FACTUAL REPORT OF INVESTIGATION

AT: - **53 Warminster Rd, London SE25 4DQ**

ON: - **28th January 2025**

FOR: - **Londonist International Management Ltd**

REF: -

JOB No: - **LI4576**

SOIL INVESTIGATION (EASTERN) LTD
Unit 8, Hill Farm, Church Lane, Ford End, Chelmsford, Essex, CM3 1LH.
TEL. 01245 237555

INTERPRETIVE REPORT ON SITE INVESTIGATION

AT

53 WARMINSTER ROAD, LONDON, SE25 4DQ

CLIENT: SOIL INVESTIGATION (EASTERN) LIMITED

SI(E) LTD JOB NO: LI4576

DATE: 27 FEBRUARY 2025 **REF:** G/022585/001

K F GEOTECHNICAL

CONSULTING GEOTECHNICAL ENGINEERS

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APPENDICES

1. INTRODUCTION

1.1 We were instructed via email dated 18 February 2025 by Soil Investigation (Eastern) Limited to prepare an interpretive report following their site investigation at the above site on the 28 January 2025.

1.2 The purpose of the investigation was to determine ground conditions to assist in the design of foundations for two new dwellings on the site.

1.3 We have not visited the site and our comments are based entirely on the information provided. This is a site plan showing the location of two boreholes, the logs of these boreholes, laboratory soil testing on samples taken from the boreholes, some photographs of the site work in progress and details of the new development.

2. THE SITE

2.1 Warminster Road is a residential street in the Norwood area of southeast London. No.53 is a large Edwardian-style property over three floors including semi-basement which lies on the east side of Warminster Road. To the right of the property there is an open space currently used for parking and as part of the garden. The proposal is to construct two properties within this space. There are trees marking the southern boundary and further trees to the rear. There are trees on the front boundary between the public walkway and the parking and turning area in front of No.53.

2.2 The site is basically level.

2.3 The Geology of Great Britain indicates that the naturally occurring subsoil is London Clay capped locally by Superficial Deposits consisting primarily of Head material.

3. SITE WORK

3.1 The layout of the site and the location of the two boreholes is indicated on the site location plan forming part of the Factual Report.

3.2 Both the boreholes were put down to the right side of the existing property in the space which is to be developed. Borehole 1 was toward the front and borehole 2, towards the rear. There is a step in level between the two boreholes which meant the drilling machine could not access the location of borehole 2 which was put down by hand auger.

3.3 Borehole 1 revealed topsoil and fill material to 600mm over a stiff slightly gravelly silty clay overlying a very stiff silty clay at 1.8m and this was proved to the base of the borehole at 12.0m. The borehole was dry and open on completion. Numerous roots of live appearance were encountered to 2.8m.

3.4 Borehole 2 revealed fill material to 700mm over a stiff slightly gravelly silty clay, changing at 1.3m to a stiff silty clay which becomes very stiff below 3.2m. The borehole was terminated at 3.4m as there was an obstruction which is assumed to be Claystone. This borehole was dry and open on completion. Live roots were encountered to 3.2m.

3.5 In-situ testing by hand held vane test was carried out at regular depths in each of the boreholes and the results are indicated on the logs. Disturbed samples were taken at regular depths and these were bagged and labelled and sent to laboratories for appropriate geotechnical analysis.

4. LABORATORY WORK

4.1 Flawless Soil Testing determined the moisture contents on all the samples down to 5.0m in borehole 1 and 3.0m in borehole 2. Liquid and plastic limits were determined on the samples taken from 1.5m and 2.5m in each borehole. The results indicate clay of very high plasticity and of correspondingly high shrinkage potential.

4.2 A comparison of the moisture contents with both the liquid limits and the plastic limits does not indicate any significant desiccation notwithstanding the presence of roots and the trees along the right boundary.

4.3 In addition to the above, pH and sulphate analysis was carried out on the sample taken from 1.0m and the results indicate Class DS-1 conditions.

5. DISCUSSION

5.1 The ground investigation revealed the anticipated geology with Head material at the surface overlying London Clay.

5.2 The in-situ testing indicates a safe bearing capacity of 170kPa at 1.0m depth. This should be more than sufficient to take the anticipated loads of a normally constructed two-storey dwelling and settlements at these sorts of loads in these ground conditions will be well within allowable limits.

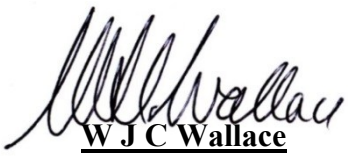
5.3 The laboratory soil testing indicates a clay of high shrinkage potential. Because of this some deepening of the foundations is likely to be required to take into account the presence of nearby trees and other significant vegetation. The calculation of additional depth should be based on the NHBC or similar standards and in this case for a clay of high shrinkage potential. If this means that foundations would need to be taken to a depth greater than 1.5m, then anti-heave precautions will be required in line with recommendations together with a suspended ground floor within the affected zone. Due to the clay nature of the subsoil, we would recommend a suspended ground floor in any case.

5.4 It is possible that the additional depth to take into account the nearby trees will make standard strip footings uneconomic and piling might be the preferred option. The boreholes were dry and open on completion and on this basis the most suitable form of pile would be an open-hole augured pile. It would be normal to sleeve the top 3.0m to 4.0m of such piles and below this depth the pile can be designed on a cohesion of 140kPa and an adhesion factor (α) of 0.45.

5.5 It is important that a specialist piling contractor or designer is employed for the final design.

5.6 As stated in the laboratory testing section, there is no sign of significant desiccation and on that basis no anti-heave precautions are required underneath any piled ground beams or slabs. However, it has to be borne in mind that what is found in the boreholes may not be representative of the site as a whole and so anti-heave precautions might be advisable as a precautionary measure.

5.7 The pH and sulphate analyses indicate class DS-1 conditions which means that no special precautions are indicated with regards to concrete in contact with the ground.



W J C Wallace

Site Location Plan	Sheet: 1 of 1
	Job No: LI4576
Scale: Not to scale	Date: 28/01/2025
Client: Londonist International Management Ltd	

SOIL INVESTIGATION EASTERN LIMITED
Tel/Fax 01245 237555 Mobile 07810 820620

Site: 53, Warminster Road, London. SE25 4DQ



Remarks: ON SITE TREE IDENTIFICATION FOR GUIDANCE ONLY. NOT AUTHENTICATED

Key:
- Trial Pit
- MH Man Hole
- Borehole
- G Gulley
- SVP Soil Vent Pipe
- RWP Rain Water Pipe
- Tree / Bush (approx. ht. in m)

Job no. LI4576 - 53 Warminster Rd London SE25 4DQ

Photos taken on site by the team on 28th January 2025





Borehole No: 1	Sheet: 1 of 1	SOIL INVESTIGATION EASTERN LIMITED Tel/Fax 01245 237555 Mobile 07810 820620
	Job No: LI4576	
Boring Method: 100mmø CFA	Date: 28/01/2025	
Client: Londonist International Management Ltd.		Site: 53 Warminster Road, London SE25

Depth (mm/m)	Description of Strata	Thick-Ness (mm/m)	Legend	Sample	Test Type	Test Result	Depth (mm/m)	Field Records/ Comments	Depth to water (mm/m)
G.L.	GRAVEL, over HARDCORE & BRICK RUBBLE, with sand, silt & gravel & occasional large pieces of concrete rubble.	600						100 Numerous roots of live & dead appearance to 12mmø to	
600	Stiff, orange brown, grey veined, slightly gravelly, silty, CLAY, with partings of orange & brown silt & fine sand.	900		•	V	88 92	1.0	600 Numerous roots of live & dead appearance to 3mmø to	
1.5	Stiff, mid brown, grey veined, silty, CLAY, with partings of orange & brown silt & fine sand, occasional gravel, claystone nodules & crystals.	300		•	V	168 180	1.5 2.0	1.1 Numerous roots of live & dead appearance to 1mmø to	
1.8	Very stiff, slightly fragmented, mid brown, grey veined, silty, CLAY, with partings of orange & brown silt & fine sand, claystone nodules & crystals.	1.2		•			2.5	2.8 Numerous hair & fibrous roots to 3.4m.	
3.0	Very stiff, mid brown, grey veined, silty, CLAY, with partings of orange & brown silt & fine sand, & crystals.	4.8		•	V	142 144	3.0		
				•	V	150 160	4.0		
				•	V	150 164	5.0	No roots observed below 3.4m.	
				•	V	230 240	6.0		
7.8	Very stiff, grey brown, silty, CLAY, with partings of brown silt & fine sand, & crystals.	4.2		•	V	260+ 260+	8.0		
				•	V	260+ 260+	10.0		
12.0	Borehole ends at 12.0m			•	V	260+ 260+	12.0		

Remarks: Borehole dry & open on completion.

Key:

- • Small disturbed sample
- B Bulk disturbed sample
- U Undisturbed sample(U100)
- W Water sample
- J Jar sample
- V Geonor Vane (kPa)
- I Mackintosh Probe
- S Standard penetration test
- N SPT blow count

Borehole No: 2	Sheet: 1 of 1	SOIL INVESTIGATION EASTERN LIMITED
	Job No: LI4576	Tel/Fax 01245 237555 Mobile 07810 820620
Boring Method: Hand Auger	Date: 28/01/2025	
Client: Londonist International Management Ltd.		Site: 53 Warminster Road, London SE25

Depth (mm/m)	Description of Strata	Thick-Ness (mm/m)	Legend	Sample	Test Type	Test Result	Depth (mm/m)	Field Records/ Comments	Depth to water (mm/m)
G.L.	MADE GROUND: Dark brown, slightly gravelly, silty, CLAY, with brick & concrete rubble.	200						100 Numerous roots of live & dead appearance to 10mmø to	
200	MADE GROUND: Dark grey, with black staining, slightly gravelly, silty, CLAY, with ash, brick & lime fragments.	500						800 Numerous roots of live & dead appearance to 4mmø to	
700	Stiff, orange brown, grey veined, slightly gravelly, silty, CLAY, with partings of orange & brown silt & fine sand.	600		•	V	86 90	1.0	1.2 Numerous roots of live & dead appearance to 2mmø to	
1.3	Stiff, mid brown, grey veined, silty, CLAY, with partings of orange & brown silt & fine sand, claystone nodules & crystals.	1.9		•			1.5		
				•	V	108 110	2.0	2.2 Numerous roots of live & dead appearance to 1mmø to	
				•			2.5		
				•	V	136 138	3.0		
3.2	Very stiff, as above.	200						3.2 Occasional hair & fibrous roots to 3.4m.	
3.4	Borehole ends at 3.4m Obstruction - too hard to hand auger, assumed claystone.								

Remarks: Borehole dry & open on completion.

Key:

- • Small disturbed sample
- B Bulk disturbed sample
- U Undisturbed sample(U100)
- W Water sample
- J Jar sample
- V Pilcon Vane (kPa)
- I Mackintosh Probe
- S Standard penetration test
- N SPT blow count

F . S . T

FLAWLESS
SOIL TESTING

REPORT NUMBER:
SIE249

CLIENT :
Soil Investigations (Eastern)Ltd
Unit 8, Hill Farm
Church Lane

SITE ADDRESS:
53 Warminster Road,
London,
SE25 4DQ

DATE OF SITE VISIT:
28 January 2025

DATE RECEIVED BY LABORATORY:
30 January 2025

Complied By:.....
L. Kirby - Office Administrator

Approved By:.....
J. Garrett - Director

DATE REPORTED:
12 February 2025

UKAS TESTING
28443

22 Francis Road, Braintree, Essex, CM7 2NR
Tel : 07778442814
Registered in England Company Reg. No. 14487335
VAT No: 443 1025 40

www.Flawless-Soils.com
Email - Enquiries@flawless-soils.com

Laboratory Summary Results

Our Ref : SIE249

Location : 53 Warminster Road, London, SE25 4DQ

Client: Soil Investigations (Eastern)Ltd

Address: Unit 8, Hill Farm, Church Lane, Ford End

Date Sampled: 28/01/2025

Date Received : 30/01/2025

Date Tested : 30/01/2025

Date of Report : 12/02/2025

Sample Ref		Type	Water Content	Soil Fraction	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index*	Modified Plasticity Index*	Soil Class*	Filter Paper Contact Time	Soil Sample Suction	Roots Present or No Roots Observed*	In situ Shear Vane Strength*	Organic Matter O.M	pH Value	Sulphate Content (g / l)		Class*
TP/BH No	Depth (m)		(%) *[1]*	> 0.425mm (%) *[2]*	(%) *[3]*	(%) *[4]*	(%) *[5]*	*[5]*	(%) [6]	*[7]*	(d)	(kPa) [8]	*[9]*	(kPa) [10]	(%)*[11]*	*[12]*	SO_3 *[13]*	SO_4 *[14]*	*[15]*
BH1	1.0	D	35.7	<5									Roots Present	90		7.4	0.19	0.23	DS-1
	1.5	D	29.8	<5	84	24	60	0.10	60	CV			Roots Present						
	2.0	D	31.1	<5									Roots Present	174					
	2.5	D	31.3	<5	83	25	58	0.11	58	CV			Roots Present						
	3.0	D	31.3	<5									H&F Roots Present	143					
	4.0	D	30.4	<5									No Roots Observed	155					
	5.0	D	31.4	<5									No Roots Observed	157					

Test Methods / Notes

[1] BS EN ISO 17892-1 : 2014 + A1 : 2022

[2] Not recorded if <5%, otherwise measured as agreed with client

[3] BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 5.3 - 1 Pt Test - Cone 80g/30°

[4] BS BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 5.5

[5] BS BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 6.5

[6] BRE Digest 240 : 1993

[7] BS 5930 : 2018 : Figure 8 - Plasticity Chart for the classification of fine soils

[8] BRE IP 4/93

[9] Roots present at depth or below. Info taken from logs if provided

[10] Values of shear strength were determined in situ using a pilcon hand vane.

[11] E010 based on Walkely-Black methodology. Completed by DETS UKAS no. 4480.

[12] BS 1377 : Part 3 : 2018 + A1 2021 Clause 12. PH testing is completed by K4 Soils Ltd who are accredited for the test UKAS no.2519. Full reports can be provided upon written request.

[13] BS 1377 : Part 3 : 2018 + A1 2021 Clause 7.6. Sulphate testing is completed by K4 Soils Ltd who are accredited for the test UKAS no.2519. Full reports can be provided upon written request.

[14] $SO_4 = 1.2 \times SO_3$

[15] BRE Special Digest One (Concrete in Aggressive Ground) August 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.

*** Non UKAS Accredited Testing.**

Key

D	Disturbed sample (small)
B	Disturbed sample (bulk)
U	Undisturbed sample
W	Groundwater sample
ENP	Essentially Non-Plastic by inspection
U/S	Underside of Foundation
H&F	Hair & Fibrous
D&D	Dead & Decomposing
DEV	Deviation

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Test results reported relate only to the items tested.

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Version: SumRep (Issue 1, Rev 0 & Issued 17.11.23)

Laboratory Testing Results

Our Ref : SIE249

Location : 53 Warminster Road, London, SE25 4DQ

Client: Soil Investigations (Eastern)Ltd

Address: Unit 8, Hill Farm, Church Lane, Ford End

Date Sampled : 28/01/2025

Date Received : 30/01/2025

Date Tested : 30/01/2025

Date of Report : 12/02/2025

Sample Ref TP/BH No	Depth (m)	Type	Water Content (%) *[1]*	Soil Fraction > 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 (d)	Soil Sample Suction (kPa) [8]	Roots Present or No Roots Observed* *[9]*	In situ Shear Vane Strength* (kPa) [10]	Organic Content L.O.I* (%)*[11]*	pH Value* *[12]*	Sulphate Content (g / l)* SO_3 *[13]*	Sulphate Content (g / l)* SO_4 *[14]*	Class* *[15]*
BH2	1.0	D	33.1	<5									Roots Present	88					
	1.5	D	32.2	<5	81	26	55	0.11	55	CV			Roots Present						
	2.0	D	32.9	<5									Roots Present	109					
	2.5	D	32.5	<5	84	25	59	0.13	59	CV			D&D Roots Present						
	3.0	D	33.0	<5									D&D Roots Present	137					

Test Methods / Notes

[1] BS EN ISO 17892-1 : 2014 + A1 : 2022

[2] Not recorded if <5%, otherwise measured as agreed with client

[3] BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 5.3 - 1 Pt Test - Cone 80g/30°

[4] BS BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 5.5

[5] BS BS EN ISO 17892-12 : 2018 + A2 : 2022 Clause 6.5

[6] BRE Digest 240 : 1993

[7] BS 5930 : 2018 : Figure 8 - Plasticity Chart for the classification of fine soils

[8] BRE IP 4/93

[9] Roots present at depth or below. Info taken from logs if provided

[10] Values of shear strength were determined in situ using a pilcon hand vane.

[11] E010 based on Walkely-Black methodology. Completed by DETS UKAS no. 4480.

[12] BS 1377 : Part 3 : 2018 + A1 2021 Clause 12. PH testing is completed by K4 Soils Ltd who are accredited for the test UKAS no.2519. Full reports can be provided upon written request.

[13] BS 1377 : Part 3 : 2018 + A1 2021 Clause 7.6. Sulphate testing is completed by K4 Soils Ltd who are accredited for the test UKAS no.2519. Full reports can be provided upon written request.

[14] SO_4 = 1.2 x SO_3

[15] BRE Special Digest One (Concrete in Aggressive Ground) August 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.

*** Non UKAS Accredited Testing.**

Key

D	Disturbed sample (small)
B	Disturbed sample (bulk)
U	Undisturbed sample
W	Groundwater sample
ENP	Essentially Non-Plastic by inspection
U/S	Underside of Foundation
H&F	Hair & Fibrous
D&D	Dead & Decomposing
DEV	Deviation

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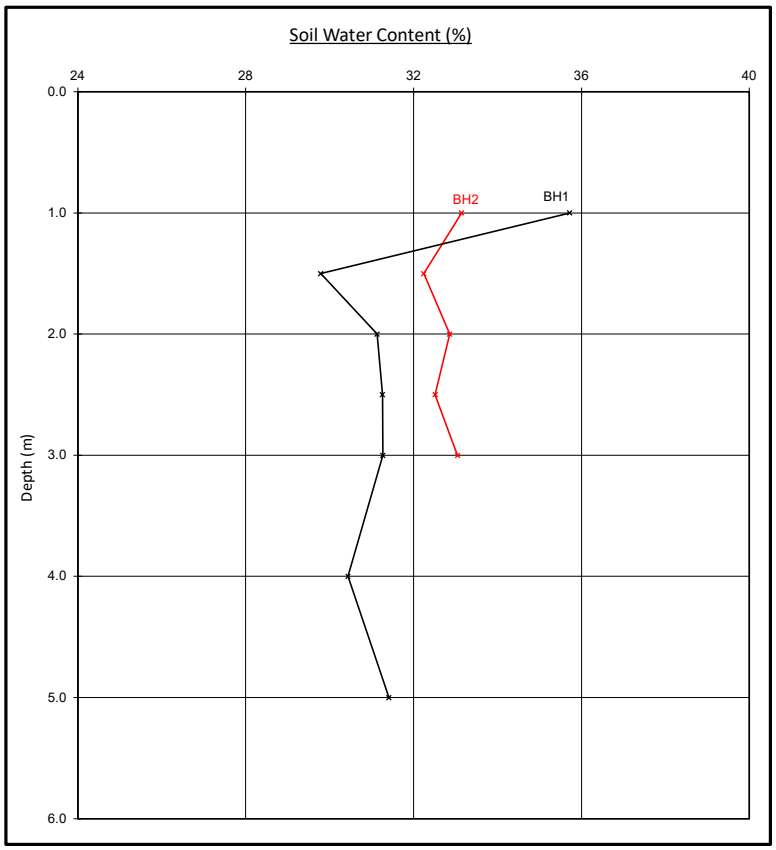
Version: SumRep (Issue 1, Rev 0 & Issued 17.11.23)

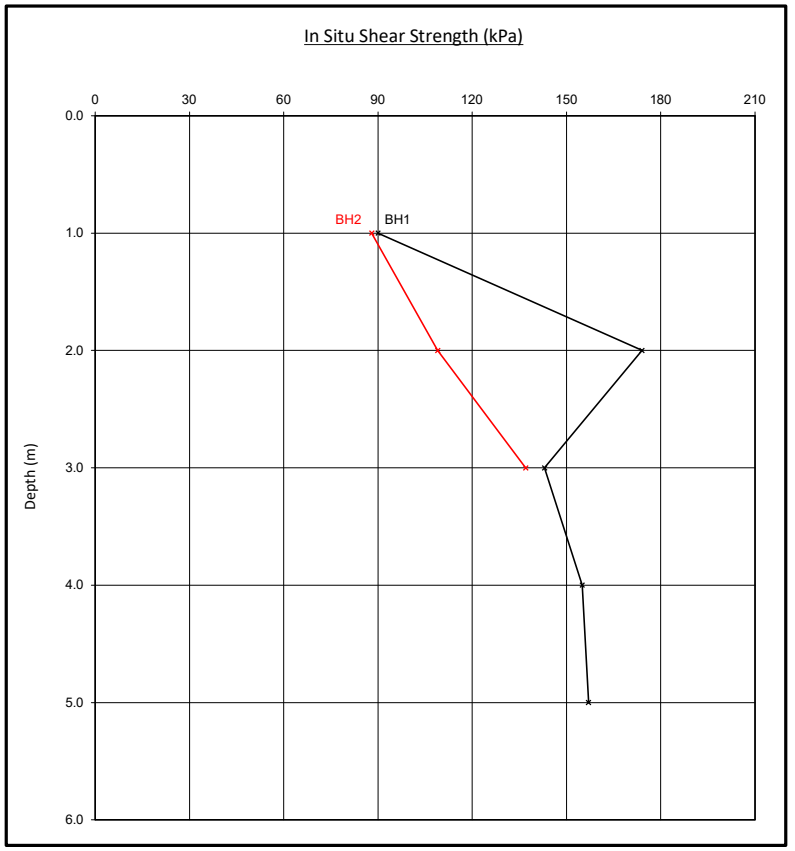
Water Content Profiles

Shear Strength Profiles

Our Ref : SIE249
Location : 53 Warminster Road, London, SE25 4DQ
Work carried out for: Soil Investigations (Eastern)Ltd
Unit 8, Hill Farm, Church Lane, Ford End

Date Sampled : 28/01/2025
Date Received : 30/01/2025
Date Tested : 30/01/2025
Date of Report : 12/02/2025





Notes
1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.

Note
1. Values of Shear Strength were determined in situ by use of a pilcon hand vane of which is limited to a maximum reading of 260kPa.

Plasticity Chart

Our Ref : SIE249
Location : 53 Warminster Road, London, SE25 4DQ
Work carried out for: Soil Investigations (Eastern)Ltd
Unit 8, Hill Farm, Church Lane, Ford End

Date Sampled : 28/01/2025
Date Received : 30/01/2025
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