

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	0.650
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SW MH 01.00	0.004	5.00	15.093	450	496457.415	106292.125	1.200
SW MH 01.50			15.093	600	496452.370	106287.880	1.566
SW MH 02.00			14.160	450	496429.990	106269.270	0.500

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.002	SW MH 01.50	SW MH 02.00	29.107	0.600	13.827	13.660	0.167	174.3	100	5.98	50.0
1.000	SW MH 01.00	SW MH 01.50	6.614	0.600	13.893	13.827	0.066	100.2	100	5.14	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.002	0.579	4.6	0.5	1.166	0.400	0.004	0.0
1.000	0.768	6.0	0.5	1.100	1.166	0.004	0.0

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.300	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node SW MH 01.50 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.550	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	0.5		
Invert Level (m)	13.827	Diameter (m)	0.018		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	99.562	28.172
1 year 15 minute winter	69.868	28.172
1 year 30 minute summer	67.776	19.178
1 year 30 minute winter	47.562	19.178
1 year 60 minute summer	48.435	12.800
1 year 60 minute winter	32.179	12.800
1 year 120 minute summer	31.831	8.412
1 year 120 minute winter	21.148	8.412
1 year 180 minute summer	25.499	6.562
1 year 180 minute winter	16.575	6.562
1 year 240 minute summer	20.693	5.468
1 year 240 minute winter	13.748	5.468
1 year 360 minute summer	16.369	4.212
1 year 360 minute winter	10.640	4.212
1 year 480 minute summer	13.246	3.501
1 year 480 minute winter	8.801	3.501
1 year 600 minute summer	11.089	3.033
1 year 600 minute winter	7.577	3.033
1 year 720 minute summer	10.069	2.699
1 year 720 minute winter	6.767	2.699
1 year 960 minute summer	8.526	2.245
1 year 960 minute winter	5.648	2.245
1 year 1440 minute summer	6.448	1.728
1 year 1440 minute winter	4.334	1.728
1 year 2160 minute summer	4.820	1.332
1 year 2160 minute winter	3.321	1.332
1 year 2880 minute summer	4.137	1.109
1 year 2880 minute winter	2.780	1.109
1 year 4320 minute summer	3.261	0.853
1 year 4320 minute winter	2.147	0.853
1 year 5760 minute summer	2.757	0.706
1 year 5760 minute winter	1.784	0.706
1 year 7200 minute summer	2.390	0.610
1 year 7200 minute winter	1.543	0.610
1 year 8640 minute summer	2.122	0.541
1 year 8640 minute winter	1.369	0.541
1 year 10080 minute summer	1.909	0.487
1 year 10080 minute winter	1.232	0.487
30 year 15 minute summer	243.818	68.992
30 year 15 minute winter	171.101	68.992
30 year 30 minute summer	166.387	47.082
30 year 30 minute winter	116.763	47.082
30 year 60 minute summer	116.589	30.811
30 year 60 minute winter	77.459	30.811
30 year 120 minute summer	73.902	19.530
30 year 120 minute winter	49.099	19.530

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year 180 minute summer	57.313	14.749
30 year 180 minute winter	37.255	14.749
30 year 240 minute summer	45.598	12.050
30 year 240 minute winter	30.295	12.050
30 year 360 minute summer	35.178	9.053
30 year 360 minute winter	22.867	9.053
30 year 480 minute summer	27.920	7.379
30 year 480 minute winter	18.550	7.379
30 year 600 minute summer	23.001	6.291
30 year 600 minute winter	15.716	6.291
30 year 720 minute summer	20.598	5.520
30 year 720 minute winter	13.843	5.520
30 year 960 minute summer	17.043	4.488
30 year 960 minute winter	11.289	4.488
30 year 1440 minute summer	12.485	3.346
30 year 1440 minute winter	8.390	3.346
30 year 2160 minute summer	9.010	2.490
30 year 2160 minute winter	6.208	2.490
30 year 2880 minute summer	7.526	2.017
30 year 2880 minute winter	5.058	2.017
30 year 4320 minute summer	5.732	1.499
30 year 4320 minute winter	3.775	1.499
30 year 5760 minute summer	4.745	1.215
30 year 5760 minute winter	3.071	1.215
30 year 7200 minute summer	4.047	1.032
30 year 7200 minute winter	2.612	1.032
30 year 8640 minute summer	3.543	0.904
30 year 8640 minute winter	2.287	0.904
30 year 10080 minute summer	3.168	0.808
30 year 10080 minute winter	2.045	0.808
100 year +40% CC 15 minute summer	441.486	124.925
100 year +40% CC 15 minute winter	309.815	124.925
100 year +40% CC 30 minute summer	304.460	86.152
100 year +40% CC 30 minute winter	213.656	86.152
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 60 minute winter	142.577	56.713
100 year +40% CC 120 minute summer	135.791	35.885
100 year +40% CC 120 minute winter	90.216	35.885
100 year +40% CC 180 minute summer	104.615	26.921
100 year +40% CC 180 minute winter	68.003	26.921
100 year +40% CC 240 minute summer	82.776	21.875
100 year +40% CC 240 minute winter	54.994	21.875
100 year +40% CC 360 minute summer	63.377	16.309
100 year +40% CC 360 minute winter	41.197	16.309
100 year +40% CC 480 minute summer	50.006	13.215
100 year +40% CC 480 minute winter	33.223	13.215
100 year +40% CC 600 minute summer	40.997	11.214
100 year +40% CC 600 minute winter	28.011	11.214
100 year +40% CC 720 minute summer	36.560	9.799
100 year +40% CC 720 minute winter	24.571	9.799
100 year +40% CC 960 minute summer	30.041	7.911
100 year +40% CC 960 minute winter	19.900	7.911

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 1440 minute summer	21.775	5.836
100 year +40% CC 1440 minute winter	14.634	5.836
100 year +40% CC 2160 minute summer	15.533	4.293
100 year +40% CC 2160 minute winter	10.703	4.293
100 year +40% CC 2880 minute summer	12.860	3.447
100 year +40% CC 2880 minute winter	8.643	3.447
100 year +40% CC 4320 minute summer	9.676	2.530
100 year +40% CC 4320 minute winter	6.372	2.530
100 year +40% CC 5760 minute summer	7.943	2.033
100 year +40% CC 5760 minute winter	5.141	2.033
100 year +40% CC 7200 minute summer	6.731	1.717
100 year +40% CC 7200 minute winter	4.344	1.717
100 year +40% CC 8640 minute summer	5.865	1.496
100 year +40% CC 8640 minute winter	3.785	1.496
100 year +40% CC 10080 minute summer	5.222	1.332
100 year +40% CC 10080 minute winter	3.370	1.332

Results for 1 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	SW MH 01.00	24	13.918	0.025	0.4	0.0057	0.0000	OK
15 minute winter	SW MH 01.50	14	13.918	0.091	0.5	0.0257	0.0000	OK
15 minute summer	SW MH 02.00	1	13.660	0.000	0.2	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SW MH 01.00	1.000	SW MH 01.50	0.5	0.370	0.083	0.0295	
15 minute winter	SW MH 01.50	Orifice	SW MH 02.00	0.2				0.2

Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	SW MH 01.00	25	14.069	0.176	1.0	0.0398	0.0000	SURCHARGED
30 minute winter	SW MH 01.50	25	14.069	0.242	0.7	0.0685	0.0000	SURCHARGED
15 minute summer	SW MH 02.00	1	13.660	0.000	0.3	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SW MH 01.00	1.000	SW MH 01.50	0.9	0.417	0.157	0.0518	
30 minute winter	SW MH 01.50	Orifice	SW MH 02.00	0.3				0.8

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	SW MH 01.00	45	14.333	0.440	1.3	0.0995	0.0000	SURCHARGED
60 minute winter	SW MH 01.50	45	14.333	0.506	0.9	0.1431	0.0000	SURCHARGED
15 minute summer	SW MH 02.00	1	13.660	0.000	0.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SW MH 01.00	1.000	SW MH 01.50	1.3	0.485	0.217	0.0518	
60 minute winter	SW MH 01.50	Orifice	SW MH 02.00	0.5				1.9