

DRAINAGE STRATEGY

PROPERTY ADDRESS

Victoria Mill
10 Lower Vickers Street
Manchester
M40 7LJ

CLIENT

Report Prepared for
Virtu Homes Ltd

REPORT REFERENCE

23-/SWH

DATE

JUNE 2025

1. Introduction

- 1.1.** ADS structural have been appointed to prepare a drainage strategy in support of a proposed residential development of a section of the ground floor at Victoria Mill, 10 Lower Vickers Street, Manchester, M40 7LJ.
- 1.2.** The application site is rectangular in shape and was previously noted as a previously re-developed mill conversion.
- 1.3.** The national Grid reference for the site is 385879,399235 and the nearest postcode to the site is M40 7LJ.
- 1.4.** The site extends to approximately 3195m² and is a brownfield site.
- 1.5.** The scheme is for the conversion of part of the lower ground floor into residential apartments along with associated infrastructure. 10 lightwells will be the new impermeable area to contribute to drainage system. The total new impermeable area is 12 m².

2. Proposed Drainage Strategy

- 2.1.** In order to demonstrate the development is of low risk the report should show:
 - That it will be feasible to balance surface water run-off to the existing run-off rate in terms of a brownfield development for all events up to the 1 in 100-year storm (including a 45% allowance for climate change) and set out how this will be achieved
 - What sustainable drainage techniques (SuDS) will be used with any obstacles to their use clearly justified
- 2.2.** The primary flood risk generated by the new development is most likely to be the risk posed to others by surface water run-off. The proposed development will marginally increase the amount of hardstanding across the site which will therefore generate similar surface water run-off rates/volumes which may need to be attenuated within the site boundary.
- 2.3.** The surface water drainage developments for any development site should aspire to be such that the volumes and peak flow rates of surface water leaving a developed site are no greater than the rates prior to the development.
- 2.4.** For a new development it may be necessary to provide surface water storage and/or infiltration to limit and reduce both the peak rate of discharge from the site and the total volume discharged from the site.
- 2.5.** Climate change (CC) will be considered by increasing the rainfall intensity by 45% in line with the Environment Agency and NPPF Technical Guidance.

3. Existing Site Drainage

- 3.1.** The site is currently unused and has previously occupied by an existing converted mill. There is an existing combined drain located just outside of the curtilage of the dwelling, ultimately out falling into the adjacent adopted drain.

It should also be noted that there is an existing canal and overflow/bypass surface water culvert which runs along the southern boundary of the site, ultimately out falling into a larger diameter culvert following the western boundary of the site.

- 3.2.** Foul drainage is to be discharged via a new wastewater treatment plant on site.
- 3.3.** The existing drainage details can be found in Appendix A

4. Consideration of the Sustainable Drainage Systems

- 4.1.** Following the Hierarchy of Sustainable Drainage Systems (SUDS) the following options must be considered.

- Soakways for roof run-off and permeable surfacing for roads, drives, car parks and private access roads
- Discharge to local watercourse
- Discharge to local sewer
- Discharge to adjacent land drains and ponds

- 4.2.** The first option to be considered must be infiltration into the ground. Even when there are alternative sewer connections or water courses available, infiltration must be utilised unless it is unfeasible.

We would advise that infiltration drainage could not be utilised on this developer due to the clay subsoils and as such we would rule out the use of this type of drainage system.

- 4.3.** The proposed storage would be catered for within the oversized pipes to cater for storms up to and including the 1 in 100 yr. 6-hour storm event +45% CCF.

5. Proposed Drainage Design

- 5.1.** In the hydraulic calculation with the new 12 m² impermeable area (12 lightwells), the max flow is 0.8 l/s without storage. So we don't need flow control as the max flow is too small.
- 5.2.** The design seeks to utilise a traditional piped drainage system. Whilst not the most sustainable solution, at this stage it is one that we are confident could be delivered To enable completion of the works
- 5.3.** The outline drawing shows the surface & foul water on separate systems. The surface water flows will be directed to the culverted water course running along the southern boundary. Foul water runs will discharge to a new waste water treatment plant.

- 5.4.** In calculating the run-off at this stage, to ensure robustness, we have assumed the following:
- No rainwater harvesting / Water butts.
- 5.5.** In order to ensure a robust approach, it has been assumed that 100% of the rainwater falling on the proposed impermeable areas for the roof and parking areas only to enter the system.
- 5.6.** No storage required.
- 5.7.** Consultation has been made with United Utilities to discuss the implications of connecting into their system.

6. Summary

- The development is currently a brownfield site.
- Surface water run-off from the new 10 lightwells within the proposed development will be discharging into the existing culverted water course.
- There's no requirement for storage.
- The drainage proposals will be designed in accordance with the techniques set out within the SUDS manual.

7. Conclusion

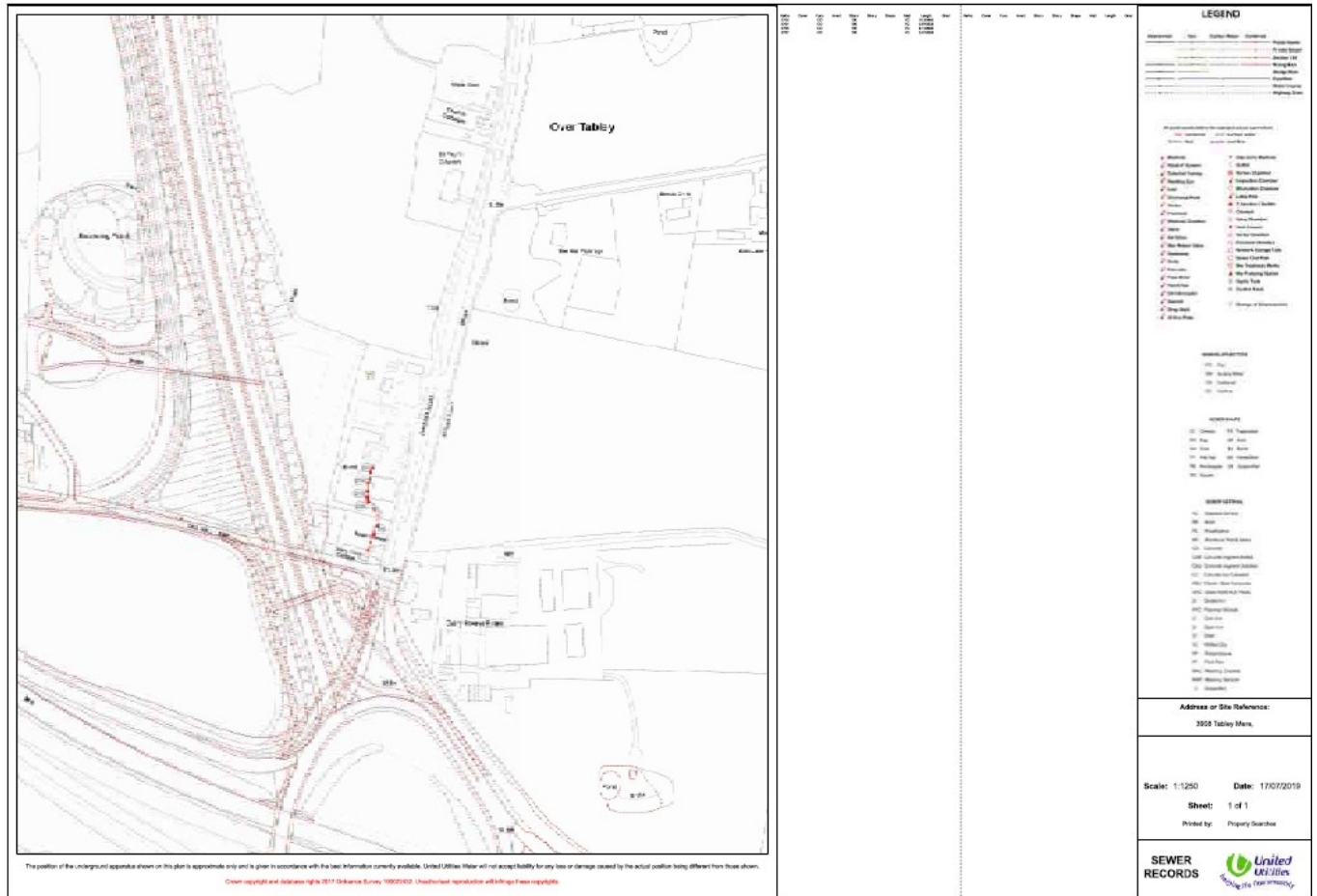
- The drainage strategy presented has investigated the Suds hierarchy in relation to preferred drainage discharge and it can be confirmed that connection to the existing culverted watercourse is the only preferred option give the potential for contamination within the underlying sub-soils
- The on-site drainage has been split between foul and surface water runs, combining into the existing combined manhole as it exits the site. This will allow a later discharge to a separate system when available.

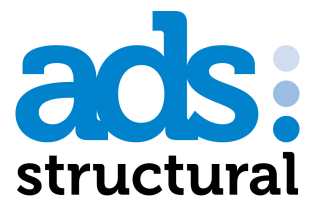
Report Prepared By: S W Hornby

A handwritten signature in black ink, appearing to read 'S W Hornby', written over a light blue horizontal line.

For and on behalf of
ADS Structural Limited.

APPENDIX A – EXISTING DRAINAGE LAYOUT





APPENDIX B – PROPOSED DRAINAGE LAYOUT



ONLY PDF/DWG ISSUES OF THIS DRAWING ARE CONTROLLED. ALL OTHER FORMATS (e.g. DWG AUTOCAD FILES) ARE UN-CONTROLLED AND ARE USED AT YOUR OWN RISK.

NOTE FOR CONTRACTORS

THIS ADS DRAWING SHOULD BE CONSIDERED ALONG WITH THE RISK INFORMATION CONTAINED IN THE CDM PRE CONSTRUCTION INFORMATION. THIS INFORMATION WILL INCLUDE DETAILS OF THE SIGNIFICANT RISK WHICH ADS HAVE IDENTIFIED WHICH MAY ARISE FROM CONSTRUCTING THE DESIGNS SHOWN ON THIS DRAWING. A COMPETENT CONTRACTOR SHOULD BE AWARE OF THE TYPICAL RISKS ASSOCIATED WITH DOING THIS WORK.

NOTE FOR WORKERS

DO NOT START YOUR WORK UNLESS YOU KNOW THE RISK AND CONTROLS RELATING TO THE WORK ON THIS DRAWING (INCLUDING SAFE SEQUENCES OF WORK AND EQUIPMENT)



DO NOT ISSUE COPIES OR PARTS OF THIS DRAWING WITHOUT THE ABOVE NOTE FOR WORKERS(UNLESS YOU ARE SURE THAT THE WORKERS CAN UNDERTAKE THE WORK SAFELY).

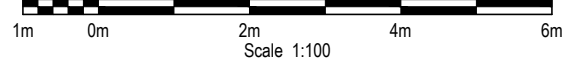
GENERAL NOTES

1. THIS DRAWING IS TO BE READ IN CONNECTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE FROM THIS DRAWING. ALL SETTING OUT DIMENSIONS ARE TO BE CHECKED AND VERIFIED ON SITE PRIOR TO COMMENCEMENT OF ANY BUILDING WORKS & FABRICATION OF MATERIALS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER.
3. ALL WORKMANSHIP AND MATERIALS ARE TO COMPLY WITH THE CURRENT BUILDING REGULATIONS, BRITISH STANDARDS AND CODES OF PRACTICE. ALL MATERIALS SHALL BE FIXED OR APPLIED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR IS TO TAKE INTO ACCOUNT EVERYTHING DEEMED NECESSARY FOR THE PROPER EXECUTION OF THE WORKS WHETHER INDICATED ON THE DRAWINGS OR NOT TO THE COMPLETE SATISFACTION OF THE LOCAL AUTHORITY.
4. FOR FINAL SETTING OUT INFORMATION RELATING TO WALL POSITIONS REFER TO ARCHITECT'S DRAWINGS.

NOTE: CONTRACTOR MUST ALLOW FOR ALL NECESSARY TEMPORARY PROPPING & NEEDLES TO EXISTING WALL CONSTRUCTION PRIOR TO REMOVING EXISTING MASONRY & INSTALLMENT OF NEW BEAM AND STANCHIONS.

WHERE THERE ARE ALTERATIONS TO LOAD BEARING MASONRY, THE FOUNDATIONS ARE TO BE CHECKED AND APPROVED PRIOR TO THE INSTALLATION OF STEELWORK UNLESS SPECIFICALLY INSTRUCTED BY THE ENGINEER IN WRITING.

EXISTING FLOOR SPAN DIRECTION HAS NOT BEEN CONFIRMED. DISCREPANCIES BETWEEN FLOOR SPANS AS SHOWN ON THIS DRAWING AND ON SITE ARE TO BE REPORTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORKS.



P3	10.06.2025	SURFACE WATER DRAINAGE UPDATED.	YZ	SWH	ADS
P2	06.12.2024	AMENDED AS PER MARK-UP.	JAL	SWH	ADS
P1	17.11.2023	FIRST ISSUE	AMS	SWH	ADS
REV.	DATE	REVISION DETAILS	DRAWN	CHKD.	APPRD.

CLIENT: VIRTU HOMES LTD

PROJECT: VICTORIA MILL

DRAWING TITLE: DRAINAGE PLAN

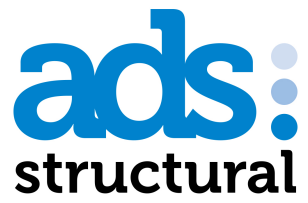
DRAWING STATUS: PRELIMINARY

ads:structural

SCALE @ A1

107 Mere Grange Business Park,
Leaside, St Helens WA9 5GG
Tel: 0151 541 4000
info@adsstructural.co.uk

PROJECT - ORIGINATOR - ZONE - LEVEL - TYPE - ROLE - NUMBER | REV



APPENDIX C - SUDS MAINTENANCE STRATEGY



ADS Consult Ltd

**Sustainable Drainage System (SuDS) Management
Strategy**

for

**Victoria Mill
10 Lower Vickers Street
Manchester
M40 7LJ**

Document No.: XXXX-ADS-XX-XX-RP-C-501
Title: Sustainable Drainage System (SuDS) Management Strategy
Client: Virtu Homes Ltd
Date: June 2025

CONTENTS

1	INTRODUCTION.....	3
2	MAINTENANCE RESPONSIBILITIES	3
3	MAINTENANCE REGIME.....	3
3.1	Manholes.....	4
3.2	Pipes	4
APPENDIX A INSPECTION CHECKLIST		5

1.0 INTRODUCTION

This management strategy has been prepared by ADS Consult Limited on behalf of Virtu Homes Ltd, for the residential development at Victoria Mill, 10 Lower Vickers Street, Manchester, M40 7LJ.

The SuDS considered for the purposes of this statement, include drainage features that will be employed to reduce and manage surface water runoff from the development to a design return period of one hundred years plus climate change of 45%. This is required so that the development will not increase the risk of flooding to the site and its environs. All drainage on site is taken to the underlying strata via the following features:

- Pipes
- Manholes

This document outlines the long-term maintenance of the proposed surface water system and will make reference to the following documents, some of which provide further detail on the maintenance operations required:

- CIRIA Report C753, 'The SUDS Manual', 2015
- CIRIA Report C625, 'Model Agreements for Sustainable Water Management Systems', 2004.
- CIRIA Report C768, 'Guidance on the Construction of SuDS', 2017; and

2.0 MAINTENANCE RESPONSIBILITIES

Responsibility for drainage within England and Wales rests with various bodies. For the Development, the drainage responsibilities will be as following:

- Site - A Management company will be set up by the developer for the development to maintain the drainage features, all SuDS features within communal areas. However, it should be noted that if, the Flood and Water Management Act 2010 is ever fully implemented this allows a surface water drainage system to be vested to the SuDS approving body (SAB) in this case Manchester Council. This would be reviewed at the time of any implementation of the act.

3.0 MAINTENANCE REGIME

The following section describes the required maintenance for each feature in turn. The SuDS maintenance requirements listed below should be reviewed after the first 5 years, with a view to agreeing to a new regime for the ongoing maintenance.

Notwithstanding the routine inspections and maintenance requirements, after severe storm events all features shall be inspected to clear debris and repair damaged structures or features. Records of the maintenance carried out shall be prepared by the Operator.

3.1 Manholes

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Remove litter and debris	Monthly
	Inspect inlets, outlets, and overflows for blockages, and clear if required.	Monthly
	Inspect inlets, outlets, and overflows for evidence of physical damage.	Monthly
	Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), the annually or as required
	Check any penstocks and other mechanical devices	Annually
Occasional Maintenance	Remove sediment from inlets, outlets, forebay and main basin when required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
Remedial actions	Repair/rehabilitation of inlets, outlets, and overflows	As required

3.2 Pipes

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect inlets, outlets, and overflows for evidence of poor operation.	Monthly
	Inspect inlets and facility surface for silt accumulation.	Monthly (for first year), the annually or as required
Occasional Maintenance	Rod through poorly performing pipes	As required
	If continued poor performance jet and CCTV survey poorly performing runs.	As required
Remedial actions	Repair / rehabilitation	As required

APPENDIX A

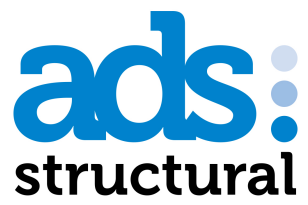
INSPECTION CHECKLIST

General information			
Site ID			
Site location and co-ordinates (GIS if appropriate)			
Elements forming the SuDS scheme		Approved drawing reference	
Inspection frequency		Approved specification reference	
Type of development		Specific purpose of any parts of the scheme (e.g., biodiversity, wildlife, and visual aspects)	

Inspection Date	Details	Y/ N	Action required	Date completed	Details	Y/ N	Action required	Date completed
General inspection items								
Is there any evidence of erosion, channeling, ponding (where not desirable) or other poor hydraulic performance?								
Is there any evidence of accidental spillages, oils, poor water quality, odours, or nuisance insects?								
Have any health and safety risks been identified to either the public or maintenance operatives?								
Silt/Sediment accumulation								
Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and within proprietary devices)? If yes, state depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator)								
Is surface clogging visible potentially problematic where water has to soak into the underlying construction or ground (e.g., under drained swale or infiltration basin)?								

Inspection Date	Details	Y/ N	Action required	Date completed	Details	Y/ N	Action required	Date completed
Does permeable or porous surfacing require sweeping to remove silt?								
Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?								
Is there any evidence of any other clogging or blockage of outlets or drainage paths?								
Is the vegetation condition satisfactory (density, weed growth, coverage etc.)? (check against approved planting regime)								
Does any part of the system require weeding, pruning, or mowing? (check against maintenance frequency state in approved design).								
Is there any evidence of invasive species becoming established? If yes, state action required								
Are any check dams or weirs in good condition?								
Is there any evidence of any accidental damage to the system (e.g., wheel ruts?)								
Is there any evidence of cross connections or other unauthorised inflows?								
Is there any evidence of tampering with the flow control?								
Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity, and visual aspects?								

Inspection Date	Details	Y/ N	Action required	Date completed	Details	Y/ N	Action required	Date completed
Other observations								
Information appended (e.g., photos)								
Continue as current Increase maintenance. Decrease maintenance								
Proposed date for next inspection								



APPENDIX D – HYDRAULIC CALCULATION

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Junctions Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
MH-01	Manhole	208555.647	601516.510	6.700	1.000	5.700	Circular	0.900
MH-02	Manhole	208562.758	601514.489	6.700	1.185	5.515	Circular	0.900
Existing MH	Manhole	208569.559	601515.206	6.700	1.356	5.344	Circular	1.200

Name	Lock
MH-01	None
MH-02	None
Existing MH	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
MH-01	Inlet	Catchment Area	(None)	No Restriction
MH-02	Inlet	1.000	(None)	No Restriction
Existing MH	Inlet	1.001	(None)	No Restriction

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
MH-01	Outlet	1.000	Free Discharge
	Outlet (1)	1.001	Orifice
MH-02	Diameter (m)	0.080	
	Coefficient of Discharge	0.600	
	Invert Level (m)	5.515	

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Connections Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
1.000	7.392	Pipe	39.959		0.6	150	6.700	5.700
1.001	6.839	Pipe	40.000		0.6	150	6.700	5.515

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance
1.000	6.700	5.515		None		(None)	(None)
1.001	6.700	5.344		None	14.3	(None)	(None)

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Inflow Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	MH-01		Time of Concentration	0.001	100	0	100	0.001
TOTAL		0.0		0.001				0.001

Project: Victoria Mill 10 Lower Vickers Street Manchester	Date: 10/06/2025			
Report Details: Type: Network Design Criteria Storm Phase: Phase	Designed by: YZ	Checked by:	Approved By:	
	Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Flow Options

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

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	☐

Manhole Options

Apply Offset	☐
--------------	--------------------------

Project: Victoria Mill 10 Lower Vickers Street Manchester	Date: 10/06/2025		
	Designed by: YZ	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG		



Runoff Type	Dynamic
Output Interval (mins)	5
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)	18.0
Ratio R	0.353
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	45.000

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: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 1 years: Increase Rainfall (%): +0: 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: 1 years: +0 %: 15 mins: Summer	0.00	0.2	0.078

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 30 years: Increase Rainfall (%): +0: 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: 30 years: +0 %: 15 mins: Summer	0.00	0.4	0.195

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Inflows Summary Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 100 years: Increase Rainfall (%): +45: 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: +45 %: 15 mins: Summer	0.00	0.8	0.369

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

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
MH-01	FSR: 1 years: +0 %: 15 mins: Summer	6.700	5.700	5.708	0.008	0.2	0.005	0.000	0.2	0.077	OK
MH-02	FSR: 1 years: +0 %: 30 mins: Summer	6.700	5.515	5.527	0.012	0.1	0.008	0.000	0.1	0.101	OK
Existing MH	FSR: 1 years: +0 %: 30 mins: Summer	6.700	5.344	5.351	0.007	0.1	0.000	0.000	0.1	0.099	OK

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

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
MH-01	FSR: 30 years: +0 %: 15 mins: Summer	6.700	5.700	5.713	0.013	0.4	0.008	0.000	0.4	0.194	OK
MH-02	FSR: 30 years: +0 %: 15 mins: Summer	6.700	5.515	5.538	0.023	0.4	0.015	0.000	0.4	0.192	OK
Existing MH	FSR: 30 years: +0 %: 30 mins: Summer	6.700	5.344	5.355	0.011	0.3	0.000	0.000	0.3	0.254	OK

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Junctions Summary Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

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
MH-01	FSR: 100 years: +45 %: 15 mins: Summer	6.700	5.700	5.718	0.018	0.8	0.011	0.000	0.8	0.368	OK
MH-02	FSR: 100 years: +45 %: 15 mins: Summer	6.700	5.515	5.552	0.037	0.8	0.023	0.000	0.7	0.366	OK
Existing MH	FSR: 100 years: +45 %: 15 mins: Summer	6.700	5.344	5.360	0.016	0.6	0.000	0.000	0.6	0.360	OK

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 1 years: Increase Rainfall (%): +0: 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
1.000	FSR: 1 years: +0 %: 15 mins: Summer	Pipe	MH-01	MH-02	6.700	5.708	0.010	0.077	0.3	0.01	0.2	OK
1.001	FSR: 1 years: +0 %: 30 mins: Summer	Pipe	MH-02	Existing MH	6.700	5.527	0.007	0.099	0.4	0	0.1	OK

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 30 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Flow

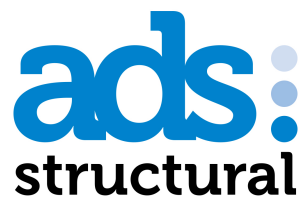
Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR: 30 years: +0 %: 15 mins: Summer	Pipe	MH-01	MH-02	6.700	5.713	0.018	0.194	0.4	0.02	0.4	OK
1.001	FSR: 30 years: +0 %: 30 mins: Summer	Pipe	MH-02	Existing MH	6.700	5.536	0.011	0.254	0.5	0.01	0.3	OK

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 100 years: Increase Rainfall (%): +45: 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
1.000	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	MH-01	MH-02	6.700	5.718	0.027	0.368	0.4	0.03	0.8	OK
1.001	FSR: 100 years: +45 %: 15 mins: Summer	Pipe	MH-02	Existing MH	6.700	5.552	0.016	0.360	0.6	0.02	0.6	OK



APPENDIX F - BLOCKAGE RISK ASSESSMENT

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Junctions Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
MH-01	Manhole	208555.647	601516.510	6.700	1.000	5.700	Circular	0.900
MH-02	Manhole	208562.758	601514.489	6.700	1.185	5.515	Circular	0.900

Name	Lock
MH-01	None
MH-02	None

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
MH-01	Outlet	Pipe	Free Discharge
	Outlet	(None)	Pump
	Invert Level (m)	5.515	
	Depth (m)	Outflow (L/s)	
	0.001	0.0	
	1.000	0.0	
	2.000	0.0	

Project: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
Report Details: Type: Connections Storm Phase: Phase		Designed by: YZ	Checked by:		Approved By:
		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
Pipe	7.392	Pipe	39.959		0.6	150	6.700	5.700

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Culvert Type	Culvert Entrance
Pipe	6.700	5.515		None	(None)	(None)

Project: Victoria Mill 10 Lower Vickers Street Manchester	Date: 10/06/2025			
Report Details: Type: Network Design Criteria Storm Phase: Phase	Designed by: YZ	Checked by:	Approved By:	
	Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			

Flow Options

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

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	☐

Manhole Options

Apply Offset	☐
--------------	--------------------------

Project: Victoria Mill 10 Lower Vickers Street Manchester	Date: 10/06/2025		
	Designed by: YZ	Checked by:	Approved By:
Report Title: Rainfall Analysis Criteria	Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG		



Runoff Type	Dynamic
Output Interval (mins)	5
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)	18.0
Ratio R	0.353
Summer	☒
Winter	☒

Return Period

Return Period (years)	Increase Rainfall (%)
1.0	0.000
30.0	0.000
100.0	45.000

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: Victoria Mill 10 Lower Vickers Street Manchester		Date: 10/06/2025			
		Designed by: YZ	Checked by:		Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase		Company Address: 107 Mere Grange Business Park, Leaside, St Helens, WA9 5GG			



FSR: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

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
MH-01	FSR: 100 years: +45 %: 1440 mins: Summer	6.700	5.700	6.286	0.586	0.1	0.373	0.000	0.0	0.908	Surcharged
MH-02	FSR: 100 years: +45 %: 1440 mins: Summer	6.700	5.515	6.286	0.771	0.0	0.490	0.000	0.0	0.008	OK