



VICTORIA HOUSE, MANCHESTER

SURFACE WATER DRAINAGE CALCULATIONS



09 October 2021

Victoria House, Manchester

Surface Water Drainage Calculations

AJP Ref: 220-229

PREPARED BY JOHN SPEERS



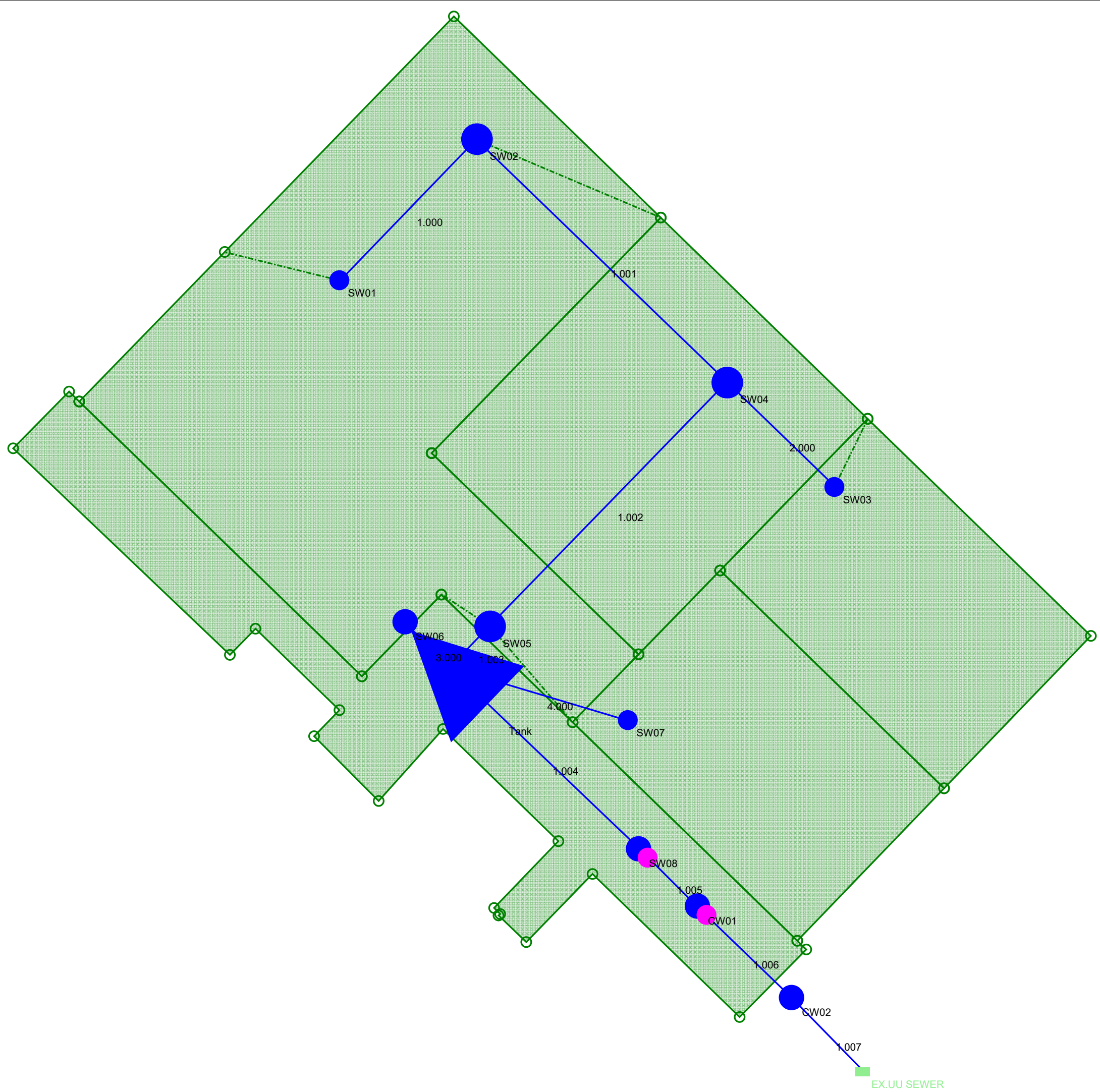
Victoria House, Manchester

Surface Water Drainage Calculations

FORSHAW LAND & PROPERTY GROUP - VICTORIA HOUSE, MANCHESTER

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	Originator:	Approved:	Date:
Record of Approval	J.Speers Senior Civil Engineer	D.Sinclair Director	09/10/2021
Version	Author:	Change Description:	
P01	J.Speers	Original Issue	09/10/2021



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1 Dale Street Liverpool L2 2ET	220-029 Victoria House, Manchester SW Network Calculations	
Date 07/10/2021 22:29 File SW NETWORK.MDX	Designed by JRS Checked by DJS	
Micro Drainage	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales			
Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.359	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.049	4-8	0.065

Total Area Contributing (ha) = 0.115

Total Pipe Volume (m³) = 1.715

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	9.332	0.090	103.7	0.044	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	16.536	0.170	97.3	0.021	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	7.079	0.260	27.2	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	16.108	0.320	50.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	2.743	0.070	39.2	0.035	0.00	0.0	0.600	o	150	Pipe/Conduit	
3.000	3.021	0.020	151.1	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.16	44.750	0.044	0.0	0.0	0.0	0.99	17.4	5.9
1.001	50.00	5.43	44.660	0.065	0.0	0.0	0.0	1.02	18.0	8.8
2.000	50.00	5.06	44.750	0.015	0.0	0.0	0.0	1.94	34.2	2.0
1.002	50.00	5.62	44.490	0.080	0.0	0.0	0.0	1.42	25.1	10.8
1.003	50.00	5.65	44.170	0.115	0.0	0.0	0.0	1.61	28.5	15.5
3.000	50.00	5.06	44.120	0.000	0.0	0.0	0.0	0.82	14.4	0.0

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1 Dale Street	220-029	
Liverpool	Victoria House, Manchester	
L2 2ET	SW Network Calculations	
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Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
4.000	8.802	0.150	58.5	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.004	12.402	0.020	620.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	3.889	0.040	96.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	6.214	-2.071	-3.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.007	4.863	0.249	19.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
4.000	50.00	5.11	44.650	0.000	0.0	0.0	0.0	1.32	23.3	0.0
1.004	50.00	6.17	44.100	0.115	0.0	0.0	0.0	0.40	7.0«	15.5
1.005	50.00	6.23	44.080	0.115	0.0	0.0	0.0	1.02	18.1	15.5
1.006	50.00	7.35	44.040	0.115	0.0	0.0	0.0	0.09	1.6«	15.5
1.007	50.00	7.37	46.100	0.115	0.0	0.0	0.0	2.98	118.4	15.5

1 Dale Street
Liverpool
L2 2ET

220-029
Victoria House, Manchester
SW Network Calculations

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Designed by JRS
Checked by DJS



Micro Drainage

Network 2019.1

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
SW01	45.900	1.150	Open Manhole	600	1.000	44.750	150				
SW02	45.900	1.240	Open Manhole	1500	1.001	44.660	150	1.000	44.660	150	
SW03	45.900	1.150	Open Manhole	600	2.000	44.750	150				
SW04	45.900	1.410	Open Manhole	1500	1.002	44.490	150	1.001	44.490	150	
								2.000	44.490	150	
SW05	45.900	1.730	Open Manhole	1200	1.003	44.170	150	1.002	44.170	150	
SW06	45.900	1.780	Open Manhole	1200	3.000	44.120	150				
SW07	45.900	1.250	Open Manhole	600	4.000	44.650	150				
Tank	45.900	1.800	Open Manhole	1200	1.004	44.100	150	1.003	44.100	150	
								3.000	44.100	150	
								4.000	44.500	150	
SW08	45.900	1.820	Open Manhole	1200	1.005	44.080	150	1.004	44.080	150	400
CW01	45.900	1.860	Open Manhole	1200	1.006	44.040	150	1.005	44.040	150	
CW02	48.750	2.650	Open Manhole	1200	1.007	46.100	225	1.006	46.111	150	
EX.UU SEWER	48.510	2.659	Open Manhole	450 x 675		OUTFALL		1.007	45.851	225	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW01	385301.803	398086.545	385301.803	398086.545	Required	
SW02	385308.319	398093.226	385308.319	398093.226	Required	
SW03	385325.241	398076.754	385325.241	398076.754	Required	
SW04	385320.173	398081.696	385320.173	398081.696	Required	
SW05	385308.942	398070.149	385308.942	398070.149	Required	
SW06	385304.915	398070.369	385304.915	398070.369	Required	
SW07	385315.460	398065.713	385315.460	398065.713	Required	
Tank	385307.015	398068.197	385307.015	398068.197	Required	
SW08	385315.970	398059.616	385315.970	398059.616	Required	
CW01	385318.757	398056.905	385318.757	398056.905	Required	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
CW02	385323.212	398052.573	385323.212	398052.573	Required	
EX.UU SEWER	385326.586	398049.071			No Entry	

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	SW01	45.900	44.750	1.000	Open Manhole	600
1.001	o	150	SW02	45.900	44.660	1.090	Open Manhole	1500
2.000	o	150	SW03	45.900	44.750	1.000	Open Manhole	600
1.002	o	150	SW04	45.900	44.490	1.260	Open Manhole	1500
1.003	o	150	SW05	45.900	44.170	1.580	Open Manhole	1200
3.000	o	150	SW06	45.900	44.120	1.630	Open Manhole	1200
4.000	o	150	SW07	45.900	44.650	1.100	Open Manhole	600
1.004	o	150	Tank	45.900	44.100	1.650	Open Manhole	1200
1.005	o	150	SW08	45.900	44.080	1.670	Open Manhole	1200
1.006	o	150	CW01	45.900	44.040	1.710	Open Manhole	1200
1.007	o	225	CW02	48.750	46.100	2.425	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	9.332	103.7	SW02	45.900	44.660	1.090	Open Manhole	1500
1.001	16.536	97.3	SW04	45.900	44.490	1.260	Open Manhole	1500
2.000	7.079	27.2	SW04	45.900	44.490	1.260	Open Manhole	1500
1.002	16.108	50.4	SW05	45.900	44.170	1.580	Open Manhole	1200
1.003	2.743	39.2	Tank	45.900	44.100	1.650	Open Manhole	1200
3.000	3.021	151.1	Tank	45.900	44.100	1.650	Open Manhole	1200
4.000	8.802	58.5	Tank	45.900	44.500	1.250	Open Manhole	1200
1.004	12.402	620.1	SW08	45.900	44.080	1.670	Open Manhole	1200
1.005	3.889	96.2	CW01	45.900	44.040	1.710	Open Manhole	1200
1.006	6.214	-3.0	CW02	48.750	46.111	2.489	Open Manhole	1200
1.007	4.863	19.5	EX.UU SEWER	48.510	45.851	2.434	Open Manhole	450 x 675

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.044	0.044	0.044
1.001	User	-	100	0.021	0.021	0.021
2.000	User	-	100	0.015	0.015	0.015
1.002	-	-	100	0.000	0.000	0.000
1.003	User	-	100	0.015	0.015	0.015
	User	-	100	0.020	0.020	0.035
3.000	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.000	0.000	0.000
1.005	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.115	0.115	0.115

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.007	EX.UU SEWER	48.510	45.851	45.850	450	675
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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 2 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.359		

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: SW08, DS/PN: 1.005, Volume (m³): 2.3

Unit Reference	MD-SHE-0129-8100-1200-8100
Design Head (m)	1.200
Design Flow (l/s)	8.1
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	129
Invert Level (m)	44.080
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	8.1	Kick-Flo®	0.764	6.6
Flush-Flo™	0.353	8.1	Mean Flow over Head Range	-	7.0

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.6	0.800	6.7	2.000	10.3	4.000	14.3	7.000	18.7
0.200	7.7	1.000	7.4	2.200	10.8	4.500	15.1	7.500	19.3
0.300	8.1	1.200	8.1	2.400	11.2	5.000	15.9	8.000	19.9
0.400	8.1	1.400	8.7	2.600	11.7	5.500	16.7	8.500	20.5
0.500	7.9	1.600	9.3	3.000	12.5	6.000	17.4	9.000	21.1
0.600	7.7	1.800	9.8	3.500	13.4	6.500	18.0	9.500	21.7

Pump Manhole: CW01, DS/PN: 1.006, Volume (m³): 2.2

Invert Level (m) 44.040

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	8.1000	1.860	8.1000

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Storage Structures for Storm

Cellular Storage Manhole: Tank, DS/PN: 1.004

Invert Level (m) 44.100 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	24.0	0.0	0.800	24.0	0.0	0.801	0.0	0.0

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.359 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s)

Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

										Water	Surcharged	Flooded
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m³)	
1.000	SW01	15 Winter	2	+0%	30/15 Summer				44.820	-0.080	0.000	
1.001	SW02	15 Winter	2	+0%	30/15 Summer				44.742	-0.068	0.000	
2.000	SW03	15 Winter	2	+0%	100/15 Summer				44.778	-0.122	0.000	
1.002	SW04	15 Winter	2	+0%	30/15 Summer				44.567	-0.073	0.000	
1.003	SW05	30 Winter	2	+0%	30/15 Summer				44.316	-0.004	0.000	
3.000	SW06	30 Winter	2	+0%	2/15 Summer				44.304	0.034	0.000	
4.000	SW07	60 Winter	2	+0%	100/15 Winter				44.650	-0.150	0.000	
1.004	Tank	30 Winter	2	+0%	2/15 Summer				44.304	0.054	0.000	
1.005	SW08	30 Winter	2	+0%	2/15 Summer				44.279	0.049	0.000	
1.006	CW01	30 Winter	2	+0%					44.119	-0.071	0.000	
1.007	CW02	30 Winter	2	+0%					46.146	-0.179	0.000	

Pipe

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	Level Exceeded	
1.000	SW01	0.44		6.8	OK		
1.001	SW02	0.57		9.5	OK		
2.000	SW03	0.08		2.3	OK		
1.002	SW04	0.51		11.9	OK		
1.003	SW05	0.78		13.0	OK		
3.000	SW06	0.02		0.2	SURCHARGED		
4.000	SW07	0.00		0.0	OK		
1.004	Tank	1.26		6.5	SURCHARGED		
1.005	SW08	0.51		6.4	SURCHARGED		
1.006	CW01	0.78		6.4	OK		
1.007	CW02	0.09		6.4	OK		

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.359 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s)

Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

										Water	Surcharged	Flooded
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m³)	
1.000	SW01	15 Winter	30	+0%	30/15 Summer				44.936	0.036	0.000	
1.001	SW02	15 Winter	30	+0%	30/15 Summer				44.886	0.076	0.000	
2.000	SW03	15 Winter	30	+0%	100/15 Summer				44.789	-0.111	0.000	
1.002	SW04	15 Winter	30	+0%	30/15 Summer				44.743	0.103	0.000	
1.003	SW05	30 Winter	30	+0%	30/15 Summer				44.577	0.257	0.000	
3.000	SW06	30 Winter	30	+0%	2/15 Summer				44.539	0.269	0.000	
4.000	SW07	60 Winter	30	+0%	100/15 Winter				44.650	-0.150	0.000	
1.004	Tank	30 Winter	30	+0%	2/15 Summer				44.539	0.289	0.000	
1.005	SW08	30 Winter	30	+0%	2/15 Summer				44.507	0.277	0.000	
1.006	CW01	30 Winter	30	+0%					44.139	-0.051	0.000	
1.007	CW02	30 Winter	30	+0%					46.150	-0.175	0.000	

Pipe

PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW01	0.78		11.9	SURCHARGED	
1.001	SW02	0.98		16.5	SURCHARGED	
2.000	SW03	0.15		4.4	OK	
1.002	SW04	0.80		18.6	SURCHARGED	
1.003	SW05	1.39		23.0	SURCHARGED	
3.000	SW06	0.03		0.3	SURCHARGED	
4.000	SW07	0.00		0.0	OK	
1.004	Tank	1.65		8.5	SURCHARGED	
1.005	SW08	0.64		8.0	SURCHARGED	
1.006	CW01	0.98		8.0	OK	
1.007	CW02	0.11		8.0	OK	

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1 Dale Street Liverpool L2 2ET	220-029 Victoria House, Manchester SW Network Calculations	
Date 07/10/2021 22:29	Designed by JRS	
File SW NETWORK.MDX	Checked by DJS	
Micro Drainage	Network 2019.1	

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 2 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.359 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

									Water	Surcharged	Flooded
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)	Depth (m)	Volume (m³)
1.000	SW01	15 Winter	100	+40%	30/15 Summer				45.791	0.891	0.000
1.001	SW02	15 Winter	100	+40%	30/15 Summer				45.678	0.868	0.000
2.000	SW03	15 Winter	100	+40%	100/15 Summer				45.371	0.471	0.000
1.002	SW04	15 Winter	100	+40%	30/15 Summer				45.356	0.716	0.000
1.003	SW05	60 Winter	100	+40%	30/15 Summer				45.285	0.965	0.000
3.000	SW06	60 Winter	100	+40%	2/15 Summer				45.274	1.004	0.000
4.000	SW07	60 Winter	100	+40%	100/15 Winter				45.274	0.474	0.000
1.004	Tank	60 Winter	100	+40%	2/15 Summer				45.274	1.024	0.000
1.005	SW08	60 Winter	100	+40%	2/15 Summer				45.243	1.013	0.000
1.006	CW01	240 Summer	100	+40%					44.140	-0.050	0.000
1.007	CW02	240 Summer	100	+40%					46.150	-0.175	0.000

						Pipe
PN	US/MH Name	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status	Level Exceeded
1.000	SW01	1.21		18.7	FLOOD RISK	
1.001	SW02	1.39		23.2	FLOOD RISK	
2.000	SW03	0.21		6.1	SURCHARGED	
1.002	SW04	1.18		27.4	SURCHARGED	
1.003	SW05	1.58		26.1	SURCHARGED	
3.000	SW06	0.07		0.7	SURCHARGED	
4.000	SW07	0.01		0.2	SURCHARGED	
1.004	Tank	1.89		9.7	SURCHARGED	
1.005	SW08	0.64		8.1	SURCHARGED	
1.006	CW01	0.98		8.1	OK	
1.007	CW02	0.11		8.1	OK	