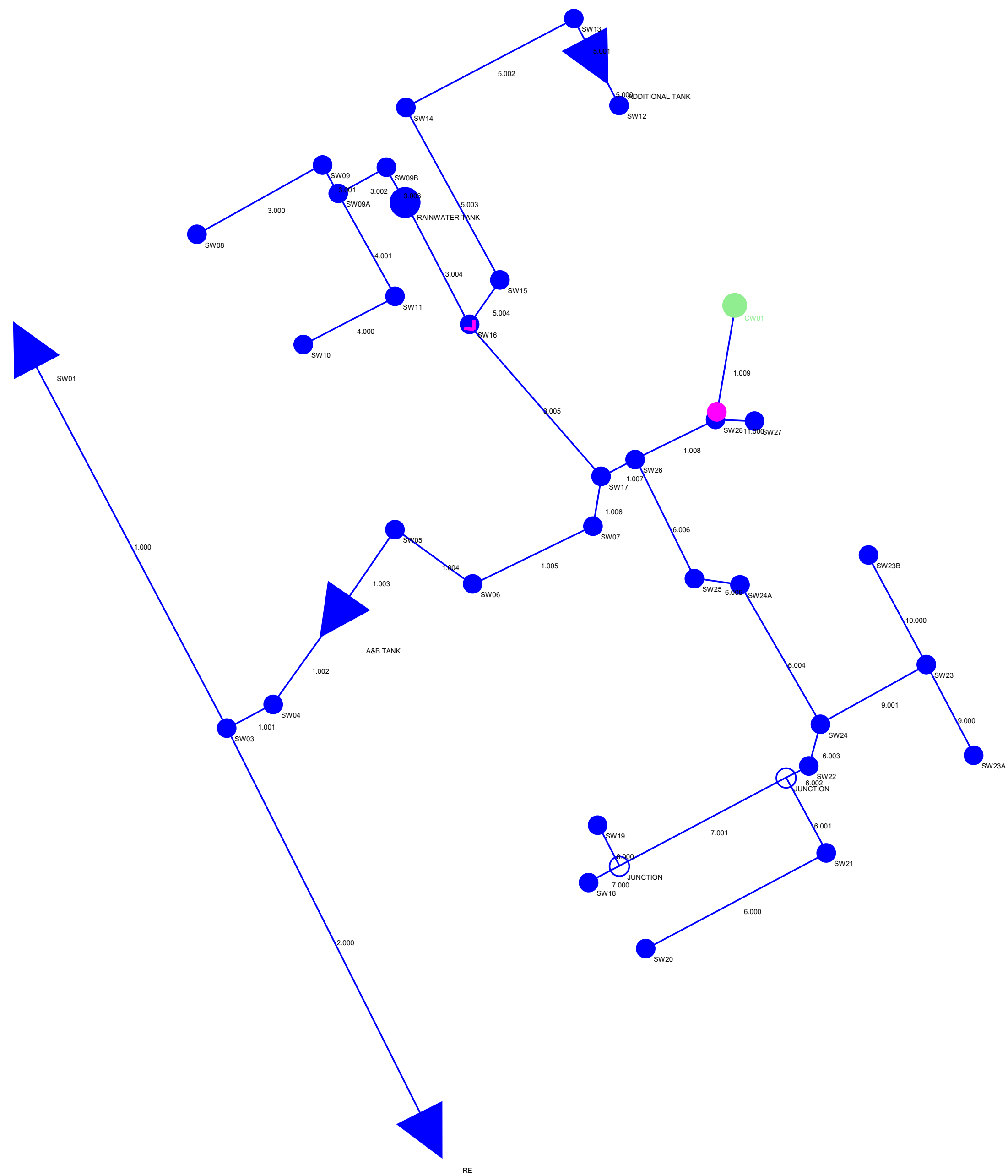




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1 Dale Street Liverpool L2 2ET	219-215 First Street Blocks A & B SW Network	
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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Blocks A&B

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	30	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.360	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Blocks A&B

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.241	4-8	0.080

Total Area Contributing (ha) = 0.321

Total Pipe Volume (m³) = 10.514

Network Design Table for Blocks A&B

« - Indicates pipe capacity < flow

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	42.014	0.420	100.0	0.008	5.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	44.168	0.440	100.4	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	5.050	0.130	38.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	10.323	0.230	44.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	10.323	0.110	93.8	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)	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)
1.000	50.00	5.70	32.815	0.008	0.0	0.0	0.0	1.00	17.8	1.1
2.000	50.00	5.73	33.520	0.000	0.0	0.0	0.0	1.00	17.7	0.0
1.001	50.00	5.79	31.940	0.008	0.0	0.0	0.0	1.62	28.6	1.1
1.002	50.00	5.90	31.940	0.008	0.0	0.0	0.0	1.51	26.6	1.1
1.003	50.00	6.03	31.710	0.008	0.0	0.0	0.0	1.35	53.7	1.1

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1 Dale Street Liverpool L2 2ET	219-215 First Street Blocks A & B SW Network	
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Network Design Table for Blocks A&B

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
1.004	9.187	0.100	92.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
1.005	12.923	0.093	139.0	0.029	0.00	0.0	0.600	o	225	Pipe/Conduit		
1.006	4.893	0.374	13.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
3.000	13.905	0.140	99.3	0.034	5.00	0.0	0.600	o	150	Pipe/Conduit		
3.001	3.141	0.030	104.7	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
4.000	10.046	0.100	100.5	0.016	5.00	0.0	0.600	o	150	Pipe/Conduit		
4.001	11.390	0.120	94.9	0.010	0.00	0.0	0.600	o	150	Pipe/Conduit		
3.002	5.312	0.050	106.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
3.003	3.869	0.010	386.9	0.023	0.00	0.0	0.600	o	150	Pipe/Conduit		
3.004	13.360	0.150	89.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
5.000	4.745	0.010	474.5	0.008	5.00	0.0	0.600	o	150	Pipe/Conduit		
5.001	4.745	0.010	474.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		
5.002	18.410	0.245	75.1	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit		
5.003	19.026	0.230	82.7	0.011	0.00	0.0	0.600	o	225	Pipe/Conduit		
5.004	5.206	0.175	29.8	0.018	0.00	0.0	0.600	o	225	Pipe/Conduit		
3.005	19.471	0.442	44.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit		
1.007	3.677	0.108	34.0	0.000	0.00	0.0	0.600	o	300	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)
1.004	50.00	6.14	31.600	0.008	0.0	0.0	0.0	1.36	54.2	1.1
1.005	50.00	6.33	31.500	0.037	0.0	0.0	0.0	1.11	44.0	5.0
1.006	50.00	6.36	31.407	0.037	0.0	0.0	0.0	3.63	144.5	5.0
3.000	50.00	5.23	33.000	0.034	0.0	0.0	0.0	1.01	17.8	4.6
3.001	50.00	5.28	32.860	0.034	0.0	0.0	0.0	0.98	17.3	4.6
4.000	50.00	5.17	33.050	0.016	0.0	0.0	0.0	1.00	17.7	2.2
4.001	50.00	5.35	32.950	0.026	0.0	0.0	0.0	1.03	18.2	3.5
3.002	50.00	5.44	32.830	0.060	0.0	0.0	0.0	0.97	17.2	8.1
3.003	50.00	5.57	31.710	0.083	0.0	0.0	0.0	0.51	8.9	11.2
3.004	50.00	5.78	31.700	0.083	0.0	0.0	0.0	1.07	18.8	11.2
5.000	50.00	5.17	32.220	0.008	0.0	0.0	0.0	0.45	8.0	1.1
5.001	50.00	5.35	32.210	0.008	0.0	0.0	0.0	0.45	8.0	1.1
5.002	50.00	5.61	32.200	0.012	0.0	0.0	0.0	1.16	20.5	1.6
5.003	50.00	5.83	31.880	0.023	0.0	0.0	0.0	1.44	57.2	3.1
5.004	50.00	5.87	31.650	0.041	0.0	0.0	0.0	2.40	95.6	5.6
3.005	50.00	6.03	31.475	0.124	0.0	0.0	0.0	1.98	78.5	16.8
1.007	50.00	6.38	30.958	0.161	0.0	0.0	0.0	2.70	191.1	21.8

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Network Design Table for Blocks A&B

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	19.792	0.200	99.0	0.004	5.00	0.0	0.600	o	150	Pipe/Conduit	
6.001	8.235	0.200	41.2	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit	
7.000	3.372	0.036	93.7	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit	
8.000	4.511	0.046	98.1	0.030	5.00	0.0	0.600	o	150	Pipe/Conduit	
7.001	18.287	0.194	94.3	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.002	2.484	0.025	99.4	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.003	4.192	0.095	44.1	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
9.000	9.914	0.170	58.3	0.001	5.00	0.0	0.600	o	150	Pipe/Conduit	
10.000	12.002	0.200	60.0	0.006	5.00	0.0	0.600	o	150	Pipe/Conduit	
9.001	11.781	0.130	90.6	0.003	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.004	15.600	0.160	97.5	0.017	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.005	4.458	0.087	51.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
6.006	12.891	0.045	286.5	0.034	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)
6.000	50.00	5.33	32.980	0.004	0.0	0.0	0.0	1.01	17.9	0.5
6.001	50.00	5.41	32.780	0.008	0.0	0.0	0.0	1.57	27.8	1.1
7.000	50.00	5.05	32.810	0.015	0.0	0.0	0.0	1.04	18.4	2.0
8.000	50.00	5.07	32.820	0.030	0.0	0.0	0.0	1.01	17.9	4.1
7.001	50.00	5.37	32.774	0.045	0.0	0.0	0.0	1.04	18.3	6.1
6.002	50.00	5.45	32.580	0.053	0.0	0.0	0.0	1.01	17.8	7.2
6.003	50.00	5.50	32.555	0.053	0.0	0.0	0.0	1.52	26.8	7.2
9.000	50.00	5.13	32.760	0.001	0.0	0.0	0.0	1.32	23.3	0.1
10.000	50.00	5.15	32.790	0.006	0.0	0.0	0.0	1.30	23.0	0.8
9.001	50.00	5.34	32.590	0.010	0.0	0.0	0.0	1.06	18.7	1.4
6.004	50.00	5.76	32.460	0.080	0.0	0.0	0.0	1.02	18.0	10.8
6.005	50.00	5.81	32.300	0.080	0.0	0.0	0.0	1.41	24.9	10.8
6.006	50.00	6.09	32.138	0.114	0.0	0.0	0.0	0.77	30.5	15.4

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Network Design Table for Blocks A&B

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
1.008	8.706	0.423	20.6	0.034	0.00	0.0	0.600	o	300	Pipe/Conduit	
11.000	3.779	0.239	15.8	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.009	11.212	0.143	78.4	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)	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)
1.008	50.00	6.42	30.850	0.309	0.0	0.0	0.0	3.48	246.0	41.8
11.000	50.00	5.02	33.000	0.012	0.0	0.0	0.0	2.55	45.0	1.6
1.009	50.00	6.55	30.428	0.321	0.0	0.0	0.0	1.48	58.8	43.5

Manhole Schedules for Blocks A&B

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
SW24A	34.400	2.100	Open Manhole	600	6.005	32.300	150	9.001	32.460	150	
SW25	34.400	2.262	Open Manhole	1200	6.006	32.138	225	6.004	32.300	150	
SW26	34.400	3.550	Open Manhole	1200	1.008	30.850	300	6.005	32.213	150	
								1.007	30.850	300	
								6.006	32.093	225	1168
SW27	34.180	1.180	Open Manhole	600	11.000	33.000	150				
SW28	34.170	3.742	Open Manhole	1500	1.009	30.428	225	1.008	30.428	300	
								11.000	32.761	150	2258
CW01	33.900	3.615	Open Manhole	2400		OUTFALL		1.009	30.285	225	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW01	383790.934	397215.765	383790.934	397215.765	Required	
RE	383830.253	397139.079	383830.253	397139.079	Required	
SW03	383810.473	397178.571	383810.473	397178.571	Required	
SW04	383814.973	397180.863	383814.973	397180.863	Required	
A&B TANK	383820.899	397189.369	383820.899	397189.369	Required	
SW05	383826.775	397197.803	383826.775	397197.803	Required	
SW06	383834.309	397192.546	383834.309	397192.546	Required	
SW07	383845.960	397198.136	383845.960	397198.136	Required	
SW08	383807.585	397226.416	383807.585	397226.416	Required	
SW09	383819.763	397233.127	383819.763	397233.127	Required	

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Manhole Schedules for Blocks A&B

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW10	383817.886	397215.735	383817.886	397215.735	Required	
SW11	383826.782	397220.404	383826.782	397220.404	Required	
SW09A	383821.278	397230.376	383821.278	397230.376	Required	
SW09B	383825.943	397232.917	383825.943	397232.917	Required	
RAINWATER TANK	383827.754	397229.498	383827.754	397229.498	Required	
SW12	383848.492	397238.902	383848.492	397238.902	Required	
ADDITIONAL TANK	383846.297	397243.109	383846.297	397243.109	Required	
SW13	383844.102	397247.316	383844.102	397247.316	Required	
SW14	383827.833	397238.700	383827.833	397238.700	Required	
SW15	383836.940	397221.994	383836.940	397221.994	Required	
SW16	383834.007	397217.692	383834.007	397217.692	Required	
SW17	383846.746	397202.966	383846.746	397202.966	Required	
SW20	383851.071	397157.212	383851.071	397157.212	Required	
SW21	383868.561	397166.477	383868.561	397166.477	Required	
SW18	383845.539	397163.602	383845.539	397163.602	Required	
SW19	383846.408	397169.166	383846.408	397169.166	Required	

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Manhole Schedules for Blocks A&B

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
JUNCTION	383848.519	397165.180			No Entry	
JUNCTION	383864.679	397173.739			No Entry	
SW22	383866.875	397174.899	383866.875	397174.899	Required	
SW23A	383882.844	397175.938	383882.844	397175.938	Required	
SW23B	383872.655	397195.342	383872.655	397195.342	Required	
SW23	383878.258	397184.728	383878.258	397184.728	Required	
SW24	383867.998	397178.938	383867.998	397178.938	Required	
SW24A	383860.206	397192.453	383860.206	397192.453	Required	
SW25	383855.789	397193.053	383855.789	397193.053	Required	
SW26	383850.043	397204.593	383850.043	397204.593	Required	
SW27	383861.613	397208.314	383861.613	397208.314	Required	
SW28	383857.837	397208.473	383857.837	397208.473	Required	
CW01	383859.692	397219.531			No Entry	

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PIPELINE SCHEDULES for Blocks A&B

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	SW01	33.865	32.815	0.900	Open Manhole	1200
2.000	o	150	RE	34.570	33.520	0.900	Open Manhole	150
1.001	o	150	SW03	34.100	31.940	2.010	Open Manhole	1200
1.002	o	150	SW04	34.100	31.940	2.010	Open Manhole	1200
1.003	o	225	A&B TANK	34.100	31.710	2.165	Open Manhole	1500
1.004	o	225	SW05	34.400	31.600	2.575	Open Manhole	1200
1.005	o	225	SW06	34.400	31.500	2.675	Open Manhole	1200
1.006	o	225	SW07	34.400	31.407	2.768	Open Manhole	1200
3.000	o	150	SW08	34.300	33.000	1.150	Open Manhole	600
3.001	o	150	SW09	34.370	32.860	1.360	Open Manhole	1200
4.000	o	150	SW10	34.400	33.050	1.200	Open Manhole	600
4.001	o	150	SW11	34.400	32.950	1.300	Open Manhole	1200
3.002	o	150	SW09A	34.400	32.830	1.420	Open Manhole	1200
3.003	o	150	SW09B	33.230	31.710	1.370	Open Manhole	1200
3.004	o	150	RAINWATER TANK	33.230	31.700	1.380	Open Manhole	3000
5.000	o	150	SW12	33.500	32.220	1.130	Open Manhole	600

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	42.014	100.0	SW03	34.100	32.395	1.555	Open Manhole	1200
2.000	44.168	100.4	SW03	34.100	33.080	0.870	Open Manhole	1200
1.001	5.050	38.8	SW04	34.100	31.810	2.140	Open Manhole	1200
1.002	10.323	44.8	A&B TANK	34.100	31.710	2.240	Open Manhole	1500
1.003	10.323	93.8	SW05	34.400	31.600	2.575	Open Manhole	1200
1.004	9.187	92.0	SW06	34.400	31.500	2.675	Open Manhole	1200
1.005	12.923	139.0	SW07	34.400	31.407	2.768	Open Manhole	1200
1.006	4.893	13.1	SW17	34.400	31.033	3.142	Open Manhole	1200
3.000	13.905	99.3	SW09	34.370	32.860	1.360	Open Manhole	1200
3.001	3.141	104.7	SW09A	34.400	32.830	1.420	Open Manhole	1200
4.000	10.046	100.5	SW11	34.400	32.950	1.300	Open Manhole	1200
4.001	11.390	94.9	SW09A	34.400	32.830	1.420	Open Manhole	1200
3.002	5.312	106.2	SW09B	33.230	32.780	0.300	Open Manhole	1200
3.003	3.869	386.9	RAINWATER TANK	33.230	31.700	1.380	Open Manhole	3000
3.004	13.360	89.1	SW16	34.400	31.550	2.700	Open Manhole	1200
5.000	4.745	474.5	ADDITIONAL TANK	33.240	32.210	0.880	Open Manhole	1500

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PIPELINE SCHEDULES for Blocks A&B

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.001	o	150	ADDITIONAL TANK	33.240	32.210	0.880	Open Manhole	1500
5.002	o	150	SW13	33.230	32.200	0.880	Open Manhole	600
5.003	o	225	SW14	33.860	31.880	1.755	Open Manhole	1200
5.004	o	225	SW15	33.230	31.650	1.355	Open Manhole	1200
3.005	o	225	SW16	34.400	31.475	2.700	Open Manhole	1200
1.007	o	300	SW17	34.400	30.958	3.142	Open Manhole	1200
6.000	o	150	SW20	34.580	32.980	1.450	Open Manhole	600
6.001	o	150	SW21	34.580	32.780	1.650	Open Manhole	600
7.000	o	150	SW18	34.600	32.810	1.640	Open Manhole	1200
8.000	o	150	SW19	34.600	32.820	1.630	Open Manhole	600
7.001	o	150	JUNCTION	34.600	32.774	1.676	Junction	
6.002	o	150	JUNCTION	34.600	32.580	1.870	Junction	
6.003	o	150	SW22	34.600	32.555	1.895	Open Manhole	600
9.000	o	150	SW23A	34.550	32.760	1.640	Open Manhole	600

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
5.001	4.745	474.5	SW13	33.230	32.200	0.880	Open Manhole	600
5.002	18.410	75.1	SW14	33.860	31.955	1.755	Open Manhole	1200
5.003	19.026	82.7	SW15	33.230	31.650	1.355	Open Manhole	1200
5.004	5.206	29.8	SW16	34.400	31.475	2.700	Open Manhole	1200
3.005	19.471	44.1	SW17	34.400	31.033	3.142	Open Manhole	1200
1.007	3.677	34.0	SW26	34.400	30.850	3.250	Open Manhole	1200
6.000	19.792	99.0	SW21	34.580	32.780	1.650	Open Manhole	600
6.001	8.235	41.2	JUNCTION	34.600	32.580	1.870	Junction	
7.000	3.372	93.7	JUNCTION	34.600	32.774	1.676	Junction	
8.000	4.511	98.1	JUNCTION	34.600	32.774	1.676	Junction	
7.001	18.287	94.3	JUNCTION	34.600	32.580	1.870	Junction	
6.002	2.484	99.4	SW22	34.600	32.555	1.895	Open Manhole	600
6.003	4.192	44.1	SW24	34.600	32.460	1.990	Open Manhole	1200
9.000	9.914	58.3	SW23	34.550	32.590	1.810	Open Manhole	600

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PIPELINE SCHEDULES for Blocks A&B

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.000	o	150	SW23B	34.380	32.790	1.440	Open Manhole	600
9.001	o	150	SW23	34.550	32.590	1.810	Open Manhole	600
6.004	o	150	SW24	34.600	32.460	1.990	Open Manhole	1200
6.005	o	150	SW24A	34.400	32.300	1.950	Open Manhole	600
6.006	o	225	SW25	34.400	32.138	2.037	Open Manhole	1200
1.008	o	300	SW26	34.400	30.850	3.250	Open Manhole	1200
11.000	o	150	SW27	34.180	33.000	1.030	Open Manhole	600
1.009	o	225	SW28	34.170	30.428	3.517	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
10.000	12.002	60.0	SW23	34.550	32.590	1.810	Open Manhole	600
9.001	11.781	90.6	SW24	34.600	32.460	1.990	Open Manhole	1200
6.004	15.600	97.5	SW24A	34.400	32.300	1.950	Open Manhole	600
6.005	4.458	51.2	SW25	34.400	32.213	2.037	Open Manhole	1200
6.006	12.891	286.5	SW26	34.400	32.093	2.082	Open Manhole	1200
1.008	8.706	20.6	SW28	34.170	30.428	3.442	Open Manhole	1500
11.000	3.779	15.8	SW28	34.170	32.761	1.259	Open Manhole	1500
1.009	11.212	78.4	CW01	33.900	30.285	3.390	Open Manhole	2400

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Area Summary for Blocks A&B

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.008	0.008	0.008
2.000	-	-	100	0.000	0.000	0.000
1.001	-	-	100	0.000	0.000	0.000
1.002	-	-	100	0.000	0.000	0.000
1.003	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.000	0.000	0.000
1.005	-	-	100	0.029	0.029	0.029
1.006	-	-	100	0.000	0.000	0.000
3.000	-	-	100	0.034	0.034	0.034
3.001	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.016	0.016	0.016
4.001	-	-	100	0.010	0.010	0.010
3.002	-	-	100	0.000	0.000	0.000
3.003	-	-	100	0.023	0.023	0.023
3.004	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.008	0.008	0.008
5.001	-	-	100	0.000	0.000	0.000
5.002	-	-	100	0.004	0.004	0.004
5.003	-	-	100	0.011	0.011	0.011
5.004	-	-	100	0.018	0.018	0.018
3.005	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
6.000	-	-	100	0.004	0.004	0.004
6.001	-	-	100	0.004	0.004	0.004
7.000	-	-	100	0.015	0.015	0.015
8.000	-	-	100	0.030	0.030	0.030
7.001	-	-	100	0.000	0.000	0.000
6.002	-	-	100	0.000	0.000	0.000
6.003	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.001	0.001	0.001
10.000	-	-	100	0.006	0.006	0.006
9.001	-	-	100	0.003	0.003	0.003
6.004	-	-	100	0.017	0.017	0.017
6.005	-	-	100	0.000	0.000	0.000
6.006	-	-	100	0.034	0.034	0.034
1.008	-	-	100	0.034	0.034	0.034
11.000	-	-	100	0.012	0.012	0.012
1.009	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.321	0.321	0.321

Free Flowing Outfall Details for Blocks A&B

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.009	CW01	33.900	30.285	30.285	2400	0

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Simulation Criteria for Blocks A&B

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 15
 Number of Online Controls 2 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.360		

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Online Controls for Blocks A&B

Non Return Valve Manhole: SW16, DS/PN: 3.005, Volume (m³): 3.7

Hydro-Brake® Optimum Manhole: SW28, DS/PN: 1.009, Volume (m³): 7.2

Unit Reference	MD-SHE-0105-8400-3400-8400
Design Head (m)	3.400
Design Flow (l/s)	8.4
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	105
Invert Level (m)	30.428
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	3.400	8.4	Kick-Flo®	0.940	4.6
Flush-Flo™	0.454	5.8	Mean Flow over Head Range	-	6.2

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)
0.100	3.6	0.800	5.3	2.000	6.5	4.000	9.1	7.000	11.8
0.200	5.2	1.000	4.7	2.200	6.8	4.500	9.6	7.500	12.2
0.300	5.7	1.200	5.2	2.400	7.1	5.000	10.1	8.000	12.6
0.400	5.8	1.400	5.5	2.600	7.4	5.500	10.5	8.500	13.0
0.500	5.8	1.600	5.9	3.000	7.9	6.000	11.0	9.000	13.3
0.600	5.7	1.800	6.2	3.500	8.5	6.500	11.4	9.500	13.7

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Storage Structures for Blocks A&B

Porous Car Park Manhole: SW01, DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	30.6
Membrane Percolation (mm/hr)	1000	Length (m)	25.0
Max Percolation (l/s)	212.5	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	33.365	Cap Volume Depth (m)	0.300

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

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	16.2
Max Percolation (l/s)	90.0	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	34.070	Cap Volume Depth (m)	0.300

Cellular Storage Manhole: A&B TANK, DS/PN: 1.003

Invert Level (m)	31.710	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

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	49.5	0.0	1.125	49.5	0.0	1.126	0.0	0.0

Cellular Storage Manhole: ADDITIONAL TANK, DS/PN: 5.001

Invert Level (m)	32.210	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

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	31.7	0.0	0.610	31.7	0.0	0.611	0.0	0.0

Time Area Diagram for Green Roof at Pipe Number 1.000 (Blocks A&B)

Area (m ³)	759	Evaporation (mm/day)	3
Depression Storage (mm)	5	Decay Coefficient	0.050

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.013793	24 28	0.004154	48 52	0.001251	72 76	0.000377
4 8	0.011292	28 32	0.003401	52 56	0.001024	76 80	0.000309
8 12	0.009245	32 36	0.002785	56 60	0.000839	80 84	0.000253
12 16	0.007569	36 40	0.002280	60 64	0.000687	84 88	0.000207
16 20	0.006197	40 44	0.001867	64 68	0.000562	88 92	0.000169
20 24	0.005074	44 48	0.001528	68 72	0.000460	92 96	0.000139

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Time Area Diagram for Green Roof at Pipe Number 1.000 (Blocks A&B)

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
96	100	0.000114	104	108	0.000076	112	116	0.000051			
100	104	0.000093	108	112	0.000062	116	120	0.000042			

Time Area Diagram for Green Roof at Pipe Number 2.000 (Blocks A&B)

Area (m³) 322 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.005851	32	36	0.001181	64	68	0.000239	96	100	0.000048
4	8	0.004791	36	40	0.000967	68	72	0.000195	100	104	0.000039
8	12	0.003922	40	44	0.000792	72	76	0.000160	104	108	0.000032
12	16	0.003211	44	48	0.000648	76	80	0.000131	108	112	0.000026
16	20	0.002629	48	52	0.000531	80	84	0.000107	112	116	0.000022
20	24	0.002153	52	56	0.000435	84	88	0.000088	116	120	0.000018
24	28	0.001762	56	60	0.000356	88	92	0.000072			
28	32	0.001443	60	64	0.000291	92	96	0.000059			

Time Area Diagram for Green Roof at Pipe Number 1.005 (Blocks A&B)

Area (m³) 38 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.000691	32	36	0.000139	64	68	0.000028	96	100	0.000006
4	8	0.000565	36	40	0.000114	68	72	0.000023	100	104	0.000005
8	12	0.000463	40	44	0.000093	72	76	0.000019	104	108	0.000004
12	16	0.000379	44	48	0.000077	76	80	0.000015	108	112	0.000003
16	20	0.000310	48	52	0.000063	80	84	0.000013	112	116	0.000003
20	24	0.000254	52	56	0.000051	84	88	0.000010	116	120	0.000002
24	28	0.000208	56	60	0.000042	88	92	0.000008			
28	32	0.000170	60	64	0.000034	92	96	0.000007			

Time Area Diagram for Green Roof at Pipe Number 1.006 (Blocks A&B)

Area (m³) 260 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.004725	24	28	0.001423	48	52	0.000429	72	76	0.000129
4	8	0.003868	28	32	0.001165	52	56	0.000351	76	80	0.000106
8	12	0.003167	32	36	0.000954	56	60	0.000287	80	84	0.000087
12	16	0.002593	36	40	0.000781	60	64	0.000235	84	88	0.000071
16	20	0.002123	40	44	0.000639	64	68	0.000193	88	92	0.000058
20	24	0.001738	44	48	0.000524	68	72	0.000158	92	96	0.000047

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Time Area Diagram for Green Roof at Pipe Number 1.006 (Blocks A&B)

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
96	100	0.000039	104	108	0.000026	112	116	0.000017			
100	104	0.000032	108	112	0.000021	116	120	0.000014			

Time Area Diagram for Green Roof at Pipe Number 3.000 (Blocks A&B)

Area (m³) 73 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.001327	32	36	0.000268	64	68	0.000054	96	100	0.000011
4	8	0.001086	36	40	0.000219	68	72	0.000044	100	104	0.000009
8	12	0.000889	40	44	0.000180	72	76	0.000036	104	108	0.000007
12	16	0.000728	44	48	0.000147	76	80	0.000030	108	112	0.000006
16	20	0.000596	48	52	0.000120	80	84	0.000024	112	116	0.000005
20	24	0.000488	52	56	0.000099	84	88	0.000020	116	120	0.000004
24	28	0.000400	56	60	0.000081	88	92	0.000016			
28	32	0.000327	60	64	0.000066	92	96	0.000013			

Time Area Diagram for Green Roof at Pipe Number 4.000 (Blocks A&B)

Area (m³) 189 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.003435	32	36	0.000693	64	68	0.000140	96	100	0.000028
4	8	0.002812	36	40	0.000568	68	72	0.000115	100	104	0.000023
8	12	0.002302	40	44	0.000465	72	76	0.000094	104	108	0.000019
12	16	0.001885	44	48	0.000381	76	80	0.000077	108	112	0.000016
16	20	0.001543	48	52	0.000312	80	84	0.000063	112	116	0.000013
20	24	0.001263	52	56	0.000255	84	88	0.000052	116	120	0.000010
24	28	0.001034	56	60	0.000209	88	92	0.000042			
28	32	0.000847	60	64	0.000171	92	96	0.000035			

Time Area Diagram for Green Roof at Pipe Number 4.001 (Blocks A&B)

Area (m³) 87 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.001581	24	28	0.000476	48	52	0.000143	72	76	0.000043
4	8	0.001294	28	32	0.000390	52	56	0.000117	76	80	0.000035
8	12	0.001060	32	36	0.000319	56	60	0.000096	80	84	0.000029
12	16	0.000868	36	40	0.000261	60	64	0.000079	84	88	0.000024
16	20	0.000710	40	44	0.000214	64	68	0.000064	88	92	0.000019
20	24	0.000582	44	48	0.000175	68	72	0.000053	92	96	0.000016

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Time Area Diagram for Green Roof at Pipe Number 4.001 (Blocks A&B)

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
96	100	0.000013	104	108	0.000009	112	116	0.000006			
100	104	0.000011	108	112	0.000007	116	120	0.000005			

Time Area Diagram for Green Roof at Pipe Number 3.002 (Blocks A&B)

Area (m³) 49 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.000890	32	36	0.000180	64	68	0.000036	96	100	0.000007
4	8	0.000729	36	40	0.000147	68	72	0.000030	100	104	0.000006
8	12	0.000597	40	44	0.000121	72	76	0.000024	104	108	0.000005
12	16	0.000489	44	48	0.000099	76	80	0.000020	108	112	0.000004
16	20	0.000400	48	52	0.000081	80	84	0.000016	112	116	0.000003
20	24	0.000328	52	56	0.000066	84	88	0.000013	116	120	0.000003
24	28	0.000268	56	60	0.000054	88	92	0.000011			
28	32	0.000220	60	64	0.000044	92	96	0.000009			

Time Area Diagram for Green Roof at Pipe Number 3.005 (Blocks A&B)

Area (m³) 232 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.004216	32	36	0.000851	64	68	0.000172	96	100	0.000035
4	8	0.003452	36	40	0.000697	68	72	0.000141	100	104	0.000028
8	12	0.002826	40	44	0.000571	72	76	0.000115	104	108	0.000023
12	16	0.002314	44	48	0.000467	76	80	0.000094	108	112	0.000019
16	20	0.001894	48	52	0.000382	80	84	0.000077	112	116	0.000016
20	24	0.001551	52	56	0.000313	84	88	0.000063	116	120	0.000013
24	28	0.001270	56	60	0.000256	88	92	0.000052			
28	32	0.001040	60	64	0.000210	92	96	0.000042			

Time Area Diagram for Green Roof at Pipe Number 6.000 (Blocks A&B)

Area (m³) 53 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.000963	24	28	0.000290	48	52	0.000087	72	76	0.000026
4	8	0.000789	28	32	0.000238	52	56	0.000072	76	80	0.000022
8	12	0.000646	32	36	0.000194	56	60	0.000059	80	84	0.000018
12	16	0.000529	36	40	0.000159	60	64	0.000048	84	88	0.000014
16	20	0.000433	40	44	0.000130	64	68	0.000039	88	92	0.000012
20	24	0.000354	44	48	0.000107	68	72	0.000032	92	96	0.000010

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Time Area Diagram for Green Roof at Pipe Number 6.000 (Blocks A&B)

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
96	100	0.000008	104	108	0.000005	112	116	0.000004			
100	104	0.000006	108	112	0.000004	116	120	0.000003			

Time Area Diagram for Green Roof at Pipe Number 7.000 (Blocks A&B)

Area (m³) 200 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.003634	32	36	0.000734	64	68	0.000148	96	100	0.000030
4	8	0.002976	36	40	0.000601	68	72	0.000121	100	104	0.000024
8	12	0.002436	40	44	0.000492	72	76	0.000099	104	108	0.000020
12	16	0.001995	44	48	0.000403	76	80	0.000081	108	112	0.000016
16	20	0.001633	48	52	0.000330	80	84	0.000067	112	116	0.000013
20	24	0.001337	52	56	0.000270	84	88	0.000054	116	120	0.000011
24	28	0.001095	56	60	0.000221	88	92	0.000045			
28	32	0.000896	60	64	0.000181	92	96	0.000037			

Time Area Diagram for Green Roof at Pipe Number 8.000 (Blocks A&B)

Area (m³) 17 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.000309	32	36	0.000062	64	68	0.000013	96	100	0.000003
4	8	0.000253	36	40	0.000051	68	72	0.000010	100	104	0.000002
8	12	0.000207	40	44	0.000042	72	76	0.000008	104	108	0.000002
12	16	0.000170	44	48	0.000034	76	80	0.000007	108	112	0.000001
16	20	0.000139	48	52	0.000028	80	84	0.000006	112	116	0.000001
20	24	0.000114	52	56	0.000023	84	88	0.000005	116	120	0.000001
24	28	0.000093	56	60	0.000019	88	92	0.000004			
28	32	0.000076	60	64	0.000015	92	96	0.000003			

Time Area Diagram for Green Roof at Pipe Number 6.003 (Blocks A&B)

Area (m³) 62 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.001127	24	28	0.000339	48	52	0.000102	72	76	0.000031
4	8	0.000922	28	32	0.000278	52	56	0.000084	76	80	0.000025
8	12	0.000755	32	36	0.000227	56	60	0.000069	80	84	0.000021
12	16	0.000618	36	40	0.000186	60	64	0.000056	84	88	0.000017
16	20	0.000506	40	44	0.000152	64	68	0.000046	88	92	0.000014
20	24	0.000414	44	48	0.000125	68	72	0.000038	92	96	0.000011

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Time Area Diagram for Green Roof at Pipe Number 6.003 (Blocks A&B)

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
96	100	0.000009	104	108	0.000006	112	116	0.000004			
100	104	0.000008	108	112	0.000005	116	120	0.000003			

Time Area Diagram for Green Roof at Pipe Number 6.006 (Blocks A&B)

Area (m³) 144 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.002617	32	36	0.000528	64	68	0.000107	96	100	0.000022
4	8	0.002142	36	40	0.000433	68	72	0.000087	100	104	0.000018
8	12	0.001754	40	44	0.000354	72	76	0.000071	104	108	0.000014
12	16	0.001436	44	48	0.000290	76	80	0.000059	108	112	0.000012
16	20	0.001176	48	52	0.000237	80	84	0.000048	112	116	0.000010
20	24	0.000963	52	56	0.000194	84	88	0.000039	116	120	0.000008
24	28	0.000788	56	60	0.000159	88	92	0.000032			
28	32	0.000645	60	64	0.000130	92	96	0.000026			

Time Area Diagram for Green Roof at Pipe Number 1.008 (Blocks A&B)

Area (m³) 21 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)	Time (mins) From:	Time (mins) To:	Area (ha)
0	4	0.000382	32	36	0.000077	64	68	0.000016	96	100	0.000003
4	8	0.000312	36	40	0.000063	68	72	0.000013	100	104	0.000003
8	12	0.000256	40	44	0.000052	72	76	0.000010	104	108	0.000002
12	16	0.000209	44	48	0.000042	76	80	0.000009	108	112	0.000002
16	20	0.000171	48	52	0.000035	80	84	0.000007	112	116	0.000001
20	24	0.000140	52	56	0.000028	84	88	0.000006	116	120	0.000001
24	28	0.000115	56	60	0.000023	88	92	0.000005			
28	32	0.000094	60	64	0.000019	92	96	0.000004			

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 15
 Number of Online Controls 2 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.360 Cv (Winter) 0.840

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

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
1.000	SW01	240 Winter	1	+0%	100/120 Winter				32.842	-0.123
2.000	RE	240 Winter	1	+0%					33.538	-0.132
1.001	SW03	240 Winter	1	+0%	30/60 Winter				31.975	-0.115
1.002	SW04	240 Winter	1	+0%	30/60 Winter				31.967	-0.123
1.003	A&B TANK	360 Winter	1	+0%	30/60 Summer				31.735	-0.200
1.004	SW05	360 Winter	1	+0%	30/30 Summer				31.625	-0.200
1.005	SW06	360 Winter	1	+0%	30/15 Summer				31.527	-0.198
1.006	SW07	360 Winter	1	+0%	30/15 Summer				31.427	-0.205
3.000	SW08	60 Winter	1	+0%	100/240 Winter				33.010	-0.140
3.001	SW09	120 Winter	1	+0%	100/240 Winter				32.874	-0.136
4.000	SW10	60 Winter	1	+0%					33.069	-0.131
4.001	SW11	120 Winter	1	+0%	100/240 Winter				32.972	-0.128
3.002	SW09A	120 Winter	1	+0%	100/240 Winter				32.859	-0.121
3.003	SW09B	15 Winter	1	+0%	30/30 Summer				31.760	-0.100
3.004	RAINWATER TANK	15 Winter	1	+0%	30/30 Summer				31.736	-0.114
5.000	SW12	15 Winter	1	+0%	100/30 Winter				32.252	-0.118
5.001	ADDITIONAL TANK	60 Winter	1	+0%	100/30 Winter				32.226	-0.134
5.002	SW13	15 Winter	1	+0%	100/30 Winter				32.216	-0.134
5.003	SW14	15 Winter	1	+0%	30/120 Winter				31.906	-0.199
5.004	SW15	15 Winter	1	+0%	30/30 Summer				31.685	-0.190
3.005	SW16	15 Winter	1	+0%	30/15 Summer				31.517	-0.183
1.007	SW17	15 Winter	1	+0%	2/60 Winter				31.009	-0.249
6.000	SW20	120 Winter	1	+0%	100/240 Winter				32.987	-0.143
6.001	SW21	15 Winter	1	+0%	100/120 Winter				32.792	-0.138
7.000	SW18	120 Winter	1	+0%	100/120 Winter				32.832	-0.128

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Flooded		Half Drain Time (mins)	Pipe Flow (l/s)	Level Status	Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)				
1.000	SW01	0.000	0.07	53	1.3	OK	
2.000	RE	0.000	0.03	35	0.6	OK	
1.001	SW03	0.000	0.08		1.8	OK	
1.002	SW04	0.000	0.08		1.8	OK	
1.003	A&B TANK	0.000	0.03	73	1.3	OK	
1.004	SW05	0.000	0.03		1.3	OK	
1.005	SW06	0.000	0.04		1.3	OK	
1.006	SW07	0.000	0.02		1.6	OK	
3.000	SW08	0.000	0.01		0.2	OK	
3.001	SW09	0.000	0.02		0.2	OK	
4.000	SW10	0.000	0.04		0.6	OK	
4.001	SW11	0.000	0.05		0.8	OK	
3.002	SW09A	0.000	0.08		1.2	OK	
3.003	SW09B	0.000	0.24		2.3	OK	
3.004	RAINWATER TANK	0.000	0.13		2.3	OK	
5.000	SW12	0.000	0.10		1.0	OK	
5.001	ADDITIONAL TANK	0.000	0.02	40	0.2	OK	
5.002	SW13	0.000	0.02		0.4	OK	
5.003	SW14	0.000	0.03		1.6	OK	
5.004	SW15	0.000	0.06		3.4	OK	
3.005	SW16	0.000	0.08		5.5	OK	
1.007	SW17	0.000	0.07		5.6	OK	
6.000	SW20	0.000	0.01		0.2	OK	
6.001	SW21	0.000	0.02		0.4	OK	
7.000	SW18	0.000	0.05		0.6	OK	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Storm	Return Climate		First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
			Period	Change					Level (m)	Depth (m)
8.000	SW19	60 Winter	1	+0%	100/120 Winter				32.823	-0.147
7.001	JUNCTION	120 Winter	1	+0%					32.792	-0.132
6.002	JUNCTION	120 Winter	1	+0%					32.609	-0.121
6.003	SW22	120 Winter	1	+0%	100/120 Summer				32.578	-0.127
9.000	SW23A	15 Winter	1	+0%	100/120 Winter				32.764	-0.146
10.000	SW23B	15 Winter	1	+0%	100/120 Winter				32.808	-0.132
9.001	SW23	15 Winter	1	+0%	100/120 Summer				32.616	-0.124
6.004	SW24	15 Winter	1	+0%	100/60 Winter				32.505	-0.105
6.005	SW24A	15 Winter	1	+0%	100/30 Winter				32.342	-0.108
6.006	SW25	15 Winter	1	+0%	100/30 Winter				32.190	-0.173
1.008	SW26	15 Winter	1	+0%	2/15 Winter				30.970	-0.180
11.000	SW27	15 Winter	1	+0%					33.021	-0.129
1.009	SW28	15 Winter	1	+0%	1/15 Summer				30.967	0.314

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)			
8.000	SW19	0.000	0.00			0.1		OK	
7.001	JUNCTION	0.000	0.04			0.7		OK*	
6.002	JUNCTION	0.000	0.09			0.9		OK*	
6.003	SW22	0.000	0.06			1.1		OK	
9.000	SW23A	0.000	0.01			0.1		OK	
10.000	SW23B	0.000	0.03			0.7		OK	
9.001	SW23	0.000	0.07			1.1		OK	
6.004	SW24	0.000	0.20			3.2		OK	
6.005	SW24A	0.000	0.18			3.2		OK	
6.006	SW25	0.000	0.12			3.2		OK	
1.008	SW26	0.000	0.05			8.8		OK	
11.000	SW27	0.000	0.05			1.4		OK	
1.009	SW28	0.000	0.12			5.8	SURCHARGED		

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 15
 Number of Online Controls 2 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.360 Cv (Winter) 0.840

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

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
1.000	SW01	120 Winter	2	+0%	100/120 Winter				32.849	-0.116
2.000	RE	120 Winter	2	+0%					33.542	-0.128
1.001	SW03	240 Winter	2	+0%	30/60 Winter				31.983	-0.107
1.002	SW04	240 Winter	2	+0%	30/60 Winter				31.975	-0.115
1.003	A&B TANK	240 Winter	2	+0%	30/60 Summer				31.742	-0.193
1.004	SW05	240 Winter	2	+0%	30/30 Summer				31.632	-0.193
1.005	SW06	240 Winter	2	+0%	30/15 Summer				31.594	-0.131
1.006	SW07	240 Winter	2	+0%	30/15 Summer				31.591	-0.041
3.000	SW08	60 Winter	2	+0%	100/240 Winter				33.014	-0.136
3.001	SW09	60 Winter	2	+0%	100/240 Winter				32.877	-0.133
4.000	SW10	60 Winter	2	+0%					33.072	-0.128
4.001	SW11	60 Winter	2	+0%	100/240 Winter				32.977	-0.123
3.002	SW09A	60 Winter	2	+0%	100/240 Winter				32.865	-0.115
3.003	SW09B	15 Winter	2	+0%	30/30 Summer				31.768	-0.092
3.004	RAINWATER TANK	15 Winter	2	+0%	30/30 Summer				31.742	-0.108
5.000	SW12	15 Winter	2	+0%	100/30 Winter				32.257	-0.113
5.001	ADDITIONAL TANK	60 Winter	2	+0%	100/30 Winter				32.229	-0.131
5.002	SW13	15 Winter	2	+0%	100/30 Winter				32.217	-0.133
5.003	SW14	15 Winter	2	+0%	30/120 Winter				31.909	-0.196
5.004	SW15	15 Winter	2	+0%	30/30 Summer				31.691	-0.184
3.005	SW16	240 Winter	2	+0%	30/15 Summer				31.593	-0.107
1.007	SW17	240 Winter	2	+0%	2/60 Winter				31.590	0.332
6.000	SW20	60 Winter	2	+0%	100/240 Winter				32.990	-0.140
6.001	SW21	15 Winter	2	+0%	100/120 Winter				32.795	-0.135
7.000	SW18	60 Winter	2	+0%	100/120 Winter				32.837	-0.123

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Flooded		Half Drain		Pipe	Status	Level Exceeded
		Volume (m ³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)		
1.000	SW01	0.000	0.12		34	2.0	OK	
2.000	RE	0.000	0.05		34	0.9	OK	
1.001	SW03	0.000	0.13			2.9	OK	
1.002	SW04	0.000	0.12			2.9	OK	
1.003	A&B TANK	0.000	0.05		78	2.2	OK	
1.004	SW05	0.000	0.05			2.2	OK	
1.005	SW06	0.000	0.06			2.1	OK	
1.006	SW07	0.000	0.03			2.4	OK	
3.000	SW08	0.000	0.02			0.3	OK	
3.001	SW09	0.000	0.03			0.3	OK	
4.000	SW10	0.000	0.05			0.8	OK	
4.001	SW11	0.000	0.07			1.2	OK	
3.002	SW09A	0.000	0.12			1.7	OK	
3.003	SW09B	0.000	0.31			3.0	OK	
3.004	RAINWATER TANK	0.000	0.17			2.9	OK	
5.000	SW12	0.000	0.14			1.2	OK	
5.001	ADDITIONAL TANK	0.000	0.03		38	0.3	OK	
5.002	SW13	0.000	0.03			0.6	OK	
5.003	SW14	0.000	0.04			2.0	OK	
5.004	SW15	0.000	0.07			4.4	OK	
3.005	SW16	0.000	0.05			3.7	OK	
1.007	SW17	0.000	0.05			4.5	SURCHARGED	
6.000	SW20	0.000	0.01			0.2	OK	
6.001	SW21	0.000	0.02			0.5	OK	
7.000	SW18	0.000	0.07			0.9	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Storm	Return Climate		First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
			Period	Change					Level (m)	Depth (m)
8.000	SW19	60 Winter	2	+0%	100/120 Winter				32.824	-0.146
7.001	JUNCTION	60 Winter	2	+0%					32.796	-0.128
6.002	JUNCTION	60 Winter	2	+0%					32.614	-0.116
6.003	SW22	60 Winter	2	+0%	100/120 Summer				32.583	-0.122
9.000	SW23A	15 Winter	2	+0%	100/120 Winter				32.765	-0.145
10.000	SW23B	15 Winter	2	+0%	100/120 Winter				32.810	-0.130
9.001	SW23	15 Winter	2	+0%	100/120 Summer				32.620	-0.120
6.004	SW24	15 Winter	2	+0%	100/60 Winter				32.511	-0.099
6.005	SW24A	15 Winter	2	+0%	100/30 Winter				32.349	-0.101
6.006	SW25	15 Winter	2	+0%	100/30 Winter				32.198	-0.165
1.008	SW26	240 Winter	2	+0%	2/15 Winter				31.590	0.439
11.000	SW27	15 Winter	2	+0%					33.024	-0.126
1.009	SW28	240 Winter	2	+0%	1/15 Summer				31.589	0.936

PN	US/MH Name	Flooded		Half Drain		Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap. (l/s)	Time (mins)	Flow (l/s)			
8.000	SW19	0.000	0.01		0.1	OK		
7.001	JUNCTION	0.000	0.05		0.9	OK*		
6.002	JUNCTION	0.000	0.12		1.3	OK*		
6.003	SW22	0.000	0.08		1.6	OK		
9.000	SW23A	0.000	0.01		0.2	OK		
10.000	SW23B	0.000	0.04		0.9	OK		
9.001	SW23	0.000	0.09		1.5	OK		
6.004	SW24	0.000	0.25		4.2	OK		
6.005	SW24A	0.000	0.23		4.2	OK		
6.006	SW25	0.000	0.16		4.2	OK		
1.008	SW26	0.000	0.04		6.8	SURCHARGED		
11.000	SW27	0.000	0.06		1.9	OK		
1.009	SW28	0.000	0.12		5.8	SURCHARGED		

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1 Dale Street Liverpool L2 2ET	219-215 First Street Blocks A & B SW Network	
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 15
 Number of Online Controls 2 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.360 Cv (Winter) 0.840

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

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
1.000	SW01	60 Winter	30	+0%	100/120 Winter				32.877	-0.088
2.000	RE	60 Winter	30	+0%					33.560	-0.110
1.001	SW03	240 Winter	30	+0%	30/60 Winter				32.240	0.150
1.002	SW04	240 Winter	30	+0%	30/60 Winter				32.236	0.146
1.003	A&B TANK	240 Winter	30	+0%	30/60 Summer				32.228	0.293
1.004	SW05	240 Winter	30	+0%	30/30 Summer				32.225	0.400
1.005	SW06	240 Winter	30	+0%	30/15 Summer				32.223	0.498
1.006	SW07	240 Winter	30	+0%	30/15 Summer				32.219	0.587
3.000	SW08	30 Winter	30	+0%	100/240 Winter				33.020	-0.130
3.001	SW09	30 Winter	30	+0%	100/240 Winter				32.887	-0.123
4.000	SW10	30 Winter	30	+0%					33.084	-0.116
4.001	SW11	30 Winter	30	+0%	100/240 Winter				32.989	-0.111
3.002	SW09A	30 Winter	30	+0%	100/240 Winter				32.881	-0.099
3.003	SW09B	240 Winter	30	+0%	30/30 Summer				32.228	0.368
3.004	RAINWATER TANK	240 Winter	30	+0%	30/30 Summer				32.226	0.376
5.000	SW12	15 Winter	30	+0%	100/30 Winter				32.272	-0.098
5.001	ADDITIONAL TANK	30 Winter	30	+0%	100/30 Winter				32.240	-0.120
5.002	SW13	30 Winter	30	+0%	100/30 Winter				32.226	-0.124
5.003	SW14	240 Winter	30	+0%	30/120 Winter				32.222	0.117
5.004	SW15	240 Winter	30	+0%	30/30 Summer				32.222	0.347
3.005	SW16	240 Winter	30	+0%	30/15 Summer				32.222	0.522
1.007	SW17	240 Winter	30	+0%	2/60 Winter				32.217	0.959
6.000	SW20	30 Winter	30	+0%	100/240 Winter				32.997	-0.133
6.001	SW21	15 Summer	30	+0%	100/120 Winter				32.802	-0.128
7.000	SW18	30 Winter	30	+0%	100/120 Winter				32.849	-0.111

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Flooded		Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)				
1.000	SW01	0.000	0.36	31	6.1	OK	
2.000	RE	0.000	0.15	30	2.6	OK	
1.001	SW03	0.000	0.25		5.7	SURCHARGED	
1.002	SW04	0.000	0.24		5.7	SURCHARGED	
1.003	A&B TANK	0.000	0.09	95	4.0	SURCHARGED	
1.004	SW05	0.000	0.09		4.1	SURCHARGED	
1.005	SW06	0.000	0.11		4.2	SURCHARGED	
1.006	SW07	0.000	0.05		4.3	SURCHARGED	
3.000	SW08	0.000	0.04		0.7	OK	
3.001	SW09	0.000	0.06		0.6	OK	
4.000	SW10	0.000	0.11		1.7	OK	
4.001	SW11	0.000	0.15		2.5	OK	
3.002	SW09A	0.000	0.25		3.5	OK	
3.003	SW09B	0.000	0.33		3.2	SURCHARGED	
3.004	RAINWATER TANK	0.000	0.18		3.1	SURCHARGED	
5.000	SW12	0.000	0.26		2.4	OK	
5.001	ADDITIONAL TANK	0.000	0.09	25	0.8	OK	
5.002	SW13	0.000	0.07		1.3	OK	
5.003	SW14	0.000	0.03		1.3	SURCHARGED	
5.004	SW15	0.000	0.04		2.2	SURCHARGED	
3.005	SW16	0.000	0.08		5.8	SURCHARGED	
1.007	SW17	0.000	0.07		5.6	SURCHARGED	
6.000	SW20	0.000	0.03		0.5	OK	
6.001	SW21	0.000	0.05		1.3	OK	
7.000	SW18	0.000	0.15		1.8	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
8.000	SW19	30 Winter	30	+0%	100/120 Winter				32.829	-0.141
7.001	JUNCTION	30 Winter	30	+0%					32.807	-0.117
6.002	JUNCTION	60 Winter	30	+0%					32.632	-0.098
6.003	SW22	60 Winter	30	+0%	100/120 Summer				32.597	-0.108
9.000	SW23A	15 Winter	30	+0%	100/120 Winter				32.770	-0.140
10.000	SW23B	15 Winter	30	+0%	100/120 Winter				32.819	-0.121
9.001	SW23	15 Winter	30	+0%	100/120 Summer				32.633	-0.107
6.004	SW24	15 Winter	30	+0%	100/60 Winter				32.542	-0.068
6.005	SW24A	15 Winter	30	+0%	100/30 Winter				32.377	-0.073
6.006	SW25	15 Winter	30	+0%	100/30 Winter				32.232	-0.131
1.008	SW26	240 Winter	30	+0%	2/15 Winter				32.216	1.065
11.000	SW27	15 Winter	30	+0%					33.034	-0.116
1.009	SW28	240 Winter	30	+0%	1/15 Summer				32.212	1.559

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Cap.	Flow / (l/s)	Time (mins)	Flow (l/s)			
8.000	SW19	0.000	0.01			0.2		OK	
7.001	JUNCTION	0.000	0.10			1.9		OK*	
6.002	JUNCTION	0.000	0.26			2.8		OK*	
6.003	SW22	0.000	0.18			3.4		OK	
9.000	SW23A	0.000	0.01			0.3		OK	
10.000	SW23B	0.000	0.08			1.8		OK	
9.001	SW23	0.000	0.18			3.0		OK	
6.004	SW24	0.000	0.57			9.5		OK	
6.005	SW24A	0.000	0.51			9.4		OK	
6.006	SW25	0.000	0.36			9.5		OK	
1.008	SW26	0.000	0.05			8.0	SURCHARGED		
11.000	SW27	0.000	0.12			3.5	OK		
1.009	SW28	0.000	0.12			6.2	SURCHARGED		

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

Simulation Criteria

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

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 15
 Number of Online Controls 2 Number of Storage Structures 4 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 18.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.360 Cv (Winter) 0.840

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

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
 Return Period(s) (years) 1, 2, 30, 100
 Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
1.000	SW01	240 Winter	100	+40%	100/120 Winter				33.184	0.219
2.000	RE	30 Winter	100	+40%					33.577	-0.093
1.001	SW03	240 Winter	100	+40%	30/60 Winter				33.171	1.081
1.002	SW04	240 Winter	100	+40%	30/60 Winter				33.166	1.076
1.003	A&B TANK	240 Winter	100	+40%	30/60 Summer				33.157	1.222
1.004	SW05	240 Winter	100	+40%	30/30 Summer				33.154	1.329
1.005	SW06	240 Winter	100	+40%	30/15 Summer				33.151	1.426
1.006	SW07	240 Winter	100	+40%	30/15 Summer				33.146	1.514
3.000	SW08	240 Winter	100	+40%	100/240 Winter				33.159	0.009
3.001	SW09	240 Winter	100	+40%	100/240 Winter				33.159	0.149
4.000	SW10	240 Winter	100	+40%					33.162	-0.038
4.001	SW11	240 Winter	100	+40%	100/240 Winter				33.161	0.061
3.002	SW09A	240 Winter	100	+40%	100/240 Winter				33.158	0.178
3.003	SW09B	240 Winter	100	+40%	30/30 Summer				33.156	1.296
3.004	RAINWATER TANK	240 Winter	100	+40%	30/30 Summer				33.154	1.304
5.000	SW12	240 Winter	100	+40%	100/30 Winter				33.152	0.782
5.001	ADDITIONAL TANK	240 Winter	100	+40%	100/30 Winter				33.152	0.792
5.002	SW13	240 Winter	100	+40%	100/30 Winter				33.152	0.802
5.003	SW14	240 Winter	100	+40%	30/120 Winter				33.151	1.046
5.004	SW15	240 Winter	100	+40%	30/30 Summer				33.150	1.275
3.005	SW16	240 Winter	100	+40%	30/15 Summer				33.149	1.449
1.007	SW17	240 Winter	100	+40%	2/60 Winter				33.144	1.886
6.000	SW20	240 Winter	100	+40%	100/240 Winter				33.156	0.026
6.001	SW21	240 Winter	100	+40%	100/120 Winter				33.155	0.225
7.000	SW18	240 Winter	100	+40%	100/120 Winter				33.158	0.198

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Flooded		Half Drain	Pipe	Status	Level Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
1.000	SW01	0.000	0.42		39	7.3	SURCHARGED
2.000	RE	0.000	0.30		28	5.2	OK
1.001	SW03	0.000	0.44			9.9	SURCHARGED
1.002	SW04	0.000	0.40			9.6	SURCHARGED
1.003	A&B TANK	0.000	0.11		211	5.0	SURCHARGED
1.004	SW05	0.000	0.11			4.8	SURCHARGED
1.005	SW06	0.000	0.12			4.7	SURCHARGED
1.006	SW07	0.000	0.07			6.0	SURCHARGED
3.000	SW08	0.000	0.04			0.7	SURCHARGED
3.001	SW09	0.000	0.06			0.7	SURCHARGED
4.000	SW10	0.000	0.12			1.8	OK
4.001	SW11	0.000	0.16			2.7	SURCHARGED
3.002	SW09A	0.000	0.27			3.8	SURCHARGED
3.003	SW09B	0.000	0.60			5.9	FLOOD RISK
3.004	RAINWATER TANK	0.000	0.26			4.5	FLOOD RISK
5.000	SW12	0.000	0.10			0.9	SURCHARGED
5.001	ADDITIONAL TANK	0.000	0.21		144	2.0	FLOOD RISK
5.002	SW13	0.000	0.10			2.0	FLOOD RISK
5.003	SW14	0.000	0.04			2.1	SURCHARGED
5.004	SW15	0.000	0.06			3.3	FLOOD RISK
3.005	SW16	0.000	0.12			8.3	SURCHARGED
1.007	SW17	0.000	0.08			6.3	SURCHARGED
6.000	SW20	0.000	0.03			0.5	SURCHARGED
6.001	SW21	0.000	0.04			0.9	SURCHARGED
7.000	SW18	0.000	0.16			1.9	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Blocks A&B

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water	Surcharged
									Level (m)	Depth (m)
8.000	SW19	240 Winter	100	+40%	100/120 Winter				33.157	0.187
7.001	JUNCTION	120 Winter	100	+40%					32.924	0.000
6.002	JUNCTION	120 Summer	100	+40%					32.730	0.000
6.003	SW22	240 Winter	100	+40%	100/120 Summer				33.154	0.449
9.000	SW23A	240 Winter	100	+40%	100/120 Winter				33.154	0.244
10.000	SW23B	240 Winter	100	+40%	100/120 Winter				33.154	0.214
9.001	SW23	240 Winter	100	+40%	100/120 Summer				33.154	0.414
6.004	SW24	240 Winter	100	+40%	100/60 Winter				33.153	0.543
6.005	SW24A	240 Winter	100	+40%	100/30 Winter				33.147	0.697
6.006	SW25	240 Winter	100	+40%	100/30 Winter				33.145	0.782
1.008	SW26	240 Winter	100	+40%	2/15 Winter				33.142	1.992
11.000	SW27	240 Winter	100	+40%					33.138	-0.012
1.009	SW28	240 Winter	100	+40%	1/15 Summer				33.138	2.485

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m ³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)			
8.000	SW19	0.000	0.01			0.2		SURCHARGED	
7.001	JUNCTION	0.000	0.16			2.9		SURCHARGED*	
6.002	JUNCTION	0.000	0.41			4.4		SURCHARGED*	
6.003	SW22	0.000	0.19			3.6		SURCHARGED	
9.000	SW23A	0.000	0.01			0.1		SURCHARGED	
10.000	SW23B	0.000	0.03			0.7		SURCHARGED	
9.001	SW23	0.000	0.07			1.1		SURCHARGED	
6.004	SW24	0.000	0.39			6.5		SURCHARGED	
6.005	SW24A	0.000	0.35			6.5		SURCHARGED	
6.006	SW25	0.000	0.27			7.2		SURCHARGED	
1.008	SW26	0.000	0.05			7.9		SURCHARGED	
11.000	SW27	0.000	0.04			1.3		OK	
1.009	SW28	0.000	0.15			7.5		SURCHARGED	