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Gloucester House 66a Church Walk Burgess Hill RH15 9AS	Yapton 7033 S73 Scheme	
Date 24/09/2020 File Site SW network + tank+wier.MDX	Designed by SDL Checked by	
Micro Drainage	Network 2020.1	

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Surface Network 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	4.852	0.032	151.6	0.028	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	8.823	0.059	149.5	0.015	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.002	32.665	0.192	170.1	0.027	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	10.625	0.063	168.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	4.244	0.134	31.7	0.088	5.00	0.0	0.600	o	100	Pipe/Conduit	
2.001	7.521	0.054	139.3	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	0.00	5.10	9.001	0.028	0.0	0.0	0.0	0.81	14.4	0.0
1.001	0.00	5.24	8.969	0.043	0.0	0.0	0.0	1.07	42.4	0.0
1.002	0.00	5.78	8.917	0.070	0.0	0.0	0.0	1.00	39.7	0.0
1.003	0.00	5.96	8.725	0.070	0.0	0.0	0.0	1.00	39.9	0.0
2.000	0.00	5.05	8.900	0.088	0.0	0.0	0.0	1.38	10.8	0.0
2.001	0.00	5.20	8.716	0.088	0.0	0.0	0.0	0.85	15.0	0.0

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1.004	50.835	0.179	284.0	0.103	0.00	0.0	0.600	o	300	Pipe/Conduit	
3.000	2.913	0.050	58.3	0.064	5.00	0.0	0.600	o	150	Pipe/Conduit	
3.001	11.125	0.074	150.3	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
4.000	1.336	0.050	26.7	0.097	5.00	0.0	0.600	o	150	Pipe/Conduit	
4.001	7.804	0.167	46.7	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.004	0.00	6.87	8.662	0.261	0.0	0.0	0.0	0.93	65.6	0.0
3.000	0.00	5.04	8.800	0.064	0.0	0.0	0.0	1.32	23.3	0.0
3.001	0.00	5.26	8.750	0.064	0.0	0.0	0.0	0.82	14.4	0.0
4.000	0.00	5.01	9.000	0.097	0.0	0.0	0.0	1.96	34.6	0.0
4.001	0.00	5.10	8.950	0.097	0.0	0.0	0.0	1.48	26.1	0.0

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1.005	17.342	0.043	403.3	0.011	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.006	20.653	0.052	397.2	0.112	0.00	0.0	0.600	o	450	Pipe/Conduit	
5.000	3.184	0.050	63.7	0.099	5.00	0.0	0.600	o	100	Pipe/Conduit	
5.001	15.162	0.112	135.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.007	21.561	0.053	406.8	0.026	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.008	22.462	0.057	394.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.005	0.00	7.16	8.483	0.433	0.0	0.0	0.0	1.01	160.0	0.0
1.006	0.00	7.50	8.440	0.545	0.0	0.0	0.0	1.01	161.3	0.0
5.000	0.00	5.05	8.900	0.099	0.0	0.0	0.0	0.97	7.6	0.0
5.001	0.00	5.35	8.800	0.099	0.0	0.0	0.0	0.86	15.2	0.0
1.007	0.00	7.86	8.388	0.670	0.0	0.0	0.0	1.00	159.3	0.0
1.008	0.00	8.22	8.335	0.670	0.0	0.0	0.0	1.02	161.9	0.0

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PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
6.000	2.659	0.050	53.2	0.106	5.00	0.0	0.600	o	150	Pipe/Conduit	
6.001	15.141	0.222	68.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.009	69.524	0.172	404.2	0.114	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.010	16.095	0.038	423.6	0.065	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.011	24.467	0.102	239.9	0.025	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
6.000	0.00	5.03	8.850	0.106	0.0	0.0	0.0	1.38	24.4	0.0
6.001	0.00	5.24	8.800	0.106	0.0	0.0	0.0	1.22	21.5	0.0
1.009	0.00	9.38	8.278	0.890	0.0	0.0	0.0	1.00	159.8	0.0
1.010	0.00	9.65	8.106	0.955	0.0	0.0	0.0	0.98	156.1	0.0
1.011	0.00	9.96	8.068	0.980	0.0	0.0	0.0	1.31	208.1	0.0

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Network Design Table for Surface Network 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
7.000	20.591	0.137	150.3	0.019	5.00	0.0	0.600	o	150	Pipe/Conduit	
7.001	8.532	0.057	149.7	0.011	0.00	0.0	0.600	o	150	Pipe/Conduit	
7.002	7.710	0.051	151.2	0.006	0.00	0.0	0.600	o	150	Pipe/Conduit	
7.003	10.077	0.067	150.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
8.000	15.925	0.106	150.2	0.048	5.00	0.0	0.600	o	150	Pipe/Conduit	
7.004	15.264	0.102	149.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
7.000	0.00	5.42	9.109	0.019	0.0	0.0	0.0	0.82	14.4	0.0
7.001	0.00	5.59	8.972	0.030	0.0	0.0	0.0	0.82	14.5	0.0
7.002	0.00	5.75	8.915	0.036	0.0	0.0	0.0	0.81	14.4	0.0
7.003	0.00	5.96	8.864	0.036	0.0	0.0	0.0	0.82	14.4	0.0
8.000	0.00	5.32	8.978	0.048	0.0	0.0	0.0	0.82	14.4	0.0
7.004	0.00	6.20	8.797	0.084	0.0	0.0	0.0	1.07	42.4	0.0

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7.005	11.065	0.074	149.5	0.058	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.006	12.274	0.082	149.7	0.016	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.007	7.760	0.051	152.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.008	43.059	0.116	371.2	0.159	0.00	0.0	0.600	o	450	Pipe/Conduit	
9.000	1.999	0.050	40.0	0.099	5.00	0.0	0.600	o	150	Pipe/Conduit	
9.001	11.227	0.577	19.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
7.005	0.00	6.37	8.695	0.142	0.0	0.0	0.0	1.07	42.4	0.0
7.006	0.00	6.56	8.621	0.158	0.0	0.0	0.0	1.07	42.4	0.0
7.007	0.00	6.68	8.539	0.158	0.0	0.0	0.0	1.06	42.0	0.0
7.008	0.00	7.37	8.488	0.317	0.0	0.0	0.0	1.05	166.9	0.0
9.000	0.00	5.02	9.300	0.099	0.0	0.0	0.0	1.60	28.2	0.0
9.001	0.00	5.10	9.250	0.099	0.0	0.0	0.0	2.29	40.5	0.0

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7.009	14.032	0.037	379.2	0.028	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.010	20.101	0.054	372.2	0.064	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.011	16.866	0.045	374.8	0.048	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.012	16.576	0.043	385.5	0.011	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.013	3.789	0.133	28.5	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
7.014	12.759	0.060	212.7	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
10.000	3.745	0.016	234.1	0.000	5.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
7.009	0.00	7.59	8.373	0.444	0.0	0.0	0.0	1.04	165.1	0.0
7.010	0.00	7.91	8.335	0.508	0.0	0.0	0.0	1.05	166.6	0.0
7.011	0.00	8.18	8.281	0.556	0.0	0.0	0.0	1.04	166.1	0.0
7.012	0.00	8.45	8.236	0.567	0.0	0.0	0.0	1.03	163.7	0.0
7.013	0.00	8.47	8.193	0.567	0.0	0.0	0.0	3.82	607.6	0.0
7.014	0.00	8.62	8.060	0.567	0.0	0.0	0.0	1.39	221.1	0.0
10.000	0.00	5.07	8.066	0.000	0.0	0.0	0.0	0.85	33.8	0.0

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10.001	4.012	0.050	80.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.012	7.974	0.059	135.2	0.113	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
10.001	0.00	5.12	8.050	0.000	0.0	0.0	0.0	1.46	58.1	0.0
1.012	0.00	10.08	7.966	1.660	0.0	0.0	0.0	1.12	44.6	0.0

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Area Summary for Surface Network 1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
8.000	-	-	100	0.048	0.048	0.048
7.004	-	-	100	0.000	0.000	0.000
7.005	-	-	100	0.058	0.058	0.058
7.006	-	-	100	0.016	0.016	0.016
7.007	-	-	100	0.000	0.000	0.000
7.008	-	-	100	0.159	0.159	0.159
9.000	-	-	100	0.099	0.099	0.099
9.001	-	-	100	0.000	0.000	0.000
7.009	-	-	100	0.028	0.028	0.028
7.010	-	-	100	0.064	0.064	0.064
7.011	-	-	100	0.048	0.048	0.048
7.012	-	-	100	0.011	0.011	0.011
7.013	-	-	100	0.000	0.000	0.000
7.014	-	-	100	0.000	0.000	0.000
10.000	-	-	100	0.000	0.000	0.000
10.001	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.113	0.113	0.113
				Total	Total	Total
				1.660	1.660	1.660

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<u>Online Controls for Surface Network 1</u> <u>Orifice Manhole: S6, DS/PN: 2.001, Volume (m³): 1.0</u> Diameter (m) 0.120 Discharge Coefficient 0.600 Invert Level (m) 8.716 <u>Orifice Manhole: 12, DS/PN: 3.001, Volume (m³): 1.0</u> Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 8.750 <u>Orifice Manhole: 11, DS/PN: 4.001, Volume (m³): 0.9</u> Diameter (m) 0.035 Discharge Coefficient 0.600 Invert Level (m) 8.950 <u>Orifice Manhole: 15, DS/PN: 5.001, Volume (m³): 0.8</u> Diameter (m) 0.045 Discharge Coefficient 0.600 Invert Level (m) 8.800 <u>Orifice Manhole: S15, DS/PN: 6.001, Volume (m³): 0.9</u> Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 8.800 <u>Orifice Manhole: S34, DS/PN: 9.001, Volume (m³): 0.8</u> Diameter (m) 0.040 Discharge Coefficient 0.600 Invert Level (m) 9.250		
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Hydro-Brake® Optimum Manhole: S43, DS/PN: 1.012, Volume (m³): 44.5

Unit Reference	MD-SHE-0123-7300-1200-7300	Sump Available	Yes
Design Head (m)	1.200	Diameter (mm)	123
Design Flow (l/s)	7.3	Invert Level (m)	7.966
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	7.3	Kick-Flo®	0.759	5.9
Flush-Flo™	0.354	7.3	Mean Flow over Head Range	-	6.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.4	0.600	6.9	1.600	8.4	2.600	10.5	5.000	14.3	7.500	17.4
0.200	6.9	0.800	6.0	1.800	8.8	3.000	11.2	5.500	15.0	8.000	17.9
0.300	7.3	1.000	6.7	2.000	9.3	3.500	12.1	6.000	15.6	8.500	18.5
0.400	7.3	1.200	7.3	2.200	9.7	4.000	12.9	6.500	16.2	9.000	19.0
0.500	7.1	1.400	7.8	2.400	10.1	4.500	13.6	7.000	16.8	9.500	19.5

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<u>Offline Controls for Surface Network 1</u> <u>Weir Manhole: 42, DS/PN: 10.001, Loop to PN: 1.012</u> Discharge Coef 0.544 Width (m) 1.000 Invert Level (m) 8.500		
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Storage Structures for Surface Network 1

Porous Car Park Manhole: S5, DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	8.900	Depression Storage (mm)	5
Max Percolation (l/s)	55.0	Width (m)	4.5	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	44.0	Membrane Depth (mm)	40

Porous Car Park Manhole: 11, DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	8.800	Depression Storage (mm)	5
Max Percolation (l/s)	48.8	Width (m)	4.5	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	39.0	Membrane Depth (mm)	40

Porous Car Park Manhole: 10, DS/PN: 4.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	0.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	9.000	Depression Storage (mm)	5
Max Percolation (l/s)	58.9	Width (m)	5.3	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	40.0	Membrane Depth (mm)	40

Porous Car Park Manhole: 14, DS/PN: 5.000

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	73.8	Porosity	0.30
Membrane Percolation (mm/hr)	1000	Safety Factor	2.0	Invert Level (m)	8.900

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<u>Porous Car Park Manhole: 14, DS/PN: 5.000</u> Width (m) 4.5 Slope (1:X) 0.0 Evaporation (mm/day) 3 Length (m) 59.0 Depression Storage (mm) 5 Membrane Depth (mm) 40 <u>Porous Car Park Manhole: S14, DS/PN: 6.000</u> Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.30 Slope (1:X) 0.0 Membrane Percolation (mm/hr) 1000 Invert Level (m) 8.850 Depression Storage (mm) 5 Max Percolation (l/s) 72.3 Width (m) 4.2 Evaporation (mm/day) 3 Safety Factor 2.0 Length (m) 62.0 Membrane Depth (mm) 40 <u>Porous Car Park Manhole: S30, DS/PN: 7.005</u> Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.30 Slope (1:X) 0.0 Membrane Percolation (mm/hr) 1000 Invert Level (m) 8.900 Depression Storage (mm) 5 Max Percolation (l/s) 27.5 Width (m) 5.5 Evaporation (mm/day) 3 Safety Factor 2.0 Length (m) 18.0 Membrane Depth (mm) 40 <u>Porous Car Park Manhole: S33, DS/PN: 9.000</u> Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.30 Slope (1:X) 0.0 Membrane Percolation (mm/hr) 1000 Invert Level (m) 9.300 Depression Storage (mm) 5 Max Percolation (l/s) 60.7 Width (m) 5.2 Evaporation (mm/day) 3 Safety Factor 2.0 Length (m) 42.0 Membrane Depth (mm) 40		
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Gloucester House 66a Church Walk Burgess Hill RH15 9AS	Yapton 7033 S73 Scheme																											
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Micro Drainage Network 2020.1																												
<u>Cellular Storage Manhole: 41, DS/PN: 10.000</u> Invert Level (m) 8.066 Infiltration Coefficient Side (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Base (m/hr) 0.00000 Safety Factor 2.0 <table><tr><td>Depth (m)</td><td>Area (m²)</td><td>Inf. Area (m²)</td><td>Depth (m)</td><td>Area (m²)</td><td>Inf. Area (m²)</td><td>Depth (m)</td><td>Area (m²)</td><td>Inf. Area (m²)</td></tr><tr><td>0.000</td><td>216.0</td><td>216.0</td><td>0.800</td><td>216.0</td><td>283.2</td><td>0.900</td><td>0.0</td><td>283.2</td></tr></table> <u>Tank or Pond Manhole: S43, DS/PN: 1.012</u> Invert Level (m) 8.000 <table><tr><td>Depth (m)</td><td>Area (m²)</td><td>Depth (m)</td><td>Area (m²)</td></tr><tr><td>0.000</td><td>399.0</td><td>1.300</td><td>1137.0</td></tr></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	216.0	216.0	0.800	216.0	283.2	0.900	0.0	283.2	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	399.0	1.300	1137.0
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)																				
0.000	216.0	216.0	0.800	216.0	283.2	0.900	0.0	283.2																				
Depth (m)	Area (m²)	Depth (m)	Area (m²)																									
0.000	399.0	1.300	1137.0																									
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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.000
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 7 Number of Storage Structures 9 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 FEH Rainfall Version 2013 Cv (Summer) 1.000
 Site Location GB 496649 103835 SU 96649 03835 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

US/MH	US/CL	Water Level	Surcharged Depth	Flooded Volume	Flow / Overflow	Infil.	Maximum	Half Drain	Pipe			
PN	Name	Event	(m)	(m)	(m³)	Cap.	(l/s)	Flow (l/s)	Vol (m³)	Time (mins)	Flow (l/s)	Status

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

PN	US/MH Name		Event			US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Infil. Flow (l/s)	Maximum Vol (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.002	S26	30 minute	2 year	Summer	I+0%	9.500	8.992	-0.073	0.000	0.52			0.055		6.5	OK
7.003	26	30 minute	2 year	Summer	I+0%	9.500	8.939	-0.075	0.000	0.50			0.104		6.4	OK
8.000	27	30 minute	2 year	Summer	I+0%	9.600	9.071	-0.057	0.000	0.70			0.076		9.3	OK
7.004	27	30 minute	2 year	Summer	I+0%	9.550	8.898	-0.124	0.000	0.42			0.152		15.6	OK
7.005	S30	30 minute	2 year	Summer	I+0%	9.800	8.835	-0.085	0.000	0.70		0.0	0.228	6	25.1	OK
7.006	S31	30 minute	2 year	Summer	I+0%	9.850	8.769	-0.077	0.000	0.76			0.219		27.7	OK
7.007	31	30 minute	2 year	Summer	I+0%	9.920	8.720	-0.044	0.000	0.86			0.436		27.4	OK
7.008	S32	30 minute	2 year	Summer	I+0%	9.860	8.686	-0.252	0.000	0.34			0.481		51.5	OK
9.000	S33	240 minute	2 year	Summer	I+0%	10.200	9.504	0.054	0.000	0.13		0.0	13.562	130	1.8	SURCHARGED
9.001	S34	240 minute	2 year	Summer	I+0%	10.150	9.507	0.107	0.000	0.04			0.235		1.6	SURCHARGED
7.009	S35	30 minute	2 year	Summer	I+0%	10.059	8.614	-0.209	0.000	0.49			2.830		54.8	OK
7.010	S36	30 minute	2 year	Summer	I+0%	9.890	8.578	-0.207	0.000	0.47			1.093		63.1	OK
7.011	S37	30 minute	2 year	Summer	I+0%	9.660	8.533	-0.198	0.000	0.56			1.526		68.7	OK
7.012	S40	30 minute	2 year	Summer	I+0%	10.030	8.485	-0.201	0.000	0.59			1.351		69.9	OK
7.013	S41	480 minute	2 year	Winter	I+0%	9.300	8.418	-0.225	0.000	0.07			7.415		14.3	OK
7.014	S42	480 minute	2 year	Winter	I+0%	9.300	8.418	-0.092	0.000	0.08			10.679		13.0	OK
10.000	41	480 minute	2 year	Winter	I+0%	9.500	8.416	0.125	0.000	0.09		0.0	72.121	471	2.3	SURCHARGED
10.001	42	480 minute	2 year	Winter	I+0%	9.500	8.416	0.141	0.000	0.06	0.0		0.420		1.8	SURCHARGED
1.012	S43	480 minute	2 year	Winter	I+0%	9.300	8.417	0.226	0.000	0.21			222.925		7.3	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.000
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coefficient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 7 Number of Storage Structures 9 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 FEH Rainfall Version 2013 Cv (Summer) 1.000
 Site Location GB 496649 103835 SU 96649 03835 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

		Water Surcharged Flooded				Half Drain		Pipe				
US/MH	US/CL	Level	Depth	Volume	Flow / Overflow	Infil.	Maximum	Time	Flow			
PN	Name	Event	(m)	(m)	(m³)	Cap.	(l/s)	Flow (l/s)	Vol (m³)	(mins)	(l/s)	Status

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Infil. Flow (l/s)	Maximum Vol (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
7.002	S26	30 minute 30 year Summer I+0%	9.500	9.250	0.185	0.000	0.81			0.182		10.1	FLOOD RISK
7.003	26	30 minute 30 year Summer I+0%	9.500	9.228	0.214	0.000	0.67			0.434		8.7	FLOOD RISK
8.000	27	30 minute 30 year Summer I+0%	9.600	9.345	0.217	0.000	1.29			0.313		17.3	FLOOD RISK
7.004	27	30 minute 30 year Summer I+0%	9.550	9.200	0.178	0.000	0.65			0.767		24.1	SURCHARGED
7.005	S30	30 minute 30 year Summer I+0%	9.800	9.141	0.221	0.000	1.06		0.0	7.790	6	37.9	SURCHARGED
7.006	S31	30 minute 30 year Summer I+0%	9.850	9.074	0.228	0.000	1.10			0.493		40.1	SURCHARGED
7.007	31	30 minute 30 year Summer I+0%	9.920	8.982	0.218	0.000	1.28			0.838		40.8	SURCHARGED
7.008	S32	30 minute 30 year Summer I+0%	9.860	8.908	-0.030	0.000	0.62			0.855		93.5	OK
9.000	S33	180 minute 30 year Summer I+0%	10.200	9.724	0.274	0.000	0.17		0.0	28.170	163	2.4	SURCHARGED
9.001	S34	180 minute 30 year Summer I+0%	10.150	9.728	0.328	0.000	0.06			0.427		2.2	SURCHARGED
7.009	S35	30 minute 30 year Summer I+0%	10.059	8.824	0.001	0.000	0.88			6.561		97.9	SURCHARGED
7.010	S36	30 minute 30 year Summer I+0%	9.890	8.787	0.002	0.000	0.85			2.345		114.9	SURCHARGED
7.011	S37	30 minute 30 year Summer I+0%	9.660	8.736	0.005	0.000	1.04			3.140		128.8	SURCHARGED
7.012	S40	720 minute 30 year Winter I+0%	10.030	8.726	0.040	0.000	0.15			2.980		17.5	SURCHARGED
7.013	S41	720 minute 30 year Winter I+0%	9.300	8.726	0.083	0.000	0.08			18.054		16.1	SURCHARGED
7.014	S42	720 minute 30 year Winter I+0%	9.300	8.726	0.216	0.000	0.10			19.998		15.6	SURCHARGED
10.000	41	720 minute 30 year Winter I+0%	9.500	8.724	0.433	0.000	0.12		0.0	135.658	1067	3.0	SURCHARGED
10.001	42	720 minute 30 year Winter I+0%	9.500	8.724	0.449	0.000	0.10	0.1		0.687		3.3	SURCHARGED
1.012	S43	720 minute 30 year Winter I+0%	9.300	8.725	0.534	0.000	0.21			441.460		7.3	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 1

Simulation Criteria

Areal Reduction Factor 1.000 Manhole Headloss Coeff (Global) 0.500 MADD Factor * 10m³/ha Storage 2.000
 Hot Start (mins) 0 Foul Sewage per hectare (l/s) 0.000 Inlet Coeffiecient 0.800
 Hot Start Level (mm) 0 Additional Flow - % of Total Flow 0.000 Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 1 Number of Time/Area Diagrams 0
 Number of Online Controls 7 Number of Storage Structures 9 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
 FEH Rainfall Version 2013 Cv (Summer) 1.000
 Site Location GB 496649 103835 SU 96649 03835 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
 Analysis Timestep 2.5 Second Increment (Extended) Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 0, 40

US/MH		US/CL		Water		Surcharged		Flooded		Half Drain		Pipe
PN	Name	Event	(m)	Level	Depth	Volume	Flow /	Overflow	Infil.	Maximum	Time	Flow
				(m)	(m)	(m ³)	Cap.	(l/s)	Flow (l/s)	Vol (m ³)	(mins)	(l/s)
												Status

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