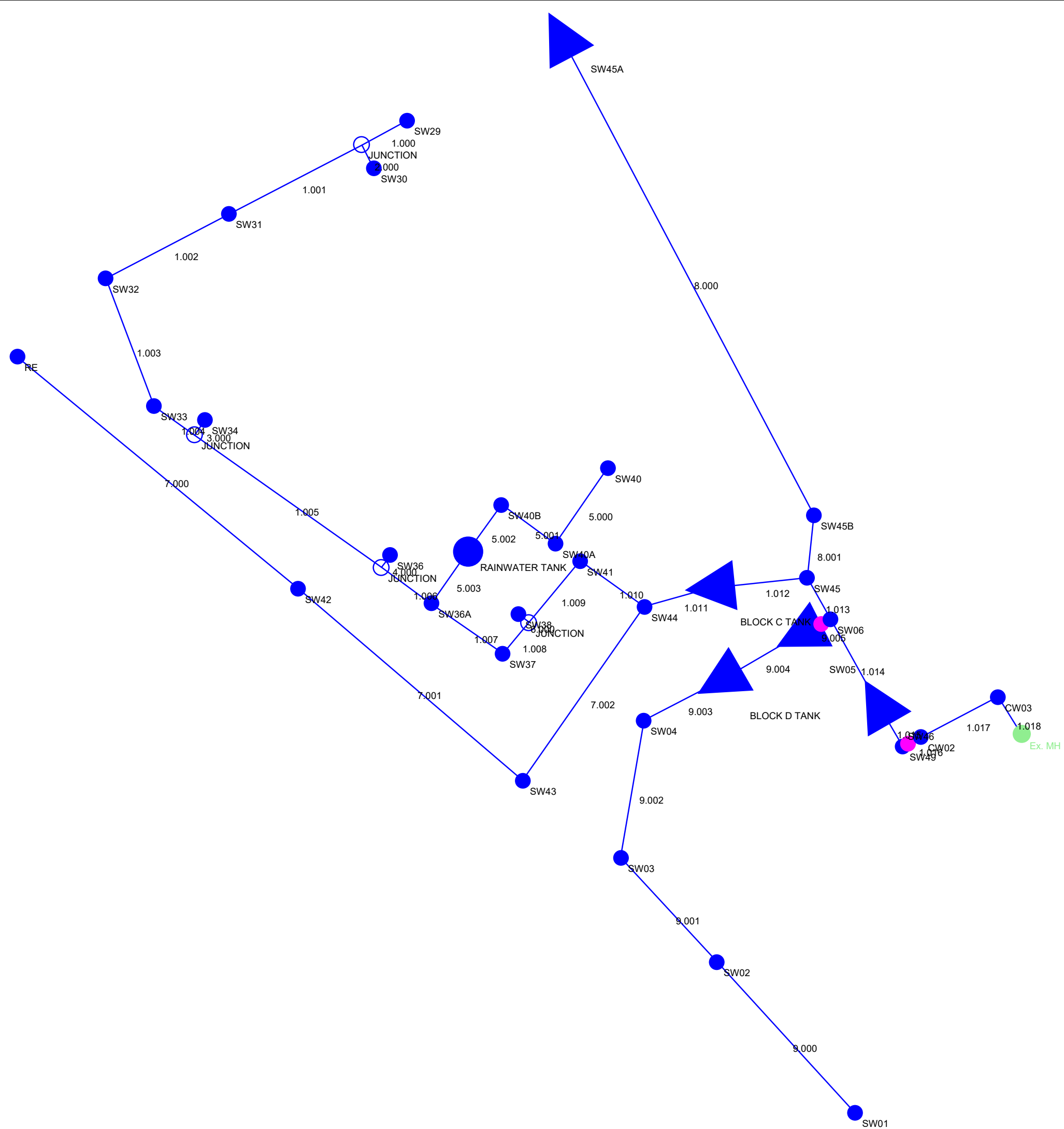




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1 Dale Street Liverpool L2 2ET	219-215 First Street Blocks C & D SW Network	
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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Blocks C&D

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	0.361	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 C&D

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.135	4-8	0.104

Total Area Contributing (ha) = 0.239

Total Pipe Volume (m³) = 11.611

Network Design Table for Blocks C&D

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	5.120	0.050	102.4	0.008	5.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	2.661	0.430	6.2	0.018	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	14.876	0.150	99.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	13.839	0.140	98.9	0.011	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	13.570	0.090	150.8	0.025	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	4.939	0.033	150.8	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	5.09	32.170	0.008	0.0	0.0	0.0	0.99	17.5	1.1
2.000	50.00	5.01	32.550	0.018	0.0	0.0	0.0	4.08	72.1	2.4
1.001	50.00	5.33	32.120	0.026	0.0	0.0	0.0	1.01	17.8	3.5
1.002	50.00	5.56	31.970	0.036	0.0	0.0	0.0	1.01	17.9	4.9
1.003	50.00	5.77	31.755	0.061	0.0	0.0	0.0	1.06	42.2	8.3
1.004	50.00	5.85	31.665	0.061	0.0	0.0	0.0	1.06	42.2	8.3

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Network Design Table for Blocks C&D

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
3.000	1.802	0.501	3.6	0.006	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	22.778	0.151	150.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
4.000	1.528	0.463	3.3	0.002	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	6.135	0.041	149.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
5.000	9.141	0.290	31.5	0.032	5.00	0.0	0.600	o	150	Pipe/Conduit	
5.001	6.627	0.069	95.5	0.003	0.00	0.0	0.600	o	150	Pipe/Conduit	
5.002	5.676	0.031	185.0	0.031	0.00	0.0	0.600	o	150	Pipe/Conduit	
5.003	6.298	0.035	179.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.007	8.671	0.060	144.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.008	4.033	0.027	149.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
6.000	1.328	0.341	3.9	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.009	7.978	0.053	150.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.010	7.855	0.050	157.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
7.000	36.195	0.240	150.5	0.000	5.00	0.0	0.600	o	150	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)
3.000	50.00	5.01	32.220	0.006	0.0	0.0	0.0	5.35	94.5	0.9
1.005	50.00	6.21	31.632	0.068	0.0	0.0	0.0	1.06	42.2	9.2
4.000	50.00	5.00	32.020	0.002	0.0	0.0	0.0	5.59	98.8	0.3
1.006	50.00	6.30	31.481	0.070	0.0	0.0	0.0	1.07	42.4	9.5
5.000	50.00	5.08	31.940	0.032	0.0	0.0	0.0	1.80	31.8	4.3
5.001	50.00	5.19	31.650	0.034	0.0	0.0	0.0	1.03	18.2	4.6
5.002	50.00	5.32	31.580	0.065	0.0	0.0	0.0	0.74	13.0	8.8
5.003	50.00	5.46	31.550	0.065	0.0	0.0	0.0	0.75	13.2	8.8
1.007	50.00	6.44	31.440	0.135	0.0	0.0	0.0	1.09	43.2	18.3
1.008	50.00	6.50	31.380	0.135	0.0	0.0	0.0	1.07	42.4	18.3
6.000	50.00	5.00	31.770	0.000	0.0	0.0	0.0	5.14	90.8	0.0
1.009	50.00	6.62	31.353	0.135	0.0	0.0	0.0	1.07	42.4	18.3
1.010	50.00	6.75	31.300	0.135	0.0	0.0	0.0	1.04	41.4	18.3
7.000	50.00	5.74	33.950	0.000	0.0	0.0	0.0	0.82	14.4	0.0

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Network Design Table for Blocks C&D

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
7.001	29.397	0.200	147.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
7.002	21.097	0.140	150.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.011	6.767	0.050	135.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.012	9.707	0.060	161.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
8.000	54.016	0.540	100.0	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	
8.001	6.242	0.055	113.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.013	4.741	0.037	129.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
9.000	20.331	0.135	150.6	0.042	5.00	0.0	0.600	o	225	Pipe/Conduit	
9.001	14.068	0.094	149.7	0.042	0.00	0.0	0.600	o	225	Pipe/Conduit	
9.002	13.824	0.093	149.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
9.003	8.483	0.023	368.8	0.020	0.00	0.0	0.600	o	225	Pipe/Conduit	
9.004	9.124	0.094	97.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
9.005	3.531	0.024	150.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.014	9.456	0.073	129.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.015	5.083	0.118	43.1	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.016	2.039	0.072	28.5	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.017	8.620	0.091	95.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.018	4.355	0.044	100.0	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)
7.001	50.00	6.33	33.710	0.000	0.0	0.0	0.0	0.83	14.6	0.0
7.002	50.00	6.76	33.510	0.000	0.0	0.0	0.0	0.82	14.4	0.0
1.011	50.00	6.86	31.250	0.135	0.0	0.0	0.0	1.12	44.5	18.3
1.012	50.00	7.02	31.200	0.135	0.0	0.0	0.0	1.03	40.8	18.3
8.000	50.00	5.90	33.250	0.000	0.0	0.0	0.0	1.00	17.8	0.0
8.001	50.00	6.01	32.710	0.000	0.0	0.0	0.0	0.94	16.7	0.0
1.013	50.00	7.09	31.140	0.135	0.0	0.0	0.0	1.15	45.7	18.3
9.000	50.00	5.32	33.065	0.042	0.0	0.0	0.0	1.06	42.3	5.7
9.001	50.00	5.54	32.930	0.084	0.0	0.0	0.0	1.07	42.4	11.4
9.002	50.00	5.75	32.836	0.084	0.0	0.0	0.0	1.07	42.5	11.4
9.003	50.00	5.96	32.743	0.104	0.0	0.0	0.0	0.67	26.8	14.1
9.004	50.00	6.08	32.720	0.104	0.0	0.0	0.0	1.33	52.8	14.1
9.005	50.00	6.13	32.626	0.104	0.0	0.0	0.0	1.07	42.4	14.1
1.014	50.00	7.23	31.103	0.239	0.0	0.0	0.0	1.15	45.7	32.4
1.015	50.00	7.27	31.030	0.239	0.0	0.0	0.0	2.00	79.5	32.4
1.016	50.00	7.28	30.912	0.239	0.0	0.0	0.0	2.46	97.8	32.4
1.017	50.00	7.39	30.840	0.239	0.0	0.0	0.0	1.34	53.3	32.4
1.018	50.00	7.44	30.750	0.239	0.0	0.0	0.0	1.31	52.0	32.4

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Manhole Schedules for Blocks C&D

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)
SW06	34.670	3.567	Open Manhole	1500	1.014	31.103	225	1.013	31.103	225	1499
								9.005	32.602	225	
SW46	34.550	3.520	Open Manhole	1200	1.015	31.030	225	1.014	31.030	225	
SW49	34.700	3.788	Open Manhole	1200	1.016	30.912	225	1.015	30.912	225	
CW02	34.600	3.760	Open Manhole	1200	1.017	30.840	225	1.016	30.840	225	
CW03	34.450	3.700	Open Manhole	1200	1.018	30.750	225	1.017	30.750	225	
Ex. MH	34.670	3.964	Open Manhole	1800		OUTFALL		1.018	30.706	225	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW29	383769.007	397207.342	383769.007	397207.342	Required	
SW30	383765.701	397202.613	383765.701	397202.613	Required	
JUNCTION	383764.469	397204.971			No Entry	
SW31	383751.284	397198.082	383751.284	397198.082	Required	
SW32	383739.018	397191.673	383739.018	397191.673	Required	
SW33	383743.827	397178.984	383743.827	397178.984	Required	
SW34	383748.900	397177.597	383748.900	397177.597	Required	
JUNCTION	383747.856	397176.128			No Entry	
SW36	383767.309	397164.181	383767.309	397164.181	Required	
JUNCTION	383766.424	397162.935			No Entry	
SW40	383788.977	397172.813	383788.977	397172.813	Required	

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Manhole Schedules for Blocks C&D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW40A	383783.761	397165.306	383783.761	397165.306	Required	
SW40B	383778.358	397169.144	383778.358	397169.144	Required	
RAINWATER TANK	383775.072	397164.516	383775.072	397164.516	Required	
SW36A	383771.425	397159.382	383771.425	397159.382	Required	
SW37	383778.495	397154.362	383778.495	397154.362	Required	
SW38	383780.070	397158.306	383780.070	397158.306	Required	
JUNCTION	383781.087	397157.452			No Entry	
SW41	383786.213	397163.565	383786.213	397163.565	Required	
RE	383730.265	397183.894	383730.265	397183.894	Required	
SW42	383758.159	397160.829	383758.159	397160.829	Required	
SW43	383780.513	397141.738	383780.513	397141.738	Required	
SW44	383792.617	397159.017	383792.617	397159.017	Required	
BLOCK C TANK	383799.108	397160.930	383799.108	397160.930	Required	
SW45A	383784.227	397215.883	383784.227	397215.883	Required	
SW45B	383809.453	397168.119	383809.453	397168.119	Required	
SW45	383808.765	397161.915	383808.765	397161.915	Required	

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Manhole Schedules for Blocks C&D

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW01	383813.545	397108.739	383813.545	397108.739	Required	
SW02	383799.790	397123.712	383799.790	397123.712	Required	
SW03	383790.273	397134.072	383790.273	397134.072	Required	
SW04	383792.525	397147.711	383792.525	397147.711	Required	
BLOCK D TANK	383800.051	397151.625	383800.051	397151.625	Required	
SW05	383807.955	397156.183	383807.955	397156.183	Required	
SW06	383811.100	397157.789	383811.100	397157.789	Required	
SW46	383815.750	397149.555	383815.750	397149.555	Required	
SW49	383818.279	397145.146	383818.279	397145.146	Required	
CW02	383820.086	397146.090	383820.086	397146.090	Required	
CW03	383827.744	397150.048	383827.744	397150.048	Required	
Ex. MH	383830.121	397146.398			No Entry	

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PIPELINE SCHEDULES for Blocks C&D

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	SW29	33.750	32.170	1.430	Open Manhole	600
2.000	o	150	SW30	33.800	32.550	1.100	Open Manhole	600
1.001	o	150	JUNCTION	33.750	32.120	1.480	Junction	
1.002	o	150	SW31	33.750	31.970	1.630	Open Manhole	600
1.003	o	225	SW32	33.750	31.755	1.770	Open Manhole	1200
1.004	o	225	SW33	33.800	31.665	1.910	Open Manhole	1200
3.000	o	150	SW34	33.800	32.220	1.430	Open Manhole	600
1.005	o	225	JUNCTION	33.800	31.632	1.943	Junction	
4.000	o	150	SW36	33.800	32.020	1.630	Open Manhole	600
1.006	o	225	JUNCTION	33.800	31.481	2.094	Junction	
5.000	o	150	SW40	33.800	31.940	1.710	Open Manhole	600
5.001	o	150	SW40A	33.800	31.650	2.000	Open Manhole	600
5.002	o	150	SW40B	33.800	31.580	2.070	Open Manhole	1200
5.003	o	150	RAINWATER TANK	33.800	31.550	2.100	Open Manhole	3000

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	5.120	102.4	JUNCTION	33.750	32.120	1.480	Junction	
2.000	2.661	6.2	JUNCTION	33.750	32.120	1.480	Junction	
1.001	14.876	99.2	SW31	33.750	31.970	1.630	Open Manhole	600
1.002	13.839	98.9	SW32	33.750	31.830	1.770	Open Manhole	1200
1.003	13.570	150.8	SW33	33.800	31.665	1.910	Open Manhole	1200
1.004	4.939	150.8	JUNCTION	33.800	31.632	1.943	Junction	
3.000	1.802	3.6	JUNCTION	33.800	31.719	1.931	Junction	
1.005	22.778	150.8	JUNCTION	33.800	31.481	2.094	Junction	
4.000	1.528	3.3	JUNCTION	33.800	31.557	2.093	Junction	
1.006	6.135	149.6	SW36A	33.800	31.440	2.135	Open Manhole	1200
5.000	9.141	31.5	SW40A	33.800	31.650	2.000	Open Manhole	600
5.001	6.627	95.5	SW40B	33.800	31.580	2.070	Open Manhole	1200
5.002	5.676	185.0	RAINWATER TANK	33.800	31.550	2.100	Open Manhole	3000
5.003	6.298	179.9	SW36A	33.800	31.515	2.135	Open Manhole	1200

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PIPELINE SCHEDULES for Blocks C&D

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)
1.007	o	225	SW36A	33.800	31.440	2.135	Open Manhole	1200
1.008	o	225	SW37	33.800	31.380	2.195	Open Manhole	1200
6.000	o	150	SW38	33.800	31.770	1.880	Open Manhole	600
1.009	o	225	JUNCTION	33.800	31.353	2.222	Junction	
1.010	o	225	SW41	33.800	31.300	2.275	Open Manhole	1200
7.000	o	150	RE	34.700	33.950	0.600	Open Manhole	150
7.001	o	150	SW42	34.700	33.710	0.840	Open Manhole	1200
7.002	o	150	SW43	34.700	33.510	1.040	Open Manhole	1200
1.011	o	225	SW44	34.700	31.250	3.225	Open Manhole	1200
1.012	o	225	BLOCK C TANK	34.400	31.200	2.975	Open Manhole	1500
8.000	o	150	SW45A	34.000	33.250	0.600	Open Manhole	1200
8.001	o	150	SW45B	34.000	32.710	1.140	Open Manhole	1200
1.013	o	225	SW45	34.150	31.140	2.785	Open Manhole	1200
9.000	o	225	SW01	34.700	33.065	1.410	Open Manhole	1200
9.001	o	225	SW02	34.700	32.930	1.545	Open Manhole	1200

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)
1.007	8.671	144.5	SW37	33.800	31.380	2.195	Open Manhole	1200
1.008	4.033	149.4	JUNCTION	33.800	31.353	2.222	Junction	
6.000	1.328	3.9	JUNCTION	33.800	31.429	2.221	Junction	
1.009	7.978	150.0	SW41	33.800	31.300	2.275	Open Manhole	1200
1.010	7.855	157.1	SW44	34.700	31.250	3.225	Open Manhole	1200
7.000	36.195	150.5	SW42	34.700	33.710	0.840	Open Manhole	1200
7.001	29.397	147.0	SW43	34.700	33.510	1.040	Open Manhole	1200
7.002	21.097	150.2	SW44	34.700	33.370	1.180	Open Manhole	1200
1.011	6.767	135.8	BLOCK C TANK	34.400	31.200	2.975	Open Manhole	1500
1.012	9.707	161.8	SW45	34.150	31.140	2.785	Open Manhole	1200
8.000	54.016	100.0	SW45B	34.000	32.710	1.140	Open Manhole	1200
8.001	6.242	113.2	SW45	34.150	32.655	1.345	Open Manhole	1200
1.013	4.741	129.0	SW06	34.670	31.103	3.342	Open Manhole	1500
9.000	20.331	150.6	SW02	34.700	32.930	1.545	Open Manhole	1200
9.001	14.068	149.7	SW03	34.700	32.836	1.639	Open Manhole	1200

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PIPELINE SCHEDULES for Blocks C&D

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)
9.002	o	225	SW03	34.700	32.836	1.639	Open Manhole	1200
9.003	o	225	SW04	34.700	32.743	1.732	Open Manhole	1200
9.004	o	225	BLOCK D TANK	34.700	32.720	1.755	Open Manhole	1500
9.005	o	225	SW05	34.700	32.626	1.849	Open Manhole	1500
1.014	o	225	SW06	34.670	31.103	3.342	Open Manhole	1500
1.015	o	225	SW46	34.550	31.030	3.295	Open Manhole	1200
1.016	o	225	SW49	34.700	30.912	3.563	Open Manhole	1200
1.017	o	225	CW02	34.600	30.840	3.535	Open Manhole	1200
1.018	o	225	CW03	34.450	30.750	3.475	Open Manhole	1200

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)
9.002	13.824	149.2	SW04	34.700	32.743	1.732	Open Manhole	1200
9.003	8.483	368.8	BLOCK D TANK	34.700	32.720	1.755	Open Manhole	1500
9.004	9.124	97.0	SW05	34.700	32.626	1.849	Open Manhole	1500
9.005	3.531	150.0	SW06	34.670	32.602	1.843	Open Manhole	1500
1.014	9.456	129.0	SW46	34.550	31.030	3.295	Open Manhole	1200
1.015	5.083	43.1	SW49	34.700	30.912	3.563	Open Manhole	1200
1.016	2.039	28.5	CW02	34.600	30.840	3.535	Open Manhole	1200
1.017	8.620	95.0	CW03	34.450	30.750	3.475	Open Manhole	1200
1.018	4.355	100.0	Ex. MH	34.670	30.706	3.739	Open Manhole	1800

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Area Summary for Blocks C&D

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	User	-	100	0.008	0.008	0.008
2.000	User	-	100	0.018	0.018	0.018
1.001	-	-	100	0.000	0.000	0.000
1.002	User	-	100	0.011	0.011	0.011
1.003	User	-	100	0.025	0.025	0.025
1.004	-	-	100	0.000	0.000	0.000
3.000	User	-	100	0.006	0.006	0.006
1.005	-	-	100	0.000	0.000	0.000
4.000	User	-	100	0.002	0.002	0.002
1.006	-	-	100	0.000	0.000	0.000
5.000	User	-	100	0.032	0.032	0.032
5.001	User	-	100	0.003	0.003	0.003
5.002	User	-	100	0.031	0.031	0.031
5.003	-	-	100	0.000	0.000	0.000
1.007	-	-	100	0.000	0.000	0.000
1.008	-	-	100	0.000	0.000	0.000
6.000	-	-	100	0.000	0.000	0.000
1.009	-	-	100	0.000	0.000	0.000
1.010	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.000	0.000	0.000
7.001	-	-	100	0.000	0.000	0.000
7.002	-	-	100	0.000	0.000	0.000
1.011	-	-	100	0.000	0.000	0.000
1.012	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.000	0.000	0.000
8.001	-	-	100	0.000	0.000	0.000
1.013	-	-	100	0.000	0.000	0.000
9.000	-	-	100	0.042	0.042	0.042
9.001	-	-	100	0.042	0.042	0.042
9.002	-	-	100	0.000	0.000	0.000
9.003	-	-	100	0.020	0.020	0.020
9.004	-	-	100	0.000	0.000	0.000
9.005	-	-	100	0.000	0.000	0.000
1.014	-	-	100	0.000	0.000	0.000
1.015	-	-	100	0.000	0.000	0.000
1.016	-	-	100	0.000	0.000	0.000
1.017	-	-	100	0.000	0.000	0.000
1.018	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.239	0.239	0.239

Free Flowing Outfall Details for Blocks C&D

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.018	Ex. MH	34.670	30.706	27.920	1800	0

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Simulation Criteria for Blocks C&D

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	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 13
Number of Online Controls 2 Number of Storage Structures 5 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 C&D

Hydro-Brake® Optimum Manhole: SW05, DS/PN: 9.005, Volume (m³): 4.0

Unit Reference MD-SHE-0100-5000-1400-5000
Design Head (m) 1.400
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 100
Invert Level (m) 32.626
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)	1.400	5.0	Kick-Flo®	0.855	4.0
Flush-Flo™	0.416	5.0	Mean Flow over Head Range	-	4.4

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	3.3	0.800	4.3	2.000	5.9	4.000	8.2	7.000	10.7
0.200	4.6	1.000	4.3	2.200	6.2	4.500	8.6	7.500	11.0
0.300	4.9	1.200	4.7	2.400	6.4	5.000	9.1	8.000	11.4
0.400	5.0	1.400	5.0	2.600	6.7	5.500	9.5	8.500	11.7
0.500	5.0	1.600	5.3	3.000	7.1	6.000	9.9	9.000	12.0
0.600	4.9	1.800	5.6	3.500	7.7	6.500	10.3	9.500	12.3

Hydro-Brake® Optimum Manhole: SW49, DS/PN: 1.016, Volume (m³): 4.4

Unit Reference MD-SHE-0087-5000-2500-5000
Design Head (m) 2.500
Design Flow (l/s) 5.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 87
Invert Level (m) 30.912
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.500	5.0	Kick-Flo®	0.777	2.9
Flush-Flo™	0.379	3.6	Mean Flow over Head Range	-	3.8

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

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Hydro-Brake® Optimum Manhole: SW49, DS/PN: 1.016, Volume (m³): 4.4

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	2.6	0.800	2.9	2.000	4.5	4.000	6.2	7.000	8.1
0.200	3.4	1.000	3.3	2.200	4.7	4.500	6.6	7.500	8.4
0.300	3.6	1.200	3.6	2.400	4.9	5.000	6.9	8.000	8.6
0.400	3.6	1.400	3.8	2.600	5.1	5.500	7.2	8.500	8.9
0.500	3.6	1.600	4.1	3.000	5.4	6.000	7.5	9.000	9.1
0.600	3.5	1.800	4.3	3.500	5.8	6.500	7.8	9.500	9.4

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Storage Structures for Blocks C&D

Cellular Storage Manhole: BLOCK C TANK, DS/PN: 1.012

Invert Level (m) 31.200 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	28.0	0.0	1.600	28.0	0.0	1.601	0.0	0.0

Porous Car Park Manhole: SW45A, DS/PN: 8.000

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 19.1
Membrane Percolation (mm/hr) 1000 Length (m) 19.1
Max Percolation (l/s) 101.3 Slope (1:X) 100.0
Safety Factor 2.0 Depression Storage (mm) 5
Porosity 0.30 Evaporation (mm/day) 3
Invert Level (m) 33.250 Cap Volume Depth (m) 0.300

Cellular Storage Manhole: BLOCK D TANK, DS/PN: 9.004

Invert Level (m) 32.720 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	38.0	0.0	1.200	38.0	0.0	1.201	0.0	0.0

Porous Car Park Manhole: SW05, DS/PN: 9.005

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 10.0
Membrane Percolation (mm/hr) 1000 Length (m) 37.6
Max Percolation (l/s) 104.4 Slope (1:X) 150.0
Safety Factor 2.0 Depression Storage (mm) 5
Porosity 0.30 Evaporation (mm/day) 3
Invert Level (m) 33.650 Cap Volume Depth (m) 0.300

Porous Car Park Manhole: SW46, DS/PN: 1.015

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 15.8
Membrane Percolation (mm/hr) 1000 Length (m) 15.8
Max Percolation (l/s) 69.3 Slope (1:X) 100.0
Safety Factor 2.0 Depression Storage (mm) 5
Porosity 0.30 Evaporation (mm/day) 3
Invert Level (m) 33.260 Cap Volume Depth (m) 0.300

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Time Area Diagram for Green Roof at Pipe Number 1.000 (Blocks C&D)

Area (m³) 248 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 0.004507		32 36 0.000910		64 68 0.000184		96 100 0.000037	
4 8 0.003690		36 40 0.000745		68 72 0.000150		100 104 0.000030	
8 12 0.003021		40 44 0.000610		72 76 0.000123		104 108 0.000025	
12 16 0.002473		44 48 0.000499		76 80 0.000101		108 112 0.000020	
16 20 0.002025		48 52 0.000409		80 84 0.000083		112 116 0.000017	
20 24 0.001658		52 56 0.000335		84 88 0.000068		116 120 0.000014	
24 28 0.001357		56 60 0.000274		88 92 0.000055			
28 32 0.001111		60 64 0.000224		92 96 0.000045			

Time Area Diagram for Green Roof at Pipe Number 2.000 (Blocks C&D)

Area (m³) 111 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 0.002017		32 36 0.000407		64 68 0.000082		96 100 0.000017	
4 8 0.001651		36 40 0.000333		68 72 0.000067		100 104 0.000014	
8 12 0.001352		40 44 0.000273		72 76 0.000055		104 108 0.000011	
12 16 0.001107		44 48 0.000223		76 80 0.000045		108 112 0.000009	
16 20 0.000906		48 52 0.000183		80 84 0.000037		112 116 0.000007	
20 24 0.000742		52 56 0.000150		84 88 0.000030		116 120 0.000006	
24 28 0.000608		56 60 0.000123		88 92 0.000025			
28 32 0.000497		60 64 0.000100		92 96 0.000020			

Time Area Diagram for Green Roof at Pipe Number 1.002 (Blocks C&D)

Area (m³) 107 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 0.001944		32 36 0.000393		64 68 0.000079		96 100 0.000016	
4 8 0.001592		36 40 0.000321		68 72 0.000065		100 104 0.000013	
8 12 0.001303		40 44 0.000263		72 76 0.000053		104 108 0.000011	
12 16 0.001067		44 48 0.000215		76 80 0.000043		108 112 0.000009	
16 20 0.000874		48 52 0.000176		80 84 0.000036		112 116 0.000007	
20 24 0.000715		52 56 0.000144		84 88 0.000029		116 120 0.000006	
24 28 0.000586		56 60 0.000118		88 92 0.000024			
28 32 0.000479		60 64 0.000097		92 96 0.000020			

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Time Area Diagram for Green Roof at Pipe Number 1.003 (Blocks C&D)

Area (m³) 45 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 0.000818		32 36 0.000165		64 68 0.000033		96 100 0.000007	
4 8 0.000670		36 40 0.000135		68 72 0.000027		100 104 0.000006	
8 12 0.000548		40 44 0.000111		72 76 0.000022		104 108 0.000005	
12 16 0.000449		44 48 0.000091		76 80 0.000018		108 112 0.000004	
16 20 0.000367		48 52 0.000074		80 84 0.000015		112 116 0.000003	
20 24 0.000301		52 56 0.000061		84 88 0.000012		116 120 0.000002	
24 28 0.000246		56 60 0.000050		88 92 0.000010			
28 32 0.000202		60 64 0.000041		92 96 0.000008			

Time Area Diagram for Green Roof at Pipe Number 3.000 (Blocks C&D)

Area (m³) 143 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 0.002599		32 36 0.000525		64 68 0.000106		96 100 0.000021	
4 8 0.002128		36 40 0.000430		68 72 0.000087		100 104 0.000018	
8 12 0.001742		40 44 0.000352		72 76 0.000071		104 108 0.000014	
12 16 0.001426		44 48 0.000288		76 80 0.000058		108 112 0.000012	
16 20 0.001168		48 52 0.000236		80 84 0.000048		112 116 0.000010	
20 24 0.000956		52 56 0.000193		84 88 0.000039		116 120 0.000008	
24 28 0.000783		56 60 0.000158		88 92 0.000032			
28 32 0.000641		60 64 0.000129		92 96 0.000026			

Time Area Diagram for Green Roof at Pipe Number 4.000 (Blocks C&D)

Area (m³) 13 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 0.000236		32 36 0.000048		64 68 0.000010		96 100 0.000002	
4 8 0.000193		36 40 0.000039		68 72 0.000008		100 104 0.000002	
8 12 0.000158		40 44 0.000032		72 76 0.000006		104 108 0.000001	
12 16 0.000130		44 48 0.000026		76 80 0.000005		108 112 0.000001	
16 20 0.000106		48 52 0.000021		80 84 0.000004		112 116 0.000001	
20 24 0.000087		52 56 0.000018		84 88 0.000004		116 120 0.000001	
24 28 0.000071		56 60 0.000014		88 92 0.000003			
28 32 0.000058		60 64 0.000012		92 96 0.000002			

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Time Area Diagram for Green Roof at Pipe Number 5.000 (Blocks C&D)

Area (m³) 225 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)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)
0 4 0.004089	32 36 0.000825	64 68 0.000167	96 100 0.000034				
4 8 0.003348	36 40 0.000676	68 72 0.000136	100 104 0.000028				
8 12 0.002741	40 44 0.000553	72 76 0.000112	104 108 0.000023				
12 16 0.002244	44 48 0.000453	76 80 0.000091	108 112 0.000018				
16 20 0.001837	48 52 0.000371	80 84 0.000075	112 116 0.000015				
20 24 0.001504	52 56 0.000304	84 88 0.000061	116 120 0.000012				
24 28 0.001231	56 60 0.000249	88 92 0.000050					
28 32 0.001008	60 64 0.000204	92 96 0.000041					

Time Area Diagram for Green Roof at Pipe Number 5.001 (Blocks C&D)

Area (m³) 93 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)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)
0 4 0.001690	32 36 0.000341	64 68 0.000069	96 100 0.000014				
4 8 0.001384	36 40 0.000279	68 72 0.000056	100 104 0.000011				
8 12 0.001133	40 44 0.000229	72 76 0.000046	104 108 0.000009				
12 16 0.000927	44 48 0.000187	76 80 0.000038	108 112 0.000008				
16 20 0.000759	48 52 0.000153	80 84 0.000031	112 116 0.000006				
20 24 0.000622	52 56 0.000126	84 88 0.000025	116 120 0.000005				
24 28 0.000509	56 60 0.000103	88 92 0.000021					
28 32 0.000417	60 64 0.000084	92 96 0.000017					

Time Area Diagram for Green Roof at Pipe Number 6.000 (Blocks C&D)

Area (m³) 213 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)	From: To: (ha)	From: To: (ha)	From: To: (ha)	From: To: (ha)
0 4 0.003871	32 36 0.000781	64 68 0.000158	96 100 0.000032				
4 8 0.003169	36 40 0.000640	68 72 0.000129	100 104 0.000026				
8 12 0.002595	40 44 0.000524	72 76 0.000106	104 108 0.000021				
12 16 0.002124	44 48 0.000429	76 80 0.000087	108 112 0.000017				
16 20 0.001739	48 52 0.000351	80 84 0.000071	112 116 0.000014				
20 24 0.001424	52 56 0.000287	84 88 0.000058	116 120 0.000012				
24 28 0.001166	56 60 0.000235	88 92 0.000048					
28 32 0.000954	60 64 0.000193	92 96 0.000039					

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1 Dale Street Liverpool L2 2ET	219-215 First Street Blocks C & D SW Network	
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Time Area Diagram for Green Roof at Pipe Number 7.000 (Blocks C&D)

Area (m³) 202 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 0.003671		32 36 0.000741		64 68 0.000150		96 100 0.000030	
4 8 0.003005		36 40 0.000607		68 72 0.000123		100 104 0.000025	
8 12 0.002461		40 44 0.000497		72 76 0.000100		104 108 0.000020	
12 16 0.002015		44 48 0.000407		76 80 0.000082		108 112 0.000017	
16 20 0.001649		48 52 0.000333		80 84 0.000067		112 116 0.000014	
20 24 0.001350		52 56 0.000273		84 88 0.000055		116 120 0.000011	
24 28 0.001106		56 60 0.000223		88 92 0.000045			
28 32 0.000905		60 64 0.000183		92 96 0.000037			

Time Area Diagram for Green Roof at Pipe Number 7.001 (Blocks C&D)

Area (m³) 264 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 0.004797		32 36 0.000969		64 68 0.000196		96 100 0.000039	
4 8 0.003928		36 40 0.000793		68 72 0.000160		100 104 0.000032	
8 12 0.003216		40 44 0.000649		72 76 0.000131		104 108 0.000026	
12 16 0.002633		44 48 0.000532		76 80 0.000107		108 112 0.000022	
16 20 0.002156		48 52 0.000435		80 84 0.000088		112 116 0.000018	
20 24 0.001765		52 56 0.000356		84 88 0.000072		116 120 0.000015	
24 28 0.001445		56 60 0.000292		88 92 0.000059			
28 32 0.001183		60 64 0.000239		92 96 0.000048			

Time Area Diagram for Green Roof at Pipe Number 8.000 (Blocks C&D)

Area (m³) 365 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 0.006633		32 36 0.001339		64 68 0.000270		96 100 0.000055	
4 8 0.005430		36 40 0.001096		68 72 0.000221		100 104 0.000045	
8 12 0.004446		40 44 0.000898		72 76 0.000181		104 108 0.000037	
12 16 0.003640		44 48 0.000735		76 80 0.000148		108 112 0.000030	
16 20 0.002980		48 52 0.000602		80 84 0.000121		112 116 0.000025	
20 24 0.002440		52 56 0.000493		84 88 0.000099		116 120 0.000020	
24 28 0.001998		56 60 0.000403		88 92 0.000081			
28 32 0.001636		60 64 0.000330		92 96 0.000067			

Time Area Diagram for Green Roof at Pipe Number 9.005 (Blocks C&D)

Area (m³) 376 Evaporation (mm/day) 3
Depression Storage (mm) 5 Decay Coefficient 0.050

Time (mins)			Time (mins)			Time (mins)			Time (mins)		
From:	To:	Area (ha)	From:	To:	Area (ha)	From:	To:	Area (ha)	From:	To:	Area (ha)
0	4	0.006833	32	36	0.001379	64	68	0.000279	96	100	0.000056
4	8	0.005594	36	40	0.001129	68	72	0.000228	100	104	0.000046
8	12	0.004580	40	44	0.000925	72	76	0.000187	104	108	0.000038
12	16	0.003750	44	48	0.000757	76	80	0.000153	108	112	0.000031
16	20	0.003070	48	52	0.000620	80	84	0.000125	112	116	0.000025
20	24	0.002514	52	56	0.000507	84	88	0.000102	116	120	0.000021
24	28	0.002058	56	60	0.000415	88	92	0.000084			
28	32	0.001685	60	64	0.000340	92	96	0.000069			

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

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 13
 Number of Online Controls 2 Number of Storage Structures 5 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 ON
 Inertia Status ON

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 Level (m)	Surcharged Depth (m)
1.000	SW29	60 Winter	1	+0%	30/120 Winter				32.193	-0.127
2.000	SW30	120 Summer	1	+0%	100/60 Summer				32.557	-0.143
1.001	JUNCTION	120 Winter	1	+0%					32.144	-0.126
1.002	SW31	120 Winter	1	+0%	30/60 Winter				32.000	-0.120
1.003	SW32	120 Winter	1	+0%	30/60 Summer				31.785	-0.195
1.004	SW33	120 Winter	1	+0%	30/30 Winter				31.698	-0.192
3.000	SW34	120 Summer	1	+0%	30/240 Winter				32.228	-0.142
1.005	JUNCTION	120 Winter	1	+0%	30/30 Winter				31.663	-0.194
4.000	SW36	120 Summer	1	+0%	30/120 Summer				32.021	-0.149
1.006	JUNCTION	120 Winter	1	+0%	30/30 Summer				31.519	-0.187
5.000	SW40	120 Winter	1	+0%	30/60 Winter				31.956	-0.134
5.001	SW40A	60 Winter	1	+0%	30/30 Winter				31.676	-0.124
5.002	SW40B	15 Winter	1	+0%	30/30 Summer				31.636	-0.094
5.003	RAINWATER TANK	15 Winter	1	+0%	30/30 Summer				31.603	-0.097
1.007	SW36A	120 Winter	1	+0%	30/30 Summer				31.490	-0.175
1.008	SW37	120 Winter	1	+0%	2/120 Winter				31.434	-0.171
6.000	SW38	120 Summer	1	+0%	30/60 Summer				31.783	-0.137
1.009	JUNCTION	240 Winter	1	+0%	2/120 Winter				31.430	-0.148
1.010	SW41	240 Winter	1	+0%	2/120 Winter				31.428	-0.096
7.000	RE	120 Winter	1	+0%					33.970	-0.130
7.001	SW42	120 Winter	1	+0%					33.741	-0.118
7.002	SW43	120 Winter	1	+0%					33.542	-0.118
1.011	SW44	240 Winter	1	+0%	2/60 Winter				31.426	-0.048
1.012	BLOCK C TANK	240 Winter	1	+0%	2/60 Winter				31.424	-0.001
8.000	SW45A	360 Winter	1	+0%	100/240 Winter				33.267	-0.133

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

PN	US/MH Name	Flooded		Half Drain		Pipe	Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)	Flow		
1.000	SW29	0.000	0.05			0.7	OK	
2.000	SW30	0.000	0.01			0.3	OK	
1.001	JUNCTION	0.000	0.06			1.1	OK*	
1.002	SW31	0.000	0.09			1.4	OK	
1.003	SW32	0.000	0.04			1.6	OK	
1.004	SW33	0.000	0.05			1.6	OK	
3.000	SW34	0.000	0.01			0.4	OK	
1.005	JUNCTION	0.000	0.05			2.0	OK*	
4.000	SW36	0.000	0.00			0.0	OK	
1.006	JUNCTION	0.000	0.07			2.0	OK*	
5.000	SW40	0.000	0.02			0.7	OK	
5.001	SW40A	0.000	0.06			1.0	OK	
5.002	SW40B	0.000	0.29			3.2	OK	
5.003	RAINWATER TANK	0.000	0.27			3.0	OK	
1.007	SW36A	0.000	0.11			3.9	OK	
1.008	SW37	0.000	0.13			3.9	OK	
6.000	SW38	0.000	0.02			0.6	OK	
1.009	JUNCTION	0.000	0.11			3.5	OK*	
1.010	SW41	0.000	0.11			3.5	OK	
7.000	RE	0.000	0.04			0.6	OK	
7.001	SW42	0.000	0.10			1.4	OK	
7.002	SW43	0.000	0.10			1.4	OK	
1.011	SW44	0.000	0.14			4.5	OK	
1.012	BLOCK C TANK	0.000	0.13	53	4.3	OK		
8.000	SW45A	0.000	0.03	47	0.6	OK		

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

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)
8.001	SW45B	360 Winter	1	+0%	100/60 Winter				32.729	-0.131
1.013	SW45	240 Winter	1	+0%	1/120 Winter				31.424	0.059
9.000	SW01	15 Winter	1	+0%	100/15 Summer				33.119	-0.171
9.001	SW02	15 Winter	1	+0%	100/15 Summer				33.007	-0.148
9.002	SW03	15 Winter	1	+0%	100/15 Summer				32.913	-0.148
9.003	SW04	15 Winter	1	+0%	30/15 Summer				32.866	-0.102
9.004	BLOCK D TANK	30 Winter	1	+0%	30/15 Winter				32.805	-0.140
9.005	SW05	30 Winter	1	+0%	30/15 Summer				32.800	-0.051
1.014	SW06	240 Winter	1	+0%	1/60 Winter				31.423	0.095
1.015	SW46	240 Winter	1	+0%	1/30 Winter				31.421	0.166
1.016	SW49	240 Winter	1	+0%	1/15 Summer				31.419	0.282
1.017	CW02	60 Winter	1	+0%					30.885	-0.181
1.018	CW03	480 Winter	1	+0%					30.802	-0.173

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)			
8.001	SW45B	0.000	0.04			0.6		OK	
1.013	SW45	0.000	0.15			4.5		SURCHARGED	
9.000	SW01	0.000	0.13			5.0		OK	
9.001	SW02	0.000	0.25			9.3		OK	
9.002	SW03	0.000	0.25			9.3		OK	
9.003	SW04	0.000	0.57			11.2		OK	
9.004	BLOCK D TANK	0.000	0.12		14	5.2		OK	
9.005	SW05	0.000	0.16		15	4.4		OK	
1.014	SW06	0.000	0.14			5.3		SURCHARGED	
1.015	SW46	0.000	0.09		73	4.2		SURCHARGED	
1.016	SW49	0.000	0.10			3.6		SURCHARGED	
1.017	CW02	0.000	0.09			3.6		OK	
1.018	CW03	0.000	0.12			3.6		OK	

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

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 13
 Number of Online Controls 2 Number of Storage Structures 5 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 ON
 Inertia Status ON

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) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.000	SW29	60 Winter	2	+0%	30/120 Winter				32.198	-0.122
2.000	SW30	60 Winter	2	+0%	100/60 Summer				32.559	-0.141
1.001	JUNCTION	60 Winter	2	+0%					32.151	-0.119
1.002	SW31	60 Winter	2	+0%	30/60 Winter				32.005	-0.115
1.003	SW32	60 Winter	2	+0%	30/60 Summer				31.791	-0.189
1.004	SW33	60 Winter	2	+0%	30/30 Winter				31.705	-0.185
3.000	SW34	60 Winter	2	+0%	30/240 Winter				32.231	-0.139
1.005	JUNCTION	60 Winter	2	+0%	30/30 Winter				31.670	-0.187
4.000	SW36	60 Winter	2	+0%	30/120 Summer				32.021	-0.149
1.006	JUNCTION	240 Winter	2	+0%	30/30 Summer				31.645	-0.061
5.000	SW40	60 Winter	2	+0%	30/60 Winter				31.960	-0.130
5.001	SW40A	60 Winter	2	+0%	30/30 Winter				31.680	-0.120
5.002	SW40B	240 Winter	2	+0%	30/30 Summer				31.646	-0.084
5.003	RAINWATER TANK	240 Winter	2	+0%	30/30 Summer				31.645	-0.054
1.007	SW36A	240 Winter	2	+0%	30/30 Summer				31.644	-0.020
1.008	SW37	240 Winter	2	+0%	2/120 Winter				31.643	0.038
6.000	SW38	60 Winter	2	+0%	30/60 Summer				31.787	-0.133
1.009	JUNCTION	480 Winter	2	+0%	2/120 Winter				31.580	0.002
1.010	SW41	240 Winter	2	+0%	2/120 Winter				31.641	0.117
7.000	RE	60 Winter	2	+0%					33.975	-0.125
7.001	SW42	60 Winter	2	+0%					33.747	-0.113
7.002	SW43	60 Winter	2	+0%					33.547	-0.113
1.011	SW44	240 Winter	2	+0%	2/60 Winter				31.640	0.165
1.012	BLOCK C TANK	240 Winter	2	+0%	2/60 Winter				31.638	0.213
8.000	SW45A	240 Winter	2	+0%	100/240 Winter				33.272	-0.128

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

PN	US/MH Name	Flooded		Half Drain		Pipe	Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)	Flow (l/s)		
1.000	SW29	0.000	0.08			1.1	OK	
2.000	SW30	0.000	0.01			0.5	OK	
1.001	JUNCTION	0.000	0.09			1.6	OK*	
1.002	SW31	0.000	0.12			2.0	OK	
1.003	SW32	0.000	0.06			2.2	OK	
1.004	SW33	0.000	0.07			2.2	OK	
3.000	SW34	0.000	0.01			0.6	OK	
1.005	JUNCTION	0.000	0.07			2.8	OK*	
4.000	SW36	0.000	0.00			0.1	OK	
1.006	JUNCTION	0.000	0.06			1.9	OK*	
5.000	SW40	0.000	0.04			1.0	OK	
5.001	SW40A	0.000	0.09			1.4	OK	
5.002	SW40B	0.000	0.17			1.9	OK	
5.003	RAINWATER TANK	0.000	0.17			1.9	OK	
1.007	SW36A	0.000	0.11			3.7	OK	
1.008	SW37	0.000	0.13			3.7	SURCHARGED	
6.000	SW38	0.000	0.03			1.0	OK	
1.009	JUNCTION	0.000	0.09			2.8	SURCHARGED*	
1.010	SW41	0.000	0.14			4.3	SURCHARGED	
7.000	RE	0.000	0.06			0.9	OK	
7.001	SW42	0.000	0.14			1.9	OK	
7.002	SW43	0.000	0.14			1.9	OK	
1.011	SW44	0.000	0.17			5.5	SURCHARGED	
1.012	BLOCK C TANK	0.000	0.14	91	4.8	4.8	SURCHARGED	
8.000	SW45A	0.000	0.05	45	0.9	0.9	OK	

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

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)
8.001	SW45B	240 Winter	2	+0%	100/60 Winter				32.734	-0.126
1.013	SW45	240 Winter	2	+0%	1/120 Winter				31.643	0.278
9.000	SW01	15 Winter	2	+0%	100/15 Summer				33.128	-0.162
9.001	SW02	15 Winter	2	+0%	100/15 Summer				33.019	-0.136
9.002	SW03	15 Winter	2	+0%	100/15 Summer				32.927	-0.134
9.003	SW04	15 Winter	2	+0%	30/15 Summer				32.888	-0.080
9.004	BLOCK D TANK	30 Winter	2	+0%	30/15 Winter				32.840	-0.105
9.005	SW05	30 Winter	2	+0%	30/15 Summer				32.834	-0.017
1.014	SW06	240 Winter	2	+0%	1/60 Winter				31.645	0.317
1.015	SW46	240 Winter	2	+0%	1/30 Winter				31.644	0.389
1.016	SW49	240 Winter	2	+0%	1/15 Summer				31.643	0.506
1.017	CW02	960 Winter	2	+0%					30.885	-0.181
1.018	CW03	960 Winter	2	+0%					30.802	-0.173

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)			
8.001	SW45B	0.000	0.06			0.9		OK	
1.013	SW45	0.000	0.19			5.5		SURCHARGED	
9.000	SW01	0.000	0.17			6.4		OK	
9.001	SW02	0.000	0.32			12.0		OK	
9.002	SW03	0.000	0.33			12.0		OK	
9.003	SW04	0.000	0.73			14.4		OK	
9.004	BLOCK D TANK	0.000	0.13		16	5.6		OK	
9.005	SW05	0.000	0.16		19	4.6		OK	
1.014	SW06	0.000	0.15			5.5		SURCHARGED	
1.015	SW46	0.000	0.09		117	4.4		SURCHARGED	
1.016	SW49	0.000	0.10			3.6		SURCHARGED	
1.017	CW02	0.000	0.09			3.6		OK	
1.018	CW03	0.000	0.12			3.6		OK	

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

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 13
 Number of Online Controls 2 Number of Storage Structures 5 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 ON
 Inertia Status ON

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	SW29	240 Winter	30	+0%	30/120 Winter				32.529	0.209
2.000	SW30	60 Winter	30	+0%	100/60 Summer				32.566	-0.134
1.001	JUNCTION	240 Summer	30	+0%					32.270	0.000
1.002	SW31	240 Winter	30	+0%	30/60 Winter				32.527	0.407
1.003	SW32	240 Winter	30	+0%	30/60 Summer				32.526	0.546
1.004	SW33	240 Winter	30	+0%	30/30 Winter				32.525	0.635
3.000	SW34	240 Winter	30	+0%	30/240 Winter				32.525	0.155
1.005	JUNCTION	1440 Summer	30	+0%	30/30 Winter				31.869	0.012
4.000	SW36	240 Winter	30	+0%	30/120 Summer				32.523	0.353
1.006	JUNCTION	1440 Summer	30	+0%	30/30 Summer				31.707	0.001
5.000	SW40	240 Winter	30	+0%	30/60 Winter				32.526	0.436
5.001	SW40A	240 Winter	30	+0%	30/30 Winter				32.525	0.726
5.002	SW40B	240 Winter	30	+0%	30/30 Summer				32.525	0.794
5.003	RAINWATER TANK	240 Winter	30	+0%	30/30 Summer				32.524	0.824
1.007	SW36A	240 Winter	30	+0%	30/30 Summer				32.523	0.858
1.008	SW37	240 Winter	30	+0%	2/120 Winter				32.522	0.917
6.000	SW38	240 Winter	30	+0%	30/60 Summer				32.521	0.601
1.009	JUNCTION	1440 Summer	30	+0%	2/120 Winter				31.580	0.002
1.010	SW41	240 Winter	30	+0%	2/120 Winter				32.520	0.995
7.000	RE	30 Winter	30	+0%					33.986	-0.114
7.001	SW42	60 Winter	30	+0%					33.765	-0.095
7.002	SW43	60 Winter	30	+0%					33.566	-0.094

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

PN	US/MH Name	Flooded		Half Drain		Pipe	Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)	Flow (l/s)		
1.000	SW29	0.000	0.09			1.3	SURCHARGED	
2.000	SW30	0.000	0.02			1.0	OK	
1.001	JUNCTION	0.000	0.12			2.1	SURCHARGED*	
1.002	SW31	0.000	0.15			2.4	SURCHARGED	
1.003	SW32	0.000	0.07			2.7	SURCHARGED	
1.004	SW33	0.000	0.09			2.6	SURCHARGED	
3.000	SW34	0.000	0.02			0.8	SURCHARGED	
1.005	JUNCTION	0.000	0.03			1.3	SURCHARGED*	
4.000	SW36	0.000	0.00			0.1	SURCHARGED	
1.006	JUNCTION	0.000	0.04			1.2	SURCHARGED*	
5.000	SW40	0.000	0.04			1.2	SURCHARGED	
5.001	SW40A	0.000	0.11			1.6	SURCHARGED	
5.002	SW40B	0.000	0.32			3.5	SURCHARGED	
5.003	RAINWATER TANK	0.000	0.31			3.4	SURCHARGED	
1.007	SW36A	0.000	0.17			6.0	SURCHARGED	
1.008	SW37	0.000	0.19			5.6	SURCHARGED	
6.000	SW38	0.000	0.03			1.1	SURCHARGED	
1.009	JUNCTION	0.000	0.08			2.5	SURCHARGED*	
1.010	SW41	0.000	0.19			5.8	SURCHARGED	
7.000	RE	0.000	0.13			1.8	OK	
7.001	SW42	0.000	0.29			4.1	OK	
7.002	SW43	0.000	0.30			4.1	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
1.011	SW44	240 Winter	30	+0%	2/60 Winter				32.518	1.044
1.012	BLOCK C TANK	240 Winter	30	+0%	2/60 Winter				32.516	1.091
8.000	SW45A	120 Winter	30	+0%	100/240 Winter				33.288	-0.112
8.001	SW45B	120 Winter	30	+0%	100/60 Winter				32.753	-0.107
1.013	SW45	240 Winter	30	+0%	1/120 Winter				32.515	1.150
9.000	SW01	15 Winter	30	+0%	100/15 Summer				33.153	-0.137
9.001	SW02	15 Winter	30	+0%	100/15 Summer				33.078	-0.077
9.002	SW03	15 Winter	30	+0%	100/15 Summer				33.033	-0.028
9.003	SW04	60 Winter	30	+0%	30/15 Summer				33.023	0.055
9.004	BLOCK D TANK	60 Winter	30	+0%	30/15 Winter				33.019	0.074
9.005	SW05	60 Winter	30	+0%	30/15 Summer				33.016	0.165
1.014	SW06	240 Winter	30	+0%	1/60 Winter				32.514	1.186
1.015	SW46	240 Winter	30	+0%	1/30 Winter				32.513	1.258
1.016	SW49	240 Winter	30	+0%	1/15 Summer				32.511	1.374
1.017	CW02	240 Winter	30	+0%					30.887	-0.179
1.018	CW03	240 Winter	30	+0%					30.805	-0.170

PN	US/MH Name	Flooded		Half Drain		Pipe		Level Exceeded
		Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)	Status	
1.011	SW44	0.000	0.23			7.2	SURCHARGED	
1.012	BLOCK C TANK	0.000	0.15		193	5.1	SURCHARGED	
8.000	SW45A	0.000	0.15		33	2.5	OK	
8.001	SW45B	0.000	0.18			2.5	OK	
1.013	SW45	0.000	0.17			5.0	SURCHARGED	
9.000	SW01	0.000	0.32			12.2	OK	
9.001	SW02	0.000	0.66			24.3	OK	
9.002	SW03	0.000	0.66			24.6	OK	
9.003	SW04	0.000	0.81			16.0	SURCHARGED	
9.004	BLOCK D TANK	0.000	0.13		36	5.6	SURCHARGED	
9.005	SW05	0.000	0.18		47	5.0	SURCHARGED	
1.014	SW06	0.000	0.15			5.6	SURCHARGED	
1.015	SW46	0.000	0.10			4.6	SURCHARGED	
1.016	SW49	0.000	0.11			4.1	SURCHARGED	
1.017	CW02	0.000	0.10			4.0	OK	
1.018	CW03	0.000	0.14			4.0	OK	

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

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 13
 Number of Online Controls 2 Number of Storage Structures 5 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 ON
 Inertia Status ON

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	SW29	240 Winter	100	+40%	30/120 Winter				33.491	1.171
2.000	SW30	240 Winter	100	+40%	100/60 Summer				33.490	0.790
1.001	JUNCTION	1440 Summer	100	+40%					32.270	0.000
1.002	SW31	240 Winter	100	+40%	30/60 Winter				33.487	1.367
1.003	SW32	240 Winter	100	+40%	30/60 Summer				33.483	1.503
1.004	SW33	240 Winter	100	+40%	30/30 Winter				33.481	1.591
3.000	SW34	240 Winter	100	+40%	30/240 Winter				33.480	1.110
1.005	JUNCTION	15 Summer	100	+40%	30/30 Winter				31.869	0.012
4.000	SW36	240 Winter	100	+40%	30/120 Summer				33.477	1.307
1.006	JUNCTION	15 Summer	100	+40%	30/30 Summer				31.707	0.001
5.000	SW40	240 Winter	100	+40%	30/60 Winter				33.485	1.395
5.001	SW40A	240 Winter	100	+40%	30/30 Winter				33.484	1.684
5.002	SW40B	240 Winter	100	+40%	30/30 Summer				33.482	1.751
5.003	RAINWATER TANK	240 Winter	100	+40%	30/30 Summer				33.479	1.779
1.007	SW36A	240 Winter	100	+40%	30/30 Summer				33.477	1.812
1.008	SW37	240 Winter	100	+40%	2/120 Winter				33.474	1.869
6.000	SW38	240 Winter	100	+40%	30/60 Summer				33.472	1.552
1.009	JUNCTION	15 Summer	100	+40%	2/120 Winter				31.580	0.002
1.010	SW41	240 Winter	100	+40%	2/120 Winter				33.470	1.945
7.000	RE	30 Winter	100	+40%					34.000	-0.100
7.001	SW42	30 Winter	100	+40%					33.789	-0.070
7.002	SW43	30 Winter	100	+40%					33.591	-0.069
1.011	SW44	240 Winter	100	+40%	2/60 Winter				33.467	1.992
1.012	BLOCK C TANK	240 Winter	100	+40%	2/60 Winter				33.463	2.038
8.000	SW45A	360 Winter	100	+40%	100/240 Winter				33.457	0.057

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

PN	US/MH Name	Flooded		Half Drain		Pipe	Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)	Flow (l/s)		
1.000	SW29	0.000	0.16			2.3	FLOOD RISK	
2.000	SW30	0.000	0.03			1.1	SURCHARGED	
1.001	JUNCTION	0.000	0.07			1.2	SURCHARGED*	
1.002	SW31	0.000	0.24			3.9	FLOOD RISK	
1.003	SW32	0.000	0.10			3.6	FLOOD RISK	
1.004	SW33	0.000	0.11			3.2	SURCHARGED	
3.000	SW34	0.000	0.03			1.4	SURCHARGED	
1.005	JUNCTION	0.000	0.20			8.5	SURCHARGED*	
4.000	SW36	0.000	0.00			0.1	SURCHARGED	
1.006	JUNCTION	0.000	0.29			8.6	SURCHARGED*	
5.000	SW40	0.000	0.07			1.9	SURCHARGED	
5.001	SW40A	0.000	0.17			2.7	SURCHARGED	
5.002	SW40B	0.000	0.50			5.4	SURCHARGED	
5.003	RAINWATER TANK	0.000	0.39			4.3	SURCHARGED	
1.007	SW36A	0.000	0.20			6.8	SURCHARGED	
1.008	SW37	0.000	0.21			6.2	SURCHARGED	
6.000	SW38	0.000	0.05			1.8	SURCHARGED	
1.009	JUNCTION	0.000	0.59			19.1	SURCHARGED*	
1.010	SW41	0.000	0.20			6.2	SURCHARGED	
7.000	RE	0.000	0.24			3.4	OK	
7.001	SW42	0.000	0.55			7.8	OK	
7.002	SW43	0.000	0.57			7.7	OK	
1.011	SW44	0.000	0.30			9.5	SURCHARGED	
1.012	BLOCK C TANK	0.000	0.21			7.2	SURCHARGED	
8.000	SW45A	0.000	0.16		77	2.7	SURCHARGED	

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

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)
8.001	SW45B	360 Winter	100	+40%	100/60 Winter				33.455	0.595
1.013	SW45	240 Winter	100	+40%	1/120 Winter				33.458	2.093
9.000	SW01	120 Winter	100	+40%	100/15 Summer				33.618	0.328
9.001	SW02	120 Winter	100	+40%	100/15 Summer				33.615	0.460
9.002	SW03	120 Winter	100	+40%	100/15 Summer				33.610	0.549
9.003	SW04	120 Winter	100	+40%	30/15 Summer				33.606	0.638
9.004	BLOCK D TANK	120 Winter	100	+40%	30/15 Winter				33.603	0.658
9.005	SW05	120 Winter	100	+40%	30/15 Summer				33.599	0.748
1.014	SW06	240 Winter	100	+40%	1/60 Winter				33.457	2.128
1.015	SW46	240 Winter	100	+40%	1/30 Winter				33.450	2.195
1.016	SW49	240 Winter	100	+40%	1/15 Summer				33.469	2.332
1.017	CW02	240 Winter	100	+40%					30.892	-0.174
1.018	CW03	240 Winter	100	+40%					30.811	-0.163

PN	US/MH Name	Flooded		Half Drain		Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)			
8.001	SW45B	0.000	0.20			2.7		SURCHARGED	
1.013	SW45	0.000	0.20			5.8		SURCHARGED	
9.000	SW01	0.000	0.19			7.5		SURCHARGED	
9.001	SW02	0.000	0.37			13.7		SURCHARGED	
9.002	SW03	0.000	0.34			12.7		SURCHARGED	
9.003	SW04	0.000	0.81			15.9		SURCHARGED	
9.004	BLOCK D TANK	0.000	0.13			5.5		SURCHARGED	
9.005	SW05	0.000	0.18			5.0		SURCHARGED	
1.014	SW06	0.000	0.25			9.5		SURCHARGED	
1.015	SW46	0.000	0.12		81	5.7		SURCHARGED	
1.016	SW49	0.000	0.13			5.0		SURCHARGED	
1.017	CW02	0.000	0.12			5.0		OK	
1.018	CW03	0.000	0.17			5.0		OK	