

Drainage Investigation Report

For Subsidence Management Services

Client Mr Michael Epstein,

Risk Address: 10 Nicholas Way, Northwood, HA6 2TS

Visit Date: 8th September 2022

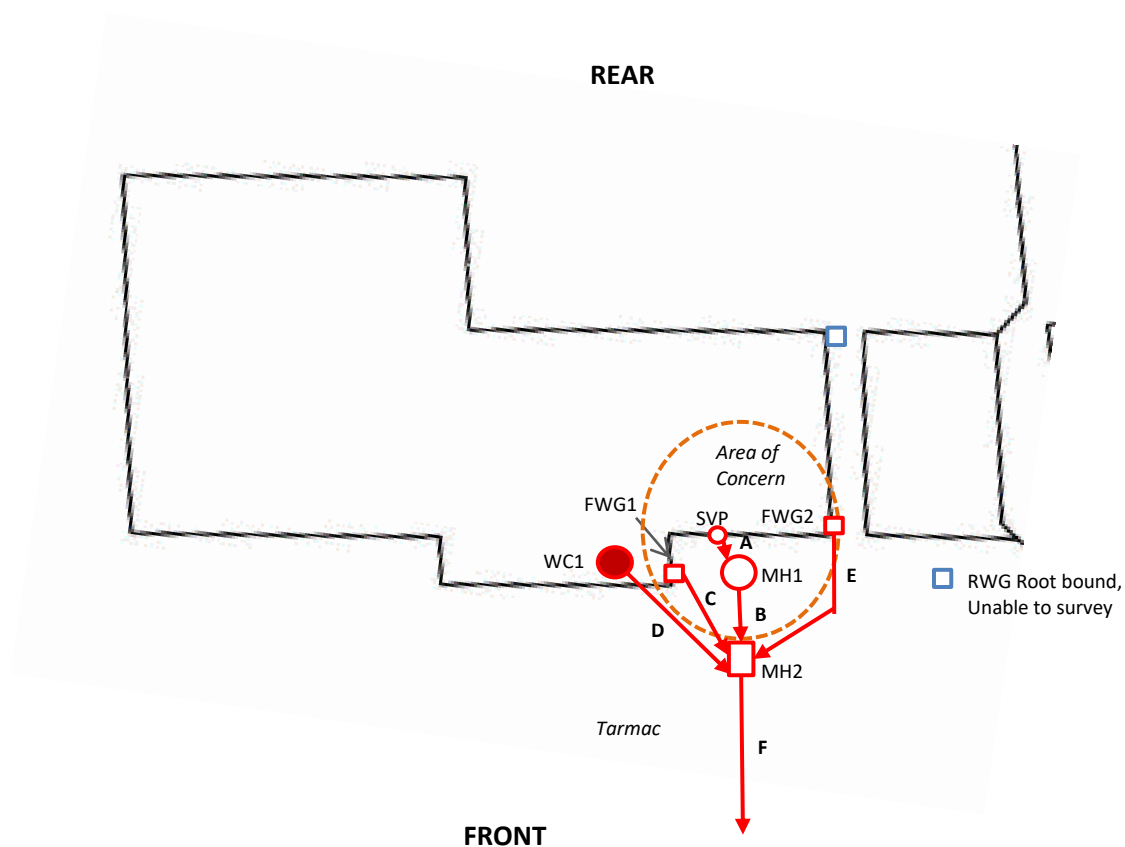
Client Reference: IFS-AVI-SUB-22-0101616

Our Reference: C65363 D22944



















Report Date: 8th September 2022

Report Content:

- Front Page
- Site Plan
- CCTV Coding
- Drain Overview
- Photographs
- Quote
- Further Report
- Quote



Key

	Tree		Building		Combined Drains		Unsurveyed Drains
	Shrubs		Water Supply		Foul Drains		Storm Drains
	Bushes		Launch Pit		WC		Excavation
	Boundary		Stop Valve		Exploratory Hole		Area of Concern
			Soak-Away		Bore Hole		

Notes:

Address:

10 Nicholas Way, Northwood, HA6 2TS

Classification: General

RUN	Start From :	MH2	Finish at :	WC	Pipe Ø:	100mm
D	Invert Level (m):	0.73	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Fail</i>				
0.00	SN	Start Node from MH2				
0.00	WL	Water Level 0%				
0.19	CC	Crack Circumferential				
0.19	R	Roots				
1.29	CC	Crack Circumferential				
1.29	R	Roots				
2.68	CC	Crack Circumferential				
3.16	R	Roots				
3.34	MC	Material of drain changes at this point to Plastic				
3.34	LL	Line of drain deviates left °				
4.03	LU	Line of drain deviates up °				
4.41	FN	Finish Node at WC				
RUN	Start From :	MH2	Finish at :	FWG2	Pipe Ø:	100mm
E	Invert Level (m):	0.73	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	C	Direction:	Upstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Fail</i>				
0.00	SN	Start Node from MH2				
0.00	WL	Water Level 0%				
0.57	CC	Crack Circumferential				
1.24	CC	Crack Circumferential				
3.16	OJM	Open Joint (medium)				
3.74	LL	Line of drain deviates left °				
5.08	CC	Crack Circumferential				
5.37	LU	Line of drain deviates up °				
5.85	CC	Crack Circumferential				
5.85	FN	Finish Node at FWG2				
RUN	Start From :	MH2	Finish at :	BEYOND AOC	Pipe Ø:	100mm
F	Invert Level (m):	0.73	Invert Level (m):	N/a	Material:	Clay
FOUL	Condition grade:	C	Direction:	Downstream	Responsibility:	Home Owner
<i>Distance</i>	<i>Code</i>	<i>Hydraulic Test - Fail</i>				
0.00	SN	Start Node from MH2				
0.00	WL	Water Level 0%				
0.09	CC	Crack Circumferential				
0.86	CC	Crack Circumferential				
1.24	CC	Crack Circumferential				
2.88	FN	Finish Node - Beyond Area of Concern				

Address:

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Classification: General

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.

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: MH1 U/S TO SVP

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Not Tested

CCTV Survey Result: Structural damage

Recommended Repair:

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

Drain Run B: MH1 D/S TO MH2

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Fail

CCTV Survey Result: Structural damage

Recommended Repair:

To prepare the drain line and insert 2m of structural liner to cover defects.

Drain Run C: MH2 U/S 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 3m of adjacent pipework
Bed new pipe, compact, backfill and reinstate tarmac

Drain Run D: MH2 U/S TO WC

Pipe Diameter: 100mm

Responsibility: Home Owner

Hydraulic Pressure Test: Fail

CCTV Survey Result: Structural damage

Recommended Repair:

To prepare the drain line using mechanical root cutting and insert 3m of structural liner to cover defects.

Drain Run E: MH2 U/S 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 1m of adjacent pipe work

To prepare the drain line and insert 5m of structural liner to cover defects to the manhole

Bed new pipe, compact, back fill and reinstate tarmac

Drain Run F: MH2 D/S TO BEYOND AREA OF CONCERN**Pipe Diameter:** 100mm**Responsibility:** Home Owner**Hydraulic Pressure Test:** Fail**CCTV Survey Result:** Structural damage**Recommended Repair:**

To prepare the drain line and insert 3m of structural liner to cover defects.

RWG1: Engineers were unable to survey the drain due to heavy root intrusion preventing access.**Recommended Repair:**

To excavate and replace existing gully including 1m of adjacent pipe work

To carry out a further look-see CCTV survey and report findings

Bed new pipe, compact, back fill and reinstate tarmac

Water Main Test	Result	Acoustic Test
	PASS	No noise could be heard which indicates that there is no leak







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 0.6m x 100mm	nr	£290.94	1.00	£290.94
UK0025	Protection Temporary works to floors, 1000 gauge polythene	m2	£1.79	2.00	£3.59
Total (Excl VAT)					£294.52

RUN / LOCATION: RUN B

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1135	Drain Lining - Initial Set-Up Fee (0-3.0m)	nr	£332.64	1.00	£332.64
UK0025	Protection Temporary works to floors, 1000 gauge polythene	m2	£1.79	2.00	£3.59
Total (Excl VAT)					£336.23

RUN / LOCATION: RUN C

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1120155	32/40mm waste pipes. Remove existing and replace with new PVCu. Fixed to manholes	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 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 to 1000mm	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
UK0825	Excavate & remove pipework. Replace with new 110mm PVCu. Bed, surround & backfill to 1000mm	m	£81.39	2.00	£162.78
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 depth	m	£35.35	3.00	£106.06
UK2050005	Disposal by hand excavated contaminated/saturated material off site	m3	£45.30	2.00	£90.61
UK1055	Removal, disposal and reinstatement of tarmac path / hardstanding to 100mm thick	m2	£47.90	3.00	£143.71
Total (Excl VAT)					£845.63

RUN / LOCATION: RUN D

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 2mm Wall	m	£55.52	3.00	£166.55
UK0561	Mechanical Root Cutting	m	£4.35	3.00	£13.04
Total (Excl VAT)					£179.59

Address:

10 Nicholas Way, Northwood, HA6 2TS

Classification: General

RUN / LOCATION: RUN E

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1120155	32/40mm waste pipes. Remove existing and replace with new PVCu. Fixed to masonry.	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 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 to c. 1000mm.	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
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 3mm Wall.	m	£55.52	5.00	£277.58
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
UK1055	Removal, disposal and reinstatement of tarmac path / hardstanding c. 100mm thick.	m2	£47.90	1.00	£47.90
Total (Excl VAT)					£748.61

RUN / LOCATION: RUN D

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK1140	Drain Lining - 100mm. Install Structural liner into existing 100mm underground drain. 3mm Wall.	m	£55.52	3.00	£166.55
UK0025	Protection Temporary works to floors, 1000 gauge polythene.	m2	£1.79	2.00	£3.59
Total (Excl VAT)					£170.13

RUN / LOCATION: RWG1

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0010	Remove existing UPVC pipework in isolated lengths, replace with new 60mm 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 to c. 1000mm.	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
UK1055	Removal, disposal and reinstatement of tarmac path / hardstanding c. 100mm thick.	m2	£47.90	1.00	£47.90
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
	CCTV survey of underground drainage & report (where undertaken as part of other drainage works).	nr	£165.00	1.00	£165.00
Total (Excl VAT)					£627.39

REPAIR ESTIMATE TOTALS:

Run / Location		Amount (£)
Set Up Fee		£148.44
RUN A		£294.52
RUN B		£336.23
RUN C		£845.63
RUN D		£179.59
RUN E		£748.61
RUN F		£170.13
RWG1		£627.39
Total (Excl VAT)		£3,350.54

Address:

10 Nicholas Way, Northwood, HA6 2TS

Classification: General

Following your instruction we attended site to complete the recommended repairs and further investigations.

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 - F: All completed to spec. No further work required.

RWG – COMPLETED TO SPEC (YES)

After excavating gully we found the pipework to be full of roots. We would recommend to excavate and replace up to 3m of pipework to soakaway/out of area of concern, after works are complete enabling contractors will be required to reinstate tarmac around gully and trench with hot lay

RUN / LOCATION: RWG - Further work

Repair Item	Description	Unit	Rate (£)	Quantity	Amount (£)
UK0010	Remove existing UPVC pipework in isolated lengths, refix with new 60mm 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 s.o. 1000mm.	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
UK1055	Removal, disposal and reinstatement of tarmac path / hardstanding s.o. 100mm thick.	m2	£47.90	1.00	£47.90
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	3.00	£106.06
UK2050005	Disposal by hand excavated contaminated/saturated material off site.	m3	£45.30	3.00	£135.91
UK0825	Excavate & remove pipework. Replace with new 110mm PVCu. Bed, surround & backfill s.o. 1000mm.	m	£81.39	2.00	£162.78
				Total (Excl VAT)	£786.48

Address: