Chelmer Site Investigations

Unit 15, East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

Factual Report

Client:	Zurich Insurance C/o Pyle Consulting
Site:	56 Parkway London NW1 7AH
CSI Ref:	FACT/4137/Visit 1
Dated:	7th January 2014

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FACTUAL REPORT CONTENT

1.0 SITE PLAN

2.0 TRIAL PITS / BOREHOLE LOGS

3.0 ROOT IDENTIFICATION

4.0 GEOTECHNICAL SOIL TESTING

5.0 CCTV DRAINAGE REPORT

6.0 REPORT NOTES

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
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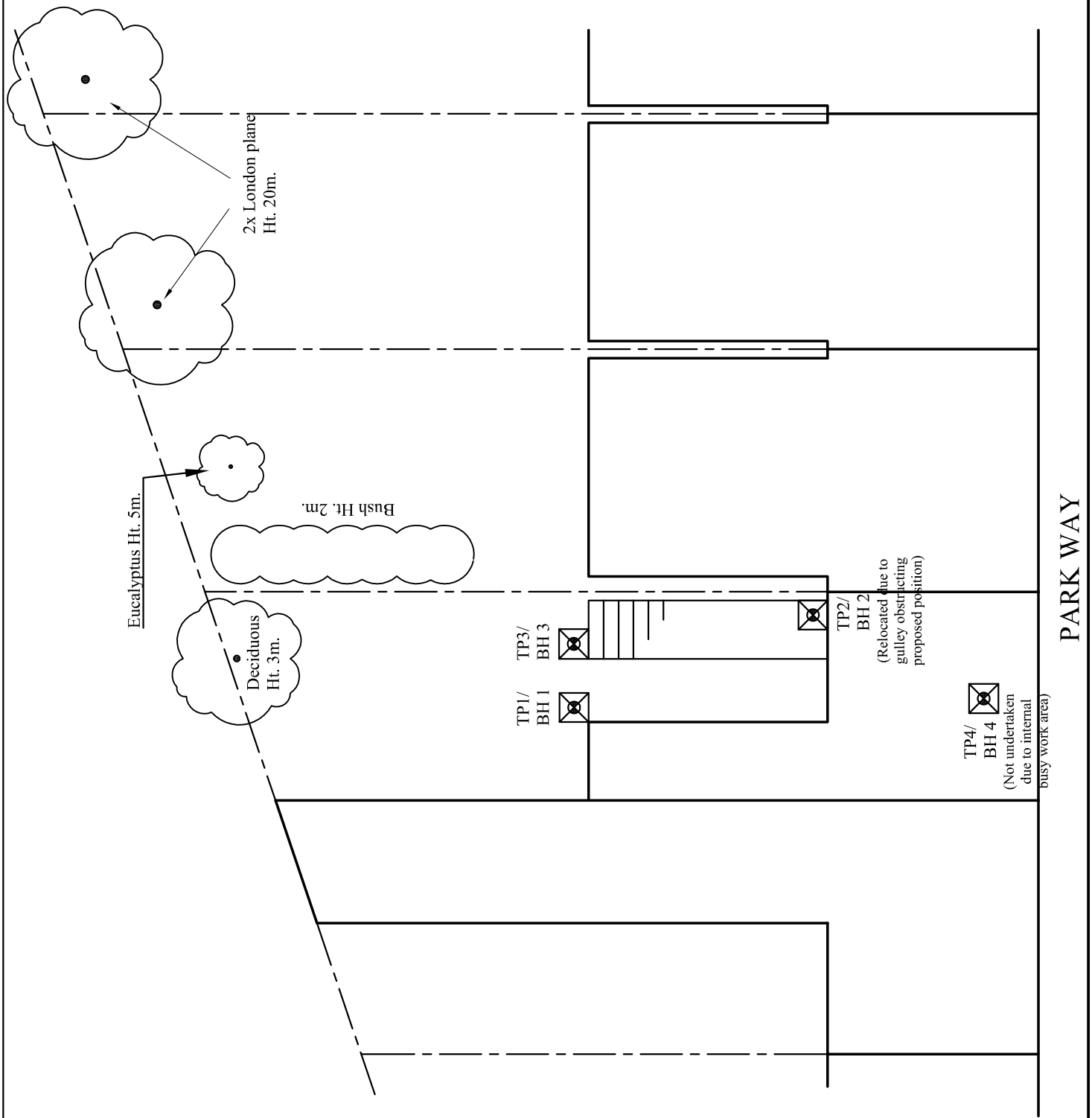
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet:** 1 of 1	**Date:** 01.12.13	
Location: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Weather:** Overcast	**Drawn by: MM**	**Checked by: ME**



Notes:

Key:

Tree/Shrub | Borehole | Trial Pit | G Gully | Tree Stump | Rain Water/ Soil Pipe | MH Manhole

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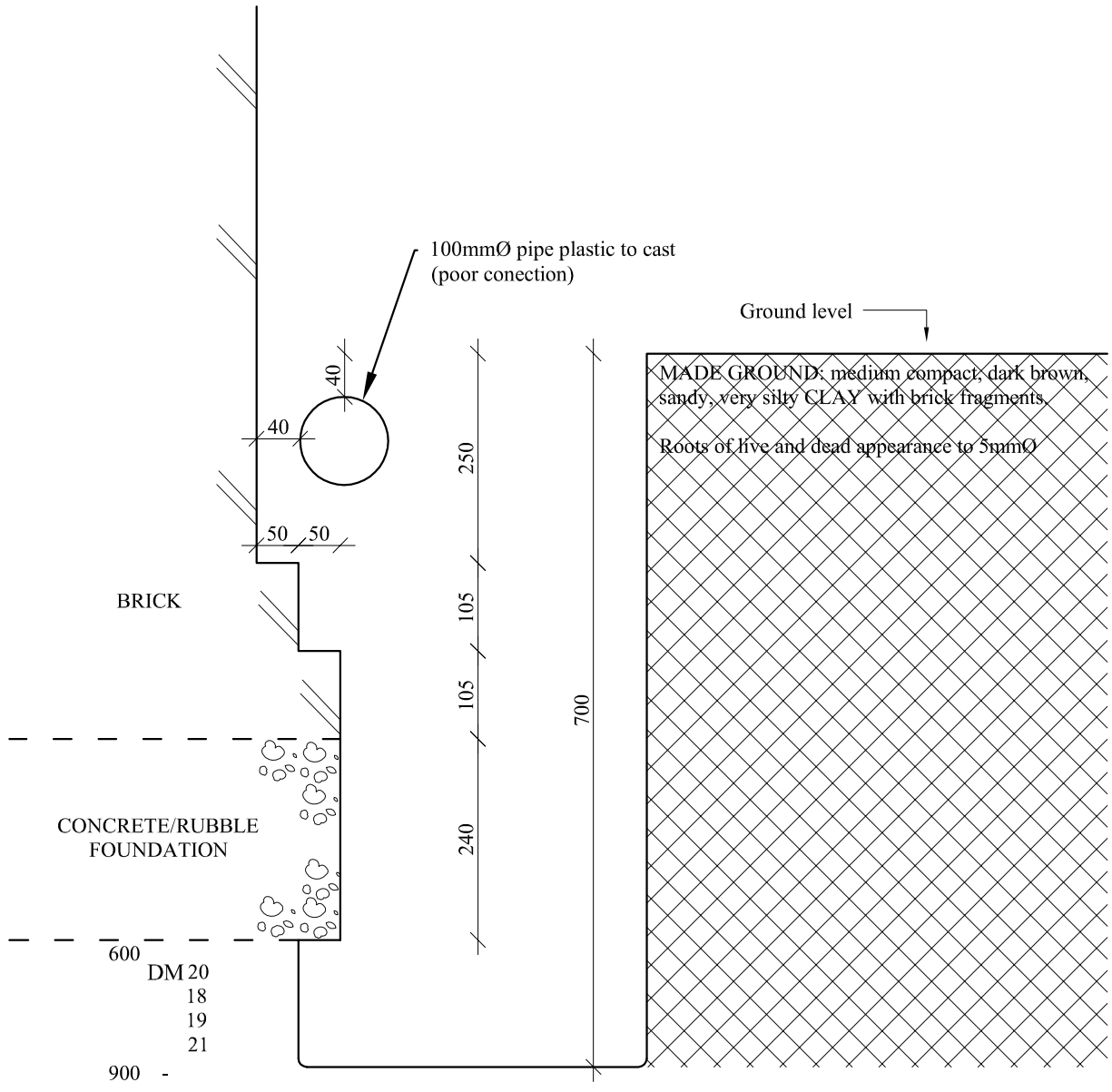
Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 07.12.13
Location: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Trial Pit No:** 1	**Weather:** Overcast
Excavation Method: Hand tools		**Drawn by:** BU	**Checked by:** ME



FOR STRATA BELOW 700mm SEE BH1 Log

Remarks:

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

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Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Overcast	**Date:** 07.12.13
Site: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Borehole No:** 1	**Boring method:** Hand Auger	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
	AS TP1	0.7					Roots of live appearance to 1mmØ to 2.2m.		
0.7	MADE GROUND: medium compact, dark brown, sandy, very silty clay with brick fragments.	0.2							
0.9				D	V	74 76			1.0
				D	V	108 112			1.5
	Stiff, mid brown, silty CLAY with partings of orange and brown silt and fine sand.	2.1		D	V	116 118			2.0
				D	V	118 122			2.5
3.0	Borehole ends at 3.0 m			D	V	134 136			3.0

Drawn by: BU **Approved by:** ME

Remarks: *Borehole dry and open on completion.*

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

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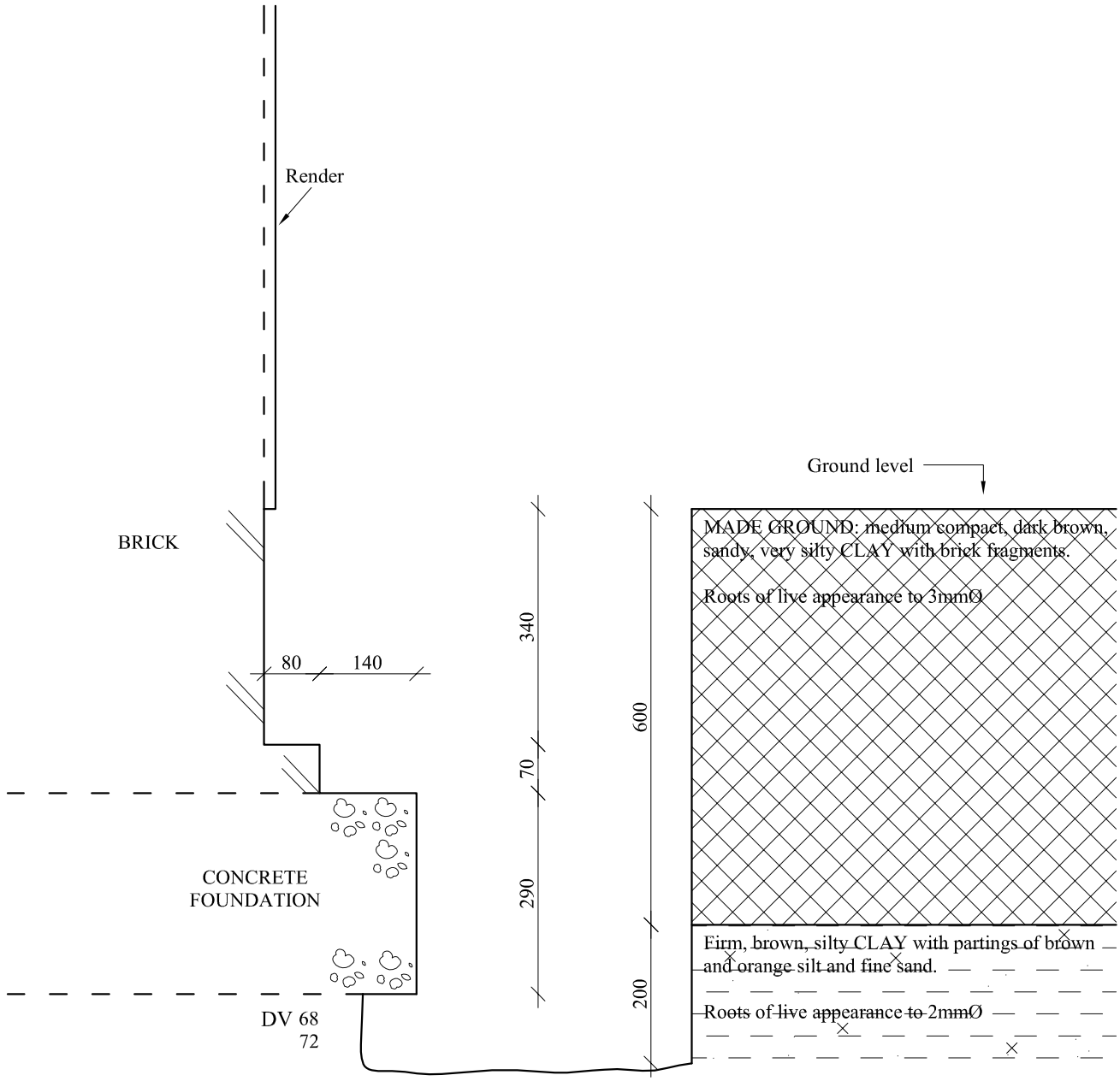
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 07.12.13
Location: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Trial Pit No:** 2	**Weather:** Overcast
Excavation Method: Hand tools		**Drawn by:** BU	**Checked by:** ME



FOR STRATA BELOW 800mm SEE BH2 Log

Remarks:

Key:
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample (U100)
N Standard Penetration Test Blow Count
J Jar sample
V Pilcon Vane (kPa)
M Mackintosh Probe
W Water Sample

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Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Overcast	**Date:** 0.7.01.14
Site: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Borehole No:** 2	**Boring method:** Hand Auger	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
	AS TP2	0.8					Roots of live appearance to 1mmØ to 1.6m.		
0.8	Firm, brown, silty CLAY with partings of orange and brown silt and fine sand. Becoming stiff from 1.0m.	2.2		D	V	78 82			1.0
				D	V	118 122			1.5
				D	V	134 136			2.0
				D	V	124 126			2.5
3.0	Borehole ends at 3.0 m			D	V	118 120			3.0

Drawn by: BU **Approved by:** ME

Remarks: *Borehole dry and open on completion.*

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

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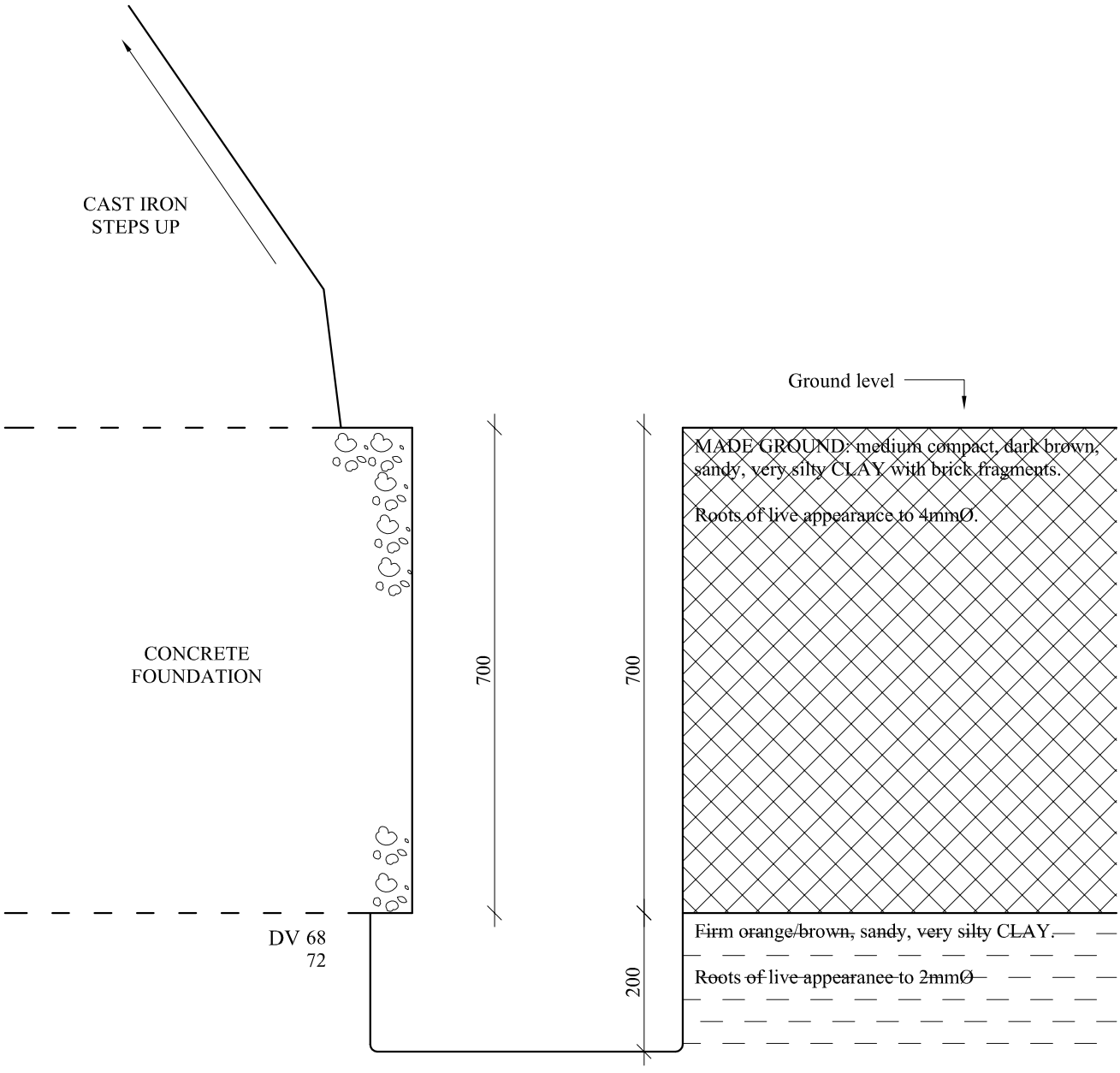
Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 07.01.14
Location: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Trial Pit No:** 3	**Weather:** Overcast
Excavation Method: Hand tools		**Drawn by:** BU	**Checked by:** ME



FOR STRATA BELOW 900mm SEE BH3 Log

Remarks:

Key:

D Small disturbed sample	**J** Jar sample
B Bulk disturbed sample	**V** Pilcon Vane (kPa)
U Undisturbed sample (U100)	**M** Mackintosh Probe
N Standard Penetration Test Blow Count	**W** Water Sample

Chelmer Site Investigations
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Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
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Client: Pyle Consulting	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Overcast	**Date:** 0.7.01.14
Site: 56 Parkway, London NW1 7AR	**Job No:** 4137	**Borehole No:** 3	**Boring method:** Hand Auger	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
	AS TP3	0.9					Roots of live appearance to 1mmØ to 1.4m.		
0.9	Stiff, brown, silty CLAY with partings of brown and orange silt and fine sand.	2.1		D	V	98 102			1.0
				D	V	118 122			1.5
	Becoming very stiff from 2.0m.			D	V	140+ 140+			2.0
				D	V	140+ 140+			2.5
3.0	Borehole ends at 3.0 m			D	V	140+ 140+			3.0

Drawn by: BU **Approved by:** ME

Remarks: *Borehole dry and open on completion.*

Key: T.D.T.D. Too Dense to Drive
D Small Disturbed Sample J Jar Sample
B Bulk Disturbed Sample V Pilcon Vane (kPa)
U Undisturbed Sample (U100) M Mackintosh Probe
W Water Sample N Standard Penetration Test Blow Count

Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, PhD, CBiol, MiBiol, MiHort, FLS
James Richardson
BSc (Hons. Biology)

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49-51 Whiteknights Road
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Tel: (0118) 986 9552 *(Direct line)*
E-mail: richardsons@botanical.net
Web: www.botanical.net

Chelmer Site Investigations
Unit 15
East Hanningfield Ind. Est.
Old Church Rd, E. Hanningfield
Essex CM3 8AB

Your ref: **4137**

Our ref: 73/4501

22/05/2014

Dear Sirs

56 Parkway

The samples you sent in relation to the above on 19/05/2014 (received by us on 21/05/2014 (yesterday)) have been examined. The structure was referable as follows:

TP, u/s, 600mm
1 root: PLATANUS (Plane). This sample was in POOR condition. Dead*.
10 pieces of BARK only - insufficient material for identification.

BH1, 700-2200mm
1 root: PLATANUS (Plane). A further sample, not examined in detail appeared similar under low magnification. Dead*.

TP2, u/s, 600mm
1 root: PLATANUS (Plane). Alive, recently*.

BH2, 800-1600mm
1 root: PLATANUS (Plane). A further sample, not examined in detail appeared similar under low magnification. Alive, recently*.

TP3, u/s, 700mm
1 root: PLATANUS (Plane). Alive, recently*.

BH3, 900-1400mm
1 root: PLATANUS (Plane). Alive, recently*.

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.

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

Report commissioned by Chelmer Site Investigations

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL03797
Client : Pyle Consulting
Client Reference : CSI4137
Site Name : 56 Parkway, London NW1

Date Received : 20/01/2014
Date Testing Started : 20/01/2014
Date Testing Completed : 21/01/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref																Sulphate Content		
BH/TP/WS	Depth	UID	Sample Type	Moisture Content (%) [1]	Soil Faction > 0.425mm (%) [2]	Liquid Limit (%) [3]	Plastic Limit (%) [4]	Plasticity Index (%) [5]	Liquidity Index (%) [5]	Modified Plasticity Index (%) [6]	Soil Class [7]	Filter Paper Contact Time (h) [8]	Soil Sample Suction (kPa)	Insitu Shear Vane Strength (kPa) [9]	Organic Content (%) [10]	pH Value [11]	SO_3 [12]	SO_4 [13]	Class [14]
TP/BH1	0.7	47449	D	35	<5									70					
TP/BH1	1.0	47450	D	34	<5	81	23	58	0.20	58	CV			75					
TP/BH1	1.5	47451	D	34	<5	86	21	65	0.19	65	CV			110					
TP/BH1	2.0	47452	D	28	<5	77	22	55	0.11	55	CV			120					
TP/BH1	2.5	47453	D	30	<5									120					
TP/BH1	3.0	47454	D	31	<5	79	21	58	0.17	58	CV			135					

Notes :-

[1] BS 1377 : Part 2 : 1990, Test No 3.2
[2] Estimated if <5%, otherwise measured
[3] BS 1377 : Part 2 : 1990, Test No 4.4
[4] BS 1377 : Part 2 : 1990, Test No 5.3
[5] BS 1377 : Part 2 : 1990, Test No 5.4
[6] BRE Digest 240 : 1993
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils
[8] In-house method S9a adapted from BRE IP 4/93
[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or Geonor vane (GV).
[10] BS 1377 : Part 3 : 1990, Test No 4
[11] BS 1377 : Part 2 : 1990, Test No 9
[12] BS 1377 : Part 3 : 1990, Test No 5.6
[13] $SO_4 = 1.2 \times SO_3$
[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key

D	Disturbed sample
B	Bulk sample
U	U100 (undisturbed sample)
W	Water sample
ENP	Essentially Non-Plastic
U/S	Underside Foundation

Comments :-

Produced :- MT
Checked By ;- AK
Date Checked :- 23-Jan-14

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL03797
Client : Pyle Consulting
Client Reference : CSI4137
Site Name : 56 Parkway, London NW1

Date Received : 20/01/2014
Date Testing Started : 20/01/2014
Date Testing Completed : 21/01/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref																	Sulphate Content		
BH/TP/WS	Depth	UID	Sample Type	Moisture Content (%) [1]	Soil Faction > 0.425mm (%) [2]	Liquid Limit (%) [3]	Plastic Limit (%) [4]	Plasticity Index (%) [5]	Liquidity Index (%) [5]	Modified Plasticity Index (%) [6]	Soil Class [7]	Filter Paper Contact Time (h) [8]	Soil Sample Suction (kPa)	Insitu Shear Vane Strength (kPa) [9]	Organic Content (%) [10]	pH Value [11]	SO_3 [12]	SO_4 [13]	Class [14]
TP/BH2	0.7	47455	D	35	<5	89	22	67	0.19	67	CV			70					
TP/BH2	1.0	47456	D	34	<5	84	21	63	0.21	63	CV			80					
TP/BH2	1.5	47457	D	31	<5	75	21	54	0.17	54	CV			120					
TP/BH2	2.0	47458	D	36	<5	73	20	53	0.30	53	CV			135					
TP/BH2	2.5	47459	D	32	<5									125					
TP/BH2	3.0	47460	D	31	<5									120					

Notes :-

[1] BS 1377 : Part 2 : 1990, Test No 3.2
[2] Estimated if <5%, otherwise measured
[3] BS 1377 : Part 2 : 1990, Test No 4.4
[4] BS 1377 : Part 2 : 1990, Test No 5.3
[5] BS 1377 : Part 2 : 1990, Test No 5.4
[6] BRE Digest 240 : 1993
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils
[8] In-house method S9a adapted from BRE IP 4/93
[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or Geonor vane (GV).
[10] BS 1377 : Part 3 : 1990, Test No 4
[11] BS 1377 : Part 2 : 1990, Test No 9
[12] BS 1377 : Part 3 : 1990, Test No 5.6
[13] $SO_4 = 1.2 \times SO_3$
[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key

D	Disturbed sample
B	Bulk sample
U	U100 (undisturbed sample)
W	Water sample
ENP	Essentially Non-Plastic
U/S	Underside Foundation

Comments :-

Produced :- MT
Checked By ;- AK
Date Checked :- 23-Jan-14

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL03797
Client : Pyle Consulting
Client Reference : CSI4137
Site Name : 56 Parkway, London NW1

Date Received : 20/01/2014
Date Testing Started : 20/01/2014
Date Testing Completed : 21/01/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref																Sulphate Content		
BH/TP/WS	Depth	UID	Sample Type	Moisture Content (%) [1]	Soil Faction > 0.425mm (%) [2]	Liquid Limit (%) [3]	Plastic Limit (%) [4]	Plasticity Index (%) [5]	Liquidity Index (%) [5]	Modified Plasticity Index (%) [6]	Soil Class [7]	Filter Paper Contact Time (h) [8]	Soil Sample Suction (kPa)	Insitu Shear Vane Strength (kPa) [9]	Organic Content (%) [10]	pH Value [11]	SO_3 [12]	SO_4 [13]	Class [14]
TP/BH3	0.7	47461	D	34	<5	84	22	62	0.20	62	CV			70					
TP/BH3	1.0	47462	D	35	<5	88	21	67	0.20	67	CV			100					
TP/BH3	1.5	47463	D	32	<5									120					
TP/BH3	2.0	47464	D	29	<5	73	17	56	0.21	56	CV			>140					
TP/BH3	2.5	47465	D	32	<5	74	22	52	0.18	52	CV			>140					
TP/BH3	3.0	47466	D	32	<5									120					

Notes :-

[1] BS 1377 : Part 2 : 1990, Test No 3.2
[2] Estimated if <5%, otherwise measured
[3] BS 1377 : Part 2 : 1990, Test No 4.4
[4] BS 1377 : Part 2 : 1990, Test No 5.3
[5] BS 1377 : Part 2 : 1990, Test No 5.4
[6] BRE Digest 240 : 1993
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils
[8] In-house method S9a adapted from BRE IP 4/93
[9] Values of shear strength were determined in situ by Chelmer Site Investigations using a Pilcon hand vane or Geonor vane (GV).
[10] BS 1377 : Part 3 : 1990, Test No 4
[11] BS 1377 : Part 2 : 1990, Test No 9
[12] BS 1377 : Part 3 : 1990, Test No 5.6
[13] $SO_4 = 1.2 \times SO_3$
[14] BRE Special Digest One (Concrete in Aggressive Ground) 2005

Note that if the SO_4 content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4m or DS-5m class respectively unless water soluble magnesium testing is undertaken to prove otherwise

Key

D	Disturbed sample
B	Bulk sample
U	U100 (undisturbed sample)
W	Water sample
ENP	Essentially Non-Plastic
U/S	Underside Foundation

Comments :-

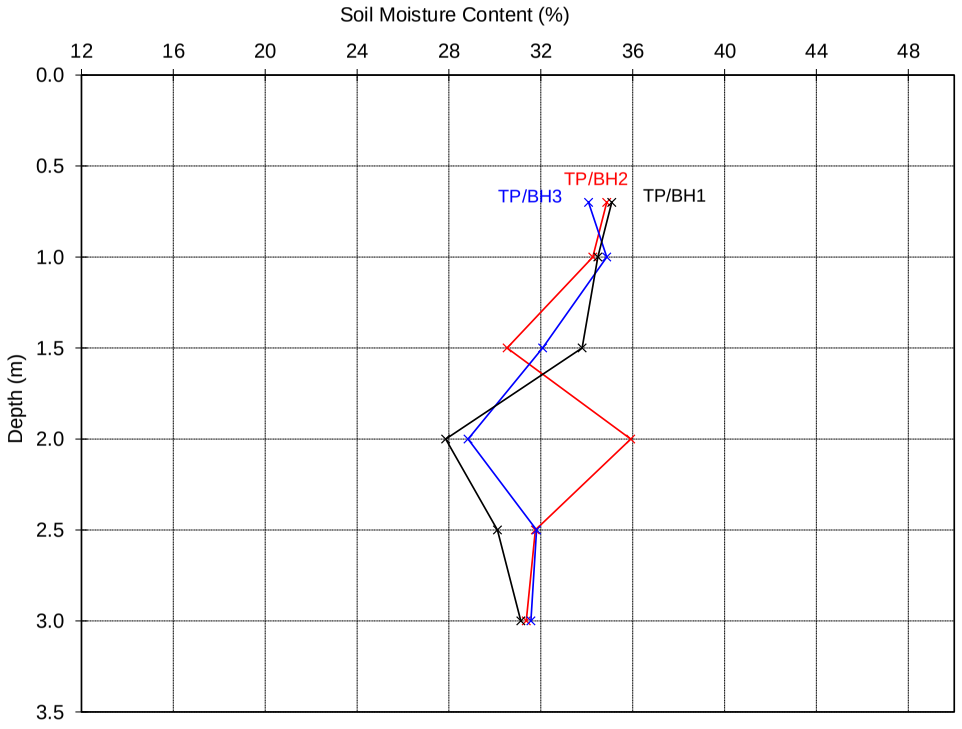
Produced :- MT
Checked By ;- AK
Date Checked :- 23-Jan-14

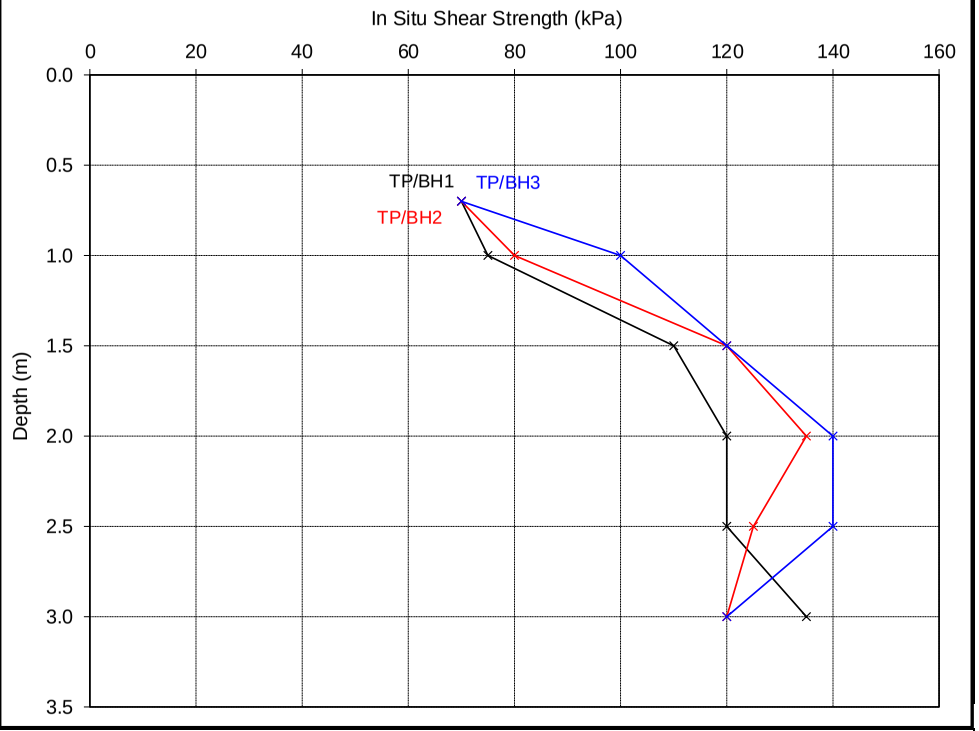
Laboratory Testing Results

Moisture Content/Shear Strength Profile

Chelmer Geotechnical Laboratories

Job Number :	CGL03797	Date Received :	20/01/2014
Client :	Pyle Consulting	Date Testing Started :	20/01/2014
Client Reference :	CSI4137	Date Testing Completed :	21/01/2014
Site Name :	56 Parkway, London NW1	Laboratory :	Chelmer Geotechnical Laboratories, CM3 8AB





Notes :-

1. If the Soil Fraction > 0.425mm exceeds 5% the Equivalent Moisture Content of the remainder (calculated in accordance with BS 1377: Part 2 : 1990, cl.3.2.4 note 1) is also plotted and the alternative profile additionally shown as an appropriately coloured broken line.
2. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly over consolidated clays) at shallow depths.

Unless otherwise stated, values of Shear Strength were determined in situ by Chelmer Site Investigations using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 140 kPa.

Comments :-

Checked By :- AK

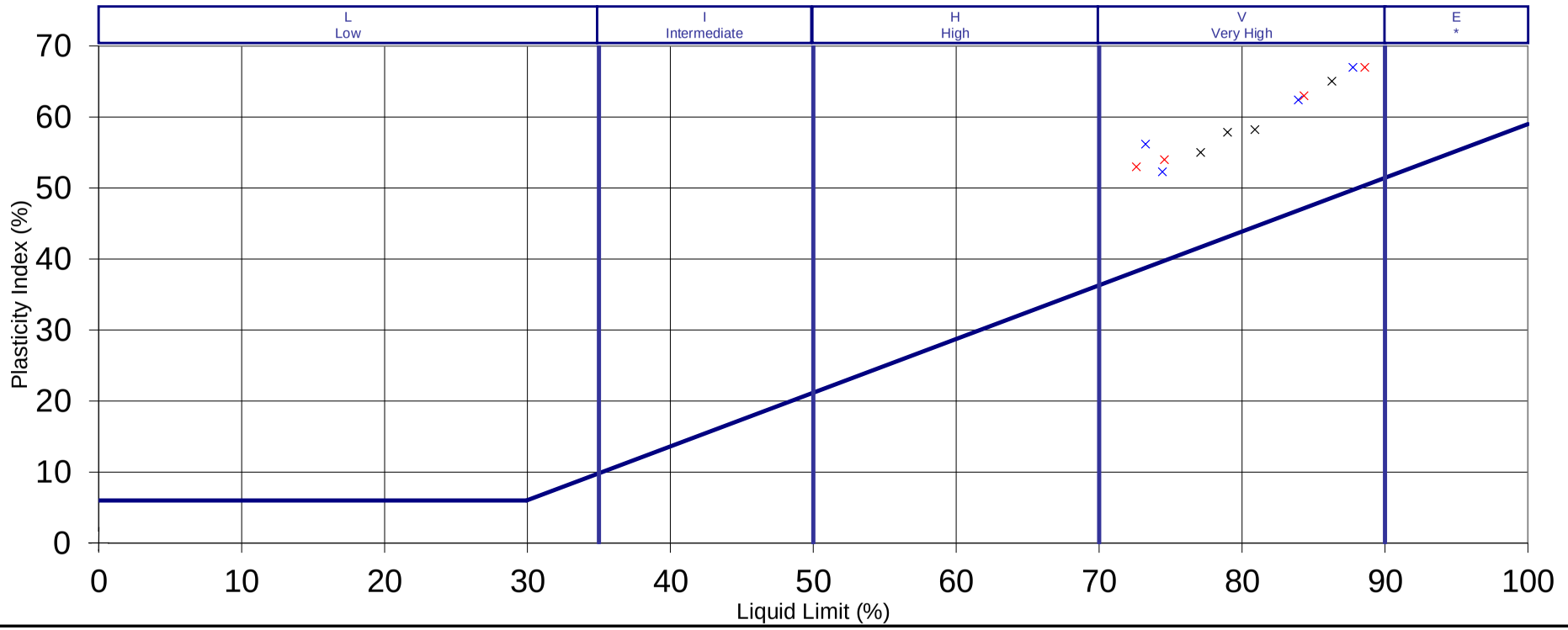
Date Checked :- 23-Jan-14

Laboratory Testing Results

Plasticity Chart for the classification of fine soils and the finer part of coarse soils
In Compliance with BS5930 : 1999

Chelmer Geotechnical Laboratories

Job Number :	CGL03797	Date Received :	20/01/2014
Client :	Pyle Consulting	Date Testing Started :	20/01/2014
Client Reference :	CSI4137	Date Testing Completed :	21/01/2014
Site Name :	56 Parkway, London NW1	Laboratory :	Chelmer Geotechnical Laboratories, CM3 8AB



Notes :-

SILT (M-SOIL), M, plots below A-Line
CLAY, C, plots above A-Line }M and C may be combined as FINE SOIL, F.

Key :- TP/BH1
TP/BH2
TP/BH3

Comments :-

Checked By :- AK Date Checked :- 23-Jan-14

Chelmer Drainfix Logistics
Unit 15, East Hanningfield Industrial Estate, Old Church Road
East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

DRAINAGE REPORT

Client:

Pyle Consulting

Site Address:

56 Parkway
London
NW1 7AH

Date of Drainage Survey:

7th January 2014

Chelmer Reference:

1019

Chelmer Drainfix Logistics
Unit 15, East Hanningfield Industrial Estate, Old Church Road
East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

REPORT CONTENTS

1.0 Drainage investigation summary

2.0 Drainage layout plan

3.0 CCTV survey report and recommendations

4.0 Manhole detail and condition summary

5.0 Summary of recommendations with repair costs

Chelmer Drainfix Logistics
Unit 15, East Hanningfield Industrial Estate, Old Church Road
East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

1.0 DRAINAGE INVESTIGATION SUMMARY

This property has a combined drainage system with services collected from the rear of the property into an interceptor manhole, MH1, before flowing out and connecting to a common sewer. This common sewer appears to flow across the rear of the properties, passing under the back addition.

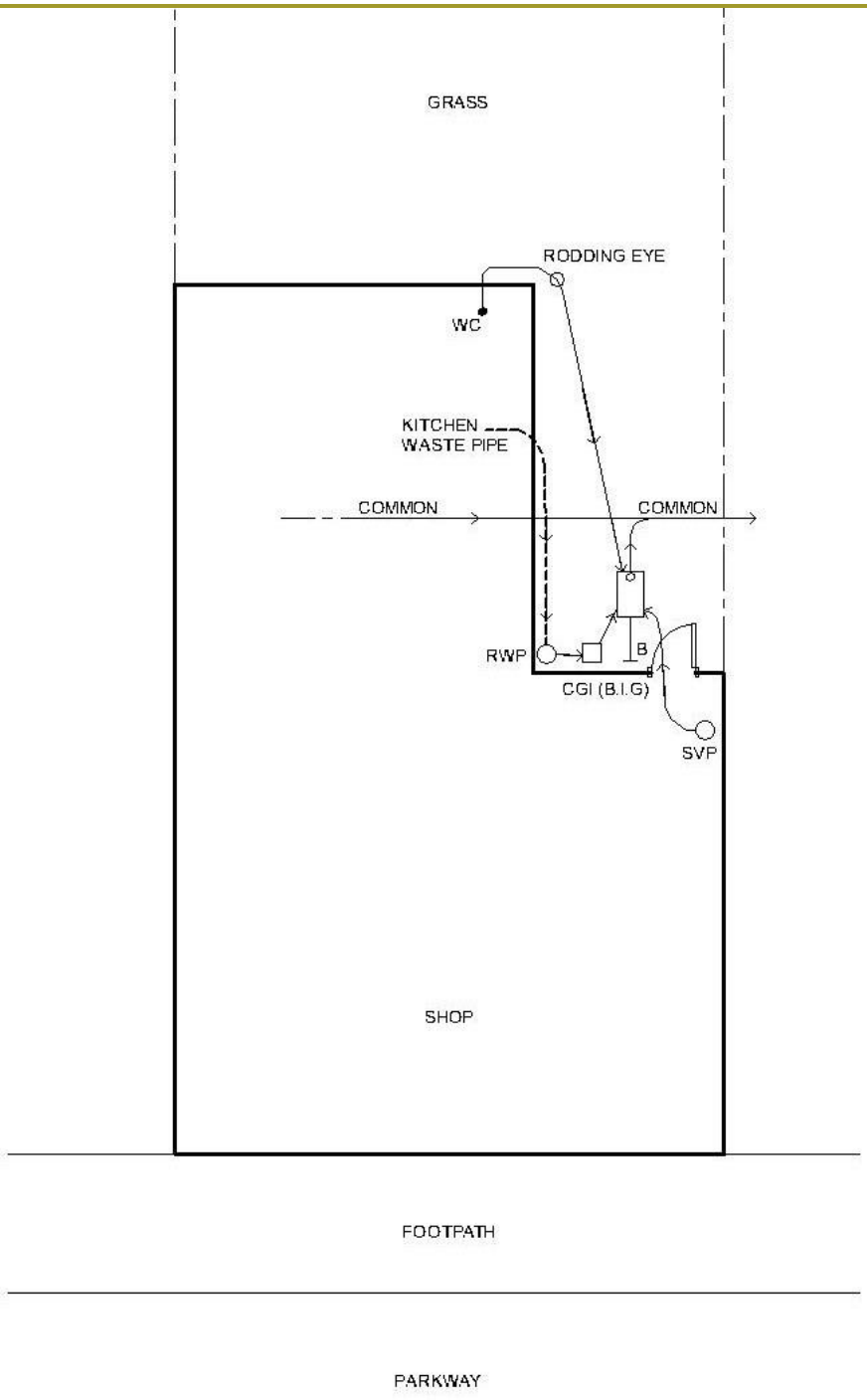
There were no operational issues noted at the time of the survey, however some defects were noted and are outlined in this report.

A CCTV survey was carried out to establish the condition of the drainage system. The fine detail of this CCTV survey is given on Pages 5–7, together with a summary of the findings and relevant recommendations where appropriate (recommendations based solely on *visual* condition of pipework).

A summary of all the recommendations are given on Page 9, together with costing for the proposed works.

Chelmer Drainfix Logistics
Unit 15, East Hanningfield Industrial Estate, Old Church Road
East Hanningfield, Essex CM3 8AB
Telephone: 01245 400 930 **Fax:** 01245 400 933
Email: info@siteinvestigations.co.uk **Website**: www.siteinvestigations.co.uk

2.0 **DRAINAGE LAYOUT PLAN (NTS)**



KEY:			
	BD = Backdrop	R/E = Rodding Eye	SWG = Surface water gully
	CG = Combined grey waste and storm gully	RWG = Rainwater gully	SVP = Soil and vent pipe
	G = Grey water waste gully	RWP = Rainwater pipe	VP = Vent pipe
	MH = Manhole	RWS = Rainwater pipe onto surface	WP = Waste pipe

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3.0 CCTV SURVEY INSECTION REPORT AND RECOMMENDATIONS

SURVEY 1:	MH1 UPSTREAM TO SVP: 100mm CLAY: FOUL DUTY
Meterage	Observations and comments
00.0	Start survey
00.8	Slight offset joint (stepped with flow)
00.9 – 01.4	Bend right
01.2	Slight offset joint (pulled right) and jointing intrusions
01.3	Radial crack
02.0 – 02.5	Bend left
02.6	At rest bend to SVP

Invert level at MH1:	650mm	Operational condition:	No operational issues noted at time of survey

Recommendations:

There were no operational issues in this line at the time of the survey, however the survey did identify a crack in the pipework just after the first bend upstream from MH1 and given this defect there is likely to be leakage from the drain.

Accordingly, consideration should be given to lining from MH1 upstream to approximately 1.5m in order to seal this defect. Please note that due to the bend in the pipework this will need to be a 'flexible' liner (CIPP).

(See Repair Item A, Section 5.0)

SURVEY 2:	MH1 UPSTREAM 'B': 100mm CLAY: REDUNDANT
Meterage	Observations and comments
00.0	Start survey
00.0 – 00.4	Debris, up to 30%
00.4	End of pipework – brick visible ahead. Line appears redundant

Invert level at MH1:	650mm	Operational condition:	N/A

Recommendations:

The CCTV survey indicated this to be a redundant connection into MH1. The end of the pipe does not appear to be properly capped-off therefore if the system blocks there could be leakage into the ground from this inlet.

All services should be carefully checked again and once this inlet is confirmed to be redundant it should be properly capped-off from within MH1.

(See Repair Item B, Section 5.0)

cont./

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3.1 CCTV SURVEY INSECTION REPORT AND RECOMMENDATIONS

SURVEY 3:	MH1 UPSTREAM TO CG1: 100mm CLAY: COMBINED DUTY
Meterage	Observations and comments
00.0	Start survey
00.3	Slight offset joint (stepped with flow). At back-inlet gully CG1

Invert level at MH1:	650mm	Operational condition:	No operational issues noted at time of survey

Recommendations:

This run is very short and no operational issues noted, however there is an open pipe from the RWP/waste pipes that connects into the gully as a back-inlet. This is in very poor condition and leakage could be seen during our site attendance. Accordingly this back-inlet and the gully CG1 should be broken out and renewed and the layout rationalised into MH1.

(See Repair Item C, Section 5.0)

SURVEY 4:	RODDING EYE UPSTREAM TO WC: 100mm PLASTIC: FOUL DUTY
Meterage	Observations and comments
00.0	Start survey
00.7 – 01.0	Bend up to WC

Invert level:	GL	Operational condition:	No operational issues noted at time of survey

Recommendations:

This section of pipework is unusually installed in that the pipework is at ground level. There were no visual defects or operational issues in the section surveyed therefore further works are not considered essential, however the arrangement is not ideal.

Pipework to WC is visible at ground level

cont./

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3.2 CCTV SURVEY INSECTION REPORT AND RECOMMENDATIONS

SURVEY 5:	R/ EYE DOWNSTREAM TO MH1: 100mm PLASTIC/CAST IRON/CLAY: FOUL DUTY
Meterage	Observations and comments
00.0	Start survey
00.3	Change of material to cast iron
04.0	Change of material to clay
04.1 – 04.3	Bend down to MH1 (enters MH1 at high level – see MH1 overview photograph, Page 8)

Invert level:	GL	Operational condition:	No operational issues noted at time of survey

Recommendations:

See general notes for Survey 4 regarding pipework being at ground level.

SURVEY 6:	MH1 DOWNSTREAM TO MAIN SEWER: 100mm CLAY: COMBINED DUTY
Meterage	Observations and comments
00.0	Start survey
00.1	Interceptor trap outlet at 6 o'clock. Radial crack/fracture
00.3	Radial crack
00.4 – 00.5	Bend left
00.6	At junction to common sewer

Invert level at MH1:	650mm	Operational condition:	No operational issues noted at time of survey

Recommendations:

The survey identified some serious visual defects in this short section of pipework through to the common sewer. There is a fracture around the back of the interceptor trap and a further radial crack in the pipework indicating this run will leak.

Consideration should therefore be given to excavating and renewing the pipework through to the common sewer, including the interceptor trap.

Please note that the common sewer passes under the back addition. If the integrity of this sewer needs to be established it should be CCTV surveyed, however this will need to be instructed through Thames Water Utilities Limited as they are responsible for this sewer.

(See Repair Item D, Section 5.0)

END OF CCTV SURVEY

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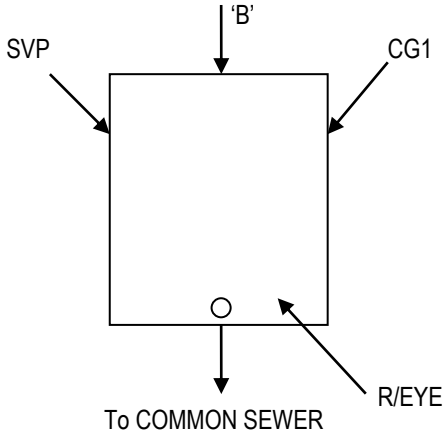
4.0 MANHOLE SUMMARY



MH1

Invert level (relative to cover level): 650mm

Cover dimension: 500 x 500mm

Chamber dimension: 500 x 500mm

Construction: Brick and render

Condition: No defects noted

Recommendation: None

MH1 overview

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4.0 SUMMARY OF RECOMMENDATIONS AND REPAIR COSTS

Item	Section of drainage	Chelmer CCTV survey number	Recommendation	Priority	Cost (£) excluding VAT
A	MH1 – SVP	1	Part line (CIPP) using flexible liner		£325.00
B	MH1 – 'B'	2	Check all services to confirm line is redundant, then cap-off properly from within MH1		£75.00
C	MH1 – CG1	3	Excavate and renew CG1 and back-inlet from RWP/waste pipes		£601.28
D	MH1 – Downstream	6	Excavate and renew (Please note that it *may* be necessary to break out part of the front manhole wall to allow sufficient working space to renew the interceptor trap in MH1)		£810.85
	High Priority			Sub-total	£1,812.13
	Medium Priority			VAT	£362,43
	Low Priority			**TOTAL**	**£2,174.56**

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TERMS AND CONDITIONS

Please note the Quotation is based on the following:-

Within this quotation we have not included for any works other than for those stated above.

All works are subject to Chelmer Site Investigations Ltd Terms and Conditions of contract, schedule of variations and day working charges.

Access to the area of work is agreed prior to date of work, as a relevant fee will apply for an aborted site visit.

Areas of work are easily accessible and clear of obstructions.

When undertaking any internal works we will require the use of electricity. However, if none is available at time of works then an additional charge will be made.

Timber decking is to be lifted by householder/owner prior to date of works or a further fee will apply.

No allowances have been made to use crawler camera drain unit to survey pipelines greater than 225mm diameter, price on application.

Subject to availability, we would be able to undertake these works within 7 **days** upon receipt of written instruction.

Payment Terms

Please be advised that when undertaking works for private/domestic clients full payment is required either before, or on the day of works.

For all new commercial clients/companies a 50% payment will be required before works commence.

If you would like to accept this quotation we would be grateful if the details attached could be completed by the person/s settling our invoice and returned to ourselves.

Please note this quotation is valid for 90 days from the date of this letter.

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We/I accept the quotation and terms as set out in Chelmer Project No.**1019** and agree your payment terms.

The invoice should be addressed as follows:-

Company Name:
(Invoice payee) _____

Invoice Address: _____

_____

_____

Tele No: _____

Fax No: _____

Email: _____

Purchase Order No: _____

Signed _____

Print Name: _____

Date: _____

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REPORT NOTES

Equipment Used

Hand tools, Mechanical Concrete Breaker and Spade, Hand Augers, 100mm/150mm diameter Mechanical Flight Auger Rig, GEO205 Flight Auger Rig, Window Sampling Rig, and Large or Limited Access Shell & Auger Rig upon request and/or access permitting.

On Site Tests

By Pilcon Shear-Vane Tester (Kn/m^2) in clay soils, and/or Mackintosh Probe in granular soils or made ground and/or upon request Continuous Dynamic Probe Testing and Standard Penetration Testing.

Note:

Details reported in trial-pits and boreholes relate to positions investigated only as instructed by the client or engineer on the date shown.

We are therefore unable to accept any responsibility for changes in soil conditions not investigated i.e. variations due to climate, season, vegetation and varying ground water levels.

Full terms and conditions are available upon request.