



THINK OUTSIDE THE BLOCKS

18 November 2022
Manchester Council
Town and Country Planning

Dear Sir / Madam

Re: Application Number: 124265/FO/2019 – Vacant Land Bounded By Ashton Old Road, Lees Street And Stanley Street , Manchester- Condition 18

I am writing to seek discharge of Condition 18 related to the installation of the drainage on the scheme.

I can confirm that the drainage has been installed inline with the scheme design. Please see below design and supporting images of the attenuation tanks and hydrobrake with penstock. Additional information has also been provided in the form of a drainage survey for both the surface water and foul water showing all drainage lines, drainage maintenance and management plan.

Please let me know if you need any further information.

Kind Regards

Mike Watson
mike@watson-homes.co.uk
0161 241 8787



THINK OUTSIDE THE BLOCKS

Partial Geoplastic Tank System Section (NTS)
Approved 11/08/2019 by Watson Construction Limited
7359 - 01

NO.	REV.	DATE	BY	CHKD.
1	1	11/08/2019	W	A





**THINK
OUTSIDE
THE BLOCKS**



Drainage Report



Prepared For
Watson Homes
208-210 Great Clowes
Street Salford

Site
Aaron Williams
Lees Street
Manchester

M7 2ZS

M11 1WH

Foul Water



RETURNFLOW LTD
Surveyor: D Scallan
info@returnflow.co.uk
07547648371

Total Defects for Project



Total DRB Grades for Project



Lees Street Ashton Old Road Manchester - CCTV Survey Report : 04/10/22

Name : RETURNFLOW LTD
 Contact : Daniel Scallan, Mike Shea, William Thorne
 Location : 34 Market Street
 Town : Atherton
 Region : Manchester
 Postcode : M46 ODG
 Email : info@returnflow.co.uk
 Contact Number : 07547648371
 Surveyor : D Scallan
 Valid Certification No :

Client Information

Name : Watson Homes
 Contact : Jamie Brooke
 Location : 208-210 Great ClowesStreet
 Town : Salford
 Region :
 Postcode : M7 2ZS
 Tel : 0161 241 8787
 Mobile : 07701333314
 Email : j.brooke@watson-homes.co.uk
 Fax :

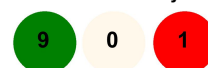
Site Information

Name : Aaron Williams
 Contact : Watson-Homes
 Location : Lees Street
 Town : Manchester
 Region :
 Postcode : M11 1WH
 Tel :
 Mobile :
 Email : A.Williams@watson-homes.co.uk
 Fax :

Total Defects for Project



Total DRB Grades for Project



Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recomendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, Including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

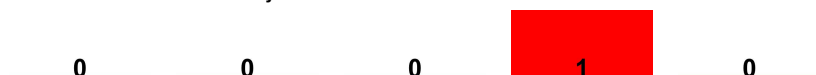
General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

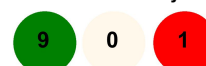
The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Total Defects for Project



Total DRB Grades for Project



Overview

Section: 1 From: FW01 To: FW02	Grade C	DRB Grade: C Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 2 From: FW02 To: FW07	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 3 From: FW04 To: FW05	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 4 From: FW04 To: UC01	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 5 From: UC01 To: FW03	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 6 From: FW05 To: UC02	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 7 From: FW08 To: C01	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Foul
Section: 8 From: FW08 To: FW07	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Foul

Section: 9 From: FW09 To: FW08	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Foul
Section: 10 From: C01 To: EXMH	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Foul

Total Defects for Project



Total DRB Grades for Project



Site: Lees Street , Manchester

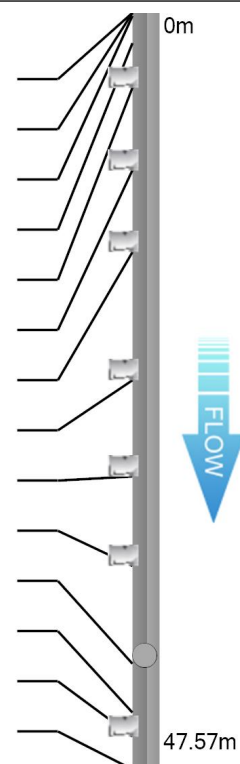
Section 1

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW01	Finish Node Ref: FW02	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

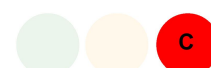
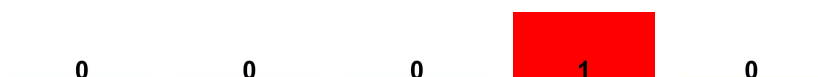
Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	47.57	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
00.19m	LRH	Line of drain/sewer deviates right [half]	0_2		0:00:03	
01.90m	H	Hole in drain/sewer 2	0_3		0:00:15	
04.70m	JN	Junction 03 : 100mm Diameter	0_4		0:00:36	
09.89m	JN	Junction 02 : 100mm Diameter	0_5		0:01:00	
15.04m	JN	Junction 02 : 100mm Diameter	0_6		0:01:31	
23.10m	JN	Junction 02 : 100mm Diameter	0_7		0:02:01	
29.15m	JN	Junction 02 : 100mm Diameter	0_8		0:02:25	
34.78m	JN	Junction 02 : 100mm Diameter	0_9		0:02:48	
40.93m	JN	Junction 12 : 100mm Diameter	0_10		0:03:15	
44.00m	WL	Water level 5%	0_11		0:03:30	
45.50m	JN	Junction 03 : 100mm Diameter	0_12		0:03:37	
47.57m	MHF	Finish node type, manhole				



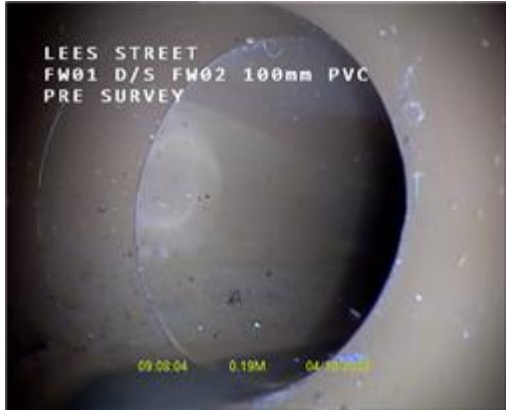
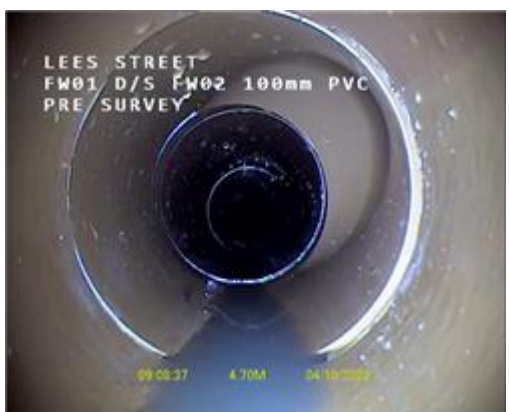
Total Defects for section

DRB Grade for Section

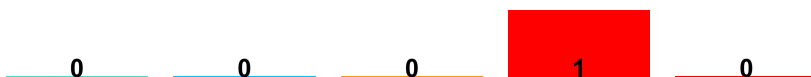


Descriptive Report with Remarks and Observation Images

Section 1

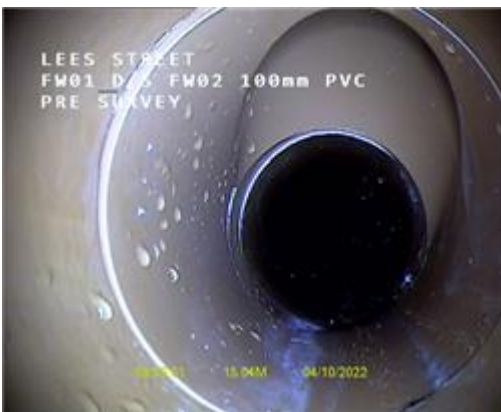
Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.19m	0:00:03	LRH	Line of drain/sewer deviates right [half]	Image Provided - Ref: 0_2 
01.90m	0:00:15	H	Hole in drain/sewer at 02 o'clock - Severity 4	Image Provided - Ref: 0_3 
04.70m	0:00:36	JN	Junction at 03 o'clock: 100mm Diameter	Image Provided - Ref: 0_4 

Total Defects for section

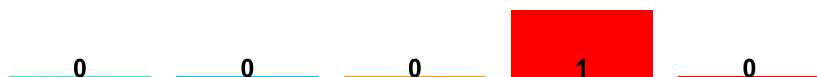


DRB Grade for Section



Pos	Video Ref	Code	Description	Image
09.89m	0:01:00	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 0_5 
15.04m	0:01:31	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 0_6 
23.10m	0:02:01	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 0_7 

Total Defects for section

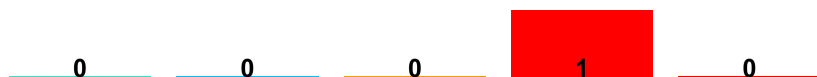


DRB Grade for Section



Pos	Video Ref	Code	Description	Image
29.15m	0:02:25	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 0_8
34.78m	0:02:48	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 0_9
40.93m	0:03:15	JN	Junction at 12 o'clock: 100mm Diameter	Image Provided - Ref: 0_10

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
44.00m	0:03:30	WL	Water level: 5% Height/Diameter	Image Provided - Ref: 0_11 
45.50m	0:03:37	JN	Junction at 03 o'clock: 100mm Diameter	Image Provided - Ref: 0_12 
47.57m		MHF	Finish node type, manhole FW02	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

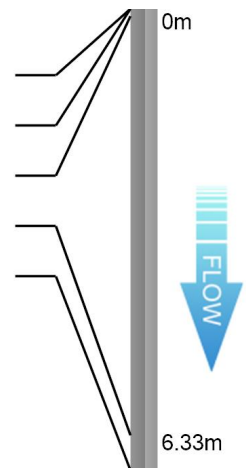
Section 2

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW02	Start Node Depth: 0.00	Finish Node Ref: FW07	Finish Node Depth: 0.00	Direction: D Use: F Material: PVC	Height/Dia: 100 Shape: C Cleaned: N
Start Node Coordinate:		Finish Node Coordinate:			

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.33	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
00.10m	LLH	Line of drain/sewer deviates left [half]		1_2	0:00:04	
05.85m	LRQ	Line of drain/sewer deviates right [quarter]		1_3	0:00:34	
06.33m	MHF	Finish node type, manhole				



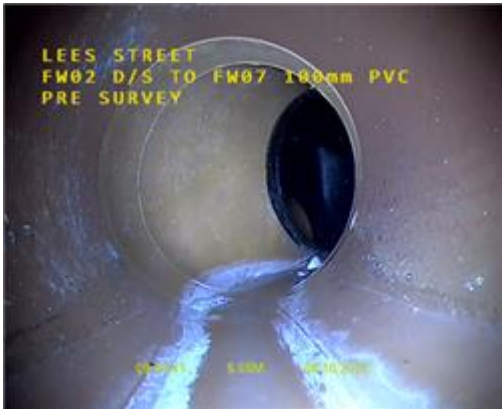
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.10m	0:00:04	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 1_2 
05.85m	0:00:34	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 1_3 
06.33m		MHF	Finish node type, manhole FW07	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

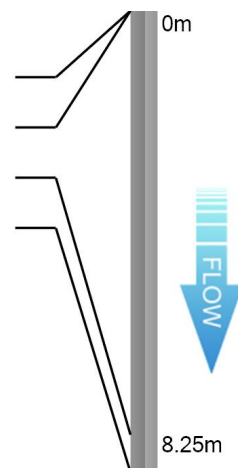
Section 3

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW04	Finish Node Ref: FW05	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.25	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
07.58m	LLQ	Line of drain/sewer deviates left [quarter]		2_2	0:00:22	
08.25m	MHF	Finish node type, manhole				



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW04	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
07.58m	0:00:22	LLQ	Line of drain/sewer deviates left [quarter]	Image Provided - Ref: 2_2 
08.25m		MHF	Finish node type, manhole FW05	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

Section 4

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW04	Finish Node Ref: UC01	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	3.45	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
03.45m	MHF	Finish node type, manhole				

Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW04	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
03.45m		MHF	Finish node type, manhole UC01	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

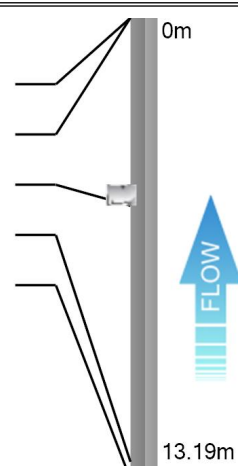
Section 5

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: UC01	Finish Node Ref: FW03	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	13.19	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
05.37m	JN	Junction 01 : 100mm Diameter	4_2		0:00:24	
12.69m	LRQ	Line of drain/sewer deviates right [quarter]	4_3		0:00:59	
13.19m	MHF	Finish node type, manhole				



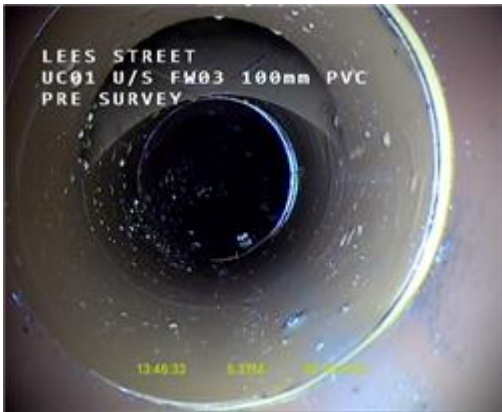
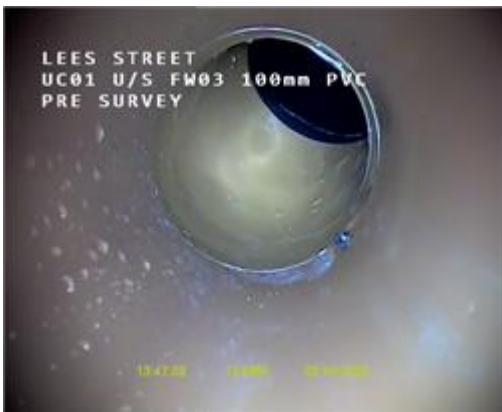
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 5

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole UC01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
05.37m	0:00:24	JN	Junction at 01 o'clock: 100mm Diameter	Image Provided - Ref: 4_2 
12.69m	0:00:59	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 4_3 
13.19m		MHF	Finish node type, manhole FW03	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

Section 6

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW05	Finish Node Ref: UC02	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.06	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
06.06m	MHF	Finish node type, manhole				

Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW05	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
06.06m		MHF	Finish node type, manhole UC02	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

Section 7

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW08	Finish Node Ref: C01	Direction: D	Height/Dia: 150		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.45	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
08.45m	MHF	Finish node type, manhole				

Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW08	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
08.45m		MHF	Finish node type, manhole C01	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

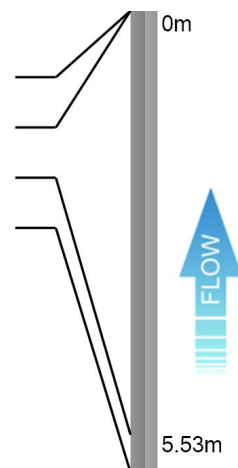
Section 8

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW08	Start Node Depth: 0.00	Finish Node Ref: FW07	Finish Node Depth: 0.00	Direction: U Use: F Material: PVC	Height/Dia: 150 Shape: C Cleaned: N
Start Node Coordinate:		Finish Node Coordinate:			

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	5.53	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
05.08m	LLQ	Line of drain/sewer deviates left [quarter]		7_2	0:00:21	
05.53m	MHF	Finish node type, manhole				



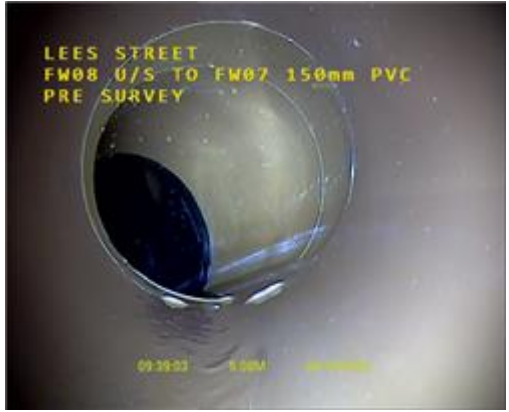
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW08	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
05.08m	0:00:21	LLQ	Line of drain/sewer deviates left [quarter]	Image Provided - Ref: 7_2 
05.53m		MHF	Finish node type, manhole FW07	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

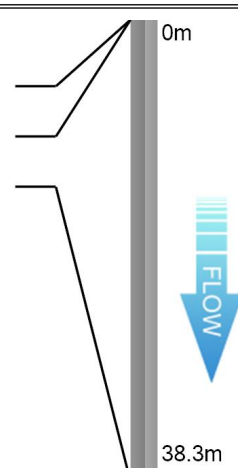
Section 9

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: FW09	Finish Node Ref: FW08	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	38.3	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
38.30m	MHF	Finish node type, manhole				



Total Defects for section

DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole FW09	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
38.30m		MHF	Finish node type, manhole FW08	

Total Defects for section



DRB Grade for Section



Site: Lees Street , Manchester

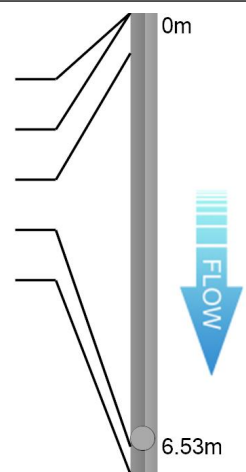
Section 10

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: D Scallan	Date: 04/10/2022
Start Node Ref: C01	Finish Node Ref: EXMH	Direction: D	Height/Dia: 150		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: F	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.53	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole				
00.00m	WL	Water level 0%			0:00:00	
00.57m	LLH	Line of drain/sewer deviates left [half]		9_2	0:00:06	
06.14m	JN	Junction 12 : 100mm Diameter		9_3	0:00:41	
06.53m	MHF	Finish node type, manhole				



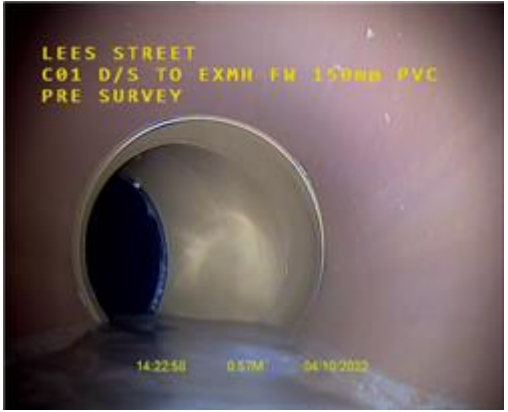
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole C01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.57m	0:00:06	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 9_2 
06.14m	0:00:41	JN	Junction at 12 o'clock: 100mm Diameter	Image Provided - Ref: 9_3 
06.53m		MHF	Finish node type, manhole EXMH	

Total Defects for section



DRB Grade for Section

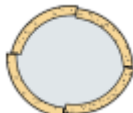


A guide to defects and other observations in drainage systems

More detailed information can be found in the National Standard (BS EN 13508-1:2003) and in the Manual of Sewer Condition Classification (MSCC) 5th Edition, written by the Water Research Centre (WRC).

Use	
Code	Description
C	Combined
F	Foul
S	Surface Water
T	Trade Effluent
W	Culverted Watercourse
Z	Other
Common Materials	
Code	Description
VC	Vitrified Clay
PVC	Polyvinyl Chloride
CO	Concrete
CI	Cast Iron
PF	Pitch Fibre
PE	Polyethylene
DI	Ductile Iron

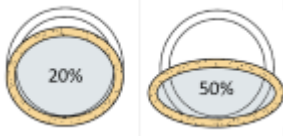
Start Node	Description	Finish Node
MH	Manhole	MHF
IC	Inspection Chamber	ICF
GY	Gulley	GYF
RE	Rodding Eye	REF
SK	Soakaway	SKF
BN	Buchan Trap	BNF
BR	Major Connection without Ref	BRF
CP	Catch Pit	CPF
OC	Other Special Chamber	OCF
OF	Outfall	OFF
OS	Oil Separator	OSF
WR	Major Connection without mh	WRF
LH	Lamphole	LHF

Code	Observation	Description	Attributes	
B	Broken	Pieces pipe have visibly moved	Defined by clock references. Associated with deformity in rigid pipe	
CC CL CM CR	Cracks	Cracks are break lines that are not visibly open	Defined by clock reference position/s. Longitudinal and radiating cracks attract only one clock reference	
CN	Connection	Lateral pipe has been connected after original construction	Described by clock reference position and diameter	

Total Defects for section

DRB Grade for Section



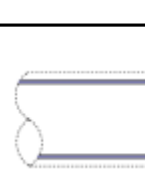
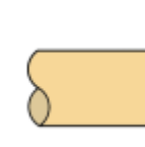
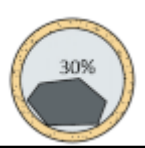
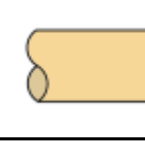
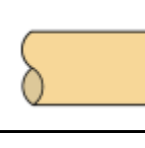
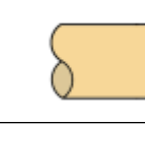
CX(I)	Defective Connection (Intruding)	Defective by intrusion or damage due to factors including: cracks, fractures, obstruction, position etc	Described by clock reference position and diameter (+ % intrusion)	
CU	Loss of Vision	Lens of camera is obscured by debris, water etc. Operator is unable to see drain clearly	'W' can be added if loss of vision is due to water	
D	Deformed	Pipe has lost its structure	Described by percentage loss of height or width. Recorded in 5% increments	
DEE	Deposits Encrustation	Eg. Attached scale deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DEG	Deposits Grease	Attached grease deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DER DES	Deposits Coarse/Fine	Settled deposits on the invert of the pipe.	Described by percentage loss of height or diameter. Recorded in 5% increments.	
FC FL FM FR	Fractures	Fractures are visibly open. Pieces of pipe have not moved	Defined by clock reference position/s. Longitudinal and radiating fractures attract only one clock reference	
H	Holes	Section of pipe fabric is missing	Defined by clock reference location. Normally two clock references	
I	Infiltration	Water is infiltrating the pipe, normally via a joint but could be via another defect	Can be described in Remarks using terms such as Seeper, Dripper and Runner	
JDL	Joint Displaced Large	Pipe has moved at joint, perpendicular to axis of pipe	More than 1.5 times the pipe wall thickness must be visible	

Total Defects for section

DRB Grade for Section

0 0 0 0 0



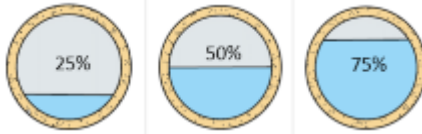
JDM	Joint Displaced Medium	Pipe has moved at joint, perpendicular to axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
JN	Junction	Lateral pipe was installed at construction	Described by clock reference position and diameter	
JX	Defective Junction	Lateral pipe was installed at construction but is defective in some way	Joint can be defective due to factors including: cracks, fractures, obstruction, position etc	
LD LU LL LR	Line Deviation	LD = Line Down, LU = Line Up, LL = Line Left, LR = Line Right. Not related to CIPP lining.	Additional modifiers are added: Q = Quarter (22.5), H = Half (45), F = Full (90). In degrees.	
LC	Lining Changes	If the drain is lined, the lining material has changed	Position of lining material change	
MC	Material Change	The pipe material has changed	Position of change is noted. Type of material change can be defined	
OB	Obstruction/Obstacle	An obstruction or obstacle is affecting the flow through the pipe	Described in percentage loss of cross-sectional area	
OJL	Open Joint Large	Pipe has moved at joint, along the axis of pipe	More than 1.5 times the pipe wall thickness must be visible	
OJM	Open Joint Medium	Pipe has moved at joint, along the axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
PC	Pipe Length Changes	Length of individual pipe changes	New length described at this position	

Total Defects for section

DRB Grade for Section

0 0 0 0 0



R	Roots	Evidence of root ingress	Roots will normally infiltrate via bad joints, cracks, fractures, breaks etc	
REM	Remark	General remark	Used for additional information	
S	Surface Damage	This might include corrosion, spalling and chemical attack	Position only. Additional information can be added in Remarks	
SA	Survey Abandoned	Used when a survey cannot continue for any reason	The reason for abandoning a survey should be noted in the remarks area	
SC	Shape Changes	Dimension of drain changes	Diameter dimension change recorded. Second dimension is recorded for no circular pipe changes	
SR	Sealing Ring	Sealing ring intrudes into pipe at joint	Described by clock reference position	
V	Vermin	Evidence of Vermin in pipe	Can also be used for evidence within manhole etc	
WL	Water Level	Used to record changes in water level. Always shown at the beginning of every survey, if dry noted as 00.	Described by percentage of height or diameter. Recorded in 5% increments	
XP	Collapsed	Drain is suffering from complete loss of structural integrity. Always followed by SA - Survey Abandoned	Percentage loss of cross-sectional area is recorded. Other related structural defects are not recorded	

Surveyor Certificate



Drainage Report



Prepared For
Watson Homes
208-210 Great Clowes Street
Salford

Site
Aaron Williams
Lees Street
Manchester

M7 2ZS

M11 1WH

Surface water



RETURN FLOW LTD
Surveyor: Will Thorne
info@returnflow.co.uk
07547648371

Total Defects for Project



Total DRB Grades for Project



Lees Street Ashton Old Road - CCTV Survey Report : 05/10/22

Name :	RETURN FLOW LTD
Contact :	Mike Shea,William Thorne,Daniel Scallan
Location :	34 Market st Atherton
Town :	Manchester
Region :	
Postcode :	M46 0DG
Email :	info@returnflow.co.uk
Contact Number :	07547648371
Surveyor :	Will Thorne
Valid Certification No :	

Client Information

Name :	Watson Homes
Contact :	Jamie Brooke
Location :	208-210 Great Clowes Street
Town :	Salford
Region :	
Postcode :	M7 2ZS
Tel :	0161 241 8787
Mobile :	07701333314
Email :	j.brooke@watson-homes.co.uk
Fax :	

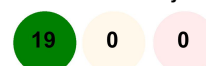
Site Information

Name :	Aaron Williams
Contact :	Watson-Homes
Location :	Lees Street
Town :	Manchester
Region :	
Postcode :	M11 1WH
Tel :	
Mobile :	
Email :	a.williams@watson-homes.co.uk
Fax :	

Total Defects for Project



Total DRB Grades for Project



Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recommendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

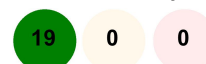
The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Total Defects for Project



Total DRB Grades for Project



Overview

Section: 1 From: SW03 To: SW01 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 2 From: SW03 To: SW02 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 3 From: SW03 To: SW05 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 4 From: SW05 To: SW04 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 5 From: SW05 To: SW06 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 6 From: SW08 To: SW07 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water

Total Defects for Project



Total DRB Grades for Project



Section: 7 From: SW08 To: SW10 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 8 From: SW10 To: SW09 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 9 From: SW10 To: SW11 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 10 From: SW11 To: SW06 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 11 From: SW11 To: SW14 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
Section: 12 From: SW13 To: SW11 MH	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Surface Water
Section: 13 From: SW13 To: SW12 MH	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water

Section: 14 From: SW13 To: SW14	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Surface Water
MH		
Section: 15 From: SW14 To: SW ATTENTION	Grade A	DRB Grade: A Pipe Size: 150 Material: Polyvinyl Chloride Use: Surface Water
MH		
Section: 16 From: SW16 To: SW15	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
MH		
Section: 17 From: SW16 To: SW17	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
MH		
Section: 18 From: SW17 To: SW18	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
MH		
Section: 19 From: SW18 To: SW ATTENTION	Grade A	DRB Grade: A Pipe Size: 100 Material: Polyvinyl Chloride Use: Surface Water
MH		

Total Defects for Project



Total DRB Grades for Project



Site: Lees Street, Manchester

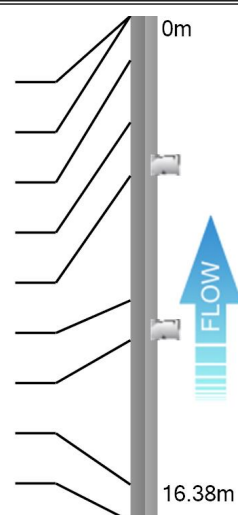
Section 1

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW03	Finish Node Ref: SW01	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	16.38	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		1_0		
00.00m	WL	Water level 0%			0:00:00	
01.44m	REM	General remark		1_2	0:00:12	
03.45m	REM	General remark		1_3	0:00:20	
05.18m	JN	Junction 10 : 100mm Diameter		1_4	0:00:27	
09.22m	REM	General remark		1_5	0:00:46	
10.51m	JN	Junction 09 : 100mm Diameter		1_6	0:00:51	
15.19m	REM	General remark		1_7	0:01:07	
16.38m	MHF	Finish node type, manhole		1_99		



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 1

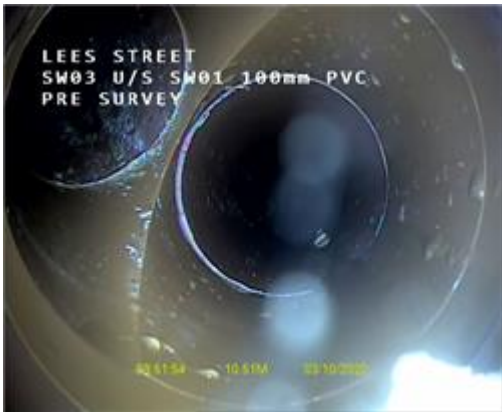
Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW03	Image Provided - Ref: 1_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.44m	0:00:12	REM	General remark GENERAL PHOTO	Image Provided - Ref: 1_2 
03.45m	0:00:20	REM	General remark GENERAL PHOTO	Image Provided - Ref: 1_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
05.18m	0:00:27	JN	Junction at 10 o'clock: 100mm Diameter	Image Provided - Ref: 1_4 
09.22m	0:00:46	REM	General remark GENERAL PHOTO	Image Provided - Ref: 1_5 
10.51m	0:00:51	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 1_6 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
15.19m	0:01:07	REM	General remark GENERAL PHOTO	Image Provided - Ref: 1_7 
16.38m		MHF	Finish node type, manhole SW01	Image Provided - Ref: 1_9999 

Total Defects for section

DRB Grade for Section



Site: Lees Street, Manchester

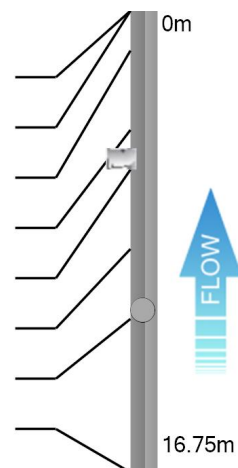
Section 2

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW03	Finish Node Ref: SW02	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	16.75	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		2_0		
00.00m	WL	Water level 0%			0:00:00	
01.44m	REM	General remark		2_2	0:00:11	
04.32m	REM	General remark		2_3	0:00:25	
05.76m	JN	Junction 01 : 100mm Diameter		2_4	0:00:40	
08.64m	REM	General remark		2_5	0:00:54	
11.18m	JN	Junction 12 : 100mm Diameter		2_6	0:01:05	
16.75m	MHF	Finish node type, manhole		2_99		



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW03	Image Provided - Ref: 2_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.44m	0:00:11	REM	General remark GENERAL PHOTO	Image Provided - Ref: 2_2 
04.32m	0:00:25	REM	General remark GENERAL PHOTO	Image Provided - Ref: 2_3 

Total Defects for section

DRB Grade for Section

 0
 0
 0
 0
 0


Pos	Video Ref	Code	Description	Image
05.76m	0:00:40	JN	Junction at 01 o'clock: 100mm Diameter	Image Provided - Ref: 2_4 
08.64m	0:00:54	REM	General remark GENERAL PHOTO	Image Provided - Ref: 2_5 
11.18m	0:01:05	JN	Junction at 12 o'clock: 100mm Diameter	Image Provided - Ref: 2_6 

Total Defects for section

DRB Grade for Section



Pos	Video Ref	Code	Description	Image
16.75m		MHF	Finish node type, manhole SW02	Image Provided - Ref: 2_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

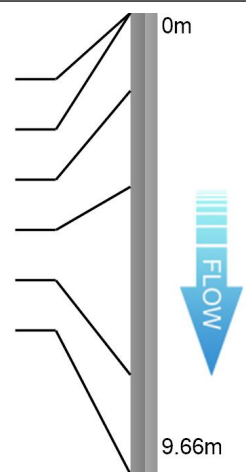
Section 3

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW03	Finish Node Ref: SW05	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	9.66	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		0_0		
00.00m	WL	Water level 0%			0:00:00	
01.63m	REM	General remark		0_2	0:00:17	
03.64m	REM	General remark		0_3	0:00:29	
07.58m	REM	General remark		0_4	0:00:45	
09.66m	MHF	Finish node type, manhole		0_99		



Total Defects for section

DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW03	Image Provided - Ref: 0_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.63m	0:00:17	REM	General remark GENERAL PHOTO	Image Provided - Ref: 0_2 
03.64m	0:00:29	REM	General remark GENERAL PHOTO	Image Provided - Ref: 0_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
07.58m	0:00:45	REM	General remark GENERAL PHOTO	Image Provided - Ref: 0_4 
09.66m		MHF	Finish node type, manhole SW05	Image Provided - Ref: 0_9999 

Total Defects for section

DRB Grade for Section



Site: Lees Street, Manchester

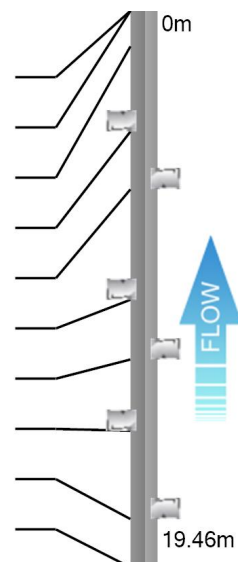
Section 4

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW05	Finish Node Ref: SW04	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	19.46	

Position	Code	Description	CD	Pic	Video Ref		
00.00m	MH	Start node type, manhole		4_0			
00.00m	WL	Water level 0%			0:00:00		
01.24m	REM	General remark		4_2	0:00:15		
04.22m	JN	Junction 02 : 100mm Diameter		4_3	0:00:32		
06.24m	JN	Junction 09 : 100mm Diameter		4_4	0:00:45		
10.10m	JN	Junction 01 : 100mm Diameter		4_5	0:01:04		
12.19m	JN	Junction 09 : 100mm Diameter		4_6	0:01:18		
14.68m	JN	Junction 03 : 100mm Diameter		4_7	0:01:31		
17.77m	JN	Junction 09 : 100mm Diameter		4_8	0:01:54		
19.46m	MHF	Finish node type, manhole		4_99			



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW05	Image Provided - Ref: 4_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.24m	0:00:15	REM	General remark GENERAL PHOTO	Image Provided - Ref: 4_2 
04.22m	0:00:32	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 4_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



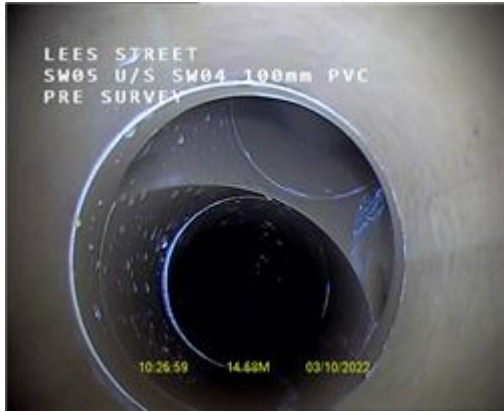
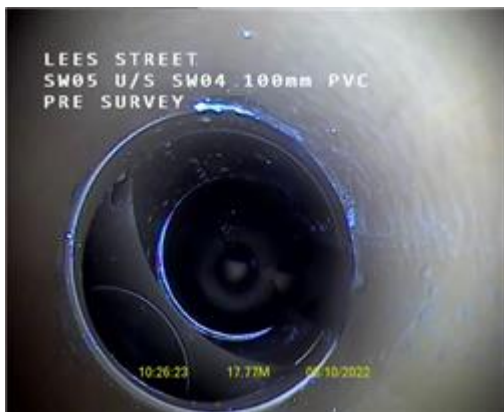
Pos	Video Ref	Code	Description	Image
06.24m	0:00:45	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 4_4 
10.10m	0:01:04	JN	Junction at 01 o'clock: 100mm Diameter	Image Provided - Ref: 4_5 
12.19m	0:01:18	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 4_6 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
14.68m	0:01:31	JN	Junction at 03 o'clock: 100mm Diameter	Image Provided - Ref: 4_7 
17.77m	0:01:54	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 4_8 
19.46m		MHF	Finish node type, manhole SW04	Image Provided - Ref: 4_9999 

Total Defects for section

DRB Grade for Section



Site: Lees Street, Manchester

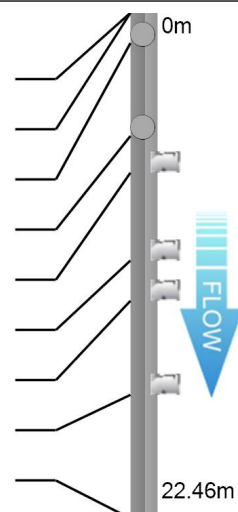
Section 5

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW05	Finish Node Ref: SW06	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	22.46	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		3_0		
00.00m	WL	Water level 0%			0:00:00	
01.34m	JN	Junction 12 : 100mm Diameter		3_2	0:00:07	
05.47m	JN	Junction 12 : 100mm Diameter		3_3	0:00:24	
07.10m	JN	Junction 11 : 100mm Diameter		3_4	0:00:29	
11.00m	JN	Junction 11 : 100mm Diameter		3_5	0:00:42	
12.79m	JN	Junction 10 : 100mm Diameter		3_6	0:00:48	
16.97m	JN	Junction 09 : 100mm Diameter		3_7	0:01:00	
22.46m	MHF	Finish node type, manhole		3_99		



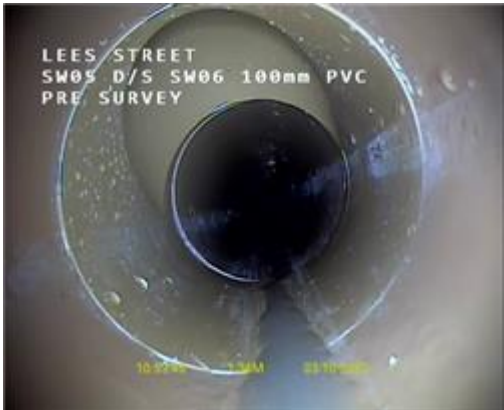
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 5

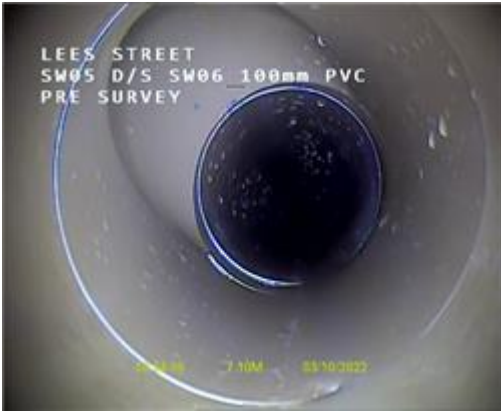
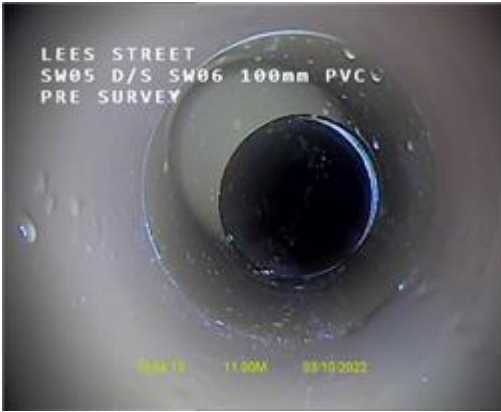
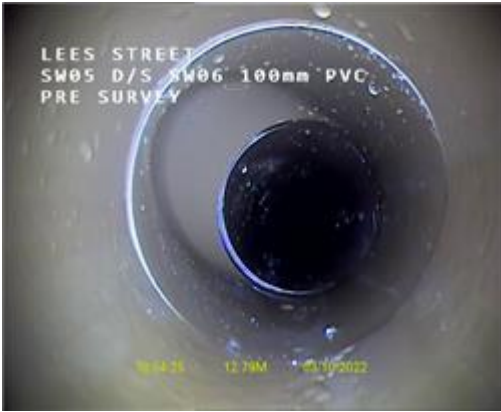
Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW05	Image Provided - Ref: 3_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.34m	0:00:07	JN	Junction at 12 o'clock: 100mm Diameter	Image Provided - Ref: 3_2 
05.47m	0:00:24	JN	Junction at 12 o'clock: 100mm Diameter	Image Provided - Ref: 3_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



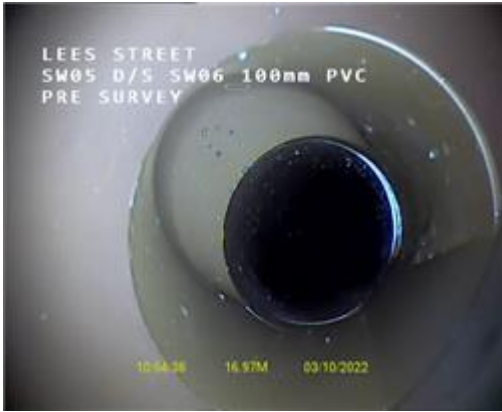
Pos	Video Ref	Code	Description	Image
07.10m	0:00:29	JN	Junction at 11 o'clock: 100mm Diameter	Image Provided - Ref: 3_4 
11.00m	0:00:42	JN	Junction at 11 o'clock: 100mm Diameter	Image Provided - Ref: 3_5 
12.79m	0:00:48	JN	Junction at 10 o'clock: 100mm Diameter	Image Provided - Ref: 3_6 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
16.97m	0:01:00	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 3_7 
22.46m		MHF	Finish node type, manhole SW06	Image Provided - Ref: 3_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

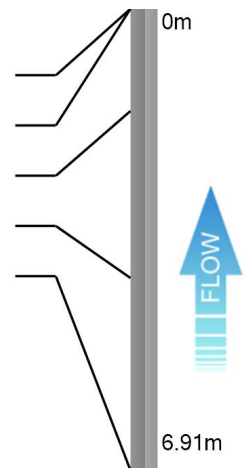
Section 6

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW08	Start Node Depth: 0.00	Finish Node Ref: SW07	Finish Node Depth: 0.00	Direction: U Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.91	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		6_0		
00.00m	WL	Water level 0%			0:00:00	
01.53m	REM	General remark		6_2	0:00:09	
04.03m	REM	General remark		6_3	0:00:19	
06.91m	MHF	Finish node type, manhole		6_99		



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW08	Image Provided - Ref: 6_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.53m	0:00:09	REM	General remark GENERAL PHOTO	Image Provided - Ref: 6_2 
04.03m	0:00:19	REM	General remark GENERAL PHOTO	Image Provided - Ref: 6_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
06.91m		MHF	Finish node type, manhole SW07	Image Provided - Ref: 6_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

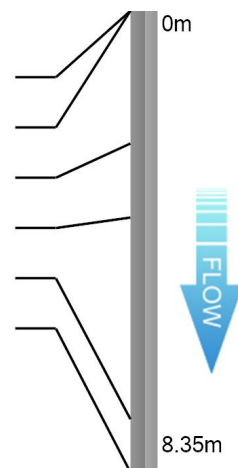
Section 7

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW08	Finish Node Ref: SW10	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.35	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		5_0		
00.00m	WL	Water level 0%			0:00:00	
02.40m	REM	General remark		5_2	0:00:09	
03.74m	REM	General remark		5_3	0:00:13	
07.39m	REM	General remark		5_4	0:00:26	
08.35m	MHF	Finish node type, manhole		5_99		



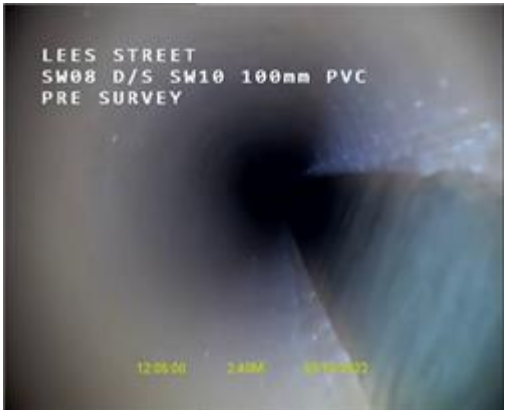
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW08	Image Provided - Ref: 5_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
02.40m	0:00:09	REM	General remark GENERAL PHOTO	Image Provided - Ref: 5_2 
03.74m	0:00:13	REM	General remark GENERAL PHOTO	Image Provided - Ref: 5_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
07.39m	0:00:26	REM	General remark GENERAL PHOTO	Image Provided - Ref: 5_4 
08.35m		MHF	Finish node type, manhole SW10	Image Provided - Ref: 5_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

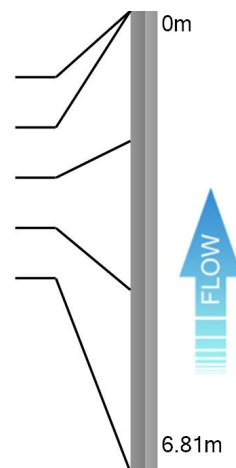
Section 8

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW10	Finish Node Ref: SW09	Direction: U	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.81	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		8_0		
00.00m	WL	Water level 0%			0:00:00	
01.92m	REM	General remark		8_2	0:00:10	
04.12m	REM	General remark		8_3	0:00:17	
06.81m	MHF	Finish node type, manhole		8_99		



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW10	Image Provided - Ref: 8_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.92m	0:00:10	REM	General remark GENERAL PHOTO	Image Provided - Ref: 8_2 
04.12m	0:00:17	REM	General remark GENERAL PHOTO	Image Provided - Ref: 8_3 

Total Defects for section

DRB Grade for Section

 0
 0
 0
 0
 0


Pos	Video Ref	Code	Description	Image
06.81m		MHF	Finish node type, manhole SW09	Image Provided - Ref: 8_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

Section 9

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW10	Start Node Depth: 0.00	Finish Node Ref: SW11	Finish Node Depth: 0.00	Direction: D Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: N

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	6.04	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		7_0		
02.40m	WL	Water level 10%		7_1	0:00:00	
04.41m	REM	General remark		7_2	0:00:23	
06.04m	MHF	Finish node type, manhole		7_99		

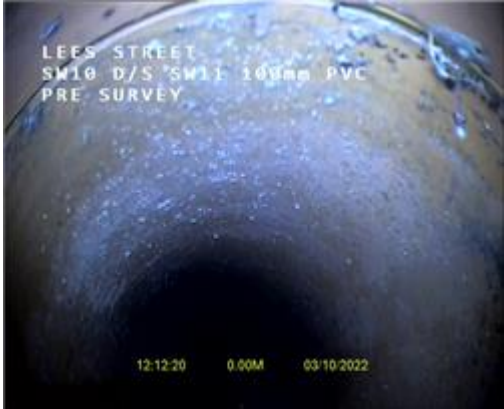
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW10	Image Provided - Ref: 7_0 
02.40m	0:00:00	WL	Water level: 10% Height/Diameter	Image Provided - Ref: 7_1 
04.41m	0:00:23	REM	General remark GENERAL PHOTO	Image Provided - Ref: 7_2 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
06.04m		MHF	Finish node type, manhole SW11	Image Provided - Ref: 7_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

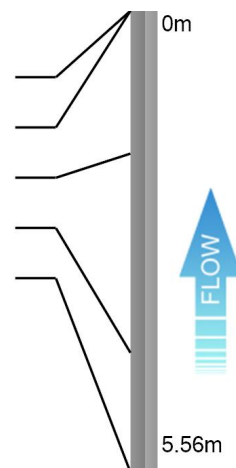
Section 10

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW11	Start Node Depth: 0.00	Finish Node Ref: SW06	Finish Node Depth: 0.00	Direction: U Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: Y

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	5.56	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		10_0		
00.00m	WL	Water level 0%			0:00:00	
01.72m	REM	General remark		10_2	0:00:08	
04.12m	REM	General remark		10_3	0:00:15	
05.56m	MHF	Finish node type, manhole		10_9		



Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW11	Image Provided - Ref: 10_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.72m	0:00:08	REM	General remark GENERAL PHOTO	Image Provided - Ref: 10_2 
04.12m	0:00:15	REM	General remark GENERAL PHOTO	Image Provided - Ref: 10_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
05.56m		MHF	Finish node type, manhole SW06	Image Provided - Ref: 10_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

Section 11

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW11	Start Node Depth: 0.00	Finish Node Ref: SW14	Finish Node Depth: 0.00	Direction: D Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: Y

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	3.4	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		9_0		
00.00m	WL	Water level 0%			0:00:00	
01.34m	LDH	Line of drain/sewer deviates down [half]		9_2	0:00:10	
01.92m	LUH	Line of drain/sewer deviates up [half]		9_3	0:00:14	
03.40m	CPF	Finish node type, catch pit		9_99		

Total Defects for section

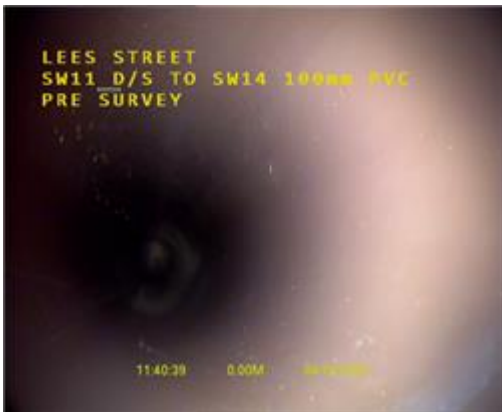
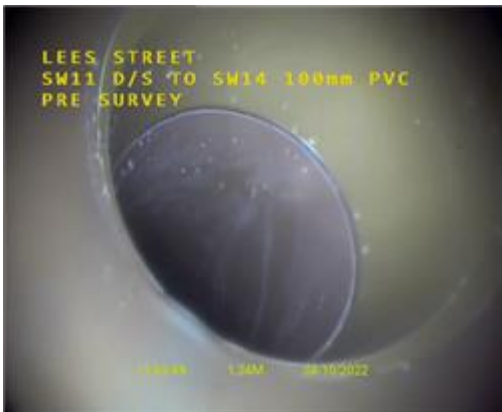
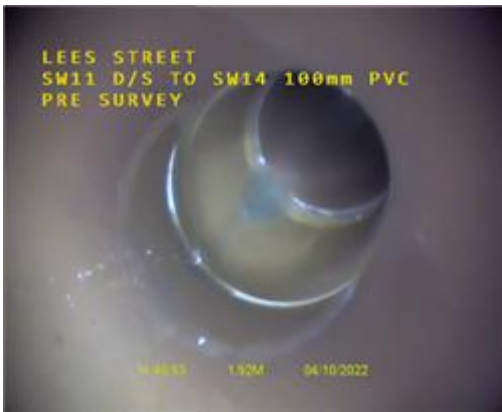
DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 11

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW11	Image Provided - Ref: 9_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.34m	0:00:10	LDH	Line of drain/sewer deviates down [half]	Image Provided - Ref: 9_2 
01.92m	0:00:14	LUH	Line of drain/sewer deviates up [half]	Image Provided - Ref: 9_3 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
03.40m		CPF	Finish node type, catch pit SW14	Image Provided - Ref: 9_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

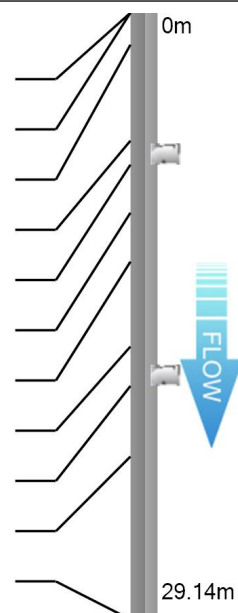
Section 12

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW13	Finish Node Ref: SW11	Direction: D	Height/Dia: 150		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	29.14	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		11_0		
00.00m	WL	Water level 0%			0:00:00	
01.53m	REM	General remark		11_2	0:00:10	
06.14m	REM	General remark		11_3	0:00:24	
07.29m	JN	Junction 09 : 100mm Diameter		11_4	0:00:32	
09.60m	REM	General remark		11_5	0:00:43	
11.95m	REM	General remark		11_6	0:00:50	
16.03m	REM	General remark		11_7	0:01:10	
17.92m	JN	Junction 09 : 100mm Diameter		11_8	0:01:16	
21.31m	REM	General remark		11_9	0:01:33	
29.14m	MHF	Finish node type, manhole		11_9		



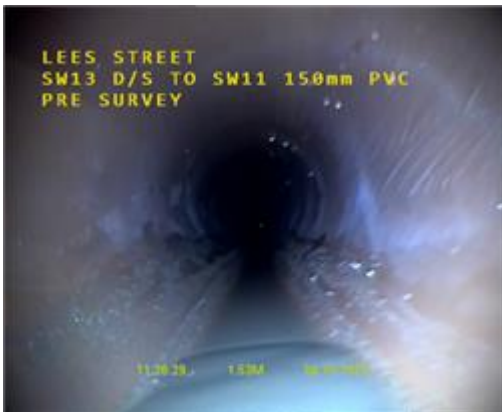
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 12

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW13	Image Provided - Ref: 11_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.53m	0:00:10	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_2 
06.14m	0:00:24	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_3 

Total Defects for section



DRB Grade for Section



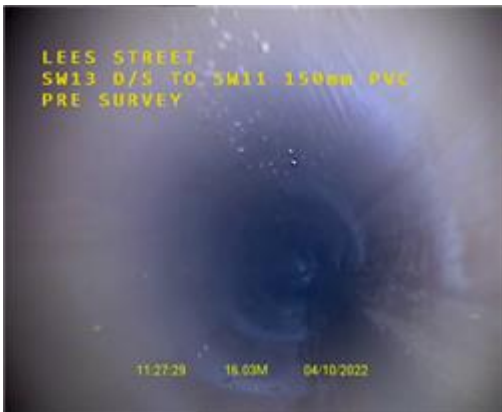
Pos	Video Ref	Code	Description	Image
07.29m	0:00:32	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 11_4 
09.60m	0:00:43	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_5 
11.95m	0:00:50	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_6 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
16.03m	0:01:10	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_7 
17.92m	0:01:16	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 11_8 
21.31m	0:01:33	REM	General remark GENERAL PHOTO	Image Provided - Ref: 11_9 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
29.14m		MHF	Finish node type, manhole SW11	Image Provided - Ref: 11_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

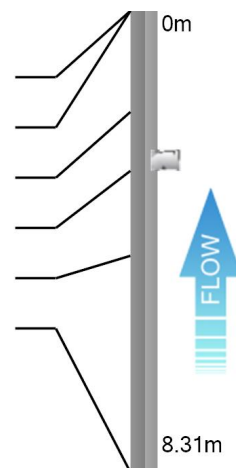
Section 13

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW13	Start Node Depth: 0.00	Finish Node Ref: SW12	Finish Node Depth: 0.00	Direction: U Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: N
Start Node Coordinate:		Finish Node Coordinate:			

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	8.31	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		13_0		
00.00m	WL	Water level 0%			0:00:00	
01.82m	REM	General remark		13_2	0:00:19	
02.88m	JN	Junction 09 : 100mm Diameter		13_3	0:00:31	
04.41m	REM	General remark		13_4	0:00:42	
08.31m	MHF	Finish node type, manhole		13_9		



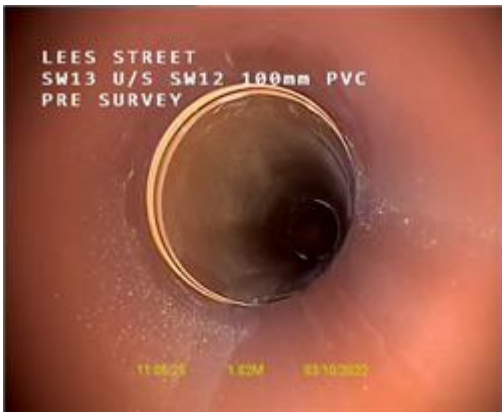
Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 13

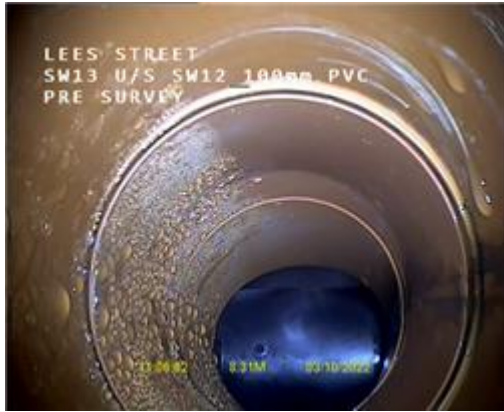
Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW13	Image Provided - Ref: 13_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.82m	0:00:19	REM	General remark GENERAL PHOTO	Image Provided - Ref: 13_2 
02.88m	0:00:31	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 13_3 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
04.41m	0:00:42	REM	General remark GENERAL PHOTO	Image Provided - Ref: 13_4 
08.31m		MHF	Finish node type, manhole SW12	Image Provided - Ref: 13_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

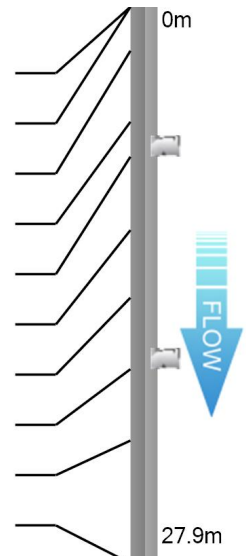
Section 14

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW13	Finish Node Ref: SW14	Direction: D	Height/Dia: 150		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	27.9	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		12_0		
00.00m	WL	Water level 0%			0:00:00	
02.20m	REM	General remark		12_2	0:00:12	
05.76m	REM	General remark		12_3	0:00:29	
07.51m	JN	Junction 09 : 100mm Diameter		12_4	0:00:37	
11.19m	REM	General remark		12_5	0:00:58	
14.58m	REM	General remark		12_6	0:01:15	
18.16m	JN	Junction 10 : 100mm Diameter		12_7	0:01:34	
21.74m	REM	General remark		12_8	0:01:52	
27.90m	CPF	Finish node type, catch pit		12_9		



Total Defects for section

DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 14

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW13	Image Provided - Ref: 12_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
02.20m	0:00:12	REM	General remark GENERAL PHOTO	Image Provided - Ref: 12_2 
05.76m	0:00:29	REM	General remark GENERAL PHOTO	Image Provided - Ref: 12_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



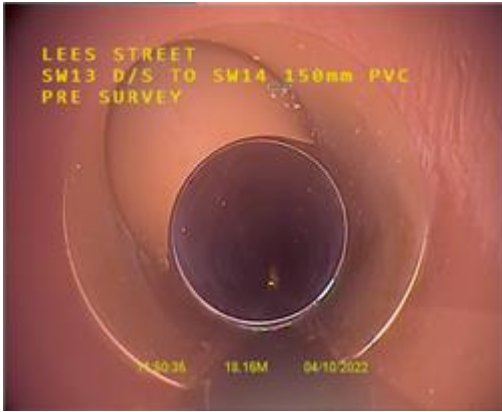
Pos	Video Ref	Code	Description	Image
07.51m	0:00:37	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 12_4 
11.19m	0:00:58	REM	General remark GENERAL PHOTO	Image Provided - Ref: 12_5 
14.58m	0:01:15	REM	General remark GENERAL PHOTO	Image Provided - Ref: 12_6 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
18.16m	0:01:34	JN	Junction at 10 o'clock: 100mm Diameter	Image Provided - Ref: 12_7 
21.74m	0:01:52	REM	General remark GENERAL PHOTO	Image Provided - Ref: 12_8 
27.90m		CPF	Finish node type, catch pit SW14	Image Provided - Ref: 12_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

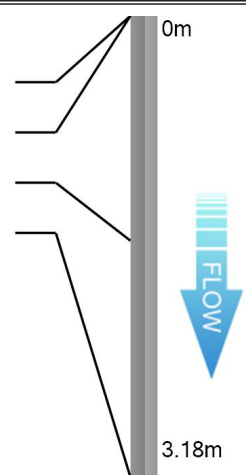
Section 15

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW14	Finish Node Ref: SW ATTENTION	Direction: D	Height/Dia: 150		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned Y		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	3.18	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		14_0		
00.00m	WL	Water level 0%			0:00:00	
01.55m	REM	General remark		14_2	0:00:14	
03.18m	SKF	Finish node type, soakaway		14_9		



Total Defects for section

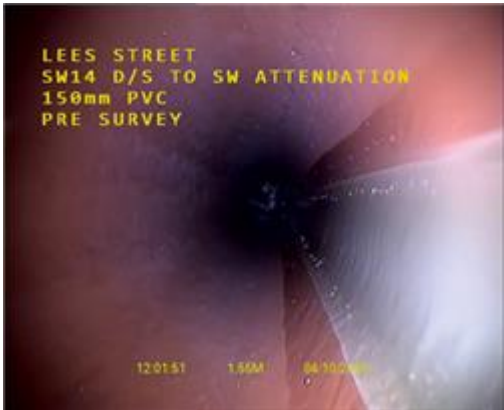
DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 15

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW14	Image Provided - Ref: 14_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.55m	0:00:14	REM	General remark GENERAL PHOTO	Image Provided - Ref: 14_2 
03.18m		SKF	Finish node type, soakaway SW ATTENTION	Image Provided - Ref: 14_9999 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Site: Lees Street, Manchester

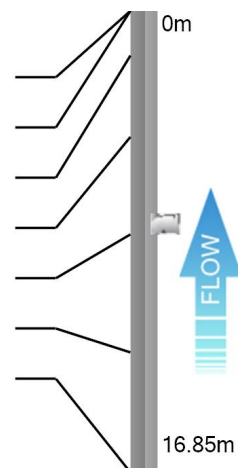
Section 16

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW16	Start Node Depth: 0.00	Finish Node Ref: SW15	Finish Node Depth: 0.00	Direction: U Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: Y

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	16.85	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		16_0		
00.00m	WL	Water level 0%			0:00:00	
01.63m	REM	General remark		16_2	0:00:07	
04.60m	REM	General remark		16_3	0:00:15	
08.16m	JN	Junction 09 : 100mm Diameter		16_4	0:00:27	
12.47m	REM	General remark		16_5	0:00:41	
16.85m	MHF	Finish node type, manhole		16_9		



Total Defects for section

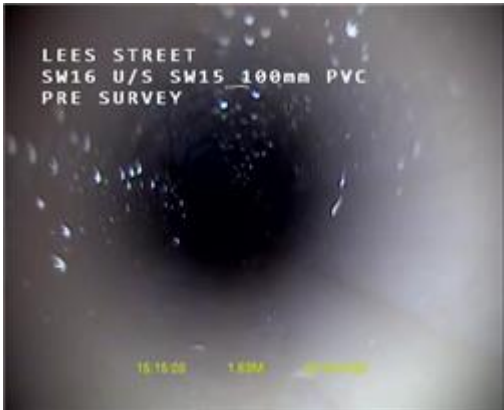
DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 16

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW16	Image Provided - Ref: 16_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.63m	0:00:07	REM	General remark GENERAL PHOTO	Image Provided - Ref: 16_2 
04.60m	0:00:15	REM	General remark GENERAL PHOTO	Image Provided - Ref: 16_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
08.16m	0:00:27	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 16_4 
12.47m	0:00:41	REM	General remark GENERAL PHOTO	Image Provided - Ref: 16_5 
16.85m		MHF	Finish node type, manhole SW15	Image Provided - Ref: 16_9999 

Total Defects for section

DRB Grade for Section



Site: Lees Street, Manchester

Section 17

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW16	Start Node Depth: 0.00	Finish Node Ref: SW17	Finish Node Depth: 0.00	Direction: D Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: N
Start Node Coordinate:		Finish Node Coordinate:			

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	5.45	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		15_0		
00.00m	WL	Water level 0%			0:00:00	
01.82m	REM	General remark		15_2	0:00:17	
04.22m	REM	General remark		15_3	0:00:28	
05.45m	MHF	Finish node type, manhole		15_9		

Total Defects for section

DRB Grade for Section



Descriptive Report with Remarks and Observation Images

Section 17

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW16	Image Provided - Ref: 15_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.82m	0:00:17	REM	General remark GENERAL PHOTO	Image Provided - Ref: 15_2 
04.22m	0:00:28	REM	General remark GENERAL PHOTO	Image Provided - Ref: 15_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0



Pos	Video Ref	Code	Description	Image
05.45m		MHF	Finish node type, manhole SW17	Image Provided - Ref: 15_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

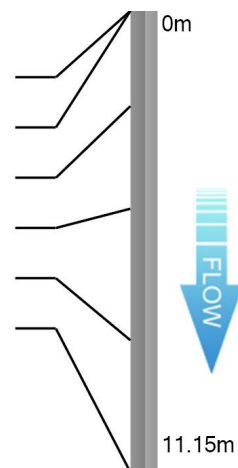
Section 18

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW17	Start Node Depth: 0.00	Finish Node Ref: SW18	Finish Node Depth: 0.00	Direction: D Use: S Material: PVC	Height/Dia: 100 Shape: C Cleaned: Y

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	11.15	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		17_0		
00.00m	WL	Water level 0%			0:00:00	
02.30m	REM	General remark		17_2	0:00:20	
04.78m	REM	General remark		17_3	0:00:32	
07.96m	REM	General remark		17_4	0:00:51	
11.15m	CPF	Finish node type, catch pit		17_9		



Total Defects for section

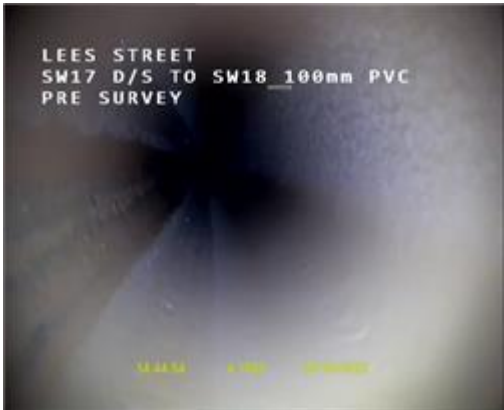
DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 18

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW17	Image Provided - Ref: 17_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
02.30m	0:00:20	REM	General remark GENERAL PHOTO	Image Provided - Ref: 17_2 
04.78m	0:00:32	REM	General remark GENERAL PHOTO	Image Provided - Ref: 17_3 

Total Defects for section

DRB Grade for Section

0 0 0 0 0


Pos	Video Ref	Code	Description	Image
07.96m	0:00:51	REM	General remark GENERAL PHOTO	Image Provided - Ref: 17_4 
11.15m		CPF	Finish node type, catch pit SW18	Image Provided - Ref: 17_9999 

Total Defects for section



DRB Grade for Section



Site: Lees Street, Manchester

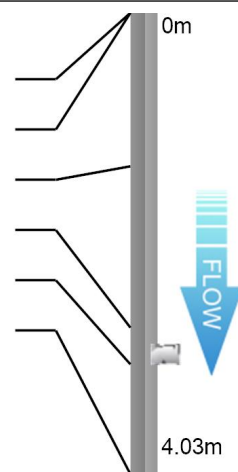
Section 19

Client: Watson Homes	Location (Street Name): Lees Street	City/Town/Village Manchester	Cust Job Ref.	Surveyors Name: Will Thorne	Date: 05/10/2022
Start Node Ref: SW18	Finish Node Ref: SW ATTENTION	Direction: D	Height/Dia: 100		
Start Node Depth: 0.00	Finish Node Depth: 0.00	Use: S	Shape: C		
Start Node Coordinate:	Finish Node Coordinate:	Material: PVC	Cleaned N		

Node Type	Cover Condition	Benching Condition	1/2 Channel Condition	Node Condition Remarks
MH	Good ✓	Good ✓	Good ✓	

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	General Remarks
A				D	N	4.03	

Position	Code	Description	CD	Pic	Video Ref	
00.00m	MH	Start node type, manhole		18_0		
00.00m	WL	Water level 0%			0:00:00	
01.34m	REM	General remark		18_2	0:00:12	
02.75m	REM	General remark		18_3	0:00:19	
03.07m	JN	Junction 09 : 100mm Diameter		18_4	0:00:22	
04.03m	SKF	Finish node type, soakaway		18_9		



Total Defects for section

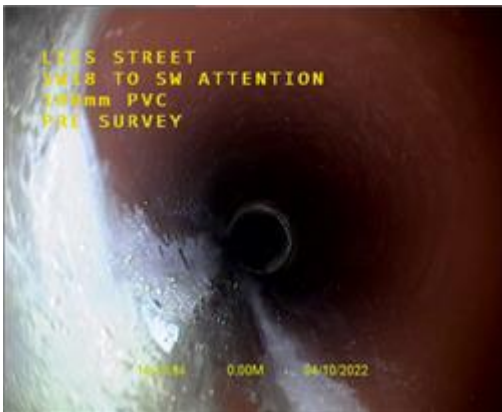
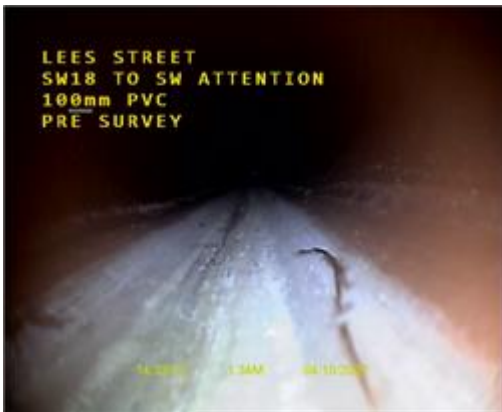
DRB Grade for Section

0 0 0 0 0



Descriptive Report with Remarks and Observation Images

Section 19

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole SW18	Image Provided - Ref: 18_0 
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.34m	0:00:12	REM	General remark GENERAL PHOTO	Image Provided - Ref: 18_2 
02.75m	0:00:19	REM	General remark GENERAL PHOTO	Image Provided - Ref: 18_3 

Total Defects for section



DRB Grade for Section



Pos	Video Ref	Code	Description	Image
03.07m	0:00:22	JN	Junction at 09 o'clock: 100mm Diameter	Image Provided - Ref: 18_4 
04.03m		SKF	Finish node type, soakaway SW ATTENTION	Image Provided - Ref: 18_9999 

Total Defects for section



DRB Grade for Section



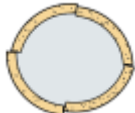
A guide to defects and other observations in drainage systems

More detailed information can be found in the National Standard (BS EN 13508-1:2003) and in the Manual of Sewer Condition Classification (MSCC) 5th Edition, written by the Water Research Centre (WRC).

Use	
Code	Description
C	Combined
F	Foul
S	Surface Water
T	Trade Effluent
W	Culverted Watercourse
Z	Other

Common Materials	
Code	Description
VC	Vitrified Clay
PVC	Polyvinyl Chloride
CO	Concrete
CI	Cast Iron
PF	Pitch Fibre
PE	Polyethylene
DI	Ductile Iron

Start Node	Description	Finish Node
MH	Manhole	MHF
IC	Inspection Chamber	ICF
GY	Gulley	GYF
RE	Rodding Eye	REF
SK	Soakaway	SKF
BN	Buchan Trap	BNF
BR	Major Connection without Ref	BRF
CP	Catch Pit	CPF
OC	Other Special Chamber	OCF
OF	Outfall	OFF
OS	Oil Separator	OSF
WR	Winser Trap	WRF
LH	Lamphole	LHF

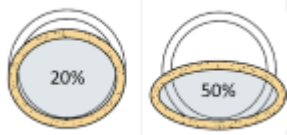
Code	Observation	Description	Attributes	
B	Broken	Pieces pipe have visibly moved	Defined by clock references. Associated with deformity in rigid pipe	
CC CL CM CR	Cracks	Cracks are break lines that are not visibly open	Defined by clock reference position/s. Longitudinal and radiating cracks attract only one clock reference	
CN	Connection	Lateral pipe has been connected after original construction	Described by clock reference position and diameter	

Total Defects for section



DRB Grade for Section



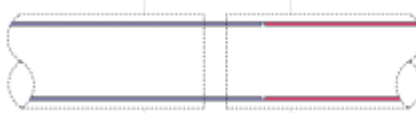
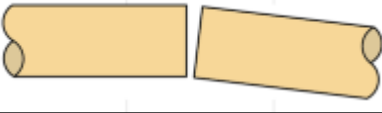
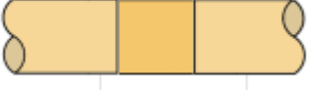
CX(I)	Defective Connection (Intruding)	Defective by intrusion or damage due to factors including: cracks, fractures, obstruction, position etc	Described by clock reference position and diameter (+ % intrusion)	
CU	Loss of Vision	Lens of camera is obscured by debris, water etc. Operator is unable to see drain clearly	'W' can be added if loss of vision is due to water	
D	Deformed	Pipe has lost its structure	Described by percentage loss of height or width. Recorded in 5% increments	
DEE	Deposits Encrustation	Eg. Attached scale deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DEG	Deposits Grease	Attached grease deposits evident	Described by clock referenced position and percentage loss of cross-sectional area (5% increments)	
DER DES	Deposits Coarse/Fine	Settled deposits on the invert of the pipe.	Described by percentage loss of height or diameter. Recorded in 5% increments.	
FC FL FM FR	Fractures	Fractures are visibly open. Pieces of pipe have not moved	Defined by clock reference position/s. Longitudinal and radiating fractures attract only one clock reference	
H	Holes	Section of pipe fabric is missing	Defined by clock reference location. Normally two clock references	
I	Infiltration	Water is infiltrating the pipe, normally via a joint but could be via another defect	Can be described in Remarks using terms such as Seeper, Dripper and Runner	
JDL	Joint Displaced Large	Pipe has moved at joint, perpendicular to axis of pipe	More than 1.5 times the pipe wall thickness must be visible	

Total Defects for section

DRB Grade for Section

0 0 0 0 0



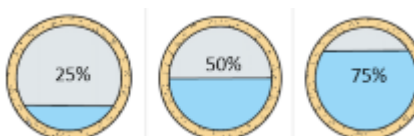
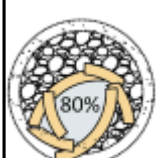
JDM	Joint Displaced Medium	Pipe has moved at joint, perpendicular to axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
JN	Junction	Lateral pipe was installed at construction	Described by clock reference position and diameter	
JX	Defective Junction	Lateral pipe was installed at construction but is defective in some way	Joint can be defective due to factors including: cracks, fractures, obstruction, position etc	
LD LU LL LR	Line Deviation	LD = Line Down, LU = Line Up, LL = Line Left, LR = Line Right. Not related to CIPP lining.	Additional modifiers are added: Q = Quarter (22.5), H = Half (45), F = Full (90). In degrees.	
LC	Lining Changes	If the drain is lined, the lining material has changed	Position of lining material change	
MC	Material Change	The pipe material has changed	Position of change is noted. Type of material change can be defined	
OB	Obstruction/Obstacle	An obstruction or obstacle is affecting the flow through the pipe	Described in percentage loss of cross-sectional area	
OJL	Open Joint Large	Pipe has moved at joint, along the axis of pipe	More than 1.5 times the pipe wall thickness must be visible	
OJM	Open Joint Medium	Pipe has moved at joint, along the axis of pipe	Between 1 and 1.5 times the pipe wall thickness must be visible	
PC	Pipe Length Changes	Length of individual pipe changes	New length described at this position	

Total Defects for section

DRB Grade for Section

0 0 0 0 0



R	Roots	Evidence of root ingress	Roots will normally infiltrate via bad joints, cracks, fractures, breaks etc	
REM	Remark	General remark	Used for additional information	
S	Surface Damage	This might include corrosion, spalling and chemical attack	Position only. Additional information can be added in Remarks	
SA	Survey Abandoned	Used when a survey cannot continue for any reason	The reason for abandoning a survey should be noted in the remarks area	
SC	Shape Changes	Dimension of drain changes	Diameter dimension change recorded. Second dimension is recorded for no circular pipe changes	
SR	Sealing Ring	Sealing ring intrudes into pipe at joint	Described by clock reference position	
V	Vermin	Evidence of Vermin in pipe	Can also be used for evidence within manhole etc	
WL	Water Level	Used to record changes in water level. Always shown at the beginning of every survey, if dry noted as 00.	Described by percentage of height or diameter. Recorded in 5% increments	
XP	Collapsed	Drain is suffering from complete loss of structural integrity. Always followed by SA - Survey Abandoned	Percentage loss of cross-sectional area is recorded. Other related structural defects are not recorded	

Our ref: 7359SMP

SuDS Management Plan
for
Ashton Old Road,
at
Manchester

For : Watson Homes
Spark Studio
2018-210 Great Clowes Street
Salford
M7 2ZS

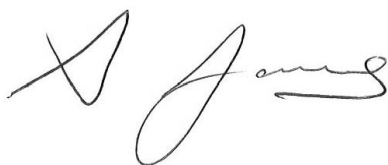
09 December 2020

SuDS Management Plan Ashton Old Road, Manchester

Document Verification

Project Title	Ashton Old Road, Manchester
Project Number	7359
Document Title	SuDS Management Plan
Document Number	7359 SMP
This document is not to be used for contractual or engineering purposes unless the document verification sheet is signed where indicated by the approver of the document.	

Prepared by



A Jones

*Senior Infrastructure Engineer***Document Revision**

Report Reference	Date	Description	Prepared	Checked and Approved
7359SMP	09/12/2020	SuDS Management Plan	A Jones	A Jones

This report has been prepared for and on behalf of our client, in accordance with the terms and conditions of the appointment agreement with Coopers. Other than where specifically allowed for in the said appointment agreement, any other party using this report for any purpose whatsoever does so at their own risk and any duty of care to that party is specifically excluded.

SuDS Management Plan Ashton Old Road, Manchester

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3.0 Maintenance Schedule	6
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SuDS Management Plan Ashton Old Road, Manchester

1.0 Introduction

Coopers (Chester) Ltd have been appointed by Watson Homes to prepare a SuDS Management Plan for the proposed residential development in Manchester. The site is bounded by Ashton Old Road, Lees Street and Stanley Street.

The surface water drainage system provides storage for up to a 100-year storm event plus 40% climate change allowance within a buried geo-cellular tank and upstream pipework and manholes. The flow is restricted using a vortex flow control device fitted in the last manhole before flows leave the site. A flow rate of 5.0 l/s has been agreed with United Utilities.

All components will be maintained by a management company for which this report sets out the inspection and maintenance requirements.

2.0 Operation and Maintenance

As with any drainage system, SuDS require regular inspection and maintenance to ensure that they continue to operate as designed and are fully functional at all times. The Aston Old Road Development SuDS components will consist of a flow control device, buried geo-cellular tank, silt trap, trapped gullies and associated upstream pipework and inspection chambers.

The SuDS components require regular inspection/clearing to prevent blockages due to accumulation of silt and debris. In general, it is recommended that they are initially inspected and cleared by a suitably trained person every 6 months for at least the first 2 years of operation and then establish a long-term regular inspection/clearing regime appropriate for the site:

The upstream pipework and inspection chambers will generally be taking clean roof run-off so maintenance requirements should be minimal and will require occasional lifting of covers to ensure no silt build ups within the chambers. The regular inspections will be more relevant to the components located in the small car parking area.

Tables 14.2 and 21.3 from CIRIA C753 The SuDS Manual provides a more detailed maintenance schedule. Inspection/clearing should also be carried out after every major storm event and to the manufacturer's recommendations.

If regular excessive accumulation of silts and debris is found in silt-traps/catchpits serving below ground attenuation/soakaway tanks, a CCTV inspection of the tank should be undertaken. The geocellular tanks are provided with a special unit type along the base to enable inspection via manholes/inspection chambers at each end. If required the inspection channel can also be used for water jetting to clear the tanks of silt/debris. Notwithstanding the above, a CCTV inspection of the tanks should be undertaken at least every five years.

Any debris obstructing or in danger of obstructing the surface water flow should be removed within a period not exceeding two weeks from inspection. Any blockage or partial blockages reported to the managing organisation should be removed within a period not exceeding two weeks.

The management company will also be required to maintain the gullies and drainage channels located within the private access road and small car parking areas. The gullies allow water to pass through the trap whilst retaining any silt and debris. As the gullies prevent silt from entering the main line drainage it is necessary to empty them occasionally, due to the depth of these units specialist equipment would normally be required such as a gully or post shovel and grafter, it is also good practice to jet or flush test the outlet after cleaning out the trap.

This maintenance plan is to be incorporated within the Health and Safety file, which, in addition to the details mentioned here, should include all the installed manufacturer's details and maintenance recommendations. In addition, it should hold the records of any inspections, together with any remedial measures undertaken. The drainage maintenance plan should be made available for inspection by the council if requested.

SuDS Management Plan Ashton Old Road, Manchester

Monitoring and maintenance of the SuDS components will be the responsibility of Watson Homes during the construction period, after completion it will be the responsibility of a management company appointed by For Housing. Details are as follows:

One Manchester*Lovell House**6 Archway**Hulme**Manchester**M15 5RN*

SuDS Management Plan Ashton Old Road, Manchester

3.0 Maintenance schedule

TABLE 14.2 An example of operation and maintenance requirements for a proprietary treatment system

Maintenance schedule	Required action	Typical frequency
Routine maintenance	Remove litter and debris and inspect for sediment, oil and grease accumulation	Six monthly
	Change the filter media	As recommended by manufacturer
	Remove sediment, oil, grease and floatables	As necessary – indicated by system inspections or immediately following significant spill
Remedial actions	Replace malfunctioning parts or structures	As required
Monitoring	Inspect for evidence of poor operation	Six monthly
	Inspect filter media and establish appropriate replacement frequencies	Six monthly
	Inspect sediment accumulation rates and establish appropriate removal frequencies	Monthly during first half year of operation, then every six months

TABLE 21.3 Operation and maintenance requirements for attenuation storage tanks

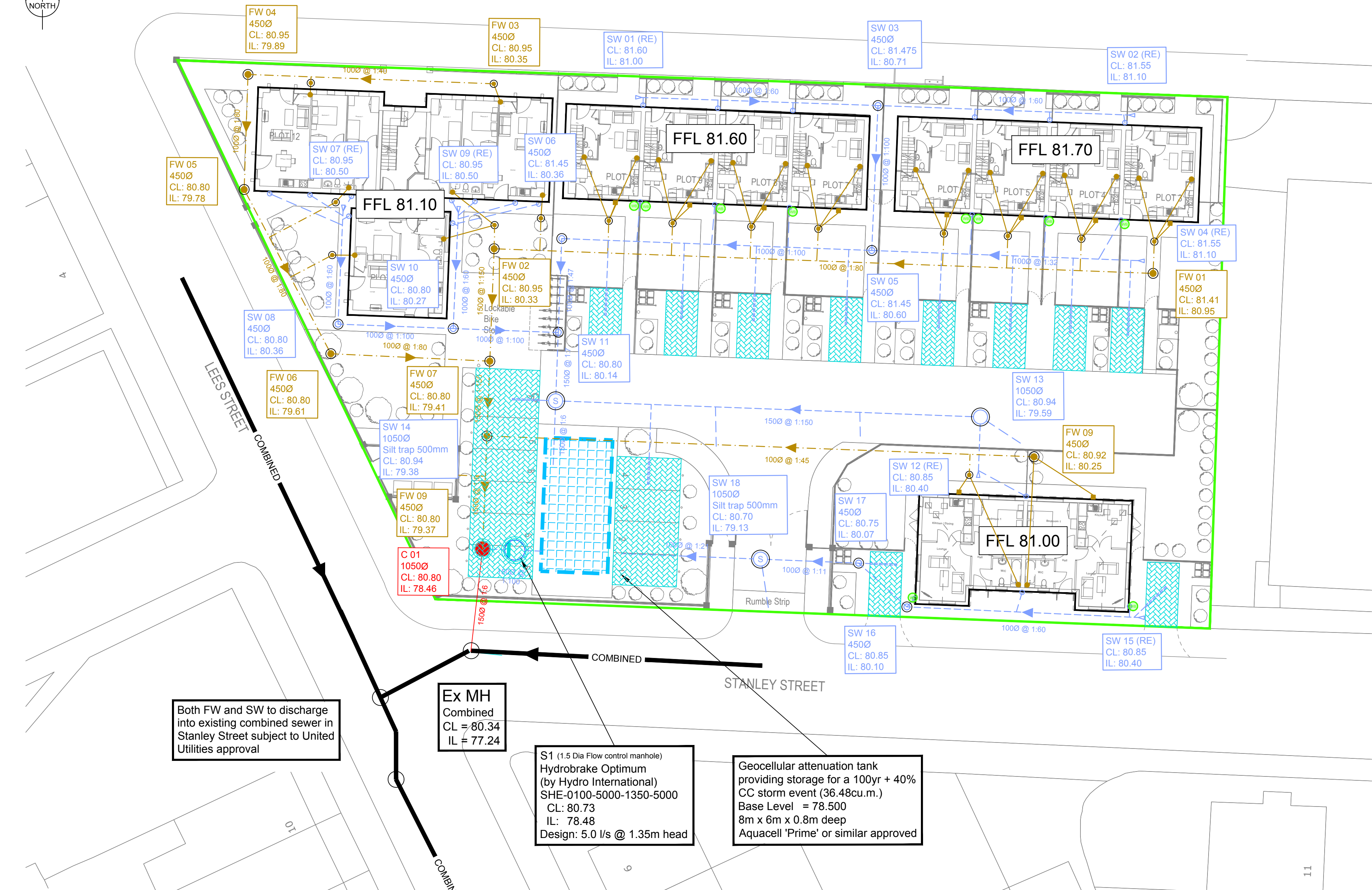
Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

Extracts from CIRIA C753 ‘The SuDS Manual’

SuDS Management Plan Ashton Old Road, Manchester

4.0 Reference Drawings

DO NOT SCALE

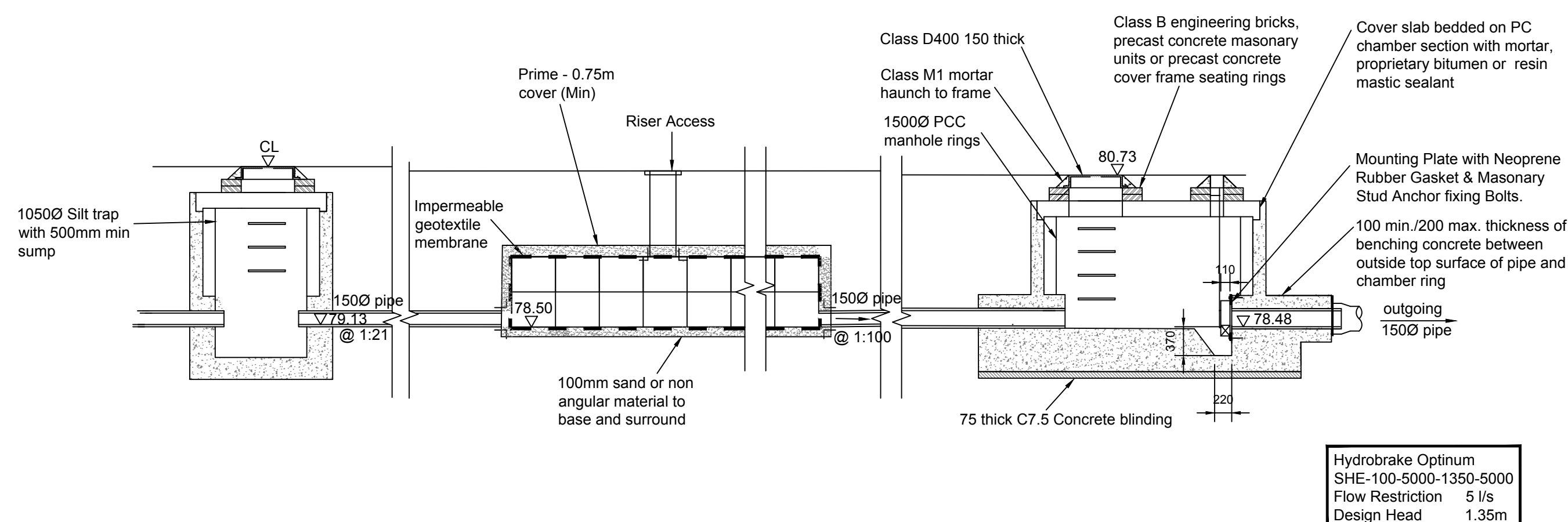


Both FW and SW to discharge into existing combined sewer in Stanley Street subject to United Utilities approval

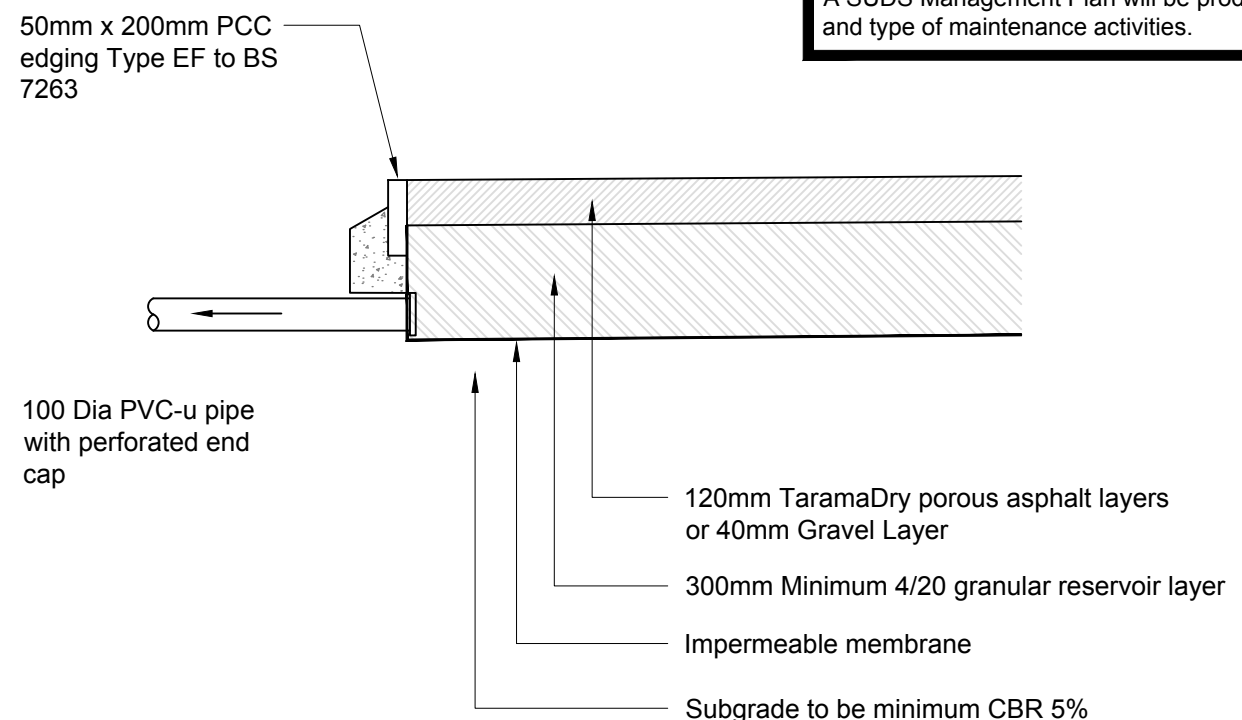
Ex MH
Combined
CL = 80.34
IL = 77.24

S1 (1.5 Dia Flow control manhole)
Hydrobrake Optimum
(by Hydro International)
SHE-0100-5000-1350-5000
CL: 80.73
IL: 78.48
Design: 5.0 l/s @ 1.35m head

Geocellular attenuation tank
providing storage for a 100yr + 40%
CC storm event (36.48cu.m.)
Base Level = 78.500
8m x 6m x 0.8m deep
Aquacell 'Prime' or similar approved



Typical Geocellular Tank System Section (NTS)
Aquacell Prime or similar approved with riser access for inspections and future maintenance



CROSS SECTION OF PERMEABLE ASPHALT
PAVING CONSTRUCTION DETAIL

Surface Water Drainage Philosophy

Policy Provision

The design for a surface water drainage system for the proposed development will be guided by the principles set out in the National Planning Policy Framework (NPPF) and the Building Regulations Approved Document H.

The NPPF Technical Guidance to the National Planning Policy Framework provides the following advice with regards to drainage in flood zone 1 sites:

"Developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of the development, and the appropriate application of sustainable drainage systems".

Sustainable drainage systems cover the whole range of sustainable approaches to surface drainage management. They are designed to control surface water run off close to where it falls and mimic natural drainage as closely as possible."

The Building Regulations Approved Document H states that rainwater shall discharge to one of the following, listed in order of priority:

1. An adequate soakaway or some other adequate infiltration system, or where this is not reasonably practical;
2. A watercourse, or where this is not reasonably practical;
3. A sewer.

This hierarchy approach is also set out in the Planning Practice Guidance at paragraph 80 of the Flood Risk and Coastal Change section.

Assessment

A phase 2 Site Investigation report have been undertaken by LK Group. Trial pits have confirmed the site is underlain with made ground and clay and will therefore not be suitable for infiltration techniques to dispose of surface water flows from the development.

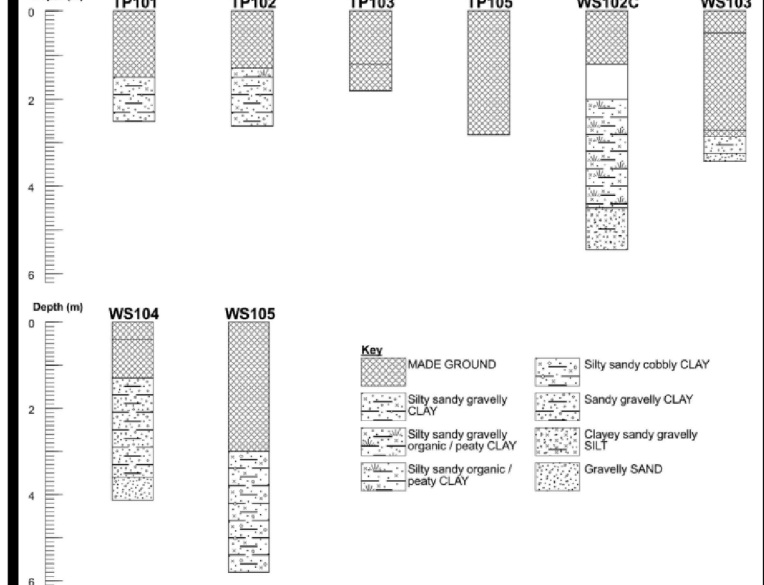


Plate 4-1: Summary of ground conditions.

There are no watercourses within the vicinity of the site so we are proposing a discharge into the public sewer network subject to United Utilities approval. The sewer records have identified a combined sewer flowing west along Stanley Street to the south of the site which connects into a larger combined sewer in Lees Street to the west of the site.

We are proposing to discharge all surface water from the proposed development into the combined sewer in Stanley Street. United Utilities have confirmed they will accept a maximum flow rate of 5 l/s into this sewer.

Greenfield run-off from the site has been calculated as 1.50 l/s QBAR. However, a minimum industry standard flow rate of 5 l/s is generally considered acceptable as this will have a 100mm orifice on flow control device. Anything smaller than this can be prone to future blockages and will become a maintenance issue.

The surface water network has been simulated in MicroDrainage and has been designed for a 100-year storm event with 40% climate change allowance. Approximately 46cu.m. of storage is required and can be provided within a buried cellular tank. This is based on a measured impermeable area of 1300sq.m. and a flow restriction of 5 l/s.

A Hydrobrake vortex flow control will be installed in the last manhole before flows are combined with foul flows and discharged into the existing sewer network.

PLOTS 1-10 will have water butts on rear RWP's to collect rainwater for garden re-use. Not appropriate for apartments.

All parking bays to be tanked permeable paving with pipe outlets back into SW network.

The incorporation of permeable paving trapped gullies and silt traps will provide sufficient components to control the quality of water being passed forward into the public sewerage network.

Maintenance / Responsibilities

All proposed drainage network will be maintained by a private 'Management Company'

A SUDS Management Plan will be produced to address frequency and type of maintenance activities.

Legend

- Site Boundary
- Existing Combined Sewer
- Proposed Private Surface Water
- Proposed Private Foul
- Proposed Private Combined
- Flow Control Manhole
- SW Attenuation
- Proposed Finished Floor Level
- Permeable Paving
- Water Butt (garden re-use)
- ACO Drain

APPROVAL

F	19.10.21	Drainage levels revised	AJ	AJ
E	13.10.21	Notes updated (infiltration consideration)	AJ	AJ
D	15.09.21	SVP/RWP Locations updated	PW	AJ
C	25.08.21	SuDS Details added	AJ	AJ
B	29.07.21	Notes Revised	AJ	AJ
A	23.06.21	SUDS components added	AJ	AJ
Rev	Date	Revision	By	Appd.


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Client			
Project	ASHTON OLD ROAD MANCHESTER		
Title	Drainage Strategy		
DRAWING NUMBER	7359 / SK01	SCALE at A1	1:200
DATE	AUG 2019	REVISION	F
DRAWN	AJ	CHECKED	AJ