

## Drainage Investigation Report

### For Subsidence Management Services

**Risk Address:** Garden Flat/ Flat B, 7 Camden Terrace, London, NW1 9BP

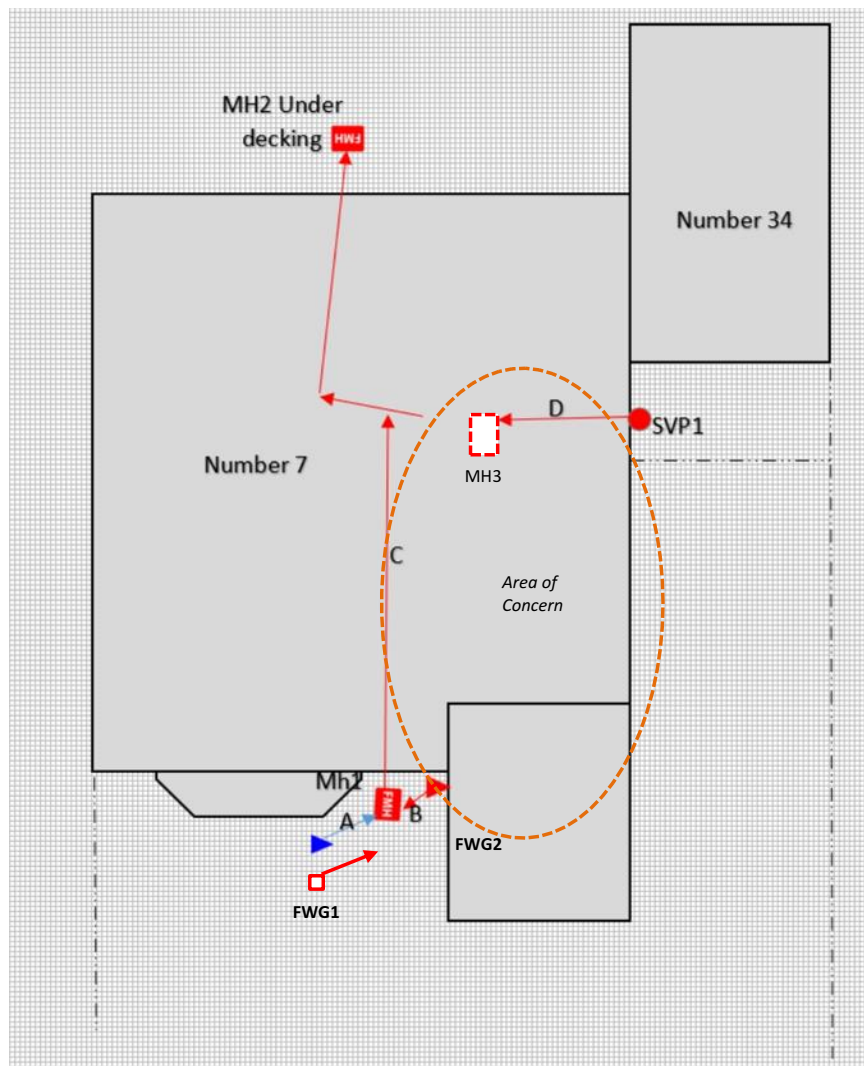
**Visit Date:** 4th October 2024

**Client Reference:** IFS-AVI-SUB-22-0102275

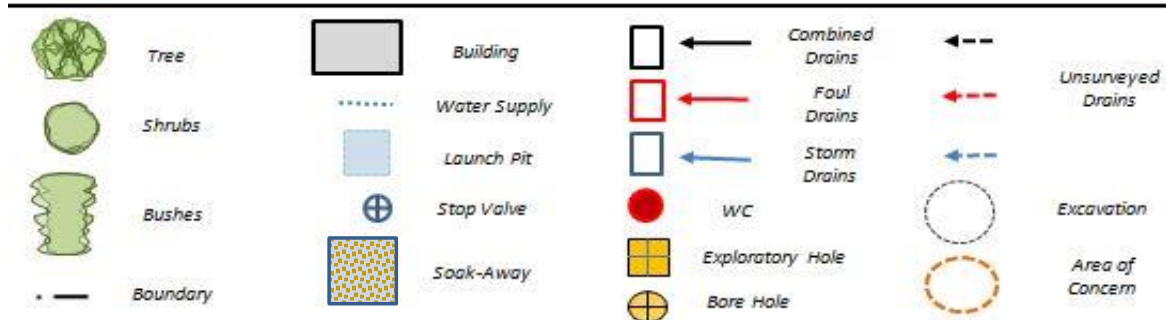
**Our Reference:** C79010 D27637

**Report Date:** 8th October 2024

**Report Content:** Front Page  
Site Plan  
CCTV Coding  
Drain Overview  
Photographs  
Further Report  
Quote



### Key



**Notes:**

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RUN	Start From :	MH1	Finish at :	FWG1	Pipe Ø:	100mm
A	Invert Level (m):	0.759	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Hydraulic Test - Fail				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.00	LL	Line of drain deviates left °				
0.19	JDM	Joint Displaced (Medium)				
0.96	JDM	Joint Displaced (Medium)				
1.06	FN	Finish Node at FWG1				
RUN	Start From :	MH1	Finish at :	FWG2	Pipe Ø:	100mm
B	Invert Level (m):	0.759	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner
Distance	Code	Hydraulic Test - Fail				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.09	JDM	Joint Displaced (Medium)				
0.48	CC	Crack Circumferential				
0.86	LU	Line of drain deviates up °				
1.44	FN	Finish Node at FWG2				
RUN	Start From :	MH1	Finish at :	BEYOND AOC	Pipe Ø:	100mm
C	Invert Level (m):	0.759	Invert Level (m):	N/a	Material:	Clay
COMBINED	Condition grade:	B	Direction:	Downstream	Responsibility:	Home Owner
Distance	Code	Hydraulic Test - Not Tested				
0.00	SN	Start Node from MH1				
0.00	WL	Water Level 0%				
0.48	CC	Crack Circumferential				
0.96	CM	Cracks Multiple				
2.20	CM	Cracks Multiple				
3.84	JDM	Joint Displaced (Medium)				
4.41	REM	Remark - Pipe joins another drain line via junction				
7.20	LR	Line of drain deviates right °				
9.52	REM	Remark - Drain enters MH2				
9.52	FN	Finish Node - Beyond Area of Concern				
RUN	Start From :	SVP	Finish at :	MH3	Pipe Ø:	100mm
D	Invert Level (m):	N/a	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	B	Direction:	Downstream	Responsibility:	Home Owner
Distance	Code	Hydraulic Test - Not Tested				
0.00	SN	Start Node from SVP				
0.00	WL	Water Level 0%				
1.58	LU	Line of drain deviates up 90° rest bend				
3.12	CM	Cracks Multiple				
4.40	REM	Remark - Drains enters MH3 Buried under floor				
4.42	FN	Finish Node at MH3 - Buried				

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Following the receipt 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.

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: MH1 Upstream to FWG1**

**Pipe Diameter:** 100mm

**Responsibility:** Home Owner

**Hydraulic Pressure Test:** Fail

**CCTV Survey Result:** Structural damage

**Recommended Repair:**

To excavate and replace existing gully including 1m of adjacent pipework  
Bed new pipe, compact, back fill and reinstate concrete

**Drain Run B: MH1 Upstream to FWG2**

**Pipe Diameter:** 100mm

**Responsibility:** Home Owner

**Hydraulic Pressure Test:** Fail

**CCTV Survey Result:** Structural damage

**Recommended Repair:**

To excavate and replace existing gully including 2m of adjacent pipework  
Bed new pipe, compact, back fill and reinstate concrete

**Drain Run C: 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:**

Prepare the drain and install 4m of structural liner downstream from MH1

**Drain Run D: SVP Downstream to MH3 (Buried)**

**Pipe Diameter:** 100mm

**Responsibility:** Home Owner

**Hydraulic Pressure Test:** Not Tested

**CCTV Survey Result:** Structural damage. Drain runs to a buried manhole

**Recommended Repair:**

Sonde and trace MH3 to locate (trace may reveal enablers are required to continue exposing MH3)

If accessible, expose MH3

Carry out further CCTV surveys and report findings

Prepare the drain and install 1x resin patch liner to seal defect at 3.12m

Water Main Test		Result	Notes
		PASS	No movement found on water meter

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Following your instruction we attended the property to complete the recommended repairs to the drains.

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

**Run A:** Engineers excavated FWG1 then installed x2 100mm patch liners to seal all pipework down to MH01. Due to the limited room. It was agreed by the office to seal the line with patches rather than change all pipework down to MH01 as the excavation was 700mm deep right outside the policyholders only access in and out of the property. Quote amended, no further work recommended.

**Run B:** Engineers excavated FWG2 and installed x1 100mm radius patch liner to seal all pipework down to MH01. Again as agreed by the office we chose to patch the line instead of excavating and changing all pipework due to the limited space and the excavation being outside the policyholders only way in and out of the property.

**Run C:** Completed to spec.

**Run D:** From MH01 engineers were able to navigate the camera through the pipework and into the buried MH03, from there we sonde and traced to locate. We found that MH03 was not within the property but within the front garden of number 34. After removing the stones covering the manhole cover we found MH03 to be 3M deep. The manhole cover was badly damaged. On closer inspection we found there to be x4 inlets within MH03 and an interceptor. We was unable to survey all lines within MH03 due to the depth. Also all steps within the manhole were broken. Due to the damage to the manhole cover we put barriers around it and informed the residence at number 34 to avoid going near the manhole until fixed. Patch liner not installed.

**Recommendations:**

To get man entry equipment to enter MH03 to conduct a further CCTV survey of all lines within the manhole and report all findings to the office for further works to complete on site while there. Also extensive picket cutting will be required to clear the line from the SVP down to MH03 due to heavy linescale. As shown in footage there is x4 serious fractures down from the SVP to MH03 that we can see and that's before we have removed all scale so could be more. There is water and electricity on site and the work will require two to three days and two men to complete these works due to the depth of manhole and picket works needed, the other inlets we are unsure which these are serving at present.

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**RUN / LOCATION: RUN A**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1120155	32/40mm waste pipes. Remove existing and replace with new PVC. Fixed to concrete.	m	£9.60	1.00	£9.60
UK1120165	32/40mm waste pipes. Shoes / bends.	nr	£10.81	2.00	£21.61
UK0595	Gully, 225mm x 225mm. Remove existing and replace with new PVC item. Red surround and	nr	£146.43	1.00	£146.43
UK1180	Patch Lining. Up to 0.6m x 100mm diameter	nr	£290.94	2.00	£581.88
UK0880	Short Radius Bend. Remove existing item and replace with new 110mm PVC.	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
UK1050	Removal, disposal and reinstatement of concrete path / hardstanding on 100mm thick	m2	£54.19	1.00	£54.19
Total (Excl VAT)					£942.13

**RUN / LOCATION: RUN B**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1120155	32/40mm waste pipes. Remove existing and replace with new PVC. Fixed to concrete.	m	£9.60	1.00	£9.60
UK1120165	32/40mm waste pipes. Shoes / bends.	nr	£10.81	2.00	£21.61
UK0595	Gully, 225mm x 225mm. Remove existing and replace with new PVC item. Red surround and	nr	£146.43	1.00	£146.43
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UK2050005	Disposal by hand excavated contaminated/saturated material off site	m3	£45.30	1.00	£45.30
UK1050	Removal, disposal and reinstatement of concrete path / hardstanding on 100mm thick	m2	£54.19	1.00	£54.19
Total (Excl VAT)					£641.59

**RUN / LOCATION: RUN C**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1133	Van pack HPWJ & CCTV in preparation of lining	nr	£148.44	1.00	£148.44
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. 2mm Wall	m	£55.52	1.00	£55.52
Total (Excl VAT)					£536.60

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RUN / LOCATION: **RUN D**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
	CCTV survey of underground drainage & report	nr	£165.00	1.00	£165.00
UK007	Excavate for access to survey. Reinstat on	nr	£60.00	1.00	£60.00
UK10051	Drain Tracing - Electronic, with report plotting	nr	£90.02	1.00	£90.02
Total (Excl VAT)					£315.03

## REPAIR ESTIMATE TOTALS:

Run / Location	Amount (£)
<b>RUN A</b>	£942.13
<b>RUN B</b>	£641.59
<b>RUN C</b>	£536.60
<b>RUN D</b>	£315.03
Total (Excl VAT)	<b>£2,435.35</b>

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**RUN / LOCATION: RUN D & FURTHER INVESTIGATIONS**

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
*	Picote	nr	£333.50	1.00	£333.50
UK10003	Daily rate for Breathing Apparatus and gas detection equipment	nr	£125.72	1.00	£125.72
	CCTV survey of underground drainage & report	nr	£165.00	1.00	£165.00
UK11000	Hourly Rate per operative - already on site -	hr	£42.42	16.00	£678.68
UK0525	High Pressure Water Jetting - up to 1 hour on site.	hr	£59.38	1.00	£59.38
UK0530	High Pressure Water Jetting - Additional 1/2 hours on site	1/2hr	£27.31	2.00	£54.63
				Total (Excl VAT)	£1,416.90

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