SubsNetUK

Drainage Investigation Report

For Subsidence Management Services

Policy Holder: Haverstock Hill Limited

Risk Address: 96 Haverstock Hill, Lower Belsize Park, London, NW3 2BD

Visit Date: 05/04/2016

Client Reference: IFS-AVI-SUB-14-0052426

Our Reference: C18151D9394

Report Date: 07/04/2016

Report Content:

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Site Plan

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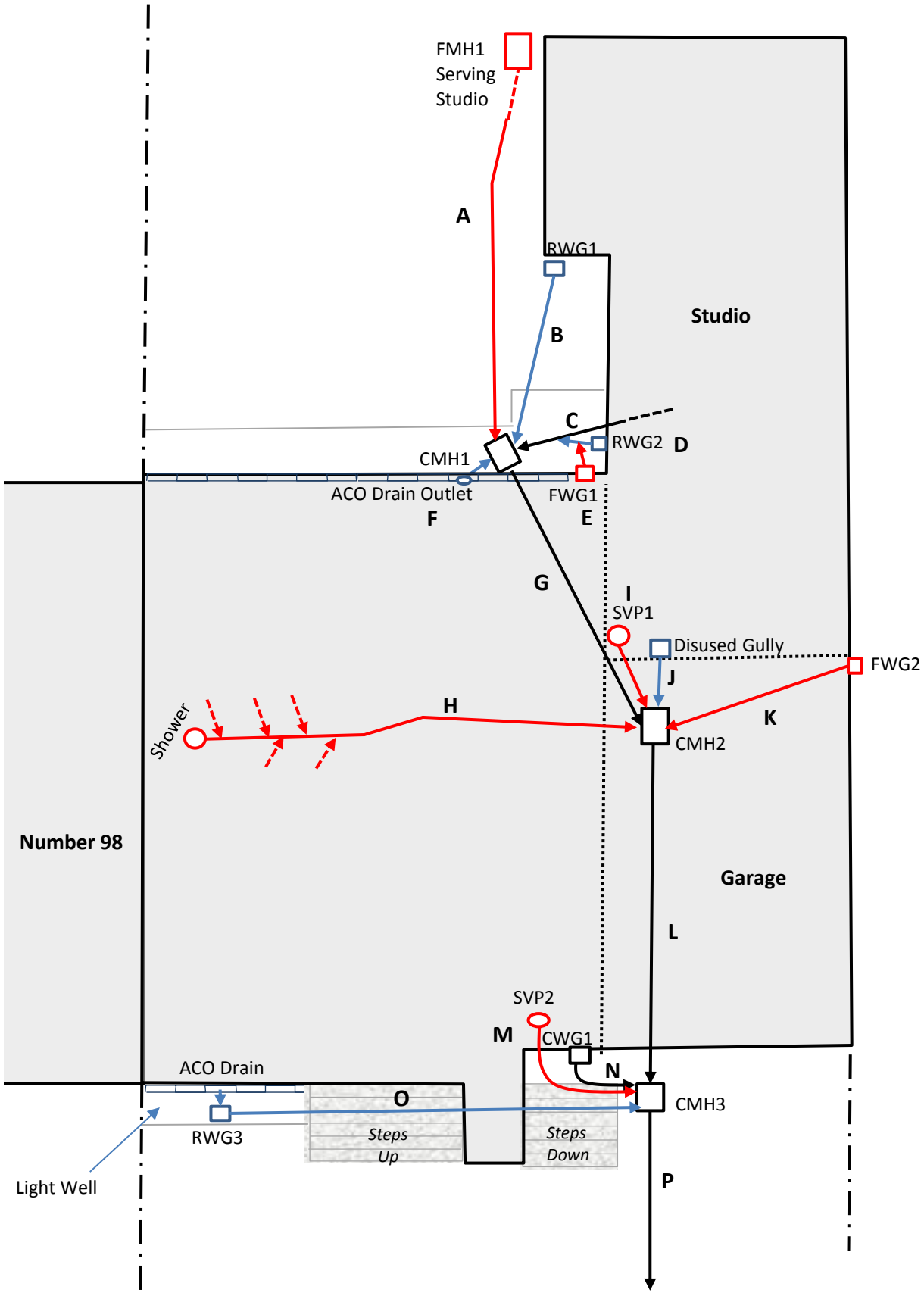

Notes:	
Address:	96 Haverstock Hill, Lower Belsize Park, London, NW3 2BD

CCTV Survey

RUN	Start From :	CMH1	Finish at :	FMH1	Pipe Ø:	100mm
A	Invert Level (m):	0.5	Invert Level (m):	N/A	Material:	Clay
FOUL	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH1
2.30	CC	Crack Circumferential from 12 to 12 o'clock
2.30	LR	Line of drain deviates right 15°
2.80	CC	Crack Circumferential from 12 to 12 o'clock
3.00	FN	Finish Node - Beyond Area of Concern

RUN	Start From :	CMH1	Finish at :	RWG1	Pipe Ø:	100mm
B	Invert Level (m):	0.5	Invert Level (m):	N/A	Material:	Clay
COMBINED	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH1
0.20	MC	Material of drain changes at this point to Plastic
1.70	LU	Line of drain deviates up 90°
1.90	LD	Line of drain deviates down 90° - Levels out
2.40	LU	Line of drain deviates up 90°
2.50	LD	Line of drain deviates down 90° - Levels out
2.70	JN	Junction at 3 o'clock
2.90	MC	Material of drain changes at this point to cast iron
5.40	FN	Finish Node at RWG1

Hydraulic Pressure Test	From	To	Result	Comments
	CMH1	RWG1	PASS	Including Junction

RUN	Start From :	CMH1	Finish at :	Upstream	Pipe Ø:	100mm
C	Invert Level (m):	0.5	Invert Level (m):	N/A	Material:	Clay
COMBINED	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH1
0.20	MC	Material of drain changes at this point to Plastic
0.30	JN	Junction at 3 o'clock from RUN D (RWG2)
0.60	MC	Material of drain changes at this point to Clay
1.10	DES	Settled Deposits (fine) 20%
1.10	SA	Survey Abandoned - Unable to push past blockages
		NOTE: This line looks to be redundant beyond junctin to RUN D

RUN	Start From :	RUN C	Finish at :	RWG2	Pipe Ø:	100mm
D	Invert Level (m):	0.5	Invert Level (m):	N/A	Material:	Clay
COMBINED	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from RUN C
0.10	JN	Junction at 3 o'clock from RUN E (FWG1)
0.40	OJL	Open Joint (large)
0.60	FN	Finish Node at RWG2

Hydraulic Pressure Test	From	To	Result	Comments
	RWG2	0.5	FAIL	

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RUN	Start From :	RUN D	Finish at :	FWG1	Pipe Ø:	100mm
E	Invert Level (m):	N/A	Invert Level (m):	N/A	Material:	Clay
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from RUN D
0.50	WL	Water Level 10%
0.90	LR	Line of drain deviates right 90°
0.90	FN	Finish Node at FWG1

Hydraulic Pressure Test	From	To	Result	Comments
	FWG1	0.5	PASS	

RUN	Start From :	CMH1	Finish at :	ACO Outlet	Pipe Ø:	100mm
F	Invert Level (m):	0.5	Invert Level (m):	N/A	Material:	Clay
STORM	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH1
0.40	MC	Material of drain changes at this point to Plastic
0.80	H	Hole in Pipe
0.80	CL	Crack Longitudinal at 12 o'clock
0.90	FN	Finish Node at ACO Outlet

Hydraulic Pressure Test	From	To	Result	Comments
	CMH1	ACO	FAIL	

RUN	Start From :	CMH2	Finish at :	CMH1	Pipe Ø:	100mm
G	Invert Level (m):	0.86	Invert Level (m):	0.5	Material:	Clay
COMBINED	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
5.90	FN	Finish Node at CMH1

Hydraulic Pressure Test	From	To	Result	Comments
	CMH2	CMH1	PASS	

RUN	Start From :	CMH2	Finish at :	Shower	Pipe Ø:	100mm
H	Invert Level (m):	0.86	Invert Level (m):	N/A	Material:	Plastic
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
2.90	LL	Line of drain deviates left 45°
4.50	LR	Line of drain deviates right 45°
4.70	CN	Connection from Shower
5.60	CN	Connection from sink basin
5.90	JN	Junction at 12 o'clock from WC
7.30	CN	Connection from Bath
7.60	JN	Junction at 12 o'clock from WC
8.60	FN	Finish Node at Shower

Hydraulic Pressure Test	From	To	Result	Comments
	CMH2	Showe Waste	PASS	Including junctions connections

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RUN	Start From :	CMH2	Finish at :	SVP1	Pipe Ø:	100mm
I	Invert Level (m):	0.86	Invert Level (m):	N/A	Material:	Cast Iron
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
1.20	LL	Line of drain deviates left 30°
1.90	MC	Material of drain changes at this point to clay
2.00	LU	Line of drain deviates up 90°
2.20	FN	Finish Node at SVP1

RUN	Start From :	CMH2	Finish at :	Disused GY	Pipe Ø:	100mm
J	Invert Level (m):	0.86	Invert Level (m):	N/A	Material:	Clay
STORM	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
0.30	LU	Line of drain deviates up 90°
0.60	OJM	Open Joint (medium)
0.90	LD	Line of drain deviates down 90° - Levels Out
1.10	FN	Finish Node at Possibly Disused Gully

RUN	Start From :	CMH2	Finish at :	FWG2	Pipe Ø:	100mm
K	Invert Level (m):	0.86	Invert Level (m):	N/A	Material:	Cast Iron
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
2.10	MC	Material of drain changes at this point to clay
2.50	FN	Finish Node at FWG2

Hydraulic Pressure Test	From	To	Result	Comments
	CMH2	FWG2	PASS	

RUN	Start From :	CMH2	Finish at :	CMH3	Pipe Ø:	100mm
L	Invert Level (m):	0.86	Invert Level (m):	1.2	Material:	Cast Iron
COMBINED	Condition grade:	A	Direction:	Downstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH2
3.10	MC	Material of drain changes at this point to cured in place liner
3.70	MC	Material of drain changes at this point to cast iron
7.10	FN	Finish Node at CMH3

Hydraulic Pressure Test	From	To	Result	Comments
	CMH2	CMH3	PASS	

RUN	Start From :	CMH3	Finish at :	SVP2	Pipe Ø:	100mm
M	Invert Level (m):	1.2	Invert Level (m):	N/A	Material:	Liner
FOUL	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH3
1.10	MC	Material of drain changes at this point to clay
2.30	SA	Survey Abandoned - Unable to push past bend

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RUN	Start From :	CMH3	Finish at :	CWG1	Pipe Ø:	100mm
N	Invert Level (m):	1.2	Invert Level (m):	0.2	Material:	Liner
COMBINED	Condition grade:	A	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH3
1.00	MC	Material of drain changes at this point to clay
1.30	LR	Line of drain deviates right 30°
1.80	FN	Finish Node at CWG1

Hydraulic Pressure Test	From	To	Result	Comments
	CMH3	CWG1	PASS	

RUN	Start From :	CMH3	Finish at :	RWG3	Pipe Ø:	100mm
O	Invert Level (m):	1.2	Invert Level (m):	0.2	Material:	Cast Iron
STORM	Condition grade:	B	Direction:	Upstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH3
1.50	RFJ	Roots Fine at Joint 5% at 8 o'clock
2.60	OJM	Open Joint (medium)
5.70	RFJ	Roots Fine at Joint 5% at 8 o'clock
6.20	MC	Material of drain changes at this point to Plastic
6.40	FN	Finish Node at RWG2

Hydraulic Pressure Test	From	To	Result	Comments
	CMH3	RWG3	FAIL	

RUN	Start From :	CMH3	Finish at :	Downstream	Pipe Ø:	150mm
P	Invert Level (m):	1.2	Invert Level (m):	N/A	Material:	Liner
COMBINED	Condition grade:	A	Direction:	Downstream	Responsibility:	Home Owner

Distance	*Code*	*Remarks*
0.00	SN	Start Node from CMH3
16.00	FN	Finish Node - Beyond Area of Concern

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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: CMH1 Upstream to FMH1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: Structural Damage - 2x cracks at 2.3 & 2.8m
Recommended Repair:

1. To prepare the drain line and insert 1x resin patch liner to cover both defects.

Drain Run B: CMH1 Upstream to RWG1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run C: CMH1 Upstream
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: Partial blockage - line possibly disused beyond RWG2 junction
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run D: RUN C Junction Upstream to RWG2
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: FAIL
CCTV Survey Result: Structural Damage - Large open joint at 0.4m near gully trap
Recommended Repair:

2. To excavate and replace existing gully including 1m of adjacent pipe work to the junction to RUN E as this falls within close proximity of the gully.

Drain Run E: RUN D Junction Upstream to FWG1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run F: CMH1 Upstream to ACO Outlet
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: FAIL
CCTV Survey Result: Structural Damage - Hole and crack in the pipe at 0.8m
Recommended Repair:

3. To carry out an isolated excavation of the pipe between the ACO and the Manhole and connect to the manhole for completion.

Drain Run G: CMH2 Upstream to CMH1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run H: CMH2 Upstream to Shower
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run I: CMH2 Upstream to SVP1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to Test
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run J: CMH2 Upstream to Possibly Disused Gully
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: Structural Damage - Open Joint at 0.6m
Recommended Repair:

4. To prepare the drain line and insert 1x resin patch liner to cover defect at 0.6m.

Drain Run K: CMH2 Upstream to FWG2
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run L: CMH2 Downstream to CMH3
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run M: CMH3 Upstream to SVP2
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run N: CMH3 Upstream to CWG1
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: PASS
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

Drain Run O: CMH3 Upstream to RWG3
Pipe Diameter: 100mm
Responsibility: Home Owner
Hydraulic Pressure Test: FAIL
CCTV Survey Result: Structural Damage - Various defects throughout
Recommended Repair:

5. To excavate and replace existing gully including 1m of adjacent pipe work to allow access into the drain line.
5. To prepare the drain line and insert 5m of structural liner to cover defects reported underneath the steps to CMH3.

NOTE: There is a posibility that the liner may not bond to the interior of the cast iron pipe and would therefore have to carry out an alternative method of repair, however it should be possible as we will be lining from point to point. Operatives are to take care entering the light well.

Drain Run P: CMH3 Downstream
Pipe Diameter: 150mm
Responsibility: Home Owner
Hydraulic Pressure Test: Unable to test
CCTV Survey Result: No Structural Damage
Recommended Repair: No repairs have been recommended as the drain line was found to be free from defects.

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

Water Main Test	From	To	Result	Notes
	ESV	Outside Tap	**PASS**	No drop in 20 minutes from 3.1 bar

Address: 96 Haverstock Hill, Lower Belsize Park, London, NW3 2BD

1. Rear of the property.

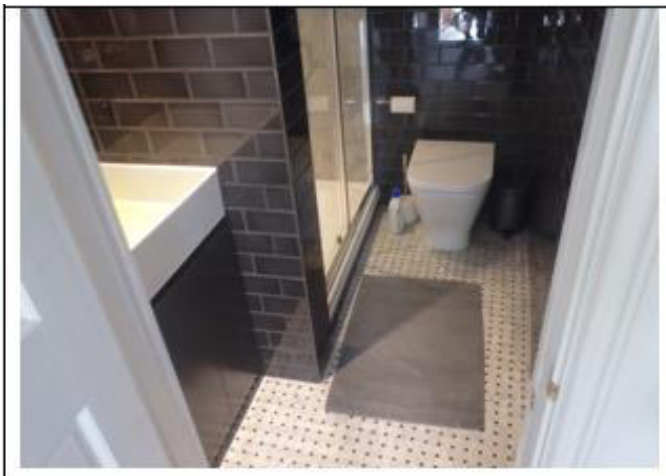
2. RWG2.

3. FWG1/Mains water pressure test.

4. CMH1.

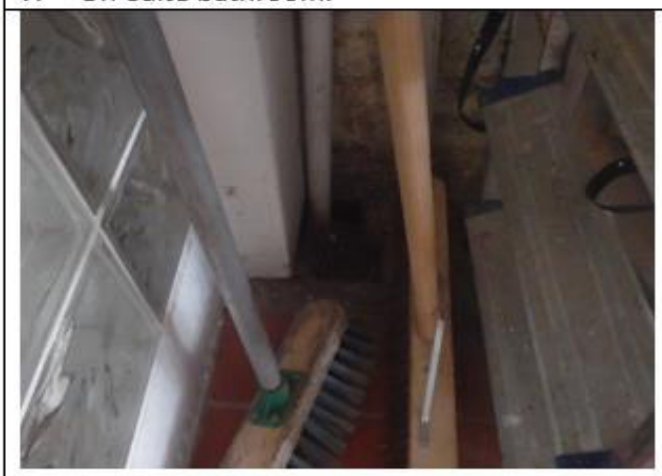
5. Mains water pressure test.

6. CMH2.



7. On-suite bathroom.

8. Main bathroom.



9. FWG2.

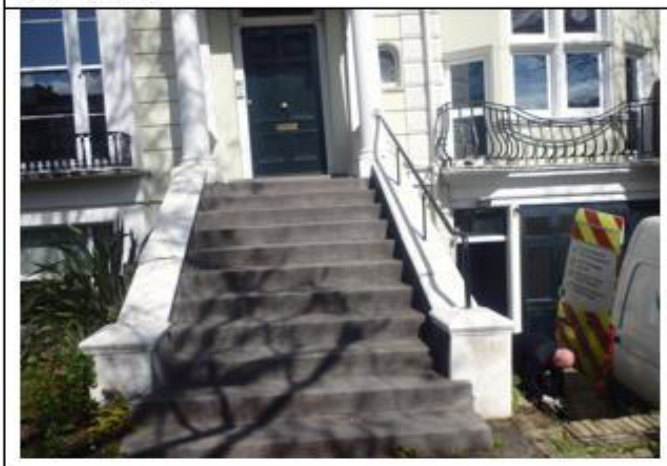
10. Hydraulic testing.

11. Hydraulic testing.

12. Hydraulic testing.

13. CWG1.

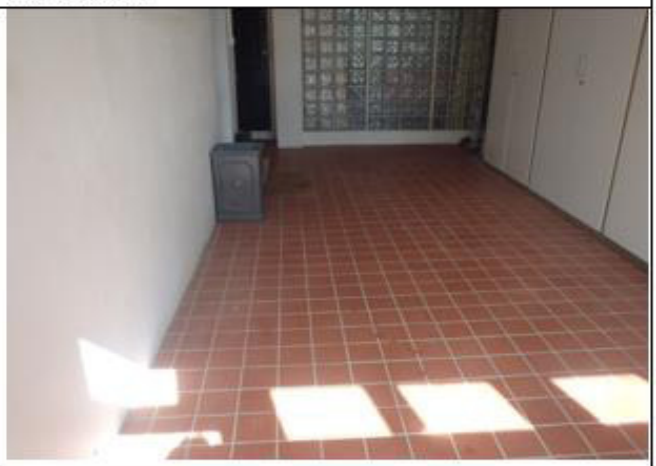
14. RWG3/Aco drain.



15. Front of the property.

16. CMH3.

17. Front surface area.



18. Surface area in the garage.

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Quote

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RUN / LOCATION: SET-UP FEE

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 A

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1180	Patch Lining. Up to 2 m x 100mm	nr	£290.94	1.00	£290.94
				Total (Excl VAT)	£290.94

RUN / LOCATION: RUN D

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0010	Remove existing UPVC pipework in isolated lengths, refix with new 69mm UPVC pipework (incl. brackets).	nr	£14.25	1.00	£14.25
UK0015	Extra over for bends.	nr	£8.31	1.00	£8.31
UK0595	Gully, 225mm x 225mm. Remove existing and replace with new PVCu item. Bed, surround and backfill .	nr	£146.43	1.00	£146.43
UK0605	Excavate & remove isolated length. Replace in new 110mm PVCu. Bed, surround & backfill. n.e. 1000mm deep.	nr	£131.47	1.00	£131.47
UK0880	Short Radius Bend. Remove existing item and replace with new 110mm PVCu.	nr	£14.89	2.00	£29.78
UK1060	Extra over pipework for surrounding drain run in 100mm thick concrete.	m	£14.40	1.00	£14.40
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
UK8120300	Hardcore Filling to excavations over 250 mm average thick.	m	£35.35	1.00	£35.35
UK2050005	Disposal by hand excavated contaminated/saturated material off site.	m3	£45.30	1.00	£45.30
UK1045	Removal, set aside and reinstatement of concrete slab paving n.e 100mm thick.	m2	£24.61	1.00	£24.61
UK0890	Junction. Remove existing item and replace with new 110mm PVCu.	nr	£21.74	1.00	£21.74
				Total (Excl VAT)	£475.24

RUN / LOCATION: RUN F

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0605	Excavate & remove isolated length. Replace in new 110mm PVCu. Bed, surround & backfill. n.e. 1000mm deep.	nr	£131.47	1.00	£131.47
UK1080	Cut out & replace drainage channel including reforming manhole benching.	nr	£109.00	1.00	£109.00
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
UK8120300	Hardcore Filling to excavations over 250 mm average thick.	m	£35.35	1.00	£35.35
UK1045	Removal, set aside and reinstatement of concrete slab paving n.e 100mm thick.	m2	£24.61	1.00	£24.61
				Total (Excl VAT)	£304.01

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RUN / LOCATION: RUN J

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1180	Patch Lining. Up to 2 m x 100mm	nr	£290.94	1.00	£290.94
				Total (Excl VAT)	£290.94

RUN / LOCATION: RUN O

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0595	Gully, 225mm x 225mm. Remove existing and replace with new PVCu item. Bed, surround and backfill .	nr	£146.43	1.00	£146.43
UK0605	Excavate & remove isolated length. Replace in new 110mm PVCu. Bed, surround & backfill. n.e. 1000mm deep.	nr	£131.47	1.00	£131.47
UK0880	Short Radius Bend. Remove existing item and replace with new 110mm PVCu.	nr	£14.89	2.00	£29.78
UK1060	Extra over pipework for surrounding drain run in 100mm thick concrete.	m	£14.40	1.00	£14.40
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
UK8120300	Hardcore Filling to excavations over 250 mm average thick.	m	£35.35	1.00	£35.35
UK2050005	Disposal by hand excavated contaminated/saturated material off site.	m3	£45.30	1.00	£45.30
UK1045	Removal, set aside and reinstatement of concrete slab paving n.e 100mm thick.	m2	£24.61	1.00	£24.61
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
				Total (Excl VAT)	£874.61

REPAIR ESTIMATE TOTALS:

Run / Location		Amount (£)
SET-UP FEE		£148.44
RUN A		£290.94
RUN D		£475.24
RUN F		£304.01
RUN J		£290.94
RUN O		£874.61
	Total (Excl VAT)	£2,384.18

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