

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	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	0.400	Preferred Cover Depth (m)	0.900
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)
S1	0.055	5.00	3.579	1200	537340.175	324864.895	0.528
s1a			3.600	300	537338.850	324859.798	0.570
s1b			3.700	300	537332.982	324857.694	0.696
s1c			3.800	300	537323.781	324859.296	0.834
S2L	0.065	5.00	4.375	300	537312.691	324849.473	1.245
S2	0.044	5.00	3.981	1200	537311.780	324858.922	1.064
s2a			4.000	300	537295.886	324857.363	1.148
s2b			4.000	300	537284.097	324854.094	1.198
S3			4.014	1200	537274.507	324859.018	1.256
S4	0.044	5.00	3.253	1200	537265.533	324906.937	0.525
S5	0.010	5.00	3.621	1200	537264.428	324885.055	0.982
S6	0.010	5.00	3.786	1200	537264.629	324874.791	1.189
s7a			3.850	300	537265.162	324868.940	1.277
S7	0.044	5.00	3.979	1200	537264.493	324865.611	1.420
S7a			4.000	300	537258.536	324859.571	1.476
s7b			4.000	300	537250.958	324855.856	1.510
s7c			4.100	300	537245.316	324848.806	1.647
S8	0.043	5.00	4.166	1200	537243.700	324839.081	1.753
S9	0.022	5.00	3.740	1200	537244.053	324803.582	1.472
S10L	0.031	5.00	4.010	1200	537337.372	324819.349	0.983
S10	0.027	5.00	3.878	1200	537329.799	324818.788	1.052
S11	0.031	5.00	4.130	1200	537332.522	324780.841	1.361
S12			4.048	1200	537331.574	324792.847	1.328
S13	0.044	5.00	3.906	1200	537323.888	324792.411	1.217
s13a			3.700	300	537302.969	324788.570	1.098
S14LA	0.038	5.00	3.700	1200	537289.373	324781.188	0.969
S14LB	0.038	5.00	3.900	1200	537288.315	324795.520	1.137
S14	0.045	5.00	3.523	1200	537289.019	324785.981	1.204
s14a			3.600	300	537275.774	324785.854	1.335
S15			3.775	1200	537254.511	324787.437	1.597
S16L	0.048	5.00	3.800	1200	537238.411	324793.998	1.243
S16	0.020	5.00	3.706	1200	537242.913	324788.302	1.576
S17	0.066	5.00	3.835	1200	537241.460	324768.825	1.785
s17a			3.900	300	537240.267	324749.047	1.930
s17b			4.000	300	537245.624	324733.126	2.099
S18	0.043	5.00	4.454	1200	537368.928	324726.026	1.675
s18a			4.250	300	537363.454	324723.478	1.496
S19			3.900	1200	537362.380	324716.857	1.173
S20			3.900	1200	537354.787	324716.096	1.204
s20a			4.000	300	537353.351	324721.768	1.328
S21	0.073	5.00	4.264	1200	537347.964	324724.416	1.617
S22L		5.00	4.200	1200	537277.513	324728.797	1.629
S22	0.022	5.00	3.801	1200	537276.772	324719.131	1.445
S23			3.871	1200	537265.059	324719.846	1.563
S24			3.947	1200	537253.302	324725.046	2.092
HW1			3.000	300	537239.039	324703.458	1.250
HW2		5.00	3.000	300	537239.546	324684.096	1.283
S25			3.200	1200	537247.906	324676.990	1.520

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S26			3.200	1200	537256.267	324669.884	1.550

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	s1a	5.266	0.600	3.051	3.030	0.021	250.8	300	5.09	50.0
1.001	s1a	s1b	6.234	0.600	3.030	3.005	0.025	249.4	300	5.19	50.0
1.002	s1b	s1c	9.339	0.600	3.004	2.966	0.038	245.8	300	5.35	50.0
1.003	s1c	S2	12.007	0.600	2.966	2.917	0.049	245.0	300	5.55	50.0
50.000	S2L	S2	9.493	0.600	3.130	3.067	0.063	150.7	150	5.19	50.0
1.004	S2	s2a	15.971	0.600	2.917	2.852	0.065	245.7	300	5.82	50.0
1.005	s2a	s2b	12.234	0.600	2.852	2.802	0.050	244.7	300	6.02	50.0
1.006	s2b	S3	10.780	0.600	2.802	2.758	0.044	245.0	300	6.20	50.0
1.007	S3	S7	11.990	0.600	2.758	2.709	0.049	244.7	300	6.40	50.0
2.000	S4	S5	21.910	0.600	2.728	2.639	0.089	246.2	450	5.28	50.0
2.001	S5	S6	10.266	0.600	2.639	2.597	0.042	244.4	450	5.41	50.0
2.002	S6	s7a	5.875	0.600	2.597	2.573	0.024	244.8	450	5.49	50.0
2.003	s7a	S7	3.395	0.600	2.573	2.559	0.014	242.5	450	5.53	50.0
1.008	S7	S7a	8.483	0.600	2.559	2.524	0.035	245.0	450	6.51	50.0
1.009	S7a	s7b	8.440	0.600	2.524	2.490	0.034	245.0	450	6.62	50.0
1.010	s7b	s7c	9.030	0.600	2.490	2.453	0.037	245.0	450	6.73	50.0
1.011	s7c	S8	9.859	0.600	2.453	2.413	0.040	245.0	450	6.86	50.0
1.012	S8	S9	35.500	0.600	2.413	2.268	0.145	245.0	450	7.32	50.0
1.013	S9	S16	15.323	0.600	2.268	2.205	0.063	245.0	450	7.52	50.0
51.000	S10L	S10	7.594	0.600	3.027	2.976	0.051	150.0	150	5.15	50.0
3.000	S10	S12	26.003	0.600	2.826	2.720	0.106	245.3	300	5.59	50.0
4.000	S11	S12	12.043	0.600	2.769	2.720	0.049	245.8	300	5.20	50.0
3.001	S12	S13	7.699	0.600	2.720	2.689	0.031	248.4	300	5.72	50.0
3.002	S13	s13a	21.269	0.600	2.689	2.602	0.087	244.5	300	6.07	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)
1.000	0.988	69.8	7.5	0.228	0.270	0.055	0.0
1.001	0.991	70.0	7.5	0.270	0.395	0.055	0.0
1.002	0.998	70.6	7.5	0.396	0.534	0.055	0.0
1.003	1.000	70.7	7.5	0.534	0.764	0.055	0.0
50.000	0.816	14.4	8.8	1.095	0.764	0.065	0.0
1.004	0.998	70.6	22.2	0.764	0.848	0.164	0.0
1.005	1.000	70.7	22.2	0.848	0.898	0.164	0.0
1.006	1.000	70.7	22.2	0.898	0.956	0.164	0.0
1.007	1.000	70.7	22.2	0.956	0.970	0.164	0.0
2.000	1.291	205.3	6.0	0.075	0.532	0.044	0.0
2.001	1.296	206.1	7.3	0.532	0.739	0.054	0.0
2.002	1.295	205.9	8.7	0.739	0.827	0.064	0.0
2.003	1.301	206.9	8.7	0.827	0.970	0.064	0.0
1.008	1.294	205.8	36.9	0.970	1.026	0.272	0.0
1.009	1.294	205.8	36.9	1.026	1.060	0.272	0.0
1.010	1.294	205.8	36.9	1.060	1.197	0.272	0.0
1.011	1.294	205.8	36.9	1.197	1.303	0.272	0.0
1.012	1.294	205.8	42.7	1.303	1.022	0.315	0.0
1.013	1.294	205.8	45.7	1.022	1.051	0.337	0.0
51.000	0.818	14.5	4.2	0.833	0.752	0.031	0.0
3.000	0.999	70.6	7.9	0.752	1.028	0.058	0.0
4.000	0.998	70.6	4.2	1.061	1.028	0.031	0.0
3.001	0.993	70.2	12.1	1.028	0.917	0.089	0.0
3.002	1.001	70.7	18.0	0.917	0.798	0.133	0.0

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)
3.003	s13a	S14	14.188	0.600	2.602	2.469	0.133	106.7	300	6.23	50.0
52.000	S14LA	S14	4.806	0.600	2.731	2.619	0.112	42.9	150	5.05	50.0
53.000	S14LB	S14	9.565	0.600	2.763	2.619	0.144	66.4	150	5.13	50.0
3.004	S14	s14a	13.246	0.600	2.319	2.265	0.054	245.3	450	6.40	50.0
3.005	s14a	S15	21.322	0.600	2.265	2.178	0.087	245.1	450	6.67	50.0
3.006	S15	S16	11.630	0.600	2.178	2.130	0.048	242.3	450	6.82	50.0
54.000	S16L	S16	7.260	0.600	2.557	2.505	0.052	139.6	150	5.14	50.0
1.014	S16	S17	19.531	0.600	2.130	2.050	0.080	244.1	450	7.77	50.0
1.015	S17	s17a	19.815	0.600	2.051	1.970	0.081	244.6	450	8.02	50.0
1.016	s17a	s17b	16.798	0.600	1.970	1.901	0.069	243.4	450	8.24	50.0
1.017	s17b	S24	11.147	0.600	1.901	1.855	0.046	242.3	450	8.38	50.0
5.000	S18	s18a	6.039	0.600	2.779	2.754	0.025	241.6	300	5.10	50.0
5.001	s18a	S19	6.708	0.600	2.754	2.727	0.027	248.4	300	5.21	50.0
5.002	S19	S20	7.631	0.600	2.727	2.696	0.031	246.2	300	5.34	50.0
5.003	S20	s20a	5.850	0.600	2.696	2.672	0.024	243.8	300	5.44	50.0
5.004	s20a	S21	6.003	0.600	2.672	2.647	0.025	240.1	300	5.54	50.0
5.005	S21	S22	71.387	0.600	2.647	2.356	0.291	245.3	300	6.73	50.0
55.000	S22L	S22	9.694	0.600	2.571	2.506	0.065	149.1	150	5.20	50.0
5.006	S22	S23	11.735	0.600	2.356	2.308	0.048	244.5	300	6.92	50.0
5.007	S23	S24	12.856	0.600	2.308	2.081	0.227	56.6	300	7.03	50.0
1.018	S24	HW1	25.875	0.600	1.856	1.750	0.106	244.1	450	8.71	50.0
1.020	HW2	S25	11.945	0.600	1.717	1.680	0.037	322.7	450	5.18	50.0
1.021	S25	S26	10.000	0.600	1.681	1.650	0.031	322.7	375	5.34	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)
3.003	1.522	107.6	18.0	0.798	0.754	0.133	0.0
52.000	1.540	27.2	5.1	0.819	0.754	0.038	0.0
53.000	1.235	21.8	5.1	0.987	0.754	0.038	0.0
3.004	1.293	205.7	34.4	0.754	0.885	0.254	0.0
3.005	1.294	205.8	34.4	0.885	1.147	0.254	0.0
3.006	1.301	207.0	34.4	1.147	1.126	0.254	0.0
54.000	0.848	15.0	6.5	1.093	1.051	0.048	0.0
1.014	1.296	206.2	89.3	1.126	1.335	0.659	0.0
1.015	1.295	206.0	98.3	1.334	1.480	0.725	0.0
1.016	1.298	206.5	98.3	1.480	1.649	0.725	0.0
1.017	1.301	207.0	98.3	1.649	1.642	0.725	0.0
5.000	1.007	71.2	5.8	1.375	1.196	0.043	0.0
5.001	0.993	70.2	5.8	1.196	0.873	0.043	0.0
5.002	0.997	70.5	5.8	0.873	0.904	0.043	0.0
5.003	1.002	70.9	5.8	0.904	1.028	0.043	0.0
5.004	1.010	71.4	5.8	1.028	1.317	0.043	0.0
5.005	0.999	70.6	15.7	1.317	1.145	0.116	0.0
55.000	0.820	14.5	0.0	1.479	1.145	0.000	0.0
5.006	1.001	70.7	18.7	1.145	1.263	0.138	0.0
5.007	2.093	147.9	18.7	1.263	1.566	0.138	0.0
1.018	1.296	206.2	117.0	1.641	0.800	0.863	0.0
1.020	1.126	179.1	0.0	0.833	1.070	0.000	0.0
1.021	1.003	110.8	0.0	1.144	1.175	0.000	0.0

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)
1.000	5.266	250.8	300	1	3.579	3.051	0.228	3.600	3.030	0.270
1.001	6.234	249.4	300	1	3.600	3.030	0.270	3.700	3.005	0.395
1.002	9.339	245.8	300	1	3.700	3.004	0.396	3.800	2.966	0.534
1.003	12.007	245.0	300	1	3.800	2.966	0.534	3.981	2.917	0.764
50.000	9.493	150.7	150	1	4.375	3.130	1.095	3.981	3.067	0.764
1.004	15.971	245.7	300	1	3.981	2.917	0.764	4.000	2.852	0.848
1.005	12.234	244.7	300	1	4.000	2.852	0.848	4.000	2.802	0.898
1.006	10.780	245.0	300	1	4.000	2.802	0.898	4.014	2.758	0.956
1.007	11.990	244.7	300	1	4.014	2.758	0.956	3.979	2.709	0.970
2.000	21.910	246.2	450	1	3.253	2.728	0.075	3.621	2.639	0.532
2.001	10.266	244.4	450	1	3.621	2.639	0.532	3.786	2.597	0.739
2.002	5.875	244.8	450	1	3.786	2.597	0.739	3.850	2.573	0.827
2.003	3.395	242.5	450	1	3.850	2.573	0.827	3.979	2.559	0.970
1.008	8.483	245.0	450	1	3.979	2.559	0.970	4.000	2.524	1.026
1.009	8.440	245.0	450	1	4.000	2.524	1.026	4.000	2.490	1.060
1.010	9.030	245.0	450	1	4.000	2.490	1.060	4.100	2.453	1.197
1.011	9.859	245.0	450	1	4.100	2.453	1.197	4.166	2.413	1.303
1.012	35.500	245.0	450	1	4.166	2.413	1.303	3.740	2.268	1.022
1.013	15.323	245.0	450	1	3.740	2.268	1.022	3.706	2.205	1.051
51.000	7.594	150.0	150	1	4.010	3.027	0.833	3.878	2.976	0.752
3.000	26.003	245.3	300	1	3.878	2.826	0.752	4.048	2.720	1.028
4.000	12.043	245.8	300	1	4.130	2.769	1.061	4.048	2.720	1.028
3.001	7.699	248.4	300	1	4.048	2.720	1.028	3.906	2.689	0.917
3.002	21.269	244.5	300	1	3.906	2.689	0.917	3.700	2.602	0.798
3.003	14.188	106.7	300	1	3.700	2.602	0.798	3.523	2.469	0.754
52.000	4.806	42.9	150	1	3.700	2.731	0.819	3.523	2.619	0.754
53.000	9.565	66.4	150	1	3.900	2.763	0.987	3.523	2.619	0.754
3.004	13.246	245.3	450	1	3.523	2.319	0.754	3.600	2.265	0.885

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	1200	Manhole	1	s1a	300	Junction	
1.001	s1a	300	Junction		s1b	300	Junction	
1.002	s1b	300	Junction		s1c	300	Junction	
1.003	s1c	300	Junction		S2	1200	Manhole	1
50.000	S2L	300	Manhole	1	S2	1200	Manhole	1
1.004	S2	1200	Manhole	1	s2a	300	Junction	
1.005	s2a	300	Junction		s2b	300	Junction	
1.006	s2b	300	Junction		S3	1200	Manhole	1
1.007	S3	1200	Manhole	1	S7	1200	Manhole	1
2.000	S4	1200	Manhole	1	S5	1200	Manhole	1
2.001	S5	1200	Manhole	1	S6	1200	Manhole	1
2.002	S6	1200	Manhole	1	s7a	300	Junction	
2.003	s7a	300	Junction		S7	1200	Manhole	1
1.008	S7	1200	Manhole	1	S7a	300	Junction	
1.009	S7a	300	Junction		s7b	300	Junction	
1.010	s7b	300	Junction		s7c	300	Junction	
1.011	s7c	300	Junction		S8	1200	Manhole	1
1.012	S8	1200	Manhole	1	S9	1200	Manhole	1
1.013	S9	1200	Manhole	1	S16	1200	Manhole	1
51.000	S10L	1200	Manhole	1	S10	1200	Manhole	1
3.000	S10	1200	Manhole	1	S12	1200	Manhole	1
4.000	S11	1200	Manhole	1	S12	1200	Manhole	1
3.001	S12	1200	Manhole	1	S13	1200	Manhole	1
3.002	S13	1200	Manhole	1	s13a	300	Junction	
3.003	s13a	300	Junction		S14	1200	Manhole	1
52.000	S14LA	1200	Manhole	1	S14	1200	Manhole	1
53.000	S14LB	1200	Manhole	1	S14	1200	Manhole	1
3.004	S14	1200	Manhole	1	s14a	300	Junction	

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)
3.005	21.322	245.1	450	1	3.600	2.265	0.885	3.775	2.178	1.147
3.006	11.630	242.3	450	1	3.775	2.178	1.147	3.706	2.130	1.126
54.000	7.260	139.6	150	1	3.800	2.557	1.093	3.706	2.505	1.051
1.014	19.531	244.1	450	1	3.706	2.130	1.126	3.835	2.050	1.335
1.015	19.815	244.6	450	1	3.835	2.051	1.334	3.900	1.970	1.480
1.016	16.798	243.4	450	1	3.900	1.970	1.480	4.000	1.901	1.649
1.017	11.147	242.3	450	1	4.000	1.901	1.649	3.947	1.855	1.642
5.000	6.039	241.6	300	1	4.454	2.779	1.375	4.250	2.754	1.196
5.001	6.708	248.4	300	1	4.250	2.754	1.196	3.900	2.727	0.873
5.002	7.631	246.2	300	1	3.900	2.727	0.873	3.900	2.696	0.904
5.003	5.850	243.8	300	1	3.900	2.696	0.904	4.000	2.672	1.028
5.004	6.003	240.1	300	1	4.000	2.672	1.028	4.264	2.647	1.317
5.005	71.387	245.3	300	1	4.264	2.647	1.317	3.801	2.356	1.145
55.000	9.694	149.1	150	1	4.200	2.571	1.479	3.801	2.506	1.145
5.006	11.735	244.5	300	1	3.801	2.356	1.145	3.871	2.308	1.263
5.007	12.856	56.6	300	1	3.871	2.308	1.263	3.947	2.081	1.566
1.018	25.875	244.1	450	1	3.947	1.856	1.641	3.000	1.750	0.800
1.020	11.945	322.7	450	1	3.000	1.717	0.833	3.200	1.680	1.070
1.021	10.000	322.7	375	1	3.200	1.681	1.144	3.200	1.650	1.175

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
3.005	s14a	300	Junction		S15	1200	Manhole	1
3.006	S15	1200	Manhole	1	S16	1200	Manhole	1
54.000	S16L	1200	Manhole	1	S16	1200	Manhole	1
1.014	S16	1200	Manhole	1	S17	1200	Manhole	1
1.015	S17	1200	Manhole	1	s17a	300	Junction	
1.016	s17a	300	Junction		s17b	300	Junction	
1.017	s17b	300	Junction		S24	1200	Manhole	1
5.000	S18	1200	Manhole	1	s18a	300	Junction	
5.001	s18a	300	Junction		S19	1200	Manhole	1
5.002	S19	1200	Manhole	1	S20	1200	Manhole	1
5.003	S20	1200	Manhole	1	s20a	300	Junction	
5.004	s20a	300	Junction		S21	1200	Manhole	1
5.005	S21	1200	Manhole	1	S22	1200	Manhole	1
55.000	S22L	1200	Manhole	1	S22	1200	Manhole	1
5.006	S22	1200	Manhole	1	S23	1200	Manhole	1
5.007	S23	1200	Manhole	1	S24	1200	Manhole	1
1.018	S24	1200	Manhole	1	HW1	300	Manhole	1
1.020	HW2	300	Manhole	1	S25	1200	Manhole	1
1.021	S25	1200	Manhole	1	S26	1200	Manhole	1

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
S1	537340.175	324864.895	3.579	0.528	1200			
						1.000	3.051	300
s1a	537338.850	324859.798	3.600	0.570	300	1.000	3.030	300
						1.001	3.030	300
s1b	537332.982	324857.694	3.700	0.696	300	1.001	3.005	300
						1.002	3.004	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
s1c	537323.781	324859.296	3.800	0.834	300	1.002	2.966	300
						1.003	2.966	300
S2L	537312.691	324849.473	4.375	1.245	300			
						50.000	3.130	150
S2	537311.780	324858.922	3.981	1.064	1200	50.000	3.067	150
						1.003	2.917	300
						1.004	2.917	300
s2a	537295.886	324857.363	4.000	1.148	300	1.004	2.852	300
						1.005	2.852	300
s2b	537284.097	324854.094	4.000	1.198	300	1.005	2.802	300
						1.006	2.802	300
S3	537274.507	324859.018	4.014	1.256	1200	1.006	2.758	300
						1.007	2.758	300
S4	537265.533	324906.937	3.253	0.525	1200			
						2.000	2.728	450
S5	537264.428	324885.055	3.621	0.982	1200	2.000	2.639	450
						2.001	2.639	450
S6	537264.629	324874.791	3.786	1.189	1200	2.001	2.597	450
						2.002	2.597	450
s7a	537265.162	324868.940	3.850	1.277	300	2.002	2.573	450
						2.003	2.573	450
S7	537264.493	324865.611	3.979	1.420	1200	2.003	2.559	450
						1.007	2.709	300
						1.008	2.559	450
S7a	537258.536	324859.571	4.000	1.476	300	1.008	2.524	450
						1.009	2.524	450
s7b	537250.958	324855.856	4.000	1.510	300	1.009	2.490	450
						1.010	2.490	450
s7c	537245.316	324848.806	4.100	1.647	300	1.010	2.453	450
						1.011	2.453	450
S8	537243.700	324839.081	4.166	1.753	1200	1.011	2.413	450
						1.012	2.413	450

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
S9	537244.053	324803.582	3.740	1.472	1200	1.012	2.268	450
						1.013	2.268	450
S10L	537337.372	324819.349	4.010	0.983	1200			
						51.000	3.027	150
S10	537329.799	324818.788	3.878	1.052	1200	51.000	2.976	150
						3.000	2.826	300
S11	537332.522	324780.841	4.130	1.361	1200			
						4.000	2.769	300
S12	537331.574	324792.847	4.048	1.328	1200	4.000	2.720	300
						3.000	2.720	300
						3.001	2.720	300
S13	537323.888	324792.411	3.906	1.217	1200	3.001	2.689	300
						3.002	2.689	300
s13a	537302.969	324788.570	3.700	1.098	300	3.002	2.602	300
						3.003	2.602	300
S14LA	537289.373	324781.188	3.700	0.969	1200			
						52.000	2.731	150
S14LB	537288.315	324795.520	3.900	1.137	1200			
						53.000	2.763	150
S14	537289.019	324785.981	3.523	1.204	1200	53.000	2.619	150
						52.000	2.619	150
						3.003	2.469	300
						3.004	2.319	450
s14a	537275.774	324785.854	3.600	1.335	300	3.004	2.265	450
						3.005	2.265	450
S15	537254.511	324787.437	3.775	1.597	1200	3.005	2.178	450
						3.006	2.178	450
S16L	537238.411	324793.998	3.800	1.243	1200			
						54.000	2.557	150
S16	537242.913	324788.302	3.706	1.576	1200	54.000	2.505	150
						3.006	2.130	450
						1.013	2.205	450
						1.014	2.130	450
S17	537241.460	324768.825	3.835	1.785	1200	1.014	2.050	450
						1.015	2.051	450

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
s17a	537240.267	324749.047	3.900	1.930	300	1.015	1.970	450
						1.016	1.970	450
s17b	537245.624	324733.126	4.000	2.099	300	1.016	1.901	450
						1.017	1.901	450
S18	537368.928	324726.026	4.454	1.675	1200			
						5.000	2.779	300
s18a	537363.454	324723.478	4.250	1.496	300	5.000	2.754	300
						5.001	2.754	300
S19	537362.380	324716.857	3.900	1.173	1200	5.001	2.727	300
						5.002	2.727	300
S20	537354.787	324716.096	3.900	1.204	1200	5.002	2.696	300
						5.003	2.696	300
s20a	537353.351	324721.768	4.000	1.328	300	5.003	2.672	300
						5.004	2.672	300
S21	537347.964	324724.416	4.264	1.617	1200	5.004	2.647	300
						5.005	2.647	300
S22L	537277.513	324728.797	4.200	1.629	1200			
						55.000	2.571	150
S22	537276.772	324719.131	3.801	1.445	1200	55.000	2.506	150
						5.005	2.356	300
						5.006	2.356	300
S23	537265.059	324719.846	3.871	1.563	1200	5.006	2.308	300
						5.007	2.308	300
S24	537253.302	324725.046	3.947	2.092	1200	5.007	2.081	300
						1.017	1.855	450
						1.018	1.856	450
HW1	537239.039	324703.458	3.000	1.250	300	1.018	1.750	450
HW2	537239.546	324684.096	3.000	1.283	300			
						1.020	1.717	450
S25	537247.906	324676.990	3.200	1.520	1200	1.020	1.680	450
						1.021	1.681	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Link	IL (m)	Dia (mm)
S26	537256.267	324669.884	3.200	1.550	1200	1.021	1.650	375

Simulation Settings

Rainfall Methodology	FSR	Drain Down Time (mins)	240
FSR Region	England and Wales	Additional Storage (m³/ha)	0.0
M5-60 (mm)	19.000	Check Discharge Rate(s)	✓
Ratio-R	0.400	1 year (l/s)	5.0
Summer CV	0.750	2 year (l/s)	5.0
Winter CV	0.840	30 year (l/s)	5.0
Analysis Speed	Detailed	100 year (l/s)	5.0
Skip Steady State	x	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 %)
100	40	10	0

Pre-development Discharge Rate

Site Makeup	Greenfield	SPR	0.10	Betterment (%)	0
Greenfield Method	IH124	Region	1	QBar	
Positively Drained Area (ha)		Growth Factor 1 year	0.85	Q 1 year (l/s)	
SAAR (mm)		Growth Factor 30 year	1.95	Q 30 year (l/s)	
Soil Index	1	Growth Factor 100 year	2.48	Q 100 year (l/s)	

Node S25 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	1.681	Product Number	CTL-SHE-0054-1400-1120-1400
Design Depth (m)	1.120	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.4	Min Node Diameter (mm)	1200

Node HW2 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	19.369
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	1.717	Main Channel Slope (1:X)	586.9
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.036

Inlets

HW1

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	536.7	0.0	0.600	840.7	0.0	0.601	989.7	0.0	1.280	1314.7	0.0

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S1	12	3.540	0.489	36.0	0.5536	0.0000	FLOOD RISK
15 minute winter	s1a	12	3.536	0.506	32.6	0.0000	0.0000	FLOOD RISK
15 minute winter	s1b	12	3.530	0.526	30.9	0.0000	0.0000	FLOOD RISK
15 minute winter	s1c	12	3.523	0.557	27.5	0.0000	0.0000	FLOOD RISK
15 minute winter	S2L	12	3.873	0.743	42.5	0.0528	0.0000	SURCHARGED
15 minute winter	S2	12	3.514	0.597	92.8	0.6747	0.0000	SURCHARGED
15 minute winter	s2a	12	3.429	0.577	91.2	0.0000	0.0000	SURCHARGED
15 minute winter	s2b	13	3.356	0.554	91.0	0.0000	0.0000	SURCHARGED
15 minute winter	S3	12	3.305	0.547	91.6	0.6181	0.0000	SURCHARGED
15 minute winter	S4	12	3.253	0.525	28.8	0.5938	1.4943	FLOOD
15 minute winter	S5	13	3.246	0.607	46.4	0.6863	0.0000	SURCHARGED
15 minute winter	S6	12	3.264	0.667	39.2	0.7544	0.0000	SURCHARGED
15 minute winter	s7a	12	3.276	0.703	49.9	0.0000	0.0000	SURCHARGED
15 minute winter	S7	12	3.277	0.718	139.4	0.8121	0.0000	SURCHARGED
15 minute winter	S7a	12	3.255	0.731	135.5	0.0000	0.0000	SURCHARGED
15 minute winter	s7b	12	3.230	0.740	137.6	0.0000	0.0000	SURCHARGED
15 minute winter	s7c	12	3.212	0.759	138.9	0.0000	0.0000	SURCHARGED
15 minute winter	S8	12	3.197	0.784	149.7	0.8862	0.0000	SURCHARGED
15 minute winter	S9	12	3.160	0.892	162.2	1.0085	0.0000	SURCHARGED
15 minute winter	S10L	12	3.371	0.344	20.3	0.3891	0.0000	SURCHARGED
15 minute winter	S10	12	3.317	0.491	37.6	0.5552	0.0000	SURCHARGED
15 minute winter	S11	12	3.318	0.549	20.3	0.6214	0.0000	SURCHARGED
15 minute winter	S12	12	3.300	0.580	51.1	0.6563	0.0000	SURCHARGED
15 minute winter	S13	12	3.290	0.601	74.5	0.6793	0.0000	SURCHARGED
15 minute winter	s13a	12	3.233	0.631	72.0	0.0000	0.0000	SURCHARGED
15 minute winter	S14LA	12	3.246	0.515	24.8	0.5828	0.0000	SURCHARGED
15 minute winter	S14LB	12	3.297	0.534	24.8	0.6035	0.0000	SURCHARGED
15 minute winter	S14	12	3.188	0.869	141.8	0.9825	0.0000	SURCHARGED
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 winter	S1	1.000	s1a	32.6	0.887	0.466	0.3708	
15 minute winter	s1a	1.001	s1b	30.9	0.818	0.441	0.4390	
15 minute winter	s1b	1.002	s1c	27.5	0.676	0.390	0.6576	
15 minute winter	s1c	1.003	S2	33.3	0.644	0.472	0.8455	
15 minute winter	S2L	50.000	S2	40.2	2.283	2.786	0.1671	
15 minute winter	S2	1.004	s2a	91.2	1.295	1.292	1.1247	
15 minute winter	s2a	1.005	s2b	91.0	1.292	1.287	0.8615	
15 minute winter	s2b	1.006	S3	91.6	1.331	1.296	0.7591	
15 minute winter	S3	1.007	S7	91.2	1.425	1.290	0.8443	
15 minute winter	S4	2.000	S5	40.2	0.690	0.196	3.4715	
15 minute winter	S5	2.001	S6	36.2	0.597	0.176	1.6266	
15 minute winter	S6	2.002	s7a	45.0	0.638	0.218	0.9309	
15 minute winter	s7a	2.003	S7	-49.9	0.642	-0.241	0.5379	
15 minute winter	S7	1.008	S7a	135.5	1.358	0.659	1.3441	
15 minute winter	S7a	1.009	s7b	137.6	1.326	0.669	1.3373	
15 minute winter	s7b	1.010	s7c	138.9	1.277	0.675	1.4307	
15 minute winter	s7c	1.011	S8	144.8	1.199	0.704	1.5621	
15 minute winter	S8	1.012	S9	159.7	1.177	0.776	5.6247	
15 minute winter	S9	1.013	S16	172.6	1.206	0.839	2.4278	
15 minute winter	S10L	51.000	S10	20.0	1.141	1.383	0.1337	
15 minute winter	S10	3.000	S12	35.6	0.787	0.504	1.8311	
15 minute winter	S11	4.000	S12	17.7	0.527	0.251	0.8481	
15 minute winter	S12	3.001	S13	47.4	0.888	0.675	0.5422	
15 minute winter	S13	3.002	s13a	72.0	1.463	1.018	1.4977	
15 minute winter	s13a	3.003	S14	68.7	1.627	0.639	0.9991	
15 minute winter	S14LA	52.000	S14	23.6	1.728	0.869	0.0846	
15 minute winter	S14LB	53.000	S14	22.4	1.383	1.027	0.1684	
15 minute winter	S14	3.004	s14a	134.5	1.227	0.654	2.0987	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	s14a	12	3.167	0.902	134.5	0.0000	0.0000	SURCHARGED
15 minute winter	S15	12	3.140	0.962	127.8	1.0879	0.0000	SURCHARGED
15 minute winter	S16L	12	3.264	0.707	31.4	0.7997	0.0000	SURCHARGED
15 minute winter	S16	12	3.126	0.996	298.7	1.1261	0.0000	SURCHARGED
15 minute winter	S17	12	2.958	0.908	329.3	1.0271	0.0000	SURCHARGED
15 minute winter	s17a	12	2.750	0.780	328.6	0.0000	0.0000	SURCHARGED
1440 minute winter	s17b	1440	2.649	0.748	27.6	0.0000	0.0000	SURCHARGED
15 minute winter	S18	11	2.916	0.137	28.1	0.1548	0.0000	OK
15 minute winter	s18a	11	2.903	0.149	27.8	0.0000	0.0000	OK
15 minute winter	S19	11	2.897	0.170	27.3	0.1925	0.0000	OK
15 minute winter	S20	11	2.895	0.199	26.6	0.2253	0.0000	OK
15 minute winter	s20a	11	2.894	0.222	26.6	0.0000	0.0000	OK
15 minute winter	S21	11	2.892	0.245	72.0	0.2766	0.0000	OK
1440 minute winter	S22L	1440	2.649	0.078	0.1	0.0886	0.0000	OK
1440 minute winter	S22	1440	2.649	0.293	4.2	0.3317	0.0000	OK
1440 minute winter	S23	1440	2.649	0.341	13.6	0.3859	0.0000	SURCHARGED
1440 minute winter	S24	1440	2.649	0.794	39.3	0.8982	0.0000	SURCHARGED
1440 minute winter	HW1	1440	2.649	0.899	98.3	0.0638	0.0000	OK
1440 minute winter	HW2	1440	2.649	0.932	39.6	0.0662	0.0000	SURCHARGED
1440 minute winter	S25	1440	2.649	0.969	1.3	1.0962	0.0000	SURCHARGED
1440 minute winter	S26	1440	1.674	0.024	1.3	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 winter	s14a	3.005	S15	127.8	0.973	0.621	3.3783	
15 minute winter	S15	3.006	S16	120.3	0.759	0.581	1.8427	
15 minute winter	S16L	54.000	S16	27.8	1.580	1.855	0.1278	
15 minute winter	S16	1.014	S17	295.6	1.866	1.434	3.0946	
15 minute winter	S17	1.015	s17a	328.6	2.074	1.595	3.1396	
15 minute winter	s17a	1.016	s17b	330.2	2.084	1.599	2.6615	
1440 minute winter	s17b	1.017	S24	35.1	0.626	0.170	1.7662	
15 minute winter	S18	5.000	s18a	27.8	0.891	0.391	0.2000	
15 minute winter	s18a	5.001	S19	27.3	0.828	0.389	0.2556	
15 minute winter	S19	5.002	S20	26.6	0.703	0.377	0.3469	
15 minute winter	S20	5.003	s20a	26.6	0.544	0.376	0.3085	
15 minute winter	s20a	5.004	S21	26.8	0.498	0.376	0.3521	
15 minute winter	S21	5.005	S22	72.0	1.180	1.020	4.3583	
1440 minute winter	S22L	55.000	S22	-0.1	-0.011	-0.009	0.1291	
1440 minute winter	S22	5.006	S23	7.0	0.711	0.099	0.8240	
1440 minute winter	S23	5.007	S24	-8.5	0.850	-0.058	0.9053	
1440 minute winter	S24	1.018	HW1	29.1	1.044	0.141	4.0997	
1440 minute winter	HW1	Flow through pond	HW2	-73.9	0.012	-0.002	748.2605	
1440 minute winter	HW2	1.020	S25	1.3	0.090	0.008	1.8926	
1440 minute winter	S25	1.021	S26	1.3	0.386	0.012	0.0337	111.2