

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	40	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	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)
S40	0.005	5.00	16.000	600	446141.528	116014.748	1.482
S39	0.023	5.00	16.149	600	446090.635	116052.953	1.349
S38	0.015	5.00	16.273		446107.687	116046.445	1.273
S37	0.009	5.00	15.963		446079.719	116044.751	1.268
S36			16.060	600	446091.116	116045.441	1.479
S35	0.022	5.00	16.026		446112.616	116030.933	1.326
S34	0.017	5.00	15.775		446080.306	116028.845	1.075
S33			15.861	1200	446092.118	116029.802	1.443
S32	0.025	5.00	15.764		446109.484	116020.255	1.164
S31	0.017	5.00	15.628		446081.397	116018.553	0.828
S30			15.622	600	446092.794	116019.244	1.291
S29			15.647	1200	446115.978	116012.374	1.297
S28		5.00	14.764	150	446069.937	116006.301	0.414
S27	0.019	5.00	15.110	600	446093.534	116007.694	1.068
S26	0.014	5.00	15.083		446113.072	115999.002	0.913
S25	0.016	5.00	14.540		446071.839	115996.727	0.340
S24			14.807	600	446094.152	115998.044	0.883
S23	0.025	5.00	14.819		446115.419	115985.767	0.849
S22	0.036	5.00	14.232		446068.894	115982.833	0.432
S21			14.401	1200	446095.017	115984.547	0.907
S20	0.027	5.00	14.307		446112.597	115972.965	0.937
S19	0.031	5.00	13.864		446077.190	115970.875	0.464
S18			13.946	600	446095.822	115971.975	0.820
S17		5.00	13.851	150	446118.108	115962.521	0.951
S16		5.00	13.479	150	446067.141	115960.303	0.529
S15	0.021	5.00	13.597	1200	446096.509	115961.246	1.009
S14	0.018	5.00	13.183		446114.601	115950.283	0.833
S13	0.022	5.00	12.976		446070.369	115947.721	0.566
S12			13.049	600	446097.288	115949.217	0.945
S11	0.015	5.00	12.602		446111.052	115939.474	0.802
S10	0.027	5.00	12.422		446070.215	115936.851	0.477
S9			12.557	1200	446097.959	115938.607	1.034
S8	0.034	5.00	11.958		446078.657	115925.108	0.792
S7			11.986	1200	446098.748	115926.294	1.246
S6	0.016	5.00	11.977	1200	446109.943	115926.955	1.425
S5		5.00	14.326	600	446058.748	115994.955	1.323
S4			13.635	600	446060.233	115964.125	1.430
S3	0.026	5.00	11.356	600	446057.129	115928.054	0.480
S2	0.005	5.00	11.110	600	446082.111	115920.529	0.508
S1			11.379	1200	446117.798	115921.739	1.015
OUTFALL			11.020	1350	446125.241	115903.070	0.790

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)
1.013	S1	OUTFALL	22.599	0.600	10.364	10.230	0.134	168.6	375	7.04	50.0
1.012	S6	S1	6.373	0.600	10.552	10.364	0.188	33.9	375	6.43	50.0
23.003	S2	S1	41.048	0.600	10.602	10.364	0.238	172.5	150	6.77	50.0
23.002	S3	S2	18.115	0.600	10.876	10.602	0.274	66.1	150	5.87	50.0
23.001	S4	S3	36.204	0.600	12.205	10.876	1.329	27.2	150	5.63	50.0
23.000	S5	S4	30.866	0.600	13.003	12.205	0.798	38.7	150	5.32	50.0
1.011	S7	S6	11.214	0.600	10.740	10.552	0.188	59.6	375	6.40	50.0
1.010	S9	S7	15.235	0.600	11.523	10.815	0.708	21.5	300	6.32	50.0
22.000	S8	S7	20.126	0.600	11.166	10.965	0.201	100.1	150	5.33	50.0
1.009	S12	S9	10.118	0.600	12.104	11.598	0.506	20.0	225	6.25	50.0
21.000	S11	S9	13.436	0.600	11.800	11.673	0.127	105.8	150	5.23	50.0
20.000	S10	S9	27.105	0.600	11.945	11.673	0.272	99.7	150	5.45	50.0
1.008	S15	S12	9.671	0.600	12.588	12.104	0.484	20.0	225	6.19	50.0
19.000	S14	S12	16.803	0.600	12.350	12.179	0.171	98.3	150	5.28	50.0
18.000	S13	S12	23.093	0.600	12.410	12.179	0.231	100.0	150	5.38	50.0
1.007	S18	S15	10.751	0.600	13.126	12.588	0.538	20.0	225	6.13	50.0
16.000	S16	S15	28.557	0.600	12.950	12.663	0.287	99.5	150	5.47	50.0
17.000	S17	S15	21.637	0.600	12.900	12.663	0.237	91.3	150	5.34	50.0
1.006	S21	S18	10.907	0.600	13.494	13.126	0.368	29.6	225	6.07	50.0
15.000	S20	S18	16.804	0.600	13.370	13.201	0.169	99.4	150	5.28	50.0
14.000	S19	S18	18.664	0.600	13.400	13.201	0.199	93.8	150	5.30	50.0
1.005	S24	S21	13.113	0.600	13.924	13.494	0.430	30.5	225	6.00	50.0
13.000	S23	S21	16.803	0.600	13.970	13.569	0.401	41.9	150	5.18	50.0
12.000	S22	S21	23.092	0.600	13.800	13.569	0.231	100.0	150	5.38	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)
1.013	1.392	153.7	91.4	0.640	0.415	0.482	0.0	208	1.449
1.012	3.121	344.7	85.5	1.050	0.640	0.451	0.0	126	2.602
23.003	0.762	13.5	5.8	0.358	0.865	0.031	0.0	69	0.734
23.002	1.238	21.9	4.9	0.330	0.358	0.026	0.0	48	1.002
23.001	1.936	34.2	0.0	1.280	0.330	0.000	0.0	0	0.000
23.000	1.623	28.7	0.0	1.173	1.280	0.000	0.0	0	0.000
1.011	2.349	259.5	82.6	0.871	1.050	0.435	0.0	145	2.094
1.010	3.404	240.6	76.2	0.734	0.871	0.402	0.0	116	3.032
22.000	1.004	17.7	6.4	0.642	0.871	0.034	0.0	62	0.920
1.009	2.939	116.9	68.2	0.720	0.734	0.359	0.0	123	3.048
21.000	0.976	17.3	2.8	0.652	0.734	0.015	0.0	41	0.719
20.000	1.006	17.8	5.2	0.327	0.734	0.027	0.0	55	0.874
1.008	2.940	116.9	60.7	0.784	0.720	0.320	0.0	115	2.963
19.000	1.014	17.9	3.3	0.683	0.720	0.018	0.0	44	0.776
18.000	1.005	17.8	4.1	0.416	0.720	0.022	0.0	49	0.818
1.007	2.940	116.9	56.7	0.595	0.784	0.299	0.0	110	2.916
16.000	1.007	17.8	0.0	0.379	0.784	0.000	0.0	0	0.000
17.000	1.052	18.6	0.0	0.801	0.784	0.000	0.0	0	0.000
1.006	2.412	95.9	45.8	0.682	0.595	0.242	0.0	109	2.384
15.000	1.007	17.8	5.1	0.787	0.595	0.027	0.0	55	0.870
14.000	1.038	18.3	5.8	0.314	0.595	0.031	0.0	58	0.920
1.005	2.377	94.5	34.4	0.658	0.682	0.181	0.0	94	2.193
13.000	1.559	27.5	4.7	0.699	0.682	0.025	0.0	42	1.168
12.000	1.005	17.8	6.7	0.282	0.682	0.036	0.0	64	0.937

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)
1.004	S27	S24	11.772	0.600	14.042	13.924	0.118	99.8	225	5.91	50.0
11.000	S26	S24	16.803	0.600	14.170	13.999	0.171	98.3	150	5.28	50.0
10.000	S25	S24	23.093	0.600	14.200	13.999	0.201	114.9	150	5.41	50.0
8.001	S29	S27	23.601	0.600	14.350	14.117	0.233	101.3	150	5.67	50.0
1.003	S30	S27	11.574	0.600	14.331	14.042	0.289	40.0	225	5.76	50.0
9.000	S28	S27	23.638	0.600	14.350	14.117	0.233	101.5	150	5.40	50.0
6.000	S32	S30	16.721	0.600	14.600	14.406	0.194	86.2	150	5.26	50.0
7.000	S31	S30	11.418	0.600	14.800	14.406	0.394	29.0	150	5.10	50.0
1.002	S33	S30	13.087	0.600	14.418	14.331	0.087	150.4	225	5.66	50.0
4.000	S35	S33	16.721	0.600	14.700	14.493	0.207	80.8	150	5.25	50.0
5.000	S34	S33	11.419	0.600	14.700	14.493	0.207	55.2	150	5.14	50.0
1.001	S36	S33	13.164	0.600	14.581	14.493	0.088	149.6	150	5.46	50.0
3.000	S39	S36	7.527	0.600	14.800	14.581	0.219	34.4	150	5.07	50.0
1.000	S38	S36	16.601	0.600	15.000	14.581	0.419	39.6	150	5.17	50.0
2.000	S37	S36	11.418	0.600	14.695	14.581	0.114	100.2	150	5.19	50.0
8.000	S40	S29	16.557	0.600	14.518	14.350	0.168	98.6	150	5.27	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)
1.004	1.309	52.0	28.8	0.843	0.658	0.152	0.0	120	1.343
11.000	1.014	17.9	2.6	0.763	0.658	0.014	0.0	38	0.721
10.000	0.936	16.5	3.0	0.190	0.658	0.016	0.0	43	0.711
8.001	0.998	17.6	0.9	1.147	0.843	0.005	0.0	24	0.532
1.003	2.073	82.4	24.3	1.066	0.843	0.128	0.0	84	1.814
9.000	0.997	17.6	0.0	0.264	0.843	0.000	0.0	0	0.000
6.000	1.083	19.1	4.8	1.014	1.066	0.025	0.0	51	0.904
7.000	1.877	33.2	3.3	0.678	1.066	0.017	0.0	32	1.203
1.002	1.063	42.3	16.2	1.218	1.066	0.085	0.0	96	0.993
4.000	1.119	19.8	4.1	1.176	1.218	0.022	0.0	46	0.882
5.000	1.357	24.0	3.2	0.925	1.218	0.017	0.0	37	0.941
1.001	0.819	14.5	8.9	1.329	1.218	0.047	0.0	85	0.861
3.000	1.722	30.4	4.3	1.199	1.329	0.023	0.0	38	1.218
1.000	1.603	28.3	2.9	1.123	1.329	0.015	0.0	33	1.039
2.000	1.004	17.7	1.7	1.118	1.329	0.009	0.0	31	0.635
8.000	1.012	17.9	0.9	1.332	1.147	0.005	0.0	24	0.539

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)
1.013	22.599	168.6	375	Circular	11.379	10.364	0.640	11.020	10.230	0.415
1.012	6.373	33.9	375	Circular	11.977	10.552	1.050	11.379	10.364	0.640
23.003	41.048	172.5	150	Circular	11.110	10.602	0.358	11.379	10.364	0.865
23.002	18.115	66.1	150	Circular	11.356	10.876	0.330	11.110	10.602	0.358

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.013	S1	1200	Manhole	Adoptable	OUTFALL	1350	Manhole	Adoptable
1.012	S6	1200	Manhole	Adoptable	S1	1200	Manhole	Adoptable
23.003	S2	600	Manhole	Adoptable	S1	1200	Manhole	Adoptable
23.002	S3	600	Manhole	Adoptable	S2	600	Manhole	Adoptable

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)
23.001	36.204	27.2	150	Circular	13.635	12.205	1.280	11.356	10.876	0.330
23.000	30.866	38.7	150	Circular	14.326	13.003	1.173	13.635	12.205	1.280
1.011	11.214	59.6	375	Circular	11.986	10.740	0.871	11.977	10.552	1.050
1.010	15.235	21.5	300	Circular	12.557	11.523	0.734	11.986	10.815	0.871
22.000	20.126	100.1	150	Circular	11.958	11.166	0.642	11.986	10.965	0.871
1.009	10.118	20.0	225	Circular	13.049	12.104	0.720	12.557	11.598	0.734
21.000	13.436	105.8	150	Circular	12.602	11.800	0.652	12.557	11.673	0.734
20.000	27.105	99.7	150	Circular	12.422	11.945	0.327	12.557	11.673	0.734
1.008	9.671	20.0	225	Circular	13.597	12.588	0.784	13.049	12.104	0.720
19.000	16.803	98.3	150	Circular	13.183	12.350	0.683	13.049	12.179	0.720
18.000	23.093	100.0	150	Circular	12.976	12.410	0.416	13.049	12.179	0.720
1.007	10.751	20.0	225	Circular	13.946	13.126	0.595	13.597	12.588	0.784
16.000	28.557	99.5	150	Circular	13.479	12.950	0.379	13.597	12.663	0.784
17.000	21.637	91.3	150	Circular	13.851	12.900	0.801	13.597	12.663	0.784
1.006	10.907	29.6	225	Circular	14.401	13.494	0.682	13.946	13.126	0.595
15.000	16.804	99.4	150	Circular	14.307	13.370	0.787	13.946	13.201	0.595
14.000	18.664	93.8	150	Circular	13.864	13.400	0.314	13.946	13.201	0.595
1.005	13.113	30.5	225	Circular	14.807	13.924	0.658	14.401	13.494	0.682
13.000	16.803	41.9	150	Circular	14.819	13.970	0.699	14.401	13.569	0.682
12.000	23.092	100.0	150	Circular	14.232	13.800	0.282	14.401	13.569	0.682
1.004	11.772	99.8	225	Circular	15.110	14.042	0.843	14.807	13.924	0.658
11.000	16.803	98.3	150	Circular	15.083	14.170	0.763	14.807	13.999	0.658
10.000	23.093	114.9	150	Circular	14.540	14.200	0.190	14.807	13.999	0.658
8.001	23.601	101.3	150	Circular	15.647	14.350	1.147	15.110	14.117	0.843
1.003	11.574	40.0	225	Circular	15.622	14.331	1.066	15.110	14.042	0.843

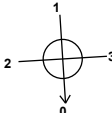
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
23.001	S4	600	Manhole	Adoptable	S3	600	Manhole	Adoptable
23.000	S5	600	Manhole	Adoptable	S4	600	Manhole	Adoptable
1.011	S7	1200	Manhole	Adoptable	S6	1200	Manhole	Adoptable
1.010	S9	1200	Manhole	Adoptable	S7	1200	Manhole	Adoptable
22.000	S8		Junction		S7	1200	Manhole	Adoptable
1.009	S12	600	Manhole	Adoptable	S9	1200	Manhole	Adoptable
21.000	S11		Junction		S9	1200	Manhole	Adoptable
20.000	S10		Junction		S9	1200	Manhole	Adoptable
1.008	S15	1200	Manhole	Adoptable	S12	600	Manhole	Adoptable
19.000	S14		Junction		S12	600	Manhole	Adoptable
18.000	S13		Junction		S12	600	Manhole	Adoptable
1.007	S18	600	Manhole	Adoptable	S15	1200	Manhole	Adoptable
16.000	S16	150	Manhole	Adoptable	S15	1200	Manhole	Adoptable
17.000	S17	150	Manhole	Adoptable	S15	1200	Manhole	Adoptable
1.006	S21	1200	Manhole	Adoptable	S18	600	Manhole	Adoptable
15.000	S20		Junction		S18	600	Manhole	Adoptable
14.000	S19		Junction		S18	600	Manhole	Adoptable
1.005	S24	600	Manhole	Adoptable	S21	1200	Manhole	Adoptable
13.000	S23		Junction		S21	1200	Manhole	Adoptable
12.000	S22		Junction		S21	1200	Manhole	Adoptable
1.004	S27	600	Manhole	Adoptable	S24	600	Manhole	Adoptable
11.000	S26		Junction		S24	600	Manhole	Adoptable
10.000	S25		Junction		S24	600	Manhole	Adoptable
8.001	S29	1200	Manhole	Adoptable	S27	600	Manhole	Adoptable
1.003	S30	600	Manhole	Adoptable	S27	600	Manhole	Adoptable

Pipeline Schedule

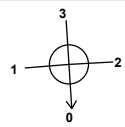
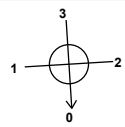
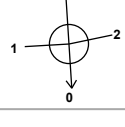
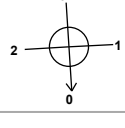
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
9.000	23.638	101.5	150	Circular	14.764	14.350	0.264	15.110	14.117	0.843
6.000	16.721	86.2	150	Circular	15.764	14.600	1.014	15.622	14.406	1.066
7.000	11.418	29.0	150	Circular	15.628	14.800	0.678	15.622	14.406	1.066
1.002	13.087	150.4	225	Circular	15.861	14.418	1.218	15.622	14.331	1.066
4.000	16.721	80.8	150	Circular	16.026	14.700	1.176	15.861	14.493	1.218
5.000	11.419	55.2	150	Circular	15.775	14.700	0.925	15.861	14.493	1.218
1.001	13.164	149.6	150	Circular	16.060	14.581	1.329	15.861	14.493	1.218
3.000	7.527	34.4	150	Circular	16.149	14.800	1.199	16.060	14.581	1.329
1.000	16.601	39.6	150	Circular	16.273	15.000	1.123	16.060	14.581	1.329
2.000	11.418	100.2	150	Circular	15.963	14.695	1.118	16.060	14.581	1.329
8.000	16.557	98.6	150	Circular	16.000	14.518	1.332	15.647	14.350	1.147

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
9.000	S28	150	Manhole	Adoptable	S27	600	Manhole	Adoptable
6.000	S32		Junction		S30	600	Manhole	Adoptable
7.000	S31		Junction		S30	600	Manhole	Adoptable
1.002	S33	1200	Manhole	Adoptable	S30	600	Manhole	Adoptable
4.000	S35		Junction		S33	1200	Manhole	Adoptable
5.000	S34		Junction		S33	1200	Manhole	Adoptable
1.001	S36	600	Manhole	Adoptable	S33	1200	Manhole	Adoptable
3.000	S39	600	Manhole	Adoptable	S36	600	Manhole	Adoptable
1.000	S38		Junction		S36	600	Manhole	Adoptable
2.000	S37		Junction		S36	600	Manhole	Adoptable
8.000	S40	600	Manhole	Adoptable	S29	1200	Manhole	Adoptable

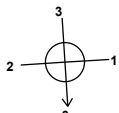
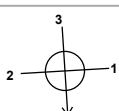
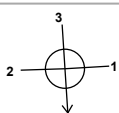
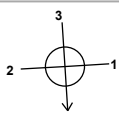
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S40	446141.528	116014.748	16.000	1.482	600				
						0	8.000	14.518	150
S39	446090.635	116052.953	16.149	1.349	600				
						0	3.000	14.800	150
S38	446107.687	116046.445	16.273	1.273					
						0	1.000	15.000	150
S37	446079.719	116044.751	15.963	1.268					
						0	2.000	14.695	150
S36	446091.116	116045.441	16.060	1.479	600		1	3.000	14.581
							2	2.000	14.581
							3	1.000	14.581
							0	1.001	14.581

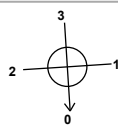
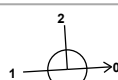
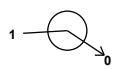
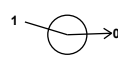
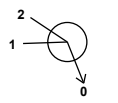
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S35	446112.616	116030.933	16.026	1.326						
						0	4.000	14.700	150	
S34	446080.306	116028.845	15.775	1.075						
						0	5.000	14.700	150	
S33	446092.118	116029.802	15.861	1.443	1200		1	5.000	14.493	150
						2	4.000	14.493	150	
						3	1.001	14.493	150	
						0	1.002	14.418	225	
S32	446109.484	116020.255	15.764	1.164						
						0	6.000	14.600	150	
S31	446081.397	116018.553	15.628	0.828						
						0	7.000	14.800	150	
S30	446092.794	116019.244	15.622	1.291	600		1	7.000	14.406	150
						2	6.000	14.406	150	
						3	1.002	14.331	225	
						0	1.003	14.331	225	
S29	446115.978	116012.374	15.647	1.297	1200		1	8.000	14.350	150
						0	8.001	14.350	150	
S28	446069.937	116006.301	14.764	0.414	150					
						0	9.000	14.350	150	
S27	446093.534	116007.694	15.110	1.068	600		1	9.000	14.117	150
						2	8.001	14.117	150	
						3	1.003	14.042	225	
						0	1.004	14.042	225	
S26	446113.072	115999.002	15.083	0.913						
						0	11.000	14.170	150	
S25	446071.839	115996.727	14.540	0.340						
						0	10.000	14.200	150	
S24	446094.152	115998.044	14.807	0.883	600		1	11.000	13.999	150
						2	10.000	13.999	150	
						3	1.004	13.924	225	
						0	1.005	13.924	225	
S23	446115.419	115985.767	14.819	0.849						
						0	13.000	13.970	150	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S22	446068.894	115982.833	14.232	0.432						
						0	12.000	13.800	150	
S21	446095.017	115984.547	14.401	0.907	1200		1	13.000	13.569	150
						2	12.000	13.569	150	
						3	1.005	13.494	225	
						0	1.006	13.494	225	
S20	446112.597	115972.965	14.307	0.937						
						0	15.000	13.370	150	
S19	446077.190	115970.875	13.864	0.464						
						0	14.000	13.400	150	
S18	446095.822	115971.975	13.946	0.820	600		1	15.000	13.201	150
						2	14.000	13.201	150	
						3	1.006	13.126	225	
						0	1.007	13.126	225	
S17	446118.108	115962.521	13.851	0.951	150					
						0	17.000	12.900	150	
S16	446067.141	115960.303	13.479	0.529	150					
						0	16.000	12.950	150	
S15	446096.509	115961.246	13.597	1.009	1200		1	17.000	12.663	150
						2	16.000	12.663	150	
						3	1.007	12.588	225	
						0	1.008	12.588	225	
S14	446114.601	115950.283	13.183	0.833						
						0	19.000	12.350	150	
S13	446070.369	115947.721	12.976	0.566						
						0	18.000	12.410	150	
S12	446097.288	115949.217	13.049	0.945	600		1	19.000	12.179	150
						2	18.000	12.179	150	
						3	1.008	12.104	225	
						0	1.009	12.104	225	
S11	446111.052	115939.474	12.602	0.802						
						0	21.000	11.800	150	
S10	446070.215	115936.851	12.422	0.477						
						0	20.000	11.945	150	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S9	446097.959	115938.607	12.557	1.034	1200		1 2 3 0	21.000 20.000 1.009 1.010	11.673 11.673 11.598 11.523	150 150 225 300
S8	446078.657	115925.108	11.958	0.792			0	22.000	11.166	150
S7	446098.748	115926.294	11.986	1.246	1200		1 2 0	22.000 1.010 1.011	10.965 10.815 10.740	150 300 375
S6	446109.943	115926.955	11.977	1.425	1200		1 0	1.011 1.012	10.552 10.552	375 375
S5	446058.748	115994.955	14.326	1.323	600		0	23.000	13.003	150
S4	446060.233	115964.125	13.635	1.430	600		1 0	23.000 23.001	12.205 12.205	150 150
S3	446057.129	115928.054	11.356	0.480	600		1 0	23.001 23.002	10.876 10.876	150 150
S2	446082.111	115920.529	11.110	0.508	600		1 0	23.002 23.003	10.602 10.602	150 150
S1	446117.798	115921.739	11.379	1.015	1200		1 2 0	23.003 1.012 1.013	10.364 10.364 10.364	150 375 375
OUTFALL	446125.241	115903.070	11.020	0.790	1350		1	1.013	10.230	375

Simulation Settings

Rainfall Methodology FSR
FSR Region England and Wales
M5-60 (mm) 20.000
Ratio-R 0.400
Summer CV 0.750
Analysis Speed Detailed

Skip Steady State x
Drain Down Time (mins) 360
Additional Storage (m³/ha) 0.0
Check Discharge Rate(s) x
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
30	0	0	0
100	40	0	0

Node S6 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	10.552	Product Number	CTL-SHE-0045-1000-1200-1000
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node S6 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	11.300	Product Number	CTL-SHE-0065-1600-0675-1600
Design Depth (m)	0.675	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	1.6	Min Node Diameter (mm)	1200

Node S6 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	11.600	Product Number	CTL-SHE-0056-1000-0337-1000
Design Depth (m)	0.337	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node S33 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	14.418	Product Number	CTL-SHE-0027-4000-1350-4000
Design Depth (m)	1.350	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.4	Min Node Diameter (mm)	1200

Node S21 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	13.494	Product Number	CTL-SHE-0110-5000-0700-5000
Design Depth (m)	0.700	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node S15 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	12.588	Product Number	CTL-SHE-0119-5800-0600-5800
Design Depth (m)	0.600	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.8	Min Node Diameter (mm)	1200

Node S9 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	11.523	Product Number	CTL-SHE-0104-4600-0800-4600
Design Depth (m)	0.800	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.6	Min Node Diameter (mm)	1200

Node S39 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	15.736	Slope (1:X)	100.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	27.500	Inf Depth (m)	
Porosity	0.30	Length (m)	7.700		

Node S36 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	15.647	Slope (1:X)	95.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	36.000	Inf Depth (m)	
Porosity	0.30	Length (m)	6.800		

Node S33 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	15.448	Slope (1:X)	75.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.350
Safety Factor	2.0	Width (m)	31.500	Inf Depth (m)	
Porosity	0.30	Length (m)	12.700		

Node S30 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	15.209	Slope (1:X)	40.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	34.600	Inf Depth (m)	
Porosity	0.30	Length (m)	12.800		

Node S27 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	14.546	Slope (1:X)	17.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	7.800	Inf Depth (m)	
Porosity	0.30	Length (m)	12.900		

Node S24 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	14.293	Slope (1:X)	65.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	40.200	Inf Depth (m)	
Porosity	0.30	Length (m)	9.500		

Node S21 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.988	Slope (1:X)	45.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	100	Depth (m)	0.350
Safety Factor	2.0	Width (m)	46.600	Inf Depth (m)	
Porosity	0.30	Length (m)	13.112		

Node S18 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.512	Slope (1:X)	25.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	45.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.900		

Node S15 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.103	Slope (1:X)	30.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	83	Depth (m)	0.350
Safety Factor	2.0	Width (m)	8.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.700		

Node S12 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.561	Slope (1:X)	21.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.350
Safety Factor	2.0	Width (m)	42.600	Inf Depth (m)	
Porosity	0.30	Length (m)	9.600		

Node S9 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	11.619	Slope (1:X)	21.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	330	Depth (m)	0.800
Safety Factor	2.0	Width (m)	49.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.100		

Node S7 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	10.856	Slope (1:X)	20.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	1.100
Safety Factor	2.0	Width (m)	23.000	Inf Depth (m)	
Porosity	0.30	Length (m)	16.400		

Node S6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	10.839	Slope (1:X)	500.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	1.000
Safety Factor	2.0	Width (m)	13.000	Inf Depth (m)	
Porosity	0.30	Length (m)	13.000		

Node S12 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.911	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	0	Depth (m)	0.100
Safety Factor	2.0	Width (m)	42.600	Inf Depth (m)	
Porosity	0.25	Length (m)	9.600		

Node S9 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.419	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	60	Depth (m)	0.100
Safety Factor	2.0	Width (m)	49.000	Inf Depth (m)	
Porosity	0.25	Length (m)	10.100		

Node S7 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	11.848	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	150	Depth (m)	0.100
Safety Factor	2.0	Width (m)	23.000	Inf Depth (m)	
Porosity	0.25	Length (m)	16.400		

Node S6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	11.839	Slope (1:X)	200.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	150	Depth (m)	0.100
Safety Factor	2.0	Width (m)	13.000	Inf Depth (m)	
Porosity	0.25	Length (m)	13.000		

Node S1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	11.079
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

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	9.0	0.0	0.300	97.0	0.0	0.301	0.0	0.0

Node S3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	11.056
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

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	40.0	0.0	0.300	389.0	0.0	0.301	0.0	0.0

Node S16 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	13.179
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	186

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	10.6	0.0	0.300	106.2	0.0	0.301	0.0	0.0

Node S17 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	13.351
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

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	5.6	0.0	0.300	50.0	0.0	0.301	0.0	0.0

Node S28 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	14.364
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

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	10.0	0.0	0.300	65.0	0.0	0.301	0.0	0.0

Node S29 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	15.347
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

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	4.0	0.0	0.300	65.0	0.0	0.301	0.0	0.0

Node S1 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	23.003
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	10.364	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	300

Node S3 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	23.001
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	10.876	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	300

Node S15 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	16.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.663	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	202	Diameter (mm)	300

Node S15 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	17.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	12.663	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	203	Diameter (mm)	300

Node S21 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	12.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.569	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	181	Diameter (mm)	300

Node S21 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	13.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.569	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	183	Diameter (mm)	300

Node S27 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Link	9.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	14.117	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	15	Diameter (mm)	300



Node S27 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	8.001
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	14.117	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	2	Diameter (mm)	300

Results for 1 year Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S40	10	14.538	0.020	0.7	0.0058	0.0000	OK
240 minute summer	S39	240	15.504	0.704	0.9	0.1993	0.0000	SURCHARGED
360 minute summer	S38	296	15.504	0.504	0.7	0.0000	0.0000	SURCHARGED
240 minute summer	S37	240	15.504	0.809	0.4	0.0000	0.0000	SURCHARGED
240 minute summer	S36	240	15.504	0.923	0.8	0.2613	0.0000	SURCHARGED
240 minute summer	S35	240	15.504	0.804	0.8	0.0000	0.0000	SURCHARGED
240 minute summer	S34	240	15.504	0.804	0.6	0.0000	0.0000	SURCHARGED
240 minute summer	S33	240	15.504	1.086	1.3	2.3494	0.0000	SURCHARGED
15 minute summer	S32	10	14.643	0.043	3.4	0.0000	0.0000	OK
15 minute summer	S31	10	14.827	0.027	2.3	0.0000	0.0000	OK
15 minute summer	S30	11	14.371	0.040	5.9	0.0114	0.0000	OK
15 minute summer	S29	11	14.369	0.019	0.7	0.0216	0.0000	OK
15 minute summer	S28	1	14.350	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S27	11	14.108	0.066	8.8	0.0188	0.0000	OK
15 minute summer	S26	11	14.202	0.032	1.8	0.0000	0.0000	OK
15 minute summer	S25	11	14.236	0.036	2.1	0.0000	0.0000	OK
30 minute summer	S24	26	14.054	0.130	11.7	0.0367	0.0000	OK
30 minute summer	S23	25	14.057	0.087	3.0	0.0000	0.0000	OK
30 minute summer	S22	24	14.054	0.254	4.3	0.0000	0.0000	SURCHARGED
30 minute summer	S21	25	14.053	0.559	17.3	3.8245	0.0000	SURCHARGED
15 minute summer	S20	10	13.416	0.046	3.6	0.0000	0.0000	OK
15 minute summer	S19	10	13.448	0.048	4.1	0.0000	0.0000	OK
180 minute summer	S18	124	13.182	0.056	7.5	0.0158	0.0000	OK
180 minute summer	S17	124	13.182	0.282	0.5	0.0051	0.0000	SURCHARGED
180 minute summer	S16	124	13.182	0.232	1.0	0.0425	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 summer	S40	8.000	S29	0.7	0.519	0.037	0.0220	
240 minute summer	S39	3.000	S36	0.6	0.417	0.021	0.1325	
360 minute summer	S38	1.000	S36	0.4	0.217	0.014	0.2923	
240 minute summer	S37	2.000	S36	-0.2	0.041	-0.009	0.2010	
240 minute summer	S36	1.001	S33	0.7	0.290	0.046	0.2317	
240 minute summer	S35	4.000	S33	0.4	0.290	0.021	0.2944	
240 minute summer	S34	5.000	S33	0.3	0.333	0.012	0.2010	
240 minute summer	S33	1.002	S30	0.4	0.386	0.009	0.0211	
15 minute summer	S32	6.000	S30	3.4	0.813	0.175	0.0691	
15 minute summer	S31	7.000	S30	2.3	1.069	0.069	0.0243	
15 minute summer	S30	1.003	S27	5.8	0.816	0.071	0.0843	
15 minute summer	S29	8.001	S27	0.6	0.464	0.034	0.0304	
15 minute summer	S28	9.000	S27	0.0	0.000	0.000	0.0000	
15 minute summer	S27	1.004	S24	8.9	1.023	0.170	0.1590	
15 minute summer	S26	11.000	S24	1.8	0.650	0.100	0.0488	
15 minute summer	S25	10.000	S24	2.0	0.639	0.123	0.0737	
30 minute summer	S24	1.005	S21	11.6	0.412	0.123	0.4163	
30 minute summer	S23	13.000	S21	3.0	0.560	0.109	0.2370	
30 minute summer	S22	12.000	S21	3.7	0.474	0.207	0.4065	
30 minute summer	S21	1.006	S18	5.0	1.323	0.052	0.0538	
15 minute summer	S20	15.000	S18	3.5	0.781	0.198	0.0757	
15 minute summer	S19	14.000	S18	4.0	0.828	0.219	0.0905	
180 minute summer	S18	1.007	S15	7.5	0.345	0.065	0.2548	
180 minute summer	S17	17.000	S15	0.7	0.046	0.037	0.3809	
180 minute summer	S16	16.000	S15	-1.0	-0.089	-0.055	0.5027	

Results for 1 year Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute summer	S15	124	13.182	0.594	8.5	2.3773	0.0000	SURCHARGED
15 minute summer	S14	10	12.387	0.037	2.4	0.0000	0.0000	OK
15 minute summer	S13	10	12.451	0.041	2.9	0.0000	0.0000	OK
15 minute summer	S12	10	12.150	0.046	10.9	0.0131	0.0000	OK
120 minute summer	S11	122	11.883	0.083	0.9	0.0000	0.0000	OK
15 minute summer	S10	10	11.991	0.046	3.7	0.0000	0.0000	OK
120 minute summer	S9	122	11.884	0.361	10.4	11.2638	0.0000	SURCHARGED
360 minute summer	S8	296	11.361	0.195	1.0	0.0000	0.0000	SURCHARGED
360 minute summer	S7	296	11.361	0.621	5.6	18.3346	0.0000	SURCHARGED
360 minute summer	S6	296	11.361	0.809	4.4	26.7161	0.0000	SURCHARGED
15 minute summer	S5	1	13.003	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S4	1	12.205	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S3	10	10.916	0.040	3.5	0.0126	0.0000	OK
15 minute summer	S2	11	10.661	0.059	4.1	0.0166	0.0000	OK
15 minute summer	S1	12	10.409	0.045	4.8	0.0619	0.0000	OK
15 minute summer	OUTFALL	12	10.275	0.045	4.7	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)
180 minute summer	S15	1.008	S12	5.8	1.486	0.050	0.0399	
15 minute summer	S14	19.000	S12	2.3	0.701	0.131	0.0563	
15 minute summer	S13	18.000	S12	2.8	0.738	0.160	0.0889	
15 minute summer	S12	1.009	S9	10.8	1.277	0.093	0.2126	
120 minute summer	S11	21.000	S9	0.9	0.404	0.052	0.1858	
15 minute summer	S10	20.000	S9	3.6	0.784	0.200	0.2244	
120 minute summer	S9	Hydro-Brake®	S7	4.6				
360 minute summer	S8	22.000	S7	1.0	0.410	0.056	0.3543	
360 minute summer	S7	1.011	S6	4.1	0.194	0.016	1.2369	
360 minute summer	S6	1.012	S1	1.9	0.608	0.005	0.0200	
15 minute summer	S5	23.000	S4	0.0	0.000	0.000	0.0000	
15 minute summer	S4	23.001	S3	0.0	0.000	0.000	0.0679	
15 minute summer	S3	23.002	S2	3.4	0.700	0.155	0.0918	
15 minute summer	S2	23.003	S1	4.1	0.751	0.302	0.2225	
15 minute summer	S1	1.013	OUTFALL	4.7	0.631	0.031	0.1680	16.7

Results for 30 year Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S40	10	14.549	0.031	1.6	0.0088	0.0000	OK
360 minute summer	S39	360	15.661	0.861	1.5	0.2435	0.0000	SURCHARGED
360 minute summer	S38	360	15.661	0.661	1.0	0.0000	0.0000	SURCHARGED
360 minute summer	S37	360	15.661	0.966	0.6	0.0000	0.0000	SURCHARGED
360 minute summer	S36	360	15.661	1.080	2.9	0.4000	0.0000	SURCHARGED
360 minute summer	S35	360	15.661	0.961	1.4	0.0000	0.0000	SURCHARGED
360 minute summer	S34	360	15.661	0.961	1.1	0.0000	0.0000	SURCHARGED
360 minute summer	S33	360	15.661	1.243	5.2	16.7479	0.0000	SURCHARGED
15 minute summer	S32	10	14.671	0.071	8.4	0.0000	0.0000	OK
15 minute summer	S31	10	14.843	0.043	5.7	0.0000	0.0000	OK
15 minute summer	S30	10	14.394	0.063	14.2	0.0178	0.0000	OK
15 minute summer	S29	11	14.380	0.030	1.6	0.0345	0.0000	OK
15 minute summer	S28	1	14.350	0.000	0.0	0.0000	0.0000	OK
60 minute summer	S27	50	14.200	0.158	14.8	0.1262	0.0000	OK
15 minute summer	S26	10	14.221	0.051	4.5	0.0000	0.0000	OK
15 minute summer	S25	10	14.257	0.057	5.2	0.0000	0.0000	OK
60 minute summer	S24	50	14.200	0.276	20.7	0.0781	0.0000	SURCHARGED
60 minute summer	S23	52	14.200	0.230	5.4	0.0000	0.0000	SURCHARGED
15 minute summer	S22	11	14.209	0.409	11.7	0.0000	0.0000	FLOOD RISK
60 minute summer	S21	51	14.199	0.705	30.4	17.6710	0.0000	SURCHARGED
15 minute summer	S20	10	13.446	0.076	8.8	0.0000	0.0000	OK
15 minute summer	S19	10	13.481	0.081	10.1	0.0000	0.0000	OK
30 minute summer	S18	22	13.344	0.218	21.4	0.0617	0.0000	OK
60 minute summer	S17	39	13.337	0.437	1.6	0.0079	0.0000	SURCHARGED
60 minute summer	S16	62	13.337	0.387	7.3	5.6576	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 summer	S40	8.000	S29	1.6	0.648	0.090	0.0427	
360 minute summer	S39	3.000	S36	1.4	0.195	0.047	0.1325	
360 minute summer	S38	1.000	S36	0.9	0.192	0.033	0.2923	
360 minute summer	S37	2.000	S36	0.5	0.161	0.030	0.2010	
360 minute summer	S36	1.001	S33	2.9	0.312	0.197	0.2317	
360 minute summer	S35	4.000	S33	1.3	0.291	0.068	0.2944	
360 minute summer	S34	5.000	S33	1.0	0.334	0.043	0.2010	
360 minute summer	S33	1.002	S30	0.4	0.394	0.009	0.0278	
15 minute summer	S32	6.000	S30	8.3	1.035	0.433	0.1339	
15 minute summer	S31	7.000	S30	5.6	1.385	0.170	0.0466	
15 minute summer	S30	1.003	S27	14.1	1.037	0.172	0.2004	
15 minute summer	S29	8.001	S27	1.6	0.591	0.091	0.1193	
15 minute summer	S28	9.000	S27	0.0	0.000	0.000	0.0904	
60 minute summer	S27	1.004	S24	14.4	0.968	0.277	0.4095	
15 minute summer	S26	11.000	S24	4.5	0.741	0.249	0.1913	
15 minute summer	S25	10.000	S24	5.1	0.744	0.309	0.2728	
60 minute summer	S24	1.005	S21	18.3	0.463	0.194	0.5215	
60 minute summer	S23	13.000	S21	5.1	0.614	0.184	0.2958	
15 minute summer	S22	12.000	S21	10.9	0.620	0.614	0.4065	
60 minute summer	S21	1.006	S18	5.0	1.186	0.052	0.2349	
15 minute summer	S20	15.000	S18	8.7	0.992	0.487	0.1616	
15 minute summer	S19	14.000	S18	9.9	1.049	0.542	0.1842	
30 minute summer	S18	1.007	S15	18.4	0.636	0.158	0.4255	
60 minute summer	S17	17.000	S15	-1.6	-0.134	-0.086	0.3809	
60 minute summer	S16	16.000	S15	-7.3	-0.413	-0.409	0.5027	

Results for 30 year Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S15	22	13.337	0.749	24.4	4.9737	0.0000	SURCHARGED
15 minute summer	S14	10	12.409	0.059	5.8	0.0000	0.0000	OK
15 minute summer	S13	10	12.477	0.067	7.2	0.0000	0.0000	OK
15 minute summer	S12	11	12.164	0.060	18.4	0.0170	0.0000	OK
240 minute summer	S11	284	12.142	0.342	1.3	0.0000	0.0000	SURCHARGED
240 minute summer	S10	284	12.142	0.197	2.4	0.0000	0.0000	SURCHARGED
240 minute summer	S9	284	12.142	0.619	12.7	42.6265	0.0000	SURCHARGED
960 minute summer	S8	810	11.675	0.509	1.0	0.0000	0.0000	SURCHARGED
960 minute summer	S7	810	11.675	0.935	5.5	47.4041	0.0000	SURCHARGED
960 minute summer	S6	810	11.675	1.123	3.8	43.0056	0.0000	SURCHARGED
15 minute summer	S5	1	13.003	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S4	1	12.205	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S3	10	10.940	0.064	8.5	0.0213	0.0000	OK
15 minute summer	S2	11	10.703	0.101	10.0	0.0285	0.0000	OK
15 minute summer	S1	11	10.432	0.068	10.6	0.0988	0.0000	OK
15 minute summer	OUTFALL	11	10.296	0.066	10.5	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)
30 minute summer	S15	1.008	S12	6.3	1.528	0.054	0.0583	
15 minute summer	S14	19.000	S12	5.7	0.895	0.318	0.1070	
15 minute summer	S13	18.000	S12	7.0	0.943	0.396	0.1724	
15 minute summer	S12	1.009	S9	18.5	1.240	0.158	0.2421	
240 minute summer	S11	21.000	S9	1.1	0.364	0.065	0.2365	
240 minute summer	S10	20.000	S9	2.4	0.462	0.134	0.4772	
240 minute summer	S9	Hydro-Brake®	S7	4.6				
960 minute summer	S8	22.000	S7	1.0	0.270	0.055	0.3543	
960 minute summer	S7	1.011	S6	3.7	0.108	0.014	1.2369	
960 minute summer	S6	1.012	S1	3.4	0.729	0.010	0.0303	
15 minute summer	S5	23.000	S4	0.0	0.000	0.000	0.0000	
15 minute summer	S4	23.001	S3	0.0	0.000	0.000	0.1301	
15 minute summer	S3	23.002	S2	8.3	0.866	0.381	0.1782	
15 minute summer	S2	23.003	S1	9.9	0.976	0.738	0.4168	
15 minute summer	S1	1.013	OUTFALL	10.5	0.795	0.068	0.2985	25.3

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S40	10	14.561	0.043	3.0	0.0120	0.0000	OK
600 minute summer	S39	600	15.792	0.992	1.7	1.5946	0.0000	SURCHARGED
600 minute summer	S38	600	15.792	0.792	1.1	0.0000	0.0000	SURCHARGED
600 minute summer	S37	600	15.792	1.097	0.7	0.0000	0.0000	SURCHARGED
600 minute summer	S36	600	15.792	1.211	3.4	8.3770	0.0000	SURCHARGED
600 minute summer	S35	600	15.792	1.092	1.6	0.0000	0.0000	SURCHARGED
240 minute summer	S34	240	15.775	1.075	2.6	0.0000	0.0000	FLOOD RISK
600 minute summer	S33	600	15.792	1.374	5.6	32.7014	0.0000	FLOOD RISK
15 minute summer	S32	10	14.704	0.103	15.2	0.0000	0.0000	OK
15 minute summer	S31	10	14.859	0.059	10.4	0.0000	0.0000	OK
15 minute summer	S30	10	14.417	0.086	25.7	0.0242	0.0000	OK
15 minute summer	S29	11	14.391	0.041	3.0	0.0468	0.0000	OK
30 minute summer	S28	21	14.380	0.030	1.7	0.1827	0.0000	OK
15 minute summer	S27	12	14.385	0.343	39.7	1.1764	0.0000	SURCHARGED
30 minute summer	S26	20	14.351	0.181	7.4	0.0000	0.0000	SURCHARGED
30 minute summer	S25	19	14.370	0.170	8.5	0.0000	0.0000	SURCHARGED
60 minute summer	S24	61	14.346	0.422	34.5	1.2049	0.0000	SURCHARGED
60 minute summer	S23	61	14.345	0.375	9.9	0.0000	0.0000	SURCHARGED
15 minute summer	S22	9	14.232	0.432	21.2	0.0000	0.0000	FLOOD RISK
60 minute summer	S21	61	14.345	0.851	55.8	42.3691	0.0000	FLOOD RISK
30 minute summer	S20	19	13.614	0.244	14.3	0.0000	0.0000	SURCHARGED
30 minute summer	S19	19	13.663	0.263	16.5	0.0000	0.0000	SURCHARGED
30 minute summer	S18	20	13.525	0.399	33.6	0.1365	0.0000	SURCHARGED
60 minute summer	S17	41	13.495	0.595	5.4	2.3455	0.0000	SURCHARGED
120 minute summer	S16	122	13.472	0.522	9.1	16.7608	0.0000	FLOOD RISK

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	S40	8.000	S29	3.0	0.750	0.167	0.0660	
600 minute summer	S39	3.000	S36	1.7	0.273	0.055	0.1325	
600 minute summer	S38	1.000	S36	1.1	0.155	0.038	0.2923	
600 minute summer	S37	2.000	S36	0.7	0.141	0.038	0.2010	
600 minute summer	S36	1.001	S33	2.9	0.165	0.200	0.2317	
600 minute summer	S35	4.000	S33	1.6	0.089	0.079	0.2944	
240 minute summer	S34	5.000	S33	2.5	0.395	0.105	0.2010	
600 minute summer	S33	1.002	S30	0.4	0.400	0.010	0.0300	
15 minute summer	S32	6.000	S30	15.0	1.182	0.784	0.2122	
15 minute summer	S31	7.000	S30	10.3	1.631	0.311	0.0723	
15 minute summer	S30	1.003	S27	25.6	1.079	0.310	0.3102	
15 minute summer	S29	8.001	S27	3.0	0.507	0.167	0.2544	
30 minute summer	S28	9.000	S27	-1.7	-0.155	-0.098	0.2369	
15 minute summer	S27	1.004	S24	32.0	1.157	0.616	0.4682	
30 minute summer	S26	11.000	S24	7.1	0.664	0.394	0.2958	
30 minute summer	S25	10.000	S24	7.7	0.650	0.463	0.4065	
60 minute summer	S24	1.005	S21	32.2	0.810	0.341	0.5215	
60 minute summer	S23	13.000	S21	9.6	0.658	0.347	0.2958	
15 minute summer	S22	12.000	S21	20.1	1.140	1.130	0.4065	
60 minute summer	S21	1.006	S18	5.4	1.172	0.056	0.2392	
30 minute summer	S20	15.000	S18	13.3	1.007	0.745	0.2958	
30 minute summer	S19	14.000	S18	15.4	1.064	0.840	0.3286	
30 minute summer	S18	1.007	S15	32.3	0.812	0.276	0.4276	
60 minute summer	S17	17.000	S15	-5.4	-0.306	-0.290	0.3809	
120 minute summer	S16	16.000	S15	-9.1	-0.518	-0.513	0.5027	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 94.87%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	S15	22	13.494	0.906	43.7	9.2843	0.0000	SURCHARGED
600 minute summer	S14	615	12.516	0.166	1.3	0.0000	0.0000	SURCHARGED
600 minute summer	S13	615	12.515	0.105	1.6	0.0000	0.0000	OK
600 minute summer	S12	615	12.516	0.412	9.3	0.1165	0.0000	SURCHARGED
600 minute summer	S11	615	12.514	0.714	1.1	0.0000	0.0000	FLOOD RISK
240 minute summer	S10	404	12.422	0.477	4.3	0.0000	0.0000	FLOOD RISK
600 minute summer	S9	615	12.514	0.991	12.1	92.9051	0.0000	FLOOD RISK
1440 minute summer	S8	1410	11.925	0.759	1.3	0.0000	0.0000	FLOOD RISK
1440 minute summer	S7	1410	11.925	1.185	5.7	79.4268	0.0000	FLOOD RISK
1440 minute summer	S6	1410	11.925	1.373	4.1	53.8944	0.0000	FLOOD RISK
15 minute summer	S5	1	13.003	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S4	1	12.205	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S3	11	10.977	0.101	15.4	0.0356	0.0000	OK
15 minute summer	S2	12	10.869	0.267	17.8	0.0757	0.0000	SURCHARGED
15 minute summer	S1	12	10.450	0.086	16.8	0.1312	0.0000	OK
15 minute summer	OUTFALL	12	10.312	0.082	16.7	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)
30 minute summer	S15	1.008	S12	6.9	1.557	0.059	0.1164	
600 minute summer	S14	19.000	S12	1.3	0.591	0.073	0.2958	
600 minute summer	S13	18.000	S12	1.6	0.625	0.090	0.3561	
600 minute summer	S12	1.009	S9	9.3	1.234	0.079	0.4024	
600 minute summer	S11	21.000	S9	1.0	0.328	0.060	0.2365	
240 minute summer	S10	20.000	S9	4.0	0.414	0.223	0.4772	
600 minute summer	S9	Hydro-Brake®	S7	4.6				
1440 minute summer	S8	22.000	S7	1.3	0.270	0.072	0.3543	
1440 minute summer	S7	1.011	S6	3.7	0.033	0.014	1.2369	
1440 minute summer	S6	1.012	S1	3.6	0.745	0.010	0.0332	
15 minute summer	S5	23.000	S4	0.0	0.000	0.000	0.0000	
15 minute summer	S4	23.001	S3	0.0	0.000	0.000	0.2271	
15 minute summer	S3	23.002	S2	14.8	0.978	0.677	0.2731	
15 minute summer	S2	23.003	S1	16.1	1.055	1.197	0.5754	
15 minute summer	S1	1.013	OUTFALL	16.7	0.907	0.109	0.4167	44.6