

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 Inverts
M5-60 (mm)	19.100	Minimum Backdrop Height (m)	0.200
Ratio-R	0.360	Preferred Cover Depth (m)	0.900
CV	0.950	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)	Easting (m)	Northing (m)	Depth (m)
S1	0.001	5.00	106.650	450	433550.223	210434.976	1.000
S2	0.000		106.770	450	433546.419	210440.482	1.233
S3	0.000		106.780		433545.472	210440.805	1.260

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	6.692	0.600	105.650	105.537	0.113	59.2	100	5.11	49.1
1.001	S2	S3	1.001	0.600	105.537	105.520	0.017	58.9	100	5.13	49.1

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	1.003	7.9	0.2	0.900	1.133	0.001	0.0	11	0.405
1.001	1.006	7.9	0.2	1.133	1.160	0.001	0.0	11	0.406

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	6.692	59.2	100	Circular	106.650	105.650	0.900	106.770	105.537	1.133
1.001	1.001	58.9	100	Circular	106.770	105.537	1.133	106.780	105.520	1.160

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	450	Manhole	Adoptable	S2	450	Manhole	Adoptable
1.001	S2	450	Manhole	Adoptable	S3		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1	433550.223	210434.976	106.650	1.000	450		0	1.000	105.650	100
S2	433546.419	210440.482	106.770	1.233	450		1	1.000	105.537	100
							0	1.001	105.537	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S3	433545.472	210440.805	106.780	1.260		1	1.001	105.520	100


Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	2880
M5-60 (mm)	19.100	Additional Storage (m³/ha)	0.0
Ratio-R	0.360	Starting Level (m)	
Summer CV	0.950	Check Discharge Rate(s)	x
Winter CV	0.950	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 %)
1	0	0	0
30	0	0	0
100	40	0	0

Node S3 Depth/Area Storage Structure

BRE-365: Volume (m³)	1.330	Base Inf Coefficient (m/hr)	0.09137	Invert Level (m)	105.520
BRE-365: Area (m²)	5.990	Side Inf Coefficient (m/hr)	0.30458	Time to half empty (mins)	82
BRE-365: Time (hrs)	0.729	Safety Factor	2.0		
BRE-365: Inf Coef (m/hr)	0.30458	Porosity	1.00		

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	0.5	0.5	0.400	0.5	1.5

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 (m ³)	Flood (m ³)	Status
15 minute summer	S1	10	105.660	0.010	0.2	0.0016	0.0000	OK
60 minute winter	S2	45	105.569	0.032	0.2	0.0050	0.0000	OK
60 minute winter	S3	49	105.569	0.049	0.1	0.0243	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)
15 minute summer	S1	1.000	S2	0.1	0.448	0.019	0.0026
60 minute winter	S2	1.001	S3	-0.1	0.455	-0.017	0.0029
60 minute winter	S3	Infiltration		0.0			

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
15 minute summer	S1	10	105.666	0.015	0.4	0.0025	0.0000	OK
240 minute winter	S2	152	105.650	0.113	0.2	0.0180	0.0000	SURCHARGED
240 minute winter	S3	152	105.650	0.130	0.2	0.0650	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	S1	1.000	S2	0.4	0.513	0.051	0.0170
240 minute winter	S2	1.001	S3	0.2	0.178	0.030	0.0078
240 minute winter	S3	Infiltration		0.0			

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 (m ³)	Flood (m ³)	Status
600 minute winter	S1	375	105.743	0.093	0.1	0.0147	0.0000	OK
600 minute winter	S2	375	105.743	0.206	0.2	0.0327	0.0000	SURCHARGED
600 minute winter	S3	375	105.743	0.223	0.1	0.1113	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)
600 minute winter	S1	1.000	S2	0.1	0.339	0.013	0.0515
600 minute winter	S2	1.001	S3	-0.1	0.027	-0.008	0.0078
600 minute winter	S3	Infiltration		0.0			