

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)	19.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.350	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
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)
S1	0.059	5.00	23.250	1350	450093.827	114842.484
S2	0.036	5.00	23.468	1350	450110.999	114839.588
S3	0.051	5.00	23.253	1500	450114.017	114857.481
S4	0.083	5.00	22.950	1500	450108.063	114893.786
S5	0.048	5.00	22.840	1500	450099.515	114904.651
S6	0.025	5.00	22.892	1500	450090.483	114911.573
S7	0.073	5.00	22.658	1500	450083.289	114903.961
S8	0.039	5.00	22.642	1500	450055.266	114904.669
S9			22.296	1500	450038.109	114901.388
S10	0.060	5.00	22.700	1500	450052.463	114851.229
S11			22.526	1500	450038.800	114852.251
S12			22.452	1500	450033.029	114872.897
S3032			22.286	3000	450006.729	114871.644

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	17.414	0.600	21.764	21.648	0.116	150.1	150	5.35	50.0
1.001	S2	S3	18.146	0.600	21.573	21.452	0.121	150.0	225	5.64	50.0
1.002	S3	S4	36.790	0.600	21.377	21.193	0.184	199.9	300	6.19	50.0
1.003	S4	S5	13.824	0.600	21.193	21.124	0.069	200.4	300	6.40	50.0
1.004	S5	S6	11.379	0.600	21.049	20.992	0.057	199.6	375	6.55	50.0
1.005	S6	S7	10.474	0.600	20.992	20.115	0.877	11.9	375	6.58	50.0
1.006	S7	S8	28.032	0.600	20.040	19.946	0.094	298.2	450	6.98	50.0
1.007	S8	S9	17.468	0.600	19.946	19.889	0.057	306.5	450	7.23	50.0
1.008	S9	S12	28.940	0.600	19.889	19.793	0.096	301.5	450	7.65	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)
1.000	0.818	14.4	10.7	1.336	1.670	0.059	0.0	96	0.893
1.001	1.065	42.4	17.2	1.670	1.576	0.095	0.0	100	1.011
1.002	1.108	78.3	26.4	1.576	1.457	0.146	0.0	120	1.003
1.003	1.107	78.2	41.4	1.457	1.416	0.229	0.0	155	1.121
1.004	1.278	141.2	50.1	1.416	1.525	0.277	0.0	154	1.174
1.005	5.267	581.7	54.6	1.525	2.168	0.302	0.0	77	3.347
1.006	1.172	186.4	67.8	2.168	2.246	0.375	0.0	188	1.083
1.007	1.156	183.8	74.8	2.246	1.957	0.414	0.0	200	1.099
1.008	1.165	185.3	74.8	1.957	2.209	0.414	0.0	198	1.104

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)
2.000	S10	S11	13.701	0.600	21.275	20.969	0.306	44.8	225	5.12	50.0
2.001	S11	S12	21.437	0.600	20.969	20.018	0.951	22.5	225	5.25	50.0
1.009	S12	S3032	26.330	0.600	19.793	19.705	0.088	299.2	450	8.02	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)
2.000	1.960	77.9	10.8	1.200	1.332	0.060	0.0	57	1.393
2.001	2.767	110.0	10.8	1.332	2.209	0.060	0.0	47	1.768
1.009	1.170	186.1	85.7	2.209	2.131	0.474	0.0	214	1.146

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Detailed
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	19.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.350	Starting Level (m)	
Summer CV	1.000	Check Discharge Rate(s)	x
Winter CV	1.000	Check Discharge Volume	x

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	21.856	0.092	9.6	0.1321	0.0000	OK
15 minute summer	S2	11	21.670	0.097	15.2	0.1384	0.0000	OK
15 minute summer	S3	11	21.487	0.110	23.2	0.1949	0.0000	OK
15 minute summer	S4	11	21.347	0.154	36.1	0.2716	0.0000	OK
15 minute summer	S5	11	21.195	0.146	43.5	0.2578	0.0000	OK
15 minute summer	S6	11	21.064	0.072	47.4	0.1266	0.0000	OK
15 minute summer	S7	11	20.226	0.186	58.7	0.3281	0.0000	OK
15 minute summer	S8	11	20.147	0.201	64.7	0.3557	0.0000	OK
15 minute summer	S9	12	20.083	0.194	63.9	0.3431	0.0000	OK
15 minute summer	S10	10	21.332	0.057	9.7	0.1006	0.0000	OK
15 minute summer	S11	10	21.015	0.046	9.6	0.0807	0.0000	OK
15 minute summer	S12	12	19.998	0.205	72.2	0.3627	0.0000	OK
15 minute summer	S3032	12	19.892	0.187	73.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	9.4	0.853	0.648	0.1917	
15 minute summer	S2	1.001	S3	15.1	0.956	0.356	0.2863	
15 minute summer	S3	1.002	S4	23.1	0.776	0.295	1.1001	
15 minute summer	S4	1.003	S5	36.1	1.047	0.461	0.4762	
15 minute summer	S5	1.004	S6	43.5	1.644	0.308	0.3088	
15 minute summer	S6	1.005	S7	47.4	2.560	0.082	0.2188	
15 minute summer	S7	1.006	S8	58.7	0.902	0.315	1.8260	
15 minute summer	S8	1.007	S9	63.9	0.956	0.348	1.1679	
15 minute summer	S9	1.008	S12	63.8	0.939	0.344	1.9655	
15 minute summer	S10	2.000	S11	9.6	1.418	0.124	0.0934	
15 minute summer	S11	2.001	S12	9.5	1.683	0.087	0.1213	
15 minute summer	S12	1.009	S3032	73.1	1.103	0.393	1.7442	33.2

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	22.101	0.337	23.4	0.4822	0.0000	SURCHARGED
15 minute summer	S2	11	21.747	0.174	36.2	0.2488	0.0000	OK
15 minute summer	S3	11	21.576	0.199	55.6	0.3522	0.0000	OK
15 minute summer	S4	11	21.493	0.300	86.8	0.5297	0.0000	OK
15 minute summer	S5	11	21.285	0.236	104.9	0.4163	0.0000	OK
15 minute summer	S6	11	21.103	0.111	114.4	0.1969	0.0000	OK
15 minute summer	S7	11	20.391	0.351	142.1	0.6211	0.0000	OK
15 minute summer	S8	11	20.320	0.374	155.8	0.6600	0.0000	OK
15 minute summer	S9	11	20.246	0.357	153.9	0.6305	0.0000	OK
15 minute summer	S10	10	21.368	0.093	23.8	0.1648	0.0000	OK
15 minute summer	S11	10	21.039	0.070	23.6	0.1243	0.0000	OK
15 minute summer	S12	12	20.149	0.356	174.5	0.6297	0.0000	OK
15 minute summer	S3032	12	20.000	0.295	174.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	22.6	1.283	1.562	0.2985	
15 minute summer	S2	1.001	S3	36.3	1.157	0.858	0.5696	
15 minute summer	S3	1.002	S4	55.3	0.899	0.707	2.2085	
15 minute summer	S4	1.003	S5	86.7	1.317	1.108	0.8862	
15 minute summer	S5	1.004	S6	104.9	2.105	0.743	0.5704	
15 minute summer	S6	1.005	S7	114.4	2.514	0.197	0.5996	
15 minute summer	S7	1.006	S8	141.0	1.046	0.756	3.8335	
15 minute summer	S8	1.007	S9	153.9	1.122	0.837	2.4060	
15 minute summer	S9	1.008	S12	152.2	1.131	0.821	3.8955	
15 minute summer	S10	2.000	S11	23.6	1.814	0.303	0.1790	
15 minute summer	S11	2.001	S12	23.5	2.096	0.214	0.3656	
15 minute summer	S12	1.009	S3032	174.7	1.423	0.939	3.2203	81.4

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.95%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	11	23.250	1.486	42.4	2.1265	0.3309	FLOOD
15 minute summer	S2	11	22.428	0.855	59.6	1.2233	0.0000	SURCHARGED
15 minute summer	S3	11	22.137	0.760	93.0	1.3427	0.0000	SURCHARGED
15 minute summer	S4	11	21.831	0.638	148.2	1.1280	0.0000	SURCHARGED
15 minute summer	S5	11	21.467	0.418	179.9	0.7383	0.0000	SURCHARGED
15 minute summer	S6	11	21.278	0.286	196.2	0.5046	0.0000	OK
15 minute summer	S7	11	21.124	1.084	244.0	1.9157	0.0000	SURCHARGED
15 minute summer	S8	11	20.902	0.956	269.2	1.6900	0.0000	SURCHARGED
15 minute summer	S9	11	20.706	0.817	268.1	1.4436	0.0000	SURCHARGED
15 minute summer	S10	10	21.410	0.135	43.2	0.2377	0.0000	OK
15 minute summer	S11	10	21.066	0.097	43.0	0.1712	0.0000	OK
15 minute summer	S12	11	20.429	0.636	309.0	1.1242	0.0000	SURCHARGED
15 minute summer	S3032	11	20.091	0.386	308.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	35.6	2.020	2.460	0.3066	
15 minute summer	S2	1.001	S3	59.1	1.487	1.397	0.7217	
15 minute summer	S3	1.002	S4	92.1	1.308	1.176	2.5907	
15 minute summer	S4	1.003	S5	147.0	2.088	1.879	0.9735	
15 minute summer	S5	1.004	S6	179.0	2.160	1.268	1.1400	
15 minute summer	S6	1.005	S7	193.9	2.551	0.333	1.0493	
15 minute summer	S7	1.006	S8	242.4	1.530	1.300	4.4415	
15 minute summer	S8	1.007	S9	268.1	1.692	1.459	2.7677	
15 minute summer	S9	1.008	S12	267.4	1.688	1.442	4.5854	
15 minute summer	S10	2.000	S11	43.0	2.091	0.551	0.2815	
15 minute summer	S11	2.001	S12	42.7	2.218	0.388	0.6014	
15 minute summer	S12	1.009	S3032	308.3	1.957	1.657	3.9898	147.0