SubsNetUK

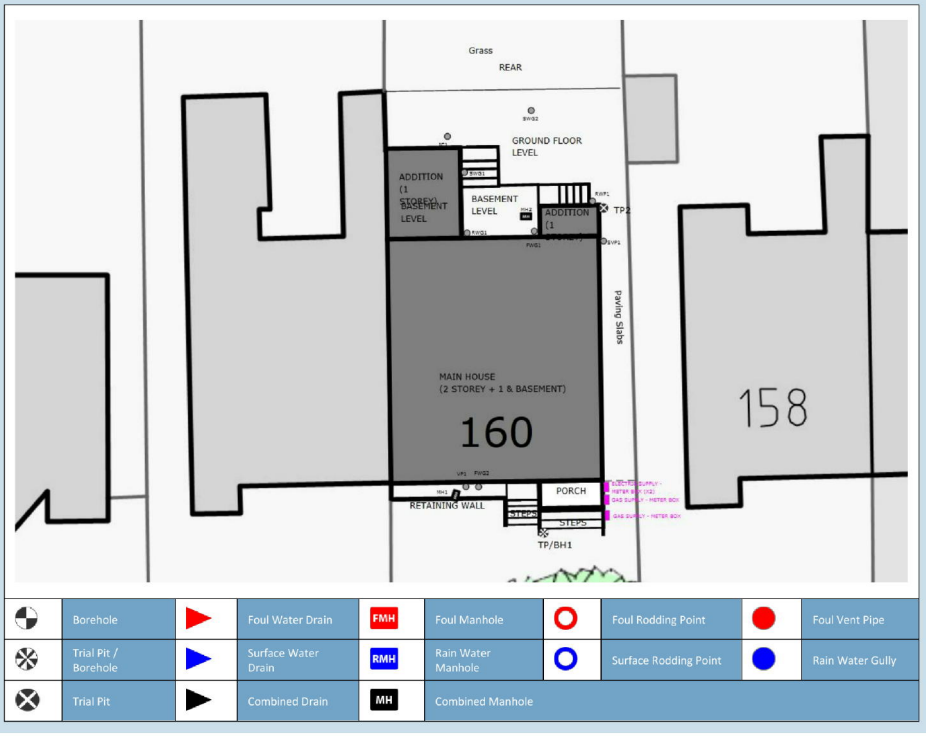
GEOTECHNICAL

for Subsidence Management Services

160 Camden Road, London, NW1 9HJ

Client:	Subsidence Management Services
Client Contact:	Peter Moore
Client Ref:	IFS-CIS-SUB-11-0031154
Policy Holder:	Mr David Blagbrough
Report Date:	20 January 2016
Our Ref:	C6598G10848

Site Plan



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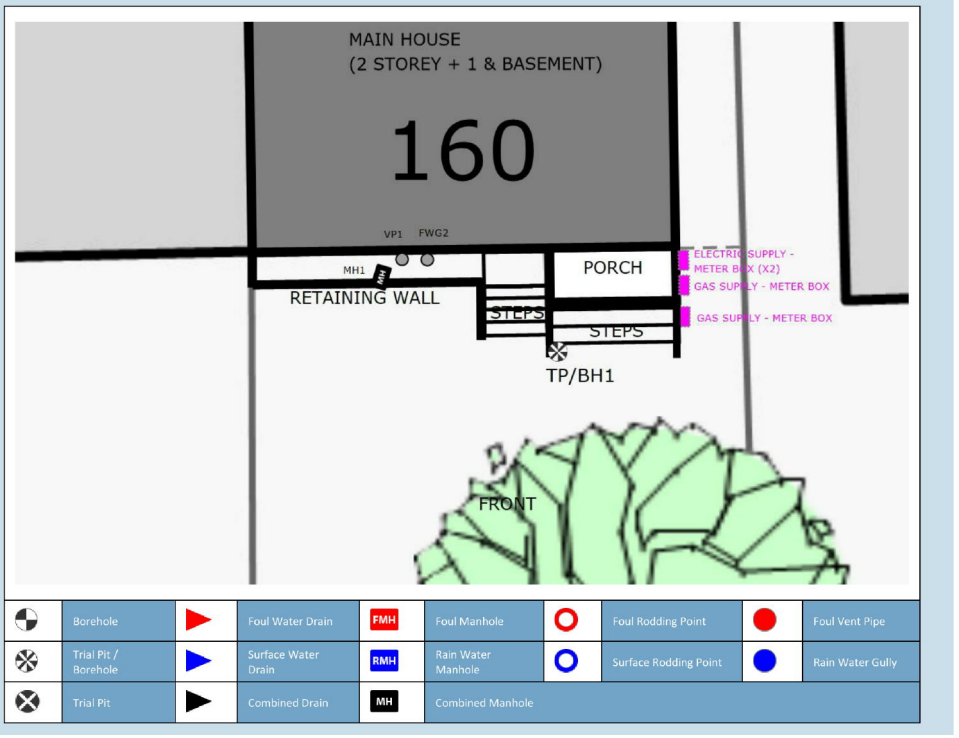
Site Plan



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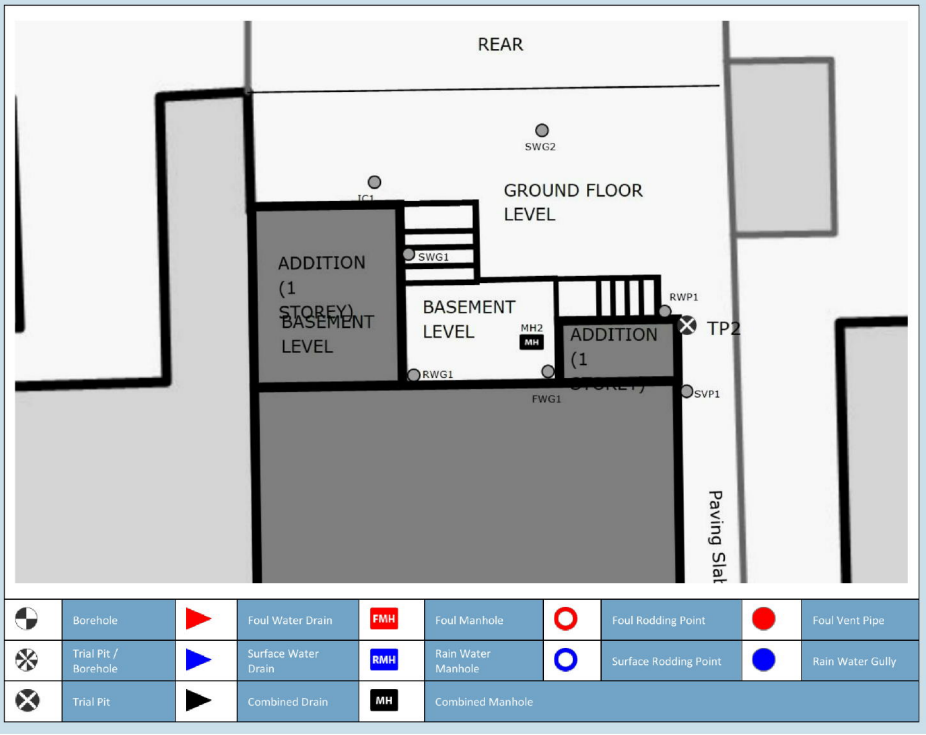
Site Plan



	Borehole		Foul Water Drain	FMH	Foul Manhole		Foul Rodding Point		Foul Vent Pipe
	Trial Pit / Borehole		Surface Water Drain	RMH	Rain Water Manhole		Surface Rodding Point		Rain Water Gully
	Trial Pit		Combined Drain	MH	Combined Manhole				

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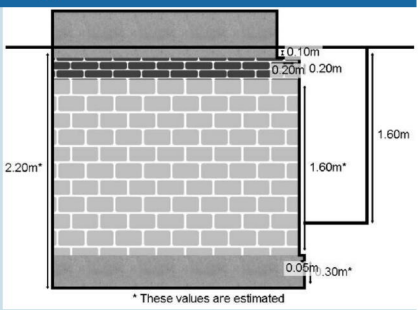
TP/BH1 Foundation Detail and Borehole Log

Foundation Detail

Porch/ Steps foundation comprised of concrete to 100mm bgl, bearing on brickwork to 300mm bgl with a total projection of 200mm from the elevation. In turn, bearing on concrete blockwork to 1900mm bgl, with a total projection of 200mm from the elevation. In turn, bearing on concrete to an estimated depth of 2200mm bgl, with a total projection of 250mm from the elevation.
Underside of foundation (USF) was estimated by pushing a probe, approximately 200mm back from the face of the foundation, at an angle with no apparent contact with the face of the foundation beyond the estimated depth.



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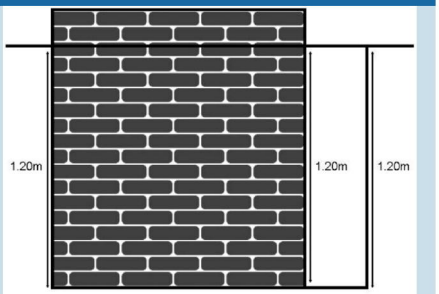
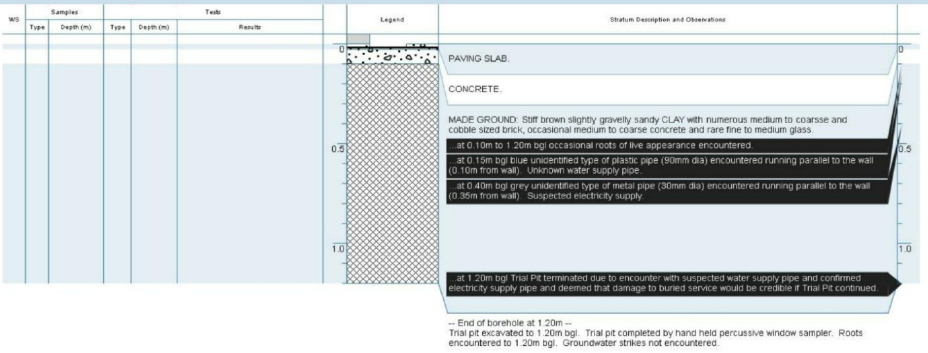
TP2 Foundation Detail and Borehole Log

Foundation Detail

Addition foundation was partially exposed and comprised of brick wall to a depth of at least 1200mm bgl.

Addition foundation was not exposed or underside confirmed due to buried services within the trial pit.





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Site Observations

GENERAL:
Site Investigation works (TP/BH1) undertaken on 3 November 2015 during dry weather (i.e. no rain).
Site Investigation works (TP2) undertaken on 23 November 2015 during dry weather (i.e. no rain).

HEALTH AND SAFETY:
Negative signal obtained in Power and Radio mode on the Cable Avoidance Tool (CAT) at TP/BH1 and TP2.
Blue unidentified type of plastic pipe (90mm dia) running parallel to wall (0.10m from wall) at 0.15m bgl in TP2. Suspected water supply pipe.
Grey unidentified type of metal pipe (30mm dia) running parallel to wall (0.35m from wall) at 0.40m bgl in TP2. Suspected electricity supply.

DRAINAGE:
The rainwater downpipe (RWP1) was encountered not connected to the sub-surface drainage system and discharging to ground surface.

FOUNDATIONS:
Excavation did not expose the underside of the Porch/ Steps foundation. The underside of foundation (USF) was estimated to be 2.20m bgl in TP/BH1. The underside of the foundation was not exposed or confirmed due to being unable to safely extend trial pit to the underside of foundation (USF).

Addition foundation was partially exposed to 1.20m bgl but the underside of foundation (USF) was unable to be confirmed or checked in TP/2. The foundation was not exposed or underside confirmed due to buried services within the trial pit.

BOREHOLE:
Hand Held Percussive Window Sampler refusal at 3.50m bgl due to soil stiffness within the clay in TP/BH1. Borehole terminated. No further works undertaken.

SOILS:
Made Ground deposits were encountered below the estimated underside of foundations extending to a depth of 2.90m bgl in TP/BH1.

ROOTS:
Roots encountered to 2.90m and 1.20m bgl in TP/BH1 and TP/2.

INSITU TESTING:
Hand Penetrometer (PEN) not undertaken from 2.20m to 2.90m bgl in TP/BH 1 due to the soils granular content. Hand Penetrometer (PEN) undertaken at 3.20m bgl and 3.50m bgl within the window sampler only in TP/BH1.
Mackintosh Probe (MP) test undertaken at 2.20m bgl within the hand auger borehole and thereafter in the window sample borehole at 3.10m and 3.50m bgl only in TP/BH1.

WATER STRIKES:
No water strike/s (NWS) encountered in TP/BH1 and TP/2.

The groundwater observations do not necessarily indicate equilibrium conditions. It should be appreciated that groundwater levels are subject to both seasonal and weather induced variations. Other effects such as construction activities may also change groundwater levels.

ROOT IDENTIFICATION

for Subsidence Management Services

160 Camden Road, London, NW1 9HJ

Client:	Subsidence Management Services
Client Contact:	Peter Moore
Claim Number:	1557389119
Client Reference:	IFS-CIS-SUB-11-0031154
Policy Holder:	Mr David Blagbrough
Report Date:	6 November 2015
Our Ref:	R12248

European Plant Science Laboratory

Intec

[redacted]

Sub Sample	Species Identified		Root Diameter	Starch
TP/BH1:				
2.2-2.9m	*Platanus* spp.	1	2 mm	Moderate

Comments:

1 - Plus 4 others also identified as *Platanus* spp.

Platanus spp. include London plane and Oriental plane.

Signed: M D Mitchell

Unless we are otherwise instructed in writing, the above sample material will normally be disposed of 6 years after the date of this report.

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INVESTOR IN PEOPLE

[redacted]

ISO 9001 REGISTERED FIRM

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SOIL ANALYSIS

for Subsidence Management Services

160 Camden Road, London, NW1 9HJ

Client:	Subsidence Management Services
Client Contact:	Peter Moore
Claim Number:	1557389119
Policy Holder:	Mr David Blagbrough
Report Date:	20 November 2015
Our Ref:	C7903S6598
Compiled By:	[redacted]
Checked By:	
Test Commenced:	13 November 2015
Test Completed:	20 November 2015
Days in Contact:	7

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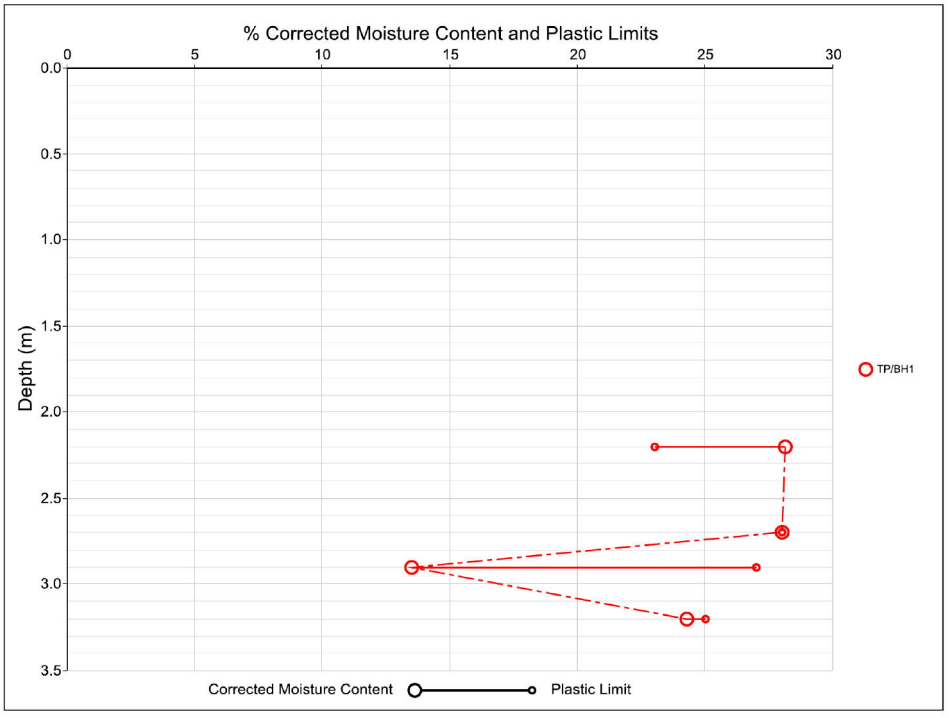
Note

Where appropriate moisture contents have been corrected to demonstrate the equivalent moisture content following the sample being passed through a .425 mm sieve for comparison with the Liquid & Plastic Limit. Where this is not available, uncorrected moisture contents have been used in the graph on the following page.

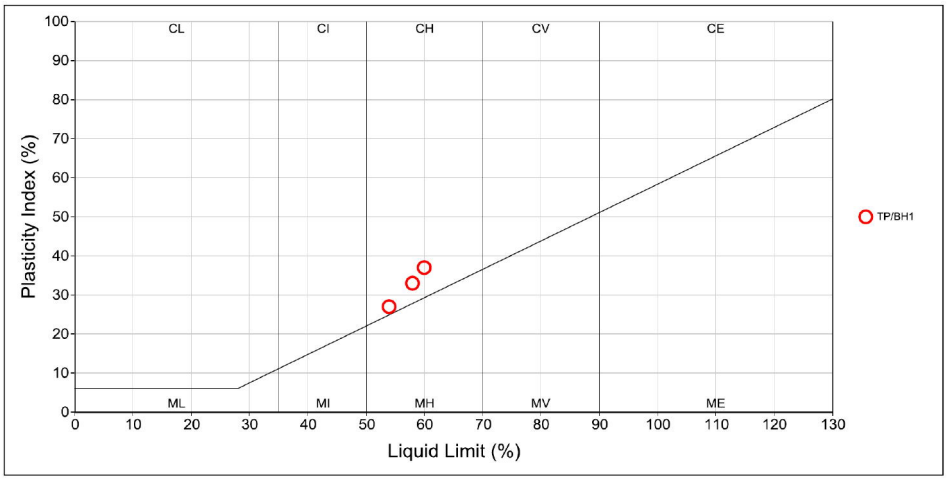
Lab Ref	Depth (m)	MC (%)	Corr MC (%)	LL (%)	PL (%)	PI (%)	% Passing .425mm
Samples from TP/BH1							
001	2.20	27	28	60	23	37	96
002	2.70	28					
003	2.90	13	13	54	27	27	97
004	3.20	24	24	58	25	33	99

Corrected Moisture Content and Plastic Limits Graph



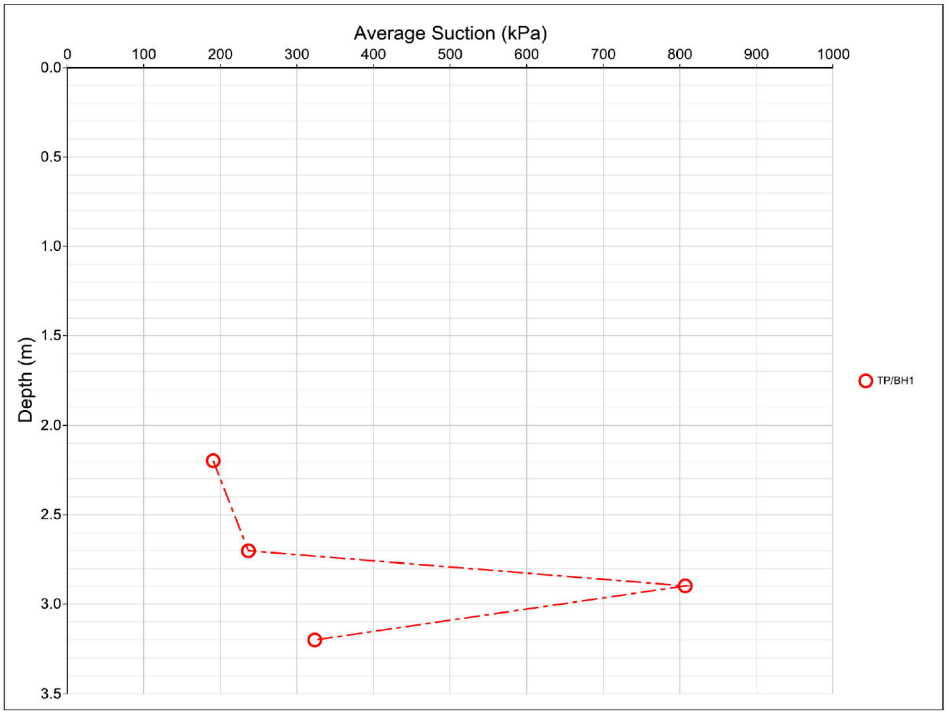
Lab Ref	Depth (m)	Description	BS:5930	NHBC Chapter 4.2
Samples from TP/BH1				
001	2.20	Brown CLAY with rare sand and fine gravel including brick fragments and clinker	CH	Medium
002	2.70	Brown CLAY with occasional sand and fine gravel including brick fragments and clinker		
003	2.90	Brown slightly sandy CLAY with occasional fine to medium gravel including flint	CH	Medium
004	3.20	Brown CLAY with rare sand and fine gravel	CH	Medium

Plasticity Chart for Casagrande Classification



Lab Ref	Depth (m)	Filter Paper	Bag Weight (g)	Bag + Wet Filter (g)	Bag + Dry Filter (g)	Oven Dry Filter (g)	Water Content (%)	Suction (kPa)	Average (kPa)
Samples from TP/BH1									
001	2.20	Top	1.238	1.492	1.417	0.179	41.709	176.088	190.865
		Middle	1.235	1.362	1.324	0.090	42.346	160.715	
		Bottom	1.207	1.453	1.383	0.176	39.670	235.794	
002	2.70	Top	1.227	1.344	1.310	0.084	40.719	202.911	237.357
		Middle	1.234	1.360	1.324	0.090	40.535	208.330	
		Bottom	1.238	1.363	1.329	0.091	37.969	300.831	
003	2.90	Top	1.246	1.373	1.343	0.097	31.405	770.214	807.851
		Middle	1.251	1.365	1.339	0.087	30.355	895.185	
		Bottom	1.194	1.303	1.277	0.083	31.515	758.154	
004	3.20	Top	1.207	1.452	1.385	0.178	37.929	302.559	324.058
		Middle	1.264	1.384	1.352	0.088	36.591	366.476	
		Bottom	1.239	1.363	1.329	0.090	37.916	303.138	

Average Suction



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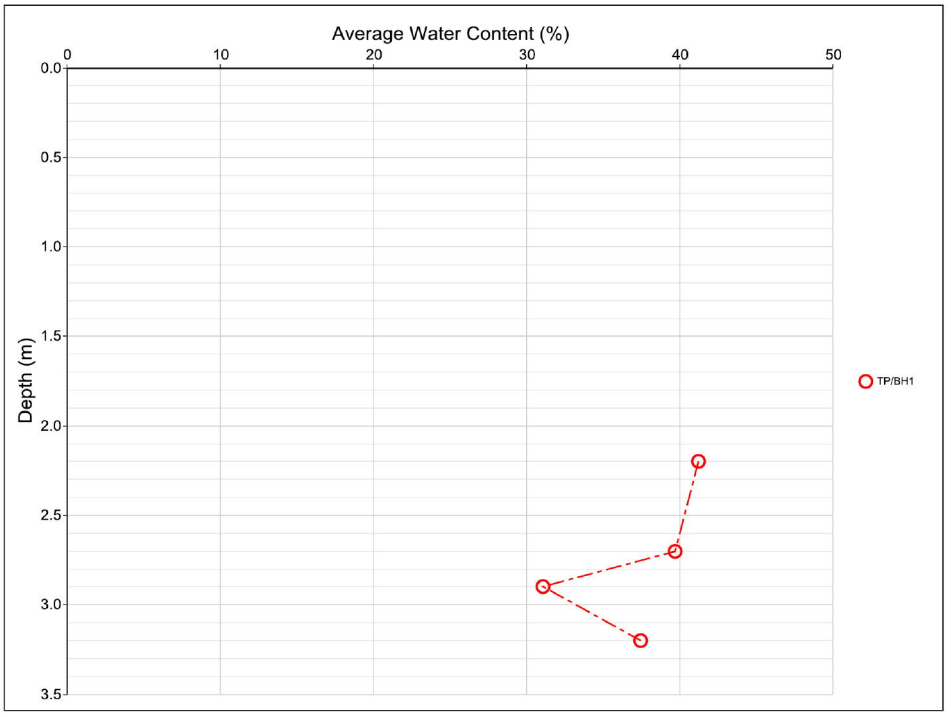
Average Water Content



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Drainage Investigation Report

For Subsidence Management Services

Policy Holder: David Blagbrough

Risk Address: 160 Camden Road, London, NW1 9HJ

Visit Date: 28/09/2015

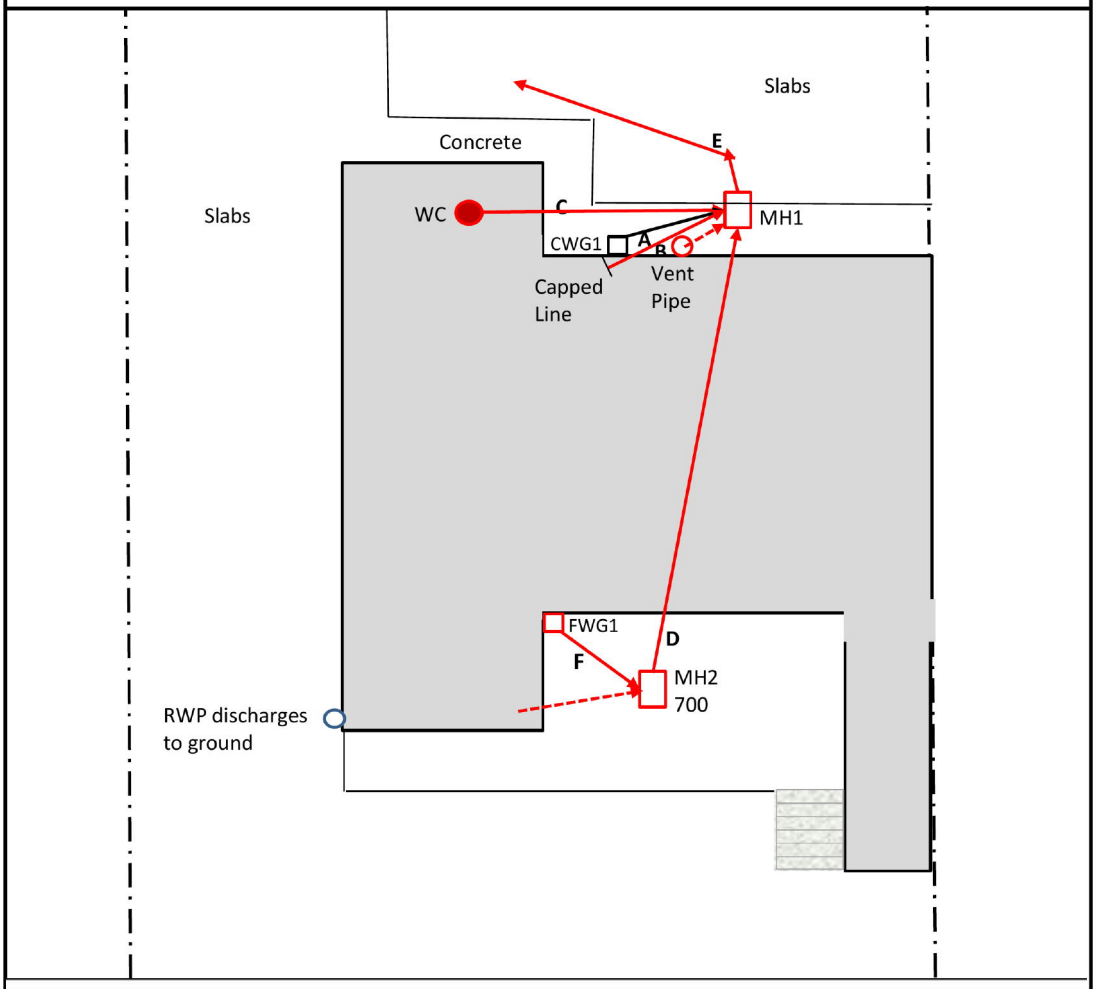
Client Reference: IFS-CIS-SUB-11-0031154

Our Reference: C6598D8662

Report Date: 06/10/2015

Report Content:

SubsNetUK **Site Plan** SubsNetUK



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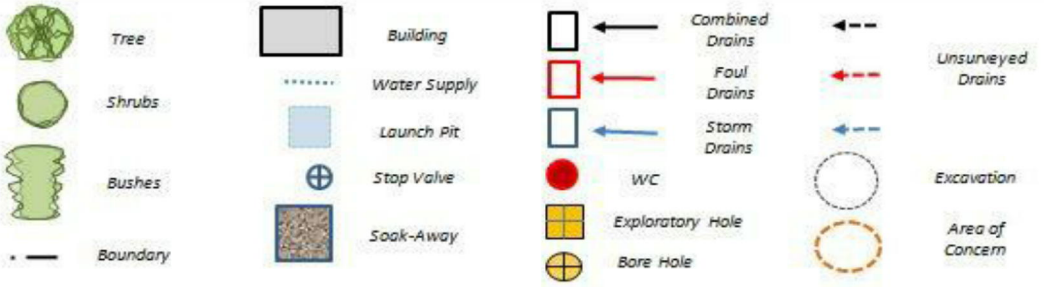

Notes:	
Address:	160 Camden Road, London, NW1 9HJ

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CCTV Survey

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RUN	Start From :	MH1	Finish at :	CWG1	Pipe Ø:	100mm
A	Invert Level (m):	1.1	Invert Level (m):	N/A	Material:	Plastic
COMBINED	Condition grade:	A	Direction:	Upstream	Shared:	NO

Distance	Code	Remarks
0.00	SN	Start Node from MH1
0.00	WL	Water Level 0%
0.60	FN	Finish Node at CWG1

Hydraulic Pressure Test	From	To	Result	Comments
	MH1	CWG1	PASS	

RUN	Start From :	MH1	Finish at :	Capped Line	Pipe Ø:	100mm
B	Invert Level (m):	1.1	Invert Level (m):	N/A	Material:	Clay
FOUL	Condition grade:	C	Direction:	Upstream	Shared:	NO

Distance	Code	Remarks
0.00	SN	Start Node from MH1
0.00	WL	Water Level 0%
0.30	JDL	Joint Displaced (Large)
0.50	LU	Line of drain deviates up 90°
0.90	FN	Finish Node at Capped Line

RUN	Start From :	MH1	Finish at :	WC	Pipe Ø:	100mm
C	Invert Level (m):	1.1	Invert Level (m):	N/A	Material:	Clay
FOUL	Condition grade:	B	Direction:	Upstream	Shared:	NO

Distance	Code	Remarks
0.00	SN	Start Node from MH1
0.00	WL	Water Level 0%
0.80	JDM	Joint Displaced (Medium)
2.50	LR	Line of drain deviates right 45°
4.50	MC	Material of drain changes at this point to Liner
4.80	LU	Line of drain deviates up 90°
5.20	FN	Finish Node at WC

RUN	Start From :	MH1	Finish at :	MH2	Pipe Ø:	100mm
D	Invert Level (m):	1.1	Invert Level (m):	0.7	Material:	Clay
FOUL	Condition grade:	B	Direction:	Upstream	Shared:	NO

Distance	Code	Remarks
0.00	SN	Start Node from MH1
0.00	WL	Water Level 0%
0.00	DEE	Attached Deposits (encrustation) 10%
9.90	FN	Finish Node at MH2

Hydraulic Pressure Test	From	To	Result	Comments
	MH1	MH2	FAIL	

Address: 160 Camden Road, London, NW1 9HJ

CCTV Survey

RUN	Start From :	MH1	Finish at :	BACF	Pipe Ø:	100mm
E	Invert Level (m):	1.1	Invert Level (m):	N/A	Material:	Clay
COMBINED	Condition grade:	B	Direction:	Downstream	Shared:	NO

Distance	*Code*	*Remarks*
0.00	SN	Start Node from MH1
0.00	WL	Water Level 0%
0.00	MC	Material of drain changes at this point to Liner
2.50	LL	Line of drain deviates left 45°
2.90	MC	Material of drain changes at this point to Clay
2.90	JDM	Joint Displaced (Medium)
7.30	FN	Finish Node at Beyond Area of Concern

RUN	Start From :	MH2	Finish at :	FWG1	Pipe Ø:	100mm
F	Invert Level (m):	0.7	Invert Level (m):	N/A	Material:	Clay
FOUL	Condition grade:	A	Direction:	Downstream	Shared:	NO

Distance	*Code*	*Remarks*
0.00	SN	Start Node from MH2
0.00	WL	Water Level 0%
0.10	FN	Finish Node at FWG1

Hydraulic Pressure Test	From	To	Result	Comments
	MH2	FWG1	PASS	

Address: 160 Camden Road, London, NW1 9HJ

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Drainage Overview

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Following the receival of your instruction, we attended site to carry out a CCTV survey.

The CCTV survey was undertaken in general accordance with the Manual of Sewer Classification and the WRc Drain Repair Book.

All runs were cleaned by high pressure water jetting prior to the CCTV survey.

The following presents a summary of the findings with recommendations to repair and/ or return the drains to a serviceable state, where necessary.

Drain Run A: CMH1MH1 upstream CWG1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs required as line is in a serviceable condition at this time.

Drain Run B: MH1 upstream to capped Line
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: Structural Damage
Recommended Repair: Cap off line within MH1 using C20P concrete

Drain Run C: MH1 upstream to WC
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS / FAIL
CCTV Survey Result: Structural Damage
Recommended Repair: Clean and suvey in preparation of lining. reline from MH1 U/S for a distance of 4.2m. Insert a patch liner on U/S section of liner to seal

Drain Run D: MH1 downstream to MH2
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: FAIL
CCTV Survey Result: Structural Damage
Recommended Repair: Remove all encrustation from line. Clean and survey in preparation of lining. Reline from MH1 D/S MH2 a distance of up to 10m

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Drainage Overview 2

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Drain Run E: MH1 downstream to Beyond Area of Concern
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: Structural Damage
Recommended Repair: Clean and survey in preparation of lining. Insert a patch liner at 2.9m D/S of MH1

Drain Run F: MH2 upstream to FWG1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Not Tested
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs required as line isa in a serviceable condition at this time

A visual inspection of the manholes revealed them to be in a good condition.

	From	To	Result	Notes
Water Main Test	ESV	Outside Tap	**PASS**	Held 4 Bar for 20 minutes

Address: 160 Camden Road, London, NW1 9HJ

SubsNetUK **Estimate** SubsNetUK

RUN/ LOCATION: Van Pack

Repair item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1133	Van pack HPWJ & CCTV in preparation of lining	nr	£148.44	1.00	£148.44
				TOTAL (Excl VAT)	£148.44

RUN/ LOCATION: RUN B

Repair item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
UK5066504	In-situ concrete plain prescribed mix C20P Foundations over.	m3	£106.88	1.00	£106.88
				TOTAL (Excl VAT)	£110.46

RUN/ LOCATION: RUN C

Repair item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	4.00	£7.17
UK1135	Drain Lining - Initial Set-Up Fee (0-3.0m)	nr	£332.64	1.00	£332.64
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 3mm Wall thickness.	m	£55.52	2.00	£111.03
UK1180	Patch Lining. Up to 2 m x 100mm diameter	nr	£290.94	1.00	£290.94
				TOTAL	

RUN/ LOCATION: RUN D

Repair item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0525	High Pressure Water Jetting - up to 1 hour on site.	hr	£59.38	1.00	£59.38
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	4.00	£7.17
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 3mm Wall thickness.	m	£55.52	10.00	£555.16
				TOTAL (Excl VAT)	£621.70

Address: 160 Camden Road, London, NW1 9HJ

SubsNetUK **Estimate 2** SubsNetUK

RUN/ LOCATION: RUN E			[redacted]
Repair item	**Description**	**Unit**	
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	
UK1180	Patch Lining. Up to 2 m x 100mm diameter	nr	

REPAIR ESTIMATE TOTALS:	[redacted]
Run/ Location	
Van Pack	
RUN B	
RUN C	
RUN D	
RUN E	

CONTINGENCY SUM: - To allow for additional works found to be required whilst undertaking repairs on-site. Permission will be sought from the Client/ Clients representative prior to carrying out these works. This sum will be adjusted according to actual repairs carried out [redacted]

Address: 160 Camden Road, London, NW1 9HJ