

**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)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	x
Time of Entry (mins)	5.00	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)
EX.IC01	0.022	5.00	11.500	600	1873687.952	-215932.244	0.700
EX.IC02	0.015	5.00	11.480	600	1873686.779	-215960.954	0.967
EX.IC03	0.146	5.00	11.100	600	1873685.842	-215992.049	0.898
IC04			11.150	600	1873692.877	-216019.300	1.250
Basin Inlet			11.300		1873715.268	-216037.046	1.527
Basin outlet			11.300		1873714.959	-216049.326	1.505
IC05 Existing			11.150	600	1873683.089	-216053.829	1.498
Ex. Outfall			10.490		1873682.205	-216066.557	0.966
6 Swale		5.00	11.300	1200	1873717.843	-216034.627	1.564
7 Swale			11.300		1873719.676	-216033.369	1.565
8 Swale			11.300		1873721.802	-216032.718	1.566
9 Swale			11.300		1873723.587	-216032.860	1.567
10 Swale			11.300		1873725.136	-216033.759	1.567
11 Swale			11.300		1873725.830	-216034.975	1.568
12 Swale		5.00	11.300		1873725.101	-216037.230	1.500
13 Swale			11.300		1873722.729	-216038.703	1.501
14 Swale			11.300		1873719.996	-216039.277	1.502
15 Swale			11.300		1873717.972	-216040.119	1.503
16 Swale			11.300		1873717.120	-216041.511	1.504
17 Swale			11.300		1873717.019	-216043.112	1.504
18 Swale			11.300		1873717.027	-216044.136	1.505
19 Swale			11.300		1873716.501	-216046.937	1.505

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	EX.IC01	EX.IC02	28.734	0.600	10.800	10.513	0.287	100.1	100	5.62	50.0
1.001	EX.IC02	EX.IC03	31.109	0.600	10.513	10.202	0.311	100.0	150	6.14	49.8
1.002	EX.IC03	IC04	28.144	0.600	10.202	9.900	0.302	93.2	300	6.43	48.7
1.003	IC04	Basin Inlet	28.571	0.600	9.900	9.773	0.127	225.0	300	6.88	47.1
3.000	6 Swale	7 Swale	2.223	0.600	9.736	9.735	0.001	2000.0	300	5.11	50.0

US Depth (m)	DS Depth (m)	Σ Area (ha)
0.600	0.867	0.022
0.817	0.748	0.037
0.598	0.950	0.183
0.950	1.227	0.183
1.264	1.265	0.000

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)
3.001	7 Swale	8 Swale	2.223	0.600	9.735	9.734	0.001	2000.0	300	5.22	50.0
1.004	5	6	3.297	0.012	9.756	9.736	0.020	164.9	300	6.93	40.8
1.010	11	12	3.669	0.012	9.729	9.727	0.002	1834.5	300	5.62	43.7
2.008	Basin outlet	IC05 Existing	32.187	0.600	9.795	9.652	0.143	225.1	100	6.71	47.7
3.002	8 Swale	9 Swale	1.791	0.600	9.734	9.733	0.001	2000.0	300	5.31	50.0
3.003	9 Swale	10 Swale	1.000	0.600	9.733	9.733	0.000	2000.0	300	5.36	50.0
3.004	10 Swale	11 Swale	1.400	0.600	9.733	9.732	0.001	2000.0	300	5.43	50.0
2.009	IC05 Existing	Ex. Outfall	12.759	0.600	9.652	9.524	0.128	99.7	100	6.98	46.8
2.000	12 Swale	13 Swale	2.792	0.600	9.800	9.799	0.001	2000.0	300	5.14	50.0
2.001	13 Swale	14 Swale	2.793	0.600	9.799	9.798	0.001	2000.0	300	5.27	50.0
2.002	14 Swale	15 Swale	2.192	0.600	9.798	9.797	0.001	2000.0	300	5.38	50.0
2.003	15 Swale	16 Swale	1.632	0.600	9.797	9.796	0.001	2000.0	300	5.46	50.0
2.004	16 Swale	17 Swale	1.000	0.600	9.796	9.796	0.000	2000.0	300	5.51	50.0
2.005	17 Swale	18 Swale	1.024	0.600	9.796	9.795	0.001	2000.0	300	5.56	50.0
2.006	18 Swale	19 Swale	1.000	0.600	9.795	9.795	0.000	2000.0	300	5.60	50.0
2.007	19 Swale	Basin outlet	1.000	0.600	9.795	9.795	0.000	2000.0	300	5.65	50.0

US Depth (m)	DS Depth (m)	Σ Area (ha)
1.265	1.266	0.000

1.405	1.398	0.000
1.266	1.267	0.000
1.267	1.267	0.000
1.267	1.268	0.000
1.398	0.866	0.000
1.200	1.201	0.000
1.201	1.202	0.000
1.202	1.203	0.000
1.203	1.204	0.000
1.204	1.204	0.000
1.204	1.205	0.000
1.205	1.205	0.000
1.205	1.205	0.000

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	✓	Check Discharge Rate(s)	x
Rainfall Events	Singular	Drain Down Time (mins)	10080	Check Discharge Volume	x
Summer CV	1.000	Additional Storage (m³/ha)	0.0		
Analysis Speed	Detailed	Starting Level (m)	10.450		

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	



Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	25	0	0

Node IC05 Existing Online Orifice Control

Flap Valve	x	Design Depth (m)	0.800	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	0.1		
Invert Level (m)	9.652	Diameter (m)	0.025		

Node 6 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	25.4	0.0	1.250	55.8	0.0

Node 7 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	17.1	0.0	1.250	37.6	0.0

Node 8 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	17.1	0.0	1.250	37.6	0.0

Node 9 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	13.8	0.0	1.250	30.3	0.0

Node 10 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.7	0.0	1.250	16.9	0.0

**Node 11 Swale Depth/Area Storage Structure**

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	10.8	0.0	1.250	23.7	0.0

Node 12 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	28.3	0.0	1.250	62.0	0.0

Node 13 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	21.5	0.0	1.250	47.2	0.0

Node 14 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	21.5	0.0	1.250	47.2	0.0

Node 15 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	16.9	0.0	1.250	37.1	0.0

Node 16 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	12.6	0.0	1.250	27.6	0.0

**Node 17 Swale Depth/Area Storage Structure**

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.7	0.0	1.250	16.9	0.0

Node 18 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.9	0.0	1.250	17.3	0.0

Node 19 Swale Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.7	0.0	1.250	16.9	0.0

Node IC04 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	10.795	Slope (1:X)	1000.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.225
Safety Factor	1.5	Width (m)	14.800	Inf Depth (m)	
Porosity	0.30	Length (m)	50.000		

Node Basin outlet Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.050
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.7	0.0	1.250	16.9	0.0