

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	5	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)	18.200	Minimum Backdrop Height (m)	0.200
Ratio-R	0.403	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.003	33.600	1350	32.726	45.227	0.600
2	0.006	33.600	1350	32.962	58.609	0.947
3		33.600	1350	39.745	60.287	1.118
4		33.600	1350	45.210	59.024	1.230

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Rain (mm/hr)
1.000	1	2	13.384	0.600	33.000	32.653	0.347	38.6	100	50.0
1.001	2	3	6.987	0.600	32.653	32.482	0.171	40.9	100	50.0
1.002	3	4	5.609	0.600	32.482	32.370	0.112	50.0	100	50.0

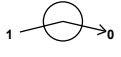
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.245	9.8	0.4	0.500	0.847	0.003	0.0	13	0.576
1.001	1.209	9.5	1.2	0.847	1.018	0.009	0.0	24	0.822
1.002	1.092	8.6	1.2	1.018	1.130	0.009	0.0	25	0.770

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	13.384	38.6	100	Circular	33.600	33.000	0.500	33.600	32.653	0.847
1.001	6.987	40.9	100	Circular	33.600	32.653	0.847	33.600	32.482	1.018
1.002	5.609	50.0	100	Circular	33.600	32.482	1.018	33.600	32.370	1.130

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1350	Manhole	Adoptable	2	1350	Manhole	Adoptable
1.001	2	1350	Manhole	Adoptable	3	1350	Manhole	Adoptable
1.002	3	1350	Manhole	Adoptable	4	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	32.726	45.227	33.600	0.600	1350				
						0	1.000	33.000	100
2	32.962	58.609	33.600	0.947	1350		1	1.000	32.653
						0	1.001	32.653	100
3	39.745	60.287	33.600	1.118	1350		1	1.001	32.482
						0	1.002	32.482	100
4	45.210	59.024	33.600	1.230	1350		1	1.002	32.370

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)	18.200	Additional Storage (m³/ha)	0.0
Ratio-R	0.403	Starting Level (m)	
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
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	35	0	0
100	45	0	0

Node 3 Online Orifice Control

Flap Valve	x	Design Depth (m)	1.000	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	2.2		
Invert Level (m)	32.482	Diameter (m)	0.032		

Node 3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	32.488
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	17

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	3.8	3.8	0.400	3.8	6.6	0.401	0.0	6.6

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
15 minute winter	1	12	33.012	0.012	0.3	0.0173	0.0000	OK
15 minute summer	2	10	32.676	0.023	1.1	0.0324	0.0000	OK
30 minute winter	3	24	32.542	0.060	0.9	0.2912	0.0000	OK
15 minute summer	4	1	32.370	0.000	0.4	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	0.3	0.351	0.031	0.0124	
15 minute summer	2	1.001	3	1.1	0.761	0.112	0.0178	
30 minute winter	3	Orifice	4	0.4				0.7

Results for 30 year +35% 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
15 minute winter	1	11	33.023	0.023	1.1	0.0325	0.0000	OK
30 minute winter	2	25	32.708	0.055	2.9	0.0781	0.0000	OK
30 minute winter	3	25	32.707	0.225	2.9	1.1538	0.0000	SURCHARGED
15 minute summer	4	1	32.370	0.000	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	1.1	0.493	0.112	0.0306	
30 minute winter	2	1.001	3	2.9	0.710	0.305	0.0426	
30 minute winter	3	Orifice	4	1.0				2.3

Results for 100 year +45% 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
15 minute winter	1	10	33.027	0.027	1.6	0.0389	0.0000	OK
30 minute winter	2	25	32.799	0.146	4.0	0.2094	0.0000	SURCHARGED
30 minute winter	3	26	32.796	0.314	3.7	1.6210	0.0000	SURCHARGED
15 minute summer	4	1	32.370	0.000	1.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	1.6	0.527	0.160	0.0606	
30 minute winter	2	1.001	3	3.7	0.756	0.390	0.0547	
30 minute winter	3	Orifice	4	1.2				3.1