

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)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	0.600
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	4.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)
S1	0.097	4.00	98.750	600	0.750
S2			97.800	600	0.970
S3			97.700	1200	1.200
Headwall			94.700		1.200

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)
1.000	S1	S2	46.550	0.600	98.000	96.830	1.170	39.8	150	4.48	50.0
1.001	S2	S3	13.000	0.600	96.830	96.500	0.330	39.4	150	4.62	50.0
1.002	S3	Headwall	240.000	0.600	96.500	93.500	3.000	80.0	150	8.18	47.5





Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.600	28.3	13.1	0.600	0.820	0.097	0.0	72	1.571
1.001	1.608	28.4	13.1	0.820	1.050	0.097	0.0	72	1.578
1.002	1.125	19.9	12.5	1.050	1.050	0.097	0.0	86	1.188

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	46.550	39.8	150	Circular	98.750	98.000	0.600	97.800	96.830	0.820
1.001	13.000	39.4	150	Circular	97.800	96.830	0.820	97.700	96.500	1.050
1.002	240.000	80.0	150	Circular	97.700	96.500	1.050	94.700	93.500	1.050

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	600	Manhole	Private	S2	600	Manhole	Private
1.001	S2	600	Manhole	Private	S3	1200	Manhole	Private
1.002	S3	1200	Manhole	Private	Headwall		Junction	

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1	98.750	0.750	600		0	1.000	98.000	150
S2	97.800	0.970	600		1	1.000	96.830	150
S3	97.700	1.200	1200		1	1.001	96.830	150
Headwall	94.700	1.200			1	1.002	93.500	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	17.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

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

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year 15 minute summer	226.195	64.005	30 year 480 minute summer	20.981	5.545
30 year 15 minute winter	158.733	64.005	30 year 480 minute winter	13.940	5.545
30 year 30 minute summer	147.452	41.724	30 year 600 minute summer	17.039	4.661
30 year 30 minute winter	103.475	41.724	30 year 600 minute winter	11.642	4.661
30 year 60 minute summer	98.615	26.061	30 year 720 minute summer	15.093	4.045
30 year 60 minute winter	65.517	26.061	30 year 720 minute winter	10.143	4.045
30 year 120 minute summer	59.946	15.842	30 year 960 minute summer	12.278	3.233
30 year 120 minute winter	39.827	15.842	30 year 960 minute winter	8.133	3.233
30 year 180 minute summer	45.598	11.734	30 year 1440 minute summer	8.788	2.355
30 year 180 minute winter	29.640	11.734	30 year 1440 minute winter	5.906	2.355
30 year 240 minute summer	35.759	9.450	100 year 15 minute summer	291.766	82.560
30 year 240 minute winter	23.758	9.450	100 year 15 minute winter	204.748	82.560
30 year 360 minute summer	26.939	6.932	100 year 30 minute summer	191.982	54.324
30 year 360 minute winter	17.511	6.932	100 year 30 minute winter	134.724	54.324

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year 60 minute summer	129.253	34.158	100 year 480 minute summer	27.350	7.228
100 year 60 minute winter	85.873	34.158	100 year 480 minute winter	18.171	7.228
100 year 120 minute summer	78.836	20.834	100 year 600 minute summer	22.137	6.055
100 year 120 minute winter	52.377	20.834	100 year 600 minute winter	15.126	6.055
100 year 180 minute summer	59.966	15.431	100 year 720 minute summer	19.562	5.243
100 year 180 minute winter	38.980	15.431	100 year 720 minute winter	13.147	5.243
100 year 240 minute summer	46.975	12.414	100 year 960 minute summer	15.851	4.174
100 year 240 minute winter	31.209	12.414	100 year 960 minute winter	10.500	4.174
100 year 360 minute summer	35.264	9.075	100 year 1440 minute summer	11.278	3.023
100 year 360 minute winter	22.923	9.075	100 year 1440 minute winter	7.579	3.023

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S1	11	98.173	0.173	29.8	0.4949	0.0000	SURCHARGED
15 minute winter	S2	12	97.124	0.294	28.0	0.0831	0.0000	SURCHARGED
15 minute winter	S3	13	96.835	0.335	26.7	0.3787	0.0000	SURCHARGED
15 minute winter	Headwall	13	93.632	0.132	21.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S1	1.000	S2	28.0	1.733	0.991	0.8195	
15 minute winter	S2	1.001	S3	26.7	1.702	0.939	0.2289	
15 minute winter	S3	1.002	Headwall	21.3	1.264	1.072	4.0873	13.2

Results for 100 year Critical Storm Duration. Lowest mass balance: 95.78%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute winter	S1	11	98.635	0.635	38.5	1.8218	0.0000	FLOOD RISK
15 minute winter	S2	14	97.406	0.576	29.0	0.1629	0.0000	SURCHARGED
15 minute winter	S3	15	97.133	0.633	27.0	0.7164	0.0000	SURCHARGED
15 minute winter	Headwall	15	93.634	0.134	22.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute winter	S1	1.000	S2	29.0	1.730	1.026	0.8195	
15 minute winter	S2	1.001	S3	27.0	1.722	0.949	0.2289	
15 minute winter	S3	1.002	Headwall	22.1	1.260	1.110	4.1031	17.5