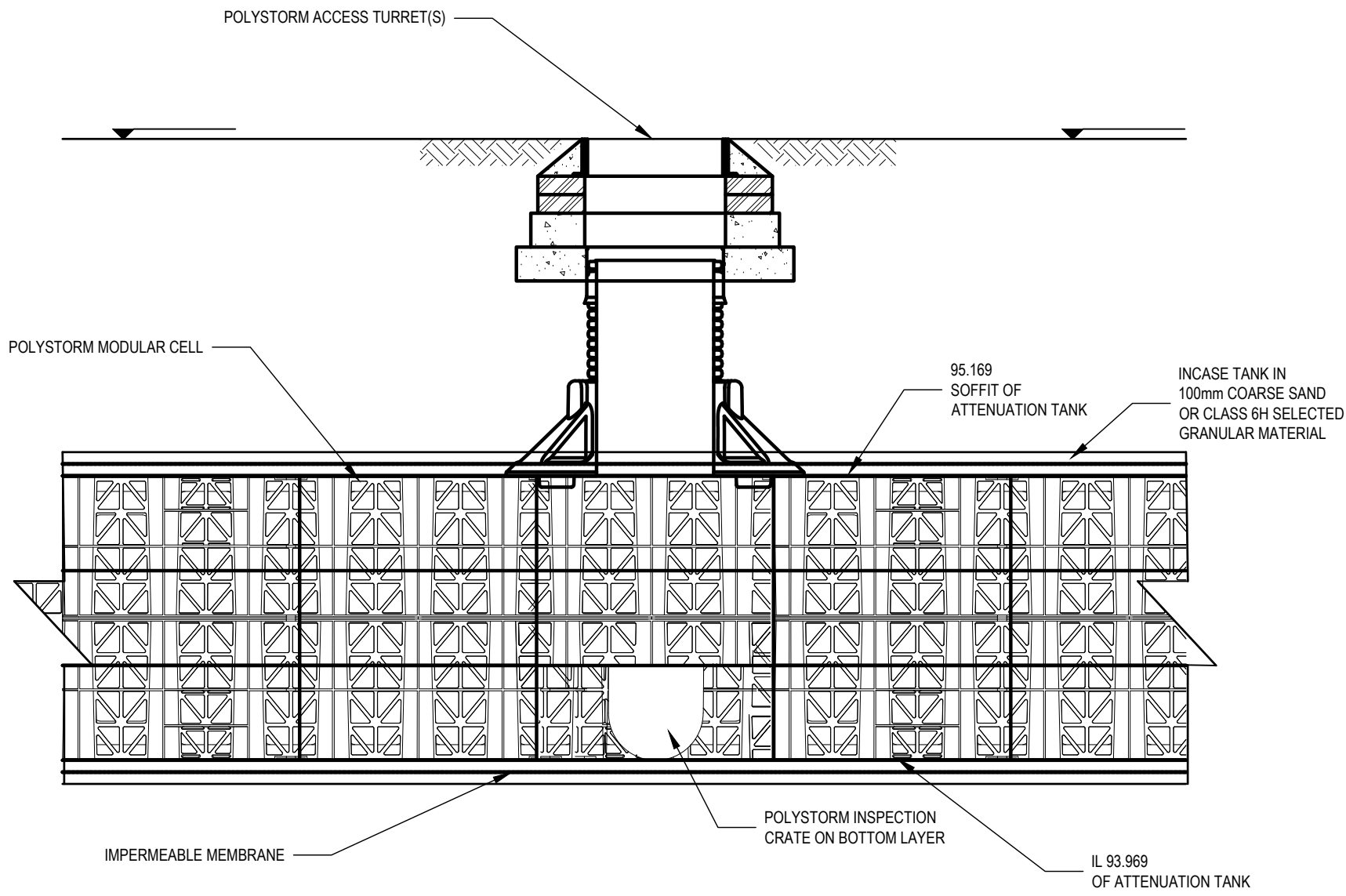
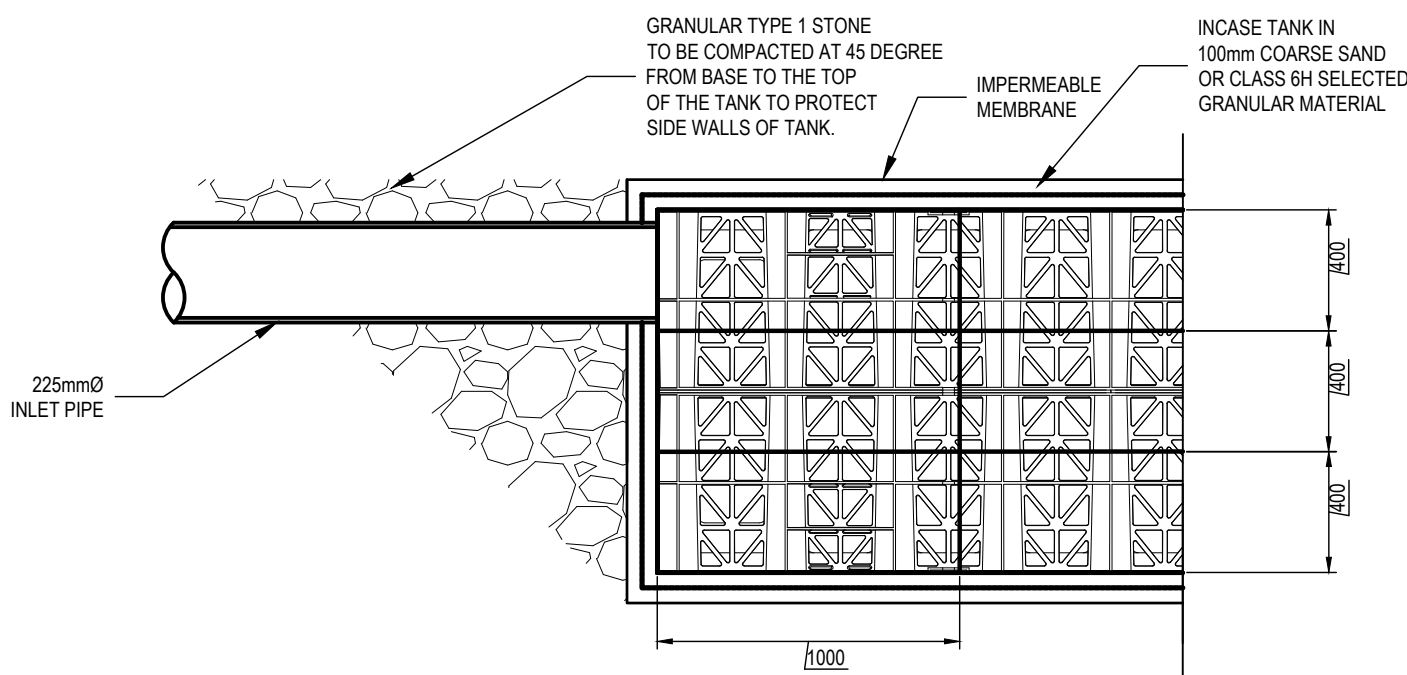


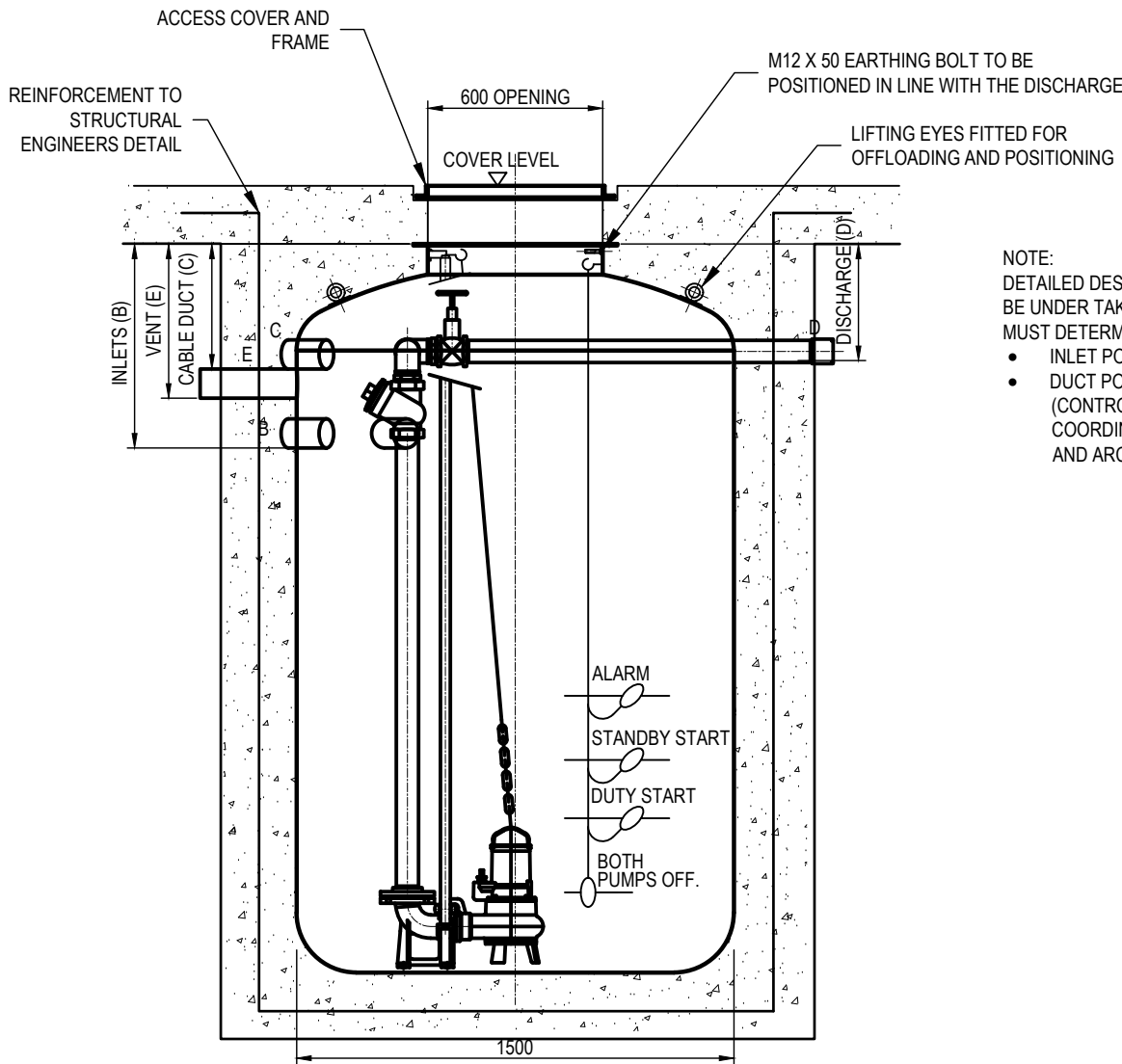
- NOTES:
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TYPICAL ATTENUATION TANK SECTION
SCALE 1:20

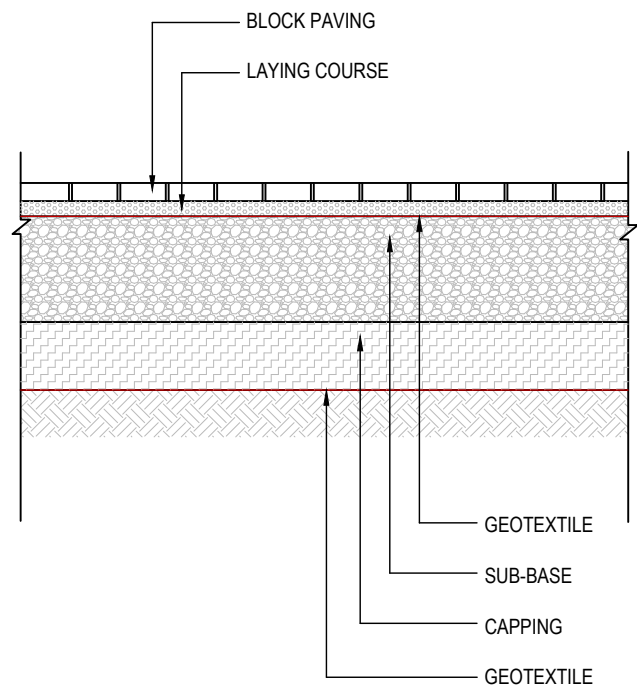


TYPICAL ATTENUATION TANK END SECTION
SCALE 1:20



NOTE:
DETAILED DESIGN OF THE PUMP CHANGE TO BE UNDER TAKEN BY THE SUPPLIER. THEY MUST DETERMINE:
• INLET POSITIONS FOR DRAINAGE
• DUCT POSITIONS FOR CONTROLS (CONTROL POSITIONS TO BE COORDINATED BY THE MEP ENGINEER AND ARCHITECT)

TYPICAL PUMP DETAIL



PERMEABLE PAVING

PERMEABLE PAVING SURFACE COURSE
SPECIFICATION BY LANDSCAPE ARCHITECT

LAYING COURSE AND JOINTING MATERIAL
50mm LAYER OF 2-6.3mm SIZE CLEAN AGGREGATE TO BS EN 12620

GEOTEXTILE
GEOTEXTILE AS RECOMMENDED BY MANUFACTURER

SUB-BASE
350mm TYPE 3 GRANULAR SUB-BASE TO CL.805 OF SHW AND 4/40 GRADING TO BS EN 7533-13:2009 (SEE TABLE 20.13 OF THE CIRIA SUDS MANUAL)

CAPPING LAYER
150mm CAPPING MATERIAL TO CL.613 OF SHW

GEOTEXTILE
TERRAM T2000 (NON-WOVEN) GEOTEXTILE OR APPROVED EQUIVALENT; SPECIFICATION TBC BY MANUFACTURER

P01	24.10.24	ISSUED FOR PLANNING	LB/LB
Rev.	Date	Amendment	Tech/Eng.

BIM Status S2

Job Title
20-30 GREYFRIARS

Drawing Title
BELOW GROUND DRAINAGE
DRAINAGE DETAILS
SHEET 2

Job No. 233968 | Scale 1:150@ A1 | Date SEPT 24 | Drawn LB

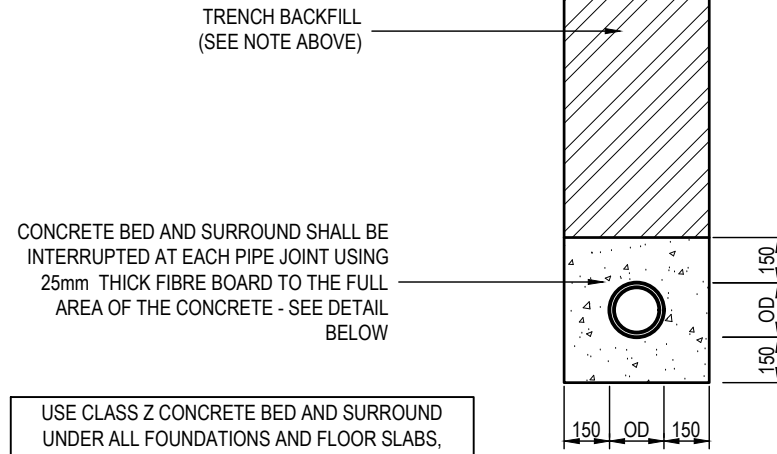
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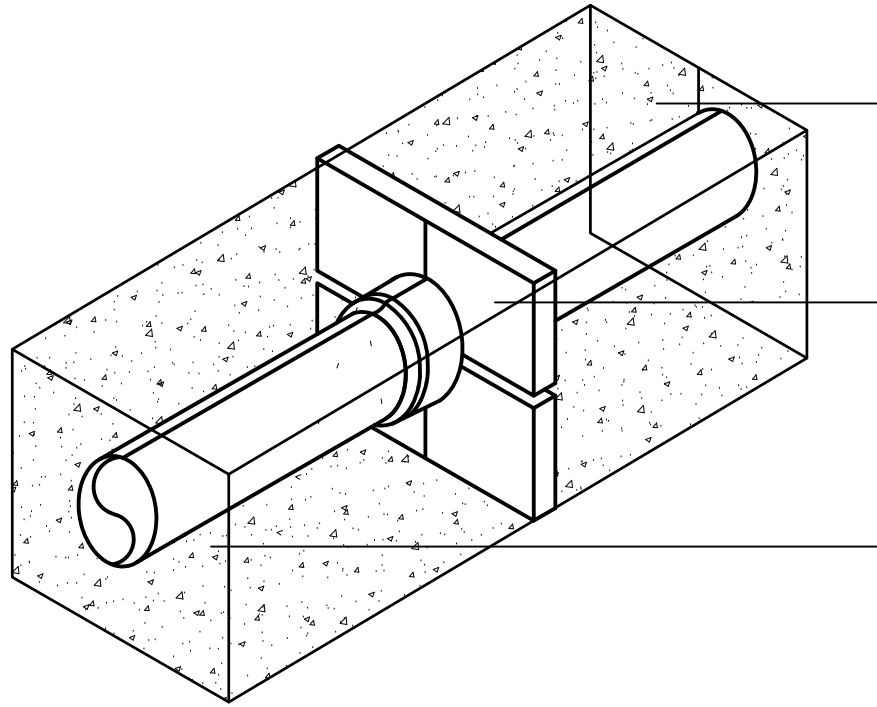
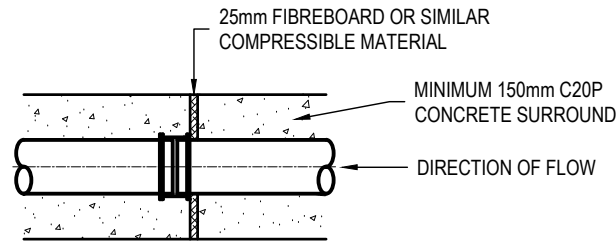
Drawing No. 233968-FSD-XX-XX-DR-C-9291 | Rev. P01

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 - DO NOT SCALE FROM THIS DRAWING. IF IN DOUBT PLEASE REQUEST FURTHER INFORMATION

TRENCH BACKFILL NOTE
1. ROADS AND FOOTPATHS: TYPE 1 GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO THE UNDERSIDE OF SURFACE CONSTRUCTION
2. ELSEWHERE: SELECTED EXCAVATED MATERIAL COMPACTED IN 150mm LAYERS



USE CLASS Z CONCRETE BED AND SURROUND UNDER ALL FOUNDATIONS AND FLOOR SLABS, WHERE COVER TO CROWN OF PIPE IS LESS THAN 0.75m IN VEHICULAR ACCESS AREAS, AND WHERE PIPES ARE LAID WITHIN 1.0m OF FOUNDATIONS

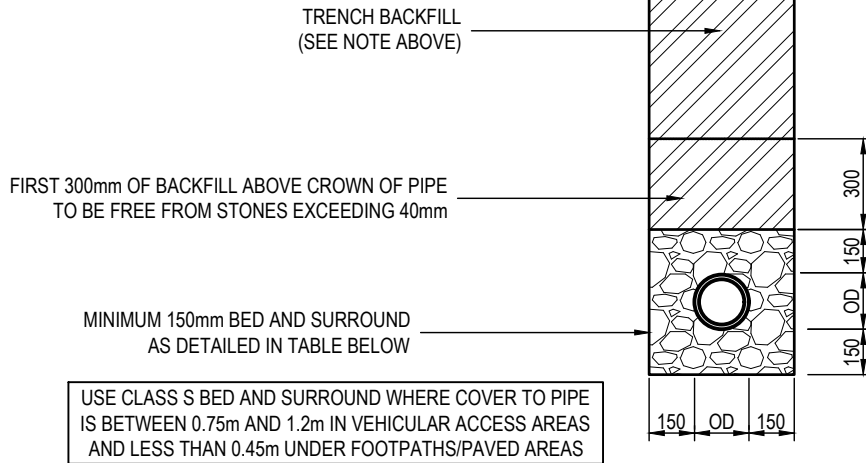


DESCRIPTION:

- 150mm MINIMUM THICK CONCRETE SURROUND.
- COMPRESSIBLE MATERIAL EITHER FIBRE BOARD OR POLYSTYRENE 25mm MINIMUM THICKNESS

DRAIN WITH CONCRETE SURROUND

TRENCH BACKFILL NOTE
1. ROADS AND FOOTPATHS: TYPE 1 GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO THE UNDERSIDE OF SURFACE CONSTRUCTION
2. ELSEWHERE: SELECTED EXCAVATED MATERIAL COMPACTED IN 150mm LAYERS



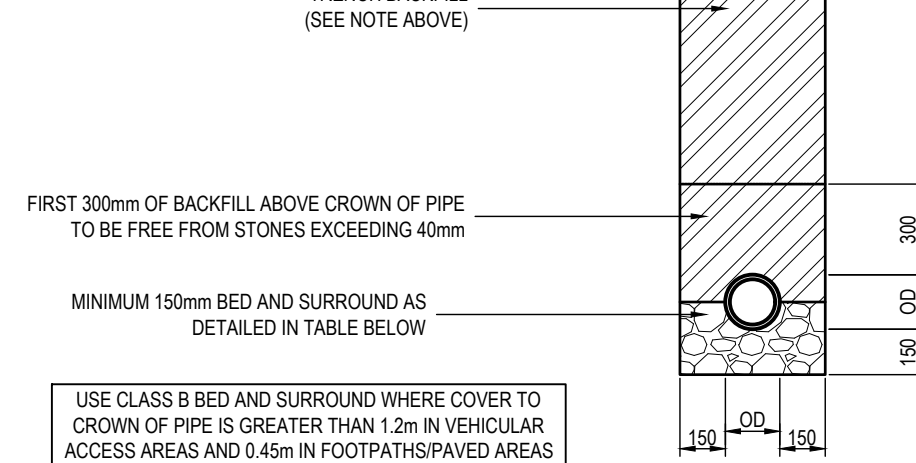
USE CLASS S BED AND SURROUND WHERE COVER TO PIPE IS BETWEEN 0.75m AND 1.2m IN VEHICULAR ACCESS AREAS AND LESS THAN 0.45m UNDER FOOTPATHS/PAVED AREAS

PIPE DIAMETER:	BEDDING MATERIAL:
1000	10mm SINGLE SIZE AGGREGATE
1010 - 1500	10mm OR 14mm SINGLE SIZE AGGREGATE
1510 - 5000	10mm, 14mm OR 20mm SINGLE SIZE AGGREGATE

NOTE:
THE ABOVE MATERIALS ARE FOR GUIDANCE. OTHER BEDDING MATERIALS CAN BE USED IN ACCORDANCE WITH THE PIPE MANUFACTURES RECOMMENDATIONS i.e. SINTERED PULVERISED FUEL ASH AND AIR COOLED BLAST FURNACE SLAGS

CLASS S GRANULAR BED AND SURROUND

TRENCH BACKFILL NOTE
1. ROADS AND FOOTPATHS: TYPE 1 GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO THE UNDERSIDE OF SURFACE CONSTRUCTION
2. ELSEWHERE: SELECTED EXCAVATED MATERIAL COMPACTED IN 150mm LAYERS

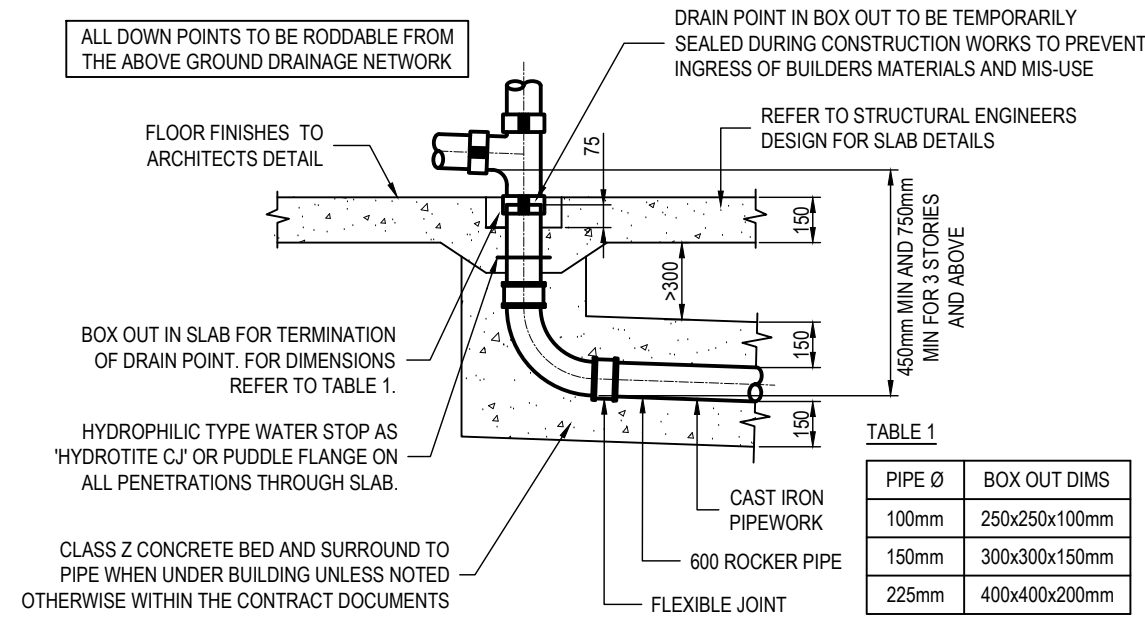


USE CLASS B BED AND SURROUND WHERE COVER TO CROWN OF PIPE IS GREATER THAN 1.2m IN VEHICULAR ACCESS AREAS AND 0.45m IN FOOTPATHS/PAVED AREAS

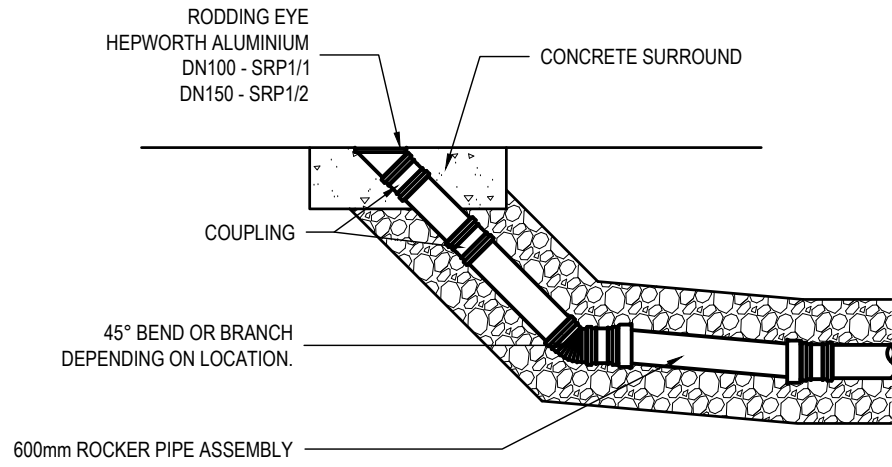
PIPE DIAMETER:	BEDDING MATERIAL:
1000	10mm SINGLE SIZE AGGREGATE
1010 - 1500	10mm OR 14mm SINGLE SIZE AGGREGATE
1510 - 5000	10mm, 14mm OR 20mm SINGLE SIZE AGGREGATE
>5000	10mm, 14mm, 20mm OR 40mm SINGLE SIZE CRUSHED ROCK

NOTE:
THE ABOVE MATERIALS ARE FOR GUIDANCE. OTHER BEDDING MATERIALS CAN BE USED IN ACCORDANCE WITH THE PIPE MANUFACTURES RECOMMENDATIONS i.e. SINTERED PULVERISED FUEL ASH AND AIR COOLED BLAST FURNACE SLAGS

CLASS B GRANULAR BED AND SURROUND



TYPICAL DRAIN POINT



EXTERNAL RODDING EYE

P01	24.10.24	ISSUED FOR PLANNING	LB/LB
Rev.	Date	Amendment	Tech/Eng.

BIM Status	S2
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Job Title
20-30 GREYFRIARS

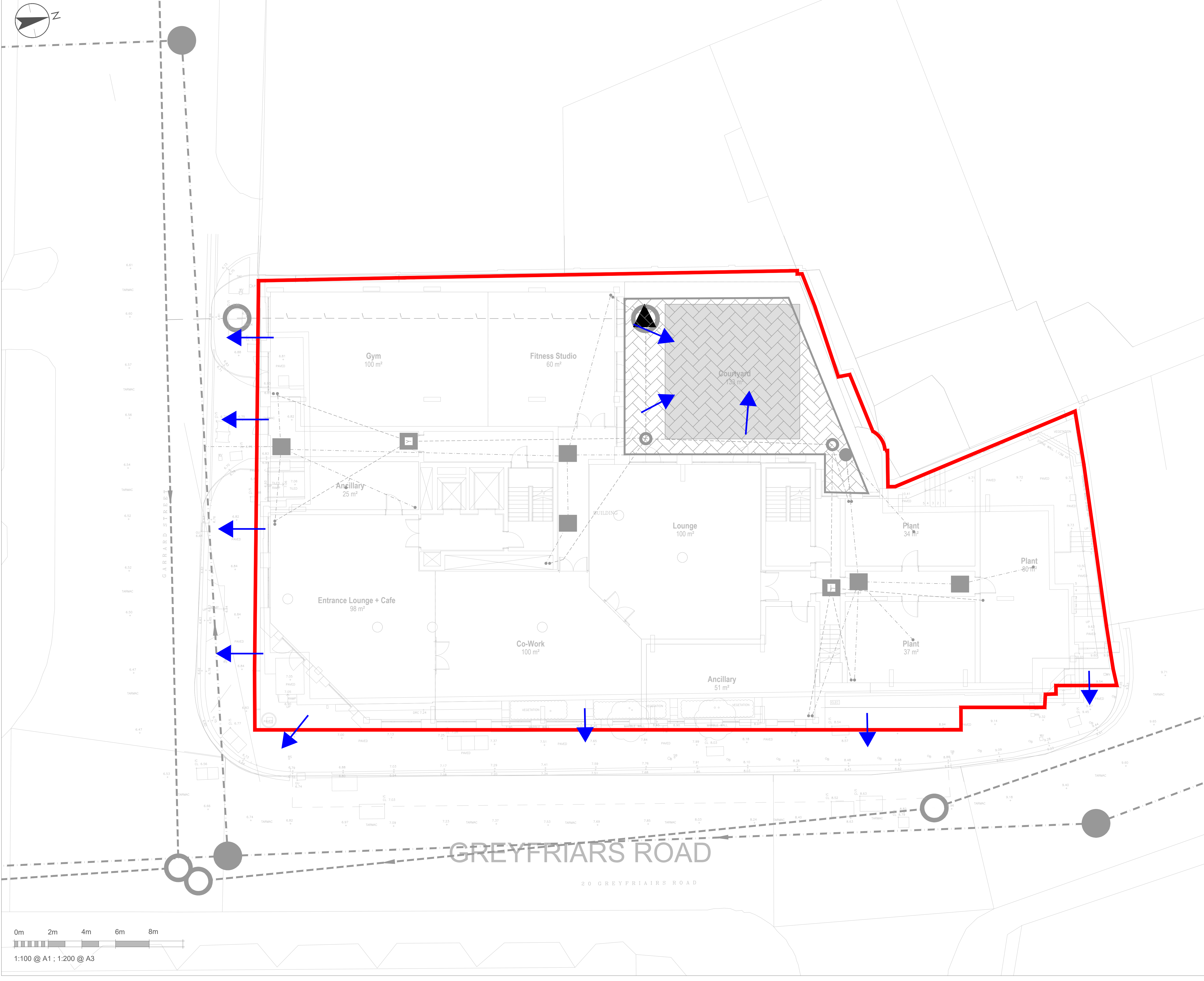
Drawing Title
BELOW GROUND DRAINAGE
DRAINAGE DETAILS
SHEET 3

Job No. 233968 | Scale 1:150@ A1 | Date SEPT 24 | Drawn LB

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Drawing No. 233968-FSD-XX-XX-DR-C-9292 | Rev. P01

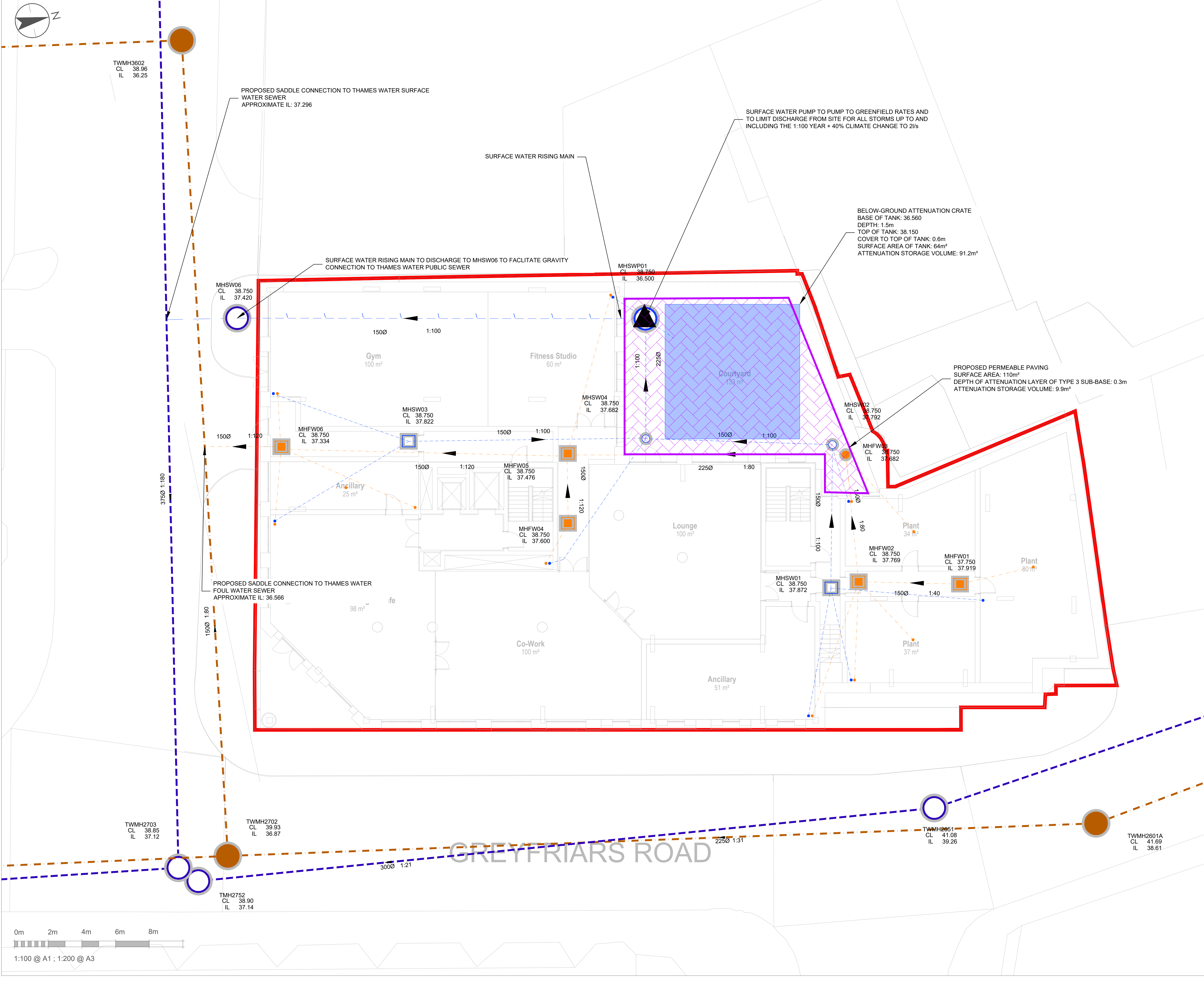


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SOURCE INFORMATION REFERENCES			
TYPE	AUTHOR	DRAWING	REVISION / DATE
LANDSCAPE LAYOUT	HENSHALL GREEN	126 HGL XX 00 DR L 0002	Preliminary October 2024
GROUND FLOOR LAYOUT	Darling Associates	GFR-DAA-ZA-00-DR-A-03100-Ground Floor Plan	Preliminary October 2024
TOPOGRAPHICAL SURVEY	Arena Property Services Limited	23134-13-B-T	12.03.24
EXISTING UTILITIES	THAMES WATER	n/a - ASSET SEARCH	OCTOBER 2024
SVP / RWP POSITIONS	Form (Assumed from GROUND FLOOR LAYOUT)	Assumed from GROUND FLOOR LAYOUT	n/a

- KEY:
- RED LINE BOUNDARY
 - EXISTING PUBLIC SURFACE WATER SEWER MANHOLE AND PIPE
 - EXISTING PUBLIC FOUL WATER SEWER MANHOLE AND PIPE
 - PROPOSED PRIVATE SURFACE WATER MANHOLE AND PIPE
 - PROPOSED PRIVATE SURFACE WATER SQUARE MANHOLE
 - PROPOSED SURFACE WATER DRAIN/DROP POINT
 - PROPOSED SURFACE WATER ATTENUATION CRATE
 - PROPOSED PERMEABLE PAVING
 - PROPOSED PRIVATE FOUL WATER MANHOLE AND PIPE
 - PROPOSED FOUL WATER DRAIN/DROP POINT
 - PROPOSED FOUL SQUARE MANHOLE
 - PROPOSED SURFACE WATER PUMPING STATION
 - OVERLAND FLOW EXCEEDANCE ROUTE

P01	11.10.24	FOR INFORMATION	LB/LB
Rev.	Date	Amendment	Tech/Eng.
BIM Status	S2		
Job Title	20-30 GREYFRIARS		
Drawing Title	BELOW GROUND DRAINAGE EXCEEDANCE PLAN		
Job No. 233968	Scale 1:150@ A1	Date SEPT 24	Drawn LB
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Form			
Intelligent Engineering Service Driven			
Drawing No. 233968-FSD-XX-XX-DR-C-9500	Rev. P01		

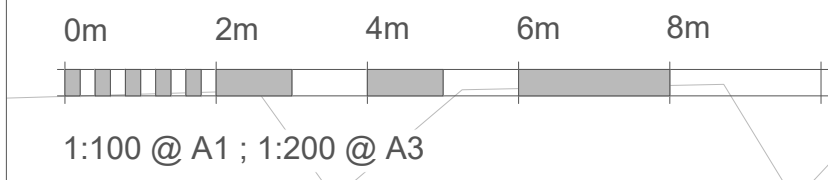


- NOTES:
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION
 - DO NOT SCALE FROM THIS DRAWING. IF IN DOUBT PLEASE REQUEST FURTHER INFORMATION
 - BELOW-GROUND DRAINAGE DESIGN IS INDICATIVE ONLY, MEP DRAIN POINT INFORMATION HAS BEEN ASSUMED FROM ARCHITECTS LAYOUT AND DESIGN SUBJECT TO CHANGE FOLLOWING RECEIPT OF DRAIN POINT INFORMATION PROVIDED BY MEP ENGINEER
 - SEWER POSITIONS ARE SHOWN INTRICATELY BASED ON ASSET RECORD INFORMATION FROM THAMES WATER RECEIVED 02.10.2024
 - LAYOUT ASSUMES NO BASEMENT DESIGN OPTION: IF BASEMENT IS USED FOR SCHEME THE MEP ENGINEER IS TO ROUTE ALL SURFACE WATER AND FOUL WATER GENERATED ABOVE LEVEL 1 TO SIDE OF BASEMENT AT GROUND FLOOR TO MINIMISE PUMPING

SOURCE INFORMATION REFERENCES			
TYPE	AUTHOR	DRAWING	REVISION / DATE
LANDSCAPE LAYOUT	HENSHALL GREEN	126 HGL XX 00 DR L 0002	Preliminary October 2024
GROUND FLOOR LAYOUT	Darling Associates	GFR-DAA-ZA-00-DR-A-03100-Ground Floor Plan	Preliminary October 2024
TOPOGRAPHICAL SURVEY	Arena Property Services Limited	23134-13-B-T	12.03.24
EXISTING UTILITIES	THAMES WATER	n/a - ASSET SEARCH	OCTOBER 2024
SVP / RWP POSITIONS	Form (Assumed from GROUND FLOOR LAYOUT)	Assumed from GROUND FLOOR LAYOUT	n/a

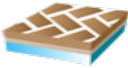
- KEY:
- RED LINE BOUNDARY
 - EXISTING PUBLIC SURFACE WATER SEWER MANHOLE AND PIPE
 - EXISTING PUBLIC FOUL WATER SEWER MANHOLE AND PIPE
 - PROPOSED PRIVATE SURFACE WATER MANHOLE AND PIPE
 - PROPOSED PRIVATE SURFACE WATER SQUARE MANHOLE
 - PROPOSED SURFACE WATER DRAIN/DROP POINT
 - PROPOSED SURFACE WATER ATTENUATION CRATE
 - PROPOSED PERMEABLE PAVING
 - PROPOSED PRIVATE FOUL WATER MANHOLE AND PIPE
 - PROPOSED FOUL WATER DRAIN/DROP POINT
 - PROPOSED FOUL SQUARE MANHOLE
 - PROPOSED SURFACE WATER PUMPING STATION

P01	24.10.24	ISSUED FOR PLANNING	LB/LB
Rev.	Date	Amendment	Tech/Eng.
BIM Status	S2		
Job Title	20-30 GREYFRIARS		
Drawing Title	BELOW GROUND DRAINAGE GENERAL LAYOUT		
Job No.	233968	Scale 1:150@ A1	Date SEPT 24 Drawn LB
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Intelligent Engineering Service Driven			
Drawing No.	233968-FSD-XX-XX-DR-C-9201		Rev. P01



Appendix F – Infodrainage modelling results

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Porous Paving

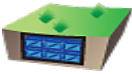
Type : Porous Paving

Dimensions		
Exceedance Level (m)		38.750
Depth (m)		0.300
Base Level (m)		38.450
Paving Layer Depth (mm)		20
Membrane Percolation (m/hr)		500.0
Porosity (%)		30
Length (m)		10.000
Long. Slope (1:X)		0.10
Width (m)		10.000
Total Volume (m³)		8.400

Outlets		
Outlet		
Outgoing Connection	Pipe (7)	
Outlet Type	Free Discharge	

Advanced		
Conductivity (m/hr)		500.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Stormwater Controls Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	38.750
Depth (m)	1.000
Base Level (m)	37.150
Number of Crates Long	1
Number of Crates Wide	1
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	8
Crate Width (m)	8
Crate Height (m)	1
Total Volume (m³)	61.400

Outlets

Outlet

Outgoing Connection	Pipe (6)
Outlet Type	Free Discharge

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Manhole Schedule Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
MHSW01	38.750 37.872	Diameter / Length: 1.200					Manhole
E:41.181 N:-23.364	0.878		{a} Pipe	Pipe	37.872	Diam/Width:225	Not Applicable
MHSW02	38.750 37.792	Diameter / Length: 1.200	{1} Pipe	Pipe	37.792	Diam/Width:225	Manhole
E:41.343 N:-14.683	0.958		{a} Pipe (1)	Pipe	37.792	Diam/Width:225	Not Applicable
MHSW04	38.750 37.682	Diameter / Length: 1.200	{1} Pipe (1)	Pipe	37.682	Diam/Width:225	Manhole
E:30.070 N:-14.391	1.068		{a} Pipe (2)	Pipe	37.682	Diam/Width:225	Not Applicable
MHSW05	38.750 37.150	Diameter / Length: 1.200	{1} Pipe (2)	Pipe	37.682	Diam/Width:225	Manhole
E:30.168 N:-7.167	1.600		{2} Pipe (6)	Pipe	37.150	Diam/Width:225 Diam/Width:150	
			{3} Pipe (7)	Pipe	37.150		
			{a} Pipe (3)	Pipe	37.682	Diam/Width:225	Not Applicable
MHSW06	38.750 37.150	Diameter / Length: 1.200	{1} Pipe (3)	Pipe	37.150	Diam/Width:225	Manhole
E:5.808 N:-7.200	1.600		{a} Pipe (4)	Pipe	37.420	Diam/Width:225	Not Applicable
SADDLE CONNECTION		Diameter / Length: 1.200	{1} Pipe (4)	Pipe	37.400	Diam/Width:225	Simple Junction
E:2.503 N:-15.039			{a} Pipe (5)	Pipe	37.400	Diam/Width:225	Not Applicable
DUMMY OUTFALL		Diameter / Length: 1.200	{1} Pipe (5)	Pipe	37.380	Diam/Width:225	Simple Junction
E:2.568 N:-24.692							Not Applicable

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by:	Checked by:	Approved By:
	LB		
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	MHSW02		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (1)	MHSW01		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (2)	MHSW04		Time of Concentration	0.021	100	0	100	0.021
Catchment Area (3)	MHSW04		Time of Concentration	0.015	100	0	100	0.015
Catchment Area (4)	MHSW05		Time of Concentration	0.005	100	0	100	0.005
Catchment Area (5)	MHSW04		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (6)	MHSW02		Time of Concentration	0.001	100	0	100	0.001
Catchment Area (7)	MHSW01		Time of Concentration	0.021	100	0	100	0.021
Catchment Area (8)	MHSW02		Time of Concentration	0.005	100	0	100	0.005
TOTAL		0.0		0.112				0.112

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Flow Options

Peak Flow Calculation	(UK) Modified Rational Method
Min. Time of Entry (mins)	5
Max. Travel Time (mins)	30

FSR

Type: FSR

Return Period (years)	100.0
Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.400

Pipe Options

Lock Slope Options	None
Design Options	Minimise Excavation
Design Level	Level Soffits
Min. Cover Depth (m)	1.200
Min. Slope (1:X)	500.00
Max. Slope (1:X)	40.00
Min. Velocity (m/s)	1.0
Max. Velocity (m/s)	3.0
Use Flow Restriction	☐
Reduce Channel Depths	☐

Pipe Size Library

Default

Add. Increment (mm)	75
Max. Diameter (mm)	0

Diameter (mm)	Min. Slope (1:X)	Max. Slope (1:X)
100	0.00	0.00
150	0.00	0.00

Manhole Options

Apply Offset

☐

Manhole Size Library

Default

Diameter / Width

Connection (mm)	Diameter / Length (m)	Width (m)
0	1.200	0.000
375	1.350	0.000
500	1.500	0.000
750	1.800	0.000

Additional Sizing

Connection (mm)	900
Diameter / Length (m)	0.900
Width (m)	0.000

Depth

Depth (m)	Diameter / Length (m)	Width (m)
0.000	1.050	0.000
1.500	1.200	0.000

Access

Depth (m)	Ladder Protrusion (mm)
0.000	130
3.000	230

Benching Requirements

Landing Width (mm)	500
Benching Width (mm)	225

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Outfall Details Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		

I

DRN

Outfalls

Outfall	Outfall Type	Fixed Surcharged Level (m)	Level Curve
DUMMY OUTFALL	Free Discharge		

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Runoff Type	Dynamic
Output Interval (mins)	1
Time Step	Shortest
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FSR

Type: FSR

Region	England And Wales
M5-60 (mm)	18.6
Ratio R	0.400
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40.000
30.0	0.000
1.0	0.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
240	480
360	720
480	960
960	1920
1440	2880

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FSR: 100 years: +40 %: 15 mins: Winter	0.01	8.0	3.682
Catchment Area (1)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	8.9	4.127
Catchment Area (2)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	12.3	5.688
Catchment Area (3)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	8.8	4.063
Catchment Area (4)	FSR: 100 years: +40 %: 15 mins: Winter	0.00	2.8	1.310
Catchment Area (5)	FSR: 100 years: +40 %: 15 mins: Winter	0.01	8.1	3.748
Catchment Area (6)	FSR: 100 years: +40 %: 15 mins: Winter	0.00	0.7	0.314
Catchment Area (7)	FSR: 100 years: +40 %: 15 mins: Winter	0.02	12.3	5.677
Catchment Area (8)	FSR: 100 years: +40 %: 15 mins: Winter	0.00	2.8	1.317

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Junctions Summary Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
MHSW01	FSR: 100 years: +40 %: 15 mins: Summer	38.750	37.872	38.099	0.227	20.2	0.256	0.000	19.6	8.754	Surcharged
MHSW02	FSR: 100 years: +40 %: 15 mins: Summer	38.750	37.792	38.081	0.289	30.3	0.326	0.000	30.5	13.495	Surcharged
MHSW04	FSR: 100 years: +40 %: 15 mins: Summer	38.750	37.682	38.030	0.348	57.5	0.394	0.000	57.3	25.521	Surcharged
MHSW05	FSR: 100 years: +40 %: 15 mins: Summer	38.750	37.150	37.631	0.481	59.8	0.544	0.000	2.0	26.668	OK
MHSW06	FSR: 100 years: +40 %: 15 mins: Summer	38.750	37.150	37.465	0.315	2.0	0.356	0.000	2.0	2.876	OK
SADDLE CONNECTION	FSR: 100 years: +40 %: 15 mins: Summer		37.400	37.446	0.046	2.0			2.0	2.815	OK
DUMMY OUTFALL	FSR: 100 years: +40 %: 15 mins: Summer		37.380	37.424	0.044	2.0			2.0	2.815	OK

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Stormwater Controls Summary Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 100 years: +40 %: 15 mins: Summer	37.535	37.535	0.385	0.385	58.2	23.402	0.000	0.000	1.9	1.015	61.887	OK
Porous Paving	FSR: 100 years: +40 %: 15 mins: Summer	138.450	38.450	0.000	0.000	0.0	0.000	0.000	0.000	0.0	0.000	100.000	OK

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Connections Summary Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			





Critical Storm Per Item: Rank By: Max. Flow

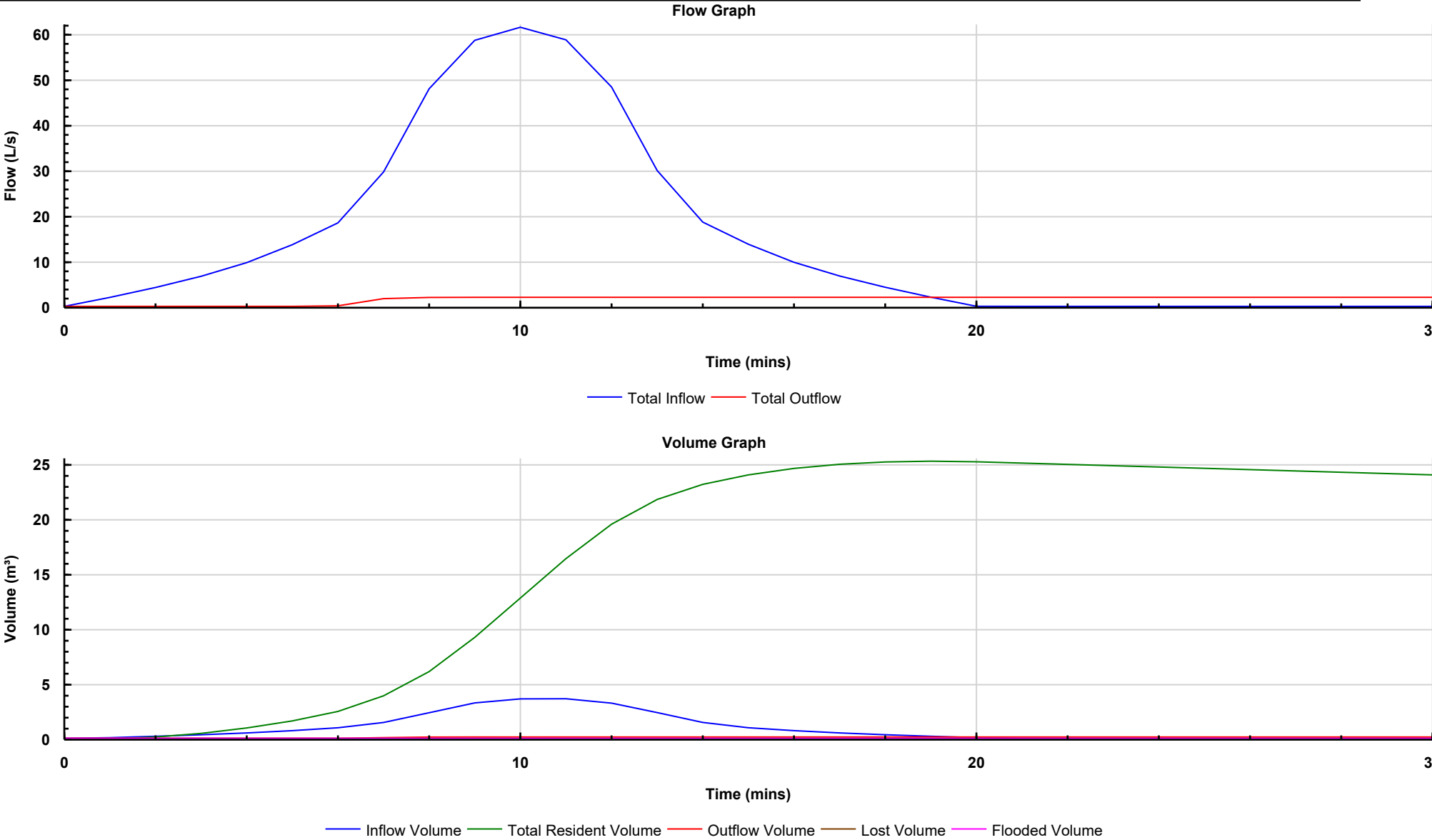
Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	MHSW01	MHSW02	38.750	38.121	0.225	9.804	0.8	0.41	20.5	Surcharge d
Pipe (1)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	MHSW02	MHSW04	38.750	38.101	0.225	15.118	0.8	0.62	31.8	Surcharge d
Pipe (2)	FSR: 100 years: +40 %: 15 mins: Winter	Pipe	MHSW04	MHSW05	38.750	38.046	0.225	28.592	1.5	2.01	59.9	Surcharge d
Pipe (3)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	MHSW05	MHSW06	38.750	37.631	0.009	3.264	0.0	0.03	2.0	OK
Pipe (4)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	MHSW06	SADDLE CONNECTION	38.750	37.465	0.046	2.876	0.5	0.08	2.0	OK
Pipe (5)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	SADDLE CONNECTIO N	DUMMY OUTFALL	38.500	37.446	0.045	2.815	0.4	0.09	2.0	OK
Pipe (6)	FSR: 100 years: +40 %: 240 mins: Winter	Pipe	Cellular Storage	MHSW05	38.750	37.883	0.225	0.000	0.0	0.07	2.0	Surcharge d
Pipe (7)	FSR: 100 years: +40 %: 15 mins: Summer	Pipe	Porous Paving	MHSW05	138.750	38.450	0.150	0.000	0.0	0	0.0	OK

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024			
	Designed by: LB	Checked by:	Approved By:	
Report Details: Type: Phase Management Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Phase
FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Graphs



Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.0
Total Inflow Volume (m³)	3.682

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.2
2	0.5
3	0.9
4	1.4
5	2.1
6	3.2
7	4.5
8	6.2
9	7.5
10	8.0
11	7.5
12	6.2
13	4.6
14	3.2
15	2.2
16	1.4
17	0.9
18	0.6
19	0.2
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (1)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.9
Total Inflow Volume (m³)	4.127

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.2
2	0.6
3	1.0
4	1.6
5	2.4
6	3.5
7	5.1
8	6.9
9	8.4
10	8.9
11	8.4
12	7.0
13	5.2
14	3.6
15	2.4
16	1.6
17	1.0
18	0.6
19	0.2
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (2)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	12.3
Total Inflow Volume (m³)	5.688

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.3
2	0.8
3	1.4
4	2.1
5	3.3
6	4.9
7	7.0
8	9.6
9	11.6
10	12.3
11	11.6
12	9.7
13	7.1
14	4.9
15	3.3
16	2.2
17	1.4
18	0.9
19	0.3
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (3)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.8
Total Inflow Volume (m³)	4.063

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.2
2	0.6
3	1.0
4	1.5
5	2.4
6	3.5
7	5.0
8	6.8
9	8.3
10	8.8
11	8.3
12	6.9
13	5.1
14	3.5
15	2.4
16	1.5
17	1.0
18	0.6
19	0.2
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (4)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	2.8
Total Inflow Volume (m³)	1.310

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.1
2	0.2
3	0.3
4	0.5
5	0.8
6	1.1
7	1.6
8	2.2
9	2.7
10	2.8
11	2.7
12	2.2
13	1.6
14	1.1
15	0.8
16	0.5
17	0.3
18	0.2
19	0.1
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (5)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.1
Total Inflow Volume (m³)	3.748

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.2
2	0.6
3	0.9
4	1.4
5	2.2
6	3.2
7	4.6
8	6.3
9	7.6
10	8.1
11	7.6
12	6.4
13	4.7
14	3.3
15	2.2
16	1.4
17	0.9
18	0.6
19	0.2
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (6)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	0.7
Total Inflow Volume (m³)	0.314

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.0
2	0.0
3	0.1
4	0.1
5	0.2
6	0.3
7	0.4
8	0.5
9	0.6
10	0.7
11	0.6
12	0.5
13	0.4
14	0.3
15	0.2
16	0.1
17	0.1
18	0.1
19	0.0
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (7)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	12.3
Total Inflow Volume (m³)	5.677

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.3
2	0.8
3	1.4
4	2.1
5	3.3
6	4.9
7	7.0
8	9.6
9	11.5
10	12.3
11	11.6
12	9.6
13	7.1
14	4.9
15	3.3
16	2.2
17	1.4
18	0.9
19	0.3
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Catchment Area (8)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Catchment Area

Inflow

Max. Inflow (L/s)	2.8
Total Inflow Volume (m³)	1.317

Tables

Time (mins)	Total Inflow (L/s)
0	0.0
1	0.1
2	0.2
3	0.3
4	0.5
5	0.8
6	1.1
7	1.6
8	2.2
9	2.7
10	2.8
11	2.7
12	2.2
13	1.6
14	1.1
15	0.8
16	0.5
17	0.3
18	0.2
19	0.1
20	0.0
21	0.0
22	0.0
23	0.0
24	0.0
25	0.0
26	0.0
27	0.0
28	0.0
29	0.0
30	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		
Report Details: Type: Junction Results Storm Phase: Phase			



MHSW01
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Manhole

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	0.6	0.012	0.013	0.000	0.2
2	1.4	0.024	0.028	0.000	1.1
3	2.2	0.032	0.036	0.000	2.0
4	3.2	0.039	0.044	0.000	3.0
5	4.5	0.047	0.053	0.000	4.2
6	6.0	0.055	0.063	0.000	5.8
7	9.7	0.072	0.082	0.000	9.1
8	15.7	0.095	0.108	0.000	15.0
9	19.2	0.163	0.185	0.000	16.2
10	20.2	0.227	0.256	0.000	19.4
11	19.3	0.227	0.256	0.000	19.6
12	15.9	0.176	0.199	0.000	17.7
13	9.9	0.096	0.109	0.000	12.9
14	6.1	0.057	0.064	0.000	6.6
15	4.5	0.049	0.055	0.000	4.8
16	3.2	0.041	0.046	0.000	3.5
17	2.2	0.034	0.039	0.000	2.4
18	1.4	0.028	0.031	0.000	1.6
19	0.7	0.021	0.024	0.000	0.9
20	0.0	0.012	0.014	0.000	0.3
21	0.0	0.007	0.007	0.000	0.1
22	0.0	0.004	0.005	0.000	0.0
23	0.0	0.003	0.003	0.000	0.0
24	0.0	0.002	0.003	0.000	0.0
25	0.0	0.002	0.002	0.000	0.0
26	0.0	0.002	0.002	0.000	0.0
27	0.0	0.002	0.002	0.000	0.0
28	0.0	0.001	0.002	0.000	0.0
29	0.0	0.001	0.002	0.000	0.0
30	0.0	0.001	0.001	0.000	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by:	Checked by:	Approved By:
	LB		
Report Details: Type: Junction Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



MHSW02
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Manhole

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	0.6	0.007	0.008	0.000	0.1
2	1.9	0.024	0.027	0.000	1.3
3	3.1	0.035	0.039	0.000	2.8
4	4.7	0.043	0.049	0.000	4.3
5	6.6	0.052	0.058	0.000	6.2
6	9.0	0.061	0.069	0.000	8.6
7	14.4	0.080	0.090	0.000	12.5
8	23.6	0.144	0.162	0.000	18.9
9	26.6	0.235	0.265	0.000	23.9
10	30.3	0.289	0.326	0.000	29.7
11	30.1	0.288	0.326	0.000	30.5
12	26.3	0.244	0.276	0.000	27.9
13	18.2	0.162	0.183	0.000	23.2
14	9.9	0.082	0.092	0.000	13.0
15	7.2	0.058	0.065	0.000	7.7
16	5.2	0.049	0.055	0.000	5.6
17	3.6	0.041	0.047	0.000	4.0
18	2.3	0.034	0.038	0.000	2.7
19	1.2	0.026	0.030	0.000	1.6
20	0.3	0.018	0.020	0.000	0.7
21	0.1	0.011	0.012	0.000	0.2
22	0.0	0.008	0.009	0.000	0.1
23	0.0	0.006	0.006	0.000	0.1
24	0.0	0.004	0.005	0.000	0.0
25	0.0	0.004	0.004	0.000	0.0
26	0.0	0.003	0.004	0.000	0.0
27	0.0	0.003	0.003	0.000	0.0
28	0.0	0.003	0.003	0.000	0.0
29	0.0	0.002	0.003	0.000	0.0
30	0.0	0.002	0.003	0.000	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



MHSW04
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Manhole

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	1.0	0.014	0.016	0.000	0.1
2	3.1	0.045	0.051	0.000	1.1
3	5.8	0.077	0.087	0.000	4.2
4	8.6	0.098	0.111	0.000	7.4
5	12.3	0.119	0.134	0.000	10.9
6	16.9	0.141	0.159	0.000	15.4
7	25.9	0.178	0.201	0.000	23.5
8	40.6	0.242	0.274	0.000	37.3
9	50.4	0.308	0.349	0.000	48.8
10	57.5	0.348	0.394	0.000	57.0
11	57.0	0.348	0.393	0.000	57.3
12	49.8	0.313	0.354	0.000	50.7
13	36.8	0.249	0.281	0.000	39.4
14	21.5	0.180	0.204	0.000	25.1
15	13.9	0.139	0.158	0.000	15.6
16	10.0	0.119	0.134	0.000	11.3
17	7.0	0.101	0.115	0.000	8.1
18	4.6	0.085	0.097	0.000	5.6
19	2.5	0.069	0.078	0.000	3.5
20	0.7	0.052	0.059	0.000	1.8
21	0.2	0.038	0.043	0.000	0.8
22	0.1	0.030	0.034	0.000	0.4
23	0.1	0.025	0.029	0.000	0.3
24	0.0	0.022	0.025	0.000	0.2
25	0.0	0.019	0.022	0.000	0.1
26	0.0	0.017	0.019	0.000	0.1
27	0.0	0.015	0.017	0.000	0.1
28	0.0	0.014	0.016	0.000	0.1
29	0.0	0.013	0.014	0.000	0.0
30	0.0	0.012	0.013	0.000	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Junction Results Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



MHSW05
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Manhole

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	0.1	0.002	0.002	0.000	0.0
2	1.3	0.014	0.016	0.000	0.3
3	4.5	0.054	0.061	0.000	1.1
4	7.8	0.119	0.135	0.000	2.0
5	11.5	0.218	0.247	0.000	2.0
6	16.2	0.300	0.340	0.000	2.0
7	24.8	0.287	0.325	0.000	2.0
8	39.4	0.313	0.354	0.000	2.0
9	51.4	0.399	0.451	0.000	2.0
10	59.7	0.481	0.544	0.000	2.0
11	59.8	0.477	0.539	0.000	2.0
12	52.9	0.457	0.517	0.000	2.0
13	40.8	0.419	0.474	0.000	2.0
14	25.9	0.375	0.424	0.000	2.0
15	16.2	0.369	0.418	0.000	2.0
16	11.7	0.374	0.423	0.000	2.0
17	8.4	0.378	0.428	0.000	2.0
18	5.8	0.381	0.431	0.000	2.0
19	3.6	0.383	0.433	0.000	2.0
20	2.0	0.384	0.434	0.000	2.0
21	2.0	0.384	0.434	0.000	2.0
22	2.0	0.382	0.433	0.000	2.0
23	2.0	0.381	0.430	0.000	2.0
24	2.0	0.379	0.429	0.000	2.0
25	2.0	0.377	0.427	0.000	2.0
26	2.0	0.375	0.424	0.000	2.0
27	2.0	0.374	0.422	0.000	2.0
28	2.0	0.372	0.420	0.000	2.0
29	2.0	0.370	0.418	0.000	2.0
30	2.0	0.368	0.416	0.000	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		
Report Details: Type: Junction Results Storm Phase: Phase			



MHSW06
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Manhole

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	0.0	0.001	0.001	0.000	0.0
2	0.3	0.007	0.008	0.000	0.0
3	1.1	0.039	0.044	0.000	0.0
4	2.0	0.122	0.138	0.000	0.0
5	2.0	0.225	0.255	0.000	0.0
6	2.0	0.305	0.345	0.000	1.2
7	2.0	0.314	0.355	0.000	1.9
8	2.0	0.315	0.356	0.000	2.0
9	2.0	0.315	0.356	0.000	2.0
10	2.0	0.315	0.356	0.000	2.0
11	2.0	0.315	0.356	0.000	2.0
12	2.0	0.315	0.356	0.000	2.0
13	2.0	0.315	0.356	0.000	2.0
14	2.0	0.315	0.356	0.000	2.0
15	2.0	0.315	0.356	0.000	2.0
16	2.0	0.315	0.356	0.000	2.0
17	2.0	0.315	0.356	0.000	2.0
18	2.0	0.315	0.356	0.000	2.0
19	2.0	0.315	0.356	0.000	2.0
20	2.0	0.315	0.356	0.000	2.0
21	2.0	0.315	0.356	0.000	2.0
22	2.0	0.315	0.356	0.000	2.0
23	2.0	0.315	0.356	0.000	2.0
24	2.0	0.315	0.356	0.000	2.0
25	2.0	0.315	0.356	0.000	2.0
26	2.0	0.315	0.356	0.000	2.0
27	2.0	0.315	0.356	0.000	2.0
28	2.0	0.315	0.356	0.000	2.0
29	2.0	0.315	0.356	0.000	2.0
30	2.0	0.315	0.356	0.000	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Junction Results Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



SADDLE CONNECTION
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Simple Junction

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Total Outflow (L/s)
0	0.0	0.000	0.0
1	0.0	0.000	0.0
2	0.0	0.000	0.0
3	0.0	0.000	0.0
4	0.0	0.000	0.0
5	0.0	0.000	0.0
6	1.2	0.012	0.1
7	1.9	0.043	1.7
8	2.0	0.046	2.0
9	2.0	0.046	2.0
10	2.0	0.046	2.0
11	2.0	0.046	2.0
12	2.0	0.046	2.0
13	2.0	0.046	2.0
14	2.0	0.046	2.0
15	2.0	0.046	2.0
16	2.0	0.046	2.0
17	2.0	0.046	2.0
18	2.0	0.046	2.0
19	2.0	0.046	2.0
20	2.0	0.046	2.0
21	2.0	0.046	2.0
22	2.0	0.046	2.0
23	2.0	0.046	2.0
24	2.0	0.046	2.0
25	2.0	0.046	2.0
26	2.0	0.046	2.0
27	2.0	0.046	2.0
28	2.0	0.046	2.0
29	2.0	0.046	2.0
30	2.0	0.046	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



DUMMY OUTFALL
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Simple Junction

Tables

Time (mins)	Total Inflow (L/s)	Depth (m)	Total Outflow (L/s)
0	0.0	0.000	0.0
1	0.0	0.000	0.0
2	0.0	0.000	0.0
3	0.0	0.000	0.0
4	0.0	0.000	0.0
5	0.0	0.000	0.0
6	0.1	0.011	0.1
7	1.7	0.041	1.7
8	2.0	0.044	2.0
9	2.0	0.044	2.0
10	2.0	0.044	2.0
11	2.0	0.044	2.0
12	2.0	0.044	2.0
13	2.0	0.044	2.0
14	2.0	0.044	2.0
15	2.0	0.044	2.0
16	2.0	0.044	2.0
17	2.0	0.044	2.0
18	2.0	0.044	2.0
19	2.0	0.044	2.0
20	2.0	0.044	2.0
21	2.0	0.044	2.0
22	2.0	0.044	2.0
23	2.0	0.044	2.0
24	2.0	0.044	2.0
25	2.0	0.044	2.0
26	2.0	0.044	2.0
27	2.0	0.044	2.0
28	2.0	0.044	2.0
29	2.0	0.044	2.0
30	2.0	0.044	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Stormwater Control Results Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Cellular Storage
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Cellular Storage

Tables

Time (mins)	Total Inflow (L/s)	Depth(m)	Resident Volume(m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
1	0.0	0.000	0.000	0.000	0.0
2	0.0	0.000	0.000	0.000	0.0
3	0.7	0.000	0.013	0.000	-0.7
4	0.9	0.001	0.049	0.000	-0.9
5	3.9	0.003	0.169	0.000	-3.9
6	14.0	0.011	0.663	0.000	-14.0
7	23.0	0.029	1.766	0.000	-23.0
8	35.1	0.057	3.455	0.000	-35.1
9	46.5	0.098	5.916	0.000	-46.5
10	57.0	0.150	9.062	0.000	-57.0
11	58.2	0.208	12.565	0.000	-58.2
12	51.2	0.262	15.888	0.000	-51.2
13	39.4	0.307	18.639	0.000	-39.4
14	24.5	0.339	20.588	0.000	-24.5
15	14.0	0.357	21.708	0.000	-14.0
16	9.7	0.369	22.416	0.000	-9.7
17	6.4	0.377	22.895	0.000	-6.4
18	3.7	0.382	23.198	0.000	-3.7
19	1.6	0.384	23.359	0.000	-1.6
20	0.0	0.385	23.402	0.000	0.2
21	0.0	0.384	23.355	0.000	1.3
22	0.0	0.383	23.270	0.000	1.6
23	0.0	0.381	23.172	0.000	1.7
24	0.0	0.379	23.067	0.000	1.8
25	0.0	0.378	22.958	0.000	1.8
26	0.0	0.376	22.846	0.000	1.9
27	0.0	0.374	22.733	0.000	1.9
28	0.0	0.372	22.620	0.000	1.9
29	0.0	0.370	22.505	0.000	1.9
30	0.0	0.368	22.389	0.000	1.9

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Porous Paving
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Porous Paving

Tables

Time (mins)	Total Inflow (L/s)	US Depth (m)	DS Depth (m)	Resident Volume(m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.000	0.0
1	0.0	0.000	0.000	0.000	0.000	0.0
2	0.0	0.000	0.000	0.000	0.000	0.0
3	0.0	0.000	0.000	0.000	0.000	0.0
4	0.0	0.000	0.000	0.000	0.000	0.0
5	0.0	0.000	0.000	0.000	0.000	0.0
6	0.0	0.000	0.000	0.000	0.000	0.0
7	0.0	0.000	0.000	0.000	0.000	0.0
8	0.0	0.000	0.000	0.000	0.000	0.0
9	0.0	0.000	0.000	0.000	0.000	0.0
10	0.0	0.000	0.000	0.000	0.000	0.0
11	0.0	0.000	0.000	0.000	0.000	0.0
12	0.0	0.000	0.000	0.000	0.000	0.0
13	0.0	0.000	0.000	0.000	0.000	0.0
14	0.0	0.000	0.000	0.000	0.000	0.0
15	0.0	0.000	0.000	0.000	0.000	0.0
16	0.0	0.000	0.000	0.000	0.000	0.0
17	0.0	0.000	0.000	0.000	0.000	0.0
18	0.0	0.000	0.000	0.000	0.000	0.0
19	0.0	0.000	0.000	0.000	0.000	0.0
20	0.0	0.000	0.000	0.000	0.000	0.0
21	0.0	0.000	0.000	0.000	0.000	0.0
22	0.0	0.000	0.000	0.000	0.000	0.0
23	0.0	0.000	0.000	0.000	0.000	0.0
24	0.0	0.000	0.000	0.000	0.000	0.0
25	0.0	0.000	0.000	0.000	0.000	0.0
26	0.0	0.000	0.000	0.000	0.000	0.0
27	0.0	0.000	0.000	0.000	0.000	0.0
28	0.0	0.000	0.000	0.000	0.000	0.0
29	0.0	0.000	0.000	0.000	0.000	0.0
30	0.0	0.000	0.000	0.000	0.000	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.008	0.1
2	0.024	1.1
3	0.035	2.2
4	0.044	3.4
5	0.056	5.3
6	0.069	8.0
7	0.095	11.7
8	0.135	15.6
9	0.220	17.1
10	0.225	20.5
11	0.225	20.5
12	0.224	18.4
13	0.156	14.6
14	0.092	9.3
15	0.062	6.2
16	0.049	4.1
17	0.040	2.7
18	0.032	1.7
19	0.023	0.8
20	0.014	0.3
21	0.008	0.1
22	0.006	0.0
23	0.004	0.0
24	0.003	0.0
25	0.003	0.0
26	0.002	0.0
27	0.002	0.0
28	0.002	0.0
29	0.002	0.0
30	0.002	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (1)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.009	0.1
2	0.033	1.2
3	0.058	3.1
4	0.076	5.0
5	0.095	7.8
6	0.120	11.8
7	0.156	15.7
8	0.217	20.5
9	0.225	26.0
10	0.225	31.2
11	0.225	31.8
12	0.225	28.8
13	0.225	24.2
14	0.165	17.8
15	0.117	10.7
16	0.092	6.8
17	0.076	4.5
18	0.062	2.9
19	0.048	1.6
20	0.034	0.6
21	0.024	0.2
22	0.019	0.1
23	0.015	0.1
24	0.013	0.0
25	0.011	0.0
26	0.010	0.0
27	0.009	0.0
28	0.008	0.0
29	0.008	0.0
30	0.007	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (2)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Winter

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.007	0.0
2	0.033	1.0
3	0.067	4.5
4	0.090	8.5
5	0.114	13.6
6	0.144	21.1
7	0.175	29.8
8	0.216	41.2
9	0.225	51.9
10	0.225	59.9
11	0.225	59.7
12	0.225	52.8
13	0.222	42.8
14	0.182	32.4
15	0.144	21.6
16	0.114	13.8
17	0.093	9.3
18	0.076	6.2
19	0.059	3.6
20	0.041	1.7
21	0.029	0.7
22	0.022	0.4
23	0.018	0.2
24	0.016	0.2
25	0.014	0.1
26	0.012	0.1
27	0.010	0.1
28	0.009	0.1
29	0.008	0.0
30	0.007	0.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (3)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.001	0.0
2	0.003	0.3
3	0.007	1.1
4	0.009	2.0
5	0.009	2.0
6	0.009	2.0
7	0.009	2.0
8	0.009	2.0
9	0.009	2.0
10	0.009	2.0
11	0.009	2.0
12	0.009	2.0
13	0.009	2.0
14	0.009	2.0
15	0.009	2.0
16	0.009	2.0
17	0.009	2.0
18	0.009	2.0
19	0.009	2.0
20	0.009	2.0
21	0.009	2.0
22	0.009	2.0
23	0.009	2.0
24	0.009	2.0
25	0.009	2.0
26	0.009	2.0
27	0.009	2.0
28	0.009	2.0
29	0.009	2.0
30	0.008	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (4)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.000	0.0
2	0.000	0.0
3	0.000	0.0
4	0.000	0.0
5	0.000	0.0
6	0.023	1.2
7	0.043	1.9
8	0.045	2.0
9	0.046	2.0
10	0.046	2.0
11	0.046	2.0
12	0.046	2.0
13	0.046	2.0
14	0.046	2.0
15	0.046	2.0
16	0.046	2.0
17	0.046	2.0
18	0.046	2.0
19	0.046	2.0
20	0.046	2.0
21	0.046	2.0
22	0.046	2.0
23	0.046	2.0
24	0.046	2.0
25	0.046	2.0
26	0.046	2.0
27	0.046	2.0
28	0.046	2.0
29	0.046	2.0
30	0.046	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (5)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.000	0.0
2	0.000	0.0
3	0.000	0.0
4	0.000	0.0
5	0.000	0.0
6	0.011	0.1
7	0.042	1.7
8	0.045	2.0
9	0.045	2.0
10	0.045	2.0
11	0.045	2.0
12	0.045	2.0
13	0.045	2.0
14	0.045	2.0
15	0.045	2.0
16	0.045	2.0
17	0.045	2.0
18	0.045	2.0
19	0.045	2.0
20	0.045	2.0
21	0.045	2.0
22	0.045	2.0
23	0.045	2.0
24	0.045	2.0
25	0.045	2.0
26	0.045	2.0
27	0.045	2.0
28	0.045	2.0
29	0.045	2.0
30	0.045	2.0

Project:
20-30 Greyfriars Street
Reading

Report Details:
Type: Connection Results
Storm Phase: Phase

Date:
02/10/2024

Designed by:
LB

Company Address:
Form
Second Floor, New Hibernia House, Winchester Walk
London SE1 9AG

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Pipe (6)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 240 mins: Winter

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.000	0.0
2	0.000	0.0
3	0.000	0.0
4	0.000	0.0
5	0.001	0.0
6	0.002	0.0
7	0.003	0.0
8	0.006	0.0
9	0.010	-0.1
10	0.014	-0.1
11	0.017	-0.2
12	0.020	-0.2
13	0.023	-0.2
14	0.026	-0.3
15	0.028	-0.4
16	0.029	-0.5
17	0.030	-0.5
18	0.031	-0.6
19	0.032	-0.7
20	0.032	-0.7
21	0.033	-0.8
22	0.033	-0.8
23	0.033	-0.9
24	0.034	-0.9
25	0.034	-1.0
26	0.034	-1.0
27	0.034	-1.0
28	0.035	-1.0
29	0.035	-1.0
30	0.036	-1.1
31	0.036	-1.1
32	0.036	-1.1
33	0.036	-1.1
34	0.037	-1.1
35	0.037	-1.1
36	0.038	-1.1
37	0.038	-1.1
38	0.038	-1.1
39	0.039	-1.1
40	0.039	-1.1
41	0.039	-1.1
42	0.040	-1.1
43	0.040	-1.2
44	0.041	-1.2
45	0.041	-1.2
46	0.042	-1.2
47	0.043	-1.2
48	0.043	-1.2
49	0.044	-1.2
50	0.045	-1.2
51	0.045	-1.3
52	0.046	-1.3
53	0.047	-1.3
54	0.048	-1.3
55	0.049	-1.4
56	0.050	-1.4
57	0.051	-1.4
58	0.052	-1.5
59	0.053	-1.5
60	0.055	-1.5
61	0.056	-1.6
62	0.058	-1.6
63	0.059	-1.7
64	0.061	-1.8
65	0.062	-1.8
66	0.064	-1.9
67	0.066	-1.9
68	0.067	-2.0
69	0.069	-2.1
70	0.071	-2.2
71	0.073	-2.3
72	0.076	-2.3
73	0.078	-2.4
74	0.080	-2.5
75	0.083	-2.6
76	0.085	-2.7
77	0.088	-2.8
78	0.090	-2.9
79	0.093	-3.0
80	0.096	-3.1
81	0.099	-3.2
82	0.102	-3.4
83	0.106	-3.6
84	0.109	-3.8
85	0.113	-3.9
86	0.117	-4.1
87	0.121	-4.3
88	0.125	-4.5
89	0.130	-4.7
90	0.135	-4.9
91	0.139	-5.1
92	0.144	-5.3
93	0.150	-5.5

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Time (mins)	Depth (m)	Flow (L/s)
94	0.155	-5.7
95	0.161	-5.8
96	0.167	-6.0
97	0.173	-6.2
98	0.179	-6.4
99	0.185	-6.7
100	0.192	-6.9
101	0.199	-7.1
102	0.206	-7.3
103	0.213	-7.5
104	0.221	-7.7
105	0.225	-7.9
106	0.225	-8.1
107	0.225	-8.3
108	0.225	-8.5
109	0.225	-8.6
110	0.225	-8.8
111	0.225	-9.0
112	0.225	-9.1
113	0.225	-9.3
114	0.225	-9.4
115	0.225	-9.6
116	0.225	-9.7
117	0.225	-9.8
118	0.225	-9.9
119	0.225	-10.0
120	0.225	-10.1
121	0.225	-10.2
122	0.225	-10.2
123	0.225	-10.2
124	0.225	-10.2
125	0.225	-10.2
126	0.225	-10.1
127	0.225	-10.0
128	0.225	-9.9
129	0.225	-9.8
130	0.225	-9.7
131	0.225	-9.6
132	0.225	-9.5
133	0.225	-9.3
134	0.225	-9.2
135	0.225	-9.1
136	0.225	-8.9
137	0.225	-8.7
138	0.225	-8.6
139	0.225	-8.4
140	0.225	-8.2
141	0.225	-8.0
142	0.225	-7.8
143	0.225	-7.6
144	0.225	-7.5
145	0.225	-7.3
146	0.225	-7.1
147	0.225	-6.9
148	0.225	-6.3
149	0.225	-6.2
150	0.225	-6.0
151	0.225	-5.8
152	0.225	-5.6
153	0.225	-5.4
154	0.225	-5.2
155	0.225	-5.1
156	0.225	-4.8
157	0.225	-4.6
158	0.225	-4.4
159	0.225	-4.2
160	0.225	-3.9
161	0.225	-3.8
162	0.225	-3.6
163	0.225	-3.4
164	0.225	-3.2
165	0.225	-3.1
166	0.225	-2.9
167	0.225	-2.8
168	0.225	-2.6
169	0.225	-2.5
170	0.225	-2.3
171	0.225	-2.2
172	0.225	-2.1
173	0.225	-1.9
174	0.225	-1.8
175	0.225	-1.7
176	0.225	-1.6
177	0.225	-1.5
178	0.225	-1.4
179	0.225	-1.3
180	0.225	-1.2
181	0.225	-1.1
182	0.225	-1.0
183	0.225	-0.9
184	0.225	-0.8
185	0.225	-0.8
186	0.225	-0.7
187	0.225	-0.7
188	0.225	-0.6
189	0.225	-0.5
190	0.225	-0.5
191	0.225	-0.4
192	0.225	-0.4
193	0.225	-0.4
194	0.225	-0.3

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		
Report Details: Type: Connection Results Storm Phase: Phase			



Time (mins)	Depth (m)	Flow (L/s)
195	0.225	-0.3
196	0.225	-0.3
197	0.225	-0.3
198	0.225	-0.2
199	0.225	-0.2
200	0.225	-0.2
201	0.225	-0.2
202	0.225	-0.2
203	0.225	-0.2
204	0.225	-0.2
205	0.225	-0.2
206	0.225	-0.2
207	0.225	-0.2
208	0.225	-0.2
209	0.225	-0.2
210	0.225	-0.2
211	0.225	-0.2
212	0.225	-0.2
213	0.225	-0.2
214	0.225	-0.2
215	0.225	-0.2
216	0.225	-0.2
217	0.225	-0.2
218	0.225	-0.2
219	0.225	-0.1
220	0.225	-0.1
221	0.225	-0.1
222	0.225	-0.1
223	0.225	-0.1
224	0.225	-0.1
225	0.225	0.0
226	0.225	0.0
227	0.225	0.1
228	0.225	0.1
229	0.225	0.2
230	0.225	0.2
231	0.225	0.3
232	0.225	0.4
233	0.225	0.5
234	0.225	0.6
235	0.225	0.7
236	0.225	0.8
237	0.225	0.9
238	0.225	1.1
239	0.225	1.2
240	0.225	1.4
241	0.225	1.5
242	0.225	1.6
243	0.225	1.7
244	0.225	1.7
245	0.225	1.8
246	0.225	1.8
247	0.225	1.8
248	0.225	1.8
249	0.225	1.8
250	0.225	1.8
251	0.225	1.8
252	0.225	1.8
253	0.225	1.8
254	0.225	1.8
255	0.225	1.8
256	0.225	1.8
257	0.225	1.8
258	0.225	1.8
259	0.225	1.8
260	0.225	1.8
261	0.225	1.8
262	0.225	1.8
263	0.225	1.8
264	0.225	1.8
265	0.225	1.8
266	0.225	1.8
267	0.225	1.8
268	0.225	1.8
269	0.225	1.8
270	0.225	1.8
271	0.225	1.8
272	0.225	1.8
273	0.225	1.8
274	0.225	1.8
275	0.225	1.8
276	0.225	1.8
277	0.225	1.8
278	0.225	1.8
279	0.225	1.8
280	0.225	1.8
281	0.225	1.8
282	0.225	1.8
283	0.225	1.8
284	0.225	1.8
285	0.225	1.8
286	0.225	1.8
287	0.225	1.8
288	0.225	1.8
289	0.225	1.8
290	0.225	1.8
291	0.225	1.8
292	0.225	1.8
293	0.225	1.8
294	0.225	1.8
295	0.225	1.8

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
	Report Details: Type: Connection Results Storm Phase: Phase		
Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG			



Time (mins)	Depth (m)	Flow (L/s)
296	0.225	1.8
297	0.225	1.8
298	0.225	1.8
299	0.225	1.8
300	0.225	1.8
301	0.225	1.8
302	0.225	1.8
303	0.225	1.8
304	0.225	1.8
305	0.225	1.8
306	0.225	1.8
307	0.225	1.8
308	0.225	1.9
309	0.225	1.9
310	0.225	1.9
311	0.225	1.9
312	0.225	1.9
313	0.225	1.9
314	0.225	1.9
315	0.225	1.9
316	0.225	1.9
317	0.225	1.9
318	0.225	1.9
319	0.225	1.9
320	0.225	1.9
321	0.225	1.9
322	0.225	1.9
323	0.225	1.9
324	0.225	1.9
325	0.225	1.9
326	0.225	1.9
327	0.225	1.9
328	0.225	1.9
329	0.225	1.9
330	0.225	1.9
331	0.225	1.9
332	0.225	1.9
333	0.225	1.9
334	0.225	1.9
335	0.225	1.9
336	0.225	1.9
337	0.225	1.9
338	0.225	1.9
339	0.225	1.9
340	0.225	1.9
341	0.225	1.9
342	0.225	1.9
343	0.225	1.9
344	0.225	1.9
345	0.225	1.9
346	0.225	1.9
347	0.225	1.9
348	0.225	2.0
349	0.225	2.0
350	0.225	2.0
351	0.225	2.0
352	0.225	2.0
353	0.225	2.0
354	0.225	2.0
355	0.225	2.0
356	0.225	2.0
357	0.225	2.0
358	0.225	2.0
359	0.225	2.0
360	0.225	2.0
361	0.225	2.0
362	0.225	2.0
363	0.225	2.0
364	0.225	2.0
365	0.225	2.0
366	0.225	2.0
367	0.225	2.0
368	0.225	2.0
369	0.225	2.0
370	0.225	2.0
371	0.225	2.0
372	0.225	2.0
373	0.225	2.0
374	0.225	2.0
375	0.225	2.0
376	0.225	2.0
377	0.225	2.0
378	0.225	2.0
379	0.225	2.0
380	0.225	2.0
381	0.225	2.0
382	0.225	2.0
383	0.225	2.0
384	0.225	2.0
385	0.225	2.0
386	0.225	2.0
387	0.225	2.0
388	0.225	2.0
389	0.225	2.0
390	0.225	2.0
391	0.225	2.0
392	0.225	2.0
393	0.225	2.0
394	0.225	2.0
395	0.225	2.0
396	0.225	2.0

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Time (mins)	Depth (m)	Flow (L/s)
397	0.225	2.0
398	0.225	2.0
399	0.225	2.0
400	0.225	2.0
401	0.225	2.0
402	0.225	2.0
403	0.225	2.0
404	0.225	2.0
405	0.225	2.0
406	0.225	2.0
407	0.225	2.0
408	0.225	2.0
409	0.225	2.0
410	0.225	2.0
411	0.225	2.0
412	0.225	2.0
413	0.225	2.0
414	0.225	2.0
415	0.225	2.0
416	0.225	2.0
417	0.225	2.0
418	0.225	2.0
419	0.225	2.0
420	0.225	2.0
421	0.225	2.0
422	0.225	2.0
423	0.225	2.0
424	0.225	2.0
425	0.225	2.0
426	0.225	2.0
427	0.225	2.0
428	0.225	2.0
429	0.225	2.0
430	0.225	2.0
431	0.225	2.0
432	0.225	2.0
433	0.225	2.0
434	0.225	2.0
435	0.225	2.0
436	0.225	2.0
437	0.225	2.0
438	0.225	2.0
439	0.225	2.0
440	0.225	2.0
441	0.225	2.0
442	0.225	2.0
443	0.225	2.0
444	0.225	2.0
445	0.225	2.0
446	0.225	2.0
447	0.225	2.0
448	0.225	2.0
449	0.225	2.0
450	0.225	2.0
451	0.225	2.0
452	0.225	2.0
453	0.225	2.0
454	0.225	2.0
455	0.225	2.0
456	0.225	2.0
457	0.225	2.0
458	0.225	2.0
459	0.225	2.0
460	0.225	2.0
461	0.225	2.0
462	0.225	2.0
463	0.225	2.0
464	0.225	2.0
465	0.225	2.0
466	0.225	2.0
467	0.225	2.0
468	0.225	2.0
469	0.225	2.0
470	0.225	2.0
471	0.225	2.0
472	0.225	2.0
473	0.225	2.0
474	0.225	2.0
475	0.225	2.0
476	0.225	2.0
477	0.225	2.0
478	0.225	2.0
479	0.225	1.9
480	0.225	1.9

Project: 20-30 Greyfriars Street Reading	Date: 02/10/2024		
	Designed by: LB	Checked by:	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address: Form Second Floor, New Hibernia House, Winchester Walk London SE1 9AG		



Pipe (7)
Critical Storm: FSR: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
1	0.001	0.0
2	0.007	0.0
3	0.027	0.0
4	0.060	0.0
5	0.109	0.0
6	0.150	0.0
7	0.144	0.0
8	0.150	0.0
9	0.150	0.0
10	0.150	0.0
11	0.150	0.0
12	0.150	0.0
13	0.150	0.0
14	0.150	0.0
15	0.150	0.0
16	0.150	0.0
17	0.150	0.0
18	0.150	0.0
19	0.150	0.0
20	0.150	0.0
21	0.150	0.0
22	0.150	0.0
23	0.150	0.0
24	0.150	0.0
25	0.150	0.0
26	0.150	0.0
27	0.150	0.0
28	0.150	0.0
29	0.150	0.0
30	0.150	0.0

Appendix G – SuDS Maintenance Schedule

Operation and Maintenance Manual

Project Name

20-30 Greyfriars Road, Reading

Project Number

233968

Date

October 2024

Revision

P01

Form Structural Design

Intelligent Engineering
Service Driven

New Hibernia House
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Project Information

Project Name:	20-30 Greyfriars Road
Project No:	233968
Location:	20-30 Greyfriars Road, Reading, Berkshire, RG1 1NS
Title:	Flood Risk Assessment and Drainage Strategy Report
Document Ref:	233968-FSD-XX-XX-RP-C-0002
BIM Status:	N/A

Revision History

Revision	Date	Purpose/Comments	Prepared by	Checked by	Approved by
P01	24/10/24	Issued for planning	LB	LB	LB

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1 Introduction

1.1 Project Background

Form Structural Design ("Form") have been appointed by Elder to prepare a Drainage Operations and Maintenance Manual to supplement the Drainage Strategy produced by Form. Document reference: 233968-FSD-XX-XX-DR-C-9201

Particular reference is paid to the inspection, aftercare and maintenance of SuDs drainage features as part of this manual in order to demonstrate to the LLFA or adopting authority the effectiveness and longevity of the SuDs features designed within the scheme as opposed to the standard Building Regulations local and domestic drainage and/or the main discharge drainage connections to 'Sewers for Adoption' standards.

This report is based on current best practice guidance as described in the SuDS Manual, CIRIA, C753.

Proposals contained or forming part of this report represent the design intent and may be subject to alteration or adjustment in completing the detailed design for this project. Where such adjustments are undertaken as part of the detailed design and are deemed a material derivation from the intent contained in this document, prior approval shall be obtained from the relevant authority in advance of commencing such works.

1.2 Scope of O&M Manual

This manual is intended to give an overview of the operation and maintenance for SuDS features included with the drainage strategy and in relation to typical details only. Where proprietary products are specified the manufacturer's instructions and recommendations should be followed in priority to this document unless specifically noted otherwise due to project constraints.

The recommended operations and frequencies are typical only and should be more frequent initially to ensure that there are no unforeseen issues with the operation and then adjusted to suit the site requirements.

2 Geocellular Units

2.1 Location and Description

Geocellular Units are located in the courtyard as shown on drainage drawing '233968-FSD-XX-XX-DR-C-9201.

Geocellular units are proprietary products and therefore manufacturer's specific recommendations should also be taken in to consideration above what has been prepared in this document. Additionally, different manufacturers may have different connection types and arrangements which will need to be taken in to consideration.

2.2 Operation

The geocellular units, along with permeable paving, are intended to attenuate the discharge from the site up to and including the 1 in 100 year plus 40% climate change event.

Access for maintenance has been provided through inspection chambers.

2.3 Inspection and Maintenance Regime

Regular inspection and maintenance is important for the effective operation of geocellular units as designed. As the feature is buried a regularly inspection regime is very important to ensure the correct functionality of the surface water drainage network. Maintenance responsibility for the geocellular units and their surrounding areas should be placed with Elder as noted in section 1.1.

Sediment\material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols; especially where run-off is taken from potentially contaminated areas such as car parks/service yards.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Inspect inlets, outlets and overflows for blockages, and clear if required. If faults persist jetting and CCTV survey may be required.	Monthly and after large storms.
	Check penstocks and other mechanical devices (if present).	Half yearly.
	Inspect ventilation cowl (if present)	Monthly and after large storms.
Regular maintenance\inspection	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then six monthly
	Debris removal from catchment surface (where may cause risks to performance)	Monthly
	Where rainfall infiltrates into blocks from above, check surface of filter for blockage by silt, algae or other matter. Remove and replace surface infiltration medium as necessary.	Monthly (and after large storms)
	Remove sediment from pre-treatment structures	Annually (or as required after heavy rainfall events)
Remedial actions	Repair/rehabilitation of inlets, outlet, overflows and vents.	As required.

3 Permeable Pavements

3.1 Location and Description

The permeable pavement is located within the courtyard of the site as shown on drainage drawing 233968-FSD-XX-XX-DR-C-9201.

The permeable pavement has been designed in accordance with CIRIA C753.

Permeable pavements contain proprietary products and as such, the manufacturer's recommendations should be followed where used.

3.2 Operation

Permeable pavements are an efficient mean of managing surface water runoff close to its source – intercepting runoff, reducing the volume and frequency of runoff, and providing a treatment medium.

The surface has been designed by the landscape architect to be porous or to contain gaps where rain can flow through the upper construction layers in to the voided stone which makes up the sub-base.

3.3 Inspection and Maintenance Regime

Regular inspection and maintenance is important for the effective operation of the pervious pavement. Maintenance responsibility for the pavement and its surrounding area should be placed Elder as noted in section 1.1.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols, as run-off is taken from potentially contaminated areas such as car parks/service yards.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection.	Monthly for three months after installation.
	Inspect for evidence of poor operation and/or weed growth. If required, take remedial action.	3-monthly, 48 hours after large storms in first six months.
	Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
	Monitor inspection chambers.	Annually.
Regular maintenance/inspection	Brushing and vacuuming.	Three times/year at end of winter, mid-summer, after autumn leaf fall, or as required based on site-specific observations of clogging or manufacturers' recommendations.
Occasional maintenance	Removal of weed or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required – one per year on less frequently used pavements.
	Stabilise and mow contributing and adjacent areas.	As required.
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required.
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing materials.	As required.
	Rehabilitation of surface and upper substructure by remedial sweeping.	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging).

4 Pipes (Including Oversized)

4.1 Location and Description

Pipes are the main conveyance across the site with the network as shown on drainage drawing '233968-FSD-XX-XX-DR-C-9201.

Pipes are proprietary products and the materials can vary across the site and as such where used the manufacturer's recommendations should be followed. Regardless of the product used, the pipes will be fully compliant with the drainage specification.

4.2 Operation

They are intended to be dry except for during rainfall events. These have been designed to be self-cleansing for smaller diameter pipes, and for larger diameters the risk is reduced due to the overall pipe size.

Access for maintenance is provided through access chambers, manholes, rodding plates and rodding eyes.

4.3 Inspection and Maintenance Regime

Regular inspection and maintenance is important to identify areas which may have been obstructed/clogged and may not be draining correctly thus exposing the development to a greater level of flood risk. Maintenance responsibility for the pipes should be placed with Elder.

Sediment/material removal should be undertaken in consultation with the environmental regulator to confirm appropriate protocols, as run-off is taken from potentially contaminated areas such as car parks/service yards.

Maintenance Schedule	Required Action	Frequency
Monitoring (to be undertaken more regularly within the first year of operation and adjusted as required)	Initial inspection should be provided as post construction CCTV survey.	N/A
	Inspect for evidence of poor operation via water level in chambers. If required, take remedial action.	3-monthly, 48 hours after large storms.
Occasional maintenance	Check and remove large vegetation growth near pipe runs.	6 monthly
Remedial actions	Rod through poorly performing runs as initial remediation.	As required.
	If continued poor performance jet and CCTV survey poorly performing runs.	As required.
	Seek advice as to remediation techniques suitable for the type of performance issue and location.	As required If above does not improve performance.

5 Pumping station

5.1 Location and Description

A pumping station is proposed at the courtyard of the site to discharge surface water to the Thames Water public sewer. A pump is a proprietary product and therefore manufacturer's specific recommendations should also be taken in to consideration above what has been prepared in this document. Additionally, different manufacturers may have different connection types and arrangements which will need to be taken in to consideration.

5.2 Operation

The surface water pumping station is proposed to discharge storm water from the site up to and including the 1 in 100 year plus 40% climate change event at a rate of 2l/s.

Access for maintenance has been provided through inspection chambers.

5.3 Inspection and Maintenance Regime

Regular inspection and maintenance is important for the effective operation of a pumping station. The pumping station is a proprietary product and as such the manufacturers recommended maintenance regimen should be followed. Maintenance responsibility for the pump and their surrounding areas should be placed with Elder as noted in section 1.1 and is expected to consist of the following, however, is to be confirmed by the manufacturer and supplier.

5.3.1 Regular Inspections:

- Perform regular visual inspections to check for leaks, corrosion, or unusual noises.
- Inspect control panels and alarms to ensure they are functioning properly.

5.3.2 Preventive Maintenance:

- Schedule regular service for pumps and motors, including lubrication of bearings, cleaning of components, and checking mechanical seals.
- Test the backup power supply and other emergency systems monthly.

5.3.3 Cleaning:

- Remove debris and sediment from the sump and pump intake areas regularly.
- Clean the wet well and any accessible parts of the pumping system to prevent the buildup of sludge.

5.3.4 Testing:

- Inspect and test float switches and sensors to ensure they are operating correctly.
- Conduct regular performance testing to ensure the pumps are operating at their designed capacity.

5.3.5 Record Keeping:

- Maintain logs of inspections, maintenance activities, and any repairs performed.
- Document all alarm events and any issues that arise for future reference.

5.3.6 Emergency Checks:

- Review and test emergency response procedures regularly.
- Ensure that emergency shut-off valves and access points are clear and operational.

5.3.7 Annual Maintenance:

- Schedule a comprehensive annual inspection by a qualified technician to evaluate overall system performance and condition, including electrical systems.

units as designed. As the feature is buried a regularly inspection regime is very important to ensure the correct functionality of the surface water drainage network. Maintenance responsibility for the pump and their surrounding areas should be placed with Elder as noted in section 1.1.

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