Extension at Marion Lauder House Care Home, 20 Lincombe Rd, Wythenshawe, Manchester M22 1PY

Flood Risk Assessment, Foul and Surface Water Drainage Strategy

August 2026

Project No. 0072

AFA Consulting Engineers Ltd

2a Acomb Court, Front St, Acomb, York YO24 3BJ

Tel +44(0)113 3970 384

admin@afa-eng.co.uk

Contents

1. INTRODUCTION 3
2. EXISTING SITE 3
3. FLOOD RISK ASSESSMENT 5
4. SURFACE WATER DRAINAGE STRATEGY 9
5. EFFECTS OF DEVELOPMENT ON OTHER SITES 12
6. FOUL DRAINAGE STRATEGY 122
7. CONCLUSIONS AND RECOMMENDATIONS 13

APPENDIX A - EXISTING AND PROPOSED SITE PLAN
APPENDIX B - UNITED UTILITIES SEWER RECORDS
APPENDIX C – EXISTING AND PROPSOED DRAINED AREAS
APPENDIX D – FLOOD RISK MAP
APPENDIX E - SURFACE WATER SUDS CALCULATIONS
APPENDIX F - DRAINAGE LAYOUT AND DETAILS
APPENDIX G - MAINTENANCE MANAGEMENT PLAN

Revision History

Rev	Date	Purpose/Status	Comments
-	August 2026	Information	First Issue

1. INTRODUCTION

1.1. AFA Consulting Engineers Ltd have been commissioned by Care Concepts to prepare a FRA, Foul and Surface Water Drainage strategy report to accompany the planning application for as Extension to Marion Lauder House Care Home at 20 Lincombe Road, Manchester, M22 1PY

1.2. This report will provide detailed layout and construction details for disposal of foul and surface water from the development for discharge of related planning conditions.

1.3. This report has been prepared for the use of Care Concepts. No other third party may rely upon or reproduce the contents of this report without the written approval of AFA Consulting Engineers Ltd. If any unauthorised third party comes into the possession of this report, they rely on it entirely at their own risk and AFA do not owe them any Duty of Care or Skill.

2. EXISTING SITE

2.1. The existing home is situated in the centre of Cornishway, Felshirk Road, Lincombe Road and Woodhouse Road and adjacent Woodhouse Park in Wythenshaw, Manchester. There are no rivers located within a 2km radius of the site. The existing site plan is shown in Appendix A.

2.2. The site location is indicted in Figure 1.

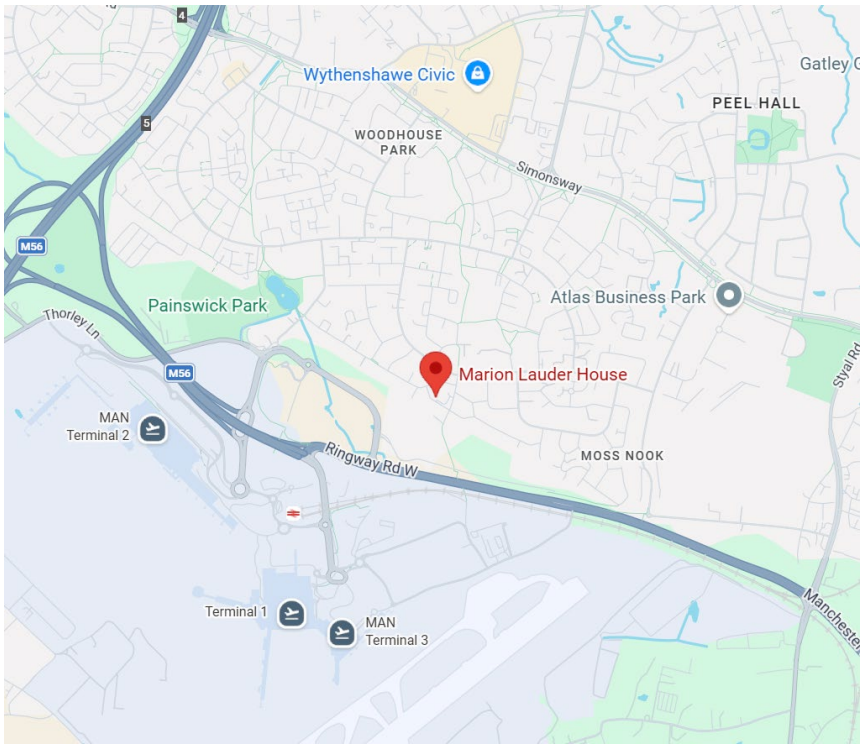


Figure 1 – Site Location Plan

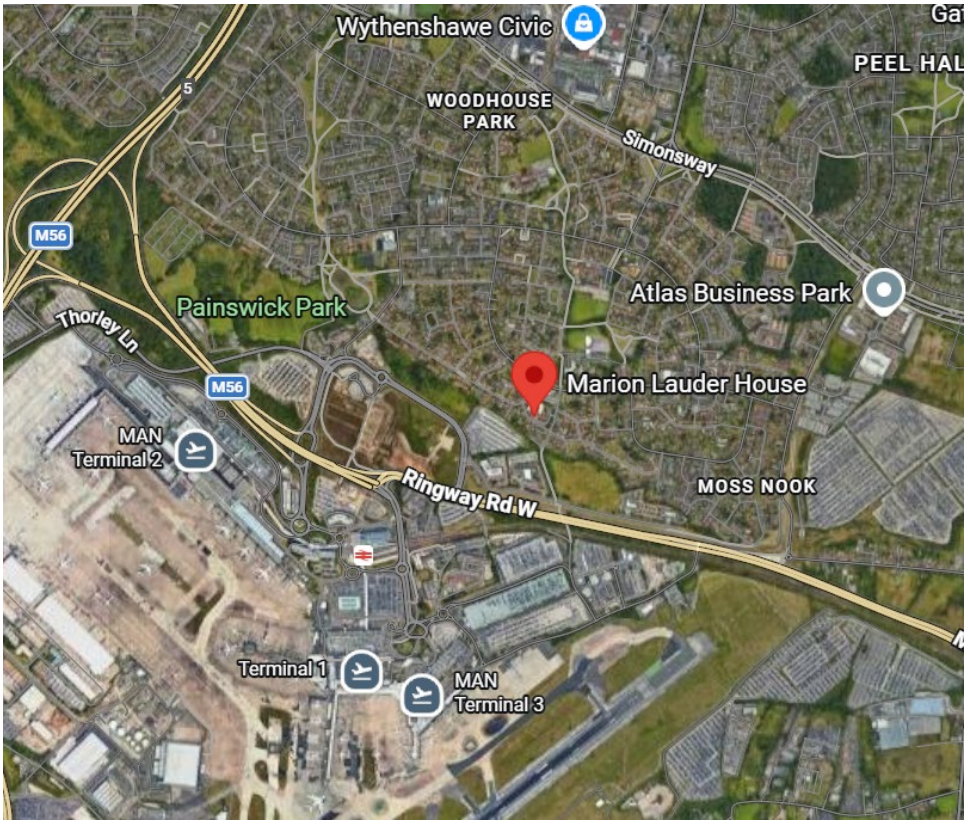


Figure 2 – Google maps satellite view

2.3. The site is roughly square in plan and is enclosed on three sides by roads. The property has mature shrubbery across the site and to the perimeters.

2.4. The site is predominately level with only minor undulations. A topographical survey of the existing site is shown in Appendix A.

2.5. The site is in a densely populated area of Manchester and there are no open watercourses in proximity to the site.

2.6. Infiltration testing has not been undertaken on the site but records from adjacent sites have recorded failed infiltration test results.

2.7. The existing site drains to the United Utilities surface water sewer which runs along the East boundary of the site. A copy of the united Utility sewer records is shown in Appendix B

3. FLOOD RISK ASSESSMENT

3.1. Development proposals and flood risk vulnerability

- With reference to Table 2 of Planning Practice Guidance to the National Planning Policy Framework, the proposed care home development would be classified as More Vulnerable.

Flood Risk Vulnerability Classification	
Vulnerability	**Development types**
More vulnerable	Hospitals.
	Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
	Buildings used for dwelling houses, student halls of residence, drinking establishments, night clubs, and hotels.
	Non-residential uses for health services, nurseries and educational establishments.
	Landfill and sites used for waste management facilities for hazardous waste.
	Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Table 1 - Source: Planning Practice Guidance – 2014

3.2. Flood risk - Fluvial / Tidal flooding

- An extract of the Environment Agency flood map for planning (Rivers and Sea) is provided below in Figure 3. The flood map was extracted from the Environment Agency's web site on 18th August 2026. The map indicates that the development site is located within Flood Zone 1 (Low Probability). Full map and details are contained in Appendix D.

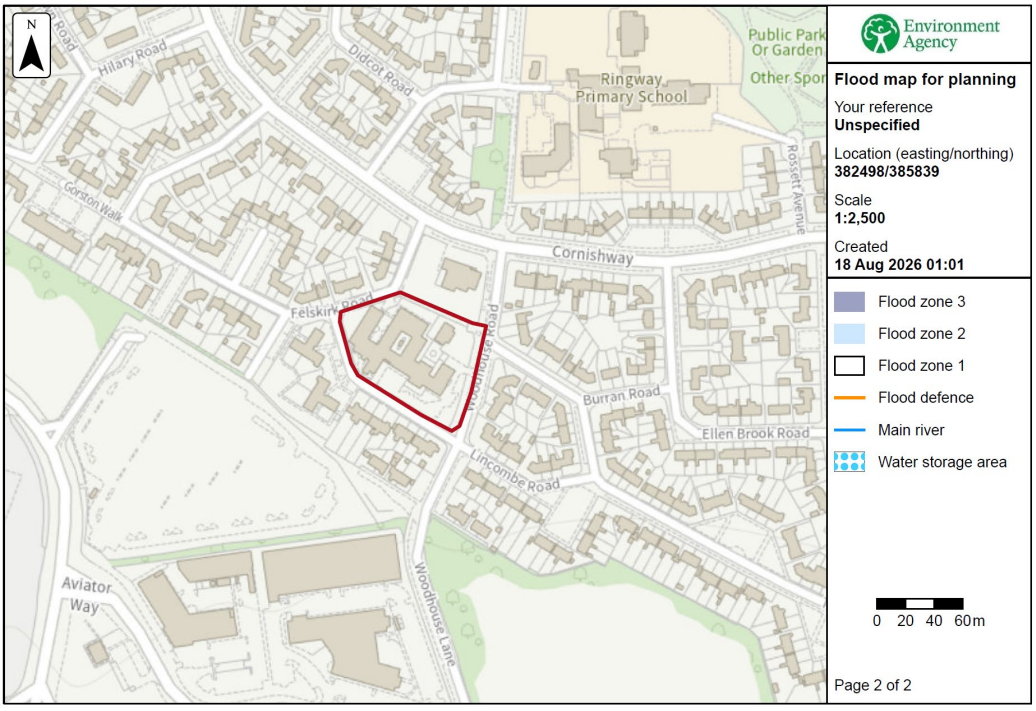


Figure 3 – Flood Map for Planning (Rivers and Sea)

Source: Gov.uk website – 18th August 2026

Flood Zone	
Flood Zones	**Definition**
Zone 1: **Low Probability**	**Land having a less than 1 in 1,000 annual probability of river or sea flooding.**
Zone 2: Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Flood plain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

Table 2 - Source: Planning Practice Guidance – 2014

- Table 2 is a copy of Table 1 from Planning Practice Guidance for *'Flood Risk and Coastal Change'* to the National Planning Policy Framework which defines Flood Zones.
- The proposed development is located within Flood Zone 1, is assessed as having a less than 1 in 1,000 annual probability of river or sea flooding in any year.

3.3. **Groundwater flooding**

- Groundwater flooding is caused when the water table rises in areas where this is usually at shallow depth. No evidence of ground water flooding within the vicinity of the site has been noted.
- The extension buildings will be designed to suit the existing building levels and so the risk of ground water flooding is considered low and no further protection is required.

3.4. **Sewer flooding**

- There is no record of sewer flooding in proximity to the site.

3.5. **Reservoir or Man-made Sources of flooding**

- The site is not in an area at risk from a major failure of a reservoir and there are no other known artificial sources of flood risk in the area as shown on the Map in figure 4 below.



Figure 4 – Flood Risk Map for Reservoirs

3.6. **Surface Water Flooding**

- There are no known surface water features with proximity of the site.
- The surface water runoff from the extension areas will be drained by a new drainage network which will be designed to accommodate rainfall from a range of storm durations up to 1 in 100 years with climate change allowance.
- From the gov.uk the existing site is not identified as being at risk of surface water flooding within 1 in 100 years as shown in Figure 5 below.

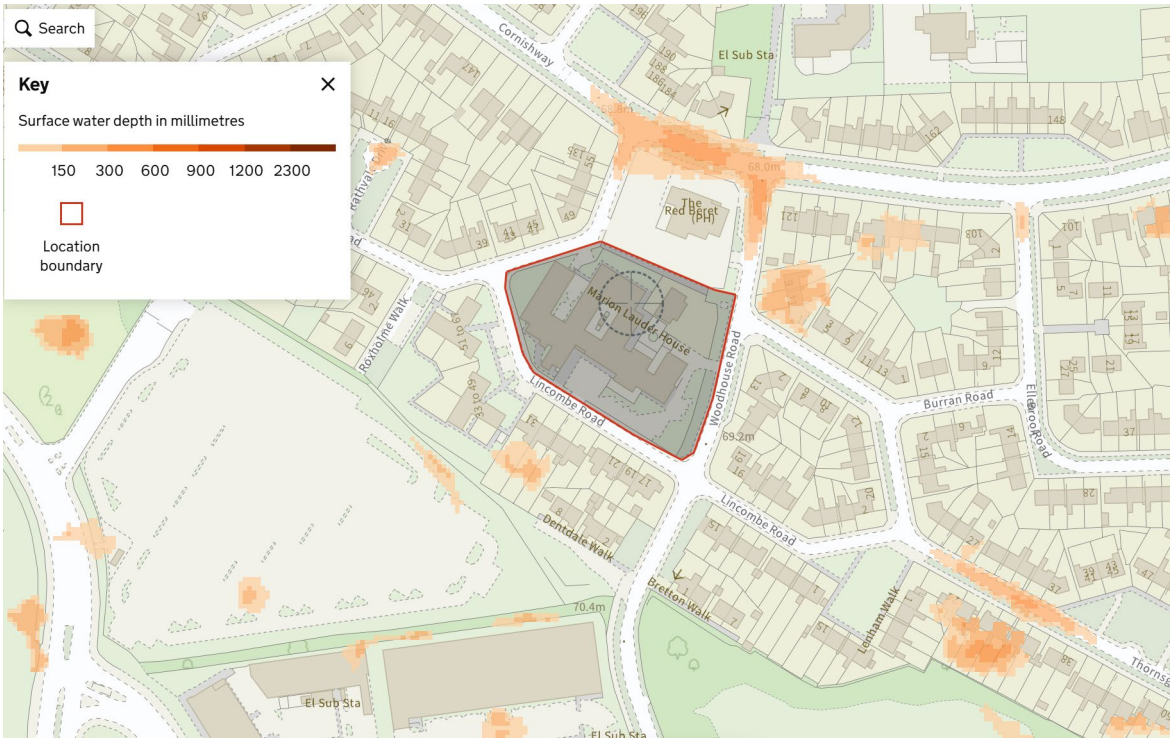


Figure 5 – Flood Risk Map for Flooding from Surface water

Source: GOV.uk website – 18th August 2026

3.7. **Standard Mitigation**

- Based upon the assessment above there are no site specific flood risk mitigation measures required for the development.
- The proposed development will be designed to accommodate a 1 in 100 year rainfall event over a range of storm duration with a 40% allowance for climate change.
- The existing drained area to the existing drainage network will be reduced from 2619m^2 to 2179m^2 which is a 440m^2 reduction.

4. SURFACE WATER DRAINAGE STRATEGY

4.1. The proposed development is for the construction of two extensions to the existing Care Home with some alterations to car parking and external landscaping. Refer to Appendix A for proposed and existing site plan.

4.2. SUDS mimic the natural drainage system and provide a method of surface water drainage which can decrease the quantity of water discharged, and hence reduce the risk of flooding. In addition to reducing flood risk, these features can improve water quality and provide biodiversity and amenity benefits.

4.3. The SUDS management train incorporates a hierarchy of techniques and considers all three SUDS criteria of flood reduction, pollution reduction, and landscape and wildlife benefit. In decreasing order of preference, the preferred means of disposal of surface water runoff is:

- Discharge to ground / infiltration
- Discharge to a surface water body.
- Discharge to a surface water sewer.
- Discharge to a combined sewer.

4.4. The philosophy of SUDS is to replicate as closely as possible the natural drainage from a site predevelopment and to treat runoff to remove pollutants, resulting in a reduced impact on the receiving watercourses. The benefits of this approach are as follows:

- Reducing runoff rates, thus reducing the flood risk downstream.
- Reducing pollutant concentrations, thus protecting the quality of the receiving water body.
- Groundwater recharge.
- Contributing to the enhanced amenity and aesthetic value of development areas.
- Providing habitats for wildlife in developed areas, and opportunity for biodiversity enhancement.

4.5. It is required to control surface water runoff from new developments through the use of Sustainable Drainage Systems (SuDS).

4.5. The drained areas of the existing site currently comprise:

Care Home Building	1781 m^2
Building 2	134 m^2
Car park to North	53 m^2
Car Park and Access Road South & East	651 m^2
Total Impermeable Area	**2619 m^2**

4.6. It is believed the existing buildings, car parking and access road are drained to the United Utilities Sewer along the East boundary of the site with no restriction is discharge rate.

4.7. The proposed development compromises the following drained areas:

Retained Care Home Building	1652 m^2
Car Park and Access Road South & East	527 m^2
Total of Retained Areas	**2179 m^2**
New Extension 1	755 m^2
New Extension 2	123 m^2
New Car Parking Area	105 m^2
Total Impermeable Area	**983 m^2**

4.8. The existing and proposed drained areas are shown on the drawing in Appendix C.

4.9. From the proposed development the drained area from the retained Care Home building will be reduced from 1781m2 to 1652m2 which is a reduction of 129m2. The drainage to existing building 2 will be removed resulting in a reduction of 134m2. The Car park to the North will be removed with a reduction of 53m2. The retained access road and car parking area will be reduced from 651m2 to 527m2 which is a 124m reduction. Overall this will result in a reduction of 440m2 to the existing drainage network.

4.10. The new extension and new car parking areas will be drained via a new surface water network. The new drained areas total 983m2.

4.11. From a review of surrounding sites infiltration testing has failed and therefore infiltration solutions are not considered feasible.

4.12. As there are no watercourses in proximity of the site it is proposed to discharge to the United Utilities Surface Water Sewer located to the East boundary of the site.

4.13. It is proposed to limit the discharge from the new areas to 2l/s via hydrobrake and provide attenuation storage to ensure flows from rainfall events up to 1 in 100 years over a range of storm durations are contained within the network. A discharge rate of 2l/s is proposed to limit the risk of blockages which can be more common on very low discharge rates.

4.14. Attenuation storage has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change. Attenuation storage has been designed within the permeable paving to the car park area and attenuation crates noted to the North of the site. Full Calculations are contained in Appendix E.

4.15. A copy of the detailed drainage layout is shown in Appendix F.

4.16. To deal with the residual risk of blockage to all onsite drainage features, the care facility operator/owner will ensure maintenance of all drainage systems in line with the requirements in Ciria C753 the SuDS Manual.

4.17. A copy of the detailed Maintenance Management Plan is shown in Appendix G. This will ensure that over the lifetime of the proposed development the drainage system will be properly maintained to ensure proper functionality. A summary schedule of proposed maintenance is shown below.

Marion Lauder House Care Home - Maintenance Schedule					
Item	Visual Inspection	Cleanse / De-sludge	CCTV Survey	Responsibility	Comments
Surface Water Drainage System (pipework, chambers etc.)	1 years	10 years	10 years	Building Owner	Cleansing to be carried as necessary
Gullies / Channels / Rainwater Stacks	Monthly	1 years	N/A	Building Owner	Cleansing to be carried as necessary
Catch Pit	Monthly	1 years	N/A	Building Owner	Maintenance in accordance with manufacturer's instructions
Attenuation Crates / inlet and outlet	Monthly	As required	N/A	Building Owner	Clear as required
Foul Drainage System (pipework, chambers etc.)	1 year	10 years	10 years	Building Owner	Cleansing to be carried as necessary
Hydrobrake	Monthly	1 years	N/A	Building Owner	Maintenance in accordance with manufacturer's instructions

5. EFFECTS OF DEVELOPMENT ON OTHER SITES

5.1. The system has been designed to ensure that there is no risk of flooding over a range of storm durations for up to 1 in 100 years plus a 40% allowance for climate change. This will ensure that the risk of flooding to adjacent sites will not be increased.

5.2. The drained area to the existing drainage system will be reduced by 440m2 which will provide a betterment on the existing drainage discharge rates.

6. FOUL DRAINAGE STRATEGY

6.1. A United Utility Foul Sewer is located along the East boundary of the site. A copy of the United Utility sewer records is shown in Appendix B.

6.2. It is proposed to discharge the foul flows from the existing areas into the United Utility sewer via a gravity connection.

6.3. A detailed layout of the new foul drainage will be populated once the existing drainage network has been surveyed.

7. CONCLUSION AND RECOMMENDATIONS

7.1. There is no site specific flood risk required for the site with all potential sources considered low.

7.2. This drainage strategy follows the hierarchy for surface water discharge.

7.3. From the proposed development the drained area from the retained Care Home building, access road and car parking area will be reduced from 2619m^2 to 2179m^2 which is a 440m^2 reduction.

7.4. The new extension and new car parking areas will create an additional drained area of 983m^2.

7.5. As infiltration is not feasible and there are no watercourses in proximity of the site and so it is proposed to discharge to the United Utilities Surface Water Sewer along the East boundary as shown in Appendix B.

7.6. It is proposed to limit the discharge from the new areas to 2l/s via hydrobrake and provide attenuation storage to ensure flows from rainfall events up to 1 in 100 years over a range of storm durations are contained within the network. A discharge rate of 2l/s is proposed to limit the risk of blockages which can be more common on very low discharge rates.

7.7. Attenuation storage has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change. Attenuation storage has been designed within the permeable paving to the car park area and attenuation crates noted to the North of the site. Full Calculations are shown in Appendix E.

7.8. A copy of the proposed surface water drainage layout is shown in Appendix F.

7.9. A United Utility Foul Sewer is located along the East boundary of the site. A copy of the United Utility sewer records is shown in Appendix B.

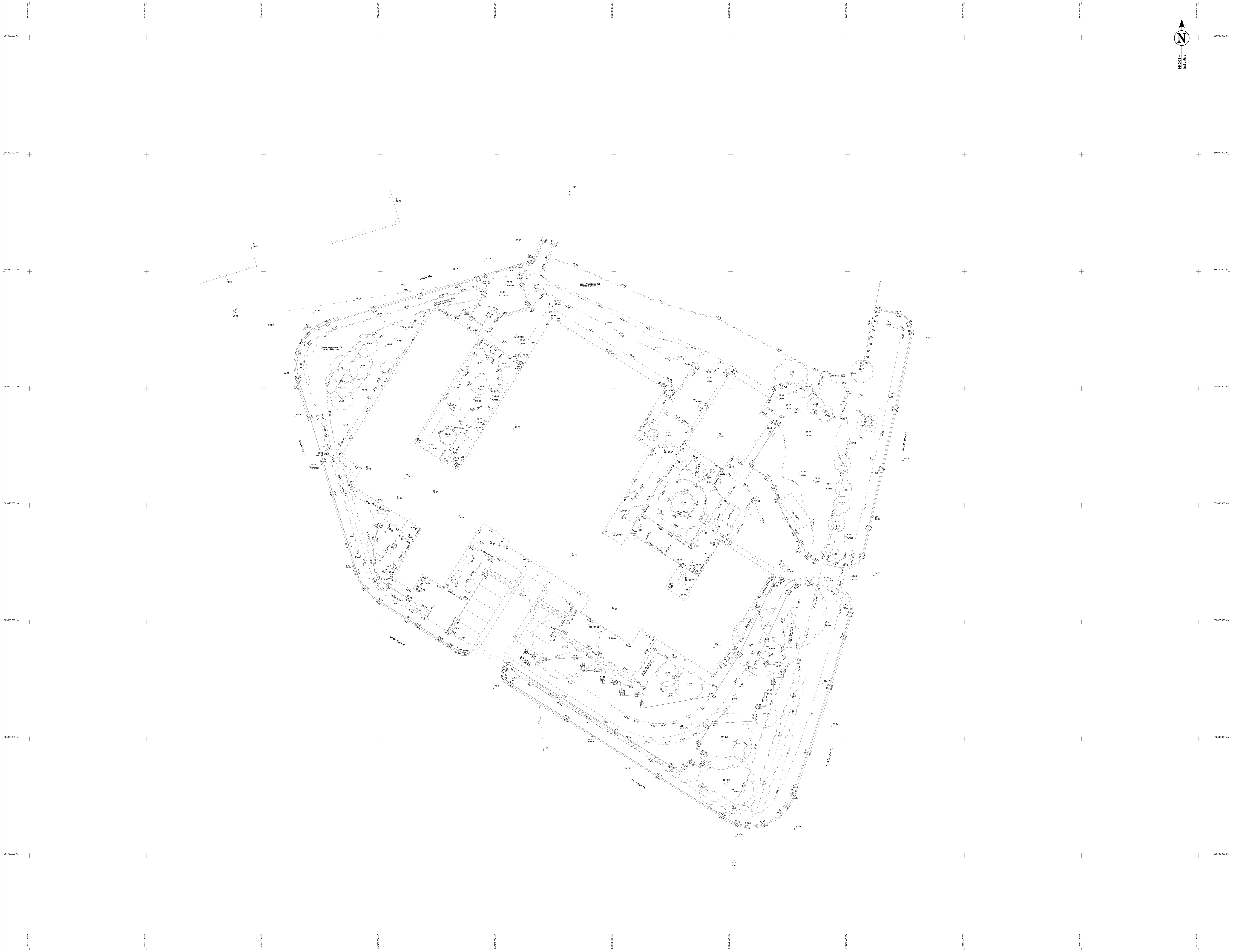
7.10. It is proposed to discharge the foul flows from the existing areas into the United Utility sewer via a gravity connection.

7.11. A detailed layout of the new foul drainage will be populated once the existing drainage network has been surveyed.

7.12. The proposed foul and surface drainage solution should be approved by the local authority prior to commencing any drainage works on site.

APPENDIX A

EXISTING AND PROPOSED SITE PLAN



TOPOGRAPHICAL & MEASURED BUILDING SURVEYS

ABBREVIATIONS & SYMBOLS

AH	Arch Head Level	ET	EP+Transformer	RSD	Roller Shutter Door
A/B	Air Brick	FB	Flower Bed	RSJ	Rolled Steel Joist
AR	Assumed Route	F/C-Lev	False Ceiling Level	SI	Sign Post
AV	Air Valve	FBD	Floor Board Direction	SL	Window Sill Level
BB	Belisha Beacon	FH	Fire Hydrant	SP	Arch Spring Point Level
BH	Bore Hole	FL	Floor Level	SV	Stop Valve
BL	Bed Level	FP	Flag Pole	SW	Surface Water
BO	Bollard	FW	Foul Water	SY	Cable Stay
BS	Bus Stop	GG	Gully Grate	Tac.	Tactile Paving
BU	Bush	GV	Gas Valve	TC	Telecom Cover
B/W	Barbed Wire Fence	HL	Window Head Level	TH	Trial Pit
BX	Box (Utilities)	IC	Inspection Cover	THL	Threshold Level
C/B	Close Board Fence	IL	Invert Level	TL	Traffic Light
CL	Cover Level	I/R	Iron Railings	ToF	Top of Fence
C/L	Chain Link Fence	KO	Kerb Outlet	ToW	Top of Wall
C-Lev	Ceiling Level	LP	Lamp Post	TP	Telegraph Pole
Col.	Column	MH	Manhole	TS	Traffic Signal Cover
C/P	Chestnut Paling Fence	MP	Marker Post	TV	Cable TV Cover
CR	Cable Riser	NB	Name Board	UC	Unknown Cover
C/W	Chicken Wire	OHL	Overhead Line (approx)	Uk	Unknown Tree
DC	Drainage Channel	Pan	Panel Fence	UMG	Unmade Ground
Dil.	Dilapidated	PB	Post Box	USB	Under Side Beam
DL	Door Level	PM	Parking Meter	UTL	Unable To Lift
DP	Down Pipe	PO	Post	UTS	Unable To Survey
DR	Drain	P/R	Post & Rail Fence	VP	Vent Pipe
EBx	Electric Box	P/W	Post & Wire Fence	WB	Waste Bin
EC	Electric Supply Cover	RE	Rodding Eye	WH	Weep Hole
EL	Eaves Level	RL	Ridge Level	WL	Water Level
EP	Electric Pole	RP	Reflector Post	WM	Water Meter
ER	Earth Rod	RS	Road Sign	WO	Wash Out
				△	Survey Control Station

DRAWING NOTES

Topographical Surveys

Trees are drawn to scale showing the average canopy spread. Descriptions and heights should be used as a guide only.

All building names, descriptions, number of storeys, construction type including roof line details are indicative only and taken externally from ground level.

All below ground details including drainage, voids and services have been identified from above ground and therefore all details relating to these features including; sizes, depth, description etc will be approximate only. All critical dimensions and connections should be checked and verified prior to starting work.

Detail, services and features may not have been surveyed if obstructed or not reasonably visible at the time of the survey.

Surveyed physical features may not necessarily represent the legal boundary line.

Measured Building Surveys

Measurements to internal walls are taken to the wall finishes at approx 1m above the floor level and the wall assumed to be vertical.

General

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work. Any errors or discrepancies must be notified to Survey Solutions immediately.

The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The survey control listed is only to be used for topographical surveys at the stated scale. All control must be checked and verified prior to use.

© Land Survey Solutions Limited holds the copyright to all the information contained within this document and their written consent must be obtained before copying or using the data other than for the purpose it was originally supplied.

This drawing should only be scaled using digital methods.

SURVEY STATIONS

Name	Easting	Northing	Height
GS02	382483.864	385879.424	69.156
AD02	382539.631	385822.961	68.997
AD03	382546.952	385871.434	68.488
AD04	382524.519	385841.231	69.533
AD05	382531.235	385856.402	69.353
AD06	382509.262	385852.428	69.663
GS01	382435.208	385872.944	69.527
GS2A	382509.883	385860.261	69.704
GS98	382504.530	385836.286	69.892
LC01	382483.031	385810.547	70.031
LC02	382456.169	385831.695	69.854
LC03	382520.678	385807.354	69.629
LC04	382531.600	385832.558	69.431
GS03	382492.440	385893.683	68.711
GS2B	382480.348	385863.458	69.767
GS99	382513.394	385830.204	69.881
LC2A	382450.867	385849.293	69.596
AD01	382520.552	385778.843	69.661

SURVEY GRID AND LEVEL DATUM

The coordinate system established for this survey is related to Ordnance Survey (OS) National Grid at multiple points using GNSS with a scale factor of 1.000.

The level datum established for this survey is related to Ordnance Survey (OS) using GPS Smartnet.

To avoid discrepancies within the survey, adding to the survey or setting out points from the survey, any coordinated data must be directly derived from the original survey control. Survey Solutions are not responsible for any third-party adding survey data to the existing information.

REV	DESCRIPTION	DRAWN	APPR	DATE

SURVEY SOLUTIONS

LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING
MONITORING

0845 040 5969
www.survey-solutions.co.uk

IPSWICH / BEDFORD / BIRMINGHAM / COVENTRY / CRAWLEY / GLASGOW / LEEDS / LONDON-CENTRAL / LONDON-EAST / MANCHESTER / NEWCASTLE / NORWICH / NOTTINGHAM / THAMES VALLEY

PROJECT TITLE
Marion Lauder House,
20 Lincombe Road, Manchester, M22 1PY

DRAWING DETAIL
TOPOGRAPHICAL SURVEY
Sheet 1 of 1

CLIENT				SCALE
ADG Architects				1:200
SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS
GS/AD/LC	MAY 2026	SR	SR	FINAL
DRAWING NUMBER			REVISION	ISSUE DATE
88989MCLS-01				MAY 2026

©Land Survey Solutions Limited 01/01/2010

Original Sheet Size A0H



0.0m 2.0m 4.0m 6.0m 8.0m 10.0m 12.0m 14.0m 16.0m 18.0m 20.0m

COPYRIGHT
All rights in this work are reserved. No part of this work may be reproduced, stored or transmitted in any form or by any means(including without limitation by photocopying or placing on a website) without the prior permission in writing of ADG except in accordance with the provisions of the Copyright, Designs and Patents Act 1988.
Applications for permission to reproduce anypart of this work should be addressed to ADG Architects at info@adgarchitects.co.uk

AREA CALCULATIONS
The areas shown are approximate only and have been measured off preliminary drawings as the likely areas at the current state of design using the stated option from the Code of Measuring Practice, 6th edition. These may be affected by future design development and construction tolerances, or the result of surveys for existing buildings. Take account of these factors before planning any financial or property development purpose or strategy and seek confirmation of latest areas before decision making.

Rev No.	Date	Description
~	05/09/24	Original Drawing

ADG
6 Pioneer Court • Morton Palms Business Park • Darlington • DL1 4WD
01325 464 111 enquiries@adgarchitects.co.uk www.adgarchitects.co.uk

Drawing Title
Proposed Site Plan

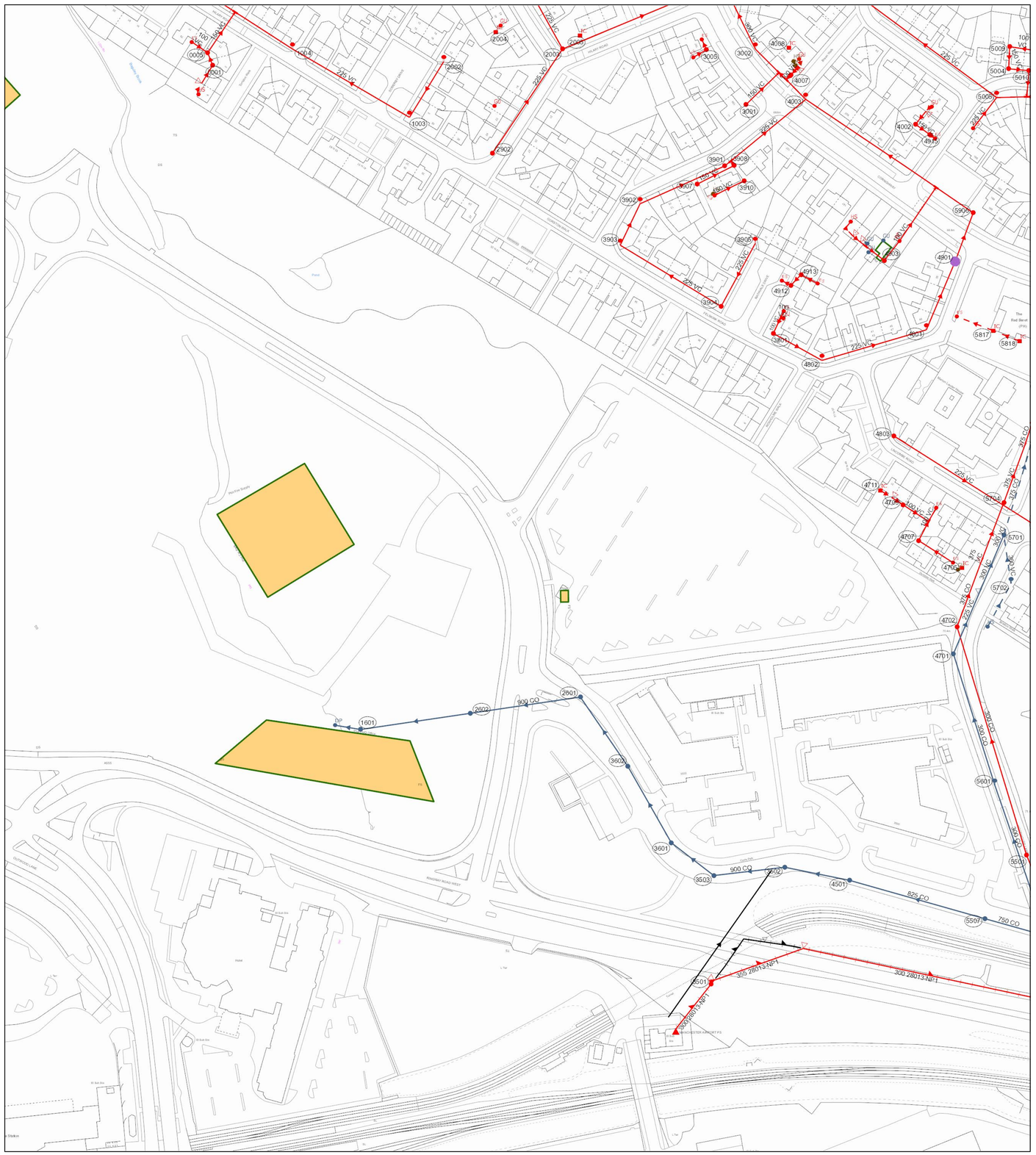
Description
Proposed Extension to Marion Lauder House,
20 Lincombe Road, Wythenshawe, Manchester M22 1PY

Client
Care Concept

Checked By	Drawn By	File Name	Drawing No.
PJ	JB	H2634 – ADG- ZZ- XX- DR- A-	9002
Scale 1:200	**Sheet Size** A1	**Status** PLANNING	**Revision** P03

APPENDIX B

UNITED UTILITIES SEWER RECORDS



The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Crown copyright and database rights 2025 Ordnance Survey 0000813445. Unauthorised reproduction will infringe these copyrights.

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
3907		CO		150			VC	23.12195	
4903		CO		100			VC	49.80035	
3602	69.8	SW	67.85	900			CO	46.66705	1 in 519
3005		CO		150			VC	6.33462	
5501	71.34	CO	68.77	300			CO	132.5566	
5501	71.34	CO	68.77	300			CO	132.5566	
4707		CO		100			VC	20.83263	
4707		CO		100			VC	20.83263	
4912		CO		150			VC	5.605608	
5601	71.25	SW	69.52	300			CO	76.53757	1 in 239
5601	71.25	SW	69.52	300			CO	76.53757	1 in 239
4501	71.38	SW	68.17	900			CO	36.74479	1 in 459
2602	69.2	SW	64.22	225			CO	75.29276	1 in 279
0001		CO		150			VC	7.540868	
4913		CO		150			VC	8.167312	
3903	70.08	CO	66.59	225			VC	25.4951	1 in 102
5009		CO		150			VC	12.27878	
5009		CO		150			VC	12.27878	
3502	71	SW	68.09	900			CO	39.84827	1 in 496
5010		CO		150			VC	14.56151	
5010		CO		150			VC	14.56151	
2003	69.42	CO	66.06	225			VC	96.38464	1 in 20
5505	71.62	SW	70.2	300			CO	65.52715	1 in 99
2602	69.2	SW	67.64	900			CO	61.67183	1 in 514
3002	65.34	CO	61.54	300			VC	41.14608	1 in 82
5906		CO	0	225			VC	112.331	
5906		CO	0	225			VC	112.331	
5011		CO		100			VC	15.75959	
4003	65.52	CO	62.18	300			VC	39.5997	1 in 64
3001		CO		150			VC	25.46388	
4701	70.58	SW	69.15	225			VC	35.8469	1 in 68
4701	70.58	SW	69.15	225			VC	35.8469	1 in 68
2902	69.65	CO	0	225			VC	69.89278	
4702	70.69	CO	0	375			CO	37.33631	
4702	70.69	CO	0	375			CO	37.33631	
3902	69.78	CO	66.32	225			VC	51.47815	
3905	69.85	CO	67.51	225			VC	39.82462	
5702	70.01	SW	68.42	300			VC	27.29469	1 in 109
5702	70.01	SW	68.42	300			VC	27.29469	1 in 109
3904	69.85	CO	0	225			VC	65.51136	
2601	69.8	SW	67.76	900			CO	61.71626	1 in 514
5004		CO		150			VC	11.29212	
5004		CO		150			VC	11.29212	
1004	66	CO	63.93	225			VC	114.281	1 in 106
3601	69.7	SW	67.95	900			CO	48.86494	1 in 489
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
4803	69.73	CO	67.16	225			VC	93.49332	1 in 130
4801	69.18	CO	66.86	225			VC	41.23106	
4801	69.18	CO	66.86	225			VC	41.23106	
5006	67.74	CO	65.48	225			VC	37.01351	1 in 116
3901		CO	0	225			VC	58.25821	
5704	69.95	CO	64.63	375			VC	31.95309	
5704	69.95	CO	64.63	375			VC	31.95309	
1601	68.47	SW	67.52	900			CO	14.3282	1 in 716
3908		CO		150			VC	3.13298	
4802	69.74	CO	67.42	225			VC	60.44005	1 in 112
4901	68.63	CO	0	225			VC	28.79236	
4901	68.63	CO	0	225			VC	28.79236	
5005	67.96	CO	65.14	225			VC	99.40332	1 in 19
5005	67.96	CO	65.14	225			VC	99.40332	1 in 19
3503	70.2	SW	68.01	900			CO	29.78145	1 in 496
4709		CO		100			VC	16.87803	
5701	69.84	SW	68.05	375			CO	79.40403	1 in 102
5701	69.84	SW	68.05	375			CO	79.40403	1 in 102
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
0005		CO		150			VC	27.22948	
2002	67.14	CO	64.65	225			VC	36.35932	1 in 89
3801	69.77	CO	67.67	225			VC	30.88689	1 in 134
4915		CO		150			VC	3.877072	
4915		CO		150			VC	3.877072	
4002		CO		150			VC	9.660741	
4002		CO		150			VC	9.660741	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- DNM Network Monitoring Point
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular	TR	Trapezoidal
EG	Egg	AR	Arch
OV	Oval	BA	Barrel
FT	Flat Top	HO	HorseShoe
RE	Rectangular	UN	Unspecified
SQ	Square		

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforecd Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

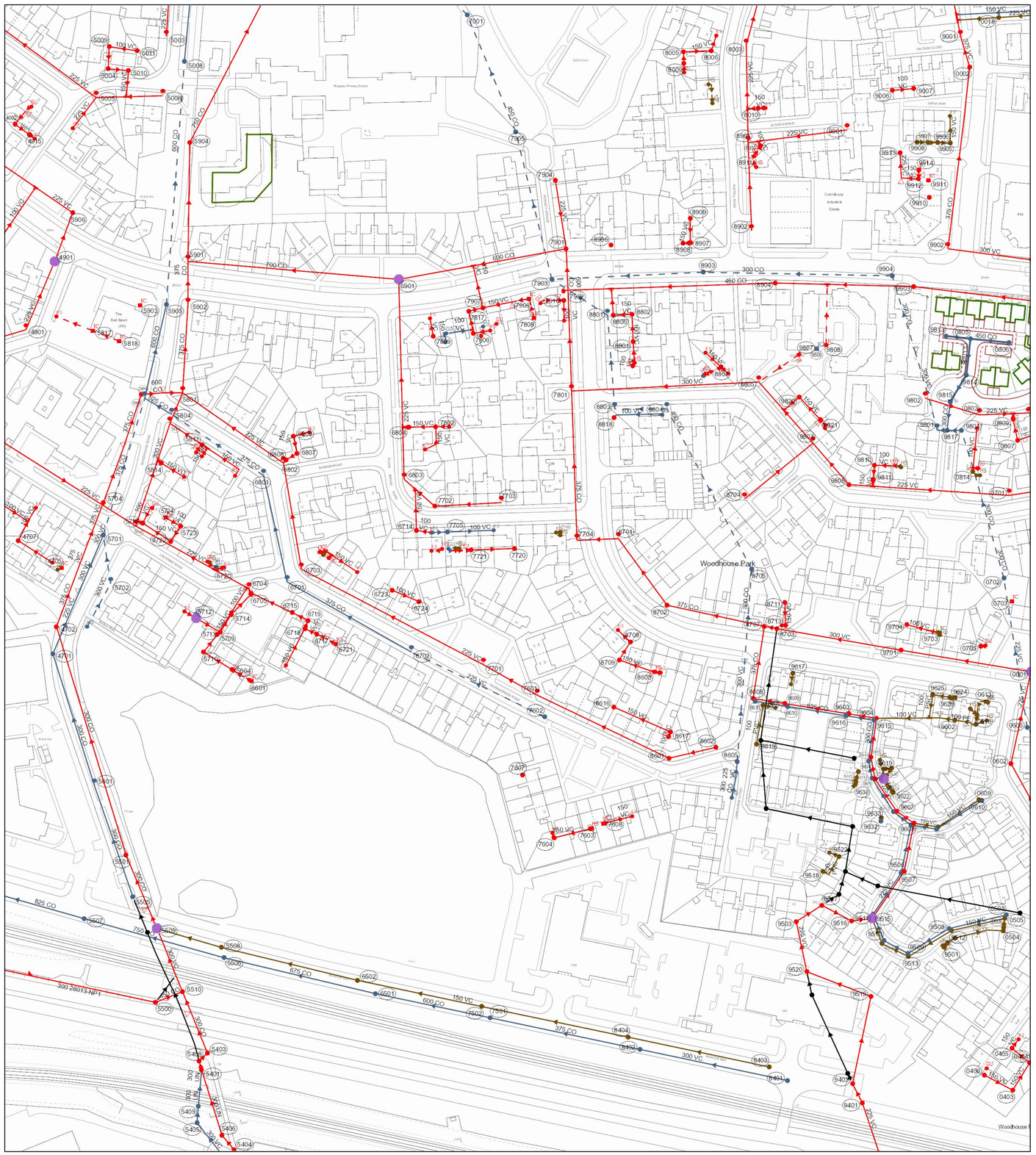
AVANT GARDE A V LTD 3000 AVIATOR WAY,
MANCHESTER,
M22 5TG

OS sheet Number: SJ8285NW
Scale: 1:1250 **Date:** 23/09/2025
Nodes: 76
Sheet: 2 of 4

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West



The position of the underground apparatus shown on this plan is approximate only and is given in accordance with the best information currently available. United Utilities Water will not accept liability for any loss or damage caused by the actual position being different from those shown.

Crown copyright and database rights 2025 Ordnance Survey 0000813445. Unauthorised reproduction will infringe these copyrights.

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9906		FO		150			VC	14.91401	
5402	72.96	SW	71.54	300			VC	23.66789	1 in 37
8403	74	FO	72.6	150			VC	79.96465	1 in 80
8403	74	FO	72.6	150			VC	79.96465	1 in 80
5501	71.34	CO	68.77	300			CO	132.5566	
5501	71.34	CO	68.77	300			CO	132.5566	
9610	71.44	SW	69.27	225			VC	14.4373	1 in 72
5802	68.76	CO	64.52	300			VC	18.38478	1 in 613
9602		FO		100			PE	8.59698	
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
9515	72.76	CO	69.07	225			VC	31.59321	1 in 150
5814		CO		150			VC	2.520009	
8702		CO	0	375			CO	45.80393	
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
6502	71.9	FO	70.28	150			VC	77.78274	1 in 132
9912		CO		150			VC	9.618885	
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
5401	72.34	CO	70.88	300			CO	5.08905	1 in 8
8802		CO		300			VC	10.39443	
9607	71.39	CO	68.52	225			VC	21.72512	1 in 155
0018		FO		225			VC	22.98763	
5011		CO		100			VC	15.79599	
5904		CO	0	750			CO	139.5421	
9609	71.49	FO	68.85	150			VC	13.6053	1 in 54
0809		CO		150			VC	3.112827	
5902	68.13	CO	64.19	375			CO	24	1 in 185
5703	69.62	CO	64.81	300			VC	60.0833	1 in 223
9604	70.24	CO	68.16	225			VC	15.50141	1 in 86
6719		CO		150			VC	9.795967	
9519		CO		225			VC	38.136	
9519		CO		225			VC	38.136	
8010		CO		150			VC	5.931518	
5713		CO		150			VC	11.58255	
5402	72.96	SW	71.54	300			VC	9.153651	1 in 14
9623		FO		100			PVC	5.542862	
7001	68.27	SW		450			CO	33.94112	
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
5506	71.7	SW	68.63	750			CO	80.53249	1 in 503
9608	71.58	CO	68.6	225			VC	11.63206	1 in 145
9609		FO		150			VC	7.066663	
5301	73.42	CO	70.78	300			CO	95.51629	1 in 143
9602	75.69	CO		225			VC	56.68638	75.69
8605	70.07	SW	67.99	300			VC	54.14795	
6718		CO		375			VC	4.675347	
4802	69.74	CO	67.42	225			VC	60.44005	1 in 112
7501	72.3	SW	69.08	600			CO	65.00063	1 in 500
7501	72.3	SW	69.08	600			CO	65.00063	1 in 500
9517	72.2	CO	69.28	225			VC	18.57114	1 in 143
0503	73.57	SW	71.94	225			VC	32.71663	1 in 74
0503	73.57	SW	71.94	225			VC	32.71663	1 in 74
9506	71.91	CO	68.86	225			VC	27.35588	1 in 105
5701	69.84	SW	68.05	375			CO	79.40403	1 in 102
5701	69.84	SW	68.05	375			CO	79.40403	1 in 102
6715		CO		150			VC	25.80434	
8801		CO		100			VC	15.18482	
7809		CO		150			VC	10.21451	
8003	68.98	CO	65.84	225			VC	31.04835	1 in 129
0016		FO		100			PE	5.421527	
7705		SW		100			VC	25.79276	
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
9516	73.07	CO	69.15	225			VC	11.57619	1 in 145
6501	72	SW	68.87	675			CO	86.52443	1 in 509
6501	72	SW	68.87	675			CO	86.52443	1 in 509
9803	69.33	CO	66.81	300			VC	45.34314	1 in 267
0609	70.87	FO	69.1	150			VC	27.16649	1 in 109
8602	70.27	CO	68.44	225			VC	26.68333	1 in 127
7817		CO		150			VC	5.317281	
9813	69.66	SW	68.32	450			CO	13.63334	1 in 454
7910		CO		100			VC	11.32262	
5716		CO		150			VC	3.155762	
5010		CO		150			VC	14.56151	
5010		CO		150			VC	14.56151	
0702	70.46	SW	68.43	300			CO	85.47147	1 in 356
7602	70.54	SW	69.5	225			VC	82.29216	1 in 69
9804	70.21	SW	68.19	300			VC	7.923929	
9620		FO		100			VC	5.682934	
9907		FO		150			VC	6.10971	
7702	69.85	CO	67.47	225			VC	22.67229	1 in 119
9509	73.3	SW	71.11	225			VC	15.17418	1 in 63
9509	73.3	SW	71.11	225			VC	15.17418	1 in 63
9612	71.4	SW	68.97	300			CO	22.07671	1 in 67
9617		CO		150			VC	6.097509	
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
9510	73.02	SW	70.87	225			VC	15.91029	1 in 9
6601	69.01	CO	67.05	375			CO	51.29437	1 in 511
6705		CO	67	225			VC	3.162278	1 in 4
0611		CO		150			PE	12.34408	
6802	69.12	CO	66.42	225			VC	68.24222	1 in 35
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9512	73.62	FO	71.05	150			VC	27.75175	1 in 71
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
9511	72.76	SW	70.63	225			VC	27.62269	1 in 64
0506		FO		100			VC	5.108209	
0506		FO		100			VC	5.108209	
7703	69.78	CO	67.75	225			VC	37.05402	1 in 143
8804	68.84	SW	67.08	450			CO	29	1 in 414
7801	68.85	CO	66.16	450			CO	56.03915	1 in 299
5702	70.01	SW	68.42	300			VC	27.29469	1 in 109
5702	70.01	SW	68.42	300			VC	27.29469	1 in 109
9602	69.08	CO	64.14	375			CO	101.713	
9520		CO	72.39	225			VC	28.46455	1 in 26
9520		CO	72.39	225			VC	28.46455	1 in 26
5004		CO		150			VC	11.29212	
5004		CO		150			VC	11.29212	
5003	67.43	CO	65.42	225			VC	46.09772	1 in 121
5402	72.96	SW	71.54	300			UN	20.23834	1 in 32
9507	71.96	SW	70.2	225			VC	27.15749	1 in 24
6714		CO		225			VC	22.94896	
4801	69.18	CO	66.86	225			VC	41.23106	
4801	69.18	CO	66.86	225			VC	41.23106	
5006	67.74	CO	65.48	225			VC	37.01351	1 in 116
5508	71.7	FO	69.69	150			VC	37.36032	1 in 149
5712		CO		150			VC	15.53559	
4901	68.63	CO	0	225			VC	28.79236	
4901	68.63	CO	0	225			VC	28.79236	
5005	67.96	CO	65.14	225			VC	99.40322	1 in 19
5005	67.96	CO	65.14	225			VC	99.40322	1 in 19
9001	68.77	CO	63.87	375			CO	57.07013	1 in 136
7704		CO	0	375			CO	63.0542	
9805		CO	0	225			VC	30.4795	
8705		SW		450			CO	100.6479	
9904	68.99	SW	67.72	300			CO	105.019	1 in 256
5709		CO		100			VC	30.81631	
5804	68.57	SW		66.95	525		CO	17.49286	1 in 219
7905	68.1	SW		66.35	450		CO	70.38466	
8801	68.36	SW		66.85	450		CO	36.89174	
0601	70.65	CO	68.11	225			VC	72.99315	1 in 107
6901	69.06	CO	64.47	700			CO	117.4266	1 in 267
0803	70.3	CO	67.43	225			VC	28.77078	1 in 137
5601	71.25	SW	69.52	300			CO	76.53757	1 in 239
5601	71.25	SW	69.52	300			CO	76.53757	1 in 239
6808		CO		150			VC	2.340847	
9624		FO		100			PSC	9.480327	
5009		CO		150			VC	12.27878	
5009		CO		150			VC	12.27878	
6703	69.71	CO	66.83	225			VC	59.84146	1 in 153
9820		CO		150			VC	11.3013	
8402	73	SW	70.24	375			CO	85.0125	1 in 90
8402	73	SW	70.24	375			CO	85.0125	1 in 90
8805	69.18	CO	66.62	300			VC	104.1201	1 in 274
9006		CO		100			VC	11.97172	
5401	72.34	CO	70.88	300			CO	6.394175	1 in 10
5401	72.34	CO	70.88	300			CO	6.394175	1 in 10
5505	71.62	SW	70.2	300			CO	65.52715	1 in 99
9503	71.97	CO	69.42	225			VC	16.93513	1 in 121
9503	71.97	CO	69.42	225			VC	16.93513	1 in 121
8904	69.03	CO	65.34	450			CO	117.6254	
9801	70.4	SW	68.17	300			VC	44.40371	1 in 193
9513	73.27	FO	71.11	150			VC	16.36872	1 in 20
9513	73.27	FO	71.11	150			VC	16.36872	1 in 20
9613	70.96	SW	68.64	300			CO	9.645584	1 in 57
8903	68.66	SW	67.31	300			CO	84.09518	
8709		CO		150			VC	11.74427	
0606	70.57	SW	68.93	225			VC	84.0119	1 in 168
5901	68.01	CO	63.62	750			CO	66.00758	
7904	68.25	CO	0	225			VC	38.47077	
4702	70.69	CO	0	375			CO	37.33631	
4702	70.69	CO	0	375			CO	37.33631	
0602	70.74	CO	68.57	225			VC	52.17279	1 in 121
9614	70.72	SW	68.47	300			CO	22.9007	1 in 143
6807		CO		150			VC	6.956486	
7817		CO		150			VC	8.086248	
9403		CO		225			VC	49.61541	
9403		CO		225			VC	49.61541	
8006		CO		150			VC	8.658717	
4803	69.73	CO	67.16	225			VC	93.49332	1 in 130
5710		CO		100			VC	12.28456	
0002		CO	0	375			VC	17.72005	
9810		FO		150			VC	7.92829	
9903	68.98	CO	65.69	450			CO	77.00517	1 in 220
6809		CO		150			VC	9.809045	
7903	68.25	SW		450			CO	84.40379	
0610	70.91	SW	69.48	225			VC	29.72202	1 in 142
9621		FO		150			VC	5.655906	
9402	75.69	CO		225			VC	11.95169	
9508	73.61	SW	71.5	225			VC	26.61387	1 in 68
9508	73.61	SW	71.5	225			VC	26.61387	1 in 68
8005		CO		150			VC	15.49933	
5801	68.31	CO	64.47	375			CO	49.09175	1 in 189
7701	69.97	CO	67.51	225			VC	114.0614	1 in 173
4709		CO		100			VC	16.87803	
5803	68.89	SW	66.85	600			CO	53.36666	
5500	72.07	CO	69.43	450			CO	16.07119	1 in 201
5500	72.07	CO	69.43	450			CO	16.07119	1 in 201
8404	73	FO	71.6	150			VC	82.95797	1 in 104
8404	73	FO	71.6	150			VC	82.95797	1 in 104
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5507	71.78	SW	68.39	825			CO	78.02978	1 in 520
5008		SW	0	600			CO	118.5116	
4903		CO		100			VC	49.80035	
8401	74	SW	71.2	300			VC	83.69702	1 in 87
8401	74	SW	71.2	300			VC	83.69702	1 in 87
0701	70.41	CO	67.65	225			VC	89.20202	
5509	71.8	CO	69.33	300			VC	12.48333	1 in 46
5509	71.8	CO	69.33	300			VC	12.48333	1 in 46
0806	69.92	SW	68.36	450			CO	21.43554	1 in 306
5806		CO	0	600			CO	12.04159	
4707		CO		100			VC	20.83263	

Refno	Cover	Func	Invert	Size x	Size y	Shape	Matl	Length	Grad
9502		FO		100			VC	27.43905	
9502		FO		100			VC	27.43905	
0504		FO		100			VC	1.821391	
0504		FO		100			VC	1.821391	
8704	69.04	CO	67.25	225			VC	49.0408	1 in 114
8701	69.44	CO	66.68	375			CO	23.02173	
8009		CO		150			VC	6.467936	
5806		CO		150			VC	14.66344	
5714		CO		150			VC	15.67439	
9814	70.06	SW	68.25	450			VC	17.42433	1 in 436
9622		FO		100			PVC	3.610226	
7806		CO		150			VC	12.68026	
8807		CO		150			VC	5.407094	
7902		CO	0	600			CO	23.01959	
9615	70.21	SW	68.31	525			CO	15.96723	1 in 59
9611	71.54	SW	69.07	300			CO	12.2867	1 in 123
5906		CO	0	225			VC	112.331	
5906		CO	0	225			VC	112.331	
9817	70.09	SW		300			VC	5.493869	
8803	68.72	SW	66.99	450			CO	52.15362	1 in 435
6717		CO		100			VC	7.397625	
0406		CO		150			VC	17.80006	
0406		CO		150			VC	17.80006	
4701	70.58	SW	69.15	225			VC	35.8469	1 in 68
4701	70.58	SW	69.15	225			VC	35.8469	1 in 68
7604		CO		150			VC	2.886749	
9625		FO		100			PSC	12.96655	
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
9514	72.98	FO	70.28	150			VC	15.00083	1 in 12
7601	70.47	CO	67.7	225			VC	34.48188	1 in 203
9802	70.22	CO	67.64	225			VC	31.5727	1 in 166
6702	69.6	SW	68.28	375			CO	79.25907	1 in 155
0807		CO		150			VC	12.02558	
7502	72.3	FO	70.8	150			VC	70.51776	1 in 136
7502	72.3	FO	70.8	150			VC	70.51776	1 in 136
0805	69.77	SW	68.29	450			CO	20.28929	1 in 507
5403	72.65	CO	69.71	300			CO	24.58371	1 in 137
5403	72.65	CO	69.71	300			CO	24.58371	1 in 137
9605	70.69	CO	68.29	225			VC	21.83155	1 in 168
0505	73.57	FO	71.47	150			VC	30.54023	1 in 73
0505	73.57	FO	71.47	150			VC	30.54023	1 in 73
5905		SW		600			CO	135.3699	
9815	70.1	SW		0			CO	0.2226948	
5704	69.95	CO	64.63	375			VC	31.95309	
5704	69.95	CO	64.63	375			VC	31.95309	
9811		CO		150			VC	3.715319	
7603		CO		150			VC	20.81898	
6701	69.61	SW	67.75	375			CO	60.41523	1 in 89
9616	70.21	SW	68.04	525			CO	32.84969	1 in 149
8907		CO		150			VC	4.097323	
9609	70.08	CO	67.68	225			VC	4.924608	
8711		CO		150			VC	24.03651	
5723		CO		150			VC	12.17267	1 in 135
8909		CO		150			VC	70.03571	1 in 269
7902		CO		150			VC	54.00926	1 in 159
7901	68.48	CO	64.83	600			CO	94.54099	1 in 350
5811		CO		150			VC	21.50706	
6803	69.46	CO	67.01	225			VC	111.0405	1 in 142
7602		CO		150			VC	14.97322	
9631		FO		100			VC	5.173009	
9619		FO		100			PE	4.480266	
8608	69.61	CO	67.39	375			CO	40.59411	1 in 119
4002		CO		150			VC	9.660741	
4002		CO		150			VC	9.660741	
6704	69.99	CO	66.24	225			VC	72.08941	1 in 120
8617		CO		150			VC	34.43003	
4915		CO		150			VC	3.877072	
8910		CO		100			VC	3.877072	
9810	70.09	SW	67.82	525			CO	2.91304	
0404		CO		150			VC	18.19024	1 in 152
0404		CO		150			VC	12.83337	
0404		CO		150			VC	12.83337	
5720		CO		150			VC	1.059786	
8601	74.74	CO	68.23	225			VC	80.85678	1 in 159
9603	70.23	CO	67.98	225			VC	36.04709	1 in 120
0403		CO		150			VC	17.87203	
0403		CO		150			VC	17.87203	
8708		CO		150			VC	9.455836	
8713		CO		150			VC	2.01246	
0405		CO		150			VC	6.217504	
0405		CO		150			VC	6.217504	
7709		FO		100			VC	2.234534	
9821		CO		150			VC	17.27409	
6804		CO		150			VC	3.404791	
5404	72.63	CO	70.09	300			UN	37.98619	1 in 106
5404	72.63	CO	70.09	300			UN	37.98619	1 in 106
6723		CO		100			VC	16.18645	
9818		FO		100			VC	6.998579	
5604		CO		100			VC	18.54598	
8611	69.83	SW	67.7	375			CO	1.803167	1 in 6
8902	68.9	CO	66.55	225			VC	49.0408	1 in 149
9901	68.74	CO	66.67	225			VC	55.44366	1 in 121
9518		CO		100			PVC	15.23643	
7907		CO		150			VC	23.97094	
8619		FO		100			PVC	21.8458	

LEGEND

Abandoned | Foul | Surface Water | Combined

- Public Sewer
- Private Sewer
- Section 104
- Rising Main
- Sludge Main
- Overflow
- Water Course
- Highway Drain

All point assets follow the standard colour convention:
red - combined blue - surface water
brown - foul purple - overflow

- Manhole
- Head of System
- Extent of Survey
- Rodding Eye
- Inlet
- Discharge Point
- Vortex
- Penstock
- Washout Chamber
- Valve
- Air Valve
- Non Return Valve
- Soakaway
- Gully
- Cascade
- Flow Meter
- Hatch Box
- Oil Interceptor
- Summit
- Drop Shaft
- Orifice Plate
- Side Entry Manhole
- Outfall
- Screen Chamber
- Inspection Chamber
- Bifurcation Chamber
- Lamp Hole
- T Junction / Saddle
- Catchpit
- Valve Chamber
- Vent Column
- Vortex Chamber
- Penstock Chamber
- Network Storage Tank
- Sewer Overflow
- Ww Treatment Works
- Ww Pumping Station
- Septic Tank
- Control Kiosk
- DNM Network Monitoring Point
- Change of Characteristic

MANHOLE FUNCTION

FO	Foul
SW	Surface Water
CO	Combined
OV	Overflow

SEWER SHAPE

CI	Circular
EG	Egg
OV	Oval
FT	Flat Top
RE	Rectangular
SQ	Square
TR	Trapezoidal
AR	Arch
BA	Barrel
HO	HorseShoe
UN	Unspecified

SEWER MATERIAL

AC	Asbestos Cement
BR	Brick
PE	Polyethylene
RP	Reinforced Plastic Matrix
CO	Concrete
CSB	Concrete Segment Bolted
CSU	Concrete Segment Unbolted
CC	Concrete Box Culverted
PSC	Plastic / Steel Composite
GRC	Glass Reinforced Plastic
DI	Ductile Iron
PVC	Polyvinyl Chloride
CI	Cast Iron
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
PP	Polypropylene
PF	Pitch Fibre
MAC	Masonry, Coursed
MAR	Masonry, Random
U	Unspecified

Address or Site Reference:

AVANT GARDE A V LTD 3000 AVIATOR WAY,
MANCHESTER,
M22 5TG

OS sheet Number: SJ8285NE
Scale: 1:1250 **Date:** 23/09/2025
Nodes: 306
Sheet: 3 of 4

Printed by: Property Searches

SEWER RECORDS

United Utilities
Water for the North West

APPENDIX C

EXISTING AND PROPOSED DRAINED AREAS



DO NOT SCALE FROM THIS DRAWING

GENERAL

1. These notes are intended to augment drawings and specifications. Where conflict of requirements exists the order of precedence shall be as shown in the specifications. Otherwise the strictest provision shall govern.
2. This drawing is to be read in conjunction with all other relevant Engineers and Architects drawings.
3. Drawings not to be scaled. All dimensions to be checked on site by the Contractor prior to the commencement of any work or shop drawing. Any discrepancies to be notified to the Architect & Engineer and further instructions obtained before work is commenced.

DRAINAGE NOTES

1. Invert of foul and surface water inspection chambers to be min 600mm below FFL.
2. Covers HD in road, MD in paths and landscaped areas.
3. All branches from stacks 100mm Ø.
4. All inspection chambers 450mm Ø with 450mm covers.
5. Manholes generally to be 1200x750 or 1050 Ø with 600x600 or 600 Ø covers except manholes between 1.5 & 2.7m deep which are to be minimum 1200mm Ø.
6. Ground floor ensuite shower and bath connections made below floor into nearest run min. 2000mm downstream using 135 branch pipe. Trap to be demountable for rodding.
7. RWP to discharge into roddable access gullies compatible
8. Gullies in hardstanding to be Hepworth semi-universal-square top (200m² capacity).
9. Ensure trap is fitted on laundry installation (separate connection).
10. Drain runs in the car park area to be surrounded in minimum 150mm pea gravel giving class s bedding factor 2.5.
11. All soil stacks to be vented - those marked SVP are taken through the roof and vented to air , all other to be fitted with Agrement Certified Air Admittance Valves.
12. Invert levels, pipe diameters, gradients, and connection points associated with petrol interceptors, storage and infiltration areas to be specified by Subcontractor.
13. Rocker pipes are to be fitted at each side of any pipes penetrating walls or relieving lintels are to be provided.
14. See project specification for further information.
15. 150Ø drains assume 1:150 unless stated
16. 100Ø drains assume 1:80 unless stated
17. Kitchen wastes connected to above floor grease trap and then into soil stack.
18. Where manhole/inspection chamber covers are located in paved or block paved areas, then covers need to be recessed to accept paving type.

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY	CHK

AFA CONSULTING ENGINEERS LTD

AFA Consulting Engineers Ltd
2a Acomb Court,
Front St,
Acomb,
York
YO24 3BJ

admin@afa-eng.co.uk

CLIENT
Care Concept

PROJECT
Proposed Extension to Marion Lauder House Care Home, 20 Lincombe Road, Wythenshawe, Manchester, M22 1PY

DRAWING TITLE
Existing Drained Areas

DRAWING STATUS
FOR COMMENT

SCALE	DATE	
1:200 @ A1	Aug 2026	
DRAWN BY	CHECKED BY	
GB	SS	
JOB NO.	DWG NO.	REV
0072	SL(5)510	-



DO NOT SCALE FROM THIS DRAWING

GENERAL

1. These notes are intended to augment drawings and specifications. Where conflict of requirements exists the order of precedence shall be as shown in the specifications. Otherwise the strictest provision shall govern.
2. This drawing is to be read in conjunction with all other relevant Engineers and Architects drawings,
3. Drawings not to be scaled. All dimensions to be checked on site by the Contractor prior to the commencement of any work or shop drawing. Any discrepancies to be notified to the Architect & Engineer and further instructions obtained before work is commenced.

DRAINAGE NOTES

1. Invert of foul and surface water inspection chambers to be min 600mm below FFL
2. Covers HD in road, MD in paths and landscaped areas.
3. All branches from stacks 100mm Ø.
4. All inspection chambers 450mm Ø with 450mm covers.
5. Manholes generally to be 1200x750 or 1050 Ø with 600x600 or 600 Ø covers except manholes between 1.5 & 2.7m deep which are to be minimum 1200mm Ø.
6. Ground floor ensuite shower and bath connections made below floor into nearest run min. 2000mm downstream using 135 branch pipe. Trap to be demountable for rodding.
7. RWP to discharge into roddable access gullies compatible
8. Gullies in hardstanding to be Hepworth semi-universal-square top (200m² capacity).
9. Ensure trap is fitted on laundry installation (separate connection).
10. Drain runs in the car park area to be surrounded in minimum 150mm pea gravel giving class s bedding factor 2.5.
11. All soil stacks to be vented - those marked SVP are taken through the roof and vented to air , all other to be fitted with Agrement Certified Air Admittance Valves.
12. Invert levels, pipe diameters, gradients, and connection points associated with petrol interceptors, storage and infiltration areas to be specified by Subcontractor.
13. Rocker pipes are to be fitted at each side of any pipes penetrating walls or relieving lintels are to be provided.
14. See project specification for further information.
15. 150Ø drains assume 1:150 unless stated
16. 100Ø drains assume 1:80 unless stated
17. Kitchen wastes connected to above floor grease trap and then into soil stack.
18. Where manhole/inspection chamber covers are located in paved or block paved areas, then covers need to be recessed to accept paving type.

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY	CHK

AFA CONSULTING ENGINEERS LTD

AFA Consulting Engineers Ltd
2a Acomb Court,
Front St,
Acomb,
York
YO24 3BJ

admin@afa-eng.co.uk

CLIENT
Care Concept

PROJECT
Proposed Extension to Marion Lauder House Care Home, 20 Lincombe Road, Wythenshawe, Manchester, M22 1PY

DRAWING TITLE
Proposed Drained Areas

DRAWING STATUS
FOR COMMENT

SCALE	DATE	
1:200 @ A1	Aug 2026	
DRAWN BY	CHECKED BY	
GB	SS	
JOB NO.	DWG NO.	REV
0072	SL(5)511	-

APPENDIX D

FLOOD RISK MAP

Flood map for planning

Your reference	Location (easting/northing)	Created
Unspecified	**382498/385839**	**18 August 2026 01:01**

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following**:

- bigger than 1 hectare (ha)
- in an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

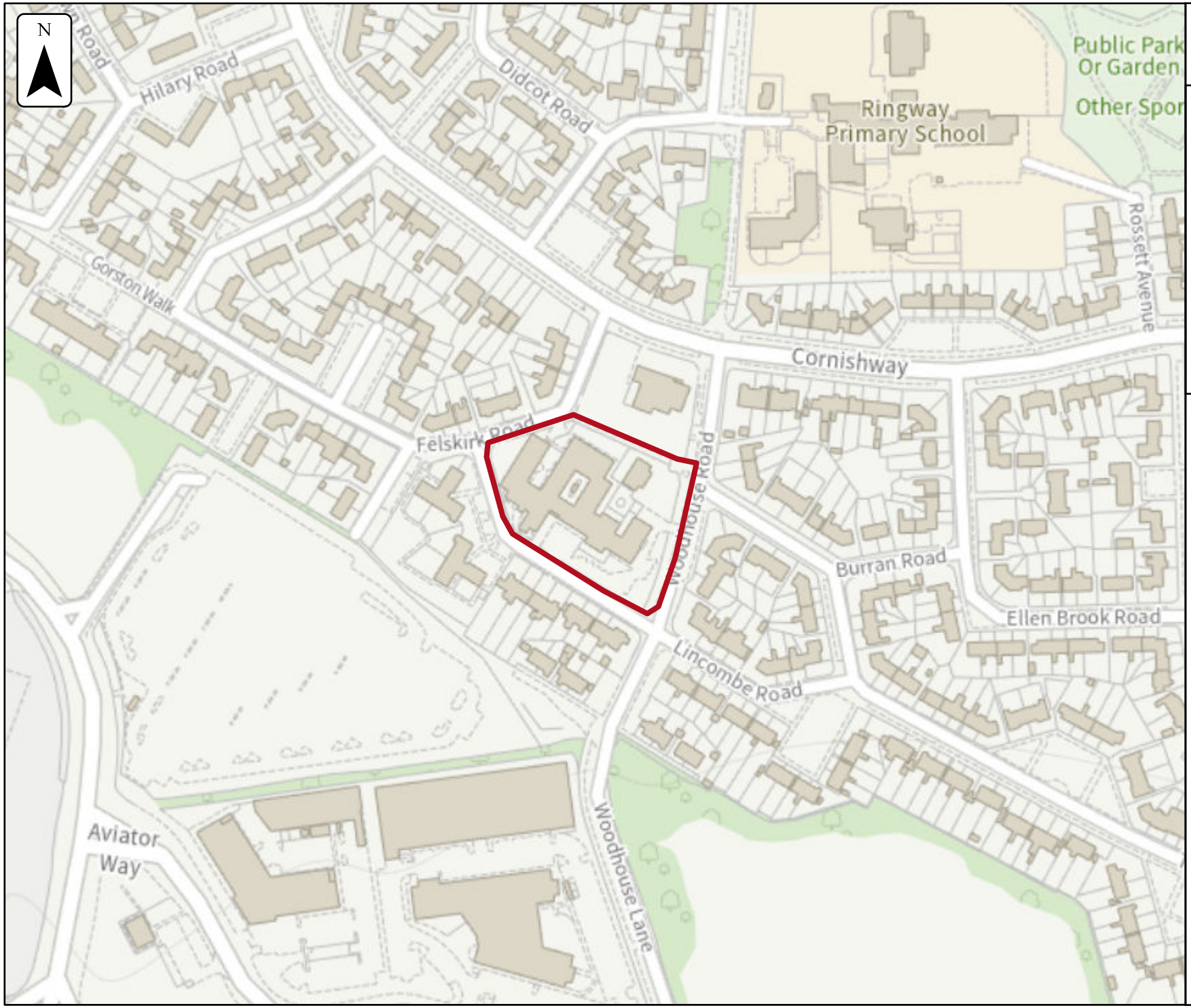
Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence which sets out the terms and conditions for using government data. https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2026 AC0000807064. https://flood-map-for-planning.service.gov.uk/os-terms



Environment Agency

Flood map for planning

Your reference
Unspecified

Location (easting/northing)
382498/385839

Scale
1:2,500

Created
18 Aug 2026 01:01

- Flood zone 3
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Water storage area

0 20 40 60m

© Environment Agency copyright and/or database rights 2026. All rights reserved. © Crown copyright and database rights 2026 Ordnance Survey licence number AC0000807064.

APPENDIX E

SUDS CALCULATIONS

0077 - Extension at Marion Lauder House Care Home, 20 Lincombe Rd, Wythenshawe, Manchester M22 1PY

The existing site compromises the following drained areas:

Care Home Building	1781 m^2
Building 2	134 m^2
Car park to North	53 m^2
Car Park and Access Road South & East	651 m^2
Total Impermeable Area	**2619 m^2**

The proposed development compromises the following drained areas:

Retained Care Home Building	1652 m^2
Car Park and Access Road South & East	527 m^2
Total of Retained Areas	**2179 m^2**
New Extension 1	755 m^2
New Extension 2	123 m^2
New Car Parking Area	105 m^2
Total Impermeable Area	**983 m^2**

The existing and proposed drained areas are shown on the drawing in Appendix C.

The existing site discharges to the United Utilities Surface Water Sewer which runs along the East boundary of the site. There is no restriction or attenuation storage to the existing network.

From the proposed development the drained area from the retained Care Home building will be reduced from 1781m^2 to 1652m^2 which is a reduction of 129m^2. The drainage to existing building 2 will be removed resulting in a reduction of 134m^2. The Car park to the North will be removed with a reduction of 53m^2. The retained access road and car parking area will be reduced from 651m^2 to 527m^2 which is a 124m^2 reduction. Overall this will result in a reduction of 440m^2 to the existing drainage network.

The new extension and new car parking areas will be drained via a new surface water network. The new drained areas total 983m^2.

From a review of surrounding sites infiltration testing has failed and therefore infiltration solutions are not considered feasible.

As there are no watercourses in proximity of the site it is proposed to discharge to the United Utilities Surface Water Sewer located to the East boundary of the site.

It is proposed to limit the discharge from the new areas to 2l/s via hydrobrake and provide attenuation storage to ensure flows from rainfall events up to 1 in 100 years over a range of storm durations are contained within the network. A discharge rate of 2l/s is proposed to limit the risk of blockages which can be more common on very low discharge rates.

Attenuation storage has been designed to accommodate rainfall events up to 1 in 100 years with 40% climate change. Attenuation storage has been designed within the permeable paving to the car park area and attenuation crates noted to the North of the site. Full Calculations are attached.

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		



Catchment Area

Type : Catchment Area

Area (ha)	0.012

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (1)

Type : Catchment Area

Area (ha)	0.011

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (2)

Type : Catchment Area

Area (ha)	0.033

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (3)

Type : Catchment Area

Area (ha)	0.014

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (4)

Type : Catchment Area

Area (ha)	0.008

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (5)

Type : Catchment Area

Area (ha)	0.009

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100



Catchment Area (6)

Type : Catchment Area

Area (ha)	0.012

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	1.000
Winter Volumetric Runoff	1.000
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Junctions Storm Phase: Phase			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
SMH01	Manhole	500722.436	164649.982	69.900	0.700	69.200	Circular	1.000
SMH09	Manhole	500740.741	164645.055	69.800	1.650	68.150	Circular	1.000
SMH02	Manhole	500741.070	164643.540	69.800	1.550	68.250	Circular	1.000
SMH03	Manhole	500757.839	164634.530	69.930	1.480	68.450	Circular	1.000
SMH10	Manhole	500748.779	164617.178	69.900	0.700	69.200	Circular	1.000
SMH05	Manhole	500770.501	164626.002	69.930	1.330	68.600	Circular	1.000
SMH04	Manhole	500768.560	164629.791	69.700	1.950	67.750	Circular	1.000
UU5806	Manhole	500776.461	164630.653	69.000	2.000	67.000	Circular	1.200
SMH06	Manhole	500765.301	164612.208	69.930	1.180	68.750	Circular	1.000
SMH07	Manhole	500749.547	164586.542	69.930	0.880	69.050	Circular	1.000
SMH08	Manhole	500744.962	164586.984	69.960	0.860	69.100	Circular	1.000

Name	Lock
SMH01	None
SMH09	None
SMH02	None
SMH03	None
SMH10	None
SMH05	None
SMH04	None
UU5806	None
SMH06	None
SMH07	None
SMH08	None

Inlets

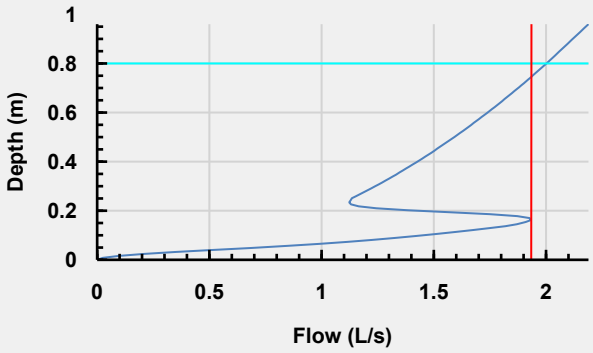
Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
SMH01	Inlet	Catchment Area	(None)	No Restriction
SMH09	Inlet	Pipe (8)	(None)	No Restriction
SMH02	Inlet	Pipe (6)	(None)	No Restriction
SMH03	Inlet	Pipe (5) Pipe (11) Catchment Area (6)	(None)	No Restriction
SMH10	Inlet	Catchment Area (2)	(None)	No Restriction
SMH05	Inlet	Pipe (4)	(None)	No Restriction
	Inlet (1)	Catchment Area (5)	(None)	No Restriction
SMH04	Inlet	Pipe (9)	(None)	No Restriction
UU5806	Inlet	Pipe (10)	(None)	No Restriction
SMH06	Inlet	Pipe (3)	(None)	No Restriction
	Inlet (1)	Catchment Area (4)	(None)	No Restriction
SMH07	Inlet	Pipe (2) Catchment Area (3)	(None)	No Restriction
SMH08	Inlet	Pipe (1)	(None)	No Restriction

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	Company Address:		

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
SMH01	Outlet	Pipe	Free Discharge
SMH09	Outlet	Pipe (9)	Free Discharge
SMH02	Outlet	Pipe (7)	Free Discharge
SMH03	Outlet	Pipe (6)	Free Discharge
SMH10	Outlet	Pipe (11)	Free Discharge
SMH05	Outlet	Pipe (5)	Free Discharge
SMH04	Outlet	Pipe (10)	Hydro-Brake®

Invert Level (m)	67.750
Design Depth (m)	0.800
Design Flow (L/s)	2.0
Objective	Minimise Upstream Storage Requirements
Application	Surface Water Only
Sump Available	☐
Unit Reference	CHE-0068-2000-0800-2000



SMH06	Outlet	Pipe (4)	Free Discharge
SMH07	Outlet	Pipe (3)	Free Discharge
SMH08	Outlet	Pipe (2)	Free Discharge

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		



Porous Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	69.950
Depth (m)	0.500
Base Level (m)	69.450
Paving Layer Depth (mm)	250
Membrane Percolation (m/hr)	0.01
Porosity (%)	30
Length (m)	17.188
Long. Slope (1:X)	100.00
Width (m)	5.422
Total Volume (m³)	7.084

Under Drain

Height Above Base (m)	0.000
Diameter (mm)	100
No. of Barrels	1
Release Height (m)	0.000
Friction Scheme	Manning's n
n	0.015

Inlets

Inlet (1)

Inlet Type	Lateral Inflow
Incoming Item(s)	Catchment Area (1)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (1)
Outlet Type	Under Drain

Advanced

Conductivity (m/hr)	1000.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	69.600
Depth (m)	0.800
Base Level (m)	68.200
Number of Crates Long	17
Number of Crates Wide	6
Number of Crates High	2
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	39.360

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Pipe
Bypass Destination	(None)
Capacity Type	No Restriction

Inlet (1)

Inlet Type	Point Inflow
Incoming Item(s)	Pipe (7)
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets

Outlet

Outgoing Connection	Pipe (8)
Outlet Type	Free Discharge

Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Connections Storm Phase: Phase			

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	14.574	Pipe	14.574		0.6	150	69.900	69.200
Pipe (1)	1.698	Pipe	4.850		0.6	150	70.122	69.450
Pipe (2)	4.606	Pipe	92.117		0.6	150	69.960	69.100
Pipe (3)	30.116	Pipe	100.385		0.6	150	69.930	69.050
Pipe (4)	14.742	Pipe	98.280		0.6	150	69.930	68.750
Pipe (5)	15.266	Pipe	101.774		0.6	150	69.930	68.600
Pipe (6)	19.036	Pipe	95.179		0.6	150	69.930	68.450
Pipe (7)	2.527	Pipe	50.542		0.6	150	69.800	68.250
Pipe (8)	2.747	Pipe	54.938		0.6	100	69.600	68.200
Pipe (9)	31.731	Pipe	79.328		0.6	100	69.800	68.150
Pipe (10)	7.948	Pipe	10.598		0.6	100	69.700	67.750
Pipe (11)	19.574	Pipe	26.099		0.6	150	69.900	69.200

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock	Flow Restriction (L/s)	Culvert Type	Culvert Entrance	Wall Thickness (mm)
Pipe	69.600	68.200		None		(None)	(None)	0
Pipe (1)	69.960	69.100		None	100.0	(None)	(None)	0
Pipe (2)	69.930	69.050		None		(None)	(None)	0
Pipe (3)	69.930	68.750		None		(None)	(None)	0
Pipe (4)	69.930	68.600		None		(None)	(None)	0
Pipe (5)	69.930	68.450		None		(None)	(None)	0
Pipe (6)	69.800	68.250		None		(None)	(None)	0
Pipe (7)	69.600	68.200		None		(None)	(None)	0
Pipe (8)	69.800	68.150		None		(None)	(None)	0
Pipe (9)	69.700	67.750		None		(None)	(None)	0
Pipe (10)	69.000	67.000		None	2.2	(None)	(None)	0
Pipe (11)	69.930	68.450		None		(None)	(None)	0

Name	Material	Trench Width (mm)	Bedding Material	Surrounding Material
Pipe		0		
Pipe (1)		0		
Pipe (2)		0		
Pipe (3)		0		
Pipe (4)		0		
Pipe (5)		0		
Pipe (6)		0		
Pipe (7)		0		
Pipe (8)		0		
Pipe (9)		0		
Pipe (10)		0		
Pipe (11)		0		

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	Company Address:		

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
SMH01	69.900 69.200	Diameter / Length: 1.000					Manhole
E:500722.436 N:164649.982	0.700		{a} Pipe	Pipe	69.200	Diam/Width:150	Not Applicable
SMH09	69.800 68.150	Diameter / Length: 1.000	{1} Pipe (8)	Pipe	68.150	Diam/Width:100	Manhole
E:500740.741 N:164645.055	1.650		{a} Pipe (9)	Pipe	68.150	Diam/Width:100	Not Applicable
SMH02	69.800 68.250	Diameter / Length: 1.000	{1} Pipe (6)	Pipe	68.250	Diam/Width:150	Manhole
E:500741.070 N:164643.540	1.550		{a} Pipe (7)	Pipe	68.250	Diam/Width:150	Not Applicable
SMH03	69.930 68.450	Diameter / Length: 1.000	{1} Pipe (5) {2} Pipe (11)	Pipe Pipe	68.450 68.450	Diam/Width:150 Diam/Width:150	Manhole
E:500757.839 N:164634.530	1.480		{a} Pipe (6)	Pipe	68.450	Diam/Width:150	Not Applicable
SMH10	69.900 69.200	Diameter / Length: 1.000					Manhole
E:500748.779 N:164617.178	0.700		{a} Pipe (11)	Pipe	69.200	Diam/Width:150	Not Applicable

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	Company Address:		

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
SMH05	69.930 68.600	Diameter / Length: 1.000	{1} Pipe (4)	Pipe	68.600	Diam/Width:150	Manhole
E:500770.501 N:164626.002	1.330		{a} Pipe (5)	Pipe	68.600	Diam/Width:150	Not Applicable
SMH04	69.700 67.750	Diameter / Length: 1.000	{1} Pipe (9)	Pipe	67.750	Diam/Width:100	Manhole
E:500768.560 N:164629.791	1.950		{a} Pipe (10)	Pipe	67.750	Diam/Width:100	Not Applicable
UU5806	69.000 67.000	Diameter / Length: 1.200	{1} Pipe (10)	Pipe	67.000	Diam/Width:100	Manhole
E:500776.461 N:164630.653	2.000						Not Applicable
SMH06	69.930 68.750	Diameter / Length: 1.000	{1} Pipe (3)	Pipe	68.750	Diam/Width:150	Manhole
E:500765.301 N:164612.208	1.180		{a} Pipe (4)	Pipe	68.750	Diam/Width:150	Not Applicable
SMH07	69.930 69.050	Diameter / Length: 1.000	{1} Pipe (2)	Pipe	69.050	Diam/Width:150	Manhole
E:500749.547 N:164586.542	0.880		{a} Pipe (3)	Pipe	69.050	Diam/Width:150	Not Applicable

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	Company Address:		

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
SMH08	69.960 69.100	Diameter / Length: 1.000	{1} Pipe (1)	Pipe	69.100	Diam/Width:150	Manhole
E:500744.962 N:164586.984	0.860		{a} Pipe (2)	Pipe	69.100	Diam/Width:150	Not Applicable

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	SMH01		Time of Concentration	0.012	100	0	100	0.012
Catchment Area (1)	Porous Paving		Time of Concentration	0.011	100	0	100	0.011
Catchment Area (2)	SMH10		Time of Concentration	0.033	100	0	100	0.033
Catchment Area (3)	SMH07		Time of Concentration	0.014	100	0	100	0.014
Catchment Area (4)	SMH06		Time of Concentration	0.008	100	0	100	0.008
Catchment Area (5)	SMH05		Time of Concentration	0.009	100	0	100	0.009
Catchment Area (6)	SMH03		Time of Concentration	0.012	100	0	100	0.012
TOTAL		**0.0**		**0.099**				**0.099**

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Network Design Criteria Storm Phase: Phase	Company Address:		

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	☐

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

Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Network Design Criteria Storm Phase: Phase			

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 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Outfall Details Storm Phase: Phase			

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
UU5806	Free Discharge			

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Title: Rainfall Analysis Criteria	Company Address:		

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	0
Perform No Discharge Analysis	☐

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflows Summary Storm Phase: Phase	Company Address:		

Critical Storm Per Item: Rank By: Max. Inflow

Inflow	Storm Event	Inflow Area (ha)	Max. Inflow (L/s)	Total Inflow Volume (m³)
Catchment Area	FEH: 100 years: +40 %: 15 mins: Summer	0.01	9.8	4.244
Catchment Area (1)	FEH: 100 years: +40 %: 15 mins: Summer	0.01	8.3	3.621
Catchment Area (2)	FEH: 100 years: +40 %: 15 mins: Summer	0.03	25.8	11.183
Catchment Area (3)	FEH: 100 years: +40 %: 15 mins: Summer	0.01	11.4	4.962
Catchment Area (4)	FEH: 100 years: +40 %: 15 mins: Summer	0.01	6.2	2.702
Catchment Area (5)	FEH: 100 years: +40 %: 15 mins: Summer	0.01	7.0	3.035
Catchment Area (6)	FEH: 100 years: +40 %: 15 mins: Summer	0.01	9.6	4.150

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

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
SMH01	FEH: 100 years: +40 %: 120 mins: Winter	69.900	69.200	69.562	0.362	2.8	0.284	0.000	2.8	8.173	Surcharged
SMH09	FEH: 100 years: +40 %: 120 mins: Winter	69.800	68.150	69.558	1.408	3.8	1.105	0.000	3.1	29.277	Surcharged
SMH02	FEH: 100 years: +40 %: 120 mins: Winter	69.800	68.250	69.562	1.312	17.8	1.030	0.000	17.4	54.605	Surcharged
SMH03	FEH: 100 years: +40 %: 120 mins: Winter	69.930	68.450	69.565	1.115	18.3	0.875	0.000	17.8	55.487	Surcharged
SMH10	FEH: 100 years: +40 %: 30 mins: Summer	69.900	69.200	69.593	0.393	17.0	0.308	0.000	16.8	14.727	Surcharged
SMH05	FEH: 100 years: +40 %: 120 mins: Winter	69.930	68.600	69.566	0.966	8.8	0.758	0.000	8.2	26.926	Surcharged
SMH04	FEH: 100 years: +40 %: 120 mins: Winter	69.700	67.750	69.525	1.775	3.1	1.394	0.000	2.2	27.907	Surcharged
UU5806	FEH: 100 years: +40 %: 30 mins: Summer	69.000	67.000	67.023	0.023	2.2	0.000	0.000	2.2	6.322	OK
SMH06	FEH: 100 years: +40 %: 120 mins: Winter	69.930	68.750	69.566	0.816	7.3	0.641	0.000	6.8	21.553	Surcharged
SMH07	FEH: 100 years: +40 %: 15 mins: Summer	69.930	69.050	69.595	0.545	11.4	0.428	0.000	10.2	9.099	Surcharged
SMH08	FEH: 100 years: +40 %: 15 mins: Summer	69.960	69.100	69.604	0.504	5.2	0.395	0.000	6.6	4.566	Surcharged

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:		

Critical Storm Per Item: Rank By: Max. Outflow

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)	Percentage Available (%)	Status
Cellular Storage	FEH: 30 years: +0 %: 15 mins: Summer	68.500	68.500	0.300	0.300	29.3	14.551	0.000	0.000	5.0	63.030	OK
Porous Paving	FEH: 100 years: +40 %: 15 mins: Summer	69.662	69.642	0.040	0.192	8.3	3.272	0.000	0.000	5.2	53.812	OK

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

Critical Storm Per Item: Rank By: Max. Flow

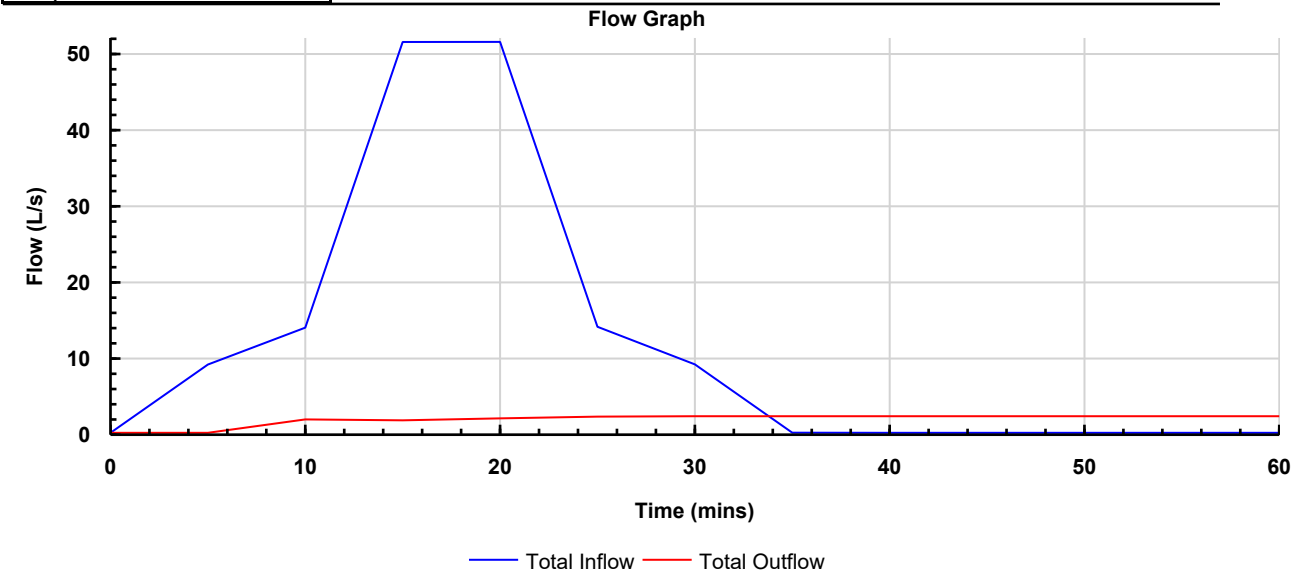
Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Status	Max. Flow (L/s)
Pipe	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH01	Cellular Storage	69.900	69.245	0.150	4.228	1.2	0.21	OK	9.7
Pipe (1)	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	Porous Paving	SMH08	70.122	69.544	0.150	4.635	1.1	0.07	OK	5.9
Pipe (2)	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	SMH08	SMH07	69.960	69.573	0.150	4.628	0.6	0.36	Surcharged	6.7
Pipe (3)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH07	SMH06	69.930	69.595	0.150	8.328	0.7	0.58	Surcharged	10.2
Pipe (4)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH06	SMH05	69.930	69.506	0.150	10.991	0.7	0.69	Surcharged	12.4
Pipe (5)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH05	SMH03	69.930	69.426	0.150	13.665	0.9	0.91	Surcharged	16.1
Pipe (6)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH03	SMH02	69.930	69.293	0.150	28.100	1.9	1.88	Surcharged	34.2
Pipe (7)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH02	Cellular Storage	69.800	68.759	0.150	27.392	2.0	1.3	Surcharged	32.6
Pipe (8)	FEH: 30 years: +0 %: 15 mins: Summer	Pipe	Cellular Storage	SMH09	69.600	68.500	0.100	3.755	0.6	0.62	Surcharged	5.0
Pipe (9)	FEH: 100 years: +40 %: 30 mins: Winter	Pipe	SMH09	SMH04	69.800	68.921	0.100	7.736	0.5	0.62	Surcharged	4.2
Pipe (10)	FEH: 100 years: +40 %: 30 mins: Summer	Pipe	SMH04	UU5806	69.700	68.880	0.023	6.322	1.6	0.12	Surcharged	2.2
Pipe (11)	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	SMH10	SMH03	69.900	69.562	0.150	11.152	1.1	0.58	Surcharged	20.3

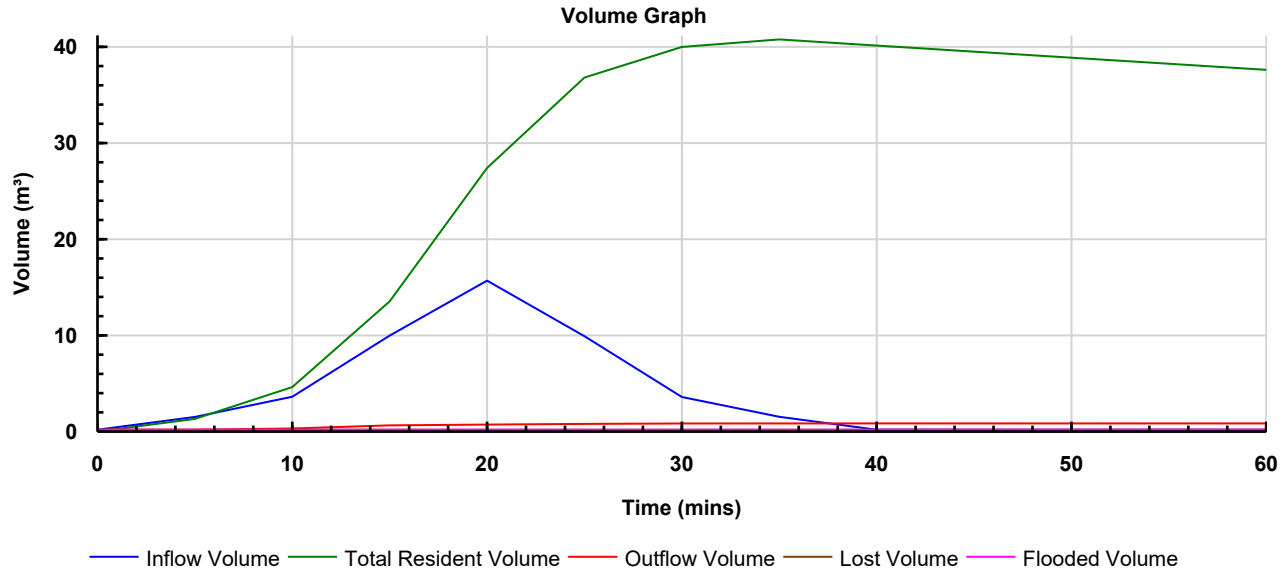
Phase
FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
UU5806			2.2	6.322
TOTAL	51.6	44.727	2.2	6.322

Graphs





Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Inflow Results Storm Phase: Phase			

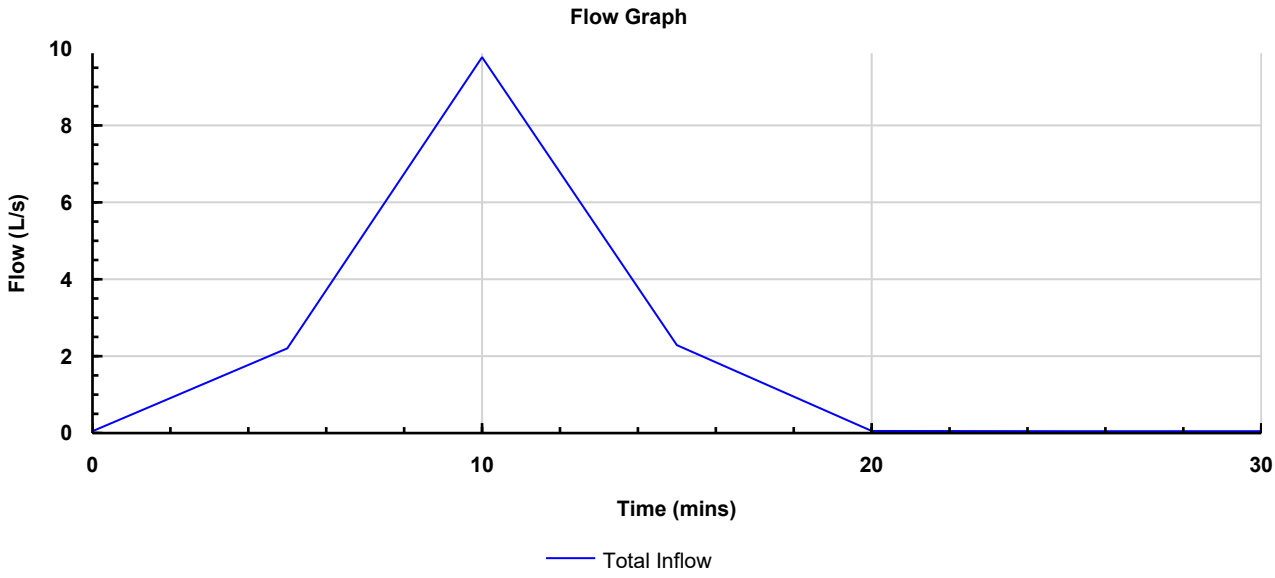
Catchment Area
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	9.8
Total Inflow Volume (m³)	4.244

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	2.2
10	9.8
15	2.2
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

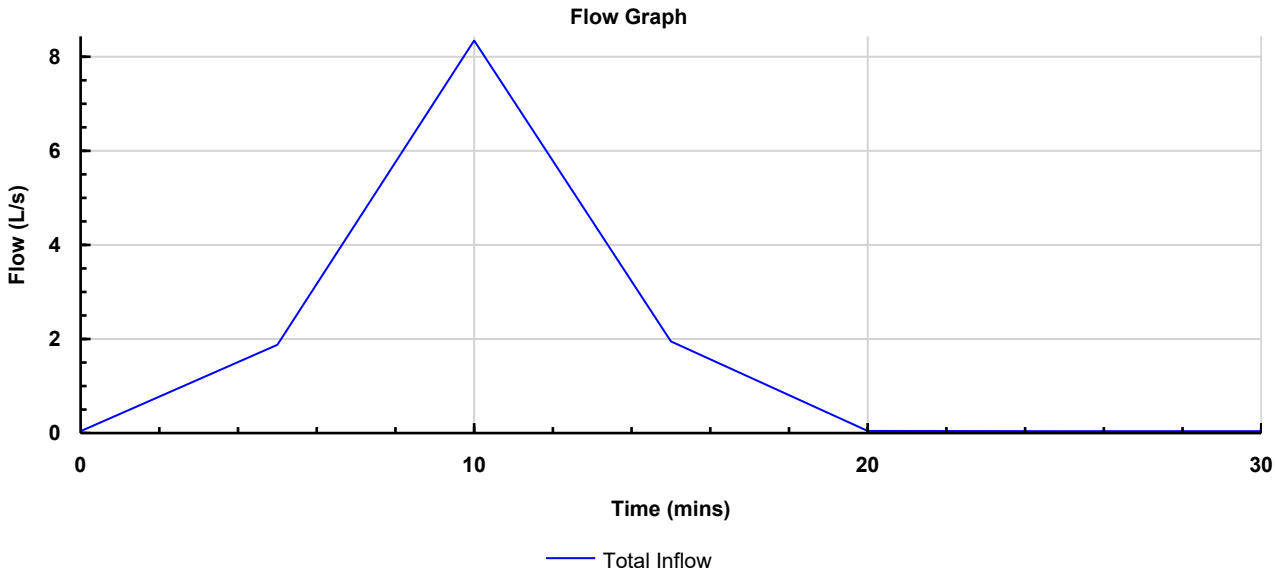
Catchment Area (1)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	8.3
Total Inflow Volume (m³)	3.621

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	1.8
10	8.3
15	1.9
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

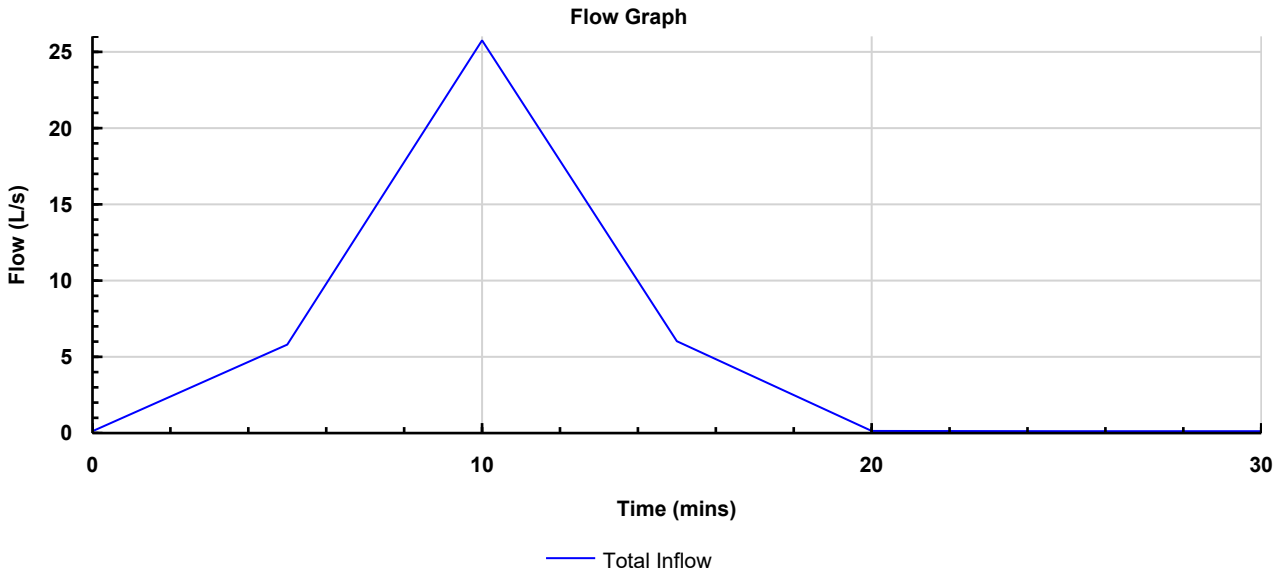
Catchment Area (2)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	25.8
Total Inflow Volume (m³)	11.183

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	5.7
10	25.8
15	5.9
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

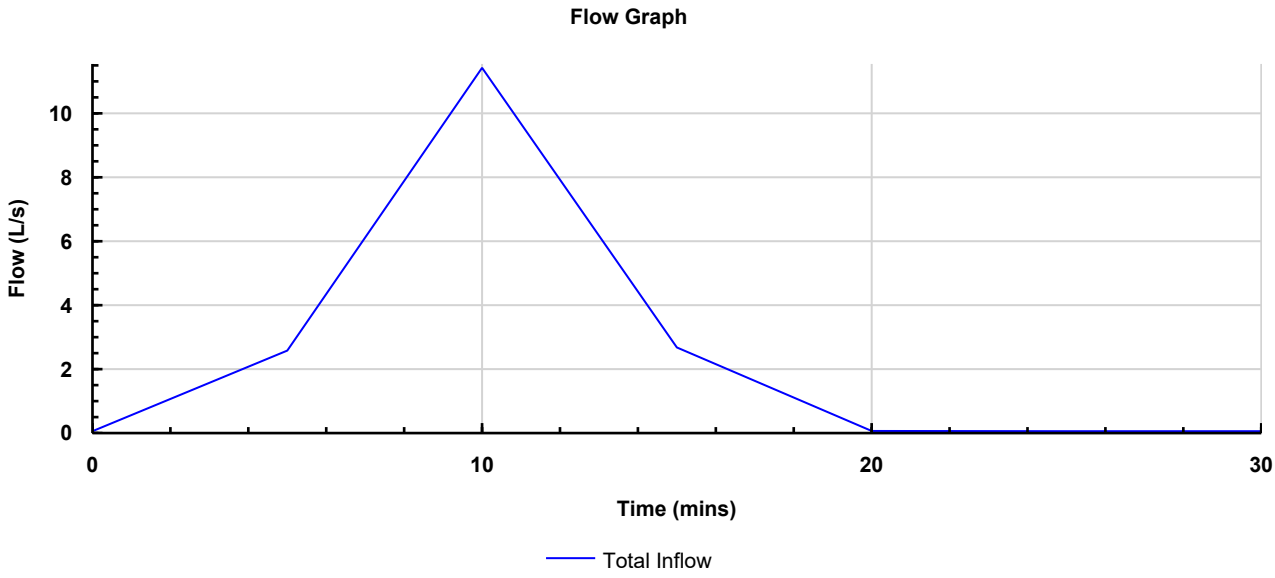
Catchment Area (3)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	11.4
Total Inflow Volume (m³)	4.962

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	2.5
10	11.4
15	2.6
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

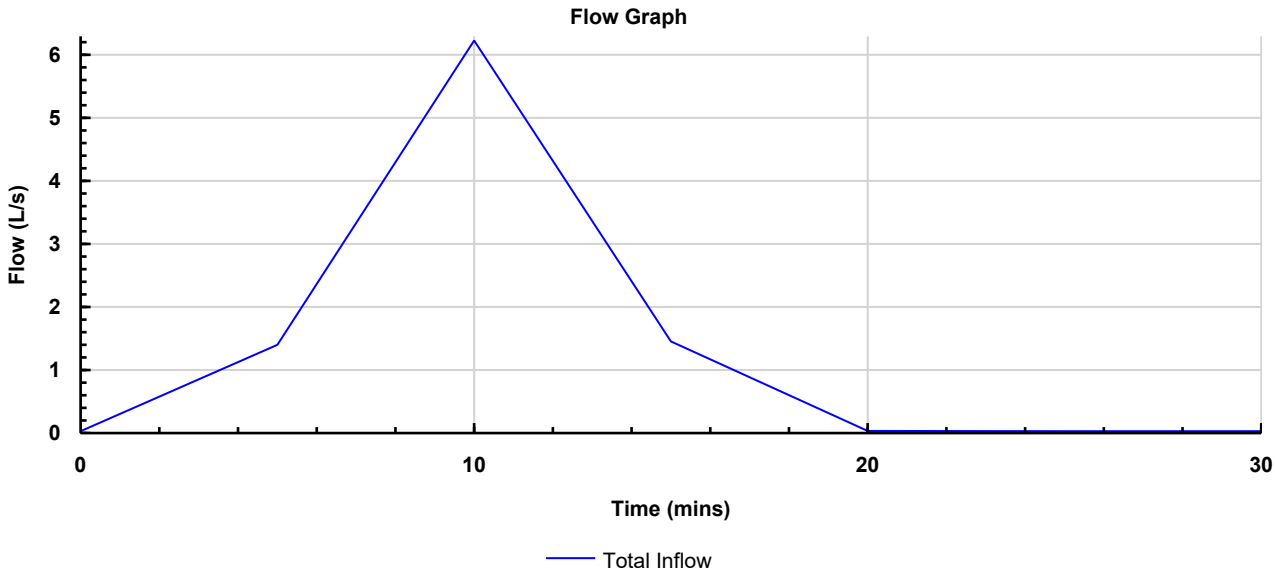
Catchment Area (4)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	6.2
Total Inflow Volume (m³)	2.702

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	1.4
10	6.2
15	1.4
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

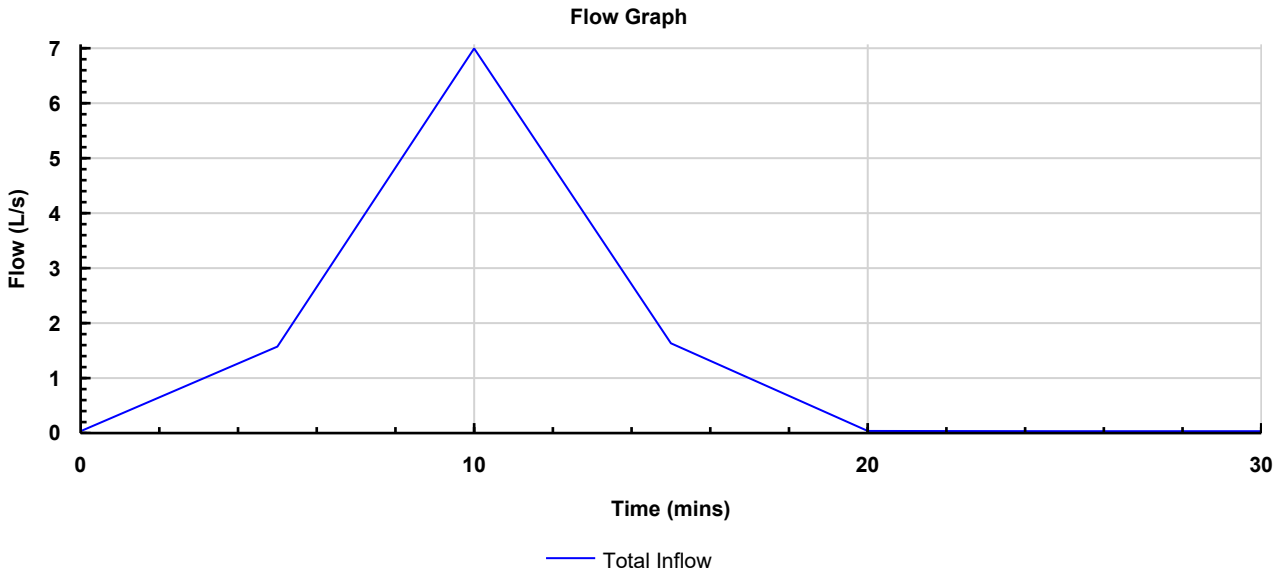
Catchment Area (5)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	7.0
Total Inflow Volume (m³)	3.035

Graphs



Tables

Time (mins)	Total Inflow (L/s)
0	0.0
5	1.5
10	7.0
15	1.6
20	0.0
25	0.0
30	0.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Inflow Results Storm Phase: Phase	Company Address:		

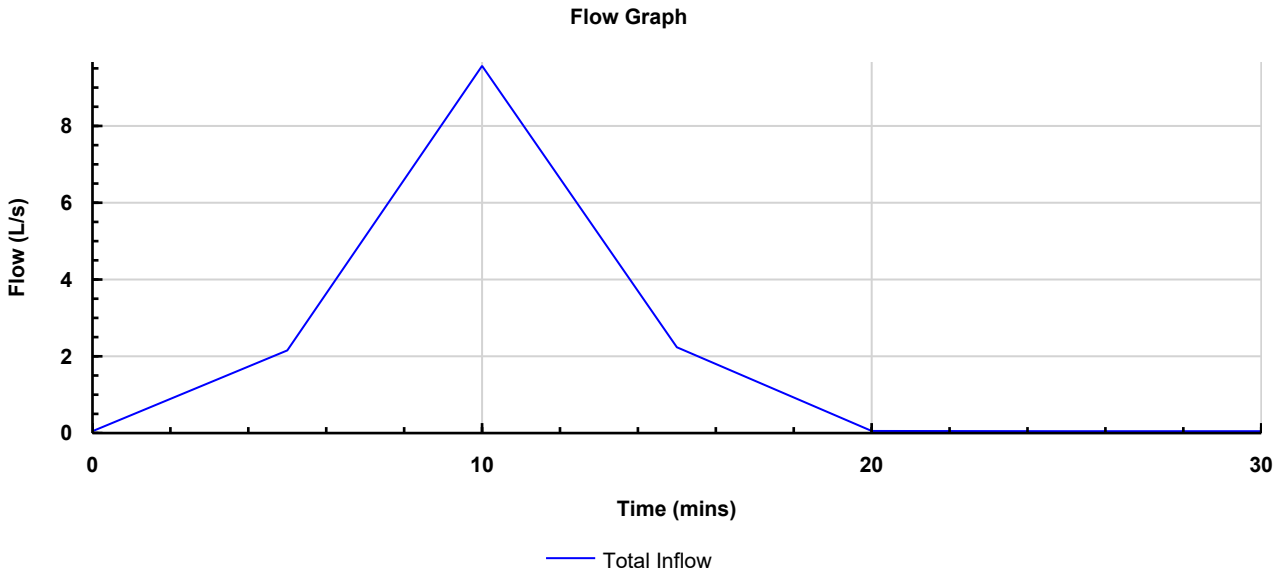
Catchment Area (6)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Catchment Area

Inflow

Max. Inflow (L/s)	9.6
Total Inflow Volume (m³)	4.150

Graphs



Tables

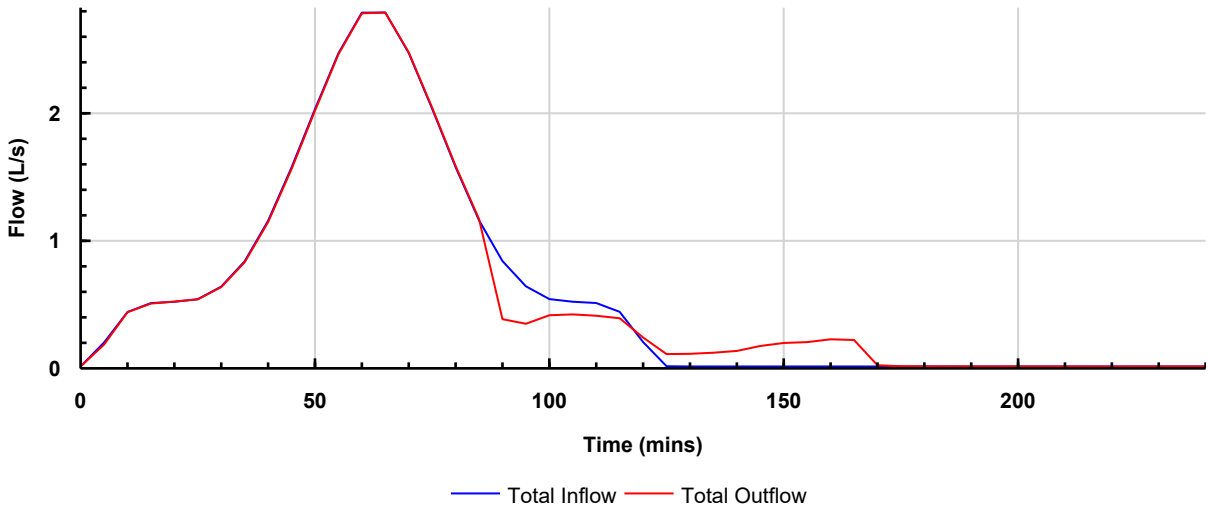
Time (mins)	Total Inflow (L/s)
0	0.0
5	2.1
10	9.6
15	2.2
20	0.0
25	0.0
30	0.0

SMH01 Type : Manhole

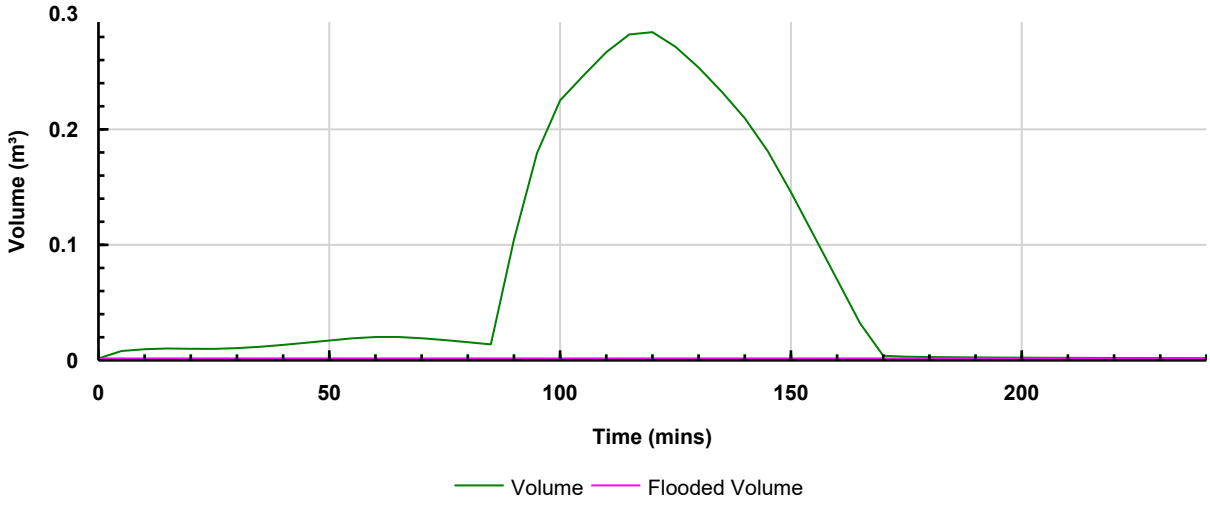
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs

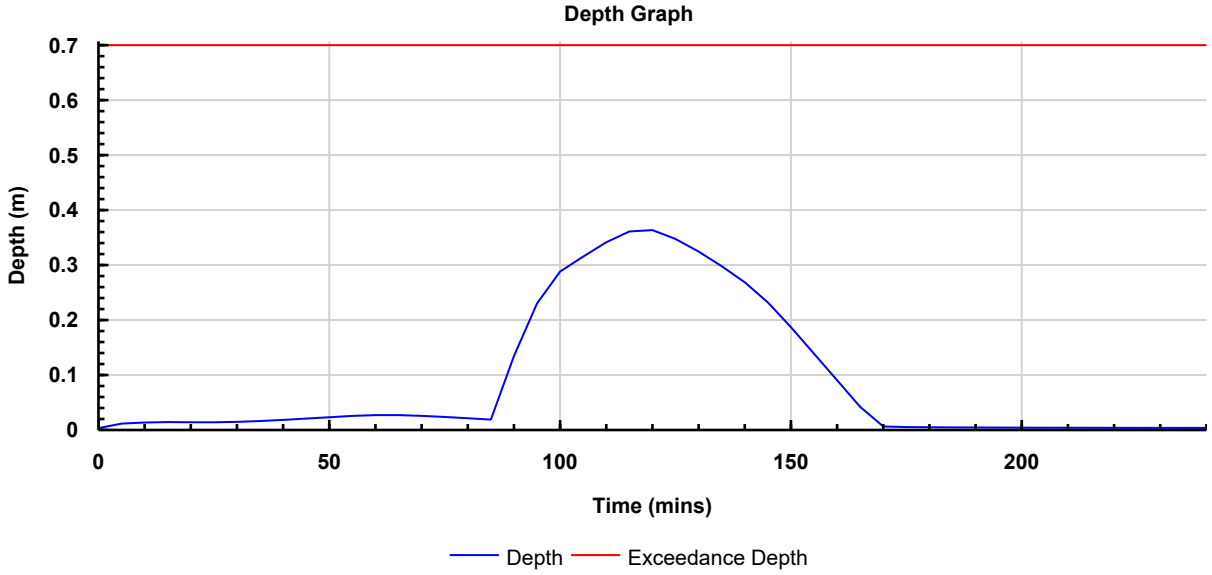
Flow Graph



Volume Graph



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

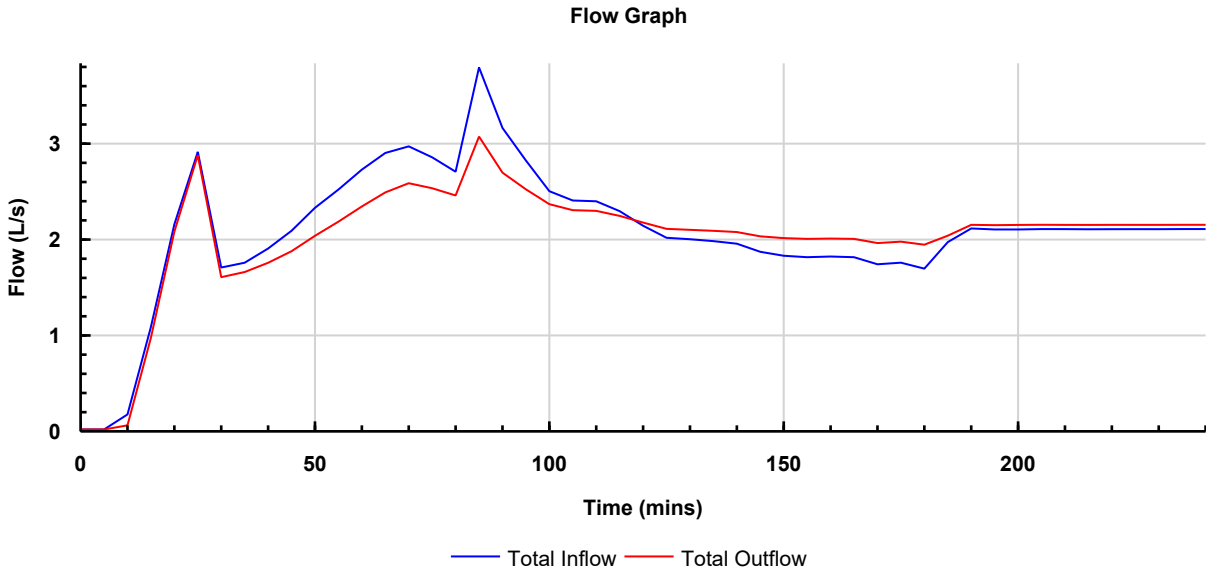
Tables

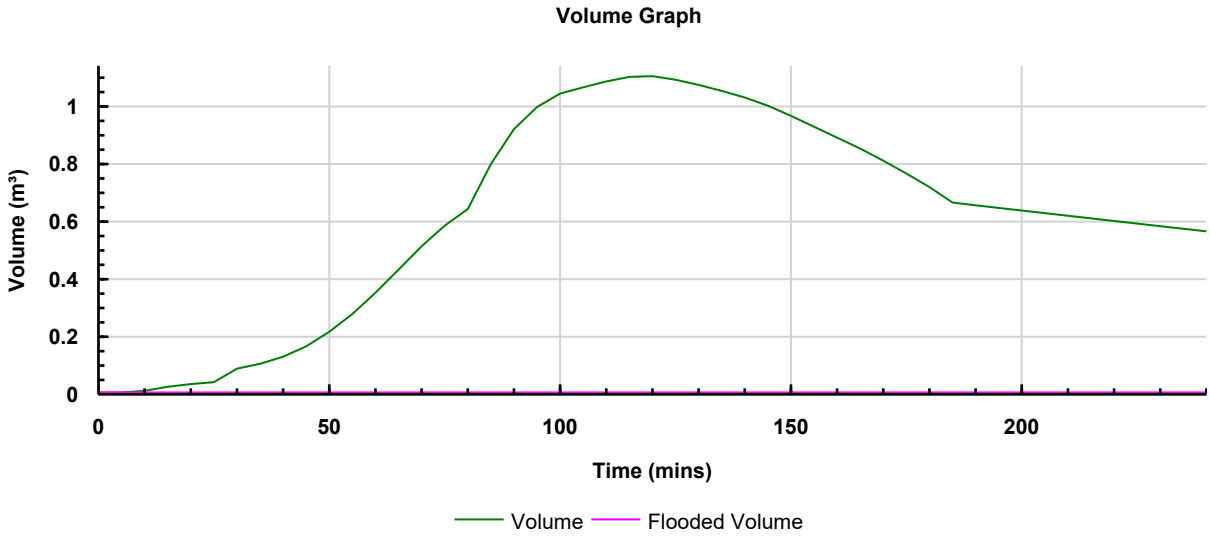
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.2	0.008	0.006	0.000	0.2
10	0.4	0.010	0.008	0.000	0.4
15	0.5	0.011	0.009	0.000	0.5
20	0.5	0.011	0.008	0.000	0.5
25	0.5	0.011	0.008	0.000	0.5
30	0.6	0.011	0.009	0.000	0.6
35	0.8	0.013	0.010	0.000	0.8
40	1.1	0.015	0.012	0.000	1.1
45	1.6	0.017	0.014	0.000	1.6
50	2.0	0.020	0.016	0.000	2.0
55	2.5	0.022	0.018	0.000	2.5
60	2.8	0.024	0.019	0.000	2.8
65	2.8	0.024	0.019	0.000	2.8
70	2.5	0.022	0.018	0.000	2.5
75	2.0	0.020	0.016	0.000	2.0
80	1.6	0.018	0.014	0.000	1.6
85	1.2	0.016	0.012	0.000	1.2
90	0.8	0.132	0.103	0.000	0.4
95	0.6	0.228	0.179	0.000	0.3
100	0.5	0.286	0.225	0.000	0.4
105	0.5	0.314	0.246	0.000	0.4
110	0.5	0.340	0.267	0.000	0.4
115	0.4	0.359	0.282	0.000	0.4
120	0.2	0.362	0.284	0.000	0.2
125	0.0	0.346	0.271	0.000	0.1
130	0.0	0.323	0.253	0.000	0.1
135	0.0	0.296	0.232	0.000	0.1
140	0.0	0.267	0.209	0.000	0.1
145	0.0	0.230	0.180	0.000	0.2
150	0.0	0.184	0.145	0.000	0.2
155	0.0	0.136	0.107	0.000	0.2
160	0.0	0.087	0.069	0.000	0.2
165	0.0	0.039	0.030	0.000	0.2
170	0.0	0.003	0.002	0.000	0.0
175	0.0	0.002	0.002	0.000	0.0
180	0.0	0.002	0.001	0.000	0.0
185	0.0	0.001	0.001	0.000	0.0
190	0.0	0.001	0.001	0.000	0.0
195	0.0	0.001	0.001	0.000	0.0
200	0.0	0.001	0.001	0.000	0.0
205	0.0	0.001	0.001	0.000	0.0
210	0.0	0.001	0.001	0.000	0.0
215	0.0	0.001	0.000	0.000	0.0
220	0.0	0.001	0.000	0.000	0.0
225	0.0	0.000	0.000	0.000	0.0
230	0.0	0.000	0.000	0.000	0.0
235	0.0	0.000	0.000	0.000	0.0
240	0.0	0.000	0.000	0.000	0.0

SMH09 Type : Manhole

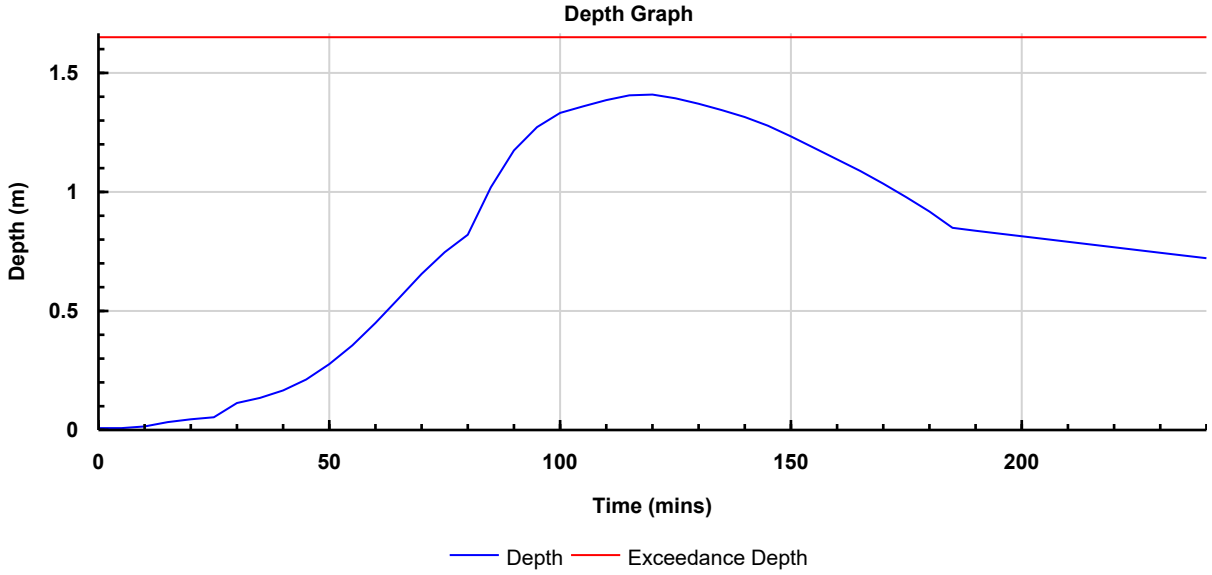
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

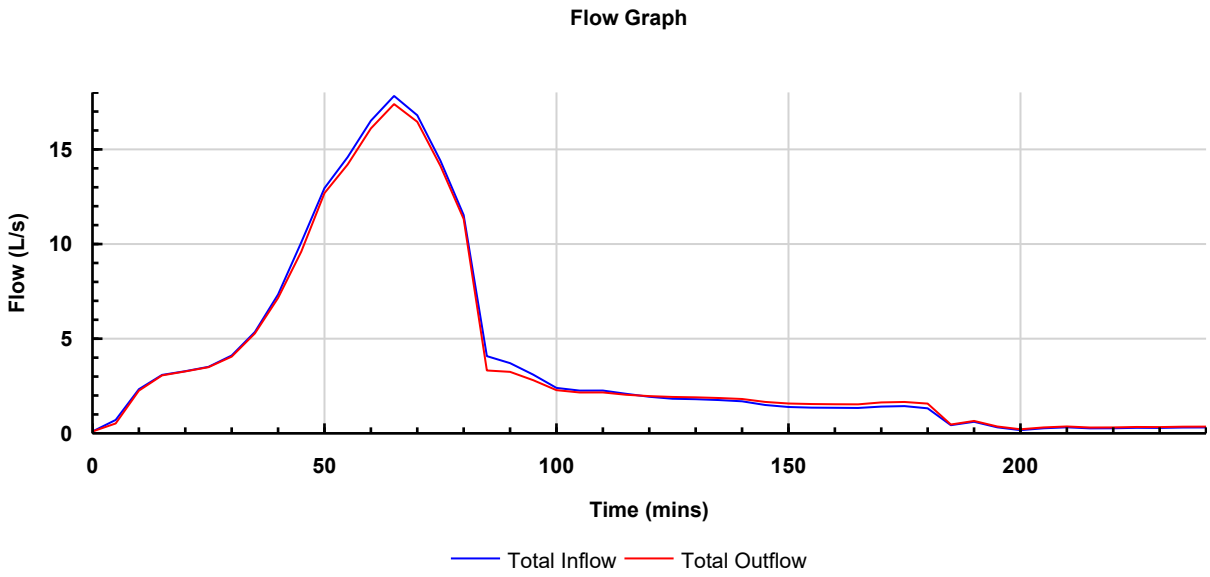
Tables

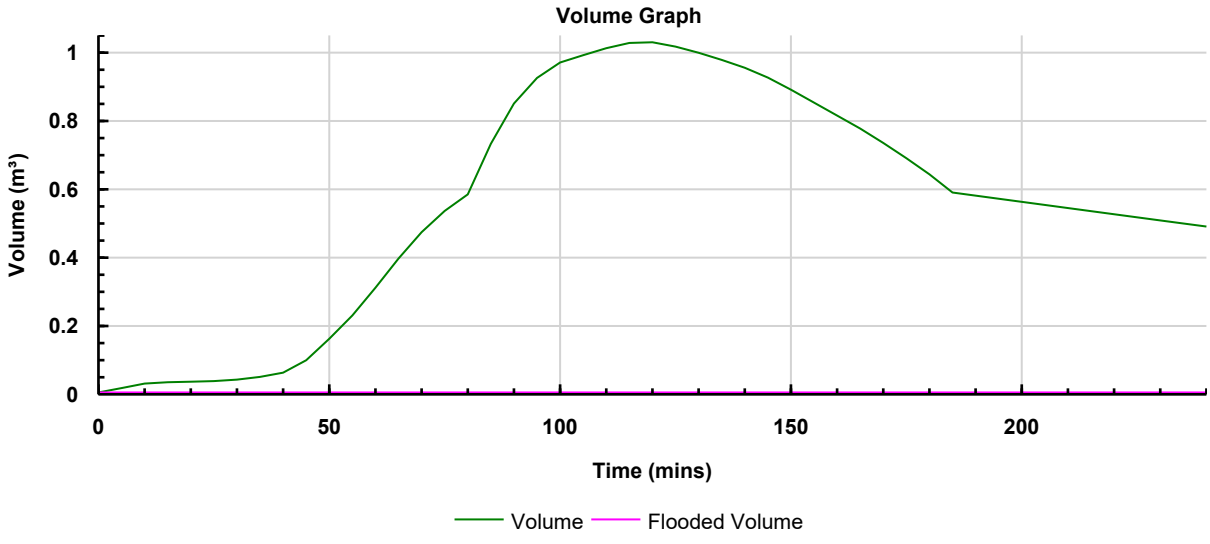
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.0	0.000	0.000	0.000	0.0
10	0.2	0.007	0.006	0.000	0.0
15	1.1	0.025	0.020	0.000	1.0
20	2.2	0.037	0.029	0.000	2.1
25	2.9	0.046	0.036	0.000	2.9
30	1.7	0.106	0.083	0.000	1.6
35	1.7	0.128	0.100	0.000	1.7
40	1.9	0.159	0.125	0.000	1.7
45	2.1	0.205	0.161	0.000	1.9
50	2.3	0.270	0.212	0.000	2.0
55	2.5	0.349	0.274	0.000	2.2
60	2.7	0.444	0.348	0.000	2.3
65	2.9	0.547	0.429	0.000	2.5
70	3.0	0.651	0.511	0.000	2.6
75	2.9	0.742	0.583	0.000	2.5
80	2.7	0.816	0.641	0.000	2.5
85	3.8	1.016	0.798	0.000	3.1
90	3.2	1.172	0.920	0.000	2.7
95	2.8	1.270	0.997	0.000	2.5
100	2.5	1.330	1.044	0.000	2.4
105	2.4	1.358	1.066	0.000	2.3
110	2.4	1.384	1.087	0.000	2.3
115	2.3	1.405	1.103	0.000	2.2
120	2.1	1.408	1.105	0.000	2.2
125	2.0	1.392	1.093	0.000	2.1
130	2.0	1.369	1.075	0.000	2.1
135	2.0	1.342	1.054	0.000	2.1
140	1.9	1.313	1.031	0.000	2.1
145	1.9	1.276	1.002	0.000	2.0
150	1.8	1.231	0.967	0.000	2.0
155	1.8	1.183	0.929	0.000	2.0
160	1.8	1.134	0.890	0.000	2.0
165	1.8	1.086	0.852	0.000	2.0
170	1.7	1.032	0.810	0.000	2.0
175	1.7	0.974	0.765	0.000	2.0
180	1.7	0.914	0.718	0.000	1.9
185	2.0	0.845	0.664	0.000	2.0
190	2.1	0.833	0.654	0.000	2.1
195	2.1	0.821	0.645	0.000	2.1
200	2.1	0.810	0.636	0.000	2.1
205	2.1	0.798	0.627	0.000	2.1
210	2.1	0.787	0.617	0.000	2.1
215	2.1	0.775	0.608	0.000	2.1
220	2.1	0.763	0.599	0.000	2.1
225	2.1	0.752	0.590	0.000	2.1
230	2.1	0.740	0.581	0.000	2.1
235	2.1	0.729	0.572	0.000	2.1
240	2.1	0.717	0.563	0.000	2.1

SMH02 Type : Manhole

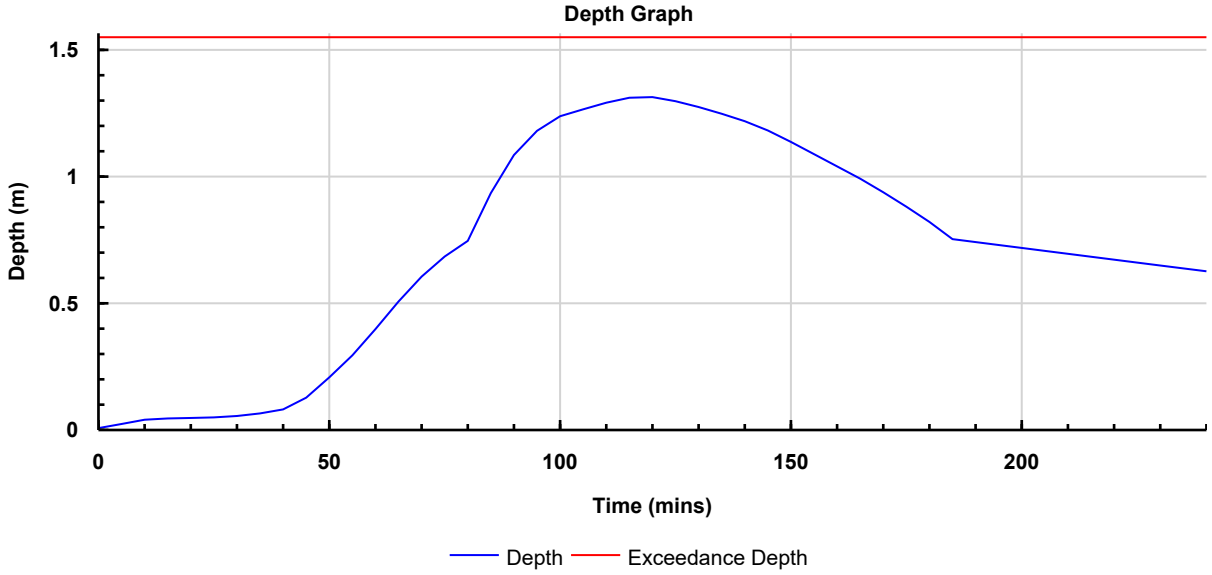
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

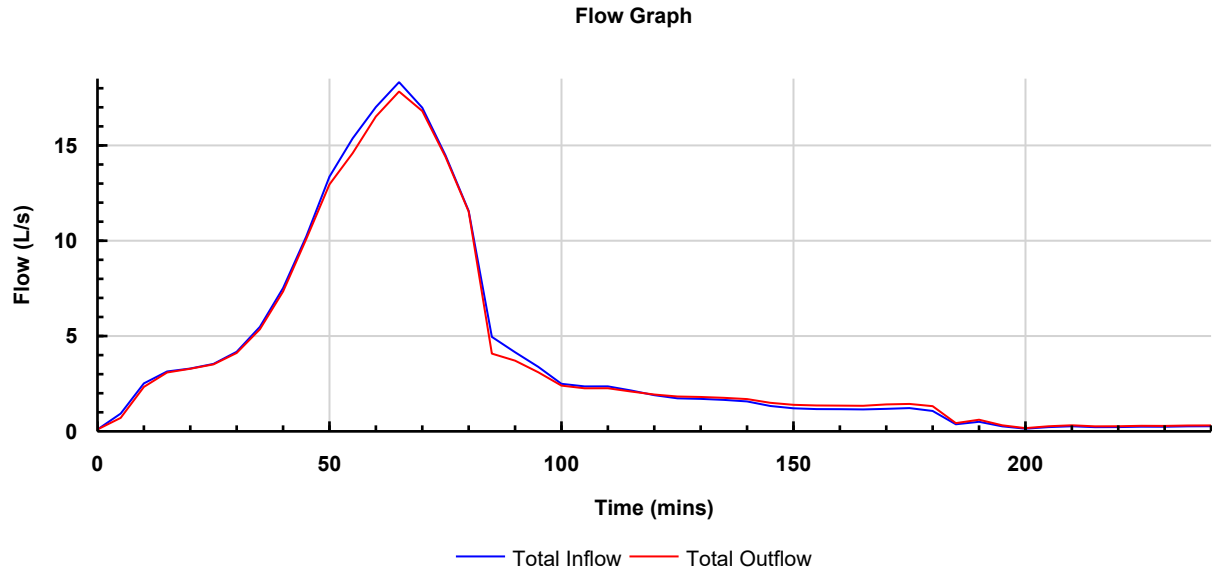
Tables

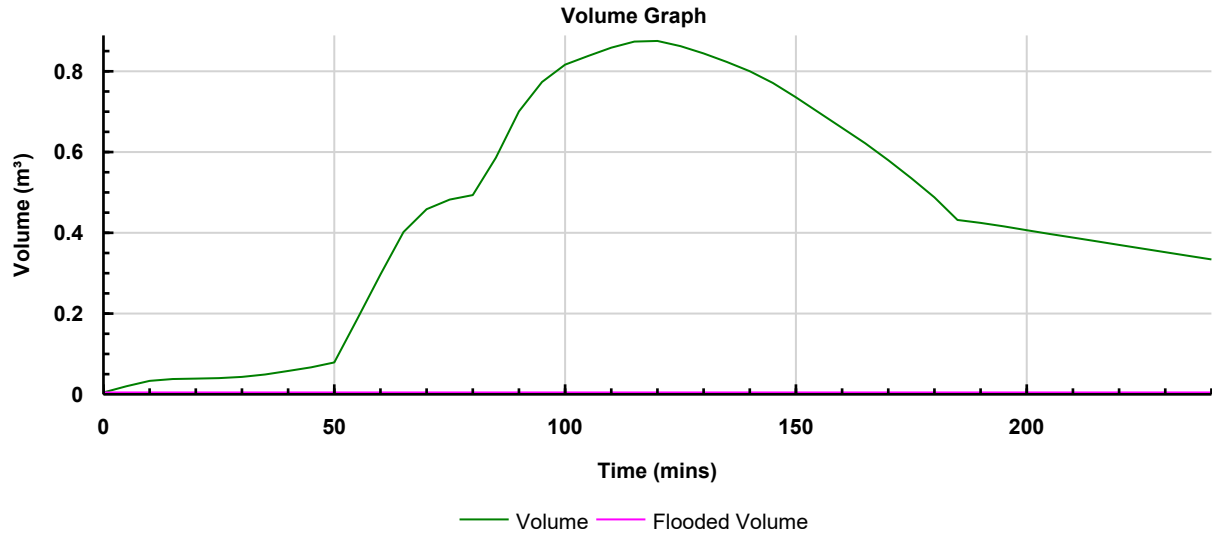
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.6	0.016	0.013	0.000	0.4
10	2.2	0.033	0.026	0.000	2.2
15	3.0	0.038	0.030	0.000	3.0
20	3.2	0.040	0.032	0.000	3.2
25	3.4	0.043	0.033	0.000	3.4
30	4.0	0.048	0.038	0.000	4.0
35	5.3	0.058	0.046	0.000	5.2
40	7.3	0.074	0.058	0.000	7.1
45	10.0	0.121	0.095	0.000	9.6
50	12.9	0.201	0.158	0.000	12.7
55	14.6	0.289	0.227	0.000	14.2
60	16.5	0.393	0.308	0.000	16.1
65	17.8	0.502	0.394	0.000	17.4
70	16.8	0.601	0.472	0.000	16.4
75	14.4	0.680	0.534	0.000	14.1
80	11.5	0.742	0.583	0.000	11.3
85	4.0	0.932	0.732	0.000	3.2
90	3.6	1.083	0.850	0.000	3.2
95	3.0	1.179	0.925	0.000	2.7
100	2.3	1.237	0.971	0.000	2.2
105	2.2	1.264	0.992	0.000	2.1
110	2.2	1.290	1.013	0.000	2.1
115	2.0	1.310	1.028	0.000	1.9
120	1.8	1.312	1.030	0.000	1.9
125	1.7	1.296	1.018	0.000	1.8
130	1.7	1.273	0.999	0.000	1.8
135	1.7	1.246	0.978	0.000	1.8
140	1.6	1.217	0.955	0.000	1.7
145	1.4	1.180	0.926	0.000	1.6
150	1.3	1.135	0.891	0.000	1.5
155	1.3	1.086	0.853	0.000	1.5
160	1.3	1.038	0.815	0.000	1.4
165	1.2	0.989	0.776	0.000	1.4
170	1.3	0.935	0.734	0.000	1.5
175	1.3	0.878	0.689	0.000	1.6
180	1.2	0.818	0.642	0.000	1.5
185	0.3	0.749	0.588	0.000	0.4
190	0.5	0.738	0.579	0.000	0.6
195	0.2	0.726	0.570	0.000	0.3
200	0.1	0.714	0.561	0.000	0.1
205	0.2	0.703	0.552	0.000	0.2
210	0.2	0.691	0.543	0.000	0.3
215	0.2	0.680	0.533	0.000	0.2
220	0.2	0.668	0.524	0.000	0.2
225	0.2	0.656	0.515	0.000	0.2
230	0.2	0.645	0.506	0.000	0.2
235	0.2	0.633	0.497	0.000	0.3
240	0.2	0.622	0.488	0.000	0.3

SMH03 Type : Manhole

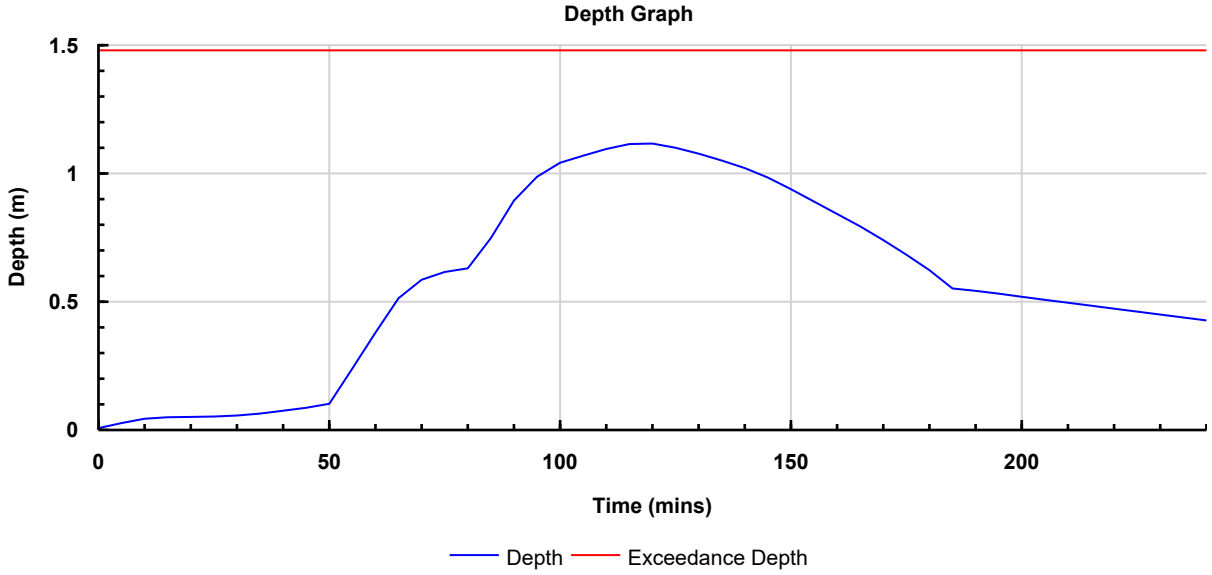
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

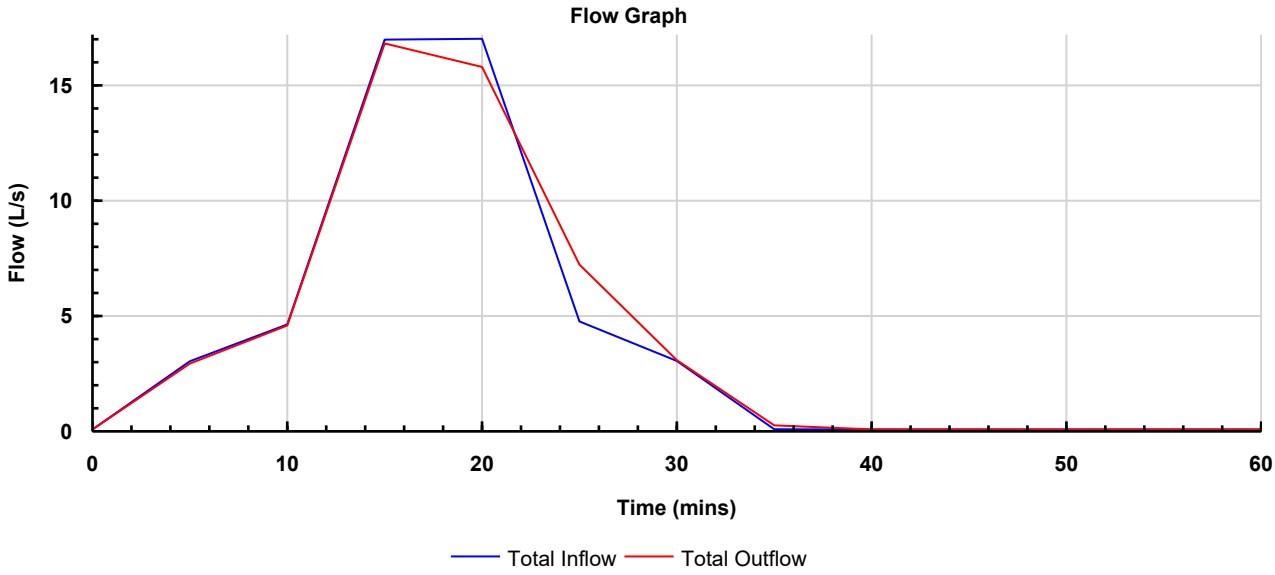
Tables

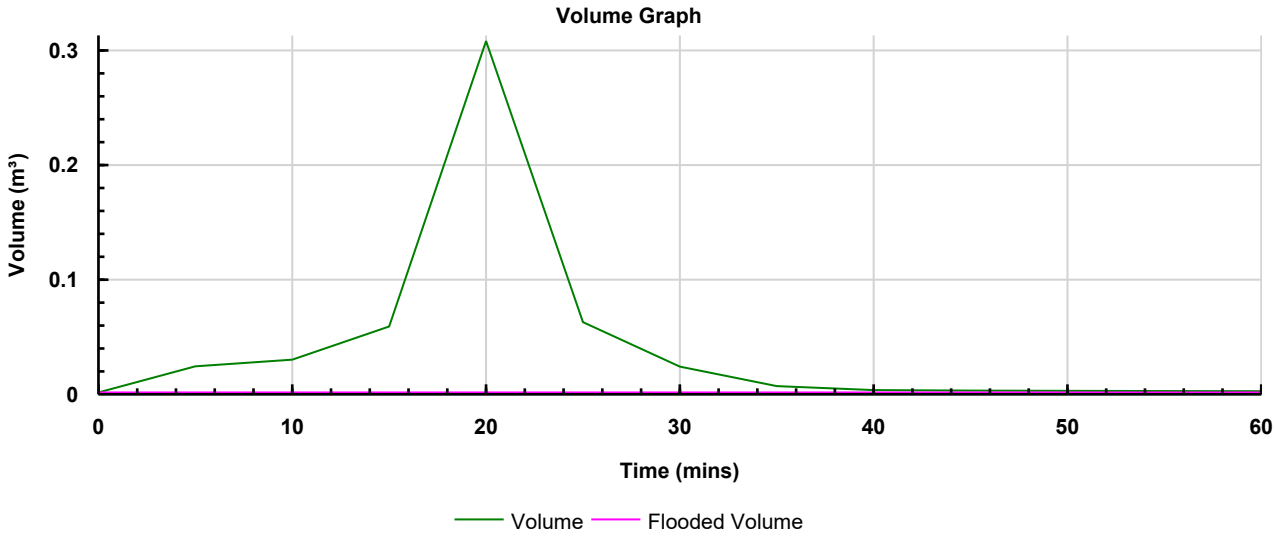
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.8	0.020	0.016	0.000	0.6
10	2.4	0.037	0.029	0.000	2.2
15	3.1	0.043	0.033	0.000	3.0
20	3.2	0.044	0.034	0.000	3.2
25	3.5	0.045	0.036	0.000	3.4
30	4.1	0.049	0.039	0.000	4.0
35	5.4	0.057	0.045	0.000	5.3
40	7.5	0.068	0.053	0.000	7.3
45	10.2	0.080	0.063	0.000	10.0
50	13.3	0.095	0.075	0.000	12.9
55	15.4	0.233	0.183	0.000	14.6
60	17.0	0.374	0.294	0.000	16.5
65	18.3	0.509	0.399	0.000	17.8
70	17.0	0.581	0.456	0.000	16.8
75	14.5	0.612	0.480	0.000	14.4
80	11.5	0.626	0.491	0.000	11.5
85	4.9	0.744	0.584	0.000	4.0
90	4.1	0.891	0.700	0.000	3.6
95	3.3	0.985	0.773	0.000	3.0
100	2.4	1.040	0.816	0.000	2.3
105	2.3	1.067	0.838	0.000	2.2
110	2.3	1.093	0.858	0.000	2.2
115	2.1	1.113	0.873	0.000	2.0
120	1.8	1.115	0.875	0.000	1.8
125	1.6	1.098	0.862	0.000	1.7
130	1.6	1.075	0.844	0.000	1.7
135	1.6	1.048	0.823	0.000	1.7
140	1.5	1.019	0.800	0.000	1.6
145	1.2	0.981	0.770	0.000	1.4
150	1.1	0.936	0.735	0.000	1.3
155	1.1	0.887	0.697	0.000	1.3
160	1.1	0.839	0.659	0.000	1.3
165	1.1	0.790	0.620	0.000	1.2
170	1.1	0.737	0.578	0.000	1.3
175	1.1	0.679	0.533	0.000	1.3
180	1.0	0.619	0.486	0.000	1.2
185	0.3	0.547	0.429	0.000	0.3
190	0.4	0.538	0.422	0.000	0.5
195	0.2	0.527	0.414	0.000	0.2
200	0.0	0.515	0.404	0.000	0.1
205	0.1	0.503	0.394	0.000	0.2
210	0.2	0.491	0.386	0.000	0.2
215	0.1	0.480	0.377	0.000	0.2
220	0.1	0.468	0.367	0.000	0.2
225	0.1	0.456	0.358	0.000	0.2
230	0.1	0.445	0.349	0.000	0.2
235	0.2	0.433	0.340	0.000	0.2
240	0.2	0.422	0.331	0.000	0.2

SMH10 Type : Manhole

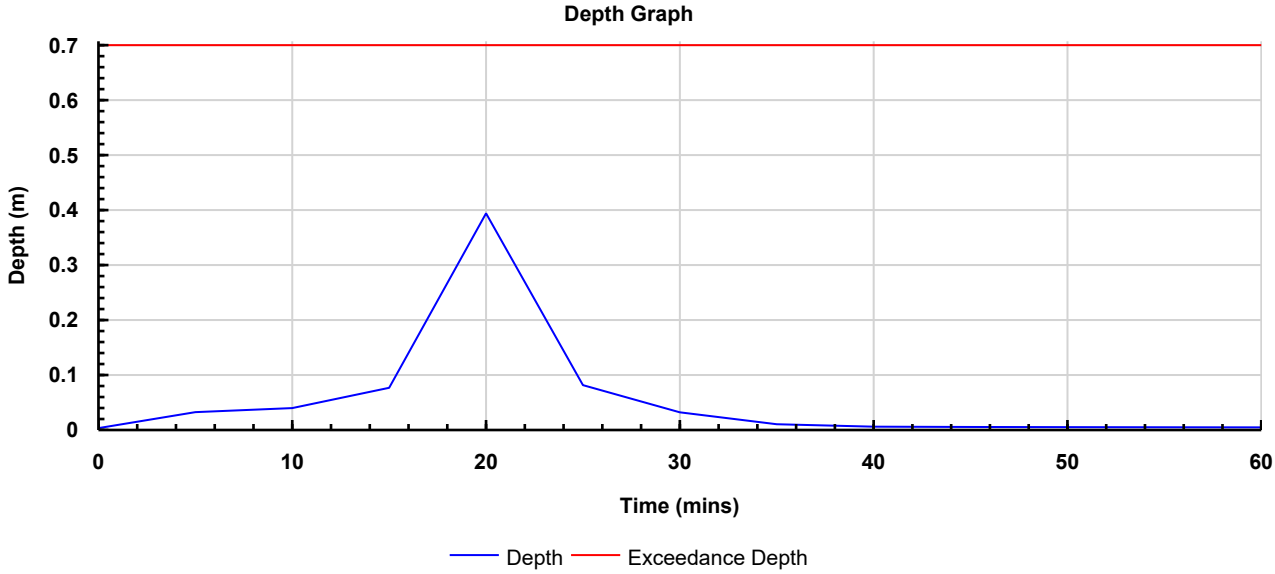
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

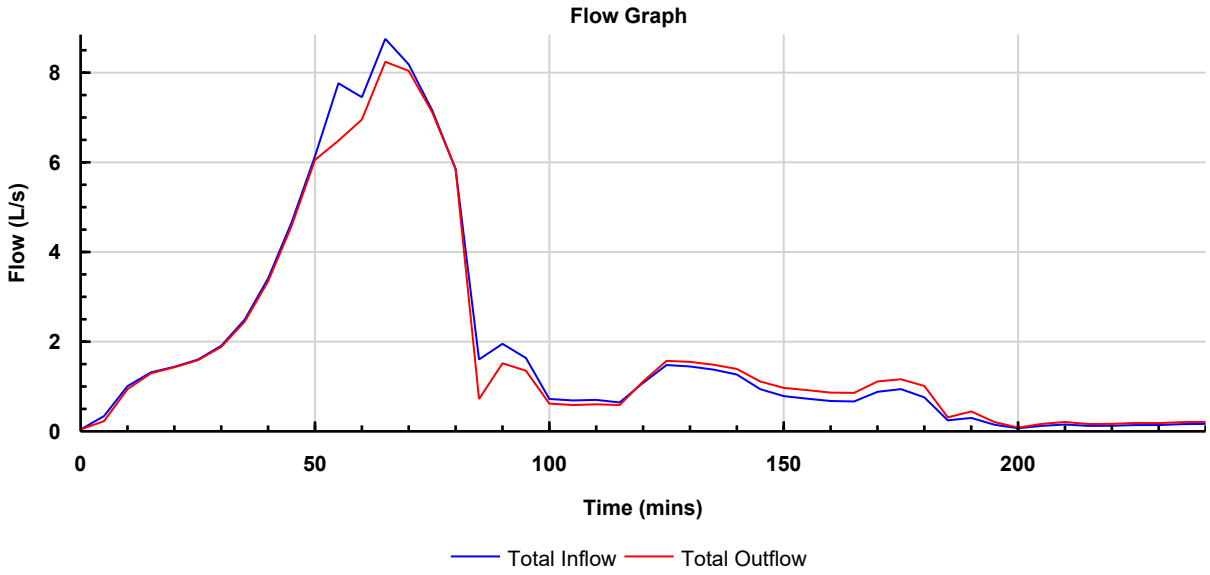
Tables

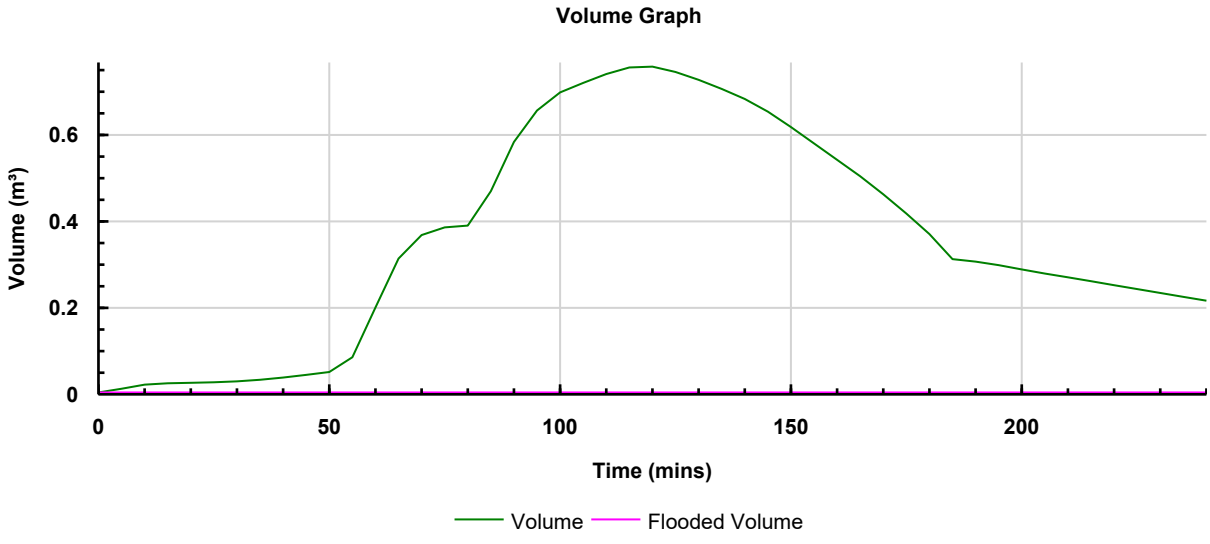
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	3.0	0.029	0.023	0.000	2.9
10	4.6	0.037	0.029	0.000	4.5
15	17.0	0.074	0.058	0.000	16.8
20	17.0	0.393	0.308	0.000	15.8
25	4.7	0.079	0.062	0.000	7.2
30	3.0	0.029	0.023	0.000	3.0
35	0.0	0.007	0.006	0.000	0.2
40	0.0	0.003	0.002	0.000	0.0
45	0.0	0.002	0.002	0.000	0.0
50	0.0	0.002	0.001	0.000	0.0
55	0.0	0.002	0.001	0.000	0.0
60	0.0	0.001	0.001	0.000	0.0

SMH05 Type : Manhole

Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

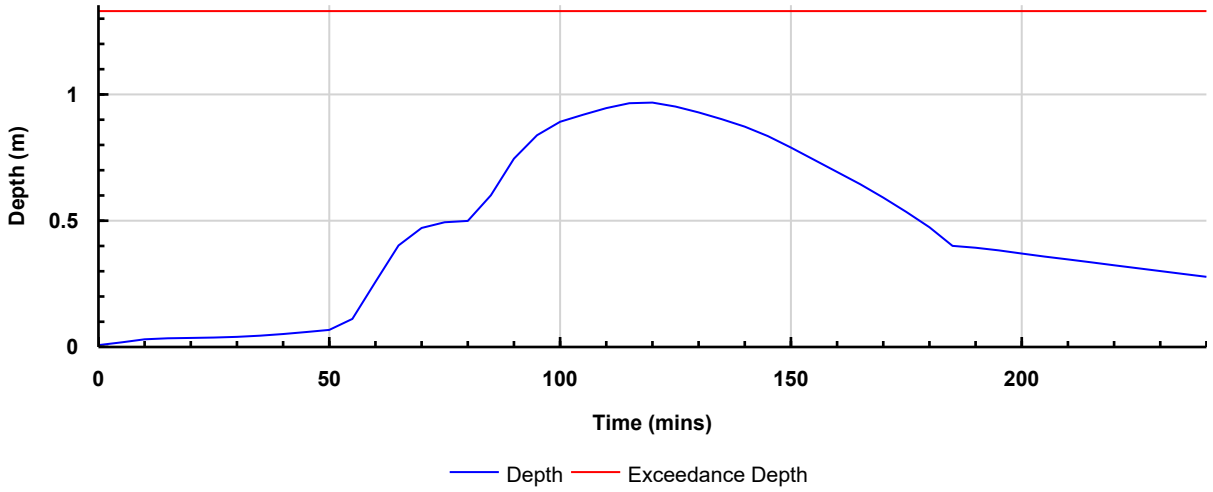
Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Depth Graph



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

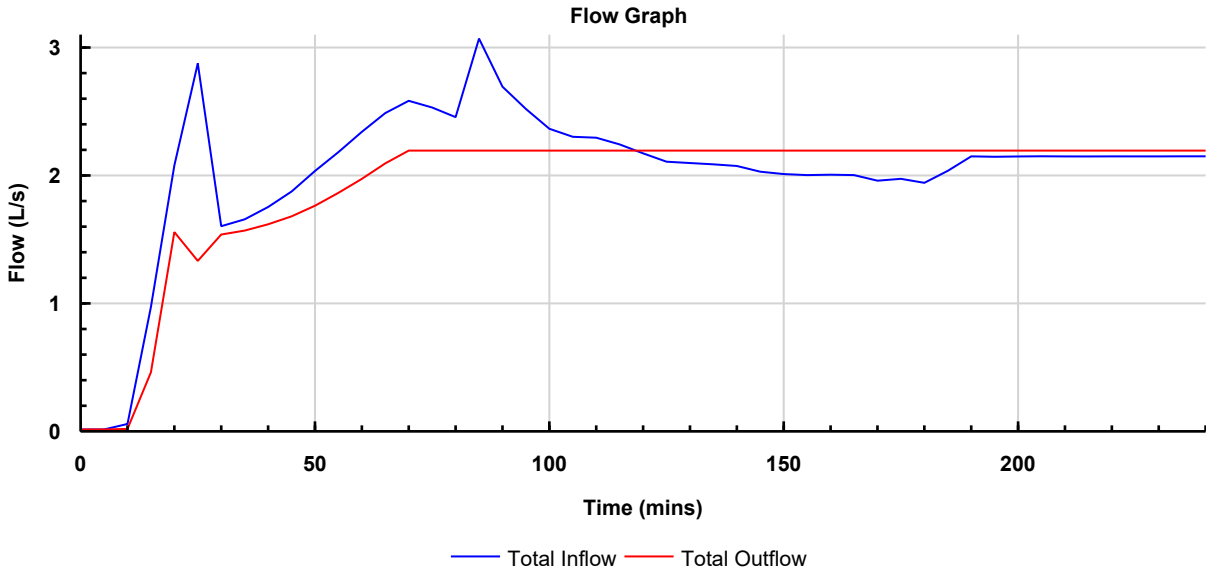
Tables

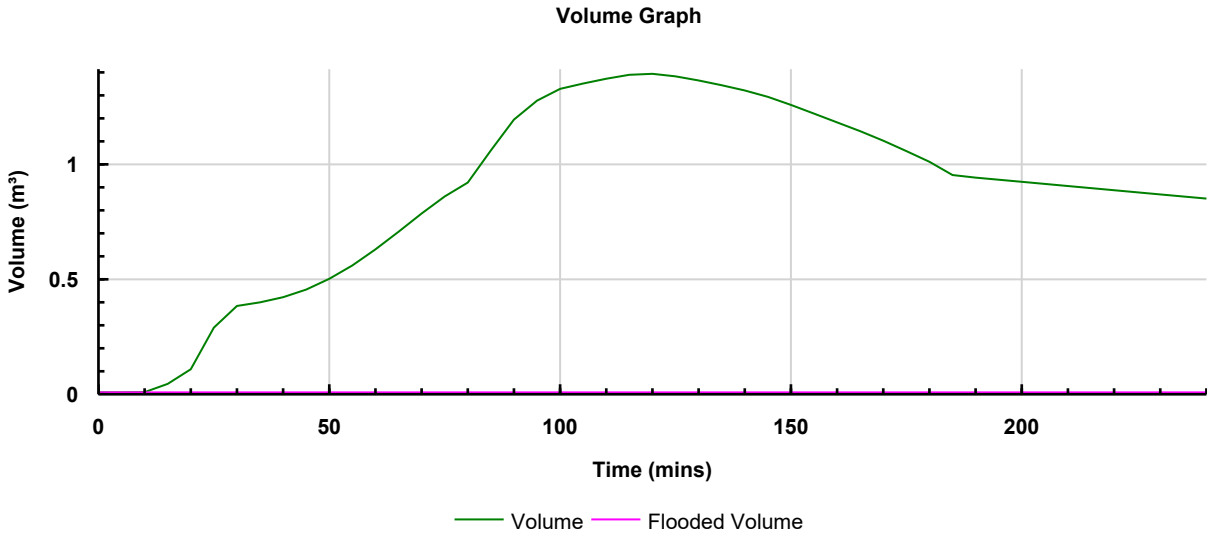
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.3	0.011	0.009	0.000	0.2
10	1.0	0.023	0.018	0.000	0.9
15	1.3	0.027	0.021	0.000	1.3
20	1.4	0.029	0.022	0.000	1.4
25	1.6	0.030	0.024	0.000	1.6
30	1.9	0.033	0.026	0.000	1.8
35	2.5	0.038	0.029	0.000	2.4
40	3.4	0.044	0.035	0.000	3.3
45	4.6	0.052	0.041	0.000	4.6
50	6.1	0.061	0.048	0.000	6.0
55	7.8	0.104	0.082	0.000	6.5
60	7.4	0.252	0.198	0.000	6.9
65	8.8	0.397	0.311	0.000	8.2
70	8.2	0.466	0.366	0.000	8.0
75	7.2	0.489	0.384	0.000	7.1
80	5.8	0.494	0.388	0.000	5.8
85	1.6	0.596	0.468	0.000	0.7
90	1.9	0.742	0.583	0.000	1.5
95	1.6	0.836	0.656	0.000	1.3
100	0.7	0.889	0.698	0.000	0.6
105	0.7	0.917	0.720	0.000	0.5
110	0.7	0.944	0.741	0.000	0.6
115	0.6	0.963	0.756	0.000	0.5
120	1.0	0.966	0.758	0.000	1.1
125	1.4	0.950	0.746	0.000	1.5
130	1.4	0.926	0.727	0.000	1.5
135	1.3	0.900	0.706	0.000	1.5
140	1.2	0.870	0.683	0.000	1.4
145	0.9	0.832	0.653	0.000	1.1
150	0.7	0.787	0.617	0.000	0.9
155	0.7	0.738	0.579	0.000	0.9
160	0.6	0.689	0.541	0.000	0.8
165	0.6	0.641	0.503	0.000	0.8
170	0.8	0.587	0.461	0.000	1.1
175	0.9	0.530	0.416	0.000	1.1
180	0.7	0.469	0.368	0.000	1.0
185	0.2	0.395	0.310	0.000	0.3
190	0.3	0.388	0.304	0.000	0.4
195	0.1	0.377	0.296	0.000	0.2
200	0.0	0.365	0.286	0.000	0.0
205	0.1	0.352	0.277	0.000	0.1
210	0.1	0.341	0.268	0.000	0.2
215	0.1	0.330	0.259	0.000	0.1
220	0.1	0.318	0.250	0.000	0.1
225	0.1	0.306	0.240	0.000	0.1
230	0.1	0.295	0.231	0.000	0.1
235	0.1	0.283	0.222	0.000	0.2
240	0.1	0.272	0.213	0.000	0.2

SMH04 Type : Manhole

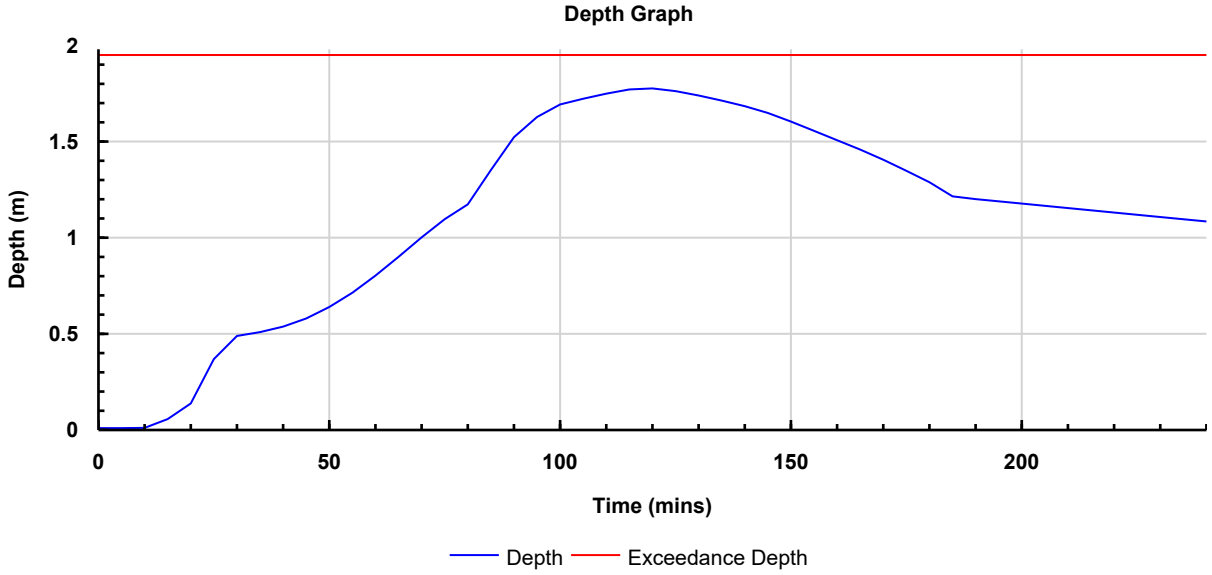
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Tables

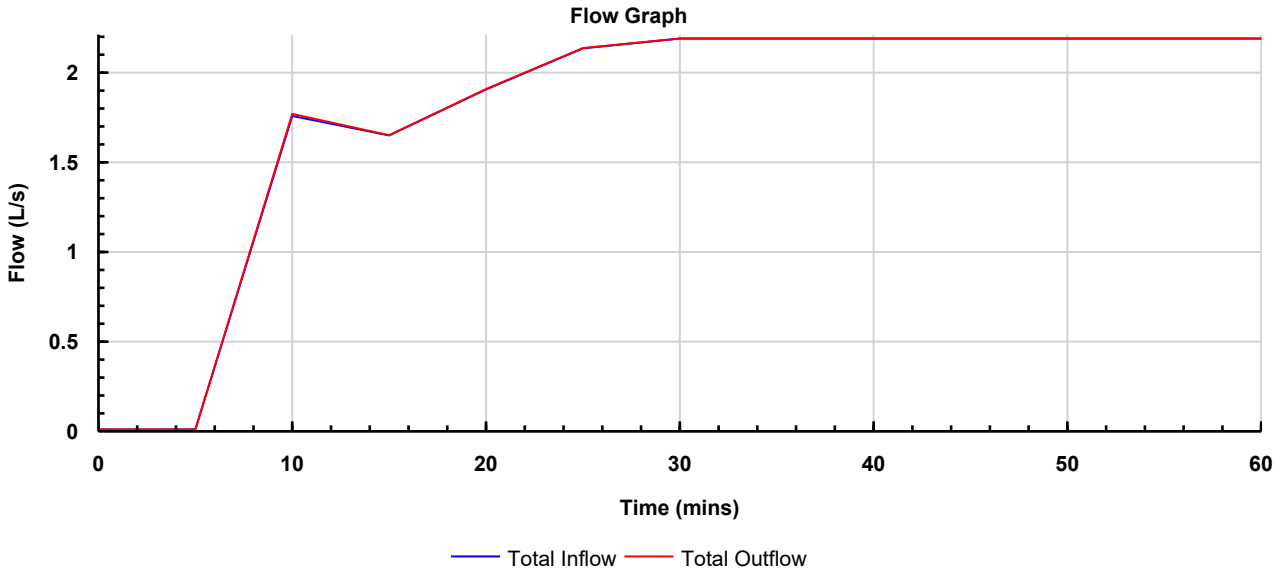
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.0	0.000	0.000	0.000	0.0
10	0.0	0.001	0.001	0.000	0.0
15	1.0	0.047	0.037	0.000	0.4
20	2.1	0.129	0.101	0.000	1.6
25	2.9	0.361	0.283	0.000	1.3
30	1.6	0.482	0.378	0.000	1.5
35	1.7	0.502	0.394	0.000	1.6
40	1.7	0.530	0.416	0.000	1.6
45	1.9	0.573	0.450	0.000	1.7
50	2.0	0.633	0.497	0.000	1.8
55	2.2	0.707	0.555	0.000	1.9
60	2.3	0.797	0.626	0.000	2.0
65	2.5	0.895	0.703	0.000	2.1
70	2.6	0.997	0.783	0.000	2.2
75	2.5	1.092	0.857	0.000	2.2
80	2.5	1.169	0.918	0.000	2.2
85	3.1	1.348	1.058	0.000	2.2
90	2.7	1.520	1.193	0.000	2.2
95	2.5	1.626	1.276	0.000	2.2
100	2.4	1.691	1.328	0.000	2.2
105	2.3	1.721	1.351	0.000	2.2
110	2.3	1.748	1.372	0.000	2.2
115	2.2	1.770	1.389	0.000	2.2
120	2.2	1.775	1.394	0.000	2.2
125	2.1	1.761	1.383	0.000	2.2
130	2.1	1.738	1.365	0.000	2.2
135	2.1	1.712	1.344	0.000	2.2
140	2.1	1.682	1.321	0.000	2.2
145	2.0	1.647	1.293	0.000	2.2
150	2.0	1.602	1.258	0.000	2.2
155	2.0	1.554	1.220	0.000	2.2
160	2.0	1.505	1.181	0.000	2.2
165	2.0	1.456	1.143	0.000	2.2
170	2.0	1.403	1.101	0.000	2.2
175	2.0	1.345	1.056	0.000	2.2
180	1.9	1.285	1.009	0.000	2.2
185	2.0	1.211	0.951	0.000	2.2
190	2.1	1.197	0.939	0.000	2.2
195	2.1	1.185	0.930	0.000	2.2
200	2.1	1.173	0.921	0.000	2.2
205	2.1	1.162	0.912	0.000	2.2
210	2.1	1.150	0.903	0.000	2.2
215	2.1	1.138	0.894	0.000	2.2
220	2.1	1.127	0.884	0.000	2.2
225	2.1	1.115	0.875	0.000	2.2
230	2.1	1.103	0.866	0.000	2.2
235	2.1	1.092	0.857	0.000	2.2
240	2.1	1.080	0.848	0.000	2.2

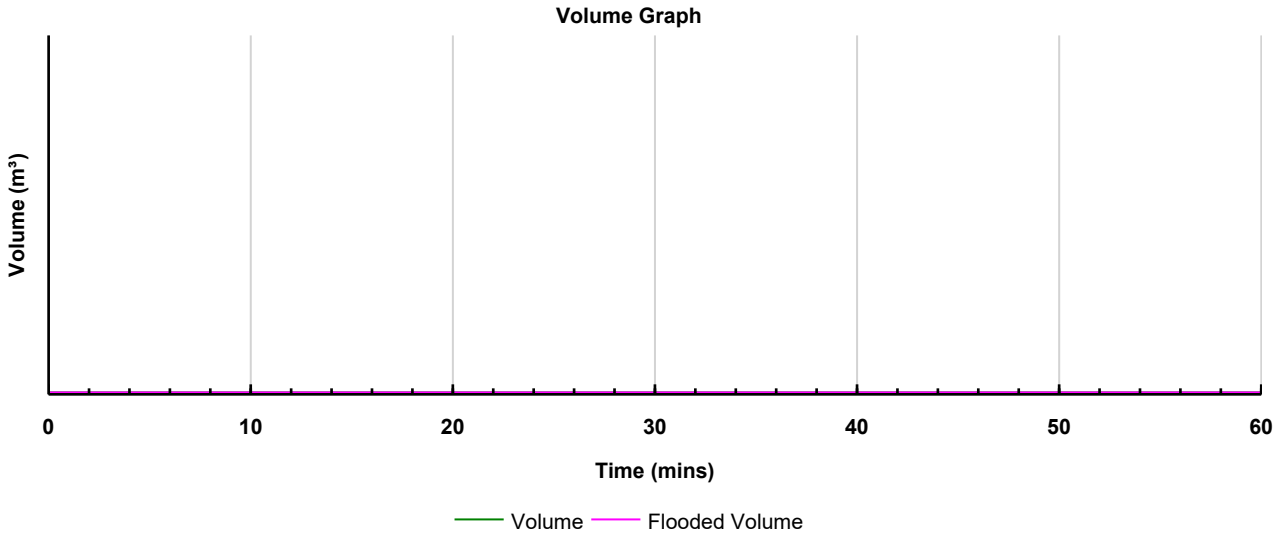
Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

UU5806 Type : Manhole

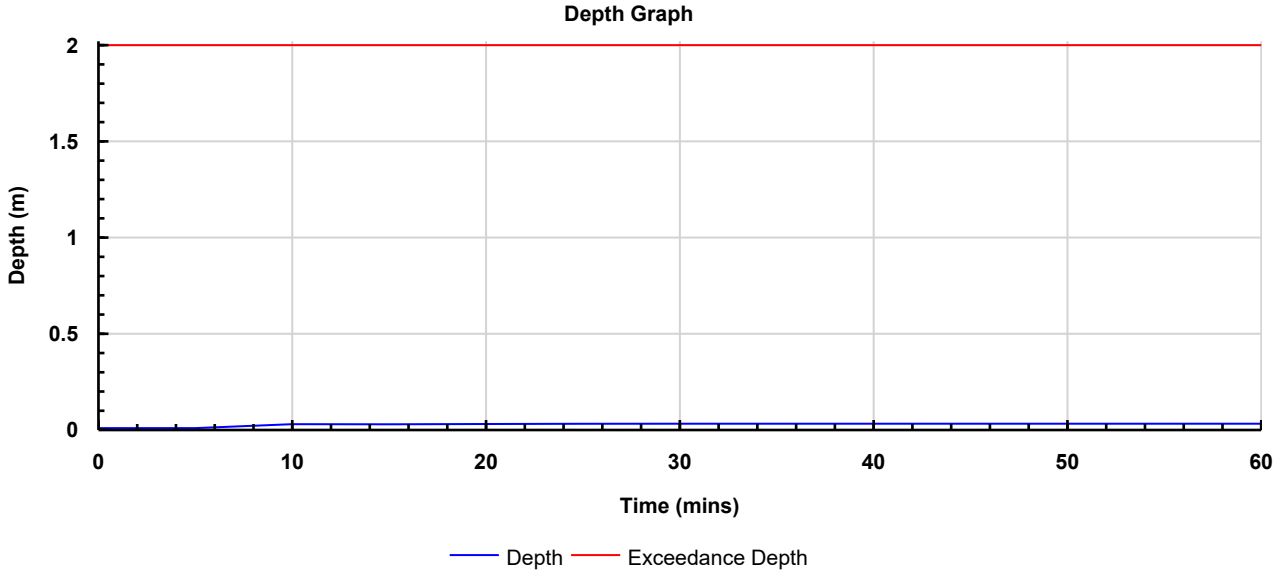
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

Tables

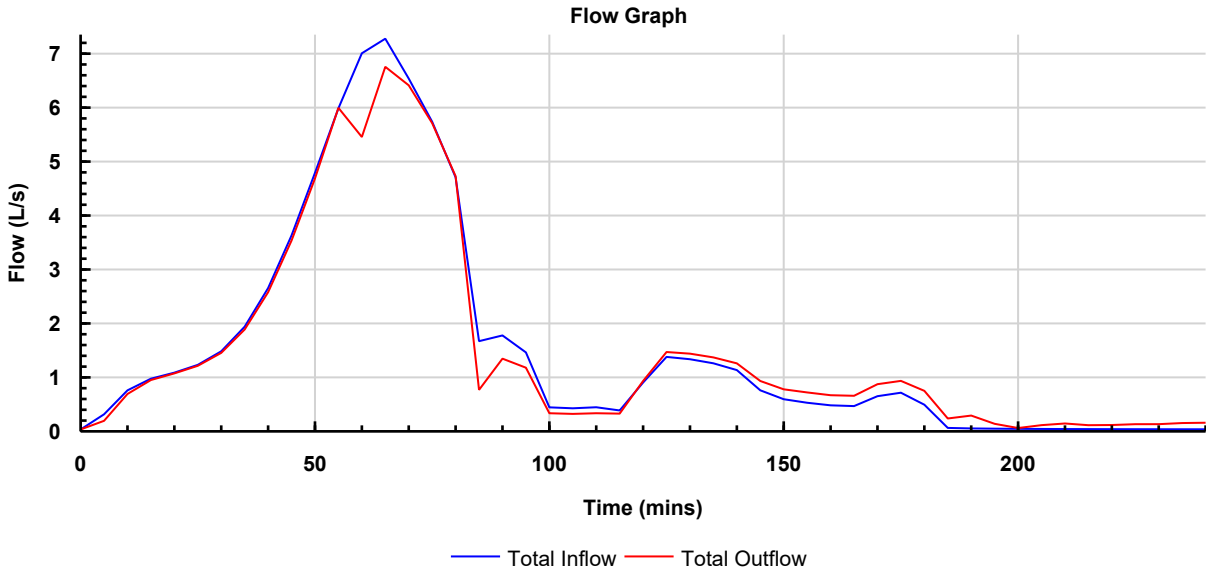
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.0	0.000	0.000	0.000	0.0
10	1.8	0.021	0.000	0.000	1.8
15	1.6	0.020	0.000	0.000	1.6
20	1.9	0.021	0.000	0.000	1.9
25	2.1	0.023	0.000	0.000	2.1
30	2.2	0.023	0.000	0.000	2.2
35	2.2	0.023	0.000	0.000	2.2
40	2.2	0.023	0.000	0.000	2.2
45	2.2	0.023	0.000	0.000	2.2
50	2.2	0.023	0.000	0.000	2.2
55	2.2	0.023	0.000	0.000	2.2
60	2.2	0.023	0.000	0.000	2.2

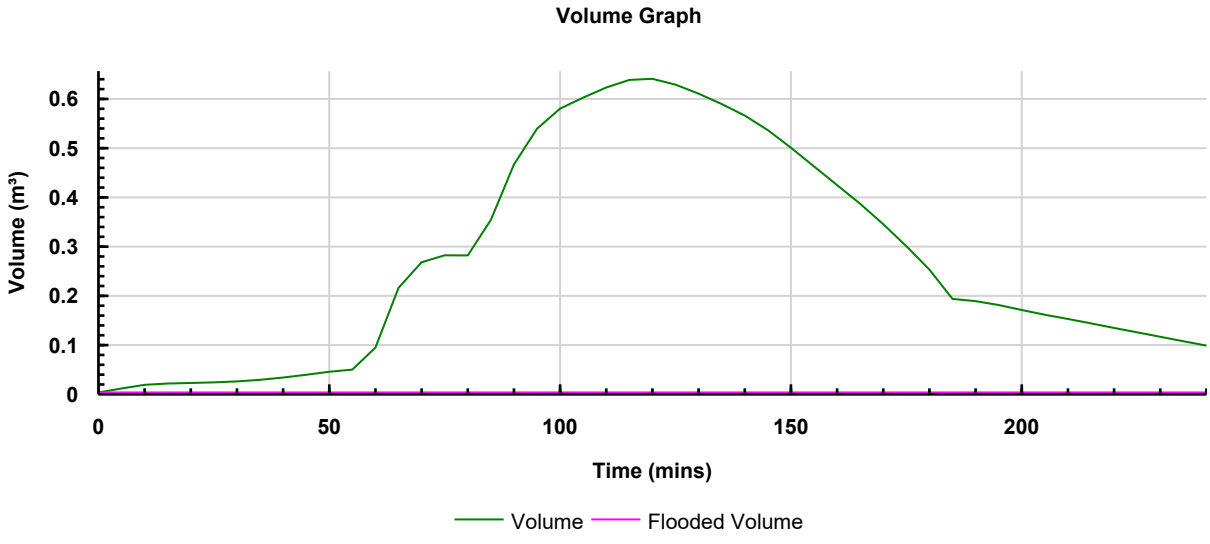
Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

SMH06 Type : Manhole

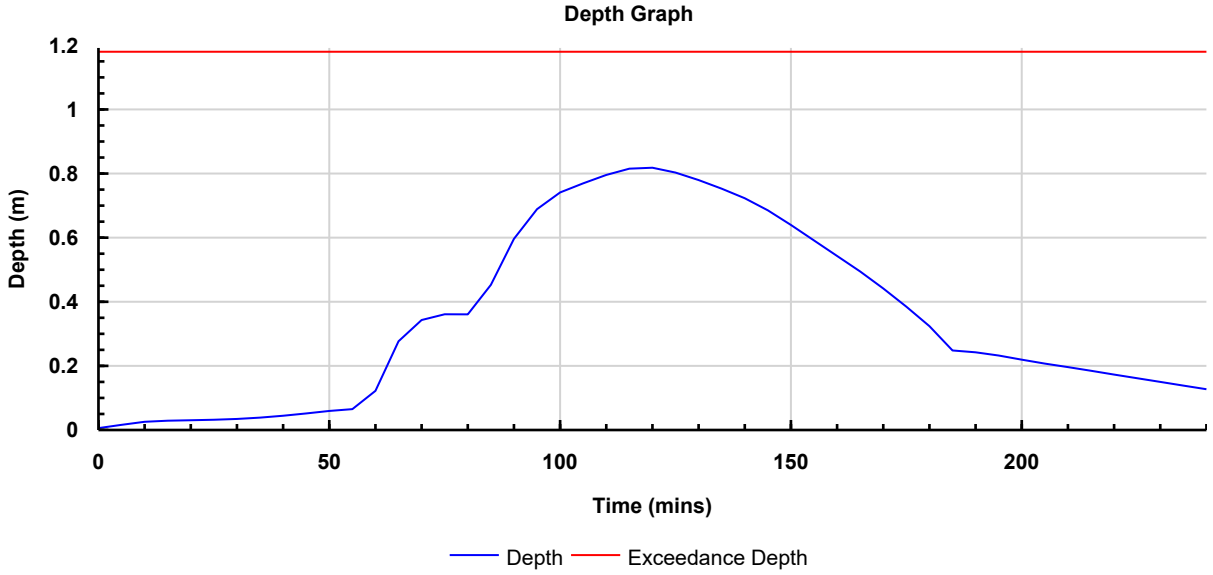
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 120 mins: Winter

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		

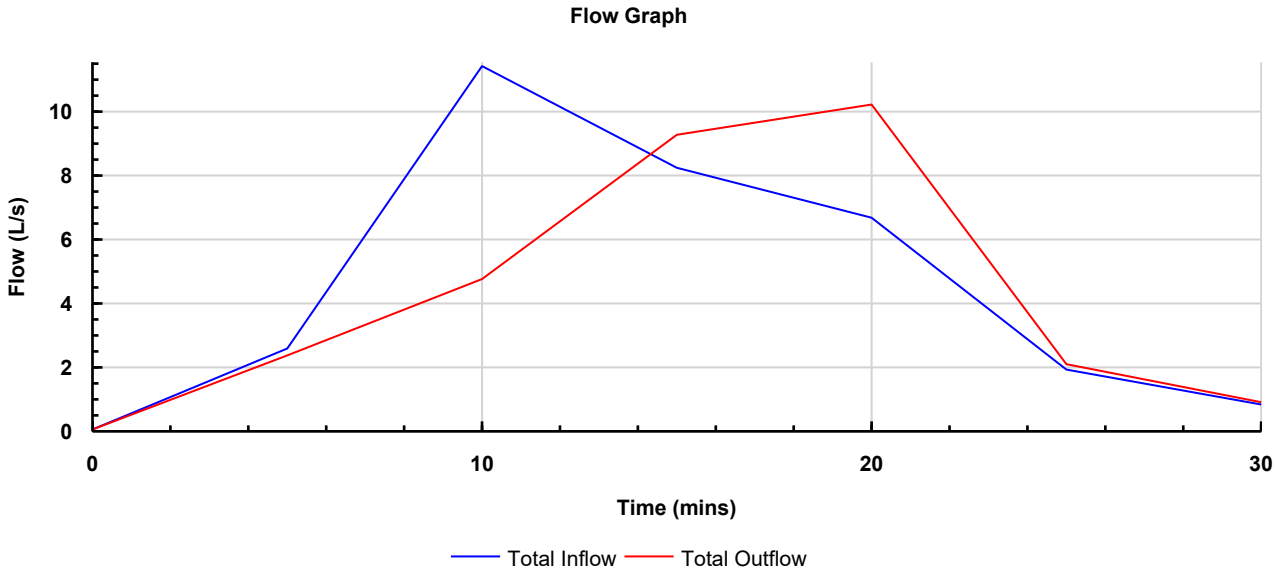
Tables

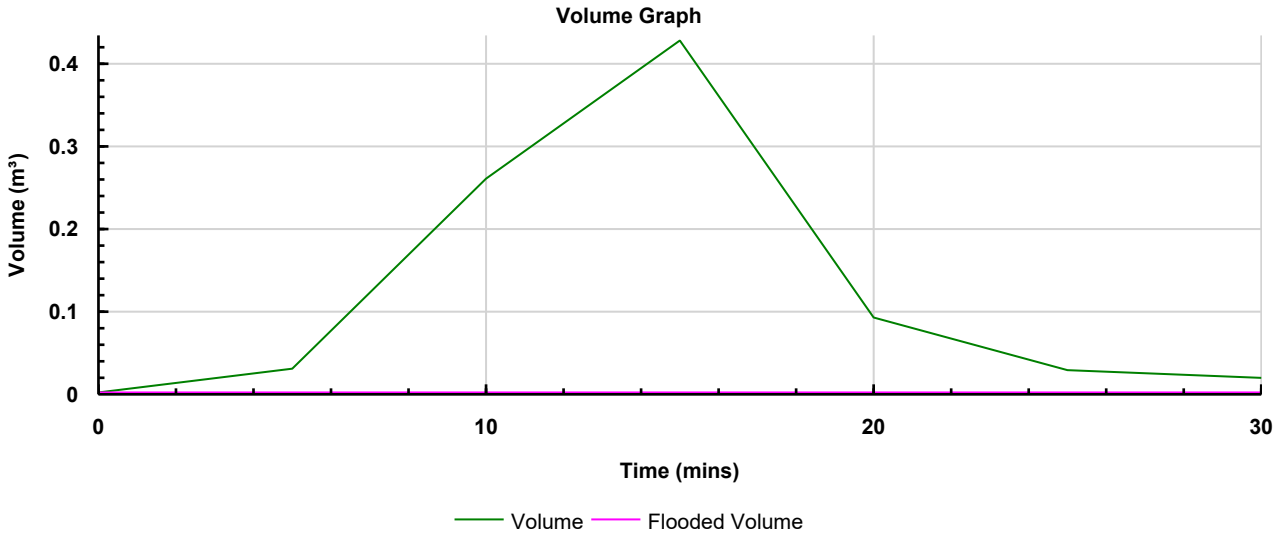
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.3	0.010	0.008	0.000	0.2
10	0.7	0.020	0.016	0.000	0.7
15	0.9	0.023	0.018	0.000	0.9
20	1.1	0.025	0.019	0.000	1.0
25	1.2	0.026	0.021	0.000	1.2
30	1.5	0.029	0.023	0.000	1.4
35	1.9	0.033	0.026	0.000	1.9
40	2.6	0.039	0.030	0.000	2.6
45	3.6	0.046	0.036	0.000	3.5
50	4.8	0.054	0.042	0.000	4.7
55	6.0	0.060	0.047	0.000	6.0
60	7.0	0.117	0.092	0.000	5.4
65	7.3	0.272	0.214	0.000	6.8
70	6.5	0.339	0.266	0.000	6.4
75	5.7	0.357	0.280	0.000	5.7
80	4.7	0.357	0.280	0.000	4.7
85	1.6	0.449	0.353	0.000	0.7
90	1.8	0.593	0.466	0.000	1.3
95	1.4	0.686	0.539	0.000	1.2
100	0.4	0.739	0.580	0.000	0.3
105	0.4	0.767	0.602	0.000	0.3
110	0.4	0.794	0.623	0.000	0.3
115	0.4	0.813	0.638	0.000	0.3
120	0.9	0.816	0.641	0.000	0.9
125	1.4	0.801	0.629	0.000	1.4
130	1.3	0.778	0.610	0.000	1.4
135	1.2	0.751	0.589	0.000	1.3
140	1.1	0.721	0.566	0.000	1.2
145	0.7	0.683	0.536	0.000	0.9
150	0.6	0.637	0.500	0.000	0.7
155	0.5	0.588	0.462	0.000	0.7
160	0.4	0.540	0.424	0.000	0.6
165	0.4	0.491	0.385	0.000	0.6
170	0.6	0.438	0.344	0.000	0.8
175	0.7	0.381	0.299	0.000	0.9
180	0.5	0.320	0.251	0.000	0.7
185	0.0	0.243	0.191	0.000	0.2
190	0.0	0.238	0.187	0.000	0.3
195	0.0	0.228	0.179	0.000	0.1
200	0.0	0.215	0.168	0.000	0.0
205	0.0	0.202	0.159	0.000	0.1
210	0.0	0.191	0.150	0.000	0.1
215	0.0	0.180	0.141	0.000	0.1
220	0.0	0.168	0.132	0.000	0.1
225	0.0	0.156	0.123	0.000	0.1
230	0.0	0.145	0.114	0.000	0.1
235	0.0	0.133	0.105	0.000	0.1
240	0.0	0.122	0.096	0.000	0.1

SMH07 Type : Manhole

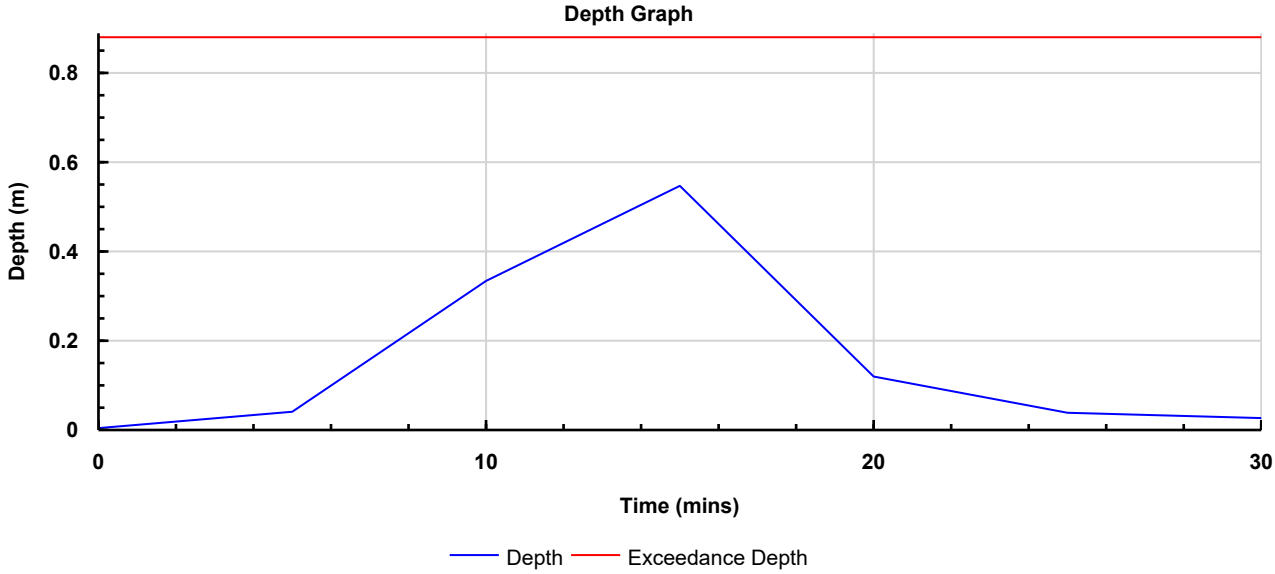
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Junction Results Storm Phase: Phase			

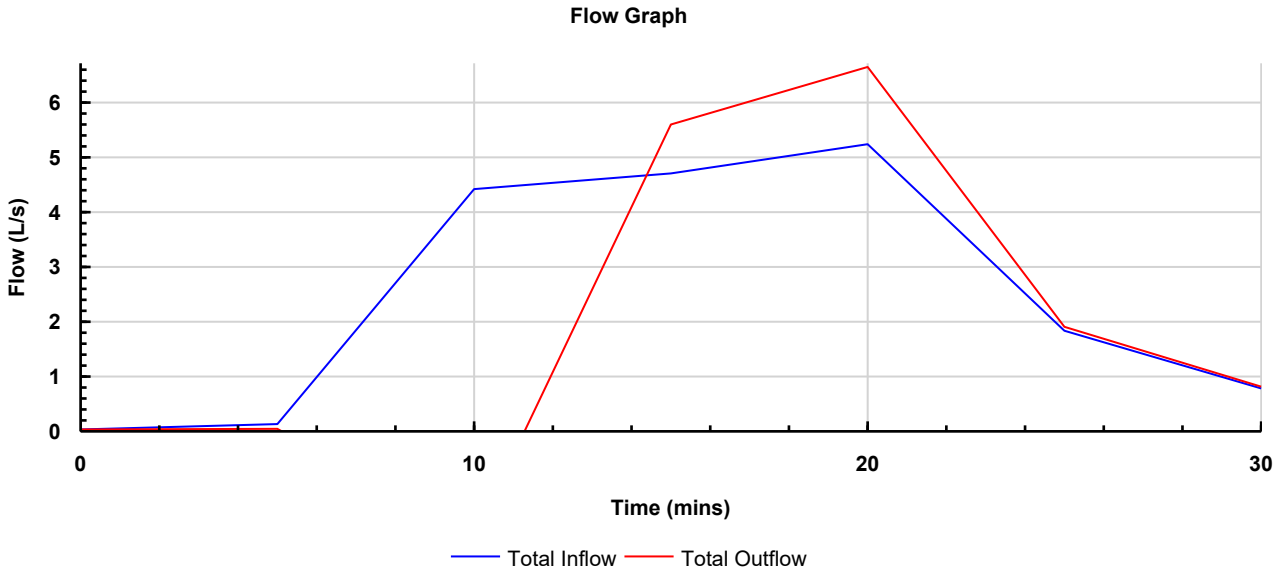
Tables

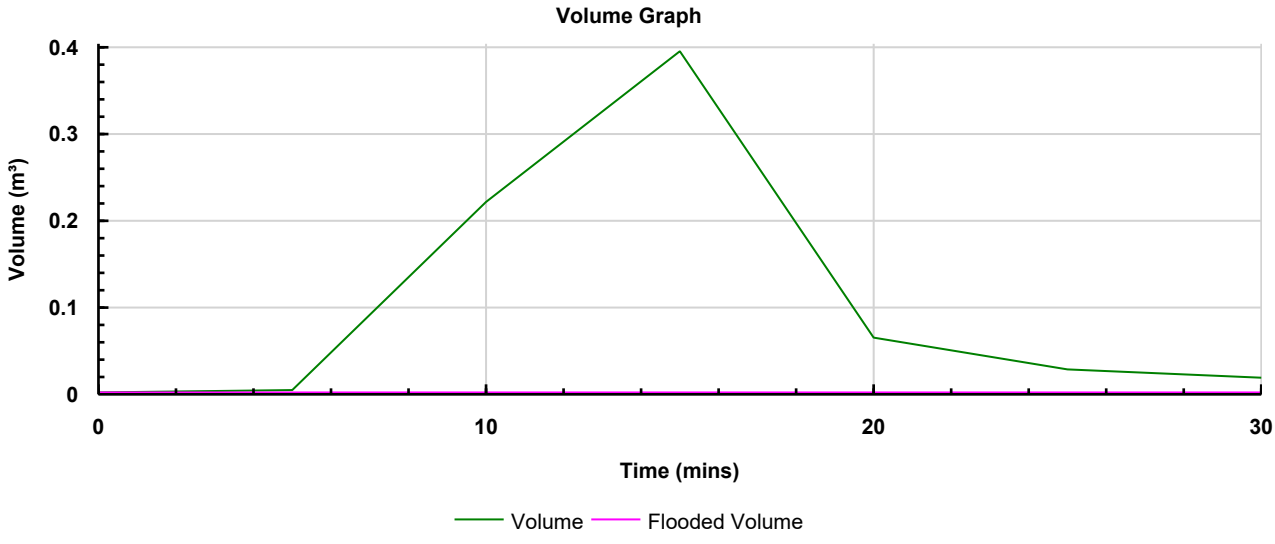
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	2.5	0.037	0.029	0.000	2.3
10	11.4	0.331	0.260	0.000	4.7
15	8.2	0.545	0.428	0.000	9.3
20	6.7	0.116	0.091	0.000	10.2
25	1.9	0.035	0.027	0.000	2.1
30	0.8	0.023	0.018	0.000	0.9

SMH08 Type : Manhole

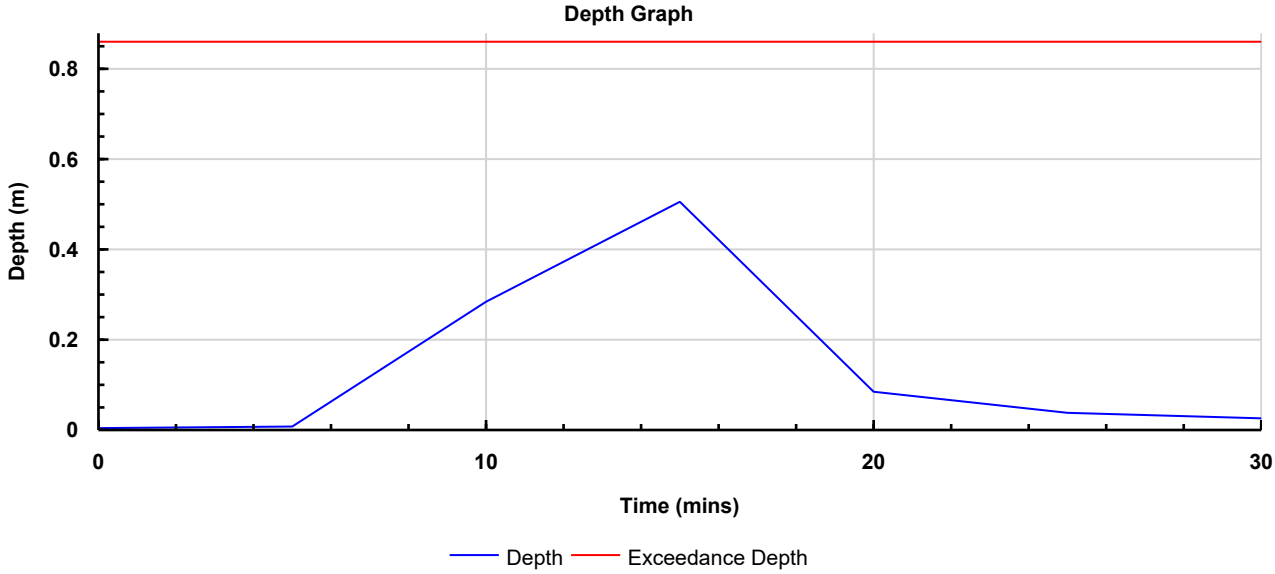
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Junction Results Storm Phase: Phase	Company Address:		



Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Junction Results Storm Phase: Phase			

Tables

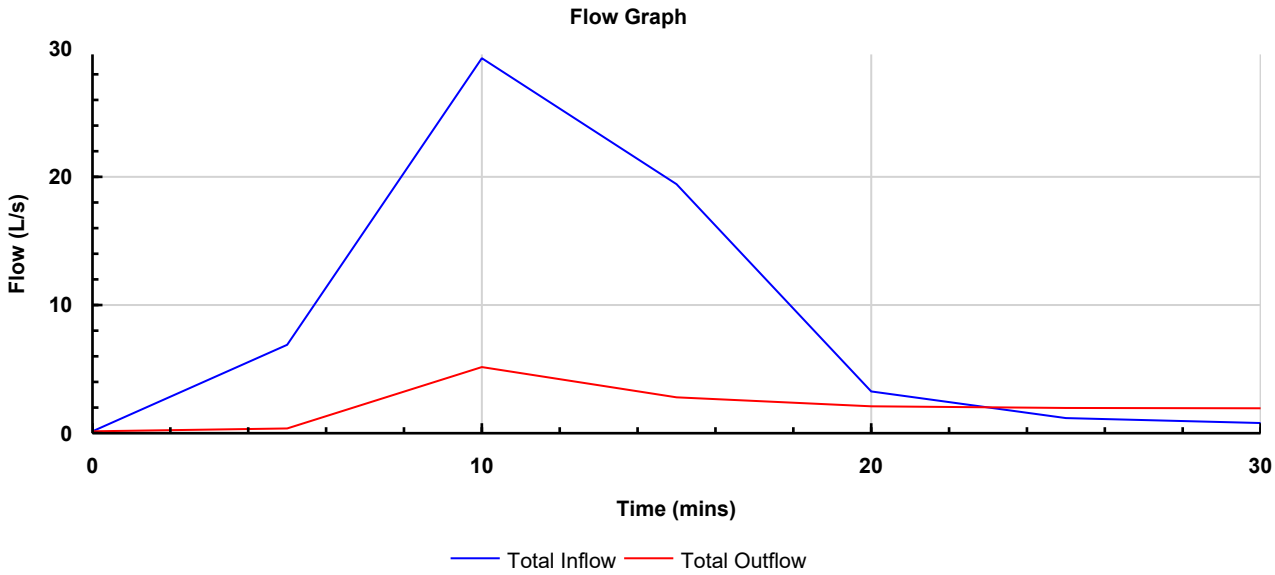
Time (mins)	Total Inflow (L/s)	Depth (m)	Volume (m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	0.1	0.004	0.003	0.000	0.0
10	4.4	0.281	0.221	0.000	-2.0
15	4.7	0.504	0.395	0.000	5.6
20	5.2	0.081	0.064	0.000	6.6
25	1.8	0.034	0.027	0.000	1.9
30	0.8	0.022	0.017	0.000	0.8

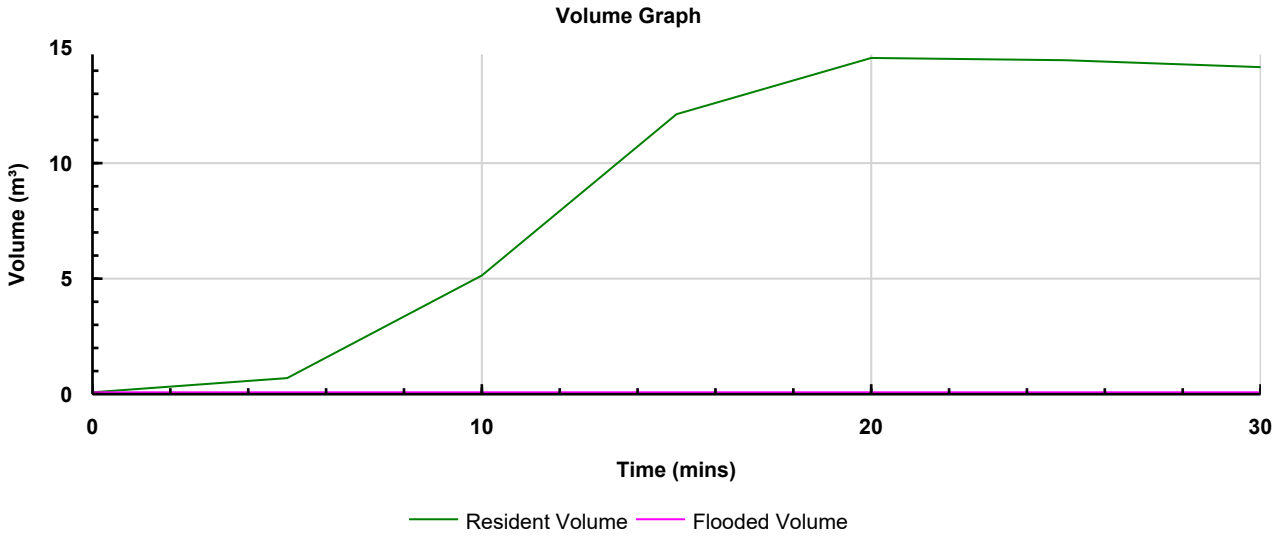
Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:		

Cellular Storage
Critical Storm: FEH: 30 years: Increase Rainfall (%): +0: 15 mins: Summer

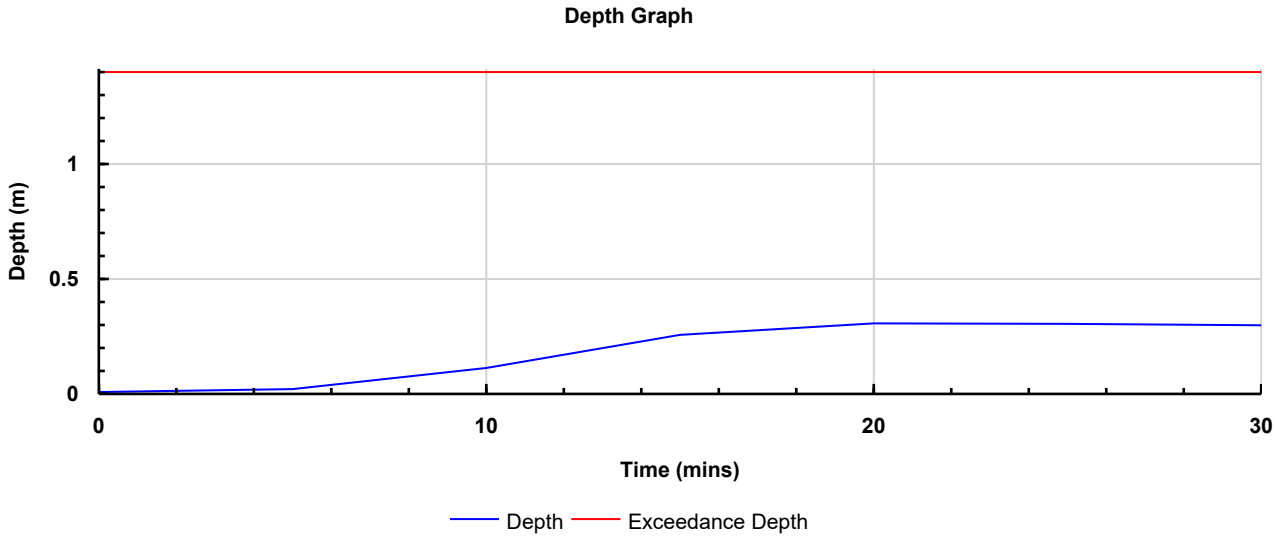
Type : Cellular Storage

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:		



Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:		

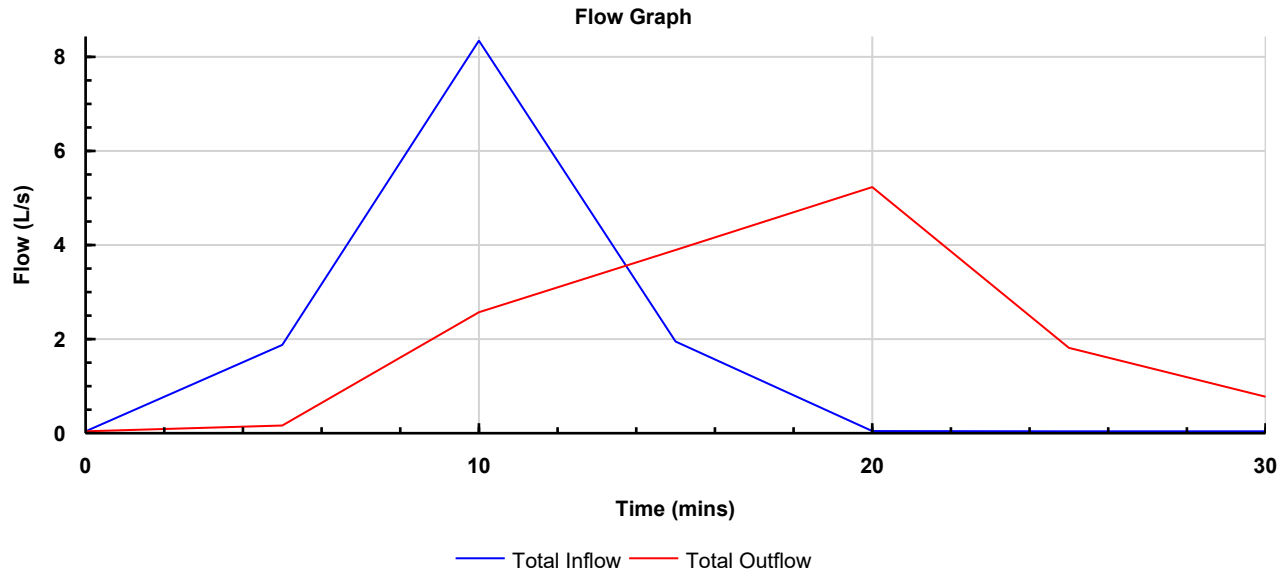
Tables

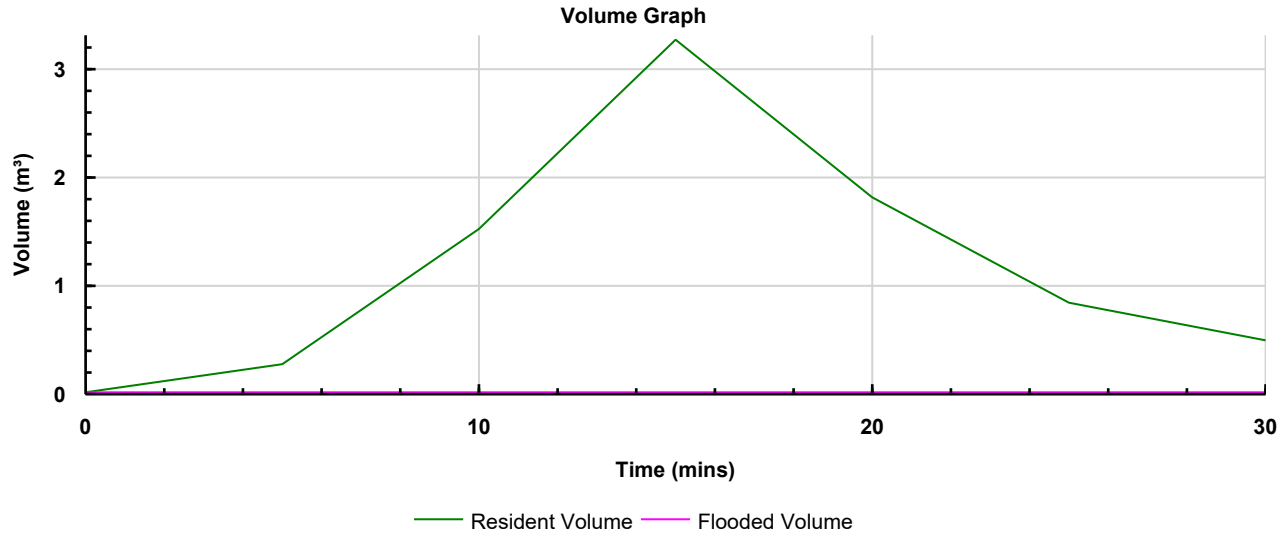
Time (mins)	Total Inflow (L/s)	Depth(m)	Resident Volume(m³)	Flooded Volume (m³)	Total Outflow (L/s)
0	0.0	0.000	0.000	0.000	0.0
5	6.8	0.013	0.618	0.000	0.2
10	29.3	0.105	5.084	0.000	5.0
15	19.4	0.250	12.104	0.000	2.7
20	3.1	0.300	14.551	0.000	2.0
25	1.0	0.298	14.453	0.000	1.8
30	0.6	0.292	14.152	0.000	1.8

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

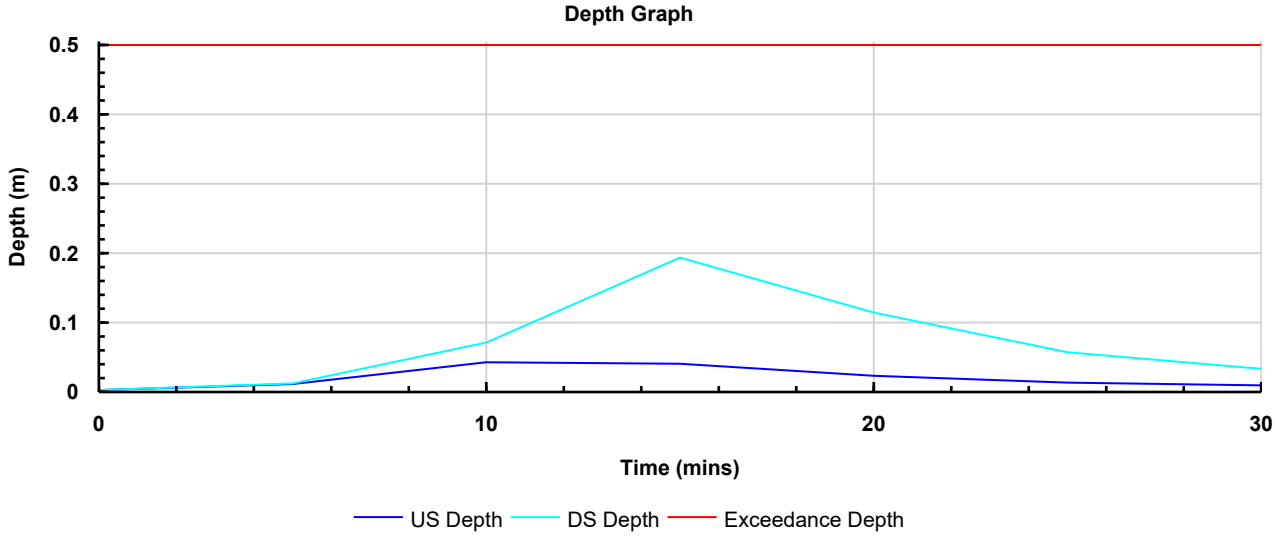
Type : Porous Paving

Graphs





Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Stormwater Control Results Storm Phase: Phase	Company Address:		



Project 0072:	Date:		
Marion Lauder Care Home	18/08/2026		
	Designed by:	Checked by:	Approved By:
	GB	SS	
Report Details:	Company Address:		
Type: Stormwater Control Results Storm Phase: Phase			

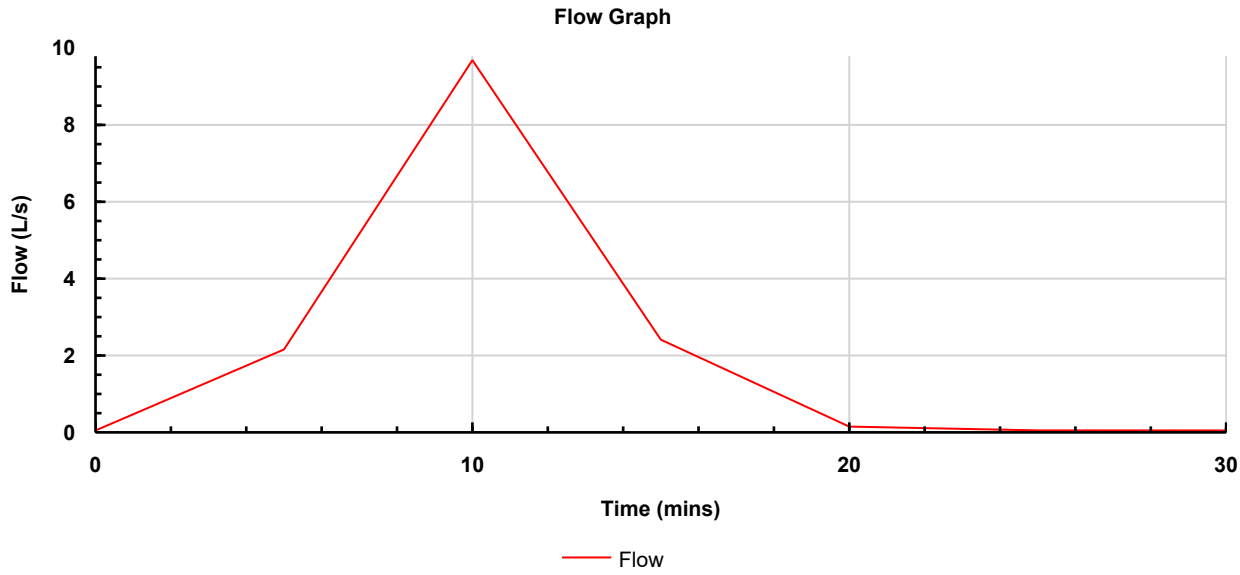
Tables

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
5	1.8	0.009	0.010	0.261	0.000	0.1
10	8.3	0.040	0.069	1.516	0.000	2.5
15	1.9	0.038	0.192	3.272	0.000	3.9
20	0.0	0.021	0.112	1.809	0.000	5.2
25	0.0	0.011	0.055	0.831	0.000	1.8
30	0.0	0.007	0.031	0.482	0.000	0.7

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

Type : Pipe

Graphs



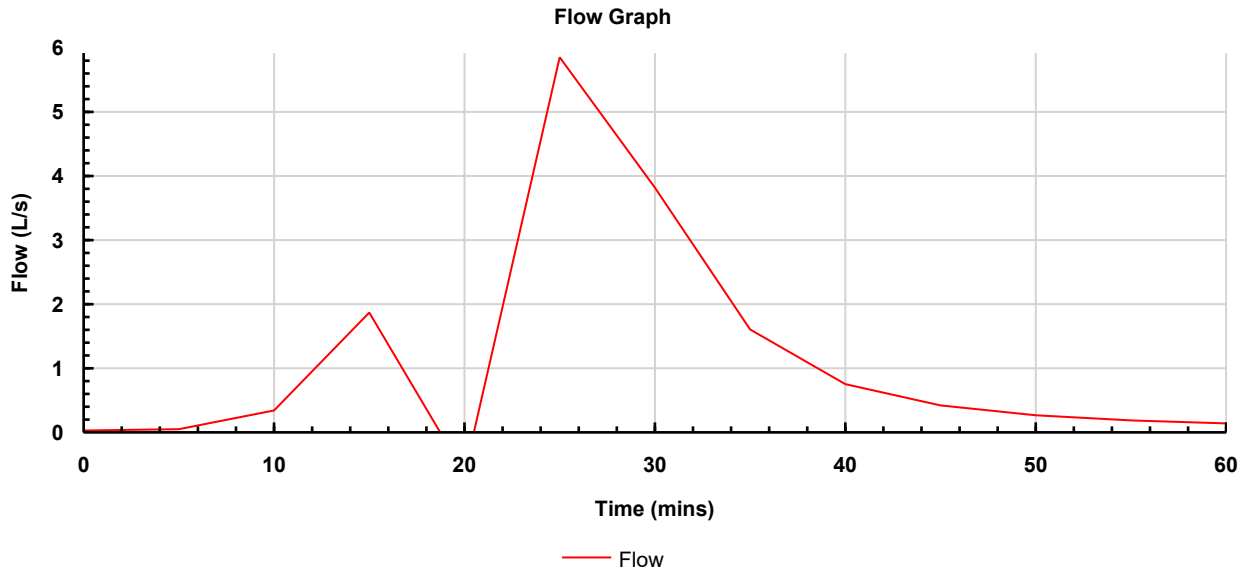
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.024	2.1
10	0.110	9.7
15	0.150	2.4
20	0.150	0.1
25	0.150	0.0
30	0.150	0.0

Pipe (1)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Type : Pipe

Graphs



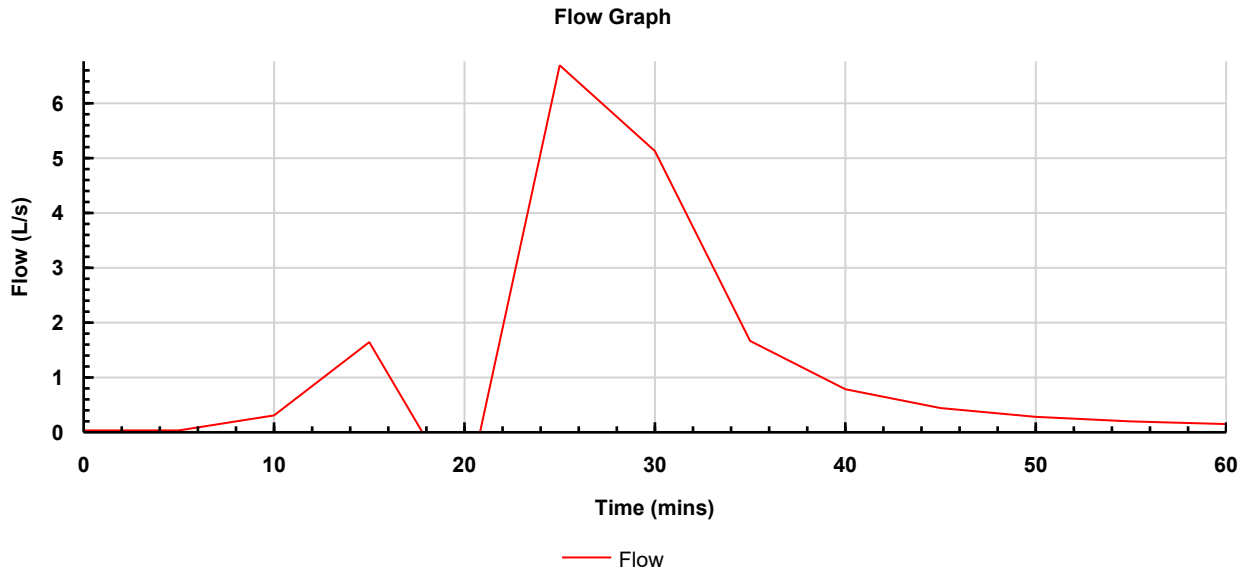
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.001	0.0
10	0.010	0.3
15	0.023	1.8
20	0.150	-0.7
25	0.150	5.9
30	0.078	3.8
35	0.023	1.6
40	0.016	0.7
45	0.012	0.4
50	0.009	0.2
55	0.008	0.2
60	0.007	0.1

Pipe (2)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Type : Pipe

Graphs



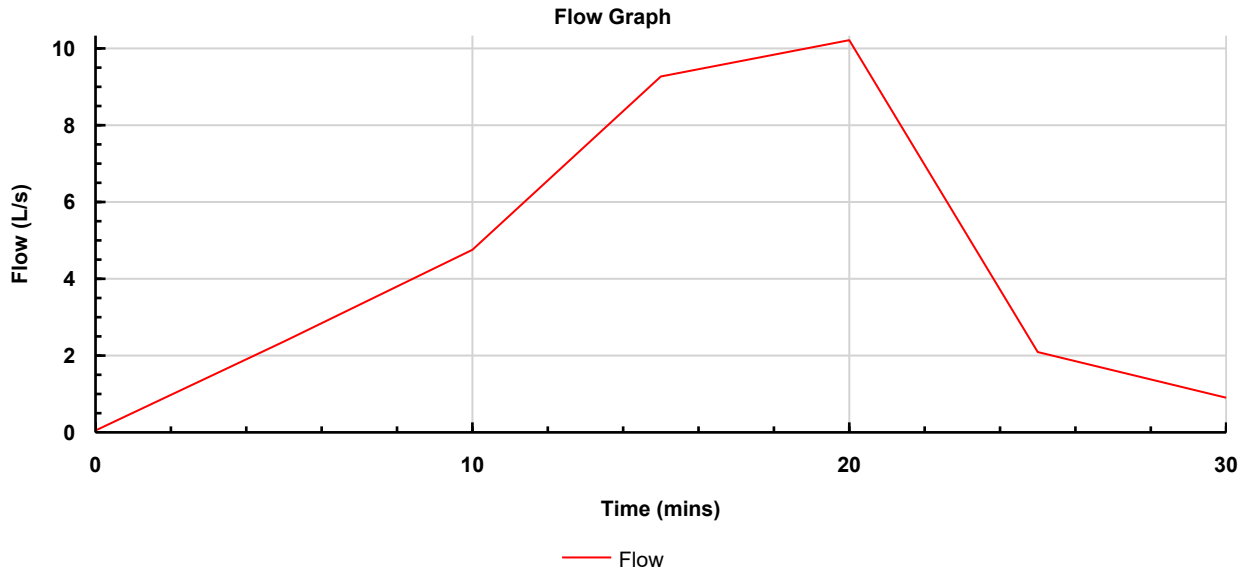
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.014	0.0
10	0.024	0.3
15	0.053	1.6
20	0.150	-1.3
25	0.150	6.7
30	0.150	5.1
35	0.032	1.6
40	0.021	0.8
45	0.016	0.4
50	0.013	0.2
55	0.010	0.2
60	0.008	0.1

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

Type : Pipe

Graphs



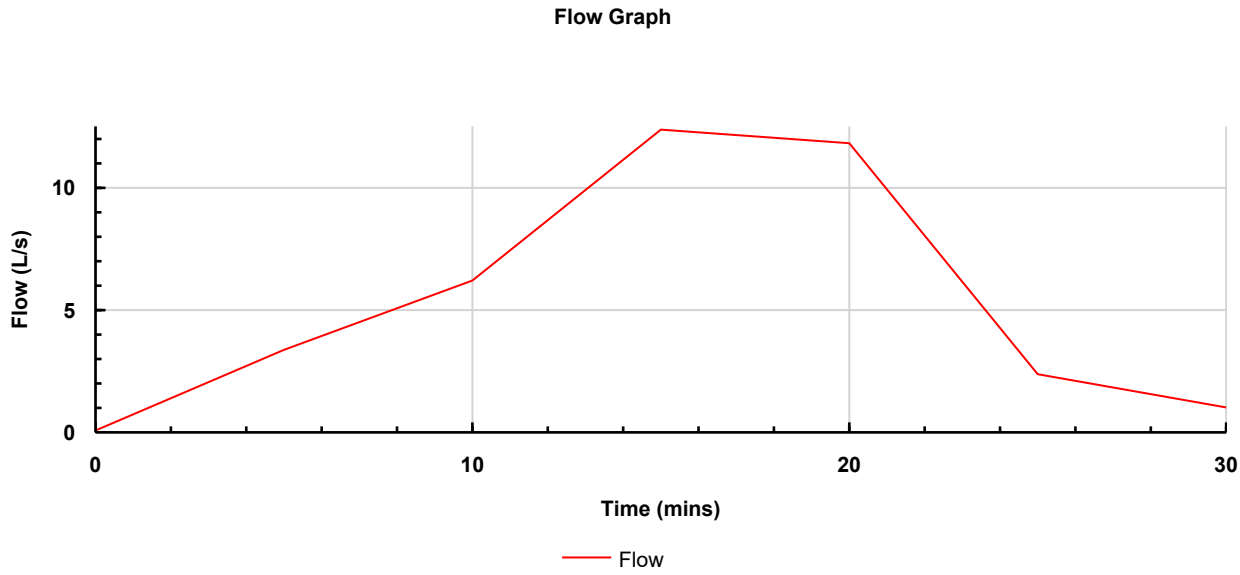
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.041	2.3
10	0.150	4.7
15	0.150	9.3
20	0.150	10.2
25	0.035	2.1
30	0.023	0.9

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

Type : Pipe

Graphs



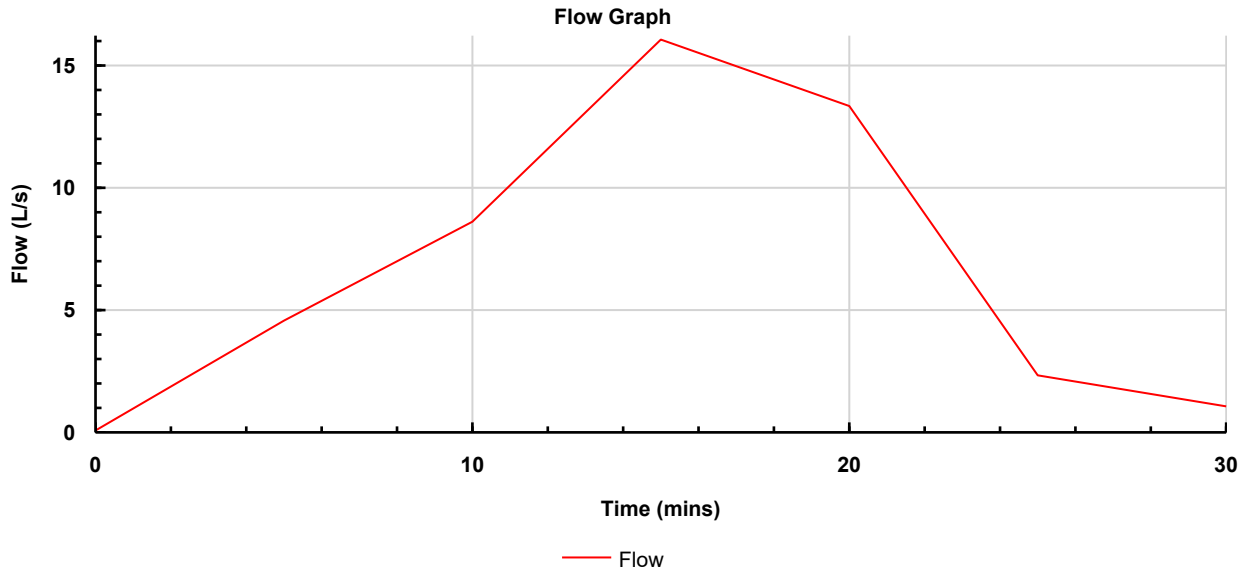
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.048	3.3
10	0.150	6.2
15	0.150	12.4
20	0.150	11.8
25	0.099	2.3
30	0.089	0.9

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

Type : Pipe

Graphs



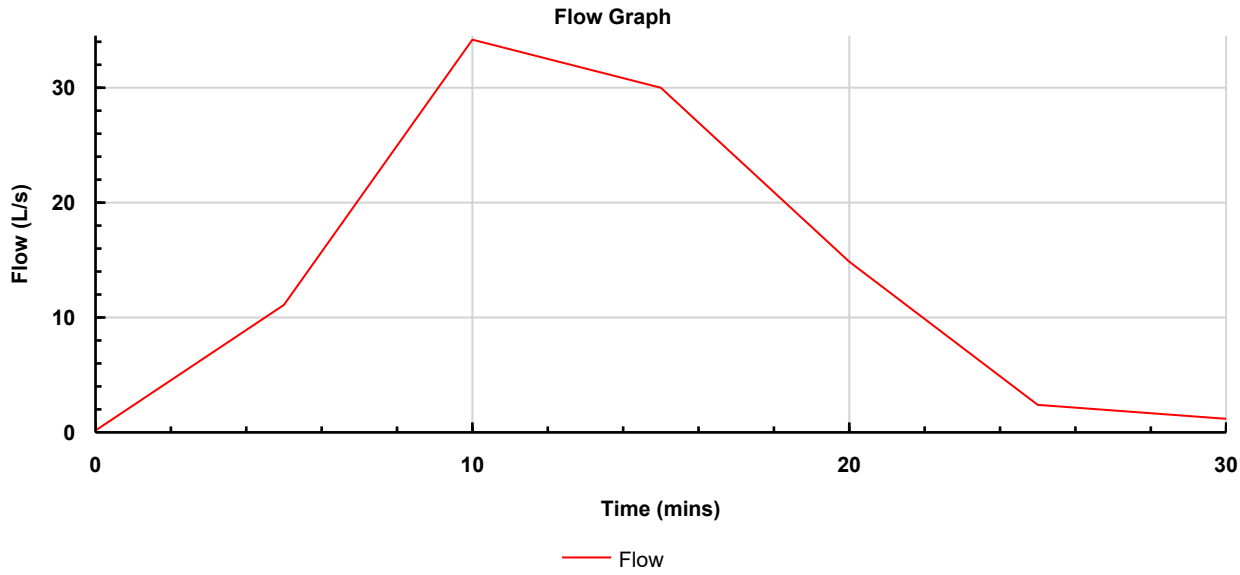
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.071	4.5
10	0.150	8.6
15	0.150	16.1
20	0.150	13.3
25	0.150	2.3
30	0.150	1.0

Pipe (6)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Graphs



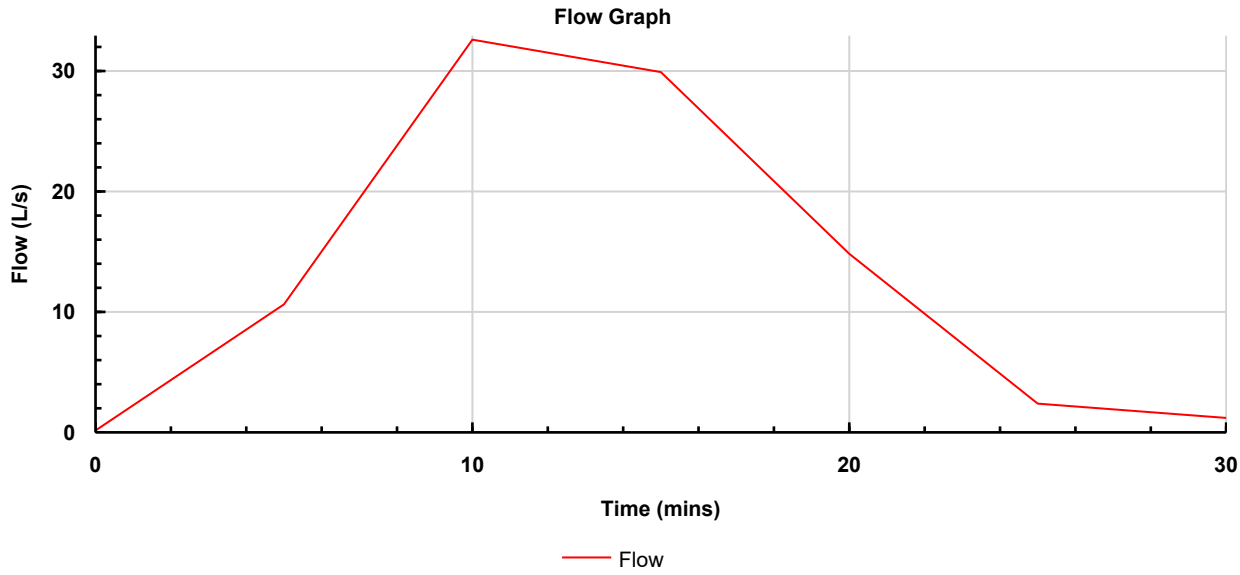
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.082	11.0
10	0.150	34.2
15	0.150	30.0
20	0.150	14.8
25	0.150	2.2
30	0.150	1.0

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

Type : Pipe

Graphs



Tables

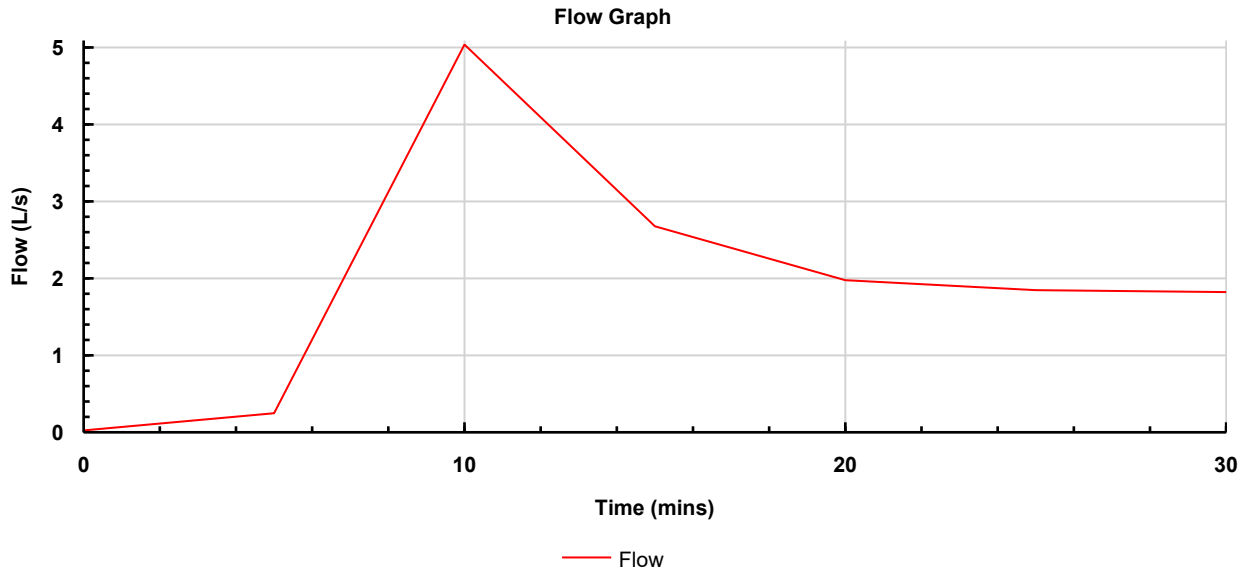
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.050	10.5
10	0.150	32.6
15	0.150	29.9
20	0.150	14.7
25	0.150	2.2
30	0.150	1.0

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address:		

Pipe (8)
Critical Storm: FEH: 30 years: Increase Rainfall (%): +0: 15 mins: Summer

Type : Pipe

Graphs



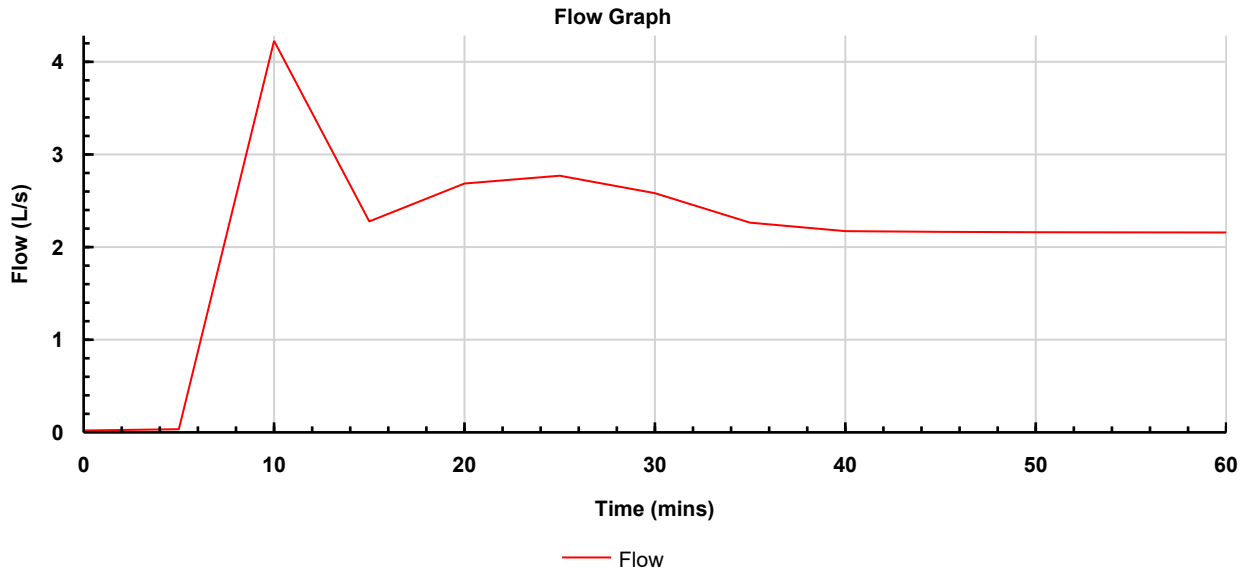
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.009	0.2
10	0.100	5.0
15	0.100	2.7
20	0.100	2.0
25	0.100	1.8
30	0.100	1.8

Pipe (9)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Winter

Type : Pipe

Graphs



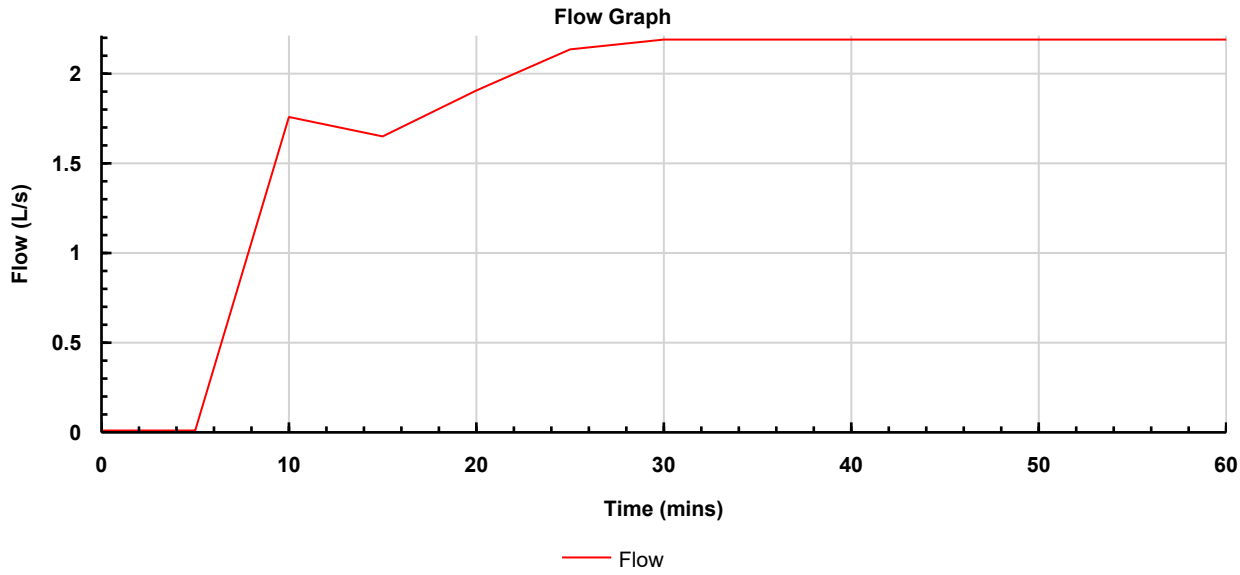
Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.002	0.0
10	0.100	4.2
15	0.100	2.3
20	0.100	2.7
25	0.100	2.8
30	0.100	2.6
35	0.100	2.3
40	0.100	2.2
45	0.100	2.2
50	0.100	2.2
55	0.100	2.1
60	0.100	2.1

Pipe (10)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 30 mins: Summer

Type : Pipe

Graphs



Tables

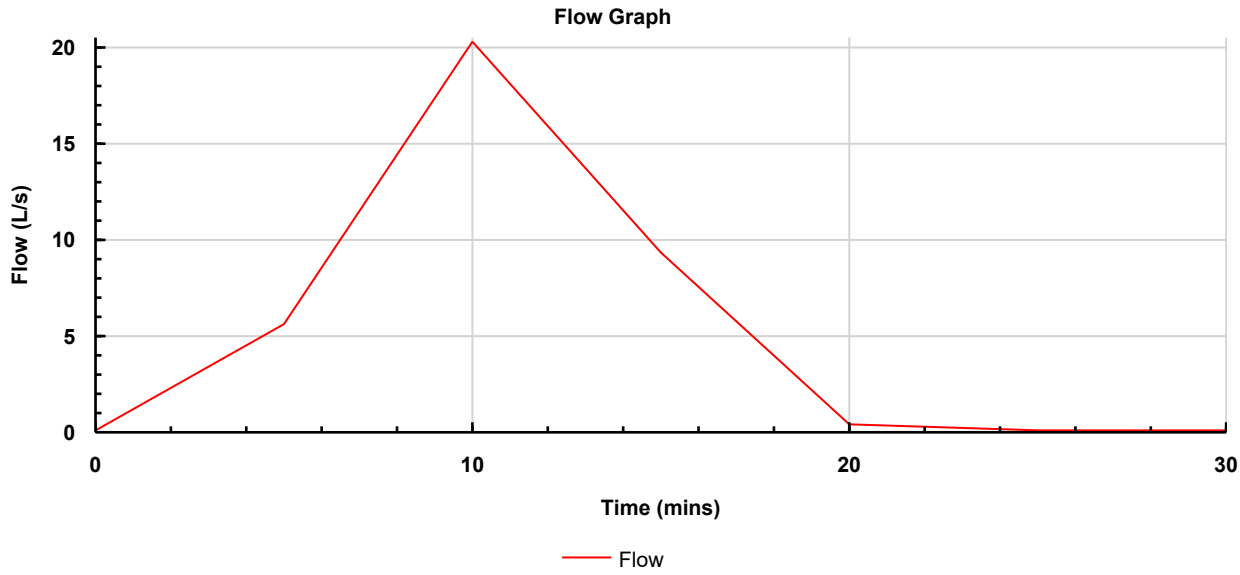
Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.000	0.0
10	0.021	1.8
15	0.020	1.6
20	0.022	1.9
25	0.023	2.1
30	0.023	2.2
35	0.023	2.2
40	0.023	2.2
45	0.023	2.2
50	0.023	2.2
55	0.023	2.2
60	0.023	2.2

Project 0072: Marion Lauder Care Home	Date: 18/08/2026		
	Designed by: GB	Checked by: SS	Approved By:
Report Details: Type: Connection Results Storm Phase: Phase	Company Address:		

Pipe (11)
Critical Storm: FEH: 100 years: Increase Rainfall (%): +40: 15 mins: Summer

Type : Pipe

Graphs

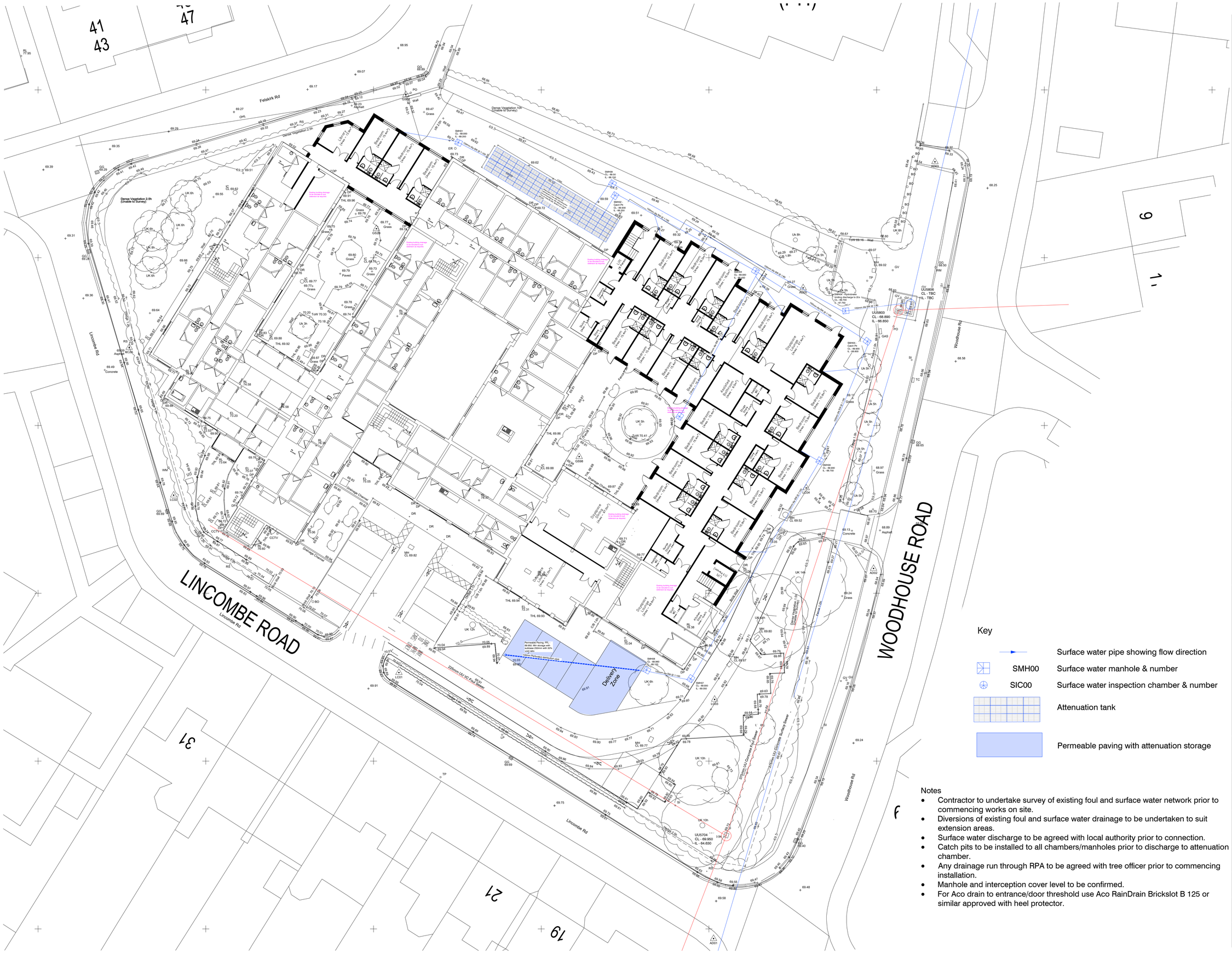


Tables

Time (mins)	Depth (m)	Flow (L/s)
0	0.000	0.0
5	0.065	5.6
10	0.150	20.3
15	0.150	9.3
20	0.150	0.3
25	0.150	0.0
30	0.150	0.0

APPENDIX F

DRAINAGE LAYOUT AND DETAILS



Key

- Surface water pipe showing flow direction
- SMH00 — Surface water manhole & number
- SIC00 — Surface water inspection chamber & number
- Attenuation tank
- Permeable paving with attenuation storage

Notes

- Contractor to undertake survey of existing foul and surface water network prior to commencing works on site.
- Diversions of existing foul and surface water drainage to be undertaken to suit extension areas.
- Surface water discharge to be agreed with local authority prior to connection.
- Catch pits to be installed to all chambers/manholes prior to discharge to attenuation chamber.
- Any drainage run through RPA to be agreed with tree officer prior to commencing installation.
- Manhole and interception cover level to be confirmed.
- For Aco drain to entrance/door threshold use Aco RainDrain Brickslot B 125 or similar approved with heel protector.

DO NOT SCALE FROM THIS DRAWING

GENERAL

1. These notes are intended to augment drawings and specifications. Where conflict of requirements exists the order of precedence shall be as shown in the specifications. Otherwise the strictest provision shall govern.
2. This drawing is to be read in conjunction with all other relevant Engineers and Architects drawings.
3. Drawings not to be scaled. All dimensions to be checked on site by the Contractor prior to the commencement of any work or shop drawing. Any discrepancies to be notified to the Architect & Engineer and further instructions obtained before work is commenced.

DRAINAGE NOTES

1. Invert of foul and surface water inspection chambers to be min 600mm below FFL.
2. Covers HD in road, MD in paths and landscaped areas.
3. All branches from stacks 100mm Ø.
4. All inspection chambers 450mm Ø with 450mm covers.
5. Manholes generally to be 1200x750 or 1050 Ø with 600x600 or 600 Ø covers except manholes between 1.5 & 2.7m deep which are to be minimum 1200mm Ø.
6. Ground floor ensuite shower and bath connections made below floor into nearest run min. 2000mm downstream using 135 branch pipe. Trap to be demountable for rodding.
7. RWP to discharge into roddable access gullies compatible
8. Gullies in hardstanding to be Hepworth semi-universal-square top (200m² capacity).
9. Ensure trap is fitted on laundry installation (separate connection).
10. Drain runs in the car park area to be surrounded in minimum 150mm pea gravel giving class s bedding factor 2.5.
11. All soil stacks to be vented - those marked SVP are taken through the roof and vented to air , all other to be fitted with Agrement Certified Air Admittance Valves.
12. Invert levels, pipe diameters, gradients, and connection points associated with petrol interceptors, storage and infiltration areas to be specified by Subcontractor.
13. Rocker pipes are to be fitted at each side of any pipes penetrating walls or relieving lintels are to be provided.
14. See project specification for further information.
15. 150Ø drains assume 1:150 unless stated
16. 100Ø drains assume 1:80 unless stated
17. Kitchen wastes connected to above floor grease trap and then into soil stack.
18. Where manhole/inspection chamber covers are located in paved or block paved areas, then covers need to be recessed to accept paving type.

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY	CHK

AFA CONSULTING ENGINEERS LTD

AFA Consulting Engineers Ltd
2a Acomb Court,
Front St,
Acomb,
York,
YO24 3BJ

admin@afa-eng.co.uk

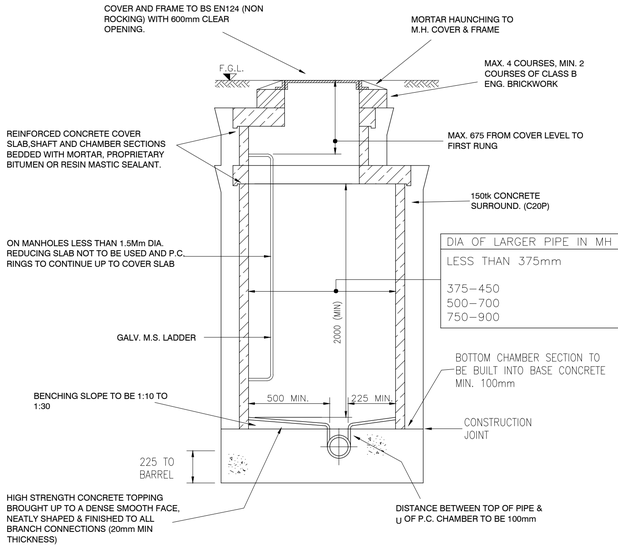
CLIENT
Care Concept

PROJECT
Proposed Extension to Marion Lauder House Care Home, 20 Lincombe Road, Wythenshawe, Manchester, M22 1PY

DRAWING TITLE
Drainage Layout

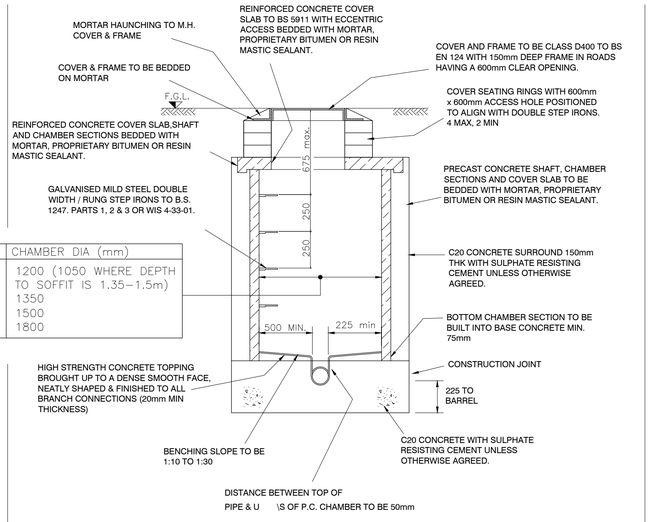
DRAWING STATUS
FOR COMMENT

SCALE	DATE
1:200 @ A1	Aug 2026
DRAWN BY	CHECKED BY
GB	SS
JOB NO.	DWG NO. / REV
0072	SL(5)500 / -



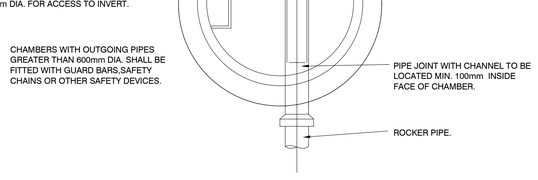
DIA OF LARGER PIPE IN MH	CHAMBER DIA (mm)
LESS THAN 375mm	1200 (1050 WHERE DEPTH TO SOFFIT IS 1.35–1.5m)
375–450	1350
500–700	1500
750–900	1800

Type 'A' Manhole Detail
Depth From Ground Level To Soffit Of Pipe 3m to 6m

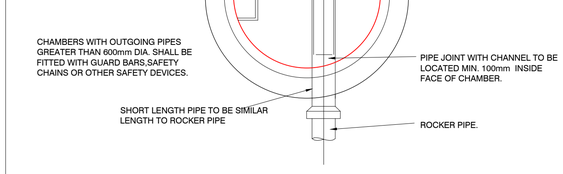


Type 'B' Manhole Detail
Max Depth From Ground Level To Soffit Of Pipe 3m

PIPE DIA.	ROCKER PIPE LENGTH
150-600	0.6
675-750	1.0
>750	1.25

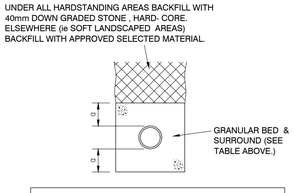


Plan
Manhole Type 'A'



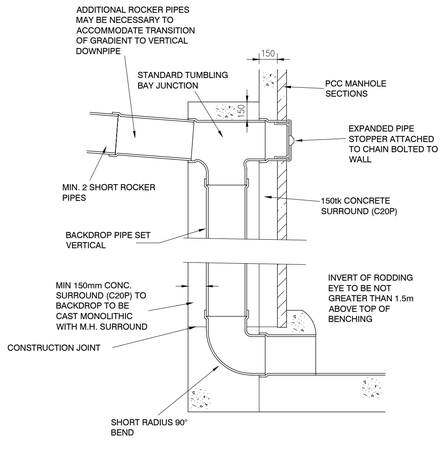
PLAN
MANHOLE TYPE 'B'
Table A

TABLE 1			
PIPE NOMINAL BORE (DN)	MAX. PARTICLE SIZE (mm)	CLASS OF BEDDING	SUITABLE IMPORTED GRANULAR MATERIALS
OVER 100 TO 150 dia	15	S	10mm OR 14mm NOMINAL SINGLE-SIZED OR 14mm TO 5mm GRADED.
OVER 150 TO 500dia	20	S	10,14 OR 20mm NOMINAL SINGLE -SIZED OR 14mm TO 5mm GRADED OR 20mm TO 5mm GRADED.
OVER 500	40	S	10,14,20 OR 40mm NOMINAL SINGLE-SIZED CRUSHED ROCK OR 14mm TO 5mm GRADED OR 20mm TO 5mm GRADED OR 40mm TO 5mm GRADED.

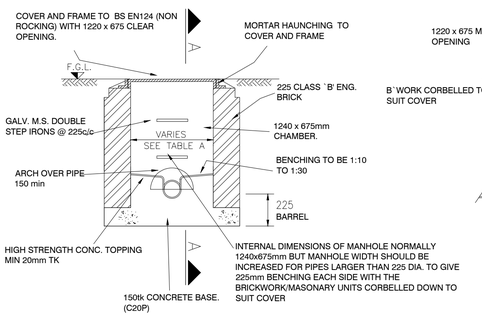


DIMENSION a ;-
IN ROCK OR MATERIAL CONTAINING HARD SPOTS
SLEEVED JOINTED PIPES - 150mm MIN.
SOCKETED PIPES - 200mm MIN.
ELSEWHERE
SLEEVED JOINTED PIPES - 100mm MIN
SOCKETED PIPES - 100mm MIN.

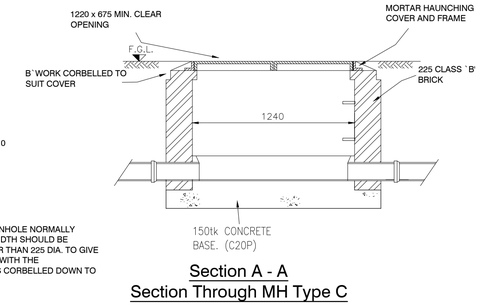
Class 'S' Pipe Bedding Detail



Vertical Backdrop Detail



Type 'C' Manhole Detail
Max Depth From Ground Level To Soffit Of Pipe 1.45m



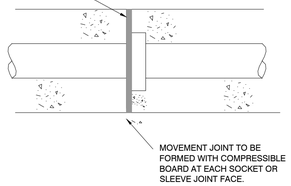
Section A - A
Section Through MH Type C

PIPE DIA.	INTERNAL MANHOLE SIZE	CORBELL DETAILS
UPTO 225	1240x675	NOT REQUIRED
300	1240x750	2 BRICK CORBELL
375	1240x825	3 BRICK CORBELL
450	1240x900	3 BRICK CORBELL
MAX. BRICK CORBELL PER COURSE TO BE 38mm		

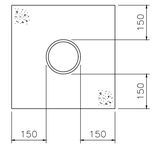
Table A

COMPRESSIBLE FILLER TO CONSIST OF BITUMEN IMPREGNATED INSULATING BOARD TO BS 1142: PART 3 OR OTHER EQUALLY COMPRESSIBLE MATERIAL. (FOR THICKNESS OF COMPRESSIBLE FILLER SEE TABLE ABOVE.)

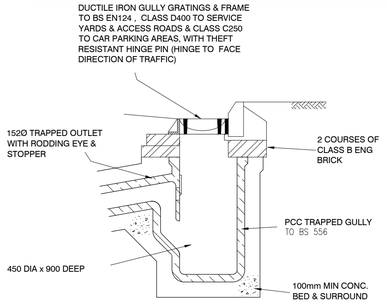
NOMINAL DIA OF PIPE (mm)	THICKNESS OF COMPRESSIBLE FILLER (mm)
LESS THAN 450	18
450-1200	36
EXCEEDING 1200	54



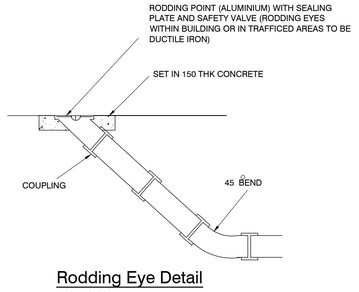
MOVEMENT JOINT TO CONCRETE PIPE SURROUND
Table A



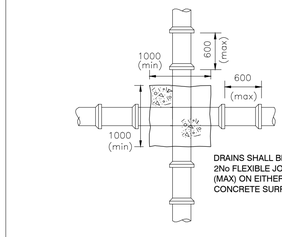
TYPICAL CONCRETE PIPE SURROUND DETAIL
Table A



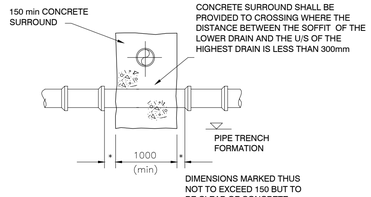
Typical Road Gully Detail



Rodding Eye Detail
(NOT TO SCALE)



Plan On Pipe Crossover



Section

DO NOT SCALE FROM THIS DRAWING

GENERAL

1. These notes are intended to augment drawings and specifications. Where conflict of requirements exists the order of precedence shall be as shown in the specifications. Otherwise the strictest provision shall govern.
2. This drawing is to be read in conjunction with all other relevant Engineers and Architects drawings,
3. Drawings not to be scaled. All dimensions to be checked on site by the Contractor prior to the commencement of any work or shop drawing. Any discrepancies to be notified to the Architect & Engineer and further instructions obtained before work is commenced.

DRAINAGE NOTES
1. Invert of foul and surface water inspection chambers to be min 600mm below FFL
2. Covers HD in road, MD in paths and landscaped areas.
3. All branches from stacks 100mm Ø.
4. All inspection chambers 450mm Ø with 450mm covers.
5. Manholes generally to be 1200x750 or 1050 Ø with 600x600 or 600 Ø covers except manholes between 1.5 & 2.7m deep which are to be minimum 1200mm Ø.
6. Ground floor ensuite shower and bath connections made below floor into nearest run min. 2000mm downstream using 135 branch pipe. Trap to be demountable for rodding.
7. RWP to discharge into roddable access gullies compatible
8. Gullies in hardstanding to be Hepworth semi-universal-square top (200m² capacity).
9. Ensure trap is fitted on laundry installation (separate connection).
10. Drain runs in the car park area to be surrounded in minimum 150mm pea gravel giving class s bedding factor 2.5.
11. All soil stacks to be vented - those marked SVP are taken through the roof and vented to air , all other to be fitted with Agrement Certified Air Admittance Valves.
12. Invert levels, pipe diameters, gradients, and connection points associated with petrol interceptors, storage and infiltration areas to be specified by Subcontractor.
13. Rocker pipes are to be fitted at each side of any pipes penetrating walls or relieving lintels are to be provided.
14. See project specification for further information.
15. 150Ø drains assume 1:150 unless stated
16. 100Ø drains assume 1:80 unless stated
17. Kitchen wastes connected to above floor grease trap and then into soil stack.
18. Where manhole/inspection chamber covers are located in paved or block paved areas, then covers need to be recessed to accept paving type.

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY	CHK

AFA CONSULTING ENGINEERS LTD

AFA Consulting Engineers Ltd
2a Acomb Court,
Front St,
Acomb,
York
YO24 3BJ

admin@afa-eng.co.uk

CLIENT
Care Concept

PROJECT
Proposed Extension to Marion Lauder House Care Home, 20 Lincombe Road, Wythenshawe, Manchester, M22 1PY

DRAWING TITLE
Drainage Details

DRAWING STATUS
FOR COMMENT

SCALE	DATE
1:50 @ A1	Aug 2026
DRAWN BY	CHECKED BY
GB	SS
JOB NO.	DWG NO. / REV
0072	SL(5)501 / -

APPENDIX G

SURFACE WATER MAINTENANCE MANAGEMENT PLAN

SuDS MAINTENANCE MANAGEMENT PLAN

This document sets out the principles for the long-term management and maintenance of the proposed surface water Sustainable Drainage Systems (SuDS) installed at the extension at Marion Lauder House Care Home, 20 Lincombe Rd, Wythenshawe, Manchester M22 1PY

The purpose of this document is to ensure that the adopting operator of the building is entrusted with a robust inspection and maintenance programme, ensuring the optimum operation of the surface water drainage network is continually maintained for the lifetime of the development and to prevent the increased risk of flooding both on and off site.

As a managed facility SuDS systems will be the responsibility of the company operating/running the facility to maintain.

SUDS are engineered solutions that aim to mimic natural drainage processes. They help to reduce pollution of watercourses and localised flooding, as well as providing amenity benefit and biodiversity.

Key Factors to be considered during maintenance

- Undesirable plants – all efforts should be made to prevent drains becoming blocked and the growth of unintentional vegetation which could be detrimental to the intentional plant regime, biodiversity aims and the building fabric.
- Regular site attendance for litter collection, grass cutting and checking of inlets, outlets and control structures.
- Occasional visits to brush clean inlet gullies and drainage channels, remove silt from source control features.
- Drain heads and outlets – all drainage points must be checked every year and cleared out it if necessary to ensure optimum performance.

The maintenance of all drainage features serving the development will be maintained by the building owner/operator. Ongoing maintenance activities for this infrastructure are detailed below.

All those responsible for the maintenance operations should adhere to the relevant health and safety legislation for the activities listed within this report (including lone working, if relevant). Method statements and risk assessments should always be completed prior to the undertaking of any works.

Cellular Storage Crates

The ongoing maintenance activities for below ground cellular storage crates are detailed below.

Cellular Storage Crates	
Regular Maintenance	***Frequency***
Inspection - Record and clean as required	Monthly
Litter and debris removal	Monthly
Occasional Tasks	***Frequency***
CCTV survey is blockages identified, jet clean as required. In line with manufacturers recommendations	As required
Remedial Work	***Frequency***
Jet clean as required. In line with manufacturers recommendations	As required

Catch Pit /Silt interceptor

The ongoing maintenance activities for the petrol and silt interceptor should be in line with manufacturer recommendations. A summary of the typical expected requirements is detailed below.

Catch Pit / Silt interceptor	
Regular Maintenance	***Frequency***
Inspection - Record and empty/clean as required	Monthly
Litter and debris removal	Monthly
Testing alarm system	Annually
Occasional Tasks	***Frequency***
Service – in line with manufacturers recommendations	As required in line with manufacturers recommendations
Remedial Work	***Frequency***
Jet clean as required. In line with manufacturers recommendations	As required in line with manufacturers recommendations

Permeable and Porous Surfaces

The ongoing maintenance activities for below Permeable and Porous Surfaces are detailed below.

Permeable and Porous Surfaces	
Regular Maintenance	***Frequency***
Cleaning Brush regularly and remove sweepings from all hard surfaces	Monthly
Occasional Tasks	***Frequency***
Brush and vacuum surface once a year to prevent silt blockage and enhance design life.	As required
Remedial Work	***Frequency***
Re-grit pacing blocks	Annually
Relay block paviours	As required
Monitor effectiveness of permeable pavement and when water does not infiltrate immediately advise Client of possible need for reinstatement of top layers or specialist cleaning. • Recent experience suggests jet washing and suction efficiency. • cleaning will substantially reinstate pavement to 90%	As required

Hydrobrake

The ongoing maintenance activities for the hydrobrake should be in line with manufacturer recommendations. A summary of the typical expected requirements is detailed below.

Hydrobrake	
Regular Maintenance	***Frequency***
Inspection - Record and empty/clean as required	Monthly
Litter and debris removal	Monthly
Occasional Tasks	***Frequency***
Service – in line with manufacturers recommendations	As required in line with manufacturers recommendations
Remedial Work	***Frequency***
Jet clean as required. In line with manufacturers recommendations	As required in line with manufacturers recommendations

Conventional Surface Water Drainage Features

The maintenance of all drainage features serving the development will be maintained by the building owner/operator. Ongoing maintenance activities for this infrastructure are detailed below.

Maintenance Activity	**Action**	**Frequency**
Check gully pots, linear drainage channels and catchpits	Check, clean and empty gully pots and catchpits as required to remove debris and sediment	Regular - Monthly
Check manholes and inspection chambers	Inspect manholes and inspection chambers for any signs of blockages. Clean, jet and empty as required	Regular - Annually
CCTV survey and jetting of drains	Check the integrity of drains, jet and clean as required. Remove collected debris as required	As necessary Every 5 years
Hydrobrake chambers / Vortex Flow Control – visual inspection	Check and remove any silt build up or blockages in accordance with the Manufacturers recommendations	Typically annually or as required

Records

A service log will be maintained which will include details of all scheduled maintenance required. Logs will be incorporated that record when checks were carried out and whether any actions are deemed necessary. If actions are required, a breakdown of the maintenance measures undertaken or in progress will be logged along with the date when the action was or is to be scheduled.

Records will be maintained by the management company for a minimum period of 5 years.