Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	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)	22.000	Minimum Backdrop Height (m)	1.200
Ratio-R	0.440	Preferred Cover Depth (m)	0.600
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Depth (m)
S1	0.020	5.00	56.000	450	0.550
S2	0.000	5.00	56.000	600	0.800
S3			55.600	600	0.575
S4	0.000		55.000	600	1.050
Outfall	0.000		55.000	10	1.083

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	20.000	0.600	55.450	55.200	0.250	80.0	150	5.30	50.0
1.001	S2	S3	10.000	0.600	55.200	55.100	0.100	100.0	150	5.46	50.0
1.002	S3	S4	215.000	0.600	55.025	53.950	1.075	200.0	225	9.35	46.2
1.003	S4	Outfall	5.000	0.600	53.950	53.917	0.033	150.0	225	9.43	46.0

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	1.125	19.9	2.7	0.400	0.650	0.020	0.0	37	0.787
1.001	1.005	17.8	2.7	0.650	0.350	0.020	0.0	40	0.727
1.002	0.921	36.6	2.5	0.350	0.825	0.020	0.0	40	0.531
1.003	1.065	42.3	2.5	0.825	0.858	0.020	0.0	36	0.582

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	22.000	Drain Down Time (mins)	240
Ratio-R	0.440	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 %)
100	40	0	0

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Node S4 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.400	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	1.5		
Invert Level (m)	53.950	Diameter (m)	0.034		

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Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	10	55.548	0.098	14.4	0.0871	0.0000	OK
15 minute winter	S2	10	55.310	0.110	14.2	0.0311	0.0000	OK
15 minute winter	S3	12	55.118	0.093	14.0	0.0263	0.0000	OK
60 minute winter	S4	55	54.372	0.422	7.0	0.1194	0.0000	SURCHARGED
15 minute summer	Outfall	1	53.917	0.000	1.1	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	S1	1.000	S2	14.2	1.092	0.717	0.2604	
15 minute winter	S2	1.001	S3	14.0	1.066	0.791	0.1316	
15 minute winter	S3	1.002	S4	13.4	0.875	0.365	5.2799	
60 minute winter	S4	Orifice	Outfall	1.5				10.6

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