



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	6.00
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)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	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)
1	0.143	5.00	140.100	2100	2.440
2			140.100	2100	2.500
3			140.000	1200	2.433

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	1	2	14.500	0.600	137.660	137.600	0.060	241.7	1500	5.09	50.0
1.001	2	3	5.000	0.600	137.600	137.567	0.033	150.0	225	5.17	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	2.754	4867.5	25.8	0.940	1.000	0.143	0.0	76	0.768
1.001	1.065	42.3	25.8	2.275	2.208	0.143	0.0	127	1.116

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)	0.0
Ratio-R	0.400	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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	40	0	0
100	40	0	0

Node 2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	137.600	Product Number	CTL-SHE-0158-1400-1800-1400
Design Depth (m)	1.800	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	14.0	Min Node Diameter (mm)	1500

Results for 2 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	13	137.936	0.276	26.0	0.9568	0.0000	OK
15 minute winter	2	14	137.936	0.336	20.4	1.1638	0.0000	SURCHARGED
15 minute winter	3	14	137.651	0.084	12.7	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	20.4	0.459	0.004	3.7160	
15 minute winter	2	1.001	3	12.7	0.875	0.300	0.0727	11.9

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	1	24	138.254	0.594	38.0	2.0580	0.0000	OK
30 minute winter	2	24	138.253	0.653	27.5	2.2635	0.0000	SURCHARGED
30 minute winter	3	28	137.656	0.089	14.0	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)
30 minute winter	1	1.000	2	27.5	0.466	0.006	10.0424	
30 minute winter	2	1.001	3	14.0	0.897	0.331	0.0780	29.7

Results for 30 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
30 minute winter	1	26	138.592	0.932	53.2	3.2297	0.0000	OK
30 minute winter	2	26	138.593	0.992	38.9	3.4380	0.0000	SURCHARGED
15 minute summer	3	11	137.656	0.089	14.0	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)
30 minute winter	1	1.000	2	38.9	0.485	0.008	17.3063	
30 minute winter	2	1.001	3	14.0	0.897	0.331	0.0780	41.6

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
30 minute winter	1	29	139.119	1.459	69.7	5.0553	0.0000	OK
30 minute winter	2	29	139.119	1.519	44.0	5.2631	0.0000	SURCHARGED
30 minute winter	3	61	137.656	0.089	14.0	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)
30 minute winter	1	1.000	2	44.0	0.491	0.009	25.4331	
30 minute winter	2	1.001	3	14.0	0.897	0.331	0.0781	54.4