MAT LAB LIMITED

SITE INVESTIGATION REPORT

Client's Name: Goldstein

Address: 261 Goldhurst Terrace,
London,
NW6 3EP

Report Date: 11-Oct-12
Job No.: **55890** (If _R suffix appears after Job No., this indicates Revision Number)
Insurance Co.: Chambers & Newman
Claim Ref. No.:

Project Engineer: Mark Lacy
From: The Graham High Group Ltd.,
Engineers Ref.: L/2012/27371

Contents:

Address: Mat Lab Ltd
The Dell
Bickenhill Lane
Catherine-De-Barnes
Solihull
B92 0DE

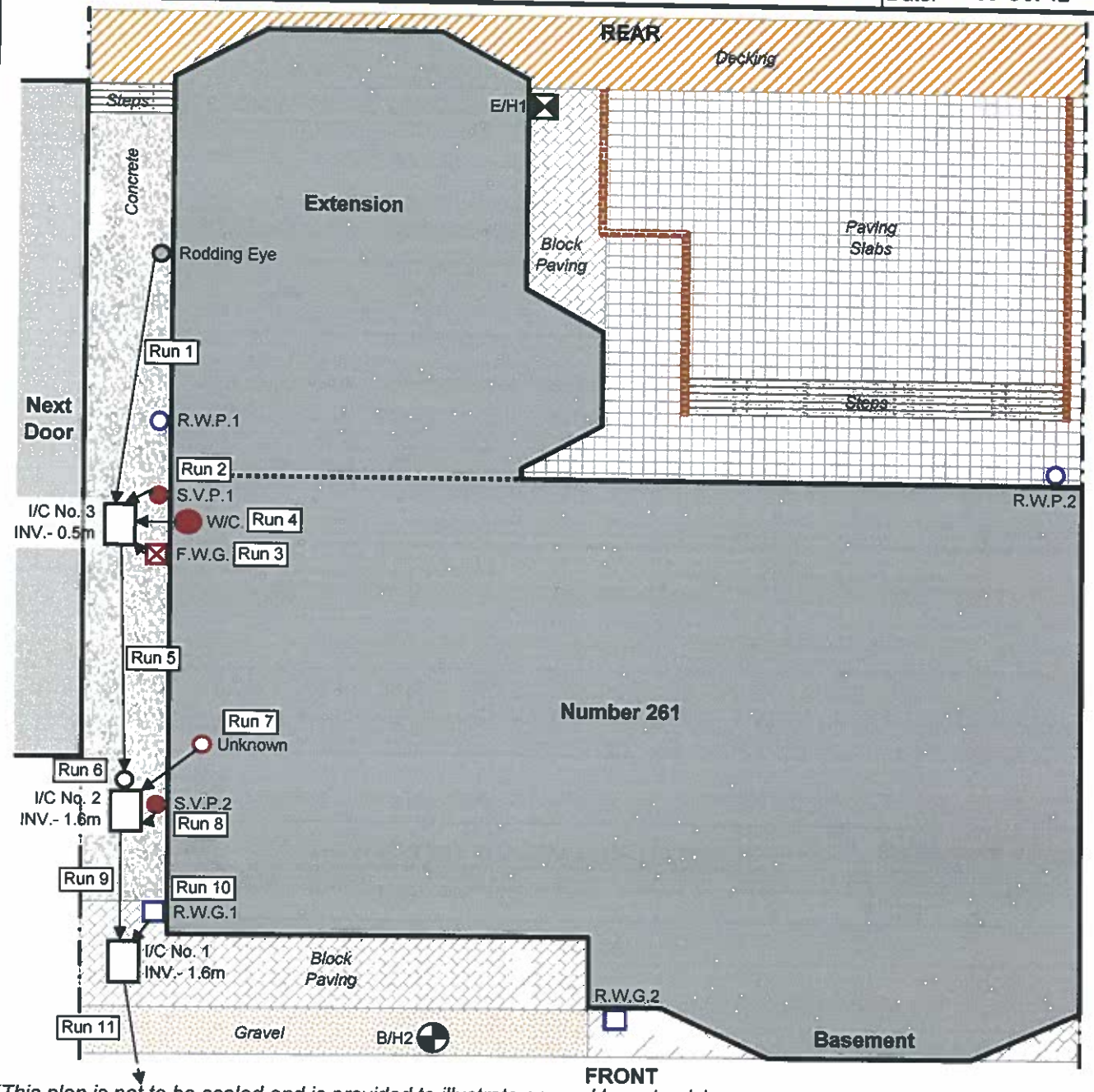
Phone No.: 0121 704 3339
Fax No.: 0121 704 4675
E-mail: post@mat-lab.com

Checked By :	AJ
Date :	11/10/2012

SITE AND DRAINAGE LAYOUT

Site Crew: Paul S

Date: 09-Oct-12



(This plan is not to be scaled and is provided to illustrate general layout only)

General Comments:

Key: =RWGully =RWPipe =FWGully =W/C or S.V. pipe =Inspection Chamber

=Rodding Eye =Surveyed pipe indicating flow =Unsurveyed pipe

=E/H=Exploratory Hole (hand dug pit and/or hand auger) =Area of Damage

=Hedge or Shrub =Trees =Boundary line

=Outlet at 6 o'clock =Inlet at 12 o'clock

Address: **261 Goldhurst Terrace, London, NW6 3EP**

Job No. **55890**

CCTV SURVEY DETAILS

Site Crew: Paul S | Date: 09-Oct-12

Run: 1 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C3 (Bwk) **Inv (m):** 0.50 Upstream **To:** Rodding Eye **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
1.6 - 1.8	Debris (Foul) 10%	1	
3.70			Pipe Bends Right
4.02			At Restbend to Rodding Eye + End of Survey

Run: 2 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C3 (Bwk) **Inv (m):** 0.50 Upstream **To:** S.V.P.1 **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.47	No Visible Defects	1	At Restbend to S.V.P.1 + End of Survey

Run: 3 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C3 (Bwk) **Inv (m):** 0.50 Upstream **To:** F.W.G. **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.97	No Visible Defects	1	At Trap to F.W.G. + End of Survey

Run: 4 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C3 (Bwk) **Inv (m):** 0.50 Upstream **To:** W/C **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.07	No Visible Defects	1	Pipe Bends Up + Pipe Bends Right
0.70			At Restbend to W/C + End of Survey

Run: 5 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C3 (Bwk) **Inv (m):** 0.50 Downstream **To:** I/C2 (Bwk) **Inv (m):** 1.60

Metres	Faults / Defects	Grade	Remarks
5.00	No Visible Defects	1	Into I/C2 + Outlet to Run 6
			End of Survey

Run: 6 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C2 (Bwk) **Inv (m):** 1.60 Upstream **To:** Run 5 **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.10	No Visible Defects	1	Pipe Bends Up
1.39			Into Run 5 + End of Survey

Run: 7 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C2 (Bwk) **Inv (m):** 1.60 Upstream **To:** Unknown **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
1.00	No Visible Defects	1	At Base of Restbend to Unknown
1.84			At Top of Restbend to Unknown
			End of Survey
			Run is a possible W/C.

Continues..

Defects shown in RED relate to runs adopted by the Local Water Authority. Grades are WRC sewer condition.

Address: **261 Goldhurst Terrace, London, NW6 3EP** Job No. **55890**

CCTV SURVEY DETAILS

Site Crew: Paul S | Date: 09-Oct-12

Run: 8 **Pipe Dia. (mm):** 100 **System:** Foul Water **Made of:** Plastic
From: I/C2 (Bwk) **Inv (m):** 1.60 Upstream **To:** S.V.P.2 **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.30	No Visible Defects	1	At Base of Restbend to S.V.P.2
1.00			At Top of Restbend to S.V.P.2
			End of Survey

Run: 9 **Pipe Dia. (mm):** 150 **System:** Foul Water **Made of:** Plastic
From: I/C2 (Bwk) **Inv (m):** 1.60 Downstream **To:** I/C1 (Bwk) **Inv (m):** 1.60

Metres	Faults / Defects	Grade	Remarks
0.30		1	Pipe Changes to Glazed Clay
1.9 - 4.0	Camera Under Water		
4.00			Into I/C1 + End of Survey

Run: 10 **Pipe Dia. (mm):** 100 **System:** Storm Water **Made of:** Glazed Clay
From: I/C1 (Bwk) **Inv (m):** 1.60 Upstream **To:** R.W.G.1 **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.37	Circumferential Crack from 12 to 5 o'clock	2	
0.82			At Trap to R.W.G.1 + End of Survey

Run: 11 **Pipe Dia. (mm):** 150 **System:** Combined **Made of:** Glazed Clay
From: I/C1 (Bwk) **Inv (m):** 1.60 Downstream **To:** Unknown **Inv (m):** N/A

Metres	Faults / Defects	Grade	Remarks
0.01		N/A	Pipe Bends Down
0.4 - 0.8	Debris (Foul) 50%		Unable to Proceed
			End of Survey

Defects shown in RED relate to runs adopted by the Local Water Authority. Grades are WRC sewer condition

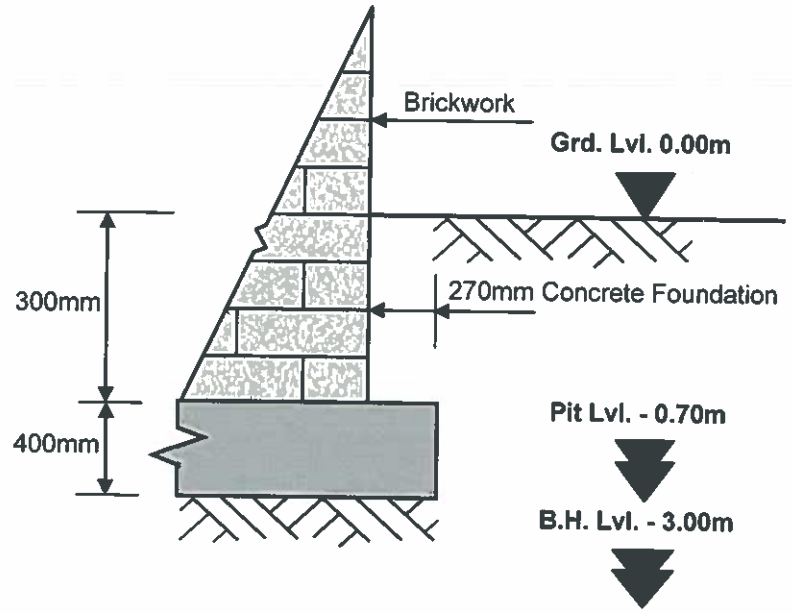
Address: **261 Goldhurst Terrace, London, NW6 3EP** | Job No. **55890**

FOUNDATION PIT RECORD

MAT LAB LIMITED

Location: **Rear Right Hand Corner of Extension**		E/H No. 1
Ground Surface: Dry	Weather: Dry	Date: 09-Oct-12

Foundation Cross Section (Not to Scale)



Roots Depth & Dia:
Down to 2.5m,
up to 3mm diameter

Water Depth Hit & Rise:
None observed on site

Reason for Termination :
Hole at instructed depth

Depth (m)	Soil Descriptions (NB:Field crew description only)
G.L.	
0.70	Firm locally friable brown slightly sandy CLAY with occasional gravel
1.50	Firm/stiff brown CLAY
2.00	Firm brown CLAY
3.00	End of Borehole

Photograph

Test Type	Depth (m) From	To
P.P. 3	1.000	
P.P. 3.1	1.500	
P.P. 4.4	2.000	
P.P. 3.1	2.500	
P.P. 3.2	3.000	

General Comments :

Key: Mac=Macintosh Probe Blow Count, V(n)=Natural Shear Vane (kN/m²), P.P. = Pocket Penetrometer (Kg/cm²)

Address: **261 Goldhurst Terrace, London, NW6 3EP** Job No. **55890**

AUGER HOLE RECORD

Location: **Remote: Front Garden**		B/H No. 2
Ground Surface : Dry	Weather : Dry	Date: 09-Oct-12

Depth (m)	Soil Descriptions (NB:Field crew description only)	Test Type	Depth (m) From	Depth (m) To
G.L.				
0.70	Soft/firm brown CLAY with some gravel & occasional sand	P.P. 1.3	0.700	
1.50	Soft/firm brown CLAY	P.P. 1.4	1.500	
2.50	Firm brown CLAY with some gravel	P.P. 2	2.500	
3.00	End of Borehole			

Roots Depth & Dia.: None observed on site

Water Strikes Depth & Rise : None observed on site

Reason for Termination: Hole at instructed depth

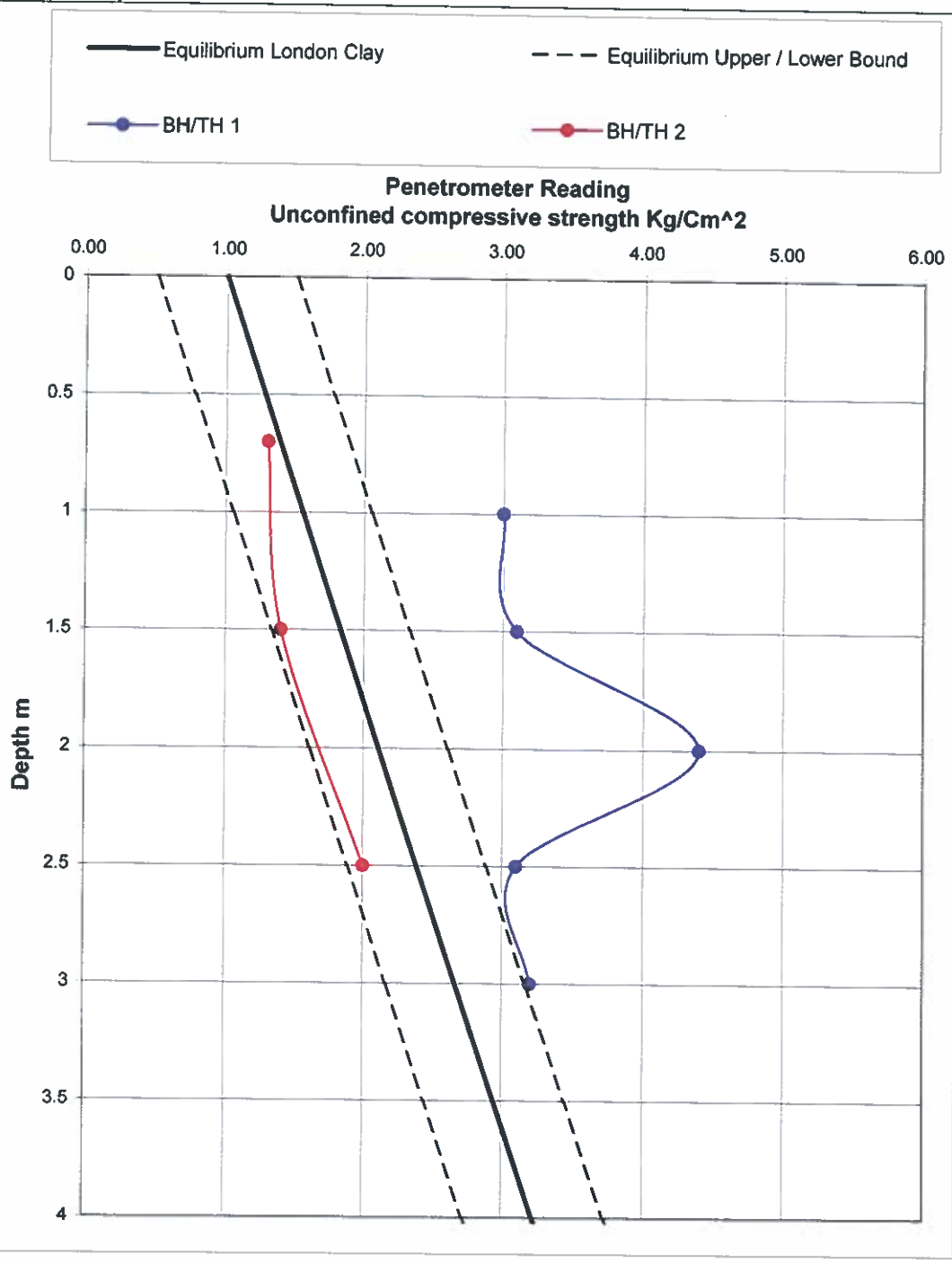
General Comments :

Key: Mac=Macintosh Probe Blow Count, V(n)=Natural Shear Vane (kN/m²), P.P. = Pocket Penetrometer (Kg/cm²)

Address: **261 Goldhurst Terrace, London, NW6 3EP** | Job No. **55890**

PENETROMETER PLOT

BH/TH No	Location
1	Rear Right Hand Corner of Extension
2	Remote: Front Garden



For the interpretation of the above penetrometer results please refer to :-

1) Desiccation in clay soils. BRE Digest. 412. February 1996, Comparisons of strength profiles.

2) Pugh R. S., Parnell P. G. and Parkes R. D. A rapid and reliable on-site method of assessing desiccation in clay soils. Proceedings of the Institution of Civil Engineers Geotechnical Engineering, 1995, 113, Jan., 25–30.

Address: **261 Goldhurst Terrace, London, NW6 3EP**

Job No. **55890**

Jetting

Due to the extensive build up of debris in Run 11, water has backed up the system and crew were unable to survey beyond 0.8m downstream from I/C1.

Therefore, we recommend using a high pressure jetter to clear the debris downstream from I/C1 and allow the free flow of waste water throughout the drainage.

Run 10

We recommend excavating and replacing R.W.G.1 and attaching up to 1m of new pipework to the existing drainage thus removing the defective pipework.

This is preferable to lining Run 10 as that would require access to I/C1 which has a deep invert and as such a deep entry kit would be needed.

MAT LAB LIMITED

QUOTATION

MAT LAB LIMITED

This Quotation is provided by :- C.P.Bennett (U.K.) Ltd.
The Dell, Bickenhill Lane, Catherine-de-Barnes, Solihull, West Midlands, B92 0DE

C.P.BENNETT (UK) LTD. SCHEDULE OF WORKS AND ESTIMATED COSTS.

ITEM	LOCATION AND DESCRIPTION	NO.	UNIT	RATE		TOTAL
	EXTERNAL WORKS :-					
	FRONT LEFT					
1	Drain jetting. [MLI70] Run 9 & 11: Jet downstream from I/C2 and I/C1 to clear debris and standing water.	1 nr	£	217.00	£	217.00
2	To excavate and replace existing Gully and up to 1m of adjacent 100mm dia. drainage (to a maximum depth of 1m) and making good to hard standings [MLI47] Replace R.W.G.1 and attach up to 1m of new pipework to existing drainage (Run 10).	1 nr	£	392.00	£	392.00
3	Extra over 100 mm dia. drainage for bend (various angles) [MLI14]	3 nr	£	33.00	£	99.00
4	Extra over 100 mm dia. drainage for connection using flexible coupling [MLI13]	1 nr	£	35.00	£	35.00
				FRONT LEFT Total =	£	**743.00**
				External Works Sub Total =	£	**743.00**
	CONTINGENCY :-					
	GENERAL					
1	CONTINGENCY SUM :- To allow for additional works found to be required whilst undertaking repairs on-site. Permission will be sought from Loss Adjusters prior to carrying out these works. This sum will be adjusted according to actual repairs carried out. [ML88]	0 nr	£	500.00	£	-
				Total Contract Value =	£	**743.00**
				V.A.T. AT 20% =	£	**148.60**
				GRAND TOTAL CONTRACT VALUE =	£	**891.60**

The true extent of the damage can only be fully ascertained when on site therefore the final invoice may have to be adjusted accordingly.
Whilst on site we shall carry out a further CCTV survey on any laterals where possible and inform you of any defects observed.
Local reinstatement of hard and soft standings will be matched as closely to existing as is practical.
If requested additional works will be charged at our standard rates.

Address: **261 Goldhurst Terrace, London, NW6 3EP** | Job No. **55890**

MAT LAB LIMITED

LABORATORY REPORT

Client's Name: Goldstein

Address: 261 Goldhurst Terrace,
London,
NW6 3EP

Report Date: 19-Oct-12
Job No.: **55890** (If _R suffix appears after Job No., this indicates Revision Number)
Insurance Co.: Chambers & Newman
Claim Ref. No.:

Project Engineer: Mark Lacy
From: The Graham High Group Ltd.,
Engineers Ref.: L/2012/27371

Contents:

Address: Mat Lab Ltd
The Dell
Bickenhill Lane
Catherine-De-Barnes
Solihull B92 0DE
E-mail: post@mat-lab.com

Phone No.: 0121 704 3339 **Fax No.:** 0121 704 4675

Authorised By:
T Pym - Reports Technician
Date Authorised: 19/10/2012

MAT LAB LIMITED

TEST SCHEDULE

MAT LAB LIMITED

Tests Requested as per:- Telephone Conversation with Engineer

Borehole No:-	BH1	BH2			
No of M/C Tests & Soil Description	5	5			
Atterberg Limits	3	3			
Suction Test	5	5			
Oedometer Swell/Strain Test					
Root Identication	Site/Lab Rts	Site/Lab Rts			
Chemical Analysis					

Key

N R = Not Requested **A P** = As appropriate (indicating MATLAB to decide)

A P Hve = As appropriate to determine Heave Potential (indicating MATLAB to decide)

Site Rts = Site extracted root material

Lab Rts = Root material extracted from soil samples in Lab.

Site/Lab Rts = Root material extracted on site & from soil samples in Lab.

Tests in blue font indicate sub-contracted testing not conducted by MATLAB Ltd.

Tests Not Possible:-

Borehole No:-	BH1	BH2			
No of M/C Tests & Soil Description					
Atterberg Limits					
Suction Test					
Oedometer Swell/Strain Test					
Root Identication		No Root Material Found			
Chemical Analysis					

Further Explanation or Comment:-

Address: **261 Goldhurst Terrace, London, NW6 3EP** | Job No. **55890**

MAT LAB LIMITED

ROOT IDENTIFICATION

MAT LAB LIMITED

Analysis subcontracted to Richardsons Botanical Investigations

261 Goldhurst Terrace, London NW6 3EP

The samples you sent in relation to the above on 12/10/2012 (received by us on 15/10/2012) have been examined. The structure was referable as follows:

TH/BH1, 0.7-1.0m

1 root: PLATANUS (Plane). 1mm diameter (approximately). 3 further roots, not examined in detail appeared similar under low magnification. Alive, recently*.

1 sample: a piece of non-organic material.

TH/BH1, 1.0-1.5m

1 root: PLATANUS (Plane). 3mm diameter (approximately). Alive, recently*.

3 pieces of BARK only - insufficient material for identification.

4 roots: unfortunately insufficient cells for identification.

TH/BH1, 1.5-2.0m

1 root: PLATANUS (Plane). 2mm diameter (approximately). A further root, not examined in detail appeared similar under low magnification. Alive, recently*.

2 roots: microscopic examination of both showed insufficient cells for recognition.

TH/BH1, 2.0-2.5m

1 root: PLATANUS (Plane). 1mm diameter (approximately). 2 further roots, not examined in detail appeared similar under low magnification. Alive, recently*.

1 piece of BARK only, insufficient material for identification.

6 roots: unfortunately insufficient cells for identification.

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.

Notes relating to Soils Report

Date Soil Samples Received in Laboratory: 12-Oct-12
Date Testing Requirements Approved: N/A

This Soils Report contains results for 2 borehole(s) on 2 page(s)

General

Soils were prepared in accordance with BS1377:Part 1:1990 Section 7

Laboratory soil sample descriptions in general accordance with BS5930:1999

Where samples are not tested on same date for a particular test type, Test Date quoted refers to the day of testing of final sample

All samples will be disposed of within 1 month of presentation of this report unless otherwise advised

Natural Moisture Content

Test Date: 12-Oct-12

Tested in accordance to BS1377:Part 2:1990 Section 3.2

A sample quantity of 100g is used for fine-grained soils, where available

Where sample quantity is critical, a minimum of 50g may be used, in accordance with BS1377:Part 2:1990

A sample quantity of 300g to 350g is used for medium-grained soils, 3kg is used for coarse-grained soils.

Atterberg Limits

Test Date: 16-Oct-12

Tested in accordance to BS1377:Part 2:1990; Section 4.4 for the Liquid Limit, Section 5 for the determination of the Plastic Limit and Plasticity Index

Suction Tests

Test Date: 19-Oct-12 (Q)*

Suction Test carried out in accordance to the accredited In-house Procedure MTLB001 with reference to the BRE paper IP4/93 (Corrected) 'A Method of Determining the State of Desiccation in Clay Soils' (Unless otherwise stated the filter paper moisture content was determined after 5 to 10 days contact and the test was prepared from a remoulded disturbed sample in accordance with in-house procedures)

* *Where denoted by '(Q)' following Test Date above, the test has been performed using 2 soil discs and quartered filter papers. The filter paper tests are conducted in a controlled environment within a temperature range of 16oC to 24oC. Average Suction values (in kPa) calculated using the BRE paper IP4/93 calibration are quoted with the maximum and minimum suction obtained, as indicated by error bars either side of plotted point. Where possible, suction values should be compared with remote borehole values, to determine relative desiccation.*

Each new batch of filter papers used for testing is checked for its consistency against the standard BRE calibration curve using a pressure membrane extractor. The current filter paper batch has been tested and shows good correlation to the BRE curve. More information is available upon request. Studies on In-house calibrations using a pressure membrane extractor continue.

UKAS TESTING
2093

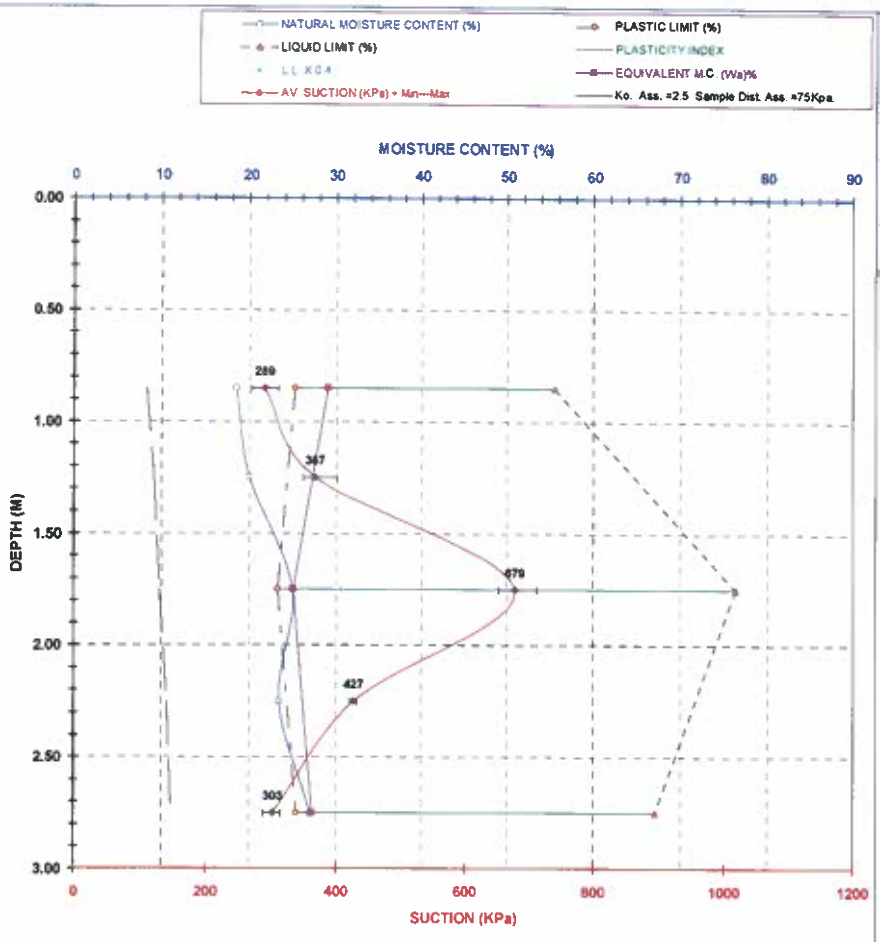
Address: **261 Goldhurst Terrace, London, NW6 3EP** | Job No. **55890**

JOB No.:- 55890
DATE SAMPLES EXTRACTED:- 09 Oct 12
CLIENT/INSURED NAME:- Goldstein
ADDRESS:- 261 Goldhurst Terrace,
London,
NW6 3EP

INSURANCE COMPANY Chambers & Newman REF:-
ENGINEER:- Mark Lacy REF:-L/2012/27371
FROM :- The Graham High Group Ltd.,
B.H. No. :- 1 of 2 No. Bore Holes
LOCATION:- Rear Right Hand Corner of Extension
REPORT DATE:- 19 Oct 12

UKAS TESTING 2093

	ATTERBERG LIMITS.						SUCTION RESULTS			NOTE :- "N.P." = "Non-Plastic" "N" = Natural & "S" = Sieve, Columns "dh" & AV. Suct below are outside of UKAS accreditation and are inferences based on the heave analysis [values in Blue are extrapolated].
DEPTH. M.	M.C. (%)	L.L. (%)	P.L. (%)	P.I. (%)	Prep Type	>425µm (%)	AV. Suct (kPa)	AV. Filter Paper M.C.(%) & No.	dh (mm)	BRIEF SOIL DESCRIPTION
0.85	19	56	25	31	S	35	289	38.24 (3)	1.9	Firm locally friable brown slightly sandy CLAY with occasional fine/medium gravel (inc chalk & made ground).
1.25	20	-	-	-	-	-	366	36.59 (3)	3.8	Firm locally friable brown slightly sandy CLAY with occasional fine/medium gravel (inc chalk & made ground).
1.75	25	76	23	53	N	0	679	32.28 (3)	9.4	Firm/stiff brown CLAY with rare sand & fine gravel.
2.25	23	-	-	-	-	-	427	35.52 (3)	7.3	Firm brown CLAY with rare sand & fine gravel.
2.75	27	67	25	42	N	1	302	37.92 (3)	4.4	Firm brown CLAY with rare sand & fine gravel.



Opinions and interpretations expressed in the chart above are outside the scope of UKAS accreditation.

The interpretations below are outside of UKAS accreditation.

Heave Potential Analysis :-

Total of Column dh (potential heave increment per layer)

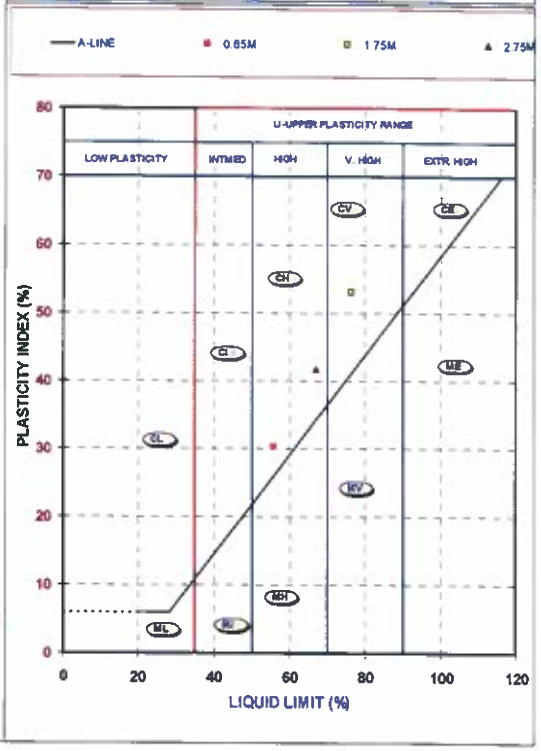
Is Approx. : 27 mm.

Therefore the Total Surface Heave Potential over the B/H depth is about :-

1cm. to 4cm.

The Above Heave Analysis is based upon :-

BRE Digest 412 Feb 1996 'Using Suction Profiles'



Authorised by :- T P

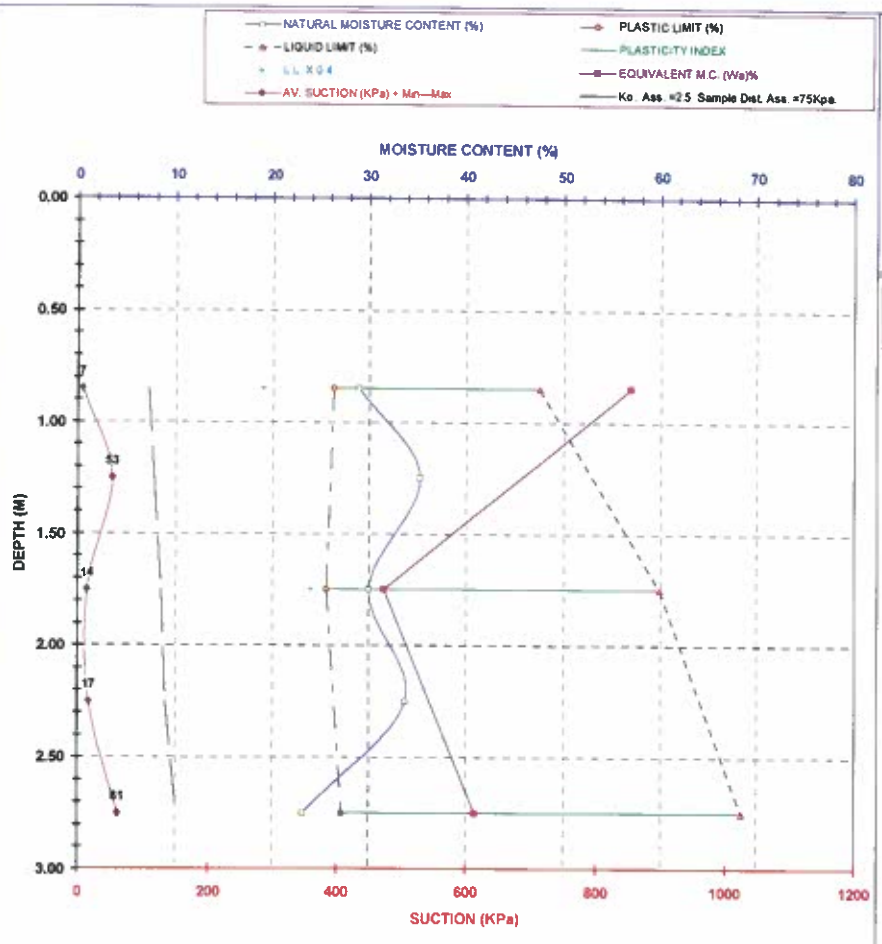
MAT LAB LIMITED

JOB No.:- 55890
DATE SAMPLES EXTRACTED:- 09 Oct 12
CLIENT/INSURED NAME:- Goldstein
ADDRESS:- 261 Goldhurst Terrace,
London,
NW6 3EP

INSURANCE COMPANY Chambers & Newman REF:-
ENGINEER:- Mark Lacy REF:-L/2012/27371
FROM :- The Graham High Group Ltd.,
B.H. No. :- 2 of 2 No. Bore Holes
LOCATION:- Remote: Front Garden
REPORT DATE:- 19 Oct 12

UKAS TESTING 2093

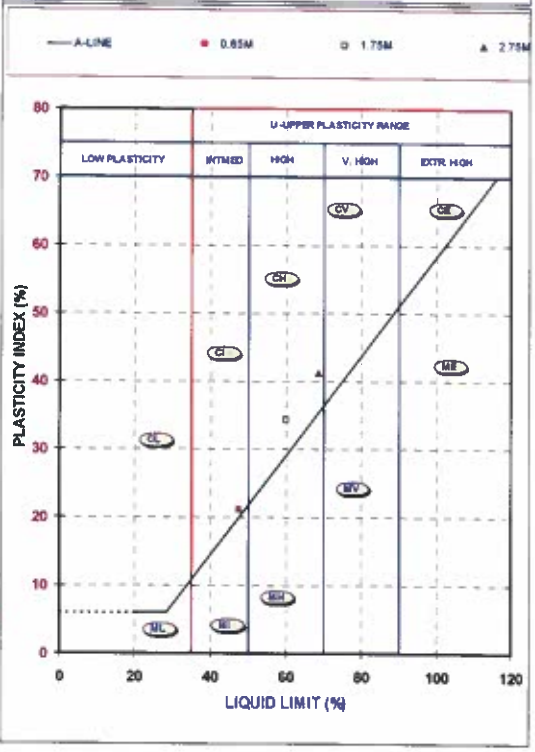
	ATTERBERG LIMITS.						SUCTION RESULTS			NOTE - "N.P." ="Non-Plastic" "N" = Natural & "S" = Sieve, Columns "dh" & AV. Suct below are outside of UKAS accreditation and are inferences based on the heave analysis (values in Blue are extrapolated).
DEPTH. M.	M.C. (%)	L.L. (%)	P.L. (%)	P.I. (%)	Prep Type	>425µm (%)	AV. Suct (kPa)	AV. Filter Paper M.C.(%) & No.	dh (mm)	BRIEF SOIL DESCRIPTION
0.85	29	47	26	21	S	49	7	125.02 (3)	0.0	Soft/firm brown CLAY with some fine gravel & occasional sand.
1.25	35	-	-	-	-	-	52	55.55 (3)	0.0	Soft/firm brown CLAY with rare sand & fine gravel.
1.75	30	60	26	34	N	5	14	94.83 (3)	0.0	Soft/firm brown CLAY with rare sand & fine gravel.
2.25	34	-	-	-	-	-	16	87.99 (3)	0.0	Soft/firm brown CLAY with rare sand & fine gravel.
2.75	23	68	27	41	S	44	61	52.29 (3)	0.0	Firm brown CLAY with some fine/medium gravel & rare sand.



Opinions and interpretations expressed in the chart above are outside the scope of UKAS accreditation.

The interpretations below are outside of UKAS accreditation.

A Heave Potential Analysis is not possible due to the low magnitude of the Suction Values.



Authorised by :- T P

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