

Technical Note 3

Project Name:	Fraser House
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Distributed to:	Client, Architect & Planning Consultant
Originated by:	Mark Saville MEng (Hons)
Client:	ARE Assets
Content:	Sustainable Urban Drainage Strategy

1 Overview

This technical note has been prepared to provide an overview of the assessment of the site for the use of SuDS within the proposed development works at Fraser House. This technical note should be read in conjunction with the Outline Structural Engineering Proposals report, LM21346-DYSE-XX-ZZ-RP-S-0002.

2 Use of SuDS

The SuDS philosophy for any development site is the promotion of prevention, source control (if possible) and site control techniques. The use of SuDS is not applicable on all sites and should be assessed for each site.

The following design philosophy is typically followed:

- Restrict, where possible, all development run off.
- Source control by the use of permeable paving and infiltration trenches where possible are to be included.
- Site control features in the form of below ground attenuation. Swales, ponds and wet/dry basins to retain excess surface water runoff will also be required. These are to be incorporated into the landscaping design.
- Aim to limit, where possible, the impermeable fraction of the development.
- Encouragement of prevention measures such as water butts and rainwater harvesting.

2.1 Site assessment for discharge

New developments are currently required to utilise sustainable urban drainage systems (SuDS) to manage surface water runoff. Options for managing surface water are considered below in order of preference until a viable solution is found.

1. **into the ground (infiltration);** As the existing building occupies the entire site, there is no viable option to utilise infiltration to discharge surface water. **Infiltration is not a suitable means of discharging surface water.**
2. **to a surface water body;** There are no surface water bodies within the vicinity of the site. **Discharge to a surface water body is not a viable means of discharging surface water.**
3. **to a surface water sewer;** There is no surface water sewer within close proximity to the site. **Discharge to a surface water sewer is not a viable means of discharging surface water sewer.**
4. **to another drainage system;** No alternative drainage systems or highway carrier drains are available for use at the development site. **Discharge to another drainage system is not a viable means of discharging surface water.**
5. **to a combined sewer;** An existing combined sewer runs along Reyner Street where the current surface water from the site discharges to. **Discharge to a combined sewer is a viable means of discharging surface water.**

Given the constraints of the site, it would not be reasonably viable to provide SuDS in the context of this project as outlined above.

3 Below ground drainage

The statutory undertaker for the area is United Utilities (UU). It is anticipated that foul water is routed via a private drainage network to a combined sewer within the adjacent highway to the rear of the building in Reyner Street. Surface water also currently discharges into this system.

3.1 Surface water

The change of use of the existing building will not change the hard surface area which is currently drained. As such, providing the existing gullies, downpipes and drains are in good working order, no changes to the surface water below ground drainage is envisaged. However, it is noted that some of the drainage is in poor condition and for a building of this age we would anticipate repair to and/or replacement of some of the existing below ground drainage will be required. A CCTV condition survey has been undertaken to identify defects within the system. These defects should be repaired as part of the proposed development works.

3.2 Foul water

The proposed change of use will increase the number of bathrooms within the building significantly. However, subject to detailed assessment, it is likely that owing to the previous

use, the foul drainage network has previously been subjected to similar discharges to the proposed use. As such providing the existing below ground drainage outlet to the sewerage undertakers network is in good working order, no changes to the foul below ground drainage network are envisaged.

Given the age of the existing building we would anticipate the existing below ground drainage may not be in good working order. A CCTV condition survey has been undertaken to identify the location and arrangement of the system as well as identify defects to be repaired as part of the proposed works.

A new network of above ground, underslung, foul drainage will be required. This will route drainage to the rear of the building and into the existing drainage connection.

Appendix A - CCTV Drainage survey results

CCTV Drainage Survey

DYSE
Fraser House
Manchester

CCTV DRAINAGE SURVEY REPORT





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DYSE FRASER HOUSDE		26/11/2022

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Project Information

Project Name
DYSE FRASER HOUSDE

Project Number

Project Date
26/11/2022

Client

Company: DYSE
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Department: Senior Engineer
Street: First Floor, 79 Thomas Street
Town or City: Manchester
Post Code: M4 1LQ
Phone: 0161 278 9072
Mobile: 07868 347 240
Email: mark.saville@dyse.com

Site

Contact: Mark Saville
Street: Fraser House
Town or City: Manchester

Contractor

Company: Sewer Surveys UK Ltd
Contact: Andrew Froggatt/ Simon Bennett
Department: Directors
Street: 14B Orgreave Close
Town or City: Sheffield
Post Code: S13 9NP
Phone: 0114 251 3481
Mobile: 07837 768649/07808 220160
Email: info@sewersurveysuk.co.uk



Section Inspection - 09/11/2022 - RE 1X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
1	1	09/11/22	10:32	DYSE	No Rain Or Snow	No	RE 1X
Operator KB		Vehicle YR15THK		Camera Prod	Preset Length Not Specified	Criticality Grade Category C	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	RE 1
Road:	Charlotte Street	Inspected Length:	6.03 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	6.03 m	Downstream Node:	MAIN
Surface Type:		Joint Length:	1.20 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition		Lining Material:	No Lining	

Comments:	
Recommendations:	

Scale:	1:53	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m RE 1 0.00 0.01 0.01 0.01 5.32 6.03 MAIN Depth: m							
		0.00	RE	Start node, rodding eye, reference: RE 1	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.01	JN	Junction at 3 o'clock, diameter: 100mm	00:00:03		
		0.01	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:06		2
		5.32	DES	Settled deposits, fine, 10% cross-sectional area loss	00:00:38	RE 1X_529fea-f0-5f7e-49	3
		6.03	BRF	Finish node, major connection without manhole, reference: MAIN	00:00:44		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	2	2.0	0.6	3.0	3.0



Section Pictures - 09/11/2022 - RE 1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Downstream	RE 1X	DYSE	22/674



RE

1X_529feaf0-5f7e-4972-b3bc-b78d09d2556a_20221126_1034
53_712.jpg, 00:00:38, 5.32 m

Settled deposits, fine, 10% cross-sectional area loss



Section Inspection - 09/11/2022 - NODE 1X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
2	1	09/11/22	10:37	DYSE	No Rain Or Snow	No	NODE 1X
Operator		Vehicle		Camera	Preset Length	Criticality Grade	Alternative ID
KB		YR15THK		Prod	Not Specified	Category C	Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	NODE 1
Road:	Charlotte Street	Inspected Length:	6.03 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	6.03 m	Downstream Node:	RE 1
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition		Lining Material:	No Lining	

Comments:

Recommendations:

Scale:	1:53	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m RE 1 0.00 0.01 0.01 3.66 4.85 6.03 6.03 NODE 1 Depth: m							
		0.00	RE	Start node, rodding eye, reference: RE 1	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.01	S01	DES Settled deposits, fine, 10% cross-sectional area loss, start	00:00:03		
		3.66	JN	Junction at 3 o'clock, diameter: 100mm	00:00:33		
		4.85	JN	Junction at 9 o'clock, diameter: 100mm	00:00:42		
		6.03	F01	DES Settled deposits, fine, 10% cross-sectional area loss, finish	00:00:53		3
		6.03	BRF	Finish node, major connection without manhole, reference: NODE 1	00:00:53		

Construction Features

Structural Defects

Miscellaneous Features

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	2.3	14.0	3.0



Section Inspection - 09/11/2022 - NODE 2X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
3	1	09/11/22	10:43	DYSE	No Rain Or Snow	No	NODE 2X
Operator		Vehicle		Camera	Preset Length	Criticality Grade	Alternative ID
KB		YR15THK		Prod	Not Specified	Category C	Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	NODE 2
Road:	Charlotte Street	Inspected Length:	3.20 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	3.20 m	Downstream Node:	RE 2
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition		Lining Material:	No Lining	

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m RE 2							
		0.00	RE	Start node, rodding eye, reference: RE 2	00:00:00		
		0.02	WL	Water level, 5% of the vertical dimension			
		0.60	MCCI	Material changes to cast iron	00:00:18		
		0.60	SR	Sealing ring intruding, intruding but not hanging at 1 o'clock	00:00:18		2
		2.49	LU	Line deviates up	00:00:29		
		3.20	OCF	Finish node, other special chamber, reference: NODE 2: SVP	00:00:38		
NODE 2 Depth: m							

Construction Features

Structural Defects

Miscellaneous Features

Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	1.0	0.3	1.0	2.0



Section Inspection - 09/11/2022 - RE 2X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
4	1	09/11/22	10:46	DYSE	No Rain Or Snow	No	RE 2X
Operator		Vehicle		Camera	Preset Length	Criticality Grade	Alternative ID
KB		YR15THK		Prod	Not Specified	Category C	Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	RE 2
Road:	Charlotte Street	Inspected Length:	4.85 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	4.85 m	Downstream Node:	MAIN
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m RE 2 0.00 0.01 0.60 2.02 4.85 4.85 RE WL MCCI CN LD BRF Start node, rodding eye, reference: RE 2 Water level, 5% of the vertical dimension Material changes to cast iron Connection other than junction at 9 o'clock, diameter: 100mm Line deviates down Finish node, major connection without manhole, reference: MAIN 00:00:00 00:00:22 00:00:39 00:01:03 00:01:03							

Construction Features
Structural Defects
Miscellaneous Features
Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Inspection - 09/11/2022 - MH 01X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
5	1	09/11/22	11:36	DYSE	No Rain Or Snow	No	MH 01X
Operator		Vehicle		Camera	Preset Length	Criticality Grade	Alternative ID
KB		YR15THK		Prod	Not Specified	Category C	Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH 01
Road:	Charlotte Street	Inspected Length:	1.07 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	1.07 m	Downstream Node:	MAIN
Surface Type:		Joint Length:	1.20 m	Downstream Pipe Depth:	
Use:	Combined	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	150 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:	
Recommendations:	

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
		0.00	MH	Start node, manhole, reference: MH 01	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.01	B	Broken pipe from 2 o'clock to 6 o'clock	00:00:05	MH 01X_9495520f-13f5-	4
		1.07	B	Broken pipe from 12 o'clock to 12 o'clock	00:00:47	MH 01X_801bd1fc-71e2-	4
		1.07	BRF	Finish node, major connection without manhole, reference: MAIN	00:00:47		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	80.0	16000.0	160.0	4.0	0	0.0	0.0	0.0	1.0



Section Pictures - 09/11/2022 - MH 01X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Downstream	MH 01X	DYSE	22/674



MH
01X_9495520f-13f5-4970-9f07-6edb2390ad7b_20221126_10
5153_408.jpg, 00:00:05, 0.01 m
Broken pipe from 2 o'clock to 6 o'clock



MH
01X_801bd1fc-71e2-480f-a4d8-c5f6b2f04110_20221126_105
307_415.jpg, 00:00:47, 1.07 m
Broken pipe from 12 o'clock to 12 o'clock



Section Inspection - 09/11/2022 - MH 02X

Item No. 6	Insp. No. 1	Date 09/11/22	Time 11:41	Client's Job Ref DYSE	Weather No Rain Or Snow	Pre Cleaned No	PLR MH 02X
Operator KB		Vehicle YR15THK		Camera Prod	Preset Length Not Specified	Criticality Grade Category C	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Downstream	Upstream Node:	MH 02
Road:	Charlotte Street	Inspected Length:	0.36 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	0.36 m	Downstream Node:	MAIN
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Combined	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	150 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:	
Recommendations:	

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: m							
MH 02		0.00	MH	Start node, manhole, reference: MH 02	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.01	REM	General remark: TRAP	00:00:20		
		0.36	BRF	Finish node, major connection without manhole, reference: MAIN	00:01:01		
Depth: m							
MAIN							

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Inspection - 09/11/2022 - C PIPEX

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
7	1	09/11/22	11:42	DYSE	No Rain Or Snow	No	C PIPEX
Operator KB		Vehicle YR15THK		Camera Prod	Preset Length Not Specified	Criticality Grade Category C	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	C PIPE
Road:	Charlotte Street	Inspected Length:	0.83 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	0.83 m	Downstream Node:	MH 02
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:	
Recommendations:	

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
		0.00	MH	Start node, manhole, reference: MH 02	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.71	DES	Settled deposits, fine, 40% cross-sectional area loss	00:00:12		4
		0.83	SA	Survey abandoned: DEBRIS	00:00:22		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	5.0	6.0	5.0	5.0



Section Inspection - 09/11/2022 - A PIPEX

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
8	1	09/11/22	11:44	DYSE	No Rain Or Snow	No	A PIPEX
Operator KB		Vehicle YR15THK		Camera Prod	Preset Length Not Specified	Criticality Grade Category C	Alternative ID Not Specified

Town or Village:	Manchester	Inspection Direction:	Upstream	Upstream Node:	A PIPE
Road:	Charlotte Street	Inspected Length:	0.50 m	Upstream Pipe Depth:	
Location:	Property with buildings	Total Length:	0.50 m	Downstream Node:	MH 02
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:		Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:
Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
		0.00	MH	Start node, manhole, reference: MH 02	00:00:00		
		0.01	WL	Water level, 5% of the vertical dimension			
		0.01	DES	Settled deposits, fine, 70% cross-sectional area loss	00:00:01		4
		0.50	SA	Survey abandoned: DEBRIS	00:00:18	A PIPEX_64 e917a8-70	

Construction Features
Structural Defects
Miscellaneous Features
Service & Operational Observations

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	8.0	16.0	8.0	5.0



Section Pictures - 09/11/2022 - A PIPEX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
8	Upstream	A PIPEX	DYSE	22/674



A
PIPEX_64e917a8-7065-458f-a29d-cb9614f4c08a_20221126_
105820_790.jpg, 00:00:18, 0.50 m
Survey abandoned, DEBRIS



Section Profile

Project Name
DYSE FRASER HOUSDE**Project Number****Project Date**
26/11/2022

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Pipe Material	Total Length	Inspected Length
1	RE 1	MAIN	09/11/2022	CHARLOTTE STREET	Polyvinyl chloride	6.03 m	6.03 m
2	NODE 1	RE 1	09/11/2022	CHARLOTTE STREET	Polyvinyl chloride	6.03 m	6.03 m
3	NODE 2	RE 2	09/11/2022	CHARLOTTE STREET	Polyvinyl chloride	3.20 m	3.20 m
4	RE 2	MAIN	09/11/2022	CHARLOTTE STREET	Polyvinyl chloride	4.85 m	4.85 m
7	C PIPE	MH 02	09/11/2022	CHARLOTTE STREET	Vitrified clay pipe (i.e. all clayware)	0.83 m	0.83 m
8	A PIPE	MH 02	09/11/2022	CHARLOTTE STREET	Vitrified clay pipe (i.e. all clayware)	0.50 m	0.50 m

Total: 6 Inspections x Circular 100 mm = 21.44 m Total Length and 21.44 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Pipe Material	Total Length	Inspected Length
5	MH 01	MAIN	09/11/2022	CHARLOTTE STREET	Vitrified clay pipe (i.e. all clayware)	1.07 m	1.07 m
6	MH 02	MAIN	09/11/2022	CHARLOTTE STREET	Vitrified clay pipe (i.e. all clayware)	0.36 m	0.36 m

Total: 2 Inspections x Circular 150 mm = 1.43 m Total Length and 1.43 m Inspected Length**Total: 8 Inspections = 22.87 m Total Length and 22.87 m Inspected Length**



Scoring Summary

Project Name
DYSE FRASER HOUSDE

Project Number

Project Date
26/11/2022

Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
5	MH 01X	4	Multiple defects

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	RE 1X	3	Settled deposits, fine, 10% cross-sectional area loss
2	NODE 1X	3	Settled deposits, fine, 10% cross-sectional area loss, finish
7	C PIPEX	4	Settled deposits, fine, 40% cross-sectional area loss
8	A PIPEX	4	Settled deposits, fine, 70% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
7	C PIPEX	Survey abandoned
8	A PIPEX	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.

Job Number: Survey By: AF

Grid Ref: Node Number: MH01 Cover Level:

Location: RIGHT SIDE OF PROPERTY

Year Laid: ? Status: PR Function: CW Node Type: MH Survey Date:

Manufacturer: Grating: NO

COVER Shape: REC Hinged: N Lockable: N Duty: L Size: 620/470 Toxic atmos: N

SHAFT Side Entry: N Regulating Courses: 30 + Depth: 3.23M Size: 540/480 Vermin: Y

CHAMBER Soffit Type: N/A No. of Step Irons: 11 No. of Ladders: No. of Landings:

Size: ? Const'n Code: BR Depth of Flow: Depth of Silt: 200 H of S:

	Pipe	U/S D/S node Reference	Shape	Pipe Size			Backdrop Diameter	Pipe Material	Lining Material	Depth from Cover (M)	Invert Level (M)
INCOMING PIPES	A	FOUL DRAINAGE FROM SIDE OF BUILDING	C	100			100	CI		4.50	
	B	? Possibly RWPS	C	100				?		4.48	
	C										
	D										
	E										
	F										
OUTGOING PIPES	X									4.57	
	Y										

CONDITION INFORMATION Enter Y if attention required. Use Remarks to clarify

Cover	Y	Irons/Ladders		Shaft		Chamber		Benching		Other	
-------	---	---------------	--	-------	--	---------	--	----------	--	-------	--

Remarks: Cover broken Step irons poor
Chamber full of debris- requires cleaning



Job Number:

Survey By: AF

Grid Ref:

Node Number: MH02

Cover Level:

Location: RIGHT SIDE OF PROPERTY

Year Laid: ?

Status: PR

Function: CW

Node Type: MH

Survey Date:

Manufacturer:

Grating: NO

COVER

Shape: SQ

Hinged: N

Lockable: N

Duty: H

Size: 560/560

Toxic atmos: N

SHAFT

Side Entry: N

Regulating Courses: 30+

Depth: 2.96

Size: 550/450

Vermin: Y

CHAMBER

Soffit Type: N/A

No. of Step Irons: 9

No. of Ladders:

No. of Landings:

Size: ?

Const'n Code: BR

Depth of Flow:

Depth of Silt: 50

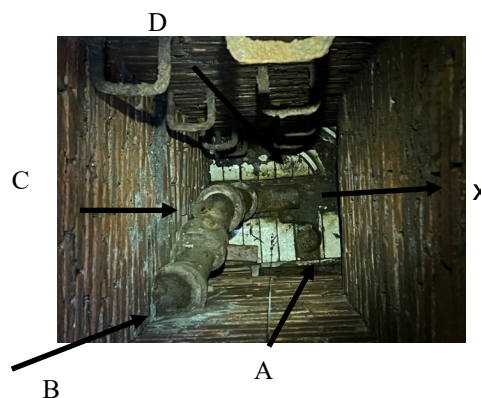
H of S:

	Pipe	U/S D/S node Reference	Shape	Pipe Size	Backdrop Diameter	Pipe Material	Lining Material	Depth from Cover (M)	Invert Level (M)
INCOMING PIPES	A	? Possibly RWPS	C	100		VC		4.54	
	B	BASE-MENT SUMP	C	100		CI		2.75	
	C	?	C	100		VC		4.54	
	D	?	C	100		VC		4.54	
	E								
	F								
OUTGOING PIPES	X	MAIN SEWER	C	150		VC		4.55	
	Y								

CONDITION INFORMATION Enter Y if attention required. Use Remarks to clarify

Cover	Irons/Ladders	Shaft	Chamber	Benching	Other
-------	---------------	-------	---------	----------	-------

Remarks: NO CONFINED SPACE ENTRY DUE TO ACCESS SPACE 350X450mm



Fraser House
Manchester

Photo 1, A number of external pipes located to the side of the building, ultimately end up in MH01 and MH02



Photo 2, A number of rainwater pipes have been exposed in the wall - assumed to discharge to MH02 and MH01



Fraser House
Manchester

Photo 3, All foul water drainage from upper floor levels is located on the external walls.



Photo 4, Drainage located in basement - RE1 and RE2 from the CCTV Drainage Survey

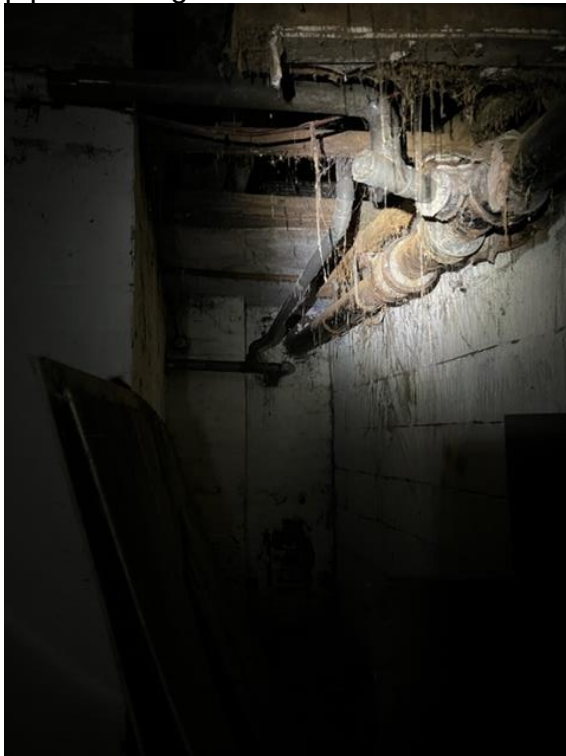


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Manchester

Photo 5, Drainage located in basement - RE2



Photo 6, Drainage located in basement - this picture shows the main outfall pipe heading towards MH01



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Manchester

Photo 7, Drainage pipes under the Lower Ground Floor - previously served the existing toilets



Photo 8, Picture shows the point where the basement sump connects to the main pipe leaving site



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Manchester

Photo 9, Public sewer manhole location



Photo 10, Rainwater pipe hoppers located on the top floor of the building, all discharge directly down to below ground drainage. No access points to rainwater pipes.



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Manchester

Photo 11, RE1 (rodding point 1) view heading up towards existing toilets



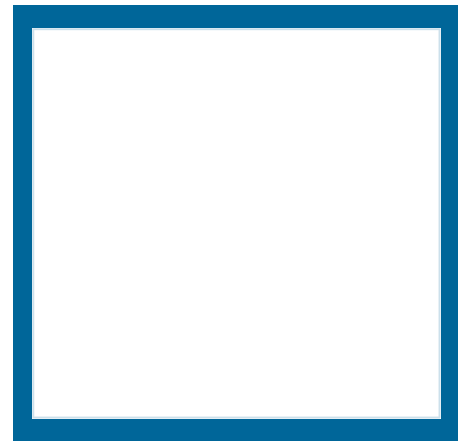
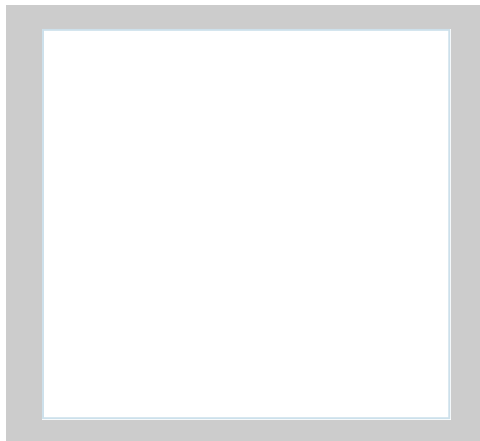
Photo 12, Sump pit located in basement - pumps out to MH2. Believed to be abandoned and disconnected.



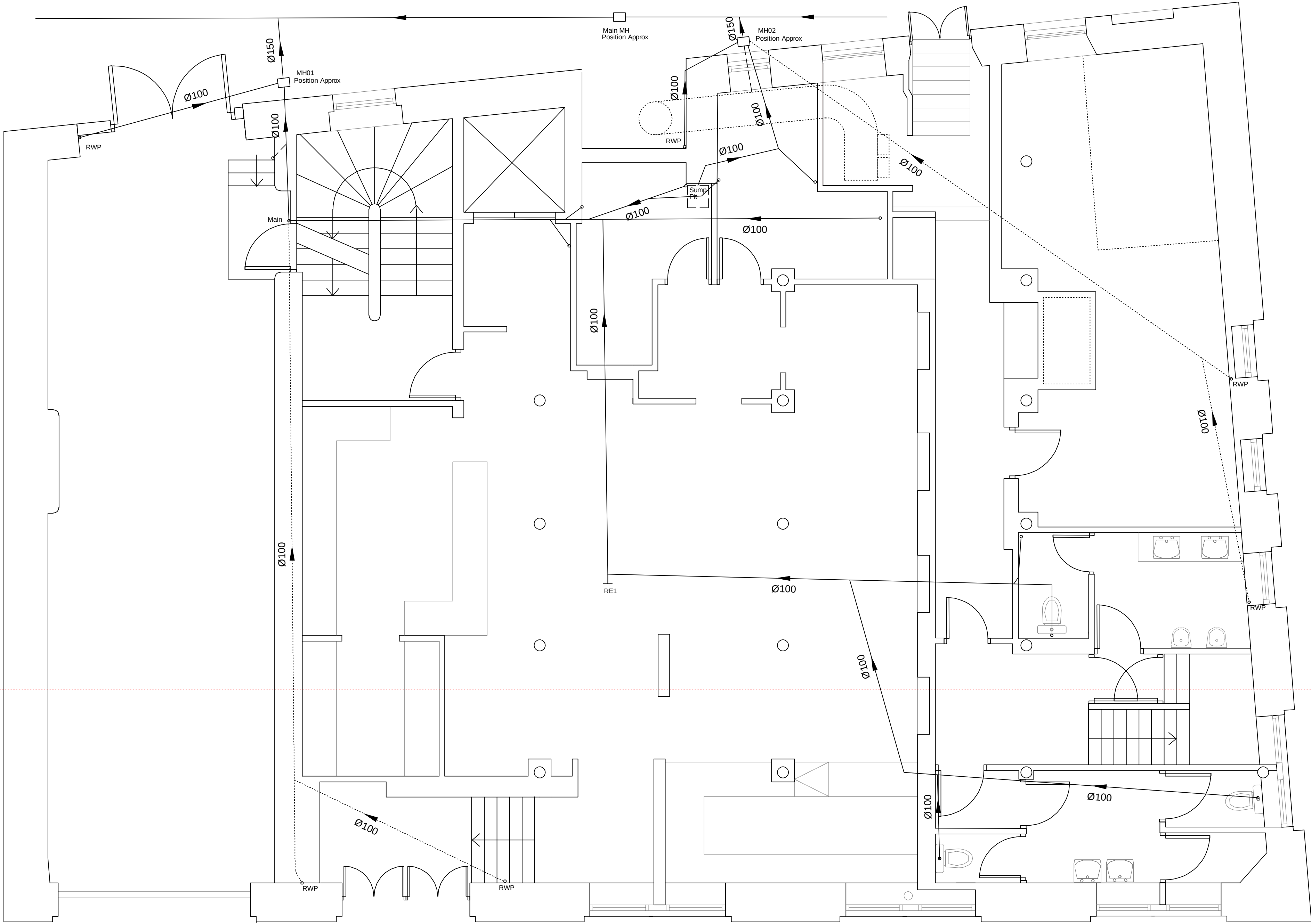
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Photo 13, View down public sewer manhole - depth of manhole is 5.18m





Fraser House
Existing Lower Gnd Floor



- Surface Water
Assumed Surface Water
Foul Water
Assumed Foul Water
Combined Water
Assumed Combined Water

ABBREVIATIONS

- B Sewer broken at this point
BJ Broken joint
CC Circumferential crack
CCJ Circumferential crack on joint
CIPR Cured in place repair
CIPP Cured in place pipe
CM Multiple cracks
CMJ Cracks multiple on joint
CN Connection
CUD Loss of vision (silt)
CUW Camera underwater
CUZ Loss of vision (Camera under water)
CW Combined water
CXD Connection defective
CXI Connection intruding
DC Diameter of pipe changes
DEC Settled desposits hard or compacted
DEE Encrustation scale light
DEEJ Encrustation light at joint
DEF Debris foulings
DER Debris rubble
DES Debris silt
DEX Othersettled deposits
DEZ Other attached deposits
FC Fracture circumferential
FCJ Fracture circumferential on joint
FL Fracture longitudinal
FM, FMJ Fracture multiple
FW Foul water
GY Gully
H Hole
HJ Hole at joint
HPWJ High pressure water jetting
IR Infiltration running
IS Infiltration seeping
JD Joint displaced medium
JN Junction
JXD Junction defective
LD Line down
LL Line left
LR Line right
LU Line up
NCA No camera access
MH Manhole
OJ Open joint medium
DBP Obstruction (external pipe or cable)
REM General observation at this point with explanation
RFJ Roots fine at joint
RMJ Roots mass at joint
RE Rodding eye
RT Root tap
SW Surface Water
SA Survey Abandoned
UTL Unable to locate
UTR Unable to raise
UTS Unable to survey
WL Water level
XP Collapse to pipe

Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference	
Designed by AB	Checked by AF	Approved by - date AB - 06/12/2022	Filename	Date 06/12/2022	Scale N.T.S.	
Sewer Surveys UK				Fraser House, 34 Charlotte St		
Manchester				Edition 0	Sheet 1/1	