

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)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.300	Preferred Cover Depth (m)	0.500
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)	Easting (m)	Northing (m)	Depth (m)
9	0.003	5.00	71.780	225	2336007.446	3355413.523	0.600
10	0.004	5.00	71.780	450	2336011.468	3355406.159	0.800
5	0.001	5.00	71.420	225	2336034.977	3355411.687	0.370
6	0.005	5.00	71.420	225	2336030.350	3355409.860	0.470
7	0.004	5.00	71.780	225	2336021.481	3355405.708	0.600
8	0.002	5.00	71.420	450	2336018.782	3355411.213	0.620
11	0.003	5.00	71.420	450	2336015.396	3355418.893	0.770
12 - Water Harvesting Tank			71.420	450	2336017.273	3355419.959	0.820
13 - Soakaway			71.420		2336021.696	3355417.850	1.300

Pipeline Schedule

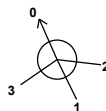
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.000	8.391	42.0	100	Circular	71.780	71.180	0.500	71.780	70.980	0.700
3.001	8.890	49.4	100	Circular	71.780	70.980	0.700	71.420	70.800	0.520
1.000	4.975	49.7	100	Circular	71.420	71.050	0.270	71.420	70.950	0.370
1.001	11.647	77.6	100	Circular	71.420	70.950	0.370	71.420	70.800	0.520
2.000	6.131	16.1	100	Circular	71.780	71.180	0.500	71.420	70.800	0.520
1.002	8.393	56.0	100	Circular	71.420	70.800	0.520	71.420	70.650	0.670
1.003	2.159	43.2	100	Circular	71.420	70.650	0.670	71.420	70.600	0.720
1.004	4.900	10.2	100	Circular	71.420	70.600	0.720	71.420	70.120	1.200

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.000	9	225	Manhole	Adoptable	10	450	Manhole	Adoptable
3.001	10	450	Manhole	Adoptable	8	450	Manhole	Adoptable
1.000	5	225	Manhole	Adoptable	6	225	Manhole	Adoptable
1.001	6	225	Manhole	Adoptable	8	450	Manhole	Adoptable
2.000	7	225	Manhole	Adoptable	8	450	Manhole	Adoptable
1.002	8	450	Manhole	Adoptable	11	450	Manhole	Adoptable
1.003	11	450	Manhole	Adoptable	12 - Water Harvesting Tank	450	Manhole	Adoptable
1.004	12 - Water Harvesting Tank	450	Manhole	Adoptable	13 - Soakaway		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
9	2336007.446	3355413.523	71.780	0.600	225		0	3.000	71.180	100
10	2336011.468	3355406.159	71.780	0.800	450		1	3.000	70.980	100
							0	3.001	70.980	100

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
5	2336034.977	3355411.687	71.420	0.370	225		0	1.000	71.050	100
6	2336030.350	3355409.860	71.420	0.470	225		1	1.000	70.950	100
							0	1.001	70.950	100
7	2336021.481	3355405.708	71.780	0.600	225		0	2.000	71.180	100
8	2336018.782	3355411.213	71.420	0.620	450		1	2.000	70.800	100
							2	1.001	70.800	100
							3	3.001	70.800	100
							0	1.002	70.800	100
11	2336015.396	3355418.893	71.420	0.770	450		1	1.002	70.650	100
							0	1.003	70.650	100
12 - Water Harvesting Tank	2336017.273	3355419.959	71.420	0.820	450		1	1.003	70.600	100
							0	1.004	70.600	100
13 - Soakaway	2336021.696	3355417.850	71.420	1.300			1	1.004	70.120	100

Simulation Settings

Rainfall Methodology	FSR	Summer CV	0.750	Drain Down Time (mins)	240
FSR Region	England and Wales	Winter CV	0.840	Additional Storage (m³/ha)	20.0
M5-60 (mm)	17.000	Analysis Speed	Normal	Check Discharge Rate(s)	x
Ratio-R	0.300	Skip Steady State	x	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	30	10	0

Node 13 - Soakaway Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.24545	Porosity	0.95	Pit Width (m)	2.500	Inf Depth (m)	
Side Inf Coefficient (m/hr)	0.24545	Invert Level (m)	69.770	Pit Length (m)	3.500	Number Required	1
Safety Factor	2.0	Time to half empty (mins)	73	Depth (m)	0.400		

Results for 100 year +30% CC +10% A Critical Storm Duration. Lowest mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	9	176	71.420	0.240	0.4	0.0359	0.0000	SURCHARGED
180 minute winter	10	176	71.420	0.440	1.0	0.1182	0.0000	SURCHARGED
180 minute winter	5	176	71.419	0.369	0.4	0.0366	0.0000	FLOOD RISK
180 minute winter	6	176	71.419	0.469	0.8	0.1286	0.0000	FLOOD RISK
180 minute winter	7	176	71.419	0.239	0.6	0.0445	0.0000	SURCHARGED
180 minute winter	8	176	71.419	0.619	2.7	0.1425	0.0000	FLOOD RISK
180 minute winter	11	176	71.419	0.769	3.1	0.1884	0.0000	FLOOD RISK
180 minute winter	12 - Water Harvesting Tank	176	71.419	0.819	2.9	0.1302	0.0000	FLOOD RISK
180 minute winter	13 - Soakaway	176	71.418	1.298	2.9	3.3294	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
180 minute winter	9	3.000	10	0.4	0.419	0.043	0.0657
180 minute winter	10	3.001	8	1.0	0.475	0.116	0.0696
180 minute winter	5	1.000	6	-0.3	0.188	-0.031	0.0389
180 minute winter	6	1.001	8	0.8	0.386	0.117	0.0911
180 minute winter	7	2.000	8	0.6	0.396	0.040	0.0480
180 minute winter	8	1.002	11	2.7	0.804	0.329	0.0657
180 minute winter	11	1.003	12 - Water Harvesting Tank	2.9	1.159	0.309	0.0169
180 minute winter	12 - Water Harvesting Tank	1.004	13 - Soakaway	2.9	1.637	0.149	0.0383
180 minute winter	13 - Soakaway	Infiltration		0.5			