

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Depth (m)	Invert Level (m)
S2	0.007	5.00	65.650	0.650	65.000
S3			64.100	0.900	63.200
RE1	0.008	5.00	66.000	0.600	65.400
S1			64.100	0.900	63.200
S4			64.100	1.200	62.900
Raingarden	0.001		63.800	0.625	63.175

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)
2.000	S2	S3	9.100	0.600	65.000	63.500	1.500	6.1	100	Circular	5.05
2.001	S3	S4	7.250	0.600	63.500	63.200	0.300	24.2	100	Circular	5.12
1.000	RE1	S1	16.200	0.600	65.400	63.500	1.900	8.5	100	Circular	5.10
1.001	S1	S4	7.250	0.600	63.500	63.200	0.300	24.2	100	Circular	5.18
1.002	S4	Raingarden	2.000	0.600	63.200	63.175	0.025	80.0	100	Circular	5.22

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	3.159	24.8	1.8	0.550	0.500	0.007	18	1.841
2.001	1.577	12.4	1.8	0.500	0.800	0.007	26	1.133
1.000	2.663	20.9	2.1	0.500	0.500	0.008	21	1.707
1.001	1.577	12.4	2.1	0.500	0.800	0.008	28	1.171
1.002	0.861	6.8	3.9	0.800	0.525	0.015	55	0.895

Simulation Settings

Rainfall Methodology	FSR	Summer CV	1.000	Additional Storage (m ³ /ha)	0.0
Rainfall Events	Singular	Winter CV	1.000	Starting Level (m)	
FSR Region	England and Wales	Analysis Speed	Normal	Check Discharge Rate(s)	x
M5-60 (mm)	20.000	Skip Steady State	x	Check Discharge Volume	x
Ratio-R	0.343	Drain Down Time (mins)	2880		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440 | 2160 | 2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0	100	45	0	0
30	40	0	0				

Node S4 Online Orifice Control

Flap Valve	x	Replaces Downstream Link	x	Diameter (m)	0.011
Downstream Link	1.002	Invert Level (m)	63.200	Discharge Coefficient	0.600

Node S4 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	63.200
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	1785

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	29.0	29.0	0.450	29.0	37.6	0.460	0.0	37.6

Node Raingarden Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.03100	Safety Factor	2.0	Invert Level (m)	62.700
Side Inf Coefficient (m/hr)	0.03100	Porosity	0.30	Time to half empty (mins)	316



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File: 14270_Flow Calcs_Amended Design.pfd
Network: Storm Network
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14270 - 34 Hurst Road
Network Calcs
Amended Design

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	8.6	8.6	0.500	8.6	13.8	1.000	8.6	19.0	1.100	8.6	20.0

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
15 minute summer	S2	10	65.015	0.015	1.2	0.0024	0.0000	OK
15 minute summer	S3	10	63.523	0.023	1.2	0.0044	0.0000	OK
15 minute summer	RE1	10	65.418	0.018	1.4	0.0004	0.0000	OK
15 minute summer	S1	10	63.525	0.025	1.4	0.0039	0.0000	OK
1440 minute winter	S4	930	63.315	0.115	0.2	3.1927	0.0000	SURCHARGED
1440 minute winter	Raingarden	1380	63.104	-0.071	0.1	1.0432	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	S2	2.000	S3	1.2	1.196	0.048	0.0093
15 minute summer	S3	2.001	S4	1.2	1.250	0.096	0.0106
15 minute summer	RE1	1.000	S1	1.4	1.174	0.066	0.0197
15 minute summer	S1	1.001	S4	1.4	1.335	0.112	0.0107
1440 minute winter	S4	1.002	Raingarden	0.1	0.291	0.012	0.0006
1440 minute winter	Raingarden	Infiltration		0.1			

Results for 30 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
15 minute summer	S2	10	65.028	0.028	4.1	0.0044	0.0000	OK
960 minute winter	S3	900	63.567	0.067	0.3	0.0131	0.0000	OK
15 minute summer	RE1	10	65.432	0.032	4.7	0.0008	0.0000	OK
960 minute winter	S1	900	63.567	0.067	0.3	0.0106	0.0000	OK
960 minute winter	S4	900	63.567	0.367	0.6	10.1776	0.0000	SURCHARGED
960 minute winter	Raingarden	1080	63.461	0.286	0.1	1.9628	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	S2	2.000	S3	4.1	1.774	0.164	0.0210
960 minute winter	S3	2.001	S4	0.3	0.280	0.024	0.0486
15 minute summer	RE1	1.000	S1	4.7	1.742	0.224	0.0436
960 minute winter	S1	1.001	S4	0.3	0.784	0.024	0.0485
960 minute winter	S4	1.002	Raingarden	0.1	0.340	0.021	0.0156
960 minute winter	Raingarden	Infiltration		0.1			

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S2	10	65.032	0.032	5.5	0.0051	0.0000	OK
960 minute summer	S3	945	64.055	0.555	0.6	0.1087	0.0000	FLOOD RISK
15 minute summer	RE1	10	65.438	0.038	6.3	0.0009	0.0000	OK
960 minute summer	S1	945	64.055	0.555	0.6	0.0882	0.0000	FLOOD RISK
960 minute summer	S4	945	64.055	0.855	1.2	12.7027	0.0000	FLOOD RISK
960 minute summer	Raingarden	1035	63.788	0.613	0.2	2.8081	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	S2	2.000	S3	5.5	1.918	0.221	0.0261
960 minute summer	S3	2.001	S4	0.6	0.425	0.048	0.0567
15 minute summer	RE1	1.000	S1	6.3	1.886	0.300	0.0540
960 minute summer	S1	1.001	S4	0.6	0.681	0.048	0.0567
960 minute summer	S4	1.002	Raingarden	0.1	0.333	0.020	0.0156
960 minute summer	Raingarden	Infiltration		0.1			