

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	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	0.344	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	8.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.006	126.850	1200	45.697	54.829	1.751
2	0.010	126.350	1200	14.576	52.773	1.354
3		126.180	1200	-1.382	59.854	1.270

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	31.189	0.600	125.099	124.996	0.103	302.8	375	50.0
1.001	2	3	17.458	0.600	124.996	124.910	0.086	203.0	150	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	1.036	114.4	0.8	1.376	0.979	0.006	0.0	22	0.294
1.001	0.701	12.4	2.1	1.204	1.120	0.016	0.0	42	0.524

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	31.189	302.8	375	Circular	126.850	125.099	1.376	126.350	124.996	0.979
1.001	17.458	203.0	150	Circular	126.350	124.996	1.204	126.180	124.910	1.120

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1200	Manhole	Private	2	1200	Manhole	Private
1.001	2	1200	Manhole	Private	3	1200	Manhole	Private

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
1	45.697	54.829	126.850	1.751	1200					
						0	1.000	125.099	375	
2	14.576	52.773	126.350	1.354	1200		1	1.000	124.996	375
						0	1.001	124.996	150	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
3	-1.382	59.854	126.180	1.270	1200	1	1.001	124.910	150



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	0.344	Starting Level (m)	
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	1.000	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	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)	124.996	Product Number	CTL-SHE-0047-9000-0800-9000
Design Depth (m)	0.800	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.9	Min Node Diameter (mm)	1200

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 summer	1	25	125.137	0.037	0.7	0.0424	0.0000	OK
30 minute summer	2	26	125.137	0.141	2.0	0.1591	0.0000	OK
30 minute summer	3	26	124.935	0.025	0.8	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 summer	1	1.000	2	0.8	0.076	0.007	0.6747	
30 minute summer	2	1.001	3	0.8	0.398	0.063	0.0340	1.6

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
60 minute summer	1	57	125.447	0.347	3.2	0.3930	0.0000	OK
60 minute summer	2	57	125.447	0.451	3.8	0.5097	0.0000	SURCHARGED
480 minute summer	3	264	124.935	0.025	0.8	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)
60 minute summer	1	1.000	2	-1.2	0.096	-0.010	3.3828	
60 minute summer	2	1.001	3	0.8	0.404	0.066	0.0354	6.6

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
60 minute winter	1	58	126.243	1.144	4.4	1.2937	0.0000	SURCHARGED
60 minute winter	2	58	126.243	1.247	3.8	1.4102	0.0000	FLOOD RISK
60 minute winter	3	58	124.939	0.029	1.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	1	1.000	2	-2.4	0.067	-0.021	3.4401	
60 minute winter	2	1.001	3	1.1	0.438	0.088	0.0434	8.9