

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	0.470	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	4.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SWMH1	0.046	4.00	73.300	1500	408509.181	379569.504	1.500
SWMH2	0.046	4.00	73.300	1500	408464.758	379565.503	1.844
SWMH3	0.046	4.00	73.300	1500	408464.758	379607.048	1.300
SWMH4	0.046	4.00	73.300	1500	408464.758	379589.914	2.048
Petrol			73.300		408473.071	379589.913	2.110
SWMH5			73.300	1500	408479.773	379589.909	2.205
ATT			73.300		408486.440	379589.902	2.300
SWMH6			73.300	1500	408497.528	379589.885	3.100
OUTLET			71.000		408554.727	379589.882	1.000

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)
1.001	SWMH1	SWMH2	44.603	0.600	71.800	71.456	0.344	129.7	150	4.84	50.0
1.002	SWMH2	SWMH4	24.411	0.600	71.456	71.252	0.204	119.7	225	5.18	50.0
1.003	SWMH3	SWMH4	17.134	0.600	72.000	71.252	0.748	22.9	150	4.14	50.0
1.004	SWMH4	Petrol	8.313	0.600	71.252	71.190	0.062	134.1	225	5.31	50.0
1.005	Petrol	SWMH5	6.702	0.600	71.190	71.095	0.095	70.5	225	5.38	50.0
1.006	SWMH5	ATT	6.667	0.600	71.095	71.000	0.095	70.2	225	5.45	50.0
1.007	ATT	SWMH6	11.088	0.600	71.000	70.900	0.100	110.9	225	5.60	50.0
1.008	SWMH6	OUTLET	57.199	0.600	70.200	70.000	0.200	286.0	225	6.84	50.0

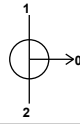
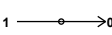
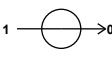
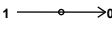
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.001	0.881	15.6	6.2	1.350	1.694	0.046	0.0	66	0.832
1.002	1.194	47.5	12.5	1.619	1.823	0.092	0.0	79	1.011
1.003	2.113	37.3	6.2	1.150	1.898	0.046	0.0	41	1.571
1.004	1.127	44.8	24.9	1.823	1.885	0.184	0.0	120	1.156
1.005	1.559	62.0	24.9	1.885	1.980	0.184	0.0	99	1.474
1.006	1.563	62.1	24.9	1.980	2.075	0.184	0.0	99	1.478
1.007	1.241	49.3	24.9	2.075	2.175	0.184	0.0	113	1.243
1.008	0.768	30.5	24.9	2.875	0.775	0.184	0.0	155	0.854

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)
1.001	44.603	129.7	150	Circular_Default Sewer Type	73.300	71.800	1.350	73.300	71.456	1.694
1.002	24.411	119.7	225	Circular_Default Sewer Type	73.300	71.456	1.619	73.300	71.252	1.823
1.003	17.134	22.9	150	Circular_Default Sewer Type	73.300	72.000	1.150	73.300	71.252	1.898
1.004	8.313	134.1	225	Circular_Default Sewer Type	73.300	71.252	1.823	73.300	71.190	1.885
1.005	6.702	70.5	225	Circular_Default Sewer Type	73.300	71.190	1.885	73.300	71.095	1.980
1.006	6.667	70.2	225	Circular_Default Sewer Type	73.300	71.095	1.980	73.300	71.000	2.075
1.007	11.088	110.9	225	Circular_Default Sewer Type	73.300	71.000	2.075	73.300	70.900	2.175
1.008	57.199	286.0	225	Circular_Default Sewer Type	73.300	70.200	2.875	71.000	70.000	0.775

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.001	SWMH1	1500	Manhole	Adoptable	SWMH2	1500	Manhole	Adoptable
1.002	SWMH2	1500	Manhole	Adoptable	SWMH4	1500	Manhole	Adoptable
1.003	SWMH3	1500	Manhole	Adoptable	SWMH4	1500	Manhole	Adoptable
1.004	SWMH4	1500	Manhole	Adoptable	Petrol		Junction	
1.005	Petrol		Junction		SWMH5	1500	Manhole	Adoptable
1.006	SWMH5	1500	Manhole	Adoptable	ATT		Junction	
1.007	ATT		Junction		SWMH6	1500	Manhole	Adoptable
1.008	SWMH6	1500	Manhole	Adoptable	OUTLET		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWMH1	408509.181	379569.504	73.300	1.500	1500				
						0	1.001	71.800	150
SWMH2	408464.758	379565.503	73.300	1.844	1500				
						0	1.002	71.456	150
									225
SWMH3	408464.758	379607.048	73.300	1.300	1500				
						0	1.003	72.000	150
SWMH4	408464.758	379589.914	73.300	2.048	1500				
						1	1.003	71.252	150
						2	1.002	71.252	225
						0	1.004	71.252	225
Petrol	408473.071	379589.913	73.300	2.110					
						1	1.004	71.190	225
						0	1.005	71.190	225
SWMH5	408479.773	379589.909	73.300	2.205	1500				
						1	1.005	71.095	225
						0	1.006	71.095	225
ATT	408486.440	379589.902	73.300	2.300					
						1	1.006	71.000	225
						0	1.007	71.000	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
SWMH6	408497.528	379589.885	73.300	3.100	1500	1  0	1	1.007	70.900	225
						0  1	1.008	70.200	225	
OUTLET	408554.727	379589.882	71.000	1.000		1 	1	1.008	70.000	225

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 (m ³ /ha)	20.0
Ratio-R	0.470	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 %)
1	0	0	0
2	0	0	0
30	0	0	0
100	40	0	0

Node SWMH6 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	70.200	Product Number	CTL-SHE-0098-7000-3100-7000
Design Depth (m)	3.100	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.0	Min Node Diameter (mm)	1200

Node ATT Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	71.000	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	1.200
Safety Factor	2.0	Width (m)	10.000	Inf Depth (m)	
Porosity	0.95	Length (m)	3.500		