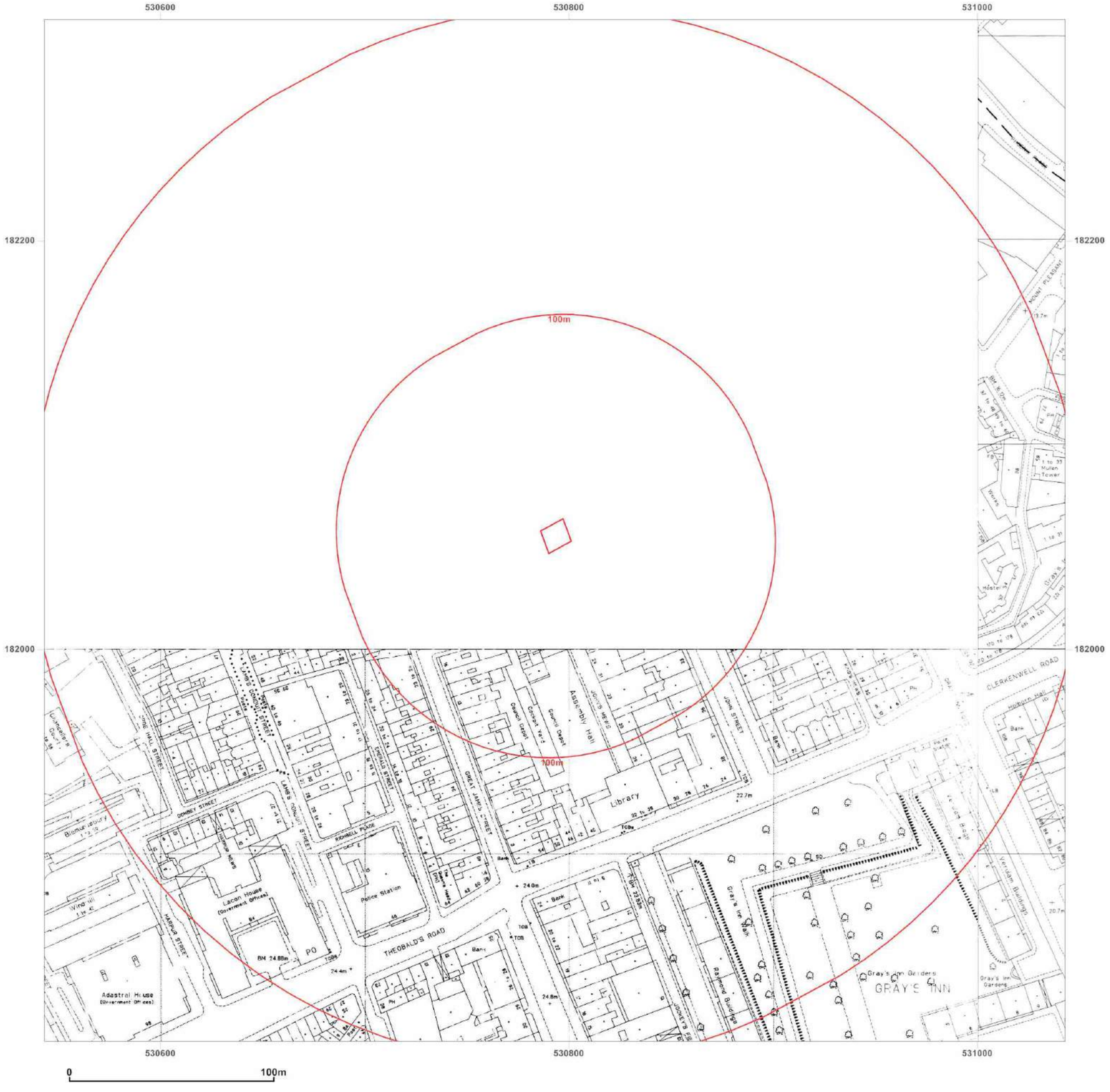

GroundSure
ENVIRONMENTAL INSIGHT

Site Details:

13-15,JOHNS MEWS,LONDON,
WC1N 2PA

Client Ref: GGC15321
Report Ref: HMD-1661661
Grid Ref: 530793, 182058

Map Name: National Grid

Map date: **1991-1995**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

Surveyed 1991
Revised 1991
Edition N/A
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Produced by
GroundSure Environmental Insight
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 12 September 2014

To view map legend click here *Legend*

APPENDIX F

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 22.05.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 1	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.2					No roots observed.		
0.2	MADE GROUND: medium compact to compact, dark brown, sandy, very silty clay with brick and concrete rubble.	0.7		D					0.5
0.9	Borehole ends at 0.9 m obstruction. (Suspect concrete)Too dense for drill to penetrate.								

Drawn by: TP **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

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 03.07.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 1A	**Boring method:** CFA 100mm Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
F.L.	CONCRETE	0.15							
0.15	MADE GROUND: medium compact to compact, dark brown, gravelly silt with numerous pieces of brick.	0.85					No roots observed.		
0.5				D					0.5
	MADE GROUND: medium compact to compact, moist, dark brown, clayey gravelly silt with numerous brick fragments.	1.5		D	M	50(20) 50(10) TDTD			1.0
				D					1.5
2.0	Borehole abandoned at 2.0 m. Obstruction thought to be made ground. Too dense for drill to penetrate.			D	M	50(15) 50(10) TDTD			2.0

Drawn by: MM **Approved by:** ME

Remarks: *Borehole moist 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

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 18.07.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 1B	**Boring method:** GEO 205 150mmØ CFA	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.075						
0.075	MADE GROUND: medium compact to compact crushed and whole brick.	0.225		D		No roots observed.		0.5
0.3	MADE GROUND: medium compact to compact, mid brown, gravelly silty coarse sand with numerous brick rubble/fragments.	0.7		D				1.0
1.0	MADE GROUND: medium compact, moist, pungent, black gravelly, very silty clay with occasional brick fragments.	3.4		D	CPT N = 18			1.5
				D				2.0
				D				2.5
				D	CPT N = 17			3.0
				D				3.5
				D				4.0
4.4	MADE GROUND: medium compact to compact, dark grey gravelly silty clay with occasional brick fragments.	1.0		D	CPT N = 35			4.5
				D				5.0
5.4	MADE GROUND: medium compact, mid grey silty clay with occasional brick fragments.	0.5		D				5.5
5.9	Stiff, mid brown, mottled grey silty CLAY with partings of brown and grey silt and fine sand and crystals.	1.6		D	SPT N = 20		*5.9*	6.0
				D				7.0
7.5	Stiff, mid grey, silty CLAY with partings of grey silt and fine sand and crystals. Becoming stiff from 8.8m.	2.5			SPT N = 26			7.5
				D				8.0
				D	SPT N = 40			9.0
							9.5	
10.0	Borehole ends at 10.0m			D				10.0

Drawn by: MM **Approved by:** ME

Remarks: *Groundwater seepage at 5.9m.*
Groundwater standing at 9.5m on completion.
Borehole open on completion.
Standpipe installed to 8.0m.

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

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 22.05.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 2	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.2					No roots observed.		
0.2	MADE GROUND: medium compact to compact, dark brown, sandy, very silty clay with brick and concrete rubble.	0.7		D					0.5
0.9	Borehole ends at 0.9 m obstruction. (Suspect concrete)Too dense for drill to penetrate.								

Drawn by: TP **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

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Chelmer Site Investigations

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 22.05.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 3	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.2					No roots observed.		
0.2	MADE GROUND: medium compact to compact, dark brown, sandy, very silty clay with brick and concrete rubble.	0.7		D					0.5
0.9	Borehole ends at 0.9 m obstruction. (Suspect concrete)Too dense for drill to penetrate.								

Drawn by: TP **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

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Weather:** Internal	**Date:** 22.05.14
Site: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Borehole No:** 4	**Boring method:** CFA 100mmØ Secondman	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type	Test Result	Root Information	Depth to Water	Depth Mtrs
G.L.	CONCRETE	0.2					No roots observed.		
0.2	MADE GROUND: medium compact to compact, dark brown, sandy, very silty clay with brick and concrete rubble.	0.7		D					0.5
0.9	Borehole ends at 0.9 m obstruction. (Suspect concrete)Too dense for drill to penetrate.								

Drawn by: TP **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

Chelmer Site Investigations
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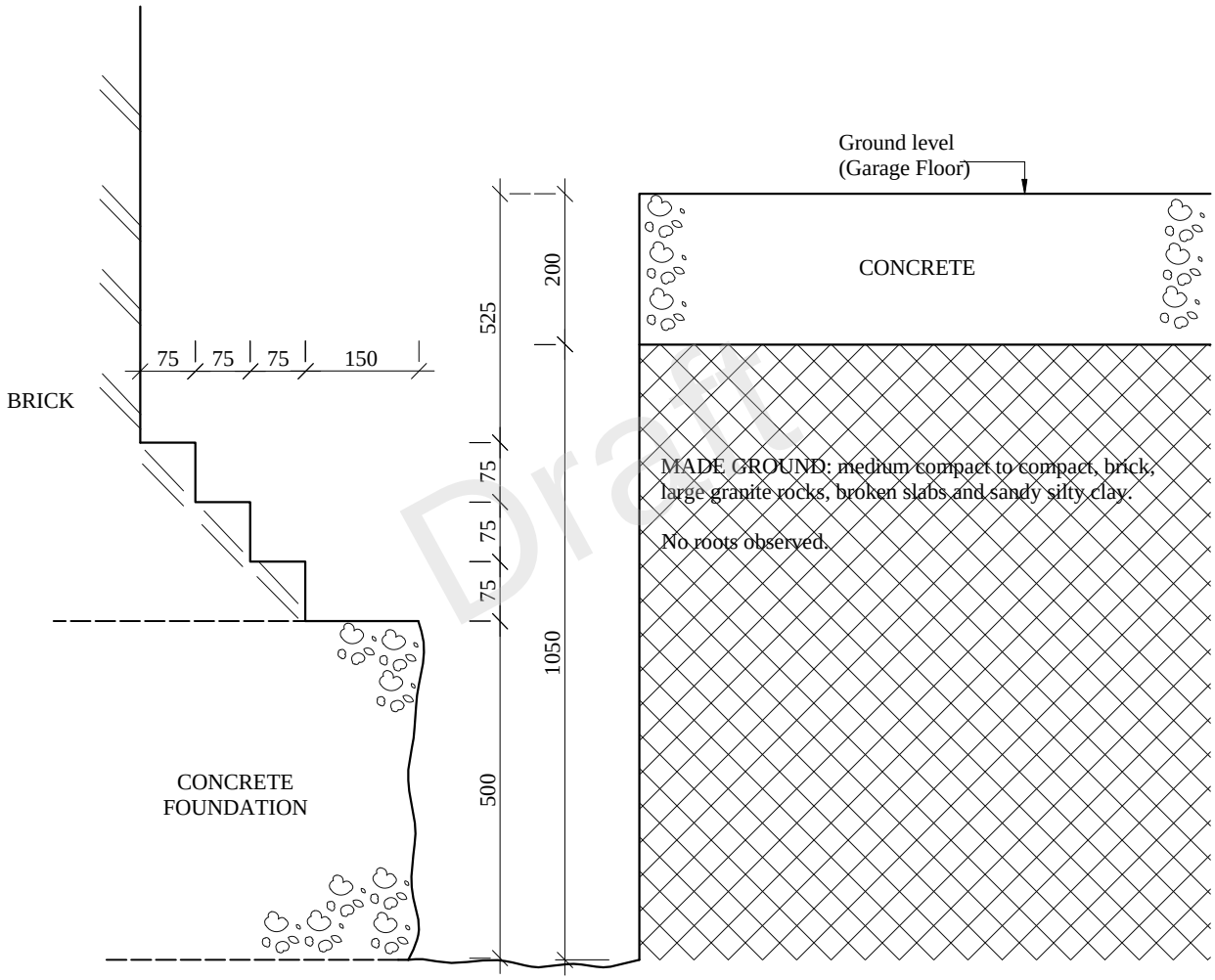
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Chelmer Site Investigations

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 2	**Date:** 22.05.14
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Trial Pit No:** 1	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** MG	**Checked by:** ME

SECTION A



TP1A ABORTED AT 1250mm
DUE TO LARGE RUBBLE UNABLE TO ESTABLISH U/S FOUNDATION

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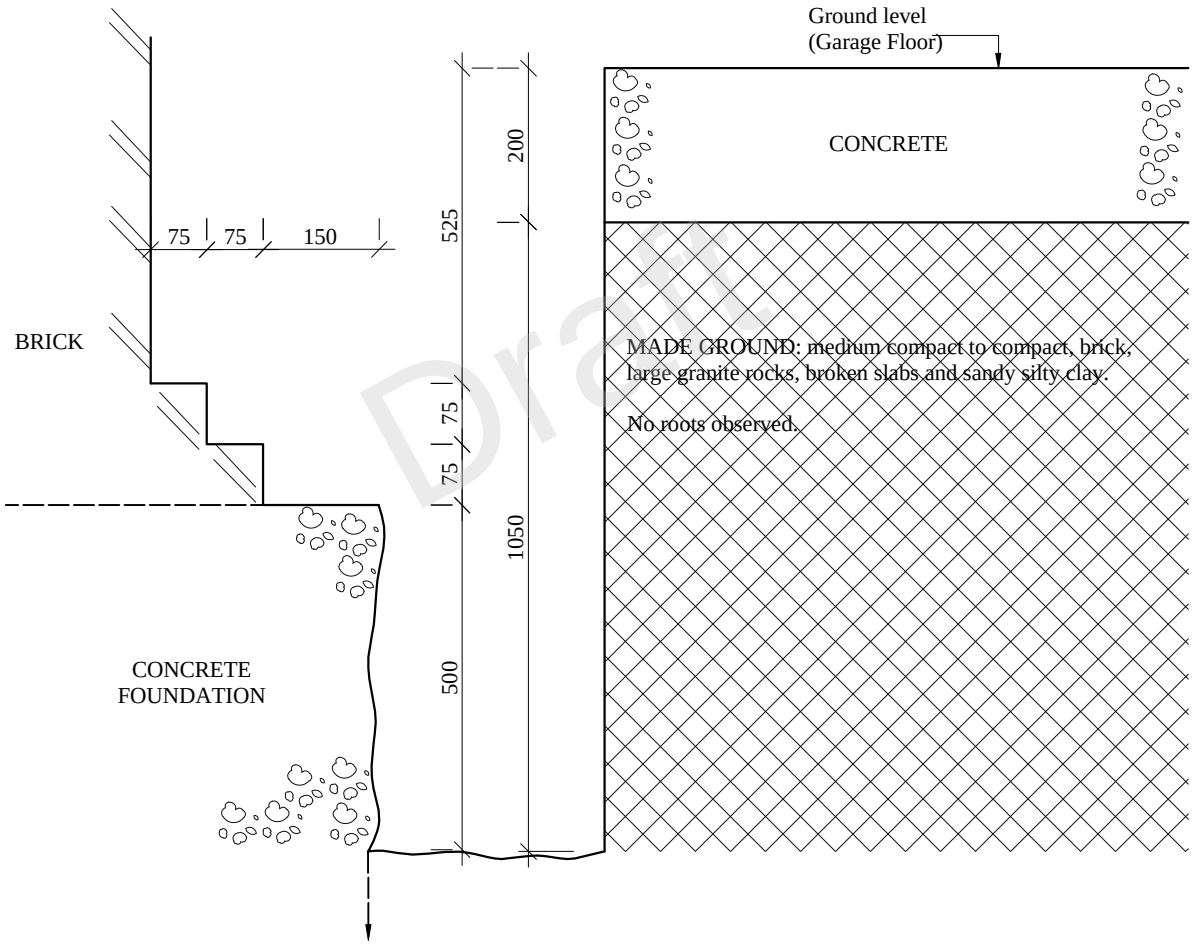
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Chelmer Site Investigations

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Date:** 22.05.14
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Trial Pit No:** 1	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** MG	**Checked by:** ME

SECTION B



TP1 SECTION-B ABORTED AT 1250mm
DUE TO LARGE RUBBLE UNABLE TO ESTABLISH U/S FOUNDATION

Remarks:

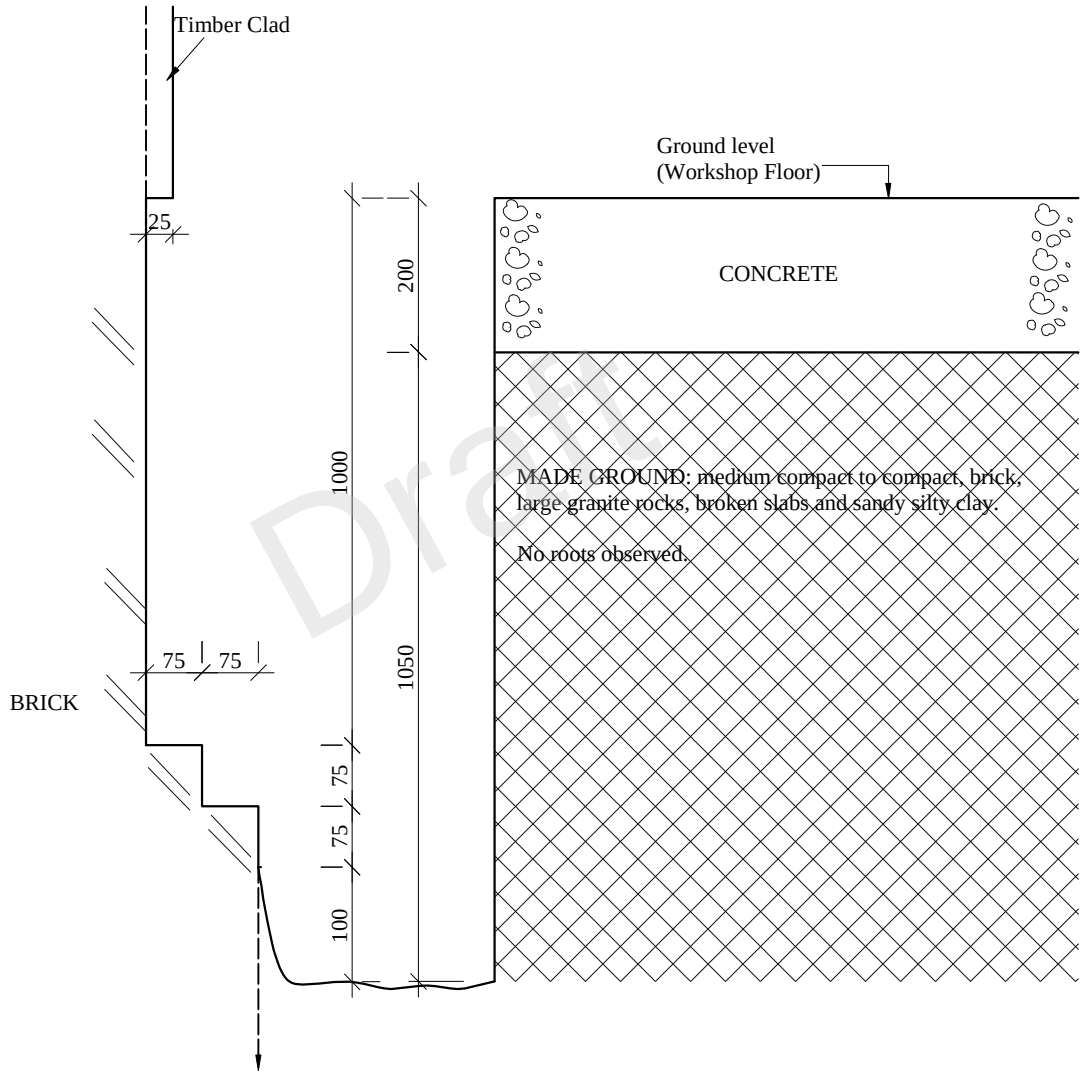
Key:
D Small disturbed sample
B Bulk disturbed sample
U Undisturbed sample (U100)
N Standard Penetration Test Blow Count
J Jar sample
V Pilcon Vane (kPa)
M Mackintosh Probe
W Water Sample

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Chelmer Site Investigations

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 2	**Date:** 22.05.14
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Trial Pit No:** 4	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** MG	**Checked by:** ME

SECTION A



TP4 SECTION-A ABORTED AT 1250mm
DUE TO MAINS SERVICES AND LARGE RUBBLE UNABLE TO ESTABLISH U/S FOUNDATION

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

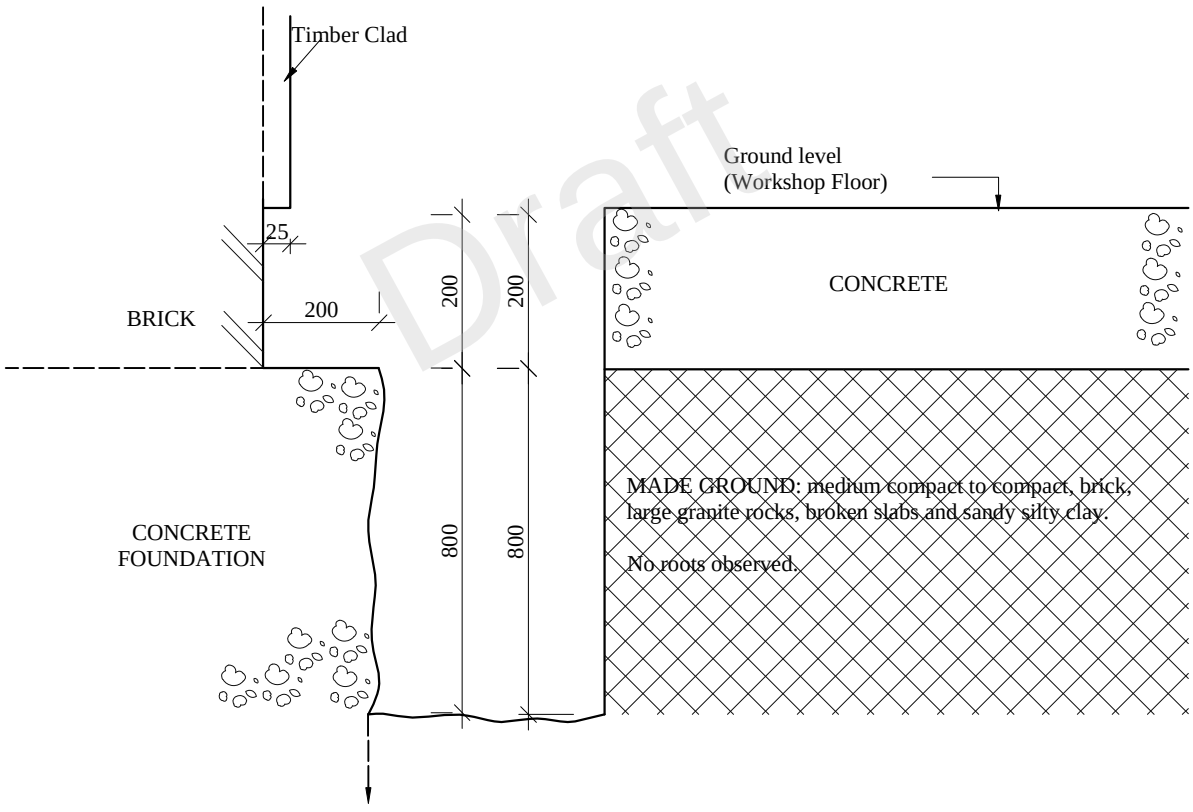
Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Chelmer Site Investigations

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Date:** 22.05.14
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507	**Trial Pit No:** 4	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** MG	**Checked by:** ME

SECTION B

FRONT WALL ELEVATION



TP4 SECTION-B ABORTED AT 1000mm
DUE TO MAINS SERVICES AND LARGE RUBBLE UNABLE TO ESTABLISH U/S FOUNDATION

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

Chelmer Geotechnical Laboratories

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.soillabs.co.uk

Geotechnical Testing

Client : Wandsworth Sand and Stone Ltd

Site Name : 13-15 Johns Mews, London WC1N 2PA

Client Reference : CSI4507

CGL Reference : CGL04289

Date of Completion : 13-Aug

UKAS TESTING
8284

Chelmer Geotechnical Laboratories

Content Summary

This report contains all test results indicated on the attached test instruction/summary (Q17).

CGL Reference : CGL04289

Client Reference : CSI4507

For the attention of : Wandsworth Sand and Stone Ltd

This report comprises of the following : 1 Page of Results

1 Moisture/Shear Strength Chart

1 Plasticity Chart

Notes :

General

Please refer to report summary notes for details pertaining to methods undertaken and their subsequent accreditations

Samples were supplied by Chelmer Site Investigations

All tests performed in-house unless otherwise stated

Deviant Samples

Samples were received in suitable containers	Yes
A date and time of sampling was provided	Yes
Arrived damaged and/or denatured	No

Laboratory Testing Results

BS 1377 : 1990

Chelmer Geotechnical Laboratories

Job Number : CGL04289
Client : Wandsworth Sand and Stone Ltd
Client Reference : CSI4507
Site Name : 13-15 Johns Mews, London WC1N 2PA

Date Received : 30/07/2014
Date Testing Started : 08/08/2014
Date Testing Completed : 13/08/2014
Laboratory Used : Chelmer Geotechnical, CM3 8AB

Sample Ref				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]	Sulphate Content		
BH/TP/WS	Depth	UID	Sample Type														SO_3 [12]	SO_4 [13]	Class [14]
1B	7.0	55860	D	33	<5	80	18	62	0.24	62	CV								
1B	8.0	55862	D	28	<5	68	14	54	0.26	54	CH					7.9	0.82	0.99	DS-2
1B	9.0	55863	D	28	<5	67	16	51	0.22	51	CH								
1B	10.0	55864	D													8.1	0.66	0.79	DS-2

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 :-

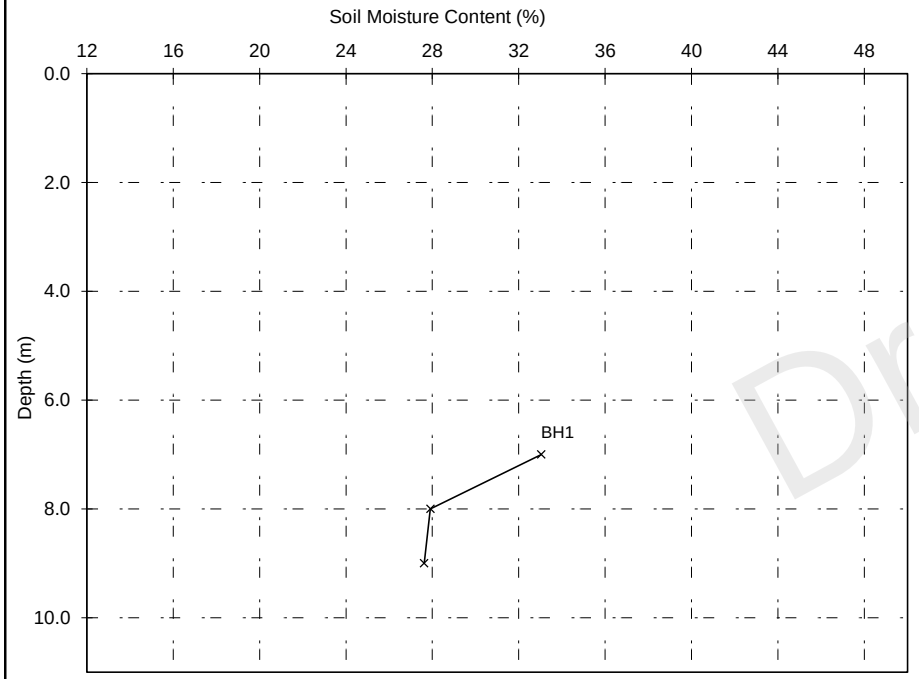
Technician :- MT
Checked By :- ME
Date Checked :- 13-Aug-14

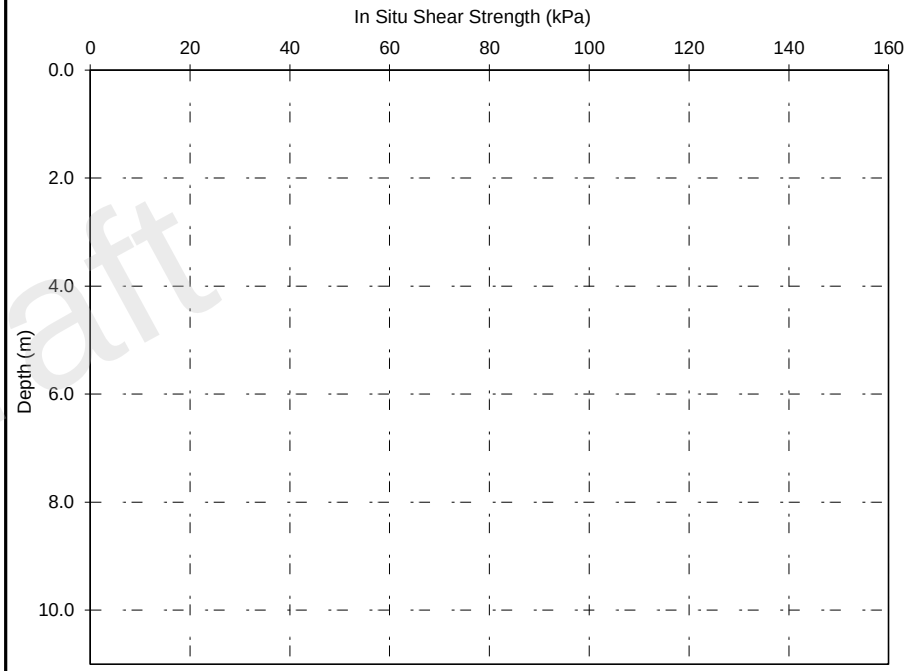
Laboratory Testing Results

Moisture Content/Shear Strength Profile

Chelmer Geotechnical Laboratories

Job Number :	CGL04289	Date Received :	30/07/2014
Client :	Wandsworth Sand and Stone Ltd	Date Testing Started :	08/08/2014
Client Reference :	CSI4507	Date Testing Completed :	13/08/2014
Site Name :	13-15 Johns Mews, London WC1N 2PA	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 :-

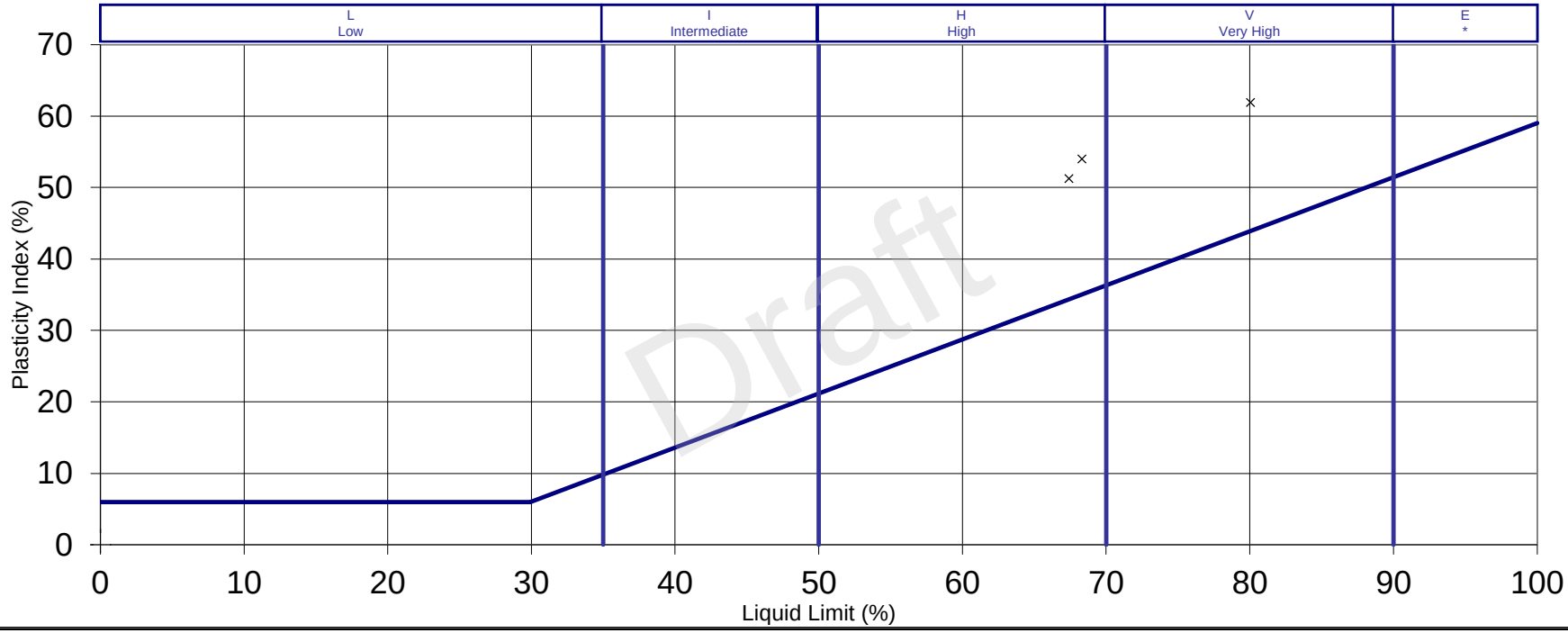
Checked By :- ME Date Checked :- 13-Aug-14

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 :	CGL04289	Date Received :	30/07/2014
Client :	Wandsworth Sand and Stone Ltd	Date Testing Started :	08/08/2014
Client Reference :	CSI4507	Date Testing Completed :	13/08/2014
Site Name :	13-15 Johns Mews, London WC1N 2PA	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 :- BH1

Comments :-

Checked By :- ME Date Checked :- 13-Aug-14

This report is personal to the client, confidential and non assignable. It is issued with no admission of liability to any third party.

This report shall not be reproduced, except in full, without the written approval of Chelmer Site Investigations Laboratories Ltd.

Where our involvement consists exclusively of testing samples, the results and comments (if provided) relate only to the samples tested.

Any samples that are deemed to be subject to deviation will be recorded as such within the test summary.

Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

Chelmer Site Investigations
Unit 15
East Hanningfield Industrial Estate
CM3 8AB

Analytical Test Report: L14/1556/CSI/001 - Amendment A

Your Project Reference:	**Johns Mews**	Samples Received on:	01.08.2014
Your Order Number:	CSI4507	Testing Instruction Received:	01.08.2014
Report Issue Number:	1	Sample Tested :	01 to 12.08.2014
Samples Analysed	4 Soils	Report issued:	13.08.2014

Signed

James Gane
Manager - Data Logistics
Nicholls Colton Analytical

Notes:

General

Please refer to Methodologies tab for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report .

Moisture Content was determined in accordance with NCA method statement MS - CL - Sample Prep, oven dried at <30˚C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with NCA method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

With the exception of Sulphate, Sulpur and LoI which are crushed over the 2mm test sieve, concentrations are reported as a percentage mass of the dry soil passing the 10mm BS test sieve. As received samples have been corrected for moisture content but not stone content.

Samples were supplied by customer.

Deviant Samples

Samples were received in suitable containers	**Yes**
A date and time of sampling was provided	**Yes**
Some sample handling times were exceeded prior to analysis of determinants	**Yes**

Where samples do not meet one or more of the above criteria they will be classed as deviant, this means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

WAC Testing

Samples were leached in accordance with BS EN 12457-2: 2002.

Eluate Results are reported as L/S 10. These results have been calculated in accordance with BS EN 12457-2:2002.

Comparative values are taken from the Environment Agency document "Guidance for waste destined for disposal in landfills", Version 2, June 2006.

Nicholls Colton Analytical
7 - 11 Harding Street
Leicester
LE1 4DH

L14/1556/CSI/001 - Amendment A

Project Reference - Johns Mews

Analytical Test Results - Env Suite 1

NCA Reference			14-26209	14-26210	14-26211
Client Sample Reference			BH1A	BH1B	BH1B
Client Sample Location			BH1A	BH1B	BH1B
Depth (m)			0.50	0.50	1.00
Date of Sampling			30.07.2014	30.07.2014	30.07.2014
Time of Sampling			AM	AM	AM
Sample Matrix			Sand	Sand	Clay
Determinant	**Units**	**Accreditation**			
Arsenic	(mg/kg)	MCERTS	20.0	13.0	19.5
Cadmium	(mg/kg)	MCERTS	0.6	0.4	0.6
Chromium (Total)	(mg/kg)	MCERTS	1.5	4.3	6.2
Copper	(mg/kg)	MCERTS	185	76.7	134
Lead	(mg/kg)	MCERTS	736	503	739
Mercury	(mg/kg)	UKAS	5.2	< 2.5	4.7
Nickel	(mg/kg)	MCERTS	21.1	14.6	22.9
Selenium	(mg/kg)	None	< 8	< 8	< 8
Zinc	(mg/kg)	MCERTS	122	66.8	124
Total Phenols	(mg/kg)	MCERTS	<1.2	<1.3	<1.3
Cyanide (Total)	(mg/kg)	MCERTS	<1.2	<1.3	<1.3
pH	pH Units	MCERTS	8.0	10.7	7.5
Sulphate	(mg/l)	None	1400	610	510
Sulphur	(%)	None	0.19	0.13	0.26
Sulphide	(mg/kg)	None	<4.0	<4.0	34.1
Acenaphthene	(mg/kg)	MCERTS	<0.1	<0.1	<0.1
Acenaphthylene	(mg/kg)	UKAS	<0.1	<0.1	<0.1
Anthracene	(mg/kg)	UKAS	0.1	<0.1	<0.1
Benzo (a) anthracene	(mg/kg)	MCERTS	1.7	<0.1	<0.1
Benzo (a) pyrene	(mg/kg)	MCERTS	1.8	<0.1	<0.1
Benzo (b) fluoranthene	(mg/kg)	MCERTS	2.2	<0.1	<0.1
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	1.2	<0.1	<0.1
Benzo (k) fluoranthene	(mg/kg)	MCERTS	0.6	<0.1	<0.1
Chrysene	(mg/kg)	MCERTS	1.5	<0.1	<0.1
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	0.1	<0.1	<0.1
Fluoranthene	(mg/kg)	MCERTS	3.0	0.1	<0.1
Fluorene	(mg/kg)	MCERTS	<0.1	<0.1	<0.1
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	1.1	<0.1	<0.1
Naphthalene	(mg/kg)	MCERTS	<0.1	<0.1	<0.1
Phenanthrene	(mg/kg)	MCERTS	1.0	0.2	0.3
Pyrene	(mg/kg)	MCERTS	3.0	0.1	<0.1
Total PAH (Sum of USEPA 16)	(mg/kg)	UKAS	17.7	1.7	1.8

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Leicester
LE1 4DH

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Project Reference - Johns Mews

Analytical Test Results - TPH CWG

NCA Reference			14-26209	14-26210	14-26211
Client Sample Reference			BH1A	BH1B	BH1B
Client Sample Location			BH1A	BH1B	BH1B
Depth (m)			0.50	0.50	1.00
Date of Sampling			30.07.2014	30.07.2014	30.07.2014
Time of Sampling			AM	AM	AM
Sample Matrix			Sand	Sand	Clay
Determinant	**Units**	**Accreditation**			
Aliphatics					
>C_5 to C_6	(mg/kg)	None	<0.03	<0.03	0.08
>C_6 to C_8	(mg/kg)	None	<0.03	<0.03	0.25
>C_8 to C_{10}	(mg/kg)	None	<0.03	<0.03	<0.03
>C_{10} to C_{12}	(mg/kg)	None	<11	<12	<13
>C_{12} to C_{16}	(mg/kg)	None	<11	<12	<13
>C_{16} to C_{21}	(mg/kg)	None	<11	<12	<13
>C_{21} to C_{35}	(mg/kg)	None	42	<12	17
Aromatics					
>C_5 to C_7	(mg/kg)	None	<0.03	<0.03	<0.03
>C_7 to C_8	(mg/kg)	None	<0.03	<0.03	<0.03
>C_8 to C_{10}	(mg/kg)	None	<0.03	<0.03	<0.03
>C_{10} to C_{12}	(mg/kg)	None	<11	<12	<13
>C_{12} to C_{16}	(mg/kg)	None	<11	<12	<13
>C_{16} to C_{21}	(mg/kg)	None	15	<12	<13
>C_{21} to C_{35}	(mg/kg)	None	130	13	31

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Project Reference - Johns Mews

Certificate Of Analysis - WAC Suite

NCA Reference	14-26212
Client Sample Reference	BH1B
Sample Description	Dark brown slightly sandy clay.
Depth (m)	1.5
Date of Sampling	30.07.2014
Time of Sampling	AM
Sample Matrix	Clay
Moisture Content (%)	28
Stone content (%)	0

			Determined Result	Inert Waste Landfill	Stable non reactive hazardous waste in a non hazardous landfill	Hazardous Waste Landfill
Solid Analysis						
Total Organic Carbon	%	MCERTS	6.4	3.0	5.0	6.0
Loss on Ignition	%	UKAS	11.0	-	-	10.0
BTEX	mg/kg	MCERTS	<0.3	6.00	-	-
PCB's (7 Congeners)	mg/kg	-	0.04	1.00	-	-
Mineral Oil ($>C_{10}$ to C_{40})	mg/kg	-	111	500	-	-
PAH	mg/kg	-	1.9	100	-	-
pH	units	MCERTS	7.6	-	> 6	-
Eluate Analysis						
Arsenic	mg/kg	-	0.07	0.50	2	25
Barium	mg/kg	-	0.26	20	100	300
Cadmium	mg/kg	-	< 0.03	0.04	1	5
Chromium (total)	mg/kg	-	< 0.03	0.5	10	70
Copper	mg/kg	-	< 0.10	2.0	50	100
Mercury	mg/kg	-	< 0.01	0.01	0.2	2
Molybdenum	mg/kg	-	0.40	0.5	10.0	30
Nickel	mg/kg	-	< 0.03	0.4	10.0	40
Lead	mg/kg	-	< 0.10	0.5	10.0	50
Antimony	mg/kg	-	0.81	0.06	0.7	5
Selenium	mg/kg	-	< 0.10	0.1	0.5	7
Zinc	mg/kg	-	< 0.10	4	50	200
Chloride	mg/kg	-	20	800	15000	25000
Fluoride	mg/kg	-	1.0	10	150	500
Sulphate (as SO_4)	mg/kg	-	1293	1000	20000	50000
Phenol Index	mg/kg	-	< 1.0	1	-	-
Dissolved Organic Carbon	mg/kg	-	80	500	800	1000

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Project Reference - Johns Mews

Sample Descriptions

NCA Reference	Client Sample Reference	Sample Depth (m)	Description	Moisture Content (%)	Stone Content (%)
14-26209	BH1A	0.50	Dark brown gravelly sand with carbonish material and brick fragments. (Fill)	7.8	57
14-26210	BH1B	0.50	Brown slightly gravelly sand with crushed rock.	15	6.0
14-26211	BH1B	1.00	Dark brown slightly sandy clay.	27	7.9

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Project Reference - Johns Mews

Analysis Methodologies

Matrix	Determinant	Sample condition for analysis	Test Method used
Soil	Metals	Air Dried	In house method statement - MS - CL - ICP metals
Soil	PAH	Air Dried	In house method statement - MS - CL - PAH
Soil	Phenols	As Received	In house method statement - MS - CL - Phenols (Skalar)
Soil	Cyanide	As Received	In house method statement - MS - CL - Cyanide by Skalar
Soil	pH	As Received	In house method statement - MS - CL - pH (Soil)
Soil	Sulphate	Air Dried	In house method statement - MS - CL - Anions (Aquakem)
Soil	Total Sulphur	Air Dried	In house method statement - MS - CL - BRE
Soil	Sulphide	-	Subcontract Analysis
Soil	CWG	As Received	In house method statement - MS - CL - EPH and VPH

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Project Reference - Johns Mews

WAC Analysis Methodologies

Matrix	Determinant	Sample condition for analysis	Test Method used
Soil	TOC	Air Dried	In house method statement - MS - CL - TOC
Soil	LoI	Air Dried	BS 1377, Part 3, 1990
Soil	BTEX	As Received	In house method statement - MS - CL - VOC and BTEX
Soil	PCB	As Received	In house method statement - MS - CL - PCB
Soil	Mineral Oil	As Received	In house method statement - MS - CL - TPH
Soil	PAH	Air Dried	In house method statement - MS - CL - PAH
Soil	pH	Air Dried	In house method statement - MS - CL - pH (Soil)
Eluate	Metals	Leached	In house method statement - MS - CL - Water Metals
Eluate	Anions	Leached	In house method statement - MS - CL - Anions (Aquakem)
Eluate	Phenol Index	Leached	In house method statement - MS - CL - Phenols (Skalar)
Eluate	DOC	Leached	In house method statement - MS - CL - DOC

Chelmer Consultancy Services
Unit 15, East Hanningfield Industrial Estate, Old Church Road
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Telephone: 01245 400 930 Fax: 01245 400 933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Landborne Gas Assessment

Site Ref: 4507
Site Name: 13-15 Johns Mews, London, WC1N 2PA

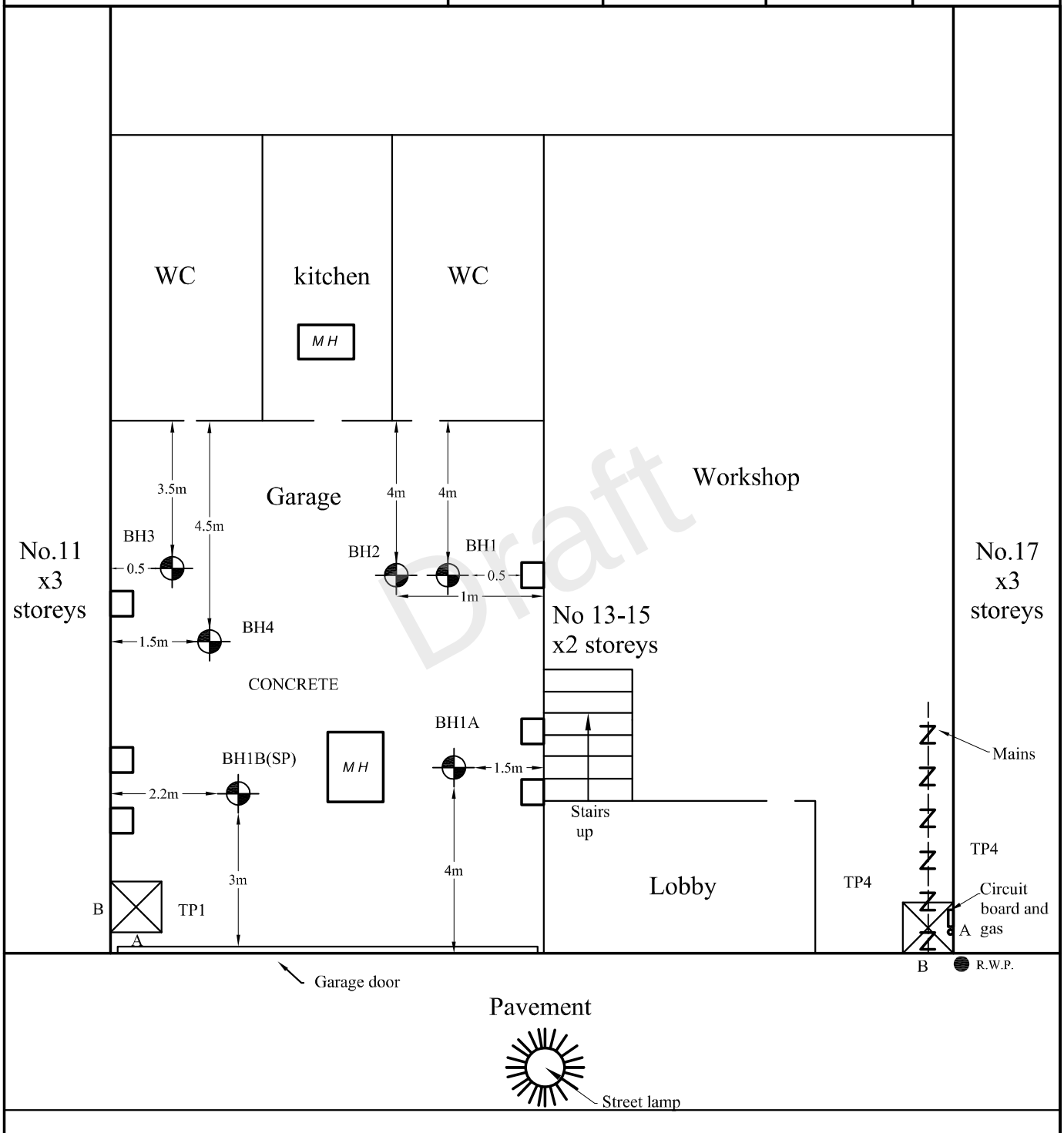
Well	Date	Methane Peak	Methane Steady	Methane GSV	Carbon Dioxide Peak	Carbon Dioxide Steady	Carbon Dioxide GSV	Oxygen	Atmos.	Flow	Response Zone	Depth to Water	CO	H2S
		%v/v	%v/v	l/hr	%v/v	%v/v	l/hr	%v/v	mbar	l/hr	m bgl	m bgl	ppm	ppm
BH1B	30/07/2014	0.1	<0.1	0.0005	0.1	0.1	0.0005	20.5	1015	0.5	1.00-8.00	3.39	0	0
	10/08/2014	0.1	0.1	0.0006	1.1	0.8	0.0066	18.8	997	0.6		3.27	0	0

Notes

NR = Not recorded
Values in Bold exceed the CO_2 Building Regulations threshold (>1.5%)
Values in Red exceed the Buildings Regulations Action Level (CO_2 >5.0% and CH_4 >1.5%)

Chelmer Site Investigations
Unit 15 East Hanningfield Industrial Estate
Old Church Road, East Hanningfield, Essex CM3 8AB
Telephone: 01245 400930 Fax: 01245 400933
Email: info@siteinvestigations.co.uk Website: www.siteinvestigations.co.uk

Client:	Wandsworth Sand and Stone LTD	**Scale:**	N.T.S.	**Sheet:**	1 of 1	**Date:**	22.05.07/03.07.14/18.07.14
Location:	13-15 Johns Mews, London, WC1N 2PA	**Job No:**	4507	**Weather:**	Internal	**Drawn by:** MM	**Checked by:** ME



Notes: *Two additional boreholes undertaken in area of TP1 and original TP2 location but not logged as similar depth and strata to BH1A. TP2 and TP3 not excavated.*

Key:

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

Landborne Gas Assessment

Site Ref: 4507F
Site Name: 13-15 John Mews, London, WC1N 2PA

Well	Date	Methane Peak	Methane Steady	Methane GSV	Carbon Dioxide Peak	Carbon Dioxide Steady	Carbon Dioxide GSV	Oxygen	Atmos.	Flow	Response Zone	Depth to Water	CO	H2S
		%v/v	%v/v	l/hr	%v/v	%v/v	l/hr	%v/v	mbar	l/hr	m bgl	m bgl	ppm	ppm
BH5	02.09.15	-	-		-	-		-	-	-	1.00-12.00	3.80	-	-
	09.09.15	0.0	0.0	0.0000	4.2	3.9	0.0210	14.2	1020	0.5		3.60	0	0
	14.09.15	-	-		-	-		-	-	-		3.48	-	-
	22.09.15	-	-		-	-		-	-	-		3.35	-	-
	20.01.16	0.1	0.1	0.0002	2.0	2.0	0.0040	19.4	1021	0.2		2.95	0	0
	03.03.16	-	-		-	-		-	-	-		2.92	-	-
	10.03.16	-	-		-	-		-	-	-		3.00	-	-
	3.17	0.0	0.0	0.0000	2.1	2.1	0.0000	-	-	0.2		3.02	0	0
BH1B	30.07.14	0.1	<0.1	0.0002	0.1	0.1	0.0040	20.5	1015	0.5	1.00-8.00	3.39	0	0
	10.08.14	0.1	0.1	0.0002	1.1	0.8	0.0040	18.8	997	0.6		3.27	0	0
	14.09.15	-	-		-	-		-	-	-		3.18	-	-
	22.09.15	-	-		-	-		-	-	-		3.13	-	-
	20.01.15	0.1	0.1	0.0003	0.1	0.1	0.0003	21.2	1021	0.3		3.00	0	0
	03.03.16	-	-		-	-		-	-	-		3.09	-	-
	10.03.16	-	-		-	-		-	-	-		3.20	-	-
	3.17	0.1	0.1	0.0003	0.1	0.1	0.0000	-	-	0.3		3.14	0	0

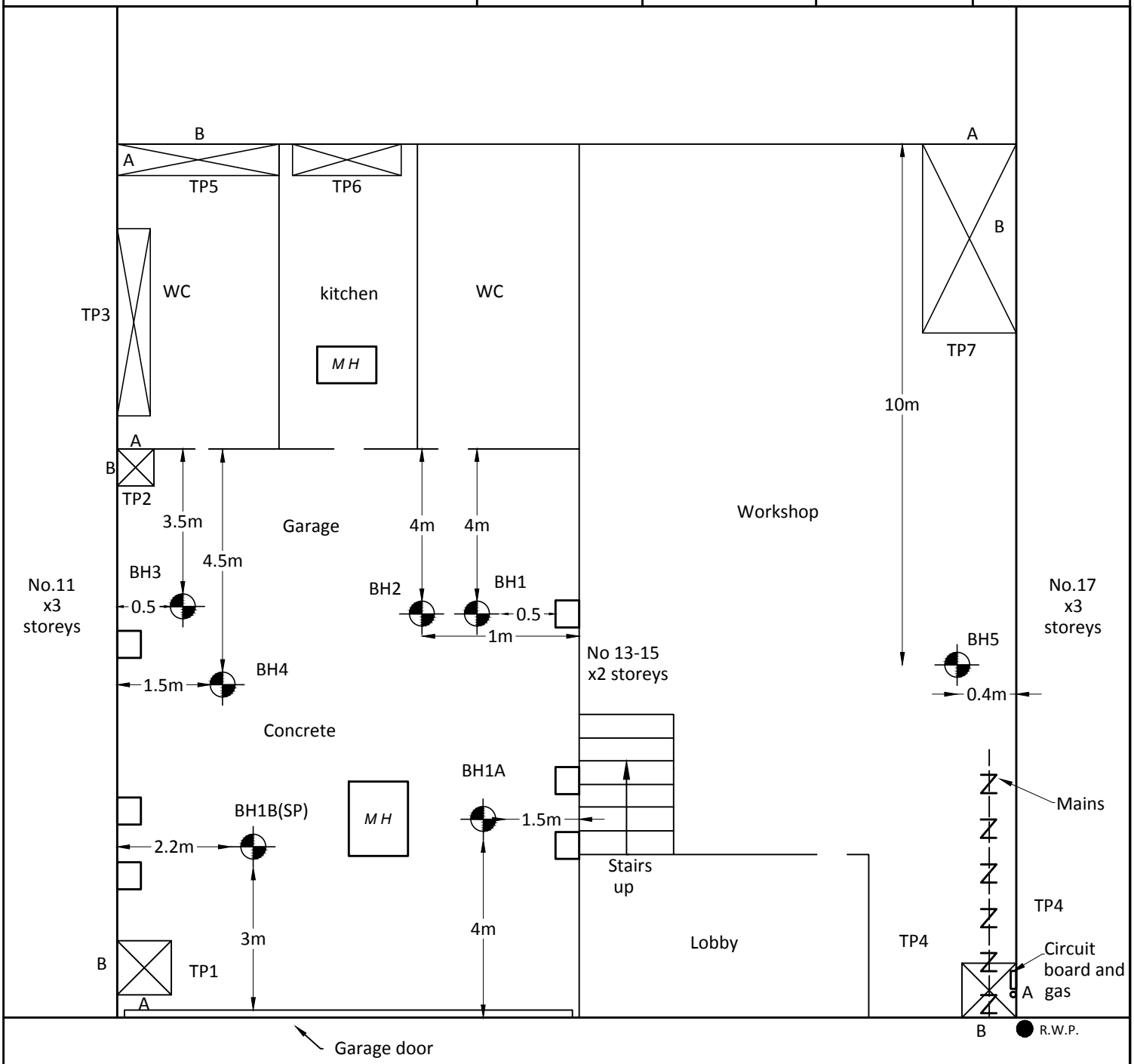
Chelmer
Site Investigations
'Groundbreaking Services'

Addendum Factual Report

Site	13-15 Johns Mews, London, WC1N 2PA
Client	Wandsworth Sand and Stone LTD
Date	04th August 2015
Our Ref	FACT/4507D Rev 1

Chelmer Site Investigation Laboratories Ltd
Unit 15 East Hanningfield Industrial Estate, Old Church Road, East Hanningfield, Essex CM3 8AB
Essex: 01245 400930 | London: 0203 67409136 | info@siteinvestigations.co.uk | www.siteinvestigations.com

Client:	Wandsworth Sand and Stone LTD	Scale:	N.T.S.	Sheet:	1 of 1	Date:	04.08.15	
Location:	13-15 Johns Mews, London, WC1N 2PA	Job No:	4507D	Weather:	Internal	Drawn by: DB		Checked by: JH



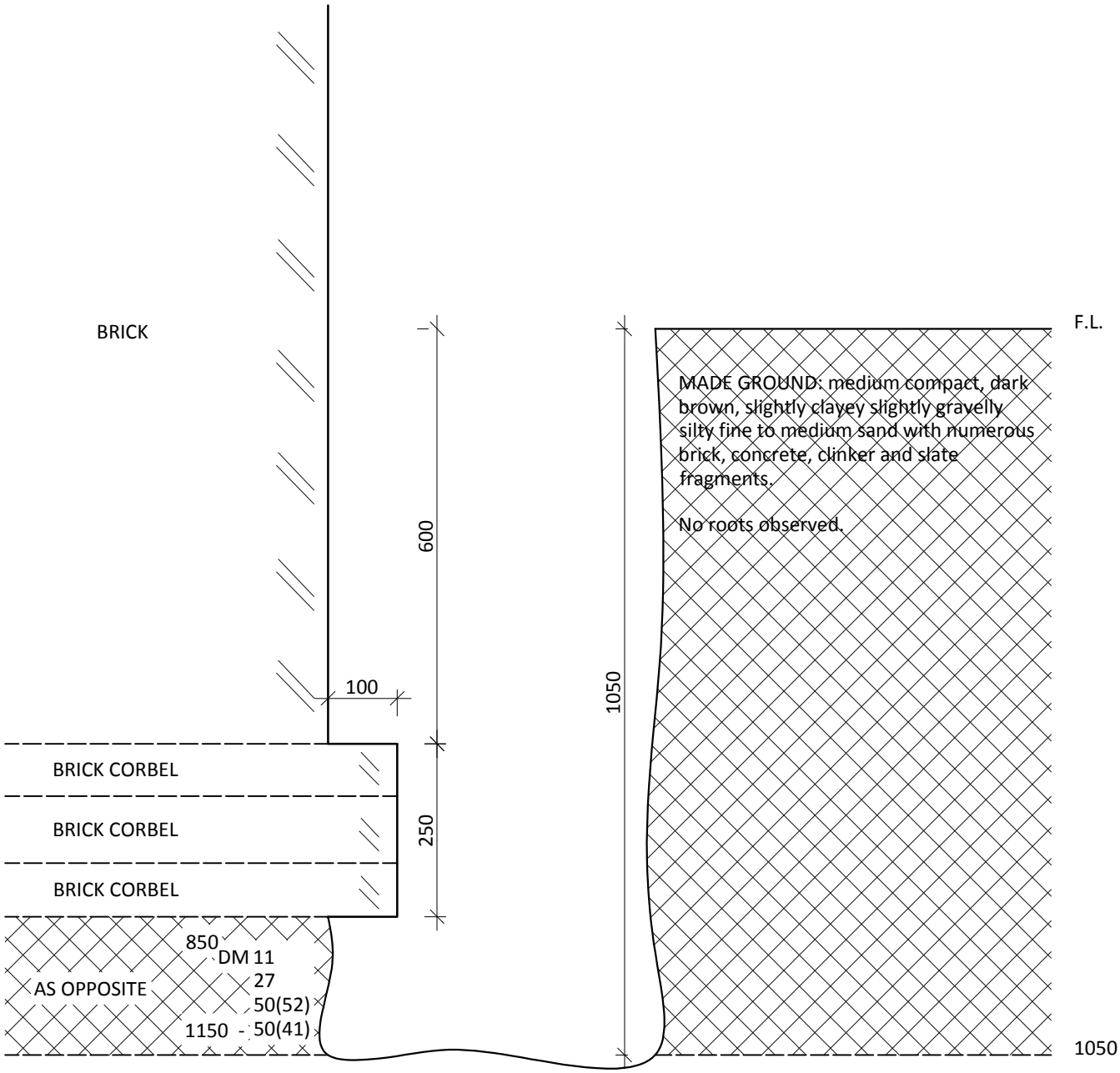
Notes:

Key:

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 2	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 2	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH

SECTION A



TP2 SECTION A ENDS AT 1050mm

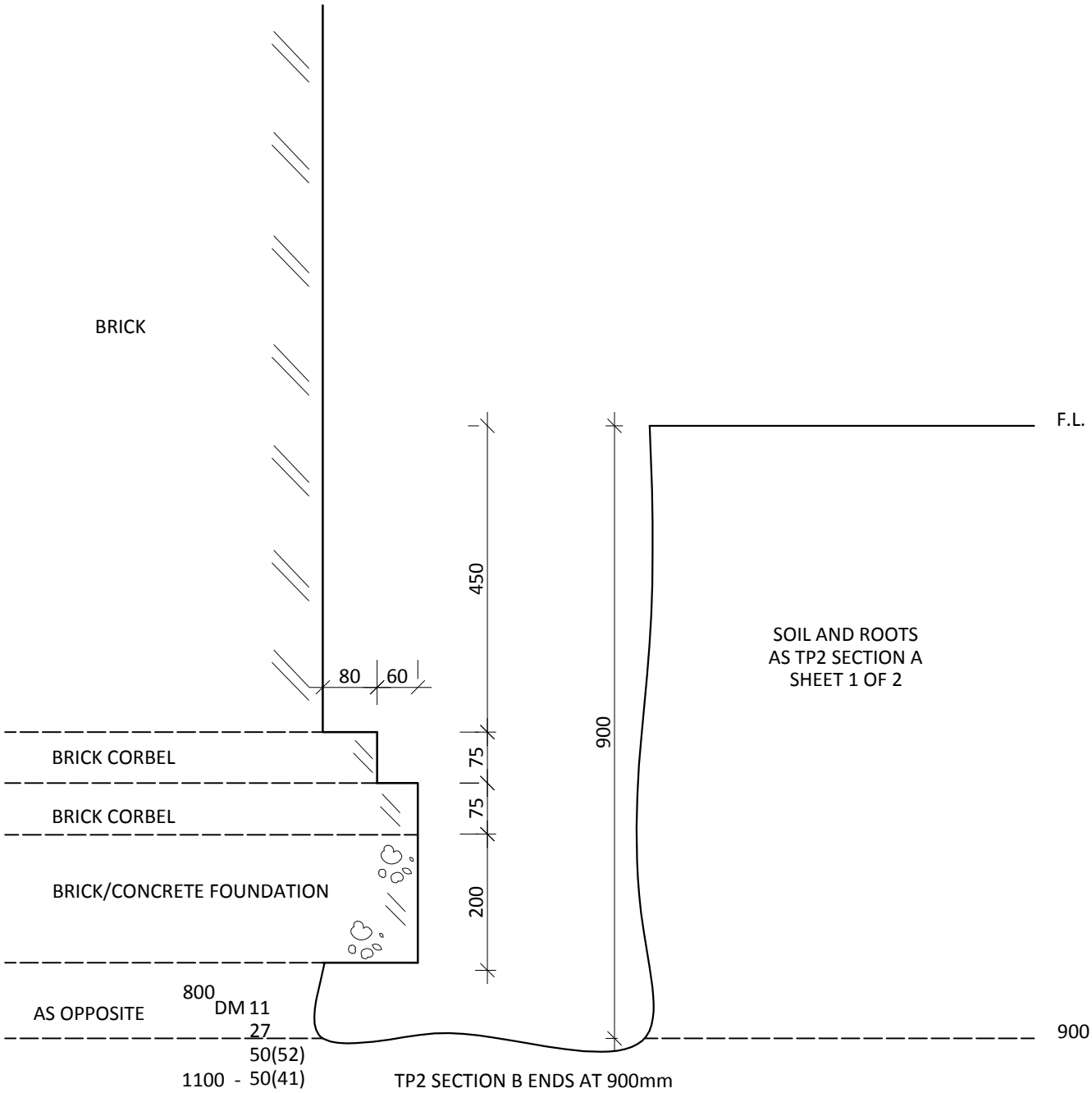
Remarks: Excavated by others.

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 2	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH

SECTION B

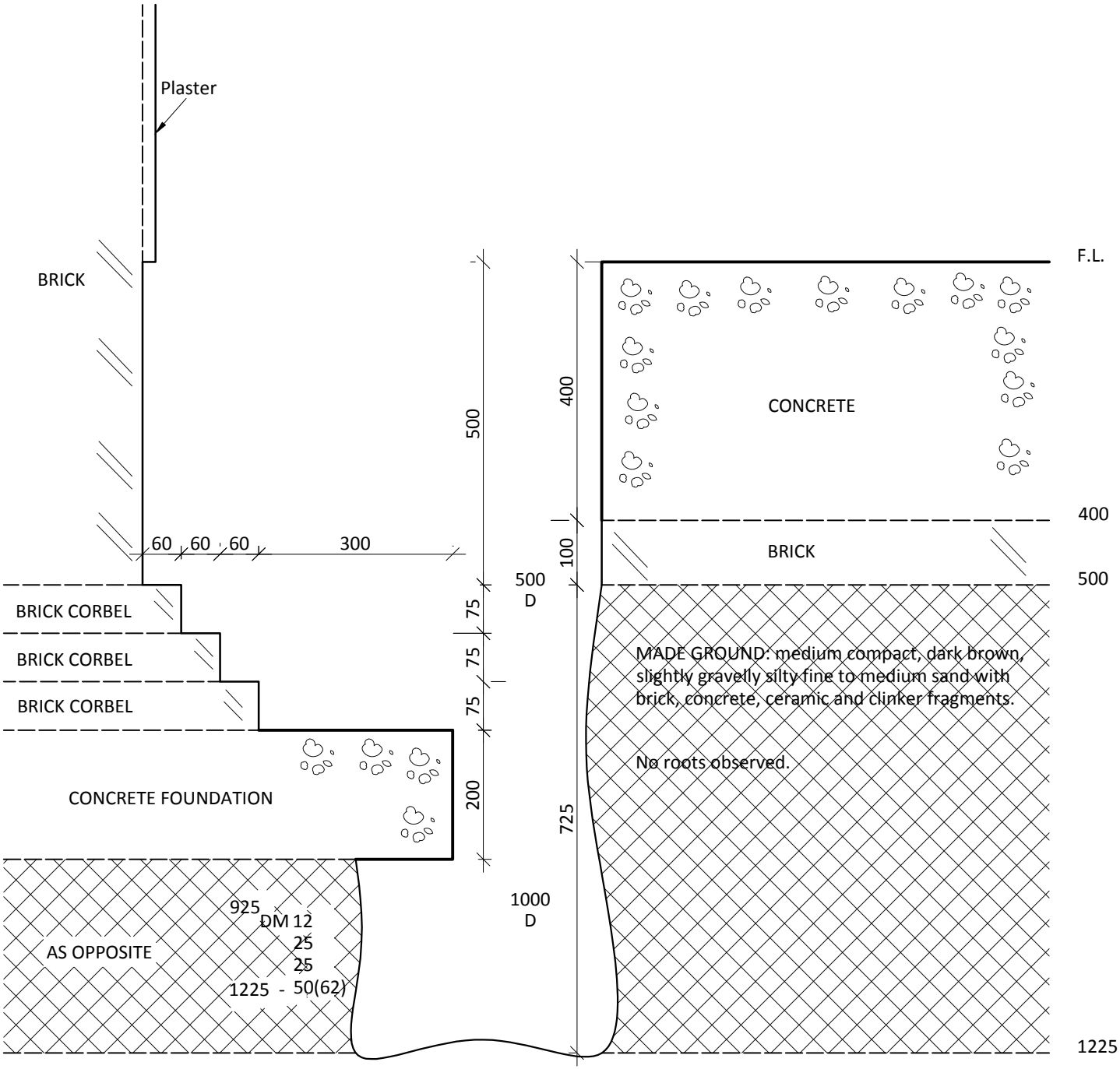


Remarks: Excavated by others.

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 3	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH



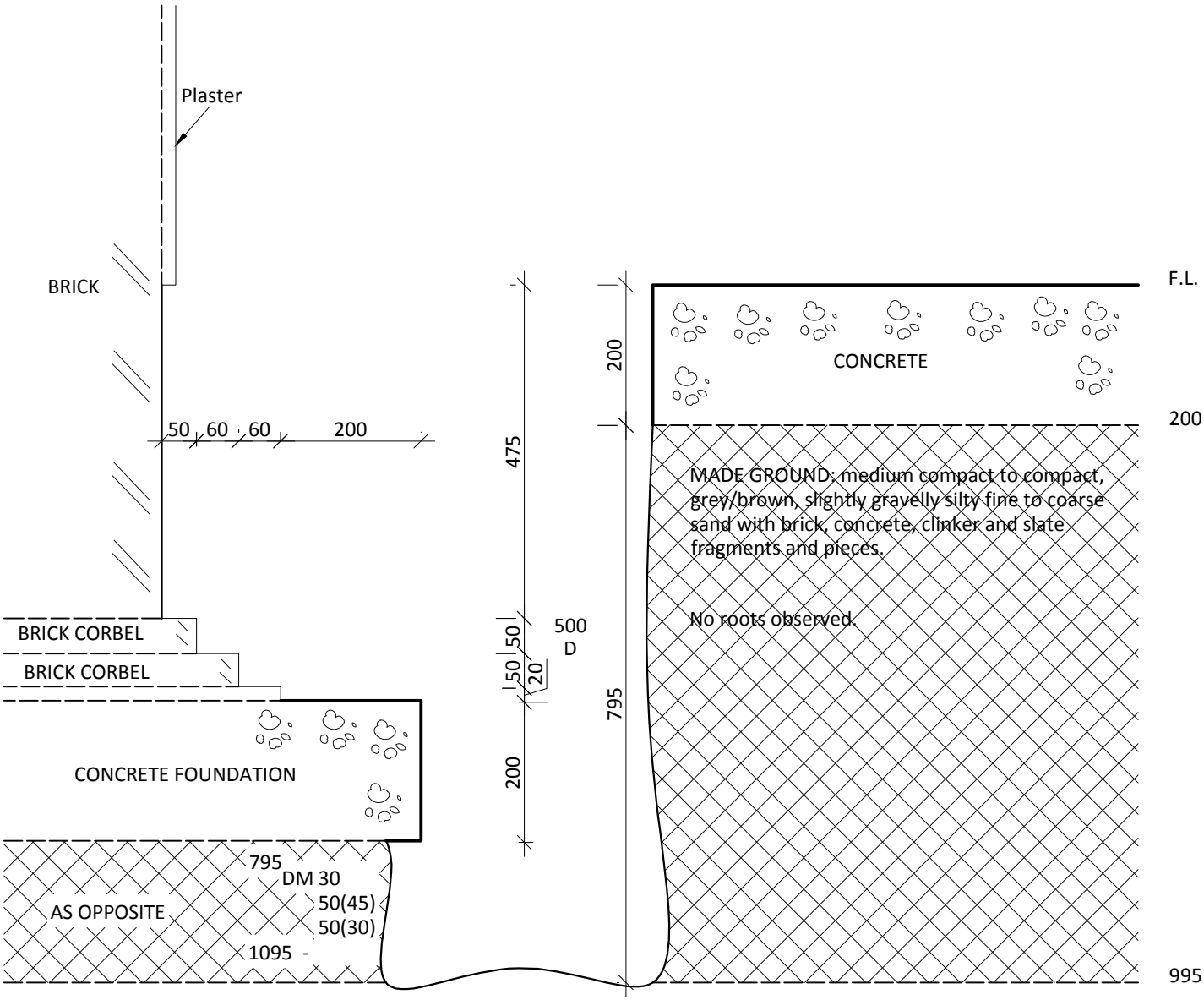
TP3 ENDS AT 1225mm

Remarks: Excavated by others.

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 5	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH



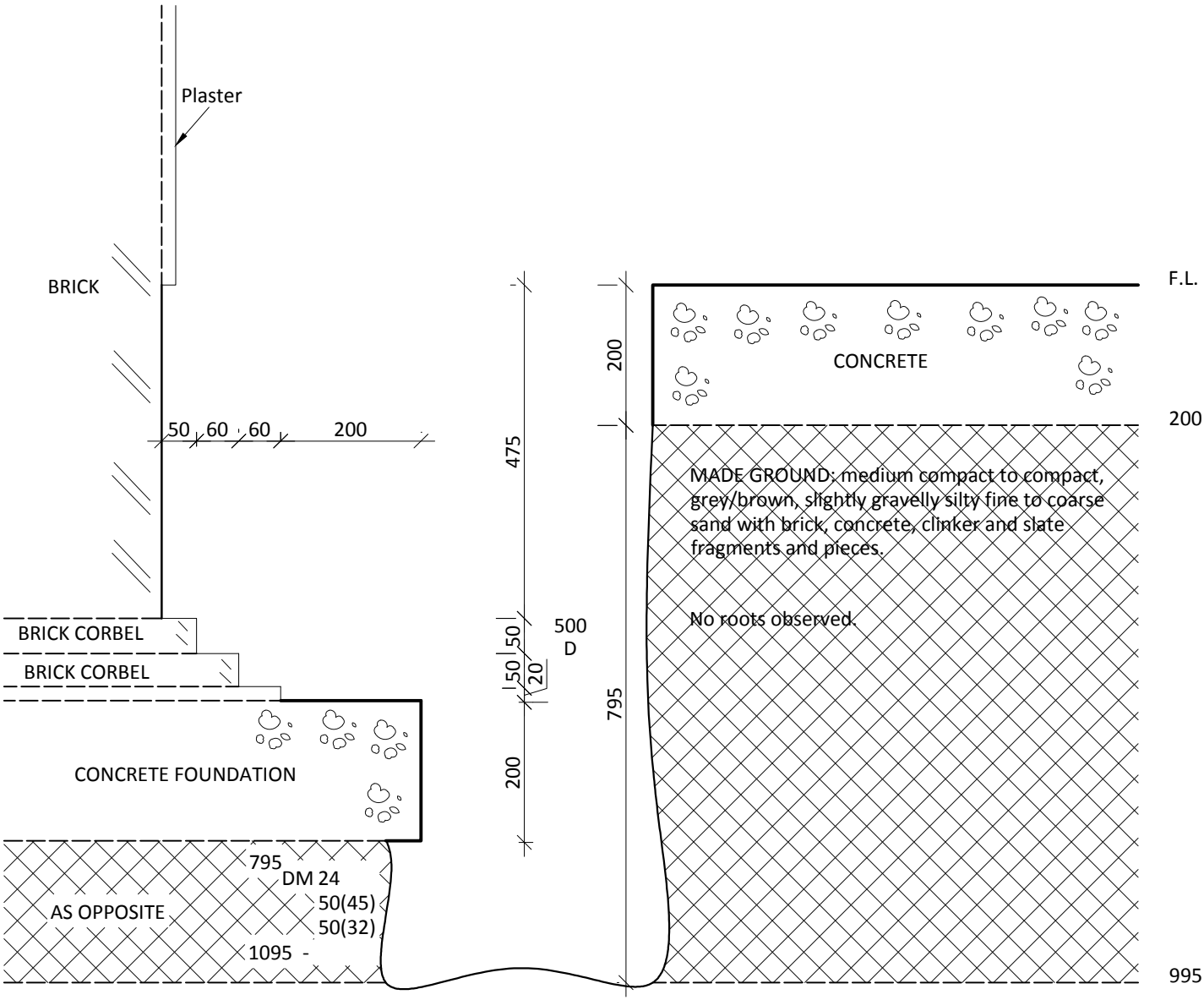
TP5 ENDS AT 995mm

Remarks: Excavated by others.
Sections A and B are the same.

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 6	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH



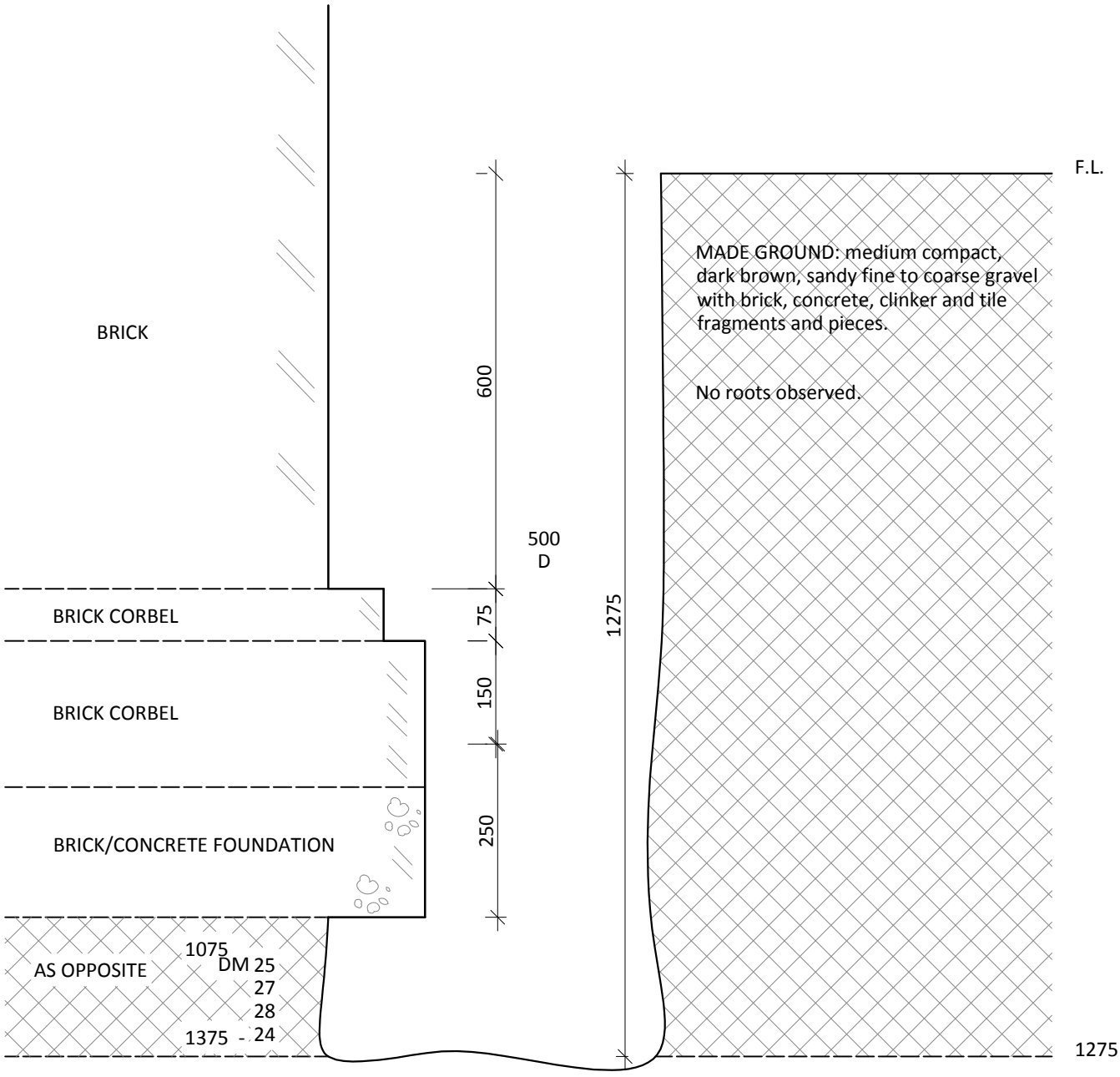
TP6 ENDS AT 995mm

Remarks: Excavated by others.

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

Client: Wandsworth Sand and Stone LTD	**Scale:** N.T.S.	**Sheet No:** 1 of 1	**Date:** 04.08.15
Location: 13-15 Johns Mews, London, WC1N 2PA	**Job No:** 4507D	**Trial Pit No:** 7	**Weather:** Internal
Excavation Method: Hand Tools		**Drawn by:** DB	**Checked by:** JH



TP7 ENDS AT 1275mm

Remarks: Excavated by others.
Sections A and B are the same.

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

Chelmer Site Investigations 'Groundbreaking Services'

Client: JM13 Ltd	Scale: N.T.S.	Sheet No: 1 of 2	Weather: Showers	Date: 18.08.15
Site: 13 - 15 John Mews, London, WC1N 2PA	Job No: 4507D	Borehole No: BH5	Boring method: Cable Percussive Rig	

Depth Mtrs.	Description of Strata	Thick-ness	Legend	Sample	Test Type Result	Root Information	Depth to Water	Depth Mtrs
G.L.	MADE GROUND: loose, brown silty gravelly fine sand with brick, concrete and ash fragments.	1.2		B B B	SPT N = 9	No roots observed below 0.0m.	GL - 1.00 0.50 - 1.20	1.20
1.2	MADE GROUND: very loose, brown slightly clayey, silty gravelly fine sand with brick, concrete and ash fragments.						1.20 - 2.00	
2.5	Becoming loose from 2.5m.	1.8		B	SPT N = 0 SPT N = 7		2.00 - 3.00	2.00 2.50
3.0					SPT N = 7			3.00
	REWORKED GROUND: soft, black, silty clay.	0.5			SPT N = 13			3.50
3.5	Firm, brown/grey gravelly silty CLAY.	0.5		B			3.50 - 4.00	
4.0	Dense, brown, silty very sandy fine to coarse GRAVEL.	1.0		D B	CPT N = 44		4.00 - 5.00	4.00
5.0							*4.50*	
	Medium dense, yellow brown medium GRAVEL.	0.7		D	CPT N = 28			5.00
5.7	Firm brown/grey slightly sandy slightly gravelly silty CLAY with selenite crystals and mica.	0.3		D D B U	CPT N = 12		5.70 - 6.50 6.00 - 6.45	5.50 5.70
6.0	Firm, brown/grey slightly sandy silty CLAY with mica.	1.0		D				6.50
7.0	Stiff, grey slightly sandy silty CLAY with mica.	5.0		D D D	SPT N = 23 CPT N = 40			7.00 7.50 7.80 8.00
8.0	Becoming stiff from 8.0.			D U D			9.00 - 9.45	8.50 9.50
				D	SPT N = 38			10.00
				D	CPT N = 52			11.00 11.50
12.0	Boreholes ends at 12.0m			D				12.00

Drawn by: JR	Approved by: JH
Remarks:	

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

Client: JM13 Ltd		**Scale:** N.T.S.	**Sheet No:** 2 of 2	**Weather:** Showers	**Date:** 18.08.15
Site: 13 - 15 John Mews, London, WC1N 2PA		**Job No:** 4507D	**Borehole No:** BH5	**Boring method:** Cable Percussive Rig	

Groundwater Encountered

Depth strike: 4.5m

Casing depth: 4.5m

Rose to 4.2m

Sealed out at 6.0m

Water level at start of boring: dry

Water level of finished of boring: dry

Borehole cased to: 6m

Piezometer/Standpipe: Standpipe installed to 12m

Pit/Chiselling: Chiseled from ground level to 1.m for 1 hour

Water Added: 100 litres added from 4.0m to 5.7m

Notes:

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Chelmer
Geotechnical Laboratories
'Groundbreaking Services'

Laboratory Report

Site	**13-15 Johns Mews, London, WC1N 2PA**
Client	**JM13 Ltd**
Date	**05-Aug-15**
Our Ref	**CSI4507D**
CGL Ref	**CGL4507D**

Chelmer Site Investigation Laboratories Ltd
Unit 15 East Hanningfield Industrial Estate, Old Church Road, East Hanningfield, Essex CM3 8AB
Essex: 01245 400930 | London: 0203 6409136 |info@siteinvestigations.co.uk | www.siteinvestigations.com

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Chelmer Geotechnical Laboratories
'Groundbreaking Services'

Content Summary

This report contains all test results as indicated on the test instruction/summary.

CGL Reference : CGL4507D

Client Reference : CSI4507D

For the attention of : JM13 Ltd

This report comprises of the following :

Notes :

General

Please refer to report summary notes for details pertaining to methods undertaken and their subsequent accreditations

Samples were supplied by Chelmer Site Investigations

All tests performed in-house unless otherwise stated

Deviant Samples

Samples were received in suitable containers	Yes
A date and time of sampling was provided	Yes
Arrived damaged and/or denatured	No

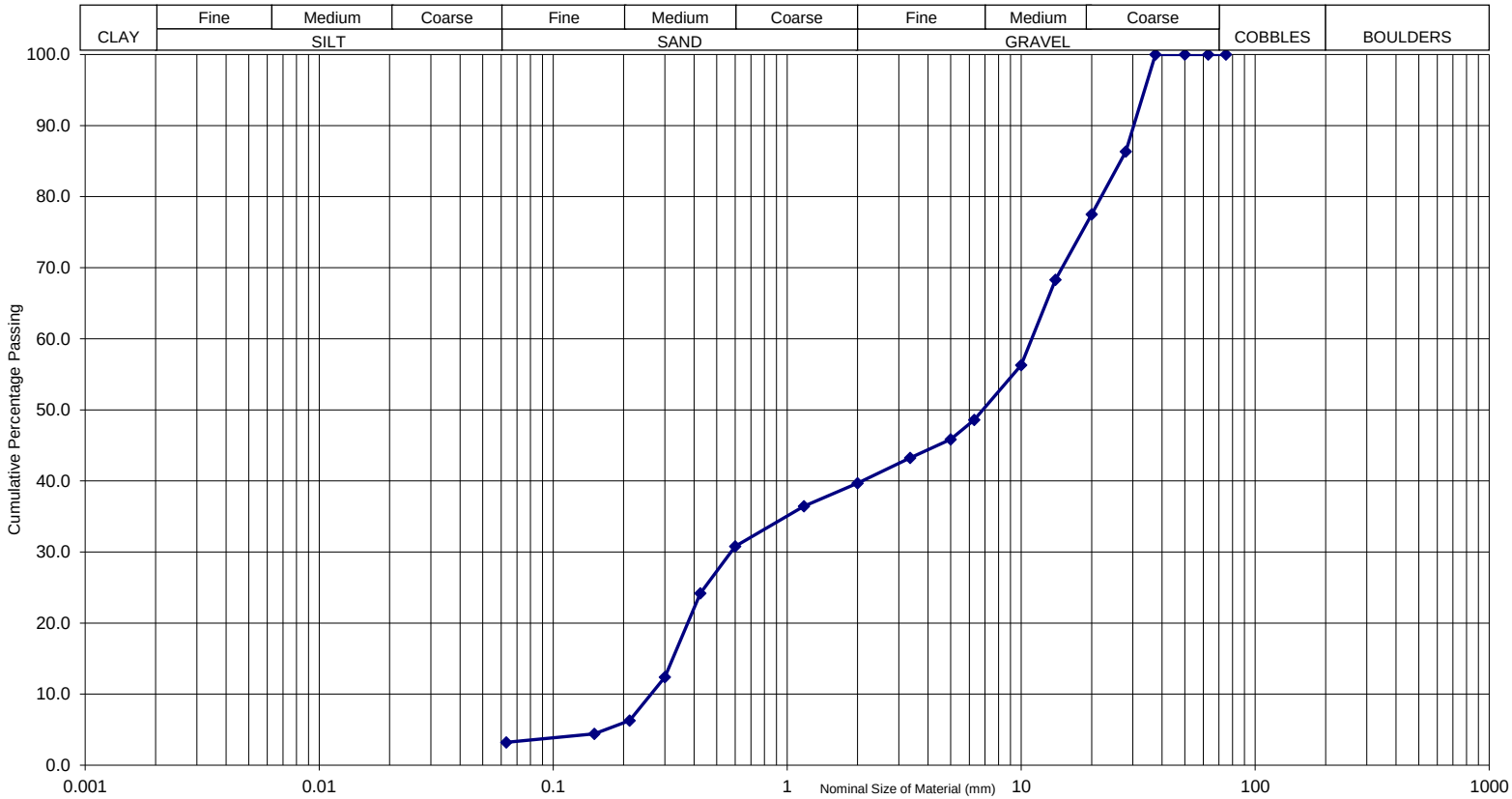
PARTICLE SIZE DISTRIBUTION

BS 1377-2:1990

Chelmer Geotechnical Laboratories 'Groundbreaking Services'

Job Number :	CGL4507D	Site Name :	13-15 Johns Mews, London, WC1N 2PA
Sample Number :	BH5	Soil Description :	Brown, silty very sandy fine to coarse GRAVEL..
Depth (m) :	4.00		
Sample UID :	65448		

Type of Sieving :	Washed
Date :	25-Aug-15
Tested By :	HS
Laboratory :	Chelmer Geotechnical CM3 8AB



Sieve Size (mm)	% Passing
90.0	100.0
75.0	100.0
63.0	100.0
50.0	100.0
37.5	100.0
28.0	86.3
20.0	77.5
14.0	68.3
10.0	56.3
6.3	48.6
5.0	45.9
3.35	43.2
2.00	39.7
1.18	36.4
0.600	30.8
0.425	24.2
0.300	12.4
0.212	6.3
0.150	4.4
0.063	3.2

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Calculations :-

$$f = \frac{(M_1 - M_2) + P}{M_1} \times 100$$

$f = 100P/M_1$ (dry sieving)

f = Percentage of fines passing 0.063mm
M_1 = Mass of dried test sample before washing (kg)
M_2 = Mass of dried residue retained on the 0.063m (kg)
P = Mass of screened material remaining in the pan (kg)

Comments :-

Checked By :- MC Date Checked :- 26-Aug-15

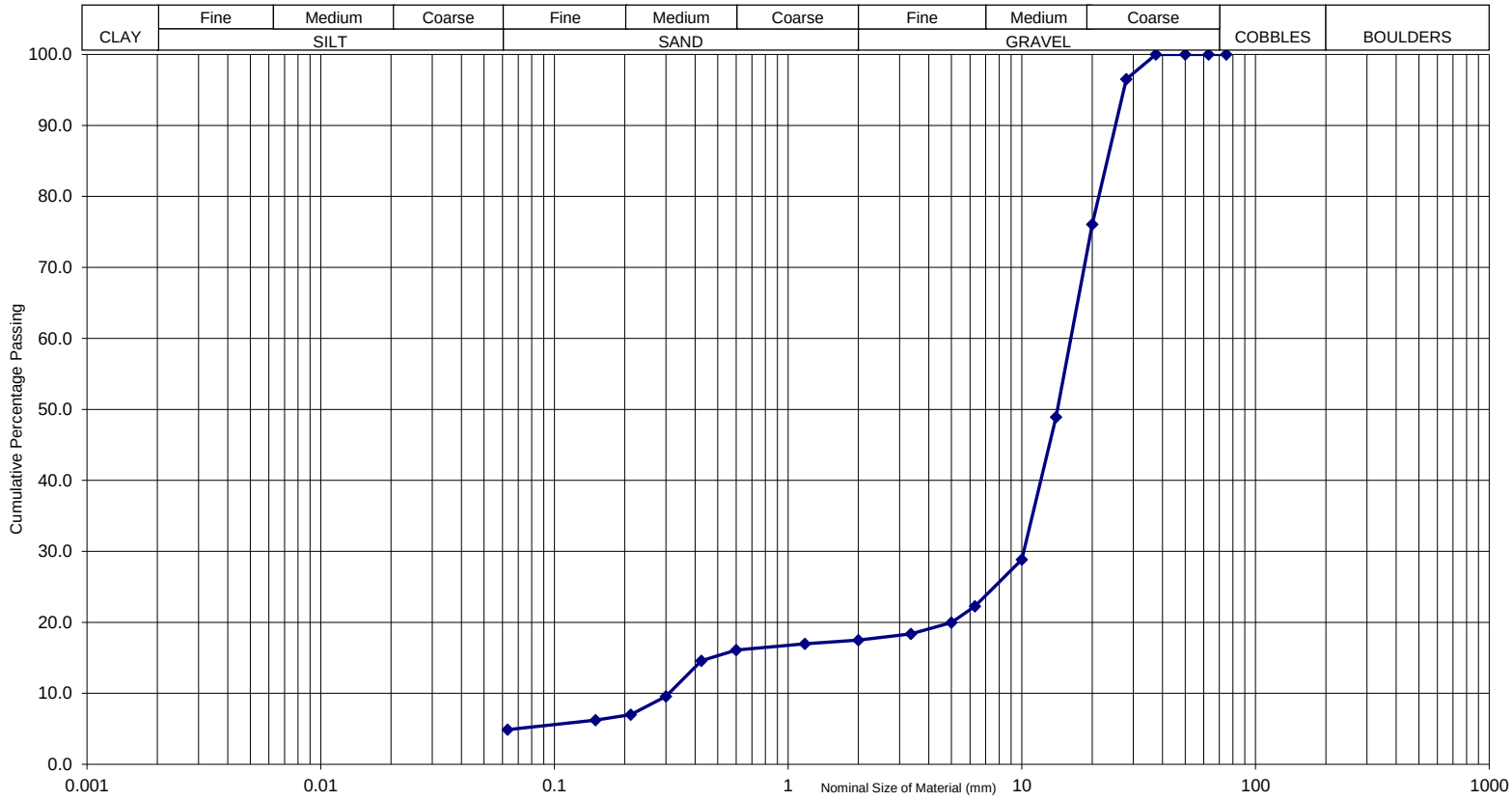
PARTICLE SIZE DISTRIBUTION

BS 1377-2:1990

Chelmer Geotechnical Laboratories 'Groundbreaking Services'

Job Number :	CGL4507D	Site Name :	13-15 Johns Mews, London, WC1N 2PA
Sample Number :	BH5	Soil Description :	Brown, silty sandy fine to coarse GRAVEL.
Depth (m) :	5.00		
Sample UID :	65449		

Type of Sieving :	Washed
Date :	25-Aug-15
Tested By :	HS
Laboratory :	Chelmer Geotechnical CM3 8AB



Sieve Size (mm)	% Passing
90.0	100.0
75.0	100.0
63.0	100.0
50.0	100.0
37.5	100.0
28.0	96.5
20.0	76.1
14.0	48.9
10.0	28.8
6.3	22.3
5.0	20.0
3.35	18.4
2.00	17.5
1.18	17.0
0.600	16.1
0.425	14.6
0.300	9.6
0.212	7.0
0.150	6.2
0.063	4.9

UKAS TESTING 8284

Calculations :-

$$f = \frac{(M_1 - M_2) + P}{M_1} \times 100$$

$f = 100P/M_1$ (dry sieving)

f = Percentage of fines passing 0.063mm
M_1 = Mass of dried test sample before washing (kg)
M_2 = Mass of dried residue retained on the 0.063m (kg)
P = Mass of screened material remaining in the pan (kg)

Comments :-

Checked By :- MC

Date Checked :- 26-Aug-15

Mark Collyer
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QTS Environmental Ltd
Unit 1
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Rose Lane
Lenham Heath
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ME17 2JN
t: 01622 850410
russell.jarvis@qtsenvironmental.com

QTS Environmental Report No: 15-34350

Site Reference:	13-15 John Mews, London, WC1N 2PA
Project / Job Ref:	CGL4507D
Order No:	4881
Sample Receipt Date:	07/08/2015
Sample Scheduled Date:	07/08/2015
Report Issue Number:	1
Reporting Date:	12/08/2015

Authorised by:

Russell Jarvis
Director
On behalf of QTS Environmental Ltd

Authorised by:

Kevin Old
Director
On behalf of QTS Environmental Ltd

QTS Environmental Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate							
QTS Environmental Report No: 15-34350	**Date Sampled**	04/08/15	04/08/15	04/08/15		
Chelmer Site Investigation Laboratories Ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: 13-15 John Mews, London, WC1N 2PA	**TP / BH No**	64908	64911	64913		
Project / Job Ref: CGL4507D	**Additional Refs**	TP3	TP5	TP6		
Order No: 4881	**Depth (m)**	U/S 0.925	U/S 0.795	U/S 0.795		
Reporting Date: 12/08/2015	**QTSE Sample No**	161523	161524	161525		

Determinand	**Unit**	**RL**	**Accreditation**					
pH	pH Units	N/a	**MCERTS**	6.2	6.4	6.3		
Total Sulphate as SO_4	mg/kg	< 200	NONE	4934	3058	3702		
Total Sulphate as SO_4	%	< 0.02	NONE	0.49	0.31	0.37		
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	**MCERTS**	543	138	186		
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	**MCERTS**	0.54	0.14	0.19		
Total Sulphur	%	< 0.02	NONE	0.16	0.10	0.13		
Ammonium as NH_4	mg/kg	< 0.5	NONE	9.3	5.4	6.6		
W/S Chloride (2:1)	mg/kg	< 1	**MCERTS**	61	29	28		
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	**MCERTS**	1980	241	170		
W/S Magnesium	mg/l	< 0.1	NONE	1.4	1.4	1.8		

Analytical results are expressed on a dry weight basis where samples are dried at less than $30^{O}C$
Analysis carried out on the dried sample is corrected for the stone content
Subcontracted analysis (S)

QTS Environmental Ltd
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Soil Analysis Certificate - Sample Descriptions	
QTS Environmental Report No: 15-34350	
Chelmer Site Investigation Laboratories Ltd	
Site Reference: 13-15 John Mews, London, WC1N 2PA	
Project / Job Ref: CGL4507D	
Order No: 4881	
Reporting Date: 12/08/2015	

QTSE Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
161523	64908	TP3	U/S 0.925	13	Brown gravelly sand with rubble
161524	64911	TP5	U/S 0.795	4.4	Brown gravelly sand with brick and rubble
161525	64913	TP6	U/S 0.795	4.8	Brown gravelly sand with concrete

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample I/S

Unsuitable Sample U/S

QTS Environmental Ltd
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Tel : 01622 850410

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

UKAS TESTING 4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
QTS Environmental Report No: 15-34350
Chelmer Site Investigation Laboratories Ltd
Site Reference: 13-15 John Mews, London, WC1N 2PA
Project / Job Ref: CGL4507D
Order No: 4881
Reporting Date: 12/08/2015

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

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Chelmer
Geotechnical Laboratories
'Groundbreaking Services'

This report is personal to the client, confidential and non assignable. It is issued with no admission of liability to any third party.

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Where our involvement consists exclusively of testing samples, the results and comments (if provided) relate only to the samples tested.

Any samples that are deemed to be subject to deviation will be recorded as such within the test summary.

Chelmer
Site Investigations
'Groundbreaking Services'

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.

APPENDIX G

Table 1: Coordinates and net bearing pressure for PDISP			
ZONE	**Net change in vertical pressure (kPa)**		
#	**Stage 1**	**Stage 2**	**Stages 3 and 4**
U1	9.43	9.43	19.43
U2	-11.04	-11.04	-1.04
U3	9.43	9.43	19.43
U4	-11.04	-11.04	-1.04
P1a	392.98	392.98	369.58
P2a	392.98	392.98	369.58
P3a	392.98	392.98	369.58
P4a	392.98	392.98	369.58
P5a	392.98	392.98	369.58
P6a	392.98	392.98	369.58
P7a	392.98	392.98	369.58
P8a	392.98	392.98	369.58
P9a	392.98	392.98	369.58
P10a	392.98	392.98	369.58
P11a	392.98	392.98	369.58
P12a	392.98	392.98	369.58
P13a	392.98	392.98	369.58
P14a	392.98	392.98	369.58
P15a	392.98	392.98	369.58
P16a	392.98	392.98	369.58
P17a	471.57	471.57	448.17
P18a	471.57	471.57	448.17
P19a	471.57	471.57	448.17
P20a	471.57	471.57	448.17
P21a	471.57	471.57	448.17
P22a	471.57	471.57	448.17
P23a	471.57	471.57	448.17
P24a	471.57	471.57	448.17
D1	0.00	-87.40	-83.46
D2	0.00	-87.40	-83.46
S1	0.00	-74.10	-64.10
P1b	392.98	392.98	380.98

Table 1: Coordinates and net bearing pressure for PDISP			
ZONE	**Net change in vertical pressure (kPa)**		
#	**Stage 1**	**Stage 2**	**Stages 3 and 4**
P2b	392.98	392.98	380.98
P3b	392.98	392.98	380.98
P4b	392.98	392.98	380.98
P5b	392.98	392.98	380.98
P6b	392.98	392.98	380.98
P7b	392.98	392.98	380.98
P8b	392.98	392.98	380.98
P9b	392.98	392.98	380.98
P10b	392.98	392.98	380.98
P11b	392.98	392.98	380.98
P12b	392.98	392.98	380.98
P13b	392.98	392.98	380.98
P14b	392.98	392.98	380.98
P15b	392.98	392.98	380.98
P16b	392.98	392.98	380.98
P17b	471.57	471.57	459.57
P18b	471.57	471.57	459.57
P19b	471.57	471.57	459.57
P20b	471.57	471.57	459.57
P21b	471.57	471.57	459.57
P22b	471.57	471.57	459.57
P23b	471.57	471.57	459.57
P24b	471.57	471.57	459.57
P1c	392.98	392.98	380.98
P2c	392.98	392.98	380.98
P3c	392.98	392.98	380.98
P4c	392.98	392.98	380.98
P5c	392.98	392.98	380.98
P6c	392.98	392.98	380.98
P7c	392.98	392.98	380.98
P8c	392.98	392.98	380.98
P9c	392.98	392.98	380.98

Table 1: Coordinates and net bearing pressure for PDISP			
ZONE	**Net change in vertical pressure (kPa)**		
#	**Stage 1**	**Stage 2**	**Stages 3 and 4**
P10c	392.98	392.98	380.98
P11c	392.98	392.98	380.98
P12c	392.98	392.98	380.98
P13c	392.98	392.98	380.98
P14c	392.98	392.98	380.98
P15c	392.98	392.98	380.98
P16c	392.98	392.98	380.98
P17c	471.57	471.57	459.57
P18c	471.57	471.57	459.57
P19c	471.57	471.57	459.57
P20c	471.57	471.57	459.57
P21c	471.57	471.57	459.57
P22c	471.57	471.57	459.57
P23c	471.57	471.57	459.57
P24c	471.57	471.57	459.57
P1d	392.98	392.98	380.98
P2d	392.98	392.98	380.98
P3d	392.98	392.98	380.98
P4d	392.98	392.98	380.98
P5d	392.98	392.98	380.98
P6d	392.98	392.98	380.98
P7d	392.98	392.98	380.98
P8d	392.98	392.98	380.98
P9d	392.98	392.98	380.98
P10d	392.98	392.98	380.98
P11d	392.98	392.98	380.98
P12d	392.98	392.98	380.98
P13d	392.98	392.98	380.98
P14d	392.98	392.98	380.98
P15d	392.98	392.98	380.98
P16d	392.98	392.98	380.98
P17d	471.57	471.57	459.57

Table 1: Coordinates and net bearing pressure for PDISP			
ZONE	**Net change in vertical pressure (kPa)**		
#	**Stage 1**	**Stage 2**	**Stages 3 and 4**
P18d	471.57	471.57	459.57
P19d	471.57	471.57	459.57
P20d	471.57	471.57	459.57
P21d	471.57	471.57	459.57
P22d	471.57	471.57	459.57
P23d	471.57	471.57	459.57
P24d	471.57	471.57	459.57

APPENDIX H

Classification of visible damage to walls (after Burland et al, 1977, Boscardin and Cording, 1989; and Burland, 2001)

Category of damage	Description of typical damage (ease of repair is underlined)	Approximate crack width (mm)	Limiting tensile strain ε_{lim} (per cent)
0 Negligible	Hairline cracks of less than about 0.1 mm are classed as negligible.	< 0.1	0.0–0.05
1 Very slight	Fine cracks that can easily be treated during normal decoration. Perhaps isolated slight fracture in building. Cracks in external brickwork visible on inspection.	< 1	0.05–0.075
2 Slight	Cracks easily filled. Redecoration probably required. Several slight fractures showing inside of building. Cracks are visible externally and some repointing may be required externally to ensure weathertightness. Doors and windows may stick slightly.	< 5	0.075–0.15
3 Moderate	The cracks require some opening up and can be patched by a mason. Recurrent cracks can be masked by suitable linings. Repointing of external brickwork and possibly a small amount of brickwork to be replaced. Doors and windows sticking. Service pipes may fracture. Weathertightness often impaired.	5–15 or a number of cracks > 3	0.15–0.3
4 Severe	Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Windows and frames distorted, floor sloping noticeably. Walls leaning or bulging noticeably, some loss of bearing in beams. Service pipes disrupted.	15–25 but also depends on number of cracks	> 0.3
5 Very severe	This requires a major repair involving partial or complete rebuilding. Beams lose bearings, walls lean badly and require shoring. Windows broken with distortion. Danger of instability.	usually > 25 but depends on number of cracks.	