

SITE INVESTIGATION FACTUAL REPORT

Report No: 287264
Client: Cunningham Lindsey - Maidstone
Site: 54 Compayne Gardens, London

Client Ref: 6095485-
Date of Visit: 20/10/2015



Home Emergency Response - Subsidence Investigation - Drainage Services – Crack & Level Monitoring – Property Video Surveys

Unit E2 First Floor Suite, Boundary Court
Willow Farm Business Park, Castle Donington
Leicestershire, DE74 2NN

☎ 0843 2272362
✉ enquiries@cet-uk.com
💻 www.cet-uk.com

CET is the trading name of CET Structures Ltd
Registered in England No. 02527130

Investigation Layout Plan

Sheet: 1 of 1

Job No: 287264

Date: 20/10/2015

Site: 54 Compayne Gardens, London NW6

Work carried
out for:

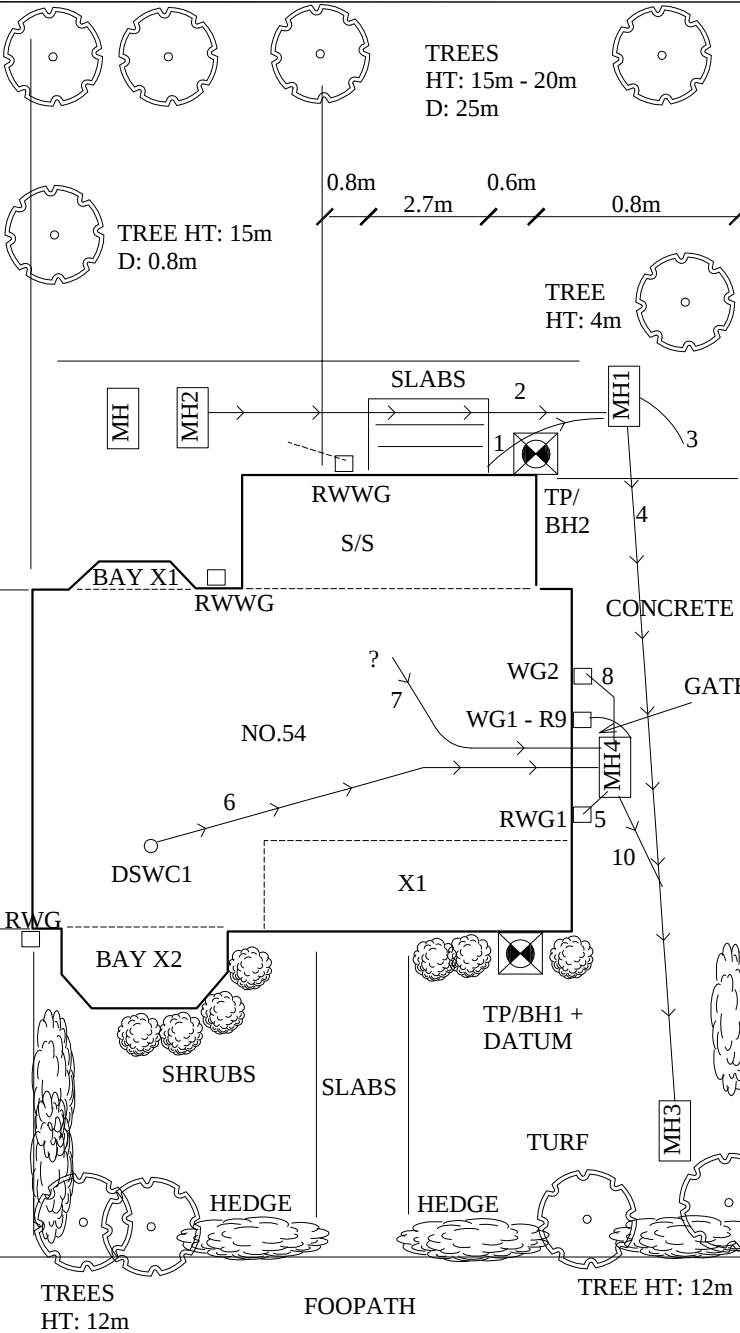
Cunningham Lindsey

MH
(SI)

MD/SA
(Checked)

AR
(Drawn)

Weather: DRY



COMPAYNE GARDENS

ON SITE TREE IDENTIFICATION FOR GUIDANCE ONLY. NOT AUTHENTICATED.

Remarks:

Key:

Combined Gully

RWWG

Manhole

MH

Rain Water Pipe

RWP

Rain Water Gully

RWG

Soil Vent Pipe

SVP

Waste Gully

WG

Waste Pipe

WP

Surface Water Drain

Foul Water Drain

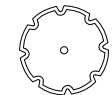
Tree / Bush

(approx. ht in m)

Trial Pit

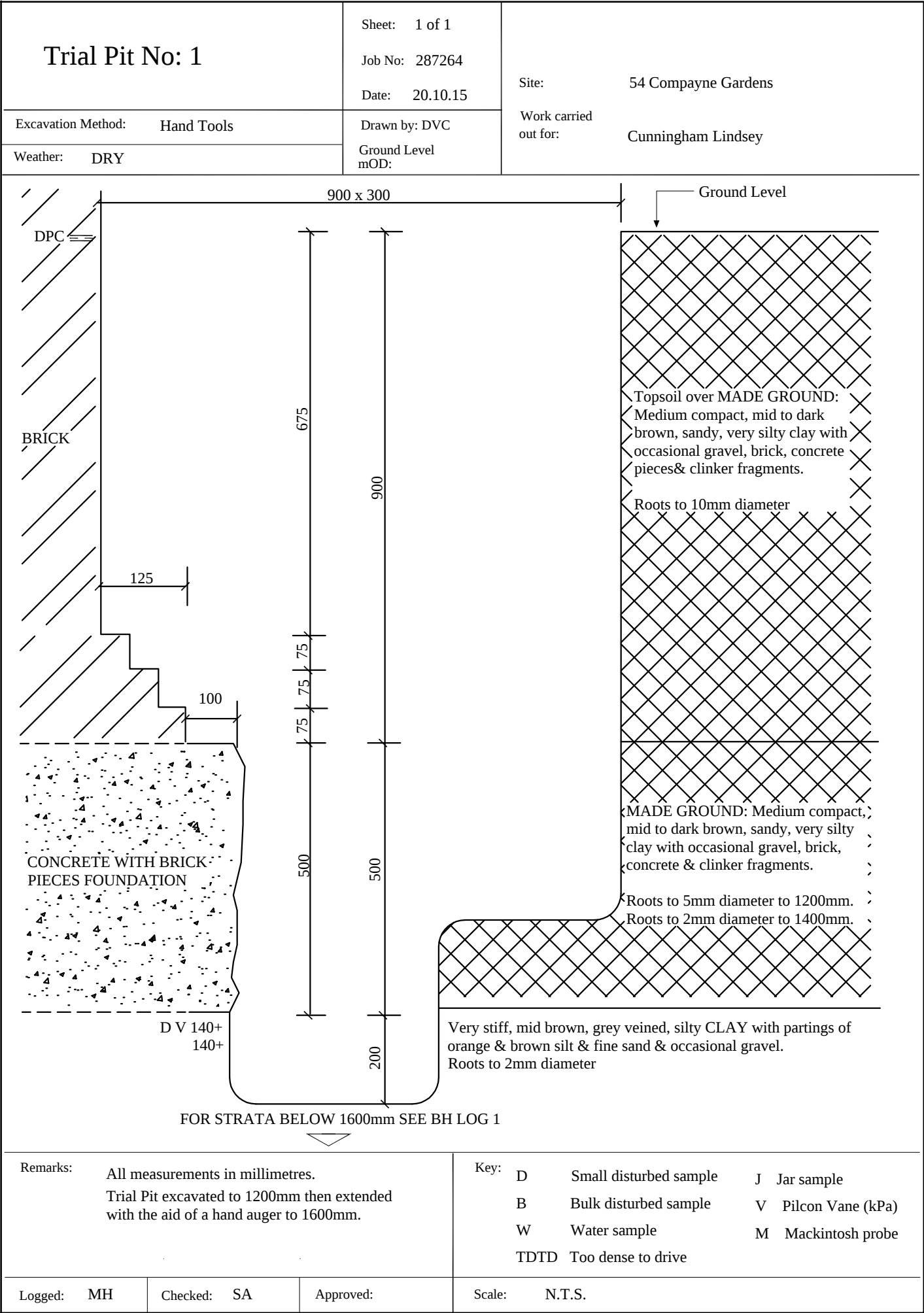
Borehole

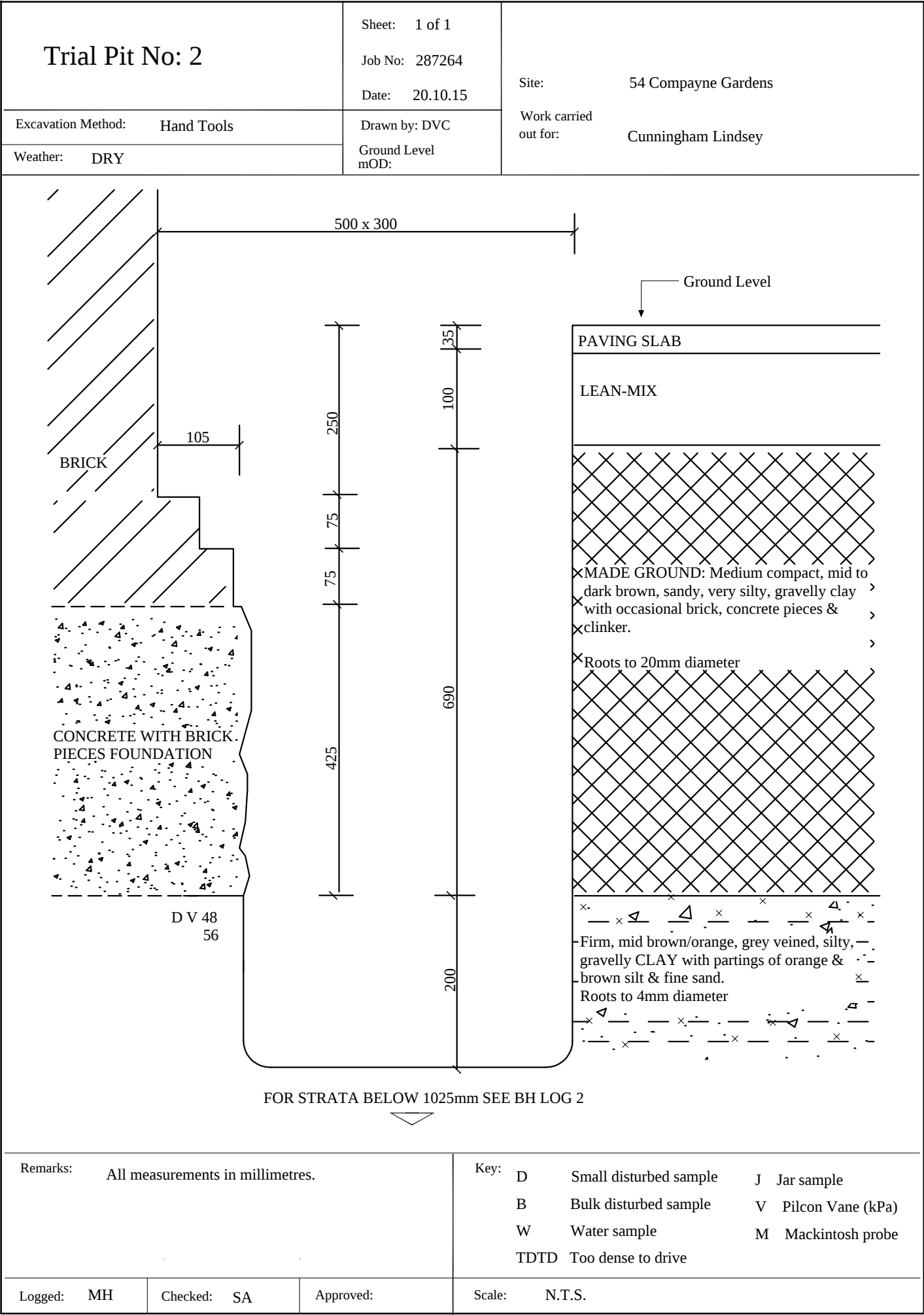
O/D - Open Discharge



Scale:

N.T.S.





Borehole No: 1 & Datum			Sheet: 1 of 1								
Boring Method: CFA			Date: 20.10.15			Site: 54 Compayne Gardens					
Diameter: 100mm		Coordinates:		Ground Level mOD:		Work Carried out for: Cunningham Lindsey					
Depth (m)	Description of Strata	Thick- ness (m)	Legend	Sample	Type	Test Result	Depth (m)	Field Records/Comments	Depth to water (m)		
1.60	As Trial Pit 1	1.60									
2.80	Very stiff, fragmented, mid brown, grey veined, silty CLAY with partings of orange & brown silt & fine sand, occasional clay-stone nodules & crystals.	1.20	___x								

			x ___	D	V	140+	2.00				

			___x.	D			2.50				

6.00	Very stiff, mid brown, grey veined, silty CLAY with partings of orange & brown silt & fine sand, occasional claystone nodules & crystals.	3.20	___x	D	V	140+	3.00				

			x ___	D			3.50				

			___x.	D	V	140+	4.00				

			___x								
			___	D			4.50				

			___	D	V	140+	5.00				

			___x.								
			___x								
Borehole ends at 6m											
Remarks: Borehole dry and open on completion. Datum installed at 6m. No soil samples taken or insitu strength tests carried out below 5m				Key: T.D.T.D. Too Dense to Drive D Small disturbed sample J Jar sample B Bulk disturbed sample V Pilcon Vane (kPa) W Water sample M Mackintosh Probe							
Logged: MH		Checked: SA		Typed by: DVC		Scale: NTS		Weather: DRY			

Borehole No: 2			Sheet: 1 of 1			Site: 54 Compayne Gardens			
Boring Method: Hand Auger			Job No: 287264						
Diameter: 75mm			Date: 20.10.15						
Coordinates:			Ground Level mOD:			Work Carried out for: Cunningham Lindsey			
Depth (m)	Description of Strata	Thick-ness (m)	Legend	Sample	Test Type	Result	Depth (m)	Field Records/Comments	Depth to water (m)
1.025	As Trial Pit 2	1.025							
1.10	Firm, mid brown/orange, grey veined, silty gravelly CLAY with partings of orange & brown silt & fine sand.	0.075	___x ___o ___						
1.40	Very stiff, mid brown, grey veined, silty CLAY with partings of orange & brown silt & fine sand & occasional gravel.	0.30	___x ___ ___o ___						
1.80	Very stiff, mid brown, grey veined, silty CLAY with partings of orange & brown silt & fine sand, occasional claystone nodules & crystals.	0.40	___x ___ ___	D	V	140+ 140+	1.50		
			___x ___ ___	D	V	94 104	2.00	Roots to 3mm diameter to 1.4m	
	Stiff, as above	1.20	x___ ___ ___	D	V	114 118	2.50		
3.00			x___ ___ ___	D	V	140+ 140+	3.00	Roots to 1mm diameter to 1.8m	
			___x ___ ___	D	V	140+ 140+	3.50		
	Very stiff, mid brown, grey veined, silty CLAY with partings of orange & brown silt & fine sand, occasional claystone nodules & crystals.	2.00	___x ___ ___	D	V	140+ 140+	4.00	Dead & decomposing root fragments to 5m	
			___x ___ ___	D	V	140+ 140+	4.50		
5.00			___x ___ ___	D	V	140+ 140+	5.00		
	Borehole ends at 5m								
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) W Water sample M Mackintosh Probe					
Logged: MH	Checked: SA	Typed by: DVC		Scale: NTS			Weather: DRY		

Laboratory Summary Results

Our Ref : 287264

Location : 54, Compayne Gardens, London, NW6

Work carried out for: Cunningham Lindsey - Maidstone

Date Sampled: 20/10/2015

Date Received : 21/10/2015

Date Tested : 22/10/2015

Date of Report : 29/10/2015

Sample Ref		Type	Moisture 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 (h)	Soil Sample Suction (kPa) [8]	Oedometer Strain [9]	Estimated Heave Potential (Dd) (mm)[10]	In situ * Shear Vane Strength (kPa) [11]	Organic * Content (%) [12]	pH * Value [13]	Sulphate Content * (g/l)		* Class [16]
TP/BH No	Depth (m)																	SO ₃ [14]	SO ₄ [15]	
1	U/S 1.40	D	23	<5	66	20	46	0.06	46	CH					> 140					
	2.0	D	23	<5	69	22	47	0.02	47	CH					> 140					
	2.5	D	23	<5																
	3.0	D	31	<5	72	26	46	0.10	46	CV					> 140					
	3.5	D	31	<5																
	4.0	D	32	<5	73	30	43	0.04	43	CV					> 140					
	4.5	D	32	<5																
	5.0	D	32	<5											> 140					

Test Methods / 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] In-house Test Procedure S17a: One Dimensional Swell/Strain Test
- [10] Estimated Heave Potential (Dd)
- [11] Values of shear strength were determined in situ by CET using a Pilcon hand vane or Geonor vane (GV).
- [12] BS 1377 : Part 3 : 1990, Test No 4
- [13] BS 1377 : Part 2 : 1990, Test No 9
- [14] BS 1377 : Part 3 : 1990, Test No 5.6
- [15] SO₄ = 1.2 x SO₃

- [16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005
- Note that if the SO₄ 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.

* These tests are not UKAS accredited

Full reports can be provided upon request

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

Version: 5BH V1.4 - 11/05/15



8618

Our Ref : 287264

Location : 54, Compayne Gardens, London, NW6

Work carried out for: Cunningham Lindsey - Maidstone

Laboratory Testing Results

Date Sampled : 20/10/2015

Date Received : 21/10/2015

Date Tested : 22/10/2015

Date of Report : 29/10/2015

Sample Ref.		Type	Moisture Content	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 (h)	Soil Sample Suction (kPa) [8]	Oedometer Strain [9]	Estimated Heave Potential (Dd) (mm)[10]	In situ * Shear Vane Strength (kPa) [11]	Organic * Content (%) [12]	pH * Value [13]	Sulphate Content * (g / l)		* Class [16]		
TP/BH No.	Depth (m)																	SO3 [14]			SO4 [15]	
2	U/S 0.825	D	15	62	Insufficient sample for further testing										52							
	1.5	D	24	<5	70	23	47	0.03	47	CV					> 140							
	2.0	D	29	<5	72	27	45	0.05	45	CV					99							
	2.5	D	32	<5											116							
	3.0	D	32	<5	74	28	46	0.09	46	CV					> 140							
	3.5	D	31	<5											> 140							
	4.0	D	32	<5											> 140							
	4.5	D	33	<5											> 140							
	5.0	D	33	<5											> 140							

Test Methods / 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] In-house Test Procedure S1/a: One Dimensional Swell/Strain Test

[10] Estimated Heave Potential (Dd)

[11] Values of shear strength were determined in situ by CET using a Pilcon hand vane or Geonor vane (GV).

[12] BS 1377 : Part 3 : 1990, Test No 4

[13] BS 1377 : Part 2 : 1990, Test No 9

[14] BS 1377 : Part 3 : 1990, Test No 5.6

[15] SO₄ = 1.2 x SO₃

[16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005

Note that if the SO₄ 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.

* These tests are not UKAS accredited

Full reports can be provided upon request

Key

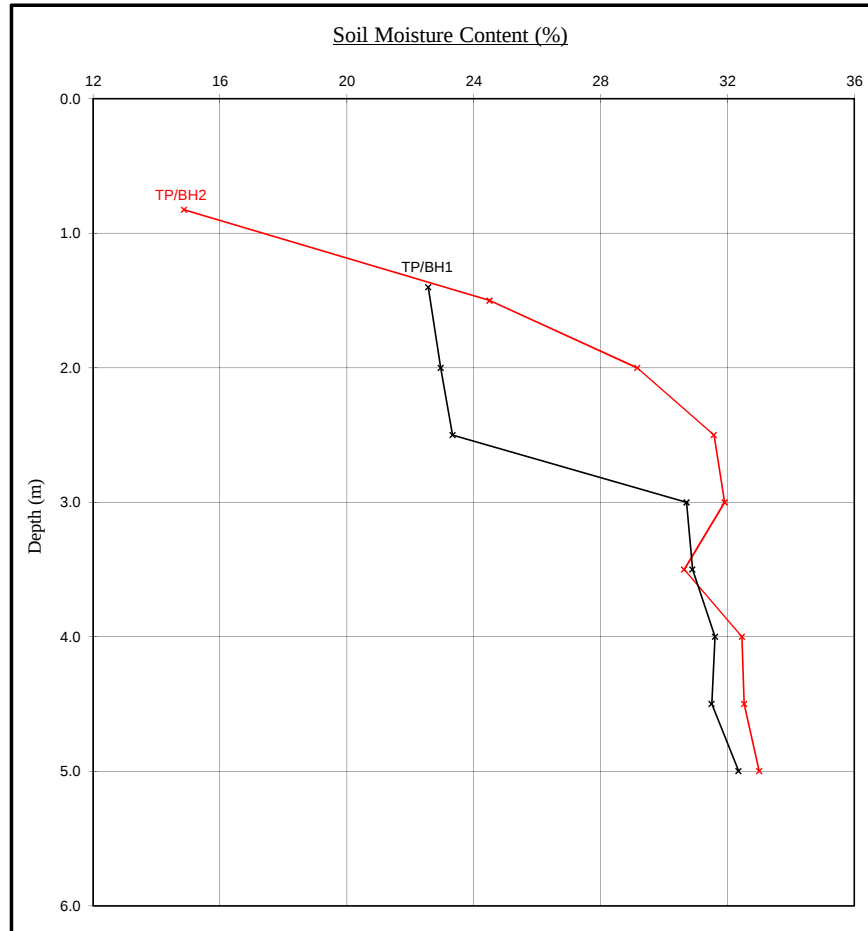
- D Disturbed sample (small)
- B Disturbed sample (bulk)
- U Undisturbed sample
- W Groundwater sample
- ENP Essentially Non-Plastic by inspection
- U/S Underside of Foundation



Moisture Content Profiles

Our Ref : 287264
 Location : 54, Compayne Gardens, London, NW6
 Work carried out for: Cunningham Lindsey - Maidstone

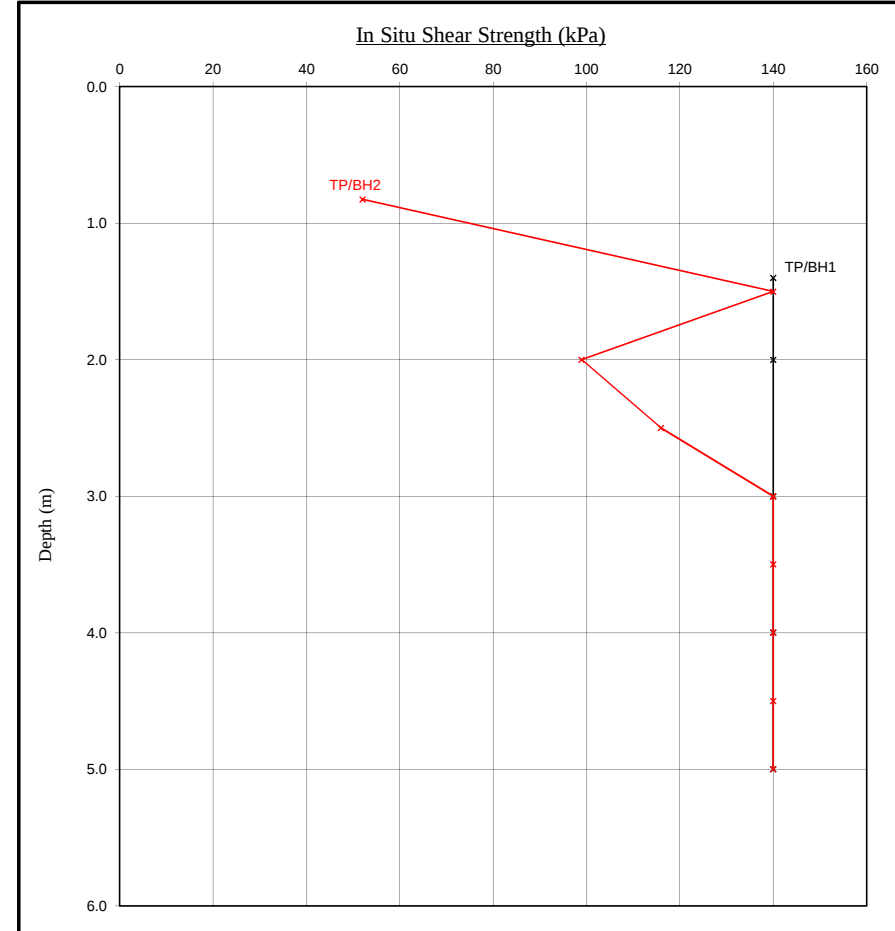
Date Sampled : 20/10/2015
 Date Received : 21/10/2015
 Date Tested : 22/10/2015
 Date of Report : 29/10/2015



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.
2. Unless specifically noted the profiles have not been related to a site datum.

Shear Strength Profiles



Note

1. Unless otherwise stated, values of Shear Strength were determined in situ by CET using a Pilcon Hand Vane the calibration of which is limited to a maximum reading of 140 kPa.
2. Unless specifically noted the profiles have not been related to a site datum.

EPSL**European Plant Science Laboratory**

Sheet: 1 of 1

Job No: 287264

Date: 28/10/2015

Order No: 749760

EPSL Ref: R12641

Site: 54 Compayne Gardens, London,

Work carried
out for: Cunningham Lindsey***Certificate of Analysis***

The following work was commissioned by CET on behalf of their client. Root samples were obtained in sealed packets from the above site with no reference given as to the types of tree or shrub from which they may have originated.

The results were as follows -

Trial pit/ Borehole number	Root diameter (mm)	Tree, shrub or climber from which root originates	Result of starch test
TP1 (USF)	1.5 mm	Tilia spp. 5 roots	Positive
BH1 (1.6-2.5m)	1 mm	Tilia spp. 4 roots	Positive
TP2 (USF)	2 mm	Fraxinus spp. 3 roots	Positive
BH2 (1.025-1.8m)	2 mm	Fraxinus spp. 3 roots	Positive
BH2 (1.025-1.8m)	1 mm	Clematis spp.	Positive

Tilia spp. are limes.

Fraxinus spp. include common ash.

Clematis spp. are common flowering, garden climbers.


MDM

Address for correspondence: EPSL, Intec, Parc Menai, Bangor, Gwynedd, North Wales, LL57 4FG

Telephone: 01248 672 652

e-mail: lab@innovation-environmental.co.uk

Head of Laboratory Services : M D Mitchell B.Sc. (Hons), M.Phil.

Plant Anatomist : Dr G S Turner B.Sc. (Hons), M.Sc., Ph.D

Plant Anatomist : Dr D P Aebischer B.Sc. (Hons), M.Sc., Ph.D

Consultant: Dr M P Denne B.Sc. (Hons), M.Sc., Ph.D

Registered in England. No 3256771, Registered Office: Yarmouth House, 1300 Parkway, Solent Business Park, Hampshire, PO15 7AE

To: Cunningham Lindsey - Maidstone
4 North Court
South Park Business Village
Armstrong Road
Kent
ME15 6JZ

Our Ref: 287264
Your Ref: 6095485
Date: 21-Oct-15

Ftiao: Yiu-Shan Wong

ESTIMATE

Site:-54 Compayne Gardens, London

ItemNo recommendations required to the private drainage surveyed.Amount

Notes		
Repairs to shared runs and off boundary pipe-work may be the responsibility of the water authority.	Total	£0.00
Condition Grade		
A - Structurally sound with no leakage evident.	plus VAT @20%	£0.00
B - Cracks and fractures observed.		
C - Structurally unsound	Total + VAT	£0.00

Quotation is binding only if accepted within 28 days from date of issue and is subject to our Standard Terms and Conditions
The price qualification notes, stated on the drainage solutions schedule of rates, apply to this quotation.
CET Structures Ltd undertakes to return to site free of charge to carry out remedial work to the drainage repairs set out above for a period of 2 months from the date of this invoice. The company standard charge rates will apply to the visit should the work requested be unrelated to the said repairs.

Underground Drainage Report	Sheet: 1 of 4	Site: 54 Compayne Gardens, London Work carried out for: Cunningham Lindsey - Maidstone
	Job No: 287264	
	Date: 20-Oct-15	

MANHOLE DETAILS

Manhole	Depth to Invert	Condition
MH1	950mm	As built
MH4	600mm	As built

CCTV Survey:-

1. Drainage Run:

From manhole 1 run 1 to unknown / disused - 100mm clay foul water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Slabs
0.6	JDL		
0.6	LR		
0.6	DES	80%	
1.0			Under S/S
1.3	SA	Survey abandoned - unable to push - assumed disused	

2 Drainage Run:

From manhole 1 run 2 to manhole 2 - 100mm cast iron combined - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Slabs
0.5			Steps
3.5			Slabs
4.0			Slabs
6.0	FH	Survey ends - reached MH2 (situated in garden of other ground floor flat)	

Water Test Grade:

0 - Unable to fill	2 - Medium Loss over 2 minutes
1 - Heavy Loss	3 - Slow Loss over 5 minutes
	4 - No Loss

Underground Drainage Report

Sheet: 2 of 4

Job No: 287264

Date: 20-Oct-15

Site: 54 Compayne Gardens, London

Work carried out for: Cunningham Lindsey - Maidstone

3 Drainage Run:

From manhole 1 run 3 to unknown - cast iron surface water - upstream (shared)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Slabs
0.8	DES	60%	
1.0			Concrete
1.6	LU		
1.9	LR		
1.9	FH	Survey ends - reached unknown assumed disused (gully not there)	

4 Drainage Run:

From manhole 1 run 4 to manhole 3 - cast iron combined - downstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Slabs
1.0			Concrete
2.7			Under hedge
14.6	JN	At 12 o'clock	
22.6	FH	Survey ends - reached MH3 under hedge (unable to lift)	

5 Drainage Run:

From manhole 4 run 5 to rain water gully 1 - plastic surface water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.0	LL	Line left	
0.2	FH	Finish - reached RWG1	
Gully condition:		As built	

Water Test Grade:

	2 - Medium Loss over 2 minutes
0 - Unable to fill	3 - Slow Loss over 5 minutes
1 - Heavy Loss	4 - No Loss

Underground Drainage Report

Sheet: 3 of 4

Job No: 287264

Date: 20-Oct-15

Site: 54 Compayne Gardens, London

Work carried out for: Cunningham Lindsey - Maidstone

6 Drainage Run:

From manhole 4 run 6 to DSWC1 - 100mm clay foul water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Under property (unseen)
2.3	LL		
5.5	LU		
6.0	FH	Survey ends - reached DSWC1	

7 Drainage Run:

From manhole 4 run 7 to upstream - 100mm clay foul water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Under property
0.4	MC	To plastic	
0.9	LR		
5.0	LU		
5.8	FH	Survey ends - reached unknown	

8 Drainage Run:

From manhole 4 run 8 to buried waste gully 2 - 100mm clay foul water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.0	DEG	10%	
0.2	LL		
0.2	DE	100%	
0.2	FH	Survey ends - reached buried WG2	

Water Test Grade:

0 - Unable to fill	2 - Medium Loss over 2 minutes
1 - Heavy Loss	3 - Slow Loss over 5 minutes
	4 - No Loss

Underground Drainage Report

Sheet: 4 of 4

Job No: 287264

Date: 20-Oct-15

Site: 54 Compayne Gardens, London

Work carried out for: Cunningham Lindsey - Maidstone

9 Drainage Run:

From manhole 4 run 9 to waste gully 1 - 100mm clay foul water - upstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.1	LL		
0.2	FH	Survey ends - reached WG1	
Gully condition: As built			

10 Drainage Run:

From manhole 4 run 10 to run 4 - 100mm clay combined - downstream (shared with flats)

Metres:	Code:	Observations:	Surface Material/ Condition:
0.0		Start	Concrete
0.0	LD	Slight	
1.0	FH	Survey ends - reached run 4	

- End of Survey -

Our assessment of the drainage system is based on our visual inspection and on information collated at the time of the survey. Where assumptions have been made these are based on our experience and do not constitute any form of guarantee, nor do we guarantee that further deterioration will not occur following this survey. CCTV video records will be stored for a period of 3 months from date of inspection and then destroyed.

Water Test Grade:

0 - Unable to fill	2 - Medium Loss over 2 minutes
1 - Heavy Loss	3 - Slow Loss over 5 minutes
	4 - No Loss

Water Authority Sewer Condition Codes

B	Broken pipe at... (or from... to...) o'clock	JN	Junction at...o'clock, diameter...mm
BR	Branch Major	JX	Junction defective at.. o'clock, diameter.. mm
CC	Crack circumferential from... to... o'clock	LC	Lining of sewer changes/starts/finishes at this point
CL	Crack longitudinal @... o'clock	LD	Line of sewer deviates down
CM	Cracks multiple from... to... o'clock	LL	Line of sewer deviates left
CN	Connection at... o'clock, diameter... mm	LN	Line defect at (or from.. to..) o'clock
CNI	Connection at... o'clock, diameter... mm, intrusion... mm	LR	Line of sewer deviates right
CU	Camera under water	LU	Line of sewer deviates up
CX	Connection defective at... o'clock	MB	Missing bricks at.. (or from.. to..) o'clock
CXI	Connection defective at... o'clock, diameter... mm, intrusion... mm	MC	Material of sewer changes at this point
D	Deformed sewer... %	MH	Manhole/node
DB	Displaced bricks at (or from.. to..) o'clock	MM	Mortar missing medium at.. (or from.. to..) o'clock
DC	Dimension of sewer changes at this point	MS	Mortar missing surface at.. (or from.. to..) o'clock
DE	Debris (non silt/grease)... % cross-sectional loss	MT	Mortar missing total at.. (or from.. to..) o'clock
DEG	Debris grease... % cross-sectional area loss	OB	Obstruction... % height/diameter loss
DES	Debris silt... % cross-sectional area loss	OJL	Open joint large
DI	Dropped invert, gap... mm	OJM	Open joint medium
EHJ	Encrustation heavy from.. to.. o'clock % cross-sectional area loss (at joint)	PC	Length of pipe forming sewer changes at this point, new length...mm
ELJ	Encrustation light from.. to.. o'clock%	RFJ	Roots fine (at joint)
EMJ	Encrustation medium from.. to.. o'clock %, cross-sectional area loss (at joint)	RMJ	Roots mass... % cross-sectional area loss (at joint)
ESH	Scale heavy... % cross-sectional area loss from... to... o'clock	RTJ	Roots tap (at joint)
ESL	Scale light from... to... o'clock	SA	Survey abandoned
ESM	Scale medium... % cross-sectional area loss from... to... o'clock	SC	Shape of sewer changes at this point
FC	Fracture circumferential from... to... o'clock	SSL	Surface damage, spalling large at (or from.. to..) o'clock
FL	Fracture longitudinal at... o'clock	SSM	Surface damage, spalling medium at (or from.. to..) o'clock
FM	Fractures multiple from... to... o'clock	SSS	Surface damage, spalling slight at (or from.. to..) o'clock
GO	General observation at this point	SWL	Surface damage, wear large at... (or from.. to..) o'clock
GP	General photograph number... taken at this point	SWM	Surface damage, wear medium at... (or from.. to..) o'clock
H	Hole in sewer at... o'clock	SWS	Surface damage, wear slight at.. (or from.. to..) o'clock
IDJ	Infiltration dripper at (or from... to...) o'clock (at joint)	V	Vermin (rats and mice)
IGJ	Infiltration gusher at (or from... to...) o'clock (at joint)	WL	Water level... % height/diameter
IRJ	Infiltration runner at (or from... to...) o'clock (at joint)	X	Sewer collapsed... % cross-sectional area loss
ISJ	Infiltration seeper at (or from... to...) o'clock (at joint)	FH	End of survey
JDM	Joint displaced medium		
JDL	Joint displaced large		

Contract: 287264

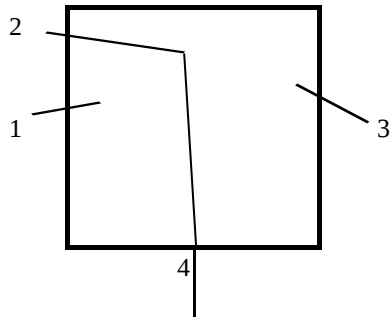
Date: 20-Oct-15

Operative Initial: IC

Site Address: 54 Compayne Gardens, London

Page: 1 of 1

M/H: 1 Depth: 950mm



Chamber Dimension (mm):

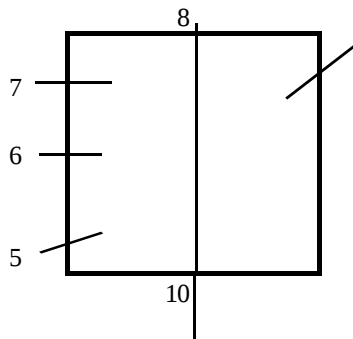
Depths of run if
different to invert level:-

Run

Manhole Condition

As built

M/H: 4 Depth: 600mm



Chamber Dimension (mm): 650 X 450

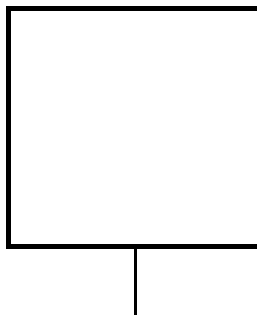
Depths of run if
different to invert level:-

Run

Manhole Condition

As built

M/H: Depth:



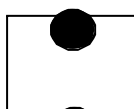
Chamber Dimension (mm):

Depths of run if
different to invert level:-

Run

Manhole Condition

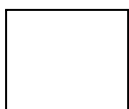
KEY....



Internal Back Drop



External Back Drop



Interceptor

Water Pressure Test Results

From:

To:

Pass / Fail