Our Ref: 12787
Your Ref: AWDM/0104/24

Mr Stephen Cantwell
Principal Planning Officer
Adur & Worthing Councils
Portland House,
Richmond Road,
Worthing,
BN11 1LF
(via email)

30th May 2024

Dear Mr Cantwell,

AWDM/0104/24 - The Montague Centre, Liverpool Road, Worthing, West Sussex

Thank you for forwarding the consultation response dated 5th April 2024 from the Lead Local Flood Authority (LLFA) at West Sussex County Council (WSCC) to the above application. The application included a Drainage Statement (DS) report prepared by GTA Civils & Transport Ltd to enable the discharge of conditions 10 (Sustainable Surface Water Drainage), 11 (Drainage Maintenance) and 13 (Foul Water Drainage) of the original planning consent AWDM/1624/22.

The LLFA's response requested further details be provided regarding the proposed green roof as follows:

> *"1. The submitted Drainage Statement indicates that a green roof will be used to reduce runoff rates into the surface water sewer and provide some attenuation. We request that further details are provided regarding the attenuation storage to be provided, the existing discharge rate and the proposed discharge rate to confirm that flood risk will not be increased elsewhere.*
>
> *2. Appendix D of the Drainage Statement provides a drainage maintenance plan. We request that the green roof is included, to ensure that it will be maintained throughout the lifetime of the development."*

We are pleased to provide the requested details with this letter. The original planning application was supported by a Preliminary Drainage and Flood Risk Strategy (PDFRS) by HOP. The PDFRS included an assessment of runoff rates based on preliminary information. The existing development site is 100% impermeably surfaced with no existing surface water attenuation features. Therefore, any introduction of permeable surfacing or sustainable drainage system (SuDS) would result in a betterment above the existing brownfield conditions in accordance with the National Planning Policy Framework (NPPF).

The approved strategy set out within the PDFRS comprised the simple addition of green roof areas in order to provide some runoff attenuation and betterment above the existing conditions. Green roofs intercept some rainfall and provide a reduction in runoff rates and volumes.

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No drainage calculations should be necessary to demonstrate this betterment. Nonetheless, calculations are enclosed with this letter. The existing sewer network has been modelled using Flow software and the site area has been apportioned to each sewer based on the available drainage survey information. The simulations have then been re-run with the green roof area (386m^2) included to represent the proposed scenario (the development also includes a courtyard garden at upper level, but this has been excluded from the calculations for conservatism).

The existing building structure limits the options to add increased loading; hence, the proposed green roof will be an extensive sedum-type roof. In accordance with The SuDS Manual (CIRIA C753), the green roof has been modelled as a hydrograph with 10mm depression storage and 3mm evaporation per day.

The 15-minute, 6-hour and 24-hour storms have been simulated for each return period in order to demonstrate the reduction in peak runoff rate and discharge volume from the site. As expected, the results show a reduction in runoff rate and volume for every storm event.

The Drainage Maintenance Plan (DMP) has been updated to include the green roof based on the guidance set out in the SuDS Manual. However, the information will need to be updated with specialist product information provided by the manufacturer prior to Handover. The updated DMP is enclosed with this letter.

We trust that this information satisfies the LLFA's concerns and allows the conditions to be discharged.

Yours sincerely,

[redacted]

Martin Roberts IEng, ACIWEM, MCIHT
Managing Director
GTA Civils & Transport Ltd
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Direct Dial: 01444 225651

Enclosures: Flow Network calculations
Drainage Maintenance Plan, Issue 2

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SMH 8652	0.026	5.00	5.620	1350	514838.463	102620.718	1.570
SMH 8655			5.400	1350	514828.095	102613.685	1.440
SMH 8654	0.016	5.00	5.510	1350	514815.131	102609.214	1.600
SMH2	0.041	5.00	7.000	1350	514824.943	102576.731	1.200
SMH1	0.045	5.00	5.540	1350	514814.693	102596.025	1.200
SMH 8550			5.500	1350	514808.170	102598.870	1.710
SMH 7552			5.500	1500	514797.656	102585.856	1.980
SMH7	0.025	5.00	5.020	1350	514822.141	102512.507	1.200
SMH8	0.025	5.00	5.080	1350	514821.812	102517.107	1.350
SMH 8556			5.040	1350	514814.339	102517.775	1.580
SMH 8555			5.290	1500	514805.825	102513.517	2.013
SMH11	0.022	5.00	5.520	1350	514852.216	102590.005	1.020
SMH10	0.060	5.00	5.470	1350	514851.598	102572.544	1.220
SMH 8552	0.087	5.00	5.460	1350	514860.202	102563.801	1.410
SMH 8553	0.020	5.00	5.070	1350	514857.599	102510.547	1.400
SMH 8455	0.004	5.00	5.060	1350	514832.673	102493.288	1.640
SMH 8457			5.300	1500	514808.897	102490.021	2.102
OUTFALL (dummy)			5.240	1500	514810.928	102468.126	2.115

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SMH 8652	SMH 8655	12.528	0.600	4.050	3.960	0.090	139.2	225	5.00	50.0
1.001	SMH 8655	SMH 8654	13.713	0.600	3.960	3.910	0.050	274.3	225	5.00	50.0
1.002	SMH 8654	SMH 8550	12.468	0.600	3.910	3.790	0.120	103.9	300	5.00	50.0
2.000	SMH2	SMH1	21.847	0.600	5.800	4.340	1.460	15.0	150	5.00	50.0
2.001	SMH1	SMH 8550	7.117	0.600	4.340	3.940	0.400	17.8	150	5.00	50.0
1.003	SMH 8550	SMH 7552	16.731	0.600	3.790	3.520	0.270	62.0	300	5.00	50.0
1.004	SMH 7552	SMH 8555	72.799	0.600	3.520	3.277	0.243	299.6	525	5.00	50.0
3.000	SMH7	SMH8	4.612	0.600	3.820	3.730	0.090	51.2	100	5.00	50.0
3.001	SMH8	SMH 8556	7.503	0.600	3.730	3.460	0.270	27.8	150	5.00	50.0
3.002	SMH 8556	SMH 8555	9.519	0.600	3.460	3.277	0.183	52.0	225	5.00	50.0
1.005	SMH 8555	SMH 8457	23.696	0.600	3.277	3.198	0.079	299.9	525	5.00	50.0
4.000	SMH11	SMH10	17.472	0.600	4.500	4.250	0.250	69.9	150	5.00	50.0
4.001	SMH10	SMH 8552	12.267	0.600	4.250	4.050	0.200	61.3	150	5.00	50.0
4.002	SMH 8552	SMH 8553	53.317	0.600	4.050	3.670	0.380	140.3	225	5.00	50.0
4.003	SMH 8553	SMH 8455	30.317	0.600	3.670	3.420	0.250	121.3	300	5.00	50.0
4.004	SMH 8455	SMH 8457	24.000	0.600	3.420	3.198	0.222	108.1	300	5.00	50.0
1.006	SMH 8457	OUTFALL (dummy)	21.989	0.600	3.198	3.125	0.073	301.2	525	5.00	50.0

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15 | 360 | 1440

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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	0	0	0

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Results for 2 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.102	0.052	4.9	0.0743	0.0000	OK
15 minute summer	SMH 8655	11	4.021	0.061	4.8	0.0873	0.0000	OK
15 minute summer	SMH 8654	11	3.964	0.054	7.7	0.0768	0.0000	OK
15 minute summer	SMH2	10	5.841	0.041	7.7	0.0591	0.0000	OK
15 minute summer	SMH1	10	4.410	0.070	16.0	0.1006	0.0000	OK
15 minute summer	SMH 8550	10	3.875	0.085	23.4	0.1214	0.0000	OK
15 minute summer	SMH 7552	11	3.621	0.101	23.4	0.1779	0.0000	OK
15 minute summer	SMH7	10	3.878	0.058	4.7	0.0837	0.0000	OK
15 minute summer	SMH8	10	3.788	0.058	9.4	0.0827	0.0000	OK
15 minute summer	SMH 8556	10	3.515	0.055	9.3	0.0780	0.0000	OK
15 minute summer	SMH 8555	12	3.401	0.124	32.5	0.2190	0.0000	OK
15 minute summer	SMH11	10	4.544	0.044	4.1	0.0634	0.0000	OK
15 minute summer	SMH10	10	4.344	0.094	15.2	0.1344	0.0000	OK
15 minute summer	SMH 8552	10	4.194	0.144	31.4	0.2068	0.0000	OK
15 minute summer	SMH 8553	11	3.796	0.126	34.5	0.1805	0.0000	OK
15 minute summer	SMH 8455	11	3.543	0.123	35.5	0.1758	0.0000	OK
15 minute summer	SMH 8457	12	3.381	0.183	65.3	0.3229	0.0000	OK
15 minute summer	OUTFALL (dummy)	12	3.294	0.169	65.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	4.8	0.623	0.110	0.0973	
15 minute summer	SMH 8655	1.001	SMH 8654	4.8	0.602	0.154	0.1092	
15 minute summer	SMH 8654	1.002	SMH 8550	7.7	0.631	0.071	0.1548	
15 minute summer	SMH2	2.000	SMH1	7.6	1.282	0.165	0.1316	
15 minute summer	SMH1	2.001	SMH 8550	15.9	2.090	0.375	0.0542	
15 minute summer	SMH 8550	1.003	SMH 7552	23.4	1.278	0.166	0.3099	
15 minute summer	SMH 7552	1.004	SMH 8555	23.4	0.728	0.084	2.4346	
15 minute summer	SMH7	3.000	SMH8	4.7	0.986	0.549	0.0218	
15 minute summer	SMH8	3.001	SMH 8556	9.3	1.545	0.274	0.0452	
15 minute summer	SMH 8556	3.002	SMH 8555	9.3	0.914	0.129	0.1381	
15 minute summer	SMH 8555	1.005	SMH 8457	30.6	0.591	0.110	1.2511	
15 minute summer	SMH11	4.000	SMH10	4.0	0.511	0.190	0.1393	
15 minute summer	SMH10	4.001	SMH 8552	15.1	1.005	0.664	0.1779	
15 minute summer	SMH 8552	4.002	SMH 8553	30.9	1.247	0.706	1.3219	
15 minute summer	SMH 8553	4.003	SMH 8455	34.8	1.260	0.345	0.8374	
15 minute summer	SMH 8455	4.004	SMH 8457	35.7	1.009	0.334	0.8487	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	65.6	1.037	0.236	1.3912	30.0

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Results for 2 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.100	0.050	4.6	0.0718	0.0000	OK
15 minute winter	SMH 8655	11	4.019	0.059	4.5	0.0844	0.0000	OK
15 minute winter	SMH 8654	11	3.962	0.052	7.2	0.0740	0.0000	OK
15 minute winter	SMH2	10	5.840	0.040	7.2	0.0572	0.0000	OK
15 minute winter	SMH1	10	4.408	0.068	15.0	0.0966	0.0000	OK
15 minute winter	SMH 8550	10	3.872	0.082	21.9	0.1169	0.0000	OK
15 minute winter	SMH 7552	11	3.617	0.097	21.8	0.1716	0.0000	OK
15 minute winter	SMH7	10	3.876	0.056	4.4	0.0798	0.0000	OK
15 minute winter	SMH8	10	3.786	0.056	8.7	0.0795	0.0000	OK
15 minute winter	SMH 8556	10	3.512	0.052	8.6	0.0746	0.0000	OK
15 minute winter	SMH 8555	12	3.395	0.118	30.1	0.2081	0.0000	OK
15 minute winter	SMH11	10	4.543	0.043	3.9	0.0616	0.0000	OK
15 minute winter	SMH10	10	4.340	0.090	14.3	0.1288	0.0000	OK
15 minute winter	SMH 8552	10	4.188	0.138	29.4	0.1973	0.0000	OK
15 minute winter	SMH 8553	11	3.791	0.121	32.2	0.1737	0.0000	OK
15 minute winter	SMH 8455	11	3.538	0.118	33.2	0.1685	0.0000	OK
15 minute winter	SMH 8457	12	3.374	0.176	60.8	0.3111	0.0000	OK
15 minute winter	OUTFALL (dummy)	12	3.288	0.163	61.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	4.5	0.613	0.103	0.0926	
15 minute winter	SMH 8655	1.001	SMH 8654	4.5	0.594	0.144	0.1039	
15 minute winter	SMH 8654	1.002	SMH 8550	7.2	0.617	0.066	0.1465	
15 minute winter	SMH2	2.000	SMH1	7.1	1.262	0.155	0.1250	
15 minute winter	SMH1	2.001	SMH 8550	14.9	2.058	0.351	0.0515	
15 minute winter	SMH 8550	1.003	SMH 7552	21.8	1.257	0.154	0.2940	
15 minute winter	SMH 7552	1.004	SMH 8555	21.7	0.711	0.078	2.2852	
15 minute winter	SMH7	3.000	SMH8	4.3	0.967	0.511	0.0206	
15 minute winter	SMH8	3.001	SMH 8556	8.6	1.523	0.255	0.0426	
15 minute winter	SMH 8556	3.002	SMH 8555	8.6	0.944	0.119	0.1297	
15 minute winter	SMH 8555	1.005	SMH 8457	28.5	0.585	0.102	1.1793	
15 minute winter	SMH11	4.000	SMH10	3.8	0.507	0.180	0.1328	
15 minute winter	SMH10	4.001	SMH 8552	14.1	0.983	0.621	0.1716	
15 minute winter	SMH 8552	4.002	SMH 8553	28.9	1.227	0.660	1.2558	
15 minute winter	SMH 8553	4.003	SMH 8455	32.5	1.244	0.323	0.7933	
15 minute winter	SMH 8455	4.004	SMH 8457	33.3	0.989	0.312	0.8088	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	61.3	1.017	0.220	1.3243	29.9

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Results for 2 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.076	0.026	1.3	0.0378	0.0000	OK
360 minute summer	SMH 8655	184	3.992	0.032	1.3	0.0455	0.0000	OK
360 minute summer	SMH 8654	184	3.939	0.029	2.1	0.0408	0.0000	OK
360 minute summer	SMH2	184	5.821	0.021	2.0	0.0305	0.0000	OK
360 minute summer	SMH1	184	4.373	0.033	4.2	0.0476	0.0000	OK
360 minute summer	SMH 8550	184	3.833	0.043	6.2	0.0609	0.0000	OK
360 minute summer	SMH 7552	184	3.573	0.053	6.2	0.0935	0.0000	OK
360 minute summer	SMH7	184	3.846	0.026	1.2	0.0377	0.0000	OK
360 minute summer	SMH8	184	3.758	0.028	2.4	0.0398	0.0000	OK
360 minute summer	SMH 8556	184	3.488	0.028	2.4	0.0400	0.0000	OK
360 minute summer	SMH 8555	184	3.338	0.061	8.5	0.1085	0.0000	OK
360 minute summer	SMH11	184	4.523	0.023	1.1	0.0331	0.0000	OK
360 minute summer	SMH10	184	4.293	0.043	4.1	0.0614	0.0000	OK
360 minute summer	SMH 8552	184	4.117	0.067	8.4	0.0965	0.0000	OK
360 minute summer	SMH 8553	184	3.732	0.062	9.3	0.0891	0.0000	OK
360 minute summer	SMH 8455	184	3.479	0.059	9.4	0.0850	0.0000	OK
360 minute summer	SMH 8457	184	3.289	0.091	17.7	0.1615	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.210	0.085	17.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	1.3	0.431	0.029	0.0376	
360 minute summer	SMH 8655	1.001	SMH 8654	1.3	0.404	0.041	0.0433	
360 minute summer	SMH 8654	1.002	SMH 8550	2.1	0.440	0.019	0.0591	
360 minute summer	SMH2	2.000	SMH1	2.0	0.914	0.043	0.0483	
360 minute summer	SMH1	2.001	SMH 8550	4.2	1.486	0.099	0.0200	
360 minute summer	SMH 8550	1.003	SMH 7552	6.2	0.864	0.044	0.1208	
360 minute summer	SMH 7552	1.004	SMH 8555	6.1	0.484	0.022	0.9228	
360 minute summer	SMH7	3.000	SMH8	1.2	0.701	0.141	0.0079	
360 minute summer	SMH8	3.001	SMH 8556	2.4	1.063	0.071	0.0169	
360 minute summer	SMH 8556	3.002	SMH 8555	2.4	0.428	0.033	0.0551	
360 minute summer	SMH 8555	1.005	SMH 8457	8.4	0.431	0.030	0.4639	
360 minute summer	SMH11	4.000	SMH10	1.1	0.380	0.051	0.0513	
360 minute summer	SMH10	4.001	SMH 8552	4.1	0.692	0.179	0.0726	
360 minute summer	SMH 8552	4.002	SMH 8553	8.3	0.876	0.189	0.5044	
360 minute summer	SMH 8553	4.003	SMH 8455	9.2	0.900	0.091	0.3094	
360 minute summer	SMH 8455	4.004	SMH 8457	9.3	0.673	0.087	0.3358	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	17.5	0.731	0.063	0.5259	101.8

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Results for 2 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	176	4.071	0.021	0.8	0.0301	0.0000	OK
360 minute winter	SMH 8655	184	3.985	0.025	0.8	0.0365	0.0000	OK
360 minute winter	SMH 8654	184	3.933	0.023	1.3	0.0329	0.0000	OK
360 minute winter	SMH2	184	5.817	0.017	1.3	0.0249	0.0000	OK
360 minute winter	SMH1	184	4.367	0.027	2.7	0.0381	0.0000	OK
360 minute winter	SMH 8550	184	3.825	0.035	4.0	0.0495	0.0000	OK
360 minute winter	SMH 7552	192	3.563	0.043	4.0	0.0766	0.0000	OK
360 minute winter	SMH7	184	3.841	0.021	0.8	0.0305	0.0000	OK
360 minute winter	SMH8	184	3.753	0.023	1.6	0.0324	0.0000	OK
360 minute winter	SMH 8556	184	3.483	0.023	1.6	0.0331	0.0000	OK
360 minute winter	SMH 8555	192	3.328	0.051	5.6	0.0897	0.0000	OK
360 minute winter	SMH11	176	4.519	0.019	0.7	0.0267	0.0000	OK
360 minute winter	SMH10	184	4.284	0.034	2.6	0.0490	0.0000	OK
360 minute winter	SMH 8552	184	4.104	0.054	5.4	0.0773	0.0000	OK
360 minute winter	SMH 8553	184	3.720	0.050	6.0	0.0719	0.0000	OK
360 minute winter	SMH 8455	184	3.468	0.048	6.1	0.0690	0.0000	OK
360 minute winter	SMH 8457	184	3.273	0.075	11.7	0.1318	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.195	0.070	11.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	0.8	0.372	0.018	0.0271	
360 minute winter	SMH 8655	1.001	SMH 8654	0.8	0.350	0.026	0.0314	
360 minute winter	SMH 8654	1.002	SMH 8550	1.3	0.387	0.012	0.0433	
360 minute winter	SMH2	2.000	SMH1	1.3	0.814	0.028	0.0353	
360 minute winter	SMH1	2.001	SMH 8550	2.7	1.315	0.064	0.0146	
360 minute winter	SMH 8550	1.003	SMH 7552	4.0	0.749	0.028	0.0899	
360 minute winter	SMH 7552	1.004	SMH 8555	4.0	0.423	0.014	0.6928	
360 minute winter	SMH7	3.000	SMH8	0.8	0.629	0.094	0.0059	
360 minute winter	SMH8	3.001	SMH 8556	1.6	0.945	0.047	0.0127	
360 minute winter	SMH 8556	3.002	SMH 8555	1.6	0.499	0.022	0.0420	
360 minute winter	SMH 8555	1.005	SMH 8457	5.6	0.387	0.020	0.3475	
360 minute winter	SMH11	4.000	SMH10	0.7	0.341	0.033	0.0374	
360 minute winter	SMH10	4.001	SMH 8552	2.6	0.607	0.114	0.0536	
360 minute winter	SMH 8552	4.002	SMH 8553	5.4	0.776	0.123	0.3707	
360 minute winter	SMH 8553	4.003	SMH 8455	6.0	0.796	0.059	0.2280	
360 minute winter	SMH 8455	4.004	SMH 8457	6.1	0.588	0.057	0.2512	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	11.7	0.654	0.042	0.3926	100.5

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Results for 2 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	720	4.065	0.015	0.4	0.0219	0.0000	OK
1440 minute summer	SMH 8655	780	3.978	0.018	0.4	0.0265	0.0000	OK
1440 minute summer	SMH 8654	750	3.927	0.017	0.7	0.0247	0.0000	OK
1440 minute summer	SMH2	750	5.813	0.013	0.7	0.0186	0.0000	OK
1440 minute summer	SMH1	750	4.359	0.019	1.4	0.0274	0.0000	OK
1440 minute summer	SMH 8550	750	3.816	0.026	2.1	0.0365	0.0000	OK
1440 minute summer	SMH 7552	750	3.552	0.032	2.1	0.0570	0.0000	OK
1440 minute summer	SMH7	750	3.835	0.015	0.4	0.0215	0.0000	OK
1440 minute summer	SMH8	750	3.746	0.016	0.8	0.0231	0.0000	OK
1440 minute summer	SMH 8556	750	3.477	0.017	0.8	0.0240	0.0000	OK
1440 minute summer	SMH 8555	750	3.314	0.037	2.9	0.0661	0.0000	OK
1440 minute summer	SMH11	750	4.514	0.014	0.4	0.0205	0.0000	OK
1440 minute summer	SMH10	750	4.275	0.025	1.4	0.0362	0.0000	OK
1440 minute summer	SMH 8552	750	4.089	0.039	2.8	0.0558	0.0000	OK
1440 minute summer	SMH 8553	750	3.706	0.036	3.1	0.0521	0.0000	OK
1440 minute summer	SMH 8455	750	3.455	0.035	3.2	0.0507	0.0000	OK
1440 minute summer	SMH 8457	750	3.253	0.055	6.1	0.0964	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.175	0.050	6.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	0.4	0.302	0.009	0.0168	
1440 minute summer	SMH 8655	1.001	SMH 8654	0.4	0.288	0.013	0.0198	
1440 minute summer	SMH 8654	1.002	SMH 8550	0.7	0.318	0.006	0.0278	
1440 minute summer	SMH2	2.000	SMH1	0.7	0.695	0.015	0.0223	
1440 minute summer	SMH1	2.001	SMH 8550	1.4	1.089	0.033	0.0092	
1440 minute summer	SMH 8550	1.003	SMH 7552	2.1	0.611	0.015	0.0577	
1440 minute summer	SMH 7552	1.004	SMH 8555	2.1	0.349	0.008	0.4418	
1440 minute summer	SMH7	3.000	SMH8	0.4	0.517	0.047	0.0036	
1440 minute summer	SMH8	3.001	SMH 8556	0.8	0.769	0.024	0.0078	
1440 minute summer	SMH 8556	3.002	SMH 8555	0.8	0.297	0.011	0.0269	
1440 minute summer	SMH 8555	1.005	SMH 8457	2.9	0.318	0.010	0.2197	
1440 minute summer	SMH11	4.000	SMH10	0.4	0.292	0.019	0.0245	
1440 minute summer	SMH10	4.001	SMH 8552	1.4	0.507	0.062	0.0343	
1440 minute summer	SMH 8552	4.002	SMH 8553	2.8	0.641	0.064	0.2328	
1440 minute summer	SMH 8553	4.003	SMH 8455	3.1	0.652	0.031	0.1441	
1440 minute summer	SMH 8455	4.004	SMH 8457	3.2	0.485	0.030	0.1606	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	6.1	0.551	0.022	0.2436	135.5

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Results for 2 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	690	4.063	0.013	0.3	0.0191	0.0000	OK
1440 minute winter	SMH 8655	690	3.976	0.016	0.3	0.0230	0.0000	OK
1440 minute winter	SMH 8654	690	3.925	0.015	0.5	0.0211	0.0000	OK
1440 minute winter	SMH2	660	5.810	0.010	0.4	0.0144	0.0000	OK
1440 minute winter	SMH1	720	4.355	0.015	0.9	0.0222	0.0000	OK
1440 minute winter	SMH 8550	720	3.811	0.021	1.4	0.0303	0.0000	OK
1440 minute winter	SMH 7552	720	3.547	0.027	1.4	0.0471	0.0000	OK
1440 minute winter	SMH7	720	3.833	0.013	0.3	0.0186	0.0000	OK
1440 minute winter	SMH8	720	3.744	0.014	0.6	0.0201	0.0000	OK
1440 minute winter	SMH 8556	720	3.475	0.015	0.6	0.0211	0.0000	OK
1440 minute winter	SMH 8555	720	3.308	0.031	2.0	0.0556	0.0000	OK
1440 minute winter	SMH11	600	4.510	0.010	0.2	0.0149	0.0000	OK
1440 minute winter	SMH10	750	4.270	0.020	0.9	0.0292	0.0000	OK
1440 minute winter	SMH 8552	750	4.082	0.032	1.9	0.0462	0.0000	OK
1440 minute winter	SMH 8553	750	3.700	0.030	2.1	0.0433	0.0000	OK
1440 minute winter	SMH 8455	750	3.449	0.029	2.1	0.0416	0.0000	OK
1440 minute winter	SMH 8457	750	3.243	0.045	4.1	0.0799	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.165	0.040	4.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.3	0.277	0.007	0.0137	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.3	0.257	0.010	0.0160	
1440 minute winter	SMH 8654	1.002	SMH 8550	0.5	0.302	0.005	0.0214	
1440 minute winter	SMH2	2.000	SMH1	0.4	0.587	0.009	0.0159	
1440 minute winter	SMH1	2.001	SMH 8550	0.9	0.955	0.021	0.0067	
1440 minute winter	SMH 8550	1.003	SMH 7552	1.4	0.538	0.010	0.0436	
1440 minute winter	SMH 7552	1.004	SMH 8555	1.4	0.304	0.005	0.3378	
1440 minute winter	SMH7	3.000	SMH8	0.3	0.476	0.035	0.0029	
1440 minute winter	SMH8	3.001	SMH 8556	0.6	0.702	0.018	0.0064	
1440 minute winter	SMH 8556	3.002	SMH 8555	0.6	0.281	0.008	0.0212	
1440 minute winter	SMH 8555	1.005	SMH 8457	2.0	0.291	0.007	0.1675	
1440 minute winter	SMH11	4.000	SMH10	0.2	0.253	0.009	0.0171	
1440 minute winter	SMH10	4.001	SMH 8552	0.9	0.435	0.040	0.0258	
1440 minute winter	SMH 8552	4.002	SMH 8553	1.9	0.571	0.043	0.1774	
1440 minute winter	SMH 8553	4.003	SMH 8455	2.1	0.586	0.021	0.1086	
1440 minute winter	SMH 8455	4.004	SMH 8457	2.1	0.421	0.020	0.1214	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	4.1	0.498	0.015	0.1810	134.7

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Results for 30 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.139	0.089	12.9	0.1275	0.0000	OK
15 minute summer	SMH 8655	10	4.064	0.104	12.8	0.1482	0.0000	OK
15 minute summer	SMH 8654	10	4.000	0.090	20.5	0.1289	0.0000	OK
15 minute summer	SMH2	10	5.869	0.069	20.3	0.0994	0.0000	OK
15 minute summer	SMH1	11	4.619	0.279	42.5	0.3991	0.0000	SURCHARGED
15 minute summer	SMH 8550	11	3.941	0.151	61.3	0.2154	0.0000	OK
15 minute summer	SMH 7552	11	3.682	0.162	61.5	0.2866	0.0000	OK
15 minute summer	SMH7	11	4.082	0.262	12.4	0.3745	0.0000	SURCHARGED
15 minute summer	SMH8	11	3.837	0.107	23.6	0.1525	0.0000	OK
15 minute summer	SMH 8556	11	3.548	0.088	23.6	0.1260	0.0000	OK
15 minute summer	SMH 8555	12	3.522	0.245	84.0	0.4332	0.0000	OK
15 minute summer	SMH11	12	5.425	0.925	10.9	1.3234	0.0000	FLOOD RISK
15 minute summer	SMH10	12	5.373	1.123	34.1	1.6071	0.0000	FLOOD RISK
15 minute summer	SMH 8552	11	4.860	0.810	70.4	1.1586	0.0000	SURCHARGED
15 minute summer	SMH 8553	11	3.881	0.211	77.2	0.3014	0.0000	OK
15 minute summer	SMH 8455	12	3.634	0.214	78.3	0.3058	0.0000	OK
15 minute summer	SMH 8457	12	3.502	0.304	159.5	0.5373	0.0000	OK
15 minute summer	OUTFALL (dummy)	12	3.392	0.267	159.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	12.8	0.788	0.291	0.2033	
15 minute summer	SMH 8655	1.001	SMH 8654	12.7	0.782	0.406	0.2240	
15 minute summer	SMH 8654	1.002	SMH 8550	20.5	0.782	0.188	0.3303	
15 minute summer	SMH2	2.000	SMH1	20.2	1.472	0.437	0.2794	
15 minute summer	SMH1	2.001	SMH 8550	40.8	2.358	0.963	0.1253	
15 minute summer	SMH 8550	1.003	SMH 7552	61.5	1.656	0.435	0.6211	
15 minute summer	SMH 7552	1.004	SMH 8555	60.3	0.858	0.216	5.6446	
15 minute summer	SMH7	3.000	SMH8	11.8	1.506	1.391	0.0361	
15 minute summer	SMH8	3.001	SMH 8556	23.6	1.955	0.698	0.0905	
15 minute summer	SMH 8556	3.002	SMH 8555	23.7	1.113	0.328	0.2578	
15 minute summer	SMH 8555	1.005	SMH 8457	80.8	0.707	0.290	2.7064	
15 minute summer	SMH11	4.000	SMH10	12.3	0.698	0.578	0.3076	
15 minute summer	SMH10	4.001	SMH 8552	33.3	1.890	1.464	0.2160	
15 minute summer	SMH 8552	4.002	SMH 8553	68.0	1.711	1.554	2.0911	
15 minute summer	SMH 8553	4.003	SMH 8455	76.7	1.452	0.761	1.6126	
15 minute summer	SMH 8455	4.004	SMH 8457	78.7	1.218	0.736	1.4892	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	159.0	1.325	0.572	2.6386	79.4

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Results for 30 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.136	0.086	12.1	0.1228	0.0000	OK
15 minute winter	SMH 8655	10	4.059	0.099	12.0	0.1418	0.0000	OK
15 minute winter	SMH 8654	11	3.996	0.086	19.1	0.1229	0.0000	OK
15 minute winter	SMH2	10	5.867	0.067	19.1	0.0959	0.0000	OK
15 minute winter	SMH1	11	4.546	0.206	39.9	0.2954	0.0000	SURCHARGED
15 minute winter	SMH 8550	11	3.934	0.144	57.0	0.2055	0.0000	OK
15 minute winter	SMH 7552	11	3.676	0.156	57.1	0.2762	0.0000	OK
15 minute winter	SMH7	11	4.042	0.222	11.6	0.3176	0.0000	SURCHARGED
15 minute winter	SMH8	10	3.831	0.101	22.2	0.1449	0.0000	OK
15 minute winter	SMH 8556	11	3.545	0.085	22.0	0.1214	0.0000	OK
15 minute winter	SMH 8555	12	3.511	0.234	78.2	0.4130	0.0000	OK
15 minute winter	SMH11	12	5.250	0.750	10.2	1.0733	0.0000	FLOOD RISK
15 minute winter	SMH10	12	5.200	0.950	32.4	1.3590	0.0000	FLOOD RISK
15 minute winter	SMH 8552	11	4.729	0.679	67.0	0.9724	0.0000	SURCHARGED
15 minute winter	SMH 8553	11	3.873	0.203	73.5	0.2907	0.0000	OK
15 minute winter	SMH 8455	12	3.622	0.202	74.8	0.2898	0.0000	OK
15 minute winter	SMH 8457	12	3.491	0.293	150.3	0.5183	0.0000	OK
15 minute winter	OUTFALL (dummy)	12	3.384	0.259	149.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	12.0	0.779	0.272	0.1925	
15 minute winter	SMH 8655	1.001	SMH 8654	11.8	0.771	0.379	0.2107	
15 minute winter	SMH 8654	1.002	SMH 8550	19.1	0.770	0.175	0.3112	
15 minute winter	SMH2	2.000	SMH1	19.0	1.454	0.411	0.2755	
15 minute winter	SMH1	2.001	SMH 8550	37.9	2.401	0.894	0.1122	
15 minute winter	SMH 8550	1.003	SMH 7552	57.1	1.622	0.404	0.5889	
15 minute winter	SMH 7552	1.004	SMH 8555	56.1	0.840	0.201	5.3233	
15 minute winter	SMH7	3.000	SMH8	11.0	1.411	1.303	0.0361	
15 minute winter	SMH8	3.001	SMH 8556	22.0	1.925	0.650	0.0857	
15 minute winter	SMH 8556	3.002	SMH 8555	22.1	1.110	0.306	0.2542	
15 minute winter	SMH 8555	1.005	SMH 8457	75.4	0.695	0.270	2.5696	
15 minute winter	SMH11	4.000	SMH10	10.9	0.619	0.511	0.3076	
15 minute winter	SMH10	4.001	SMH 8552	31.2	1.774	1.374	0.2160	
15 minute winter	SMH 8552	4.002	SMH 8553	64.9	1.635	1.483	2.0667	
15 minute winter	SMH 8553	4.003	SMH 8455	73.0	1.450	0.724	1.5314	
15 minute winter	SMH 8455	4.004	SMH 8457	74.9	1.204	0.701	1.4474	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	149.9	1.302	0.539	2.5309	79.4

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Results for 30 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.088	0.038	2.7	0.0544	0.0000	OK
360 minute summer	SMH 8655	184	4.006	0.046	2.7	0.0652	0.0000	OK
360 minute summer	SMH 8654	184	3.951	0.041	4.4	0.0581	0.0000	OK
360 minute summer	SMH2	184	5.831	0.031	4.3	0.0442	0.0000	OK
360 minute summer	SMH1	184	4.390	0.050	9.0	0.0719	0.0000	OK
360 minute summer	SMH 8550	184	3.852	0.062	13.3	0.0893	0.0000	OK
360 minute summer	SMH 7552	184	3.596	0.076	13.2	0.1341	0.0000	OK
360 minute summer	SMH7	184	3.861	0.041	2.6	0.0580	0.0000	OK
360 minute summer	SMH8	184	3.772	0.042	5.2	0.0596	0.0000	OK
360 minute summer	SMH 8556	184	3.501	0.041	5.2	0.0581	0.0000	OK
360 minute summer	SMH 8555	184	3.366	0.089	18.2	0.1565	0.0000	OK
360 minute summer	SMH11	184	4.533	0.033	2.3	0.0475	0.0000	OK
360 minute summer	SMH10	184	4.315	0.065	8.6	0.0929	0.0000	OK
360 minute summer	SMH 8552	184	4.151	0.101	17.6	0.1450	0.0000	OK
360 minute summer	SMH 8553	184	3.762	0.092	19.6	0.1315	0.0000	OK
360 minute summer	SMH 8455	184	3.506	0.086	19.8	0.1237	0.0000	OK
360 minute summer	SMH 8457	184	3.333	0.135	37.7	0.2386	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.251	0.126	37.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	2.7	0.530	0.061	0.0636	
360 minute summer	SMH 8655	1.001	SMH 8654	2.7	0.502	0.085	0.0726	
360 minute summer	SMH 8654	1.002	SMH 8550	4.3	0.540	0.040	0.1013	
360 minute summer	SMH2	2.000	SMH1	4.3	1.117	0.093	0.0849	
360 minute summer	SMH1	2.001	SMH 8550	9.0	1.818	0.211	0.0351	
360 minute summer	SMH 8550	1.003	SMH 7552	13.2	1.081	0.094	0.2054	
360 minute summer	SMH 7552	1.004	SMH 8555	13.0	0.606	0.047	1.5710	
360 minute summer	SMH7	3.000	SMH8	2.6	0.855	0.306	0.0140	
360 minute summer	SMH8	3.001	SMH 8556	5.2	1.323	0.153	0.0294	
360 minute summer	SMH 8556	3.002	SMH 8555	5.2	0.550	0.071	0.0921	
360 minute summer	SMH 8555	1.005	SMH 8457	17.9	0.535	0.064	0.8037	
360 minute summer	SMH11	4.000	SMH10	2.3	0.458	0.108	0.0890	
360 minute summer	SMH10	4.001	SMH 8552	8.5	0.853	0.376	0.1224	
360 minute summer	SMH 8552	4.002	SMH 8553	17.5	1.076	0.400	0.8678	
360 minute summer	SMH 8553	4.003	SMH 8455	19.4	1.109	0.193	0.5313	
360 minute summer	SMH 8455	4.004	SMH 8457	19.7	0.835	0.185	0.5703	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	37.3	0.894	0.134	0.9183	214.2

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Results for 30 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	184	4.081	0.031	1.8	0.0442	0.0000	OK
360 minute winter	SMH 8655	184	3.997	0.037	1.8	0.0536	0.0000	OK
360 minute winter	SMH 8654	184	3.943	0.033	2.9	0.0479	0.0000	OK
360 minute winter	SMH2	184	5.825	0.025	2.8	0.0359	0.0000	OK
360 minute winter	SMH1	184	4.380	0.040	5.8	0.0566	0.0000	OK
360 minute winter	SMH 8550	184	3.840	0.050	8.7	0.0716	0.0000	OK
360 minute winter	SMH 7552	184	3.582	0.062	8.7	0.1102	0.0000	OK
360 minute winter	SMH7	184	3.852	0.032	1.7	0.0456	0.0000	OK
360 minute winter	SMH8	184	3.763	0.033	3.4	0.0476	0.0000	OK
360 minute winter	SMH 8556	184	3.493	0.033	3.4	0.0473	0.0000	OK
360 minute winter	SMH 8555	184	3.350	0.073	12.0	0.1288	0.0000	OK
360 minute winter	SMH11	184	4.527	0.027	1.5	0.0386	0.0000	OK
360 minute winter	SMH10	184	4.301	0.051	5.6	0.0725	0.0000	OK
360 minute winter	SMH 8552	184	4.130	0.080	11.5	0.1145	0.0000	OK
360 minute winter	SMH 8553	184	3.744	0.074	12.9	0.1057	0.0000	OK
360 minute winter	SMH 8455	184	3.490	0.070	13.2	0.1008	0.0000	OK
360 minute winter	SMH 8457	184	3.308	0.110	25.1	0.1936	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.228	0.103	25.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	1.8	0.474	0.041	0.0476	
360 minute winter	SMH 8655	1.001	SMH 8654	1.8	0.447	0.057	0.0549	
360 minute winter	SMH 8654	1.002	SMH 8550	2.9	0.487	0.026	0.0747	
360 minute winter	SMH2	2.000	SMH1	2.8	1.006	0.060	0.0616	
360 minute winter	SMH1	2.001	SMH 8550	5.8	1.622	0.137	0.0254	
360 minute winter	SMH 8550	1.003	SMH 7552	8.7	0.952	0.061	0.1530	
360 minute winter	SMH 7552	1.004	SMH 8555	8.6	0.534	0.031	1.1817	
360 minute winter	SMH7	3.000	SMH8	1.7	0.768	0.200	0.0102	
360 minute winter	SMH8	3.001	SMH 8556	3.4	1.176	0.100	0.0216	
360 minute winter	SMH 8556	3.002	SMH 8555	3.4	0.477	0.047	0.0701	
360 minute winter	SMH 8555	1.005	SMH 8457	12.0	0.479	0.043	0.6002	
360 minute winter	SMH11	4.000	SMH10	1.5	0.419	0.070	0.0644	
360 minute winter	SMH10	4.001	SMH 8552	5.6	0.760	0.246	0.0907	
360 minute winter	SMH 8552	4.002	SMH 8553	11.5	0.958	0.262	0.6390	
360 minute winter	SMH 8553	4.003	SMH 8455	12.9	0.988	0.127	0.3945	
360 minute winter	SMH 8455	4.004	SMH 8457	13.1	0.740	0.123	0.4301	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	25.1	0.806	0.090	0.6842	214.2

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Results for 30 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	750	4.071	0.021	0.8	0.0301	0.0000	OK
1440 minute summer	SMH 8655	750	3.985	0.025	0.8	0.0365	0.0000	OK
1440 minute summer	SMH 8654	750	3.933	0.023	1.3	0.0329	0.0000	OK
1440 minute summer	SMH2	750	5.817	0.017	1.3	0.0249	0.0000	OK
1440 minute summer	SMH1	750	4.367	0.027	2.7	0.0381	0.0000	OK
1440 minute summer	SMH 8550	750	3.825	0.035	4.0	0.0495	0.0000	OK
1440 minute summer	SMH 7552	750	3.563	0.043	4.0	0.0766	0.0000	OK
1440 minute summer	SMH7	750	3.841	0.021	0.8	0.0305	0.0000	OK
1440 minute summer	SMH8	750	3.753	0.023	1.6	0.0324	0.0000	OK
1440 minute summer	SMH 8556	750	3.483	0.023	1.6	0.0331	0.0000	OK
1440 minute summer	SMH 8555	750	3.328	0.051	5.6	0.0897	0.0000	OK
1440 minute summer	SMH11	750	4.519	0.019	0.7	0.0267	0.0000	OK
1440 minute summer	SMH10	750	4.284	0.034	2.6	0.0490	0.0000	OK
1440 minute summer	SMH 8552	750	4.104	0.054	5.3	0.0766	0.0000	OK
1440 minute summer	SMH 8553	750	3.720	0.050	5.9	0.0714	0.0000	OK
1440 minute summer	SMH 8455	750	3.468	0.048	6.0	0.0686	0.0000	OK
1440 minute summer	SMH 8457	750	3.272	0.074	11.6	0.1314	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.195	0.070	11.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	0.8	0.371	0.018	0.0271	
1440 minute summer	SMH 8655	1.001	SMH 8654	0.8	0.350	0.026	0.0314	
1440 minute summer	SMH 8654	1.002	SMH 8550	1.3	0.379	0.012	0.0433	
1440 minute summer	SMH2	2.000	SMH1	1.3	0.814	0.028	0.0353	
1440 minute summer	SMH1	2.001	SMH 8550	2.7	1.315	0.064	0.0146	
1440 minute summer	SMH 8550	1.003	SMH 7552	4.0	0.749	0.028	0.0899	
1440 minute summer	SMH 7552	1.004	SMH 8555	4.0	0.422	0.014	0.6928	
1440 minute summer	SMH7	3.000	SMH8	0.8	0.629	0.094	0.0059	
1440 minute summer	SMH8	3.001	SMH 8556	1.6	0.945	0.047	0.0127	
1440 minute summer	SMH 8556	3.002	SMH 8555	1.6	0.379	0.022	0.0420	
1440 minute summer	SMH 8555	1.005	SMH 8457	5.6	0.387	0.020	0.3466	
1440 minute summer	SMH11	4.000	SMH10	0.7	0.336	0.033	0.0374	
1440 minute summer	SMH10	4.001	SMH 8552	2.6	0.606	0.114	0.0531	
1440 minute summer	SMH 8552	4.002	SMH 8553	5.3	0.771	0.121	0.3664	
1440 minute summer	SMH 8553	4.003	SMH 8455	5.9	0.792	0.059	0.2258	
1440 minute summer	SMH 8455	4.004	SMH 8457	6.0	0.584	0.056	0.2497	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	11.6	0.652	0.042	0.3910	272.8

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Results for 30 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	750	4.068	0.018	0.6	0.0263	0.0000	OK
1440 minute winter	SMH 8655	750	3.982	0.022	0.6	0.0319	0.0000	OK
1440 minute winter	SMH 8654	750	3.929	0.019	0.9	0.0279	0.0000	OK
1440 minute winter	SMH2	750	5.815	0.015	0.9	0.0209	0.0000	OK
1440 minute winter	SMH1	750	4.362	0.022	1.9	0.0319	0.0000	OK
1440 minute winter	SMH 8550	750	3.819	0.029	2.8	0.0417	0.0000	OK
1440 minute winter	SMH 7552	750	3.557	0.037	2.8	0.0651	0.0000	OK
1440 minute winter	SMH7	690	3.837	0.017	0.5	0.0240	0.0000	OK
1440 minute winter	SMH8	690	3.748	0.018	1.0	0.0257	0.0000	OK
1440 minute winter	SMH 8556	690	3.479	0.019	1.0	0.0266	0.0000	OK
1440 minute winter	SMH 8555	750	3.319	0.042	3.8	0.0748	0.0000	OK
1440 minute winter	SMH11	750	4.516	0.016	0.5	0.0228	0.0000	OK
1440 minute winter	SMH10	750	4.279	0.029	1.8	0.0409	0.0000	OK
1440 minute winter	SMH 8552	750	4.094	0.044	3.6	0.0631	0.0000	OK
1440 minute winter	SMH 8553	750	3.711	0.041	4.0	0.0589	0.0000	OK
1440 minute winter	SMH 8455	750	3.460	0.040	4.1	0.0571	0.0000	OK
1440 minute winter	SMH 8457	750	3.260	0.062	7.9	0.1090	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.181	0.056	7.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.6	0.340	0.014	0.0222	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.6	0.326	0.019	0.0252	
1440 minute winter	SMH 8654	1.002	SMH 8550	0.9	0.337	0.008	0.0337	
1440 minute winter	SMH2	2.000	SMH1	0.9	0.729	0.019	0.0273	
1440 minute winter	SMH1	2.001	SMH 8550	1.9	1.190	0.045	0.0114	
1440 minute winter	SMH 8550	1.003	SMH 7552	2.8	0.670	0.020	0.0705	
1440 minute winter	SMH 7552	1.004	SMH 8555	2.8	0.381	0.010	0.5351	
1440 minute winter	SMH7	3.000	SMH8	0.5	0.551	0.059	0.0042	
1440 minute winter	SMH8	3.001	SMH 8556	1.0	0.821	0.030	0.0091	
1440 minute winter	SMH 8556	3.002	SMH 8555	1.0	0.325	0.014	0.0319	
1440 minute winter	SMH 8555	1.005	SMH 8457	3.8	0.345	0.014	0.2640	
1440 minute winter	SMH11	4.000	SMH10	0.5	0.308	0.023	0.0291	
1440 minute winter	SMH10	4.001	SMH 8552	1.8	0.548	0.079	0.0408	
1440 minute winter	SMH 8552	4.002	SMH 8553	3.6	0.690	0.082	0.2782	
1440 minute winter	SMH 8553	4.003	SMH 8455	4.0	0.706	0.040	0.1718	
1440 minute winter	SMH 8455	4.004	SMH 8457	4.1	0.521	0.038	0.1914	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	7.9	0.596	0.028	0.2922	272.6

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Results for 100 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.152	0.102	16.2	0.1463	0.0000	OK
15 minute summer	SMH 8655	10	4.079	0.119	16.0	0.1701	0.0000	OK
15 minute summer	SMH 8654	10	4.013	0.103	25.7	0.1481	0.0000	OK
15 minute summer	SMH2	10	5.879	0.079	25.5	0.1136	0.0000	OK
15 minute summer	SMH1	11	4.903	0.563	53.3	0.8063	0.0000	SURCHARGED
15 minute summer	SMH 8550	11	3.964	0.174	76.5	0.2496	0.0000	OK
15 minute summer	SMH 7552	11	3.702	0.182	76.6	0.3216	0.0000	OK
15 minute summer	SMH7	11	4.235	0.415	15.5	0.5943	0.0000	SURCHARGED
15 minute summer	SMH8	11	3.860	0.130	29.3	0.1859	0.0000	OK
15 minute summer	SMH 8556	12	3.577	0.117	29.4	0.1672	0.0000	OK
15 minute summer	SMH 8555	12	3.560	0.283	103.8	0.5002	0.0000	OK
15 minute summer	SMH11	10	5.520	1.020	13.7	1.4596	0.9350	FLOOD
15 minute summer	SMH10	10	5.470	1.220	44.2	1.7458	2.7189	FLOOD
15 minute summer	SMH 8552	11	5.182	1.132	80.8	1.6199	0.0000	FLOOD RISK
15 minute summer	SMH 8553	11	3.909	0.239	88.1	0.3423	0.0000	OK
15 minute summer	SMH 8455	12	3.717	0.297	90.6	0.4255	0.0000	OK
15 minute summer	SMH 8457	12	3.535	0.337	189.1	0.5957	0.0000	OK
15 minute summer	OUTFALL (dummy)	12	3.417	0.292	187.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	16.0	0.827	0.365	0.2431	
15 minute summer	SMH 8655	1.001	SMH 8654	15.8	0.821	0.508	0.2679	
15 minute summer	SMH 8654	1.002	SMH 8550	25.6	0.815	0.235	0.3974	
15 minute summer	SMH2	2.000	SMH1	25.4	1.650	0.548	0.2957	
15 minute summer	SMH1	2.001	SMH 8550	50.9	2.889	1.200	0.1253	
15 minute summer	SMH 8550	1.003	SMH 7552	76.6	1.756	0.541	0.7295	
15 minute summer	SMH 7552	1.004	SMH 8555	75.2	0.876	0.269	6.7251	
15 minute summer	SMH7	3.000	SMH8	14.5	1.854	1.712	0.0361	
15 minute summer	SMH8	3.001	SMH 8556	29.4	2.018	0.868	0.1150	
15 minute summer	SMH 8556	3.002	SMH 8555	28.7	1.201	0.397	0.2883	
15 minute summer	SMH 8555	1.005	SMH 8457	103.1	0.777	0.370	3.1418	
15 minute summer	SMH11	4.000	SMH10	12.9	0.734	0.607	0.3076	
15 minute summer	SMH10	4.001	SMH 8552	33.9	1.928	1.493	0.2160	
15 minute summer	SMH 8552	4.002	SMH 8553	76.2	1.915	1.739	2.1205	
15 minute summer	SMH 8553	4.003	SMH 8455	88.2	1.467	0.875	1.9402	
15 minute summer	SMH 8455	4.004	SMH 8457	87.2	1.258	0.817	1.6890	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	187.7	1.392	0.675	2.9635	96.6

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Results for 100 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.148	0.098	15.2	0.1406	0.0000	OK
15 minute winter	SMH 8655	10	4.074	0.114	15.0	0.1632	0.0000	OK
15 minute winter	SMH 8654	10	4.009	0.099	24.0	0.1419	0.0000	OK
15 minute winter	SMH2	10	5.876	0.076	23.9	0.1092	0.0000	OK
15 minute winter	SMH1	11	4.801	0.461	50.0	0.6593	0.0000	SURCHARGED
15 minute winter	SMH 8550	11	3.957	0.167	71.5	0.2385	0.0000	OK
15 minute winter	SMH 7552	11	3.696	0.176	71.7	0.3107	0.0000	OK
15 minute winter	SMH7	11	4.183	0.363	14.6	0.5200	0.0000	SURCHARGED
15 minute winter	SMH8	10	3.851	0.121	27.5	0.1737	0.0000	OK
15 minute winter	SMH 8556	12	3.562	0.102	27.5	0.1462	0.0000	OK
15 minute winter	SMH 8555	12	3.550	0.273	97.2	0.4827	0.0000	OK
15 minute winter	SMH11	11	5.520	1.020	12.8	1.4596	0.2947	FLOOD
15 minute winter	SMH10	11	5.470	1.220	41.4	1.7458	1.2516	FLOOD
15 minute winter	SMH 8552	11	5.119	1.069	78.8	1.5295	0.0000	SURCHARGED
15 minute winter	SMH 8553	11	3.903	0.233	85.8	0.3335	0.0000	OK
15 minute winter	SMH 8455	12	3.667	0.247	88.1	0.3541	0.0000	OK
15 minute winter	SMH 8457	12	3.527	0.329	180.9	0.5805	0.0000	OK
15 minute winter	OUTFALL (dummy)	12	3.411	0.286	180.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	15.0	0.817	0.342	0.2307	
15 minute winter	SMH 8655	1.001	SMH 8654	14.8	0.810	0.475	0.2538	
15 minute winter	SMH 8654	1.002	SMH 8550	23.9	0.805	0.220	0.3754	
15 minute winter	SMH2	2.000	SMH1	23.8	1.566	0.514	0.2906	
15 minute winter	SMH1	2.001	SMH 8550	47.6	2.703	1.123	0.1249	
15 minute winter	SMH 8550	1.003	SMH 7552	71.7	1.726	0.507	0.6951	
15 minute winter	SMH 7552	1.004	SMH 8555	70.4	0.843	0.252	6.4176	
15 minute winter	SMH7	3.000	SMH8	13.6	1.744	1.611	0.0361	
15 minute winter	SMH8	3.001	SMH 8556	27.5	2.005	0.811	0.1043	
15 minute winter	SMH 8556	3.002	SMH 8555	27.0	1.196	0.374	0.2726	
15 minute winter	SMH 8555	1.005	SMH 8457	95.3	0.745	0.342	3.0288	
15 minute winter	SMH11	4.000	SMH10	12.2	0.695	0.575	0.3076	
15 minute winter	SMH10	4.001	SMH 8552	33.9	1.925	1.491	0.2160	
15 minute winter	SMH 8552	4.002	SMH 8553	74.8	1.881	1.708	2.1205	
15 minute winter	SMH 8553	4.003	SMH 8455	85.9	1.463	0.852	1.8165	
15 minute winter	SMH 8455	4.004	SMH 8457	86.2	1.255	0.806	1.5909	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	180.6	1.377	0.649	2.8826	97.8

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Results for 100 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.093	0.043	3.4	0.0613	0.0000	OK
360 minute summer	SMH 8655	184	4.011	0.051	3.4	0.0732	0.0000	OK
360 minute summer	SMH 8654	184	3.955	0.045	5.5	0.0647	0.0000	OK
360 minute summer	SMH2	184	5.834	0.034	5.3	0.0491	0.0000	OK
360 minute summer	SMH1	184	4.397	0.057	11.1	0.0809	0.0000	OK
360 minute summer	SMH 8550	184	3.860	0.070	16.5	0.1002	0.0000	OK
360 minute summer	SMH 7552	184	3.604	0.084	16.4	0.1489	0.0000	OK
360 minute summer	SMH7	184	3.866	0.046	3.2	0.0656	0.0000	OK
360 minute summer	SMH8	184	3.777	0.047	6.4	0.0668	0.0000	OK
360 minute summer	SMH 8556	184	3.505	0.045	6.4	0.0643	0.0000	OK
360 minute summer	SMH 8555	184	3.376	0.099	22.6	0.1749	0.0000	OK
360 minute summer	SMH11	184	4.537	0.037	2.9	0.0534	0.0000	OK
360 minute summer	SMH10	184	4.325	0.075	10.7	0.1075	0.0000	OK
360 minute summer	SMH 8552	184	4.165	0.115	21.9	0.1648	0.0000	OK
360 minute summer	SMH 8553	184	3.773	0.103	24.4	0.1479	0.0000	OK
360 minute summer	SMH 8455	184	3.517	0.097	24.7	0.1386	0.0000	OK
360 minute summer	SMH 8457	184	3.350	0.152	46.7	0.2677	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.266	0.141	46.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	3.4	0.564	0.077	0.0753	
360 minute summer	SMH 8655	1.001	SMH 8654	3.4	0.540	0.107	0.0852	
360 minute summer	SMH 8654	1.002	SMH 8550	5.4	0.575	0.050	0.1191	
360 minute summer	SMH2	2.000	SMH1	5.3	1.176	0.114	0.0994	
360 minute summer	SMH1	2.001	SMH 8550	11.1	1.917	0.261	0.0410	
360 minute summer	SMH 8550	1.003	SMH 7552	16.4	1.148	0.116	0.2398	
360 minute summer	SMH 7552	1.004	SMH 8555	16.2	0.644	0.058	1.8378	
360 minute summer	SMH7	3.000	SMH8	3.2	0.900	0.376	0.0163	
360 minute summer	SMH8	3.001	SMH 8556	6.4	1.401	0.188	0.0341	
360 minute summer	SMH 8556	3.002	SMH 8555	6.4	0.582	0.088	0.1067	
360 minute summer	SMH 8555	1.005	SMH 8457	22.2	0.562	0.079	0.9441	
360 minute summer	SMH11	4.000	SMH10	2.9	0.479	0.136	0.1068	
360 minute summer	SMH10	4.001	SMH 8552	10.6	0.903	0.468	0.1431	
360 minute summer	SMH 8552	4.002	SMH 8553	21.8	1.139	0.497	1.0189	
360 minute summer	SMH 8553	4.003	SMH 8455	24.2	1.176	0.240	0.6236	
360 minute summer	SMH 8455	4.004	SMH 8457	24.5	0.891	0.230	0.6638	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	46.3	0.944	0.167	1.0788	267.0

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Results for 100 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	184	4.084	0.034	2.2	0.0490	0.0000	OK
360 minute winter	SMH 8655	184	4.001	0.041	2.2	0.0592	0.0000	OK
360 minute winter	SMH 8654	184	3.947	0.037	3.6	0.0530	0.0000	OK
360 minute winter	SMH2	184	5.828	0.028	3.5	0.0400	0.0000	OK
360 minute winter	SMH1	184	4.385	0.045	7.3	0.0641	0.0000	OK
360 minute winter	SMH 8550	184	3.846	0.056	10.9	0.0804	0.0000	OK
360 minute winter	SMH 7552	184	3.589	0.069	10.9	0.1226	0.0000	OK
360 minute winter	SMH7	184	3.856	0.036	2.1	0.0513	0.0000	OK
360 minute winter	SMH8	184	3.767	0.037	4.2	0.0533	0.0000	OK
360 minute winter	SMH 8556	184	3.497	0.037	4.2	0.0525	0.0000	OK
360 minute winter	SMH 8555	184	3.358	0.081	15.0	0.1434	0.0000	OK
360 minute winter	SMH11	184	4.530	0.030	1.9	0.0433	0.0000	OK
360 minute winter	SMH10	184	4.307	0.057	7.0	0.0818	0.0000	OK
360 minute winter	SMH 8552	184	4.140	0.090	14.3	0.1289	0.0000	OK
360 minute winter	SMH 8553	184	3.753	0.083	16.0	0.1182	0.0000	OK
360 minute winter	SMH 8455	184	3.498	0.078	16.2	0.1119	0.0000	OK
360 minute winter	SMH 8457	184	3.321	0.123	31.2	0.2167	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.240	0.115	31.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	2.2	0.501	0.050	0.0551	
360 minute winter	SMH 8655	1.001	SMH 8654	2.2	0.474	0.070	0.0634	
360 minute winter	SMH 8654	1.002	SMH 8550	3.6	0.516	0.033	0.0877	
360 minute winter	SMH2	2.000	SMH1	3.5	1.063	0.076	0.0729	
360 minute winter	SMH1	2.001	SMH 8550	7.3	1.725	0.172	0.0301	
360 minute winter	SMH 8550	1.003	SMH 7552	10.9	1.017	0.077	0.1792	
360 minute winter	SMH 7552	1.004	SMH 8555	10.8	0.571	0.039	1.3797	
360 minute winter	SMH7	3.000	SMH8	2.1	0.811	0.248	0.0119	
360 minute winter	SMH8	3.001	SMH 8556	4.2	1.248	0.124	0.0253	
360 minute winter	SMH 8556	3.002	SMH 8555	4.2	0.515	0.058	0.0813	
360 minute winter	SMH 8555	1.005	SMH 8457	15.0	0.510	0.054	0.7033	
360 minute winter	SMH11	4.000	SMH10	1.9	0.445	0.089	0.0760	
360 minute winter	SMH10	4.001	SMH 8552	7.0	0.812	0.307	0.1056	
360 minute winter	SMH 8552	4.002	SMH 8553	14.3	1.017	0.325	0.7473	
360 minute winter	SMH 8553	4.003	SMH 8455	15.9	1.050	0.158	0.4598	
360 minute winter	SMH 8455	4.004	SMH 8457	16.2	0.784	0.152	0.4999	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	31.1	0.850	0.112	0.8044	267.5

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Results for 100 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	750	4.073	0.023	1.0	0.0335	0.0000	OK
1440 minute summer	SMH 8655	750	3.988	0.028	1.0	0.0405	0.0000	OK
1440 minute summer	SMH 8654	750	3.935	0.025	1.6	0.0363	0.0000	OK
1440 minute summer	SMH2	750	5.819	0.019	1.6	0.0274	0.0000	OK
1440 minute summer	SMH1	750	4.370	0.030	3.4	0.0428	0.0000	OK
1440 minute summer	SMH 8550	750	3.828	0.038	5.0	0.0549	0.0000	OK
1440 minute summer	SMH 7552	750	3.568	0.048	5.0	0.0851	0.0000	OK
1440 minute summer	SMH7	750	3.844	0.024	1.0	0.0343	0.0000	OK
1440 minute summer	SMH8	750	3.755	0.025	2.0	0.0363	0.0000	OK
1440 minute summer	SMH 8556	750	3.486	0.026	2.0	0.0368	0.0000	OK
1440 minute summer	SMH 8555	750	3.334	0.057	7.0	0.0999	0.0000	OK
1440 minute summer	SMH11	750	4.521	0.021	0.9	0.0301	0.0000	OK
1440 minute summer	SMH10	750	4.289	0.039	3.3	0.0553	0.0000	OK
1440 minute summer	SMH 8552	750	4.110	0.060	6.7	0.0863	0.0000	OK
1440 minute summer	SMH 8553	750	3.726	0.056	7.5	0.0804	0.0000	OK
1440 minute summer	SMH 8455	750	3.474	0.054	7.7	0.0774	0.0000	OK
1440 minute summer	SMH 8457	750	3.282	0.084	14.7	0.1478	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.203	0.078	14.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	1.0	0.397	0.023	0.0316	
1440 minute summer	SMH 8655	1.001	SMH 8654	1.0	0.376	0.032	0.0365	
1440 minute summer	SMH 8654	1.002	SMH 8550	1.6	0.402	0.015	0.0503	
1440 minute summer	SMH2	2.000	SMH1	1.6	0.854	0.035	0.0415	
1440 minute summer	SMH1	2.001	SMH 8550	3.4	1.403	0.080	0.0172	
1440 minute summer	SMH 8550	1.003	SMH 7552	5.0	0.802	0.035	0.1047	
1440 minute summer	SMH 7552	1.004	SMH 8555	5.0	0.450	0.018	0.8090	
1440 minute summer	SMH7	3.000	SMH8	1.0	0.668	0.118	0.0069	
1440 minute summer	SMH8	3.001	SMH 8556	2.0	1.008	0.059	0.0149	
1440 minute summer	SMH 8556	3.002	SMH 8555	2.0	0.406	0.028	0.0490	
1440 minute summer	SMH 8555	1.005	SMH 8457	7.0	0.411	0.025	0.4086	
1440 minute summer	SMH11	4.000	SMH10	0.9	0.363	0.042	0.0444	
1440 minute summer	SMH10	4.001	SMH 8552	3.3	0.653	0.145	0.0626	
1440 minute summer	SMH 8552	4.002	SMH 8553	6.7	0.824	0.153	0.4336	
1440 minute summer	SMH 8553	4.003	SMH 8455	7.5	0.847	0.074	0.2686	
1440 minute summer	SMH 8455	4.004	SMH 8457	7.7	0.632	0.072	0.2957	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	14.7	0.701	0.053	0.4619	339.0

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Results for 100 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	720	4.070	0.020	0.7	0.0283	0.0000	OK
1440 minute winter	SMH 8655	720	3.984	0.024	0.7	0.0343	0.0000	OK
1440 minute winter	SMH 8654	720	3.931	0.021	1.1	0.0305	0.0000	OK
1440 minute winter	SMH2	750	5.816	0.016	1.1	0.0230	0.0000	OK
1440 minute winter	SMH1	750	4.365	0.025	2.3	0.0351	0.0000	OK
1440 minute winter	SMH 8550	750	3.822	0.032	3.4	0.0458	0.0000	OK
1440 minute winter	SMH 7552	750	3.560	0.040	3.4	0.0711	0.0000	OK
1440 minute winter	SMH7	750	3.840	0.020	0.7	0.0285	0.0000	OK
1440 minute winter	SMH8	750	3.751	0.021	1.4	0.0303	0.0000	OK
1440 minute winter	SMH 8556	750	3.482	0.022	1.4	0.0311	0.0000	OK
1440 minute winter	SMH 8555	750	3.324	0.047	4.8	0.0835	0.0000	OK
1440 minute winter	SMH11	720	4.517	0.017	0.6	0.0249	0.0000	OK
1440 minute winter	SMH10	750	4.282	0.032	2.2	0.0451	0.0000	OK
1440 minute winter	SMH 8552	750	4.099	0.049	4.5	0.0706	0.0000	OK
1440 minute winter	SMH 8553	750	3.716	0.046	5.0	0.0658	0.0000	OK
1440 minute winter	SMH 8455	750	3.464	0.044	5.1	0.0634	0.0000	OK
1440 minute winter	SMH 8457	750	3.267	0.069	9.9	0.1216	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.189	0.064	9.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.7	0.356	0.016	0.0247	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.7	0.338	0.022	0.0284	
1440 minute winter	SMH 8654	1.002	SMH 8550	1.1	0.370	0.010	0.0386	
1440 minute winter	SMH2	2.000	SMH1	1.1	0.775	0.024	0.0314	
1440 minute winter	SMH1	2.001	SMH 8550	2.3	1.256	0.054	0.0130	
1440 minute winter	SMH 8550	1.003	SMH 7552	3.4	0.710	0.024	0.0803	
1440 minute winter	SMH 7552	1.004	SMH 8555	3.4	0.400	0.012	0.6207	
1440 minute winter	SMH7	3.000	SMH8	0.7	0.606	0.083	0.0053	
1440 minute winter	SMH8	3.001	SMH 8556	1.4	0.908	0.041	0.0116	
1440 minute winter	SMH 8556	3.002	SMH 8555	1.4	0.365	0.019	0.0380	
1440 minute winter	SMH 8555	1.005	SMH 8457	4.8	0.372	0.017	0.3096	
1440 minute winter	SMH11	4.000	SMH10	0.6	0.329	0.028	0.0333	
1440 minute winter	SMH10	4.001	SMH 8552	2.2	0.576	0.097	0.0473	
1440 minute winter	SMH 8552	4.002	SMH 8553	4.5	0.736	0.103	0.3258	
1440 minute winter	SMH 8553	4.003	SMH 8455	5.0	0.755	0.050	0.2008	
1440 minute winter	SMH 8455	4.004	SMH 8457	5.1	0.555	0.048	0.2234	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	9.9	0.629	0.036	0.3459	337.3

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Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SMH 8652	0.026	5.00	5.620	1350	514838.463	102620.718	1.570
SMH 8655			5.400	1350	514828.095	102613.685	1.440
SMH 8654	0.016	5.00	5.510	1350	514815.131	102609.214	1.600
SMH2	0.040	5.00	7.000	1350	514824.943	102576.731	1.200
SMH1	0.045	5.00	5.540	1350	514814.693	102596.025	1.200
SMH 8550			5.500	1350	514808.170	102598.870	1.710
SMH 7552			5.500	1500	514797.656	102585.856	1.980
SMH7	0.025	5.00	5.020	1350	514822.141	102512.507	1.200
SMH8	0.025	5.00	5.080	1350	514821.812	102517.107	1.350
SMH 8556			5.040	1350	514814.339	102517.775	1.580
SMH 8555			5.290	1500	514805.825	102513.517	2.013
SMH11	0.022	5.00	5.520	1350	514852.216	102590.005	1.020
SMH10	0.061	5.00	5.470	1350	514851.598	102572.544	1.220
SMH 8552	0.052	5.00	5.070	1350	514860.202	102563.801	1.400
GREEN ROOF	0.039	5.00	5.100	450	514853.500	102541.700	1.000
SMH 8553	0.016	5.00	5.070	1350	514857.599	102510.547	1.400
SMH 8455	0.004	5.00	5.060	1350	514832.673	102493.288	1.640
SMH 8457			5.300	1500	514808.897	102490.021	2.102
OUTFALL (dummy)			5.240	1500	514810.928	102468.126	2.115

Links (Input)

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SMH 8652	SMH 8655	12.528	0.600	4.050	3.960	0.090	139.2	225	5.00	50.0
1.001	SMH 8655	SMH 8654	13.713	0.600	3.960	3.910	0.050	274.3	225	5.00	50.0
1.002	SMH 8654	SMH 8550	12.468	0.600	3.910	3.790	0.120	103.9	300	5.00	50.0
2.000	SMH2	SMH1	21.847	0.600	5.800	4.340	1.460	15.0	150	5.00	50.0
2.001	SMH1	SMH 8550	7.117	0.600	4.340	3.940	0.400	17.8	150	5.00	50.0
1.003	SMH 8550	SMH 7552	16.731	0.600	3.790	3.520	0.270	62.0	300	5.00	50.0
1.004	SMH 7552	SMH 8555	72.799	0.600	3.520	3.277	0.243	299.6	525	5.00	50.0
3.000	SMH7	SMH8	4.612	0.600	3.820	3.730	0.090	51.2	100	5.00	50.0
3.001	SMH8	SMH 8556	7.503	0.600	3.730	3.460	0.270	27.8	150	5.00	50.0
3.002	SMH 8556	SMH 8555	9.519	0.600	3.460	3.277	0.183	52.0	225	5.00	50.0
1.005	SMH 8555	SMH 8457	23.696	0.600	3.277	3.198	0.079	299.9	525	5.00	50.0
4.000	SMH11	SMH10	17.472	0.600	4.500	4.250	0.250	69.9	150	5.00	50.0
4.001	SMH10	SMH 8552	12.267	0.600	4.250	4.050	0.200	61.3	150	5.00	50.0
4.002	SMH 8552	SMH 8553	53.317	0.600	4.050	3.670	0.380	140.3	225	5.00	50.0
GreenRoof	GREEN ROOF	SMH 8552	23.095	0.600	4.100	3.670	0.430	53.7	150	5.00	50.0
4.003	SMH 8553	SMH 8455	30.317	0.600	3.670	3.420	0.250	121.3	300	5.00	50.0
4.004	SMH 8455	SMH 8457	24.000	0.600	3.420	3.198	0.222	108.1	300	5.00	50.0
1.006	SMH 8457	OUTFALL (dummy)	21.989	0.600	3.198	3.125	0.073	301.2	525	5.00	50.0

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x

Storm Durations

15 | 360 | 1440

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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	0	0	0

Node GREEN ROOF Design Modifiers (Hydrograph)

Overrides Design Area	x	Depression Storage Depth (mm)	10
Overrides Design Additional Inflow	x	Evapo-transpiration (mm/day)	3
Depression Storage Area (m²)	386		

Applies to All storms

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Results for 2 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 99.39%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.102	0.052	4.9	0.0743	0.0000	OK
15 minute summer	SMH 8655	11	4.021	0.061	4.8	0.0873	0.0000	OK
15 minute summer	SMH 8654	11	3.964	0.054	7.7	0.0768	0.0000	OK
15 minute summer	SMH2	10	5.841	0.041	7.5	0.0584	0.0000	OK
15 minute summer	SMH1	10	4.410	0.070	15.8	0.0998	0.0000	OK
15 minute summer	SMH 8550	10	3.875	0.085	23.2	0.1210	0.0000	OK
15 minute summer	SMH 7552	11	3.620	0.100	23.2	0.1765	0.0000	OK
15 minute summer	SMH7	10	3.878	0.058	4.7	0.0837	0.0000	OK
15 minute summer	SMH8	10	3.788	0.058	9.3	0.0828	0.0000	OK
15 minute summer	SMH 8556	10	3.514	0.054	9.3	0.0776	0.0000	OK
15 minute summer	SMH 8555	12	3.399	0.122	32.1	0.2152	0.0000	OK
15 minute summer	SMH11	10	4.544	0.044	4.1	0.0634	0.0000	OK
15 minute summer	SMH10	10	4.347	0.097	15.4	0.1392	0.0000	OK
15 minute summer	SMH 8552	11	4.174	0.504	24.9	0.7214	0.0000	OK
15 minute summer	GREEN ROOF	11	4.176	0.076	2.0	0.0120	0.0000	OK
15 minute summer	SMH 8553	11	3.781	0.111	27.6	0.1585	0.0000	OK
15 minute summer	SMH 8455	11	3.524	0.104	28.1	0.1486	0.0000	OK
15 minute summer	SMH 8457	12	3.370	0.172	58.4	0.3032	0.0000	OK
15 minute summer	OUTFALL (dummy)	12	3.284	0.159	58.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	4.8	0.623	0.110	0.0973	
15 minute summer	SMH 8655	1.001	SMH 8654	4.8	0.602	0.154	0.1092	
15 minute summer	SMH 8654	1.002	SMH 8550	7.7	0.633	0.071	0.1542	
15 minute summer	SMH2	2.000	SMH1	7.4	1.265	0.161	0.1298	
15 minute summer	SMH1	2.001	SMH 8550	15.7	2.084	0.370	0.0536	
15 minute summer	SMH 8550	1.003	SMH 7552	23.2	1.283	0.164	0.3072	
15 minute summer	SMH 7552	1.004	SMH 8555	23.0	0.715	0.082	2.3933	
15 minute summer	SMH7	3.000	SMH8	4.7	0.985	0.549	0.0218	
15 minute summer	SMH8	3.001	SMH 8556	9.3	1.549	0.274	0.0450	
15 minute summer	SMH 8556	3.002	SMH 8555	9.3	0.912	0.128	0.1358	
15 minute summer	SMH 8555	1.005	SMH 8457	30.7	0.623	0.110	1.1744	
15 minute summer	SMH11	4.000	SMH10	4.0	0.495	0.190	0.1435	
15 minute summer	SMH10	4.001	SMH 8552	15.2	1.098	0.670	0.1690	
15 minute summer	SMH 8552	4.002	SMH 8553	24.7	1.177	0.563	1.1167	
15 minute summer	GREEN ROOF	GreenRoof	SMH 8552	-2.0	-0.163	-0.082	0.3062	
15 minute summer	SMH 8553	4.003	SMH 8455	27.4	1.214	0.272	0.6857	
15 minute summer	SMH 8455	4.004	SMH 8457	28.0	0.909	0.262	0.7568	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	58.3	1.004	0.210	1.2781	25.9

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Results for 2 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 99.36%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.100	0.050	4.6	0.0718	0.0000	OK
15 minute winter	SMH 8655	11	4.019	0.059	4.5	0.0844	0.0000	OK
15 minute winter	SMH 8654	11	3.962	0.052	7.2	0.0740	0.0000	OK
15 minute winter	SMH2	10	5.839	0.039	7.0	0.0563	0.0000	OK
15 minute winter	SMH1	10	4.407	0.067	14.8	0.0958	0.0000	OK
15 minute winter	SMH 8550	10	3.871	0.081	21.7	0.1164	0.0000	OK
15 minute winter	SMH 7552	11	3.616	0.096	21.6	0.1703	0.0000	OK
15 minute winter	SMH7	10	3.876	0.056	4.4	0.0798	0.0000	OK
15 minute winter	SMH8	10	3.786	0.056	8.7	0.0795	0.0000	OK
15 minute winter	SMH 8556	10	3.512	0.052	8.6	0.0745	0.0000	OK
15 minute winter	SMH 8555	12	3.393	0.116	29.8	0.2052	0.0000	OK
15 minute winter	SMH11	10	4.543	0.043	3.9	0.0616	0.0000	OK
15 minute winter	SMH10	10	4.343	0.093	14.5	0.1324	0.0000	OK
15 minute winter	SMH 8552	11	4.169	0.499	23.3	0.7145	0.0000	OK
15 minute winter	GREEN ROOF	11	4.169	0.069	1.5	0.0110	0.0000	OK
15 minute winter	SMH 8553	11	3.777	0.107	25.7	0.1525	0.0000	OK
15 minute winter	SMH 8455	11	3.520	0.100	26.2	0.1425	0.0000	OK
15 minute winter	SMH 8457	12	3.363	0.165	54.3	0.2917	0.0000	OK
15 minute winter	OUTFALL (dummy)	12	3.278	0.153	54.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	4.5	0.613	0.103	0.0926	
15 minute winter	SMH 8655	1.001	SMH 8654	4.5	0.594	0.144	0.1039	
15 minute winter	SMH 8654	1.002	SMH 8550	7.2	0.620	0.066	0.1458	
15 minute winter	SMH2	2.000	SMH1	6.9	1.244	0.150	0.1233	
15 minute winter	SMH1	2.001	SMH 8550	14.7	2.051	0.346	0.0509	
15 minute winter	SMH 8550	1.003	SMH 7552	21.6	1.261	0.153	0.2914	
15 minute winter	SMH 7552	1.004	SMH 8555	21.3	0.701	0.077	2.2520	
15 minute winter	SMH7	3.000	SMH8	4.3	0.967	0.511	0.0206	
15 minute winter	SMH8	3.001	SMH 8556	8.6	1.523	0.255	0.0426	
15 minute winter	SMH 8556	3.002	SMH 8555	8.6	0.943	0.118	0.1279	
15 minute winter	SMH 8555	1.005	SMH 8457	28.5	0.615	0.102	1.1070	
15 minute winter	SMH11	4.000	SMH10	3.8	0.495	0.180	0.1360	
15 minute winter	SMH10	4.001	SMH 8552	14.3	1.085	0.627	0.1605	
15 minute winter	SMH 8552	4.002	SMH 8553	23.1	1.160	0.528	1.0631	
15 minute winter	GREEN ROOF	GreenRoof	SMH 8552	-1.5	-0.120	-0.064	0.2954	
15 minute winter	SMH 8553	4.003	SMH 8455	25.5	1.193	0.253	0.6492	
15 minute winter	SMH 8455	4.004	SMH 8457	25.9	0.884	0.242	0.7207	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	54.3	0.986	0.195	1.2119	25.9

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Results for 2 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.076	0.026	1.3	0.0378	0.0000	OK
360 minute summer	SMH 8655	184	3.992	0.032	1.3	0.0455	0.0000	OK
360 minute summer	SMH 8654	184	3.939	0.029	2.1	0.0408	0.0000	OK
360 minute summer	SMH2	184	5.821	0.021	2.0	0.0305	0.0000	OK
360 minute summer	SMH1	184	4.373	0.033	4.2	0.0476	0.0000	OK
360 minute summer	SMH 8550	184	3.833	0.043	6.2	0.0609	0.0000	OK
360 minute summer	SMH 7552	184	3.573	0.053	6.2	0.0933	0.0000	OK
360 minute summer	SMH7	184	3.846	0.026	1.2	0.0377	0.0000	OK
360 minute summer	SMH8	184	3.758	0.028	2.4	0.0398	0.0000	OK
360 minute summer	SMH 8556	184	3.488	0.028	2.4	0.0400	0.0000	OK
360 minute summer	SMH 8555	184	3.338	0.061	8.5	0.1083	0.0000	OK
360 minute summer	SMH11	184	4.523	0.023	1.1	0.0331	0.0000	OK
360 minute summer	SMH10	184	4.293	0.043	4.1	0.0614	0.0000	OK
360 minute summer	SMH 8552	184	4.118	0.448	8.6	0.6416	0.0000	OK
360 minute summer	GREEN ROOF	184	4.128	0.028	1.9	0.0045	0.0000	OK
360 minute summer	SMH 8553	184	3.732	0.062	9.3	0.0891	0.0000	OK
360 minute summer	SMH 8455	184	3.479	0.059	9.4	0.0849	0.0000	OK
360 minute summer	SMH 8457	184	3.289	0.091	17.6	0.1612	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.210	0.085	17.4	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	1.3	0.431	0.029	0.0376	
360 minute summer	SMH 8655	1.001	SMH 8654	1.3	0.404	0.041	0.0433	
360 minute summer	SMH 8654	1.002	SMH 8550	2.1	0.440	0.019	0.0590	
360 minute summer	SMH2	2.000	SMH1	2.0	0.913	0.043	0.0483	
360 minute summer	SMH1	2.001	SMH 8550	4.2	1.485	0.098	0.0200	
360 minute summer	SMH 8550	1.003	SMH 7552	6.2	0.864	0.044	0.1205	
360 minute summer	SMH 7552	1.004	SMH 8555	6.1	0.483	0.022	0.9202	
360 minute summer	SMH7	3.000	SMH8	1.2	0.701	0.141	0.0079	
360 minute summer	SMH8	3.001	SMH 8556	2.4	1.063	0.071	0.0169	
360 minute summer	SMH 8556	3.002	SMH 8555	2.4	0.429	0.033	0.0550	
360 minute summer	SMH 8555	1.005	SMH 8457	8.3	0.431	0.030	0.4626	
360 minute summer	SMH11	4.000	SMH10	1.1	0.380	0.051	0.0513	
360 minute summer	SMH10	4.001	SMH 8552	4.1	0.685	0.179	0.0734	
360 minute summer	SMH 8552	4.002	SMH 8553	8.5	0.888	0.193	0.5090	
360 minute summer	GREEN ROOF	GreenRoof	SMH 8552	1.9	0.158	0.078	0.2299	
360 minute summer	SMH 8553	4.003	SMH 8455	9.2	0.900	0.091	0.3090	
360 minute summer	SMH 8455	4.004	SMH 8457	9.3	0.673	0.087	0.3352	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	17.4	0.731	0.063	0.5246	96.6

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Results for 2 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.80%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	176	4.071	0.021	0.8	0.0301	0.0000	OK
360 minute winter	SMH 8655	184	3.985	0.025	0.8	0.0365	0.0000	OK
360 minute winter	SMH 8654	184	3.933	0.023	1.3	0.0329	0.0000	OK
360 minute winter	SMH2	184	5.817	0.017	1.3	0.0249	0.0000	OK
360 minute winter	SMH1	184	4.367	0.027	2.7	0.0381	0.0000	OK
360 minute winter	SMH 8550	184	3.825	0.035	4.0	0.0495	0.0000	OK
360 minute winter	SMH 7552	192	3.563	0.043	4.0	0.0766	0.0000	OK
360 minute winter	SMH7	184	3.841	0.021	0.8	0.0305	0.0000	OK
360 minute winter	SMH8	184	3.753	0.023	1.6	0.0324	0.0000	OK
360 minute winter	SMH 8556	184	3.483	0.023	1.6	0.0331	0.0000	OK
360 minute winter	SMH 8555	192	3.328	0.051	5.6	0.0897	0.0000	OK
360 minute winter	SMH11	176	4.519	0.019	0.7	0.0267	0.0000	OK
360 minute winter	SMH10	184	4.285	0.035	2.7	0.0499	0.0000	OK
360 minute winter	SMH 8552	184	4.105	0.435	5.6	0.6226	0.0000	OK
360 minute winter	GREEN ROOF	184	4.123	0.023	1.2	0.0036	0.0000	OK
360 minute winter	SMH 8553	184	3.721	0.051	6.1	0.0724	0.0000	OK
360 minute winter	SMH 8455	184	3.468	0.048	6.2	0.0694	0.0000	OK
360 minute winter	SMH 8457	184	3.273	0.075	11.7	0.1322	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.195	0.070	11.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	0.8	0.372	0.018	0.0271	
360 minute winter	SMH 8655	1.001	SMH 8654	0.8	0.350	0.026	0.0314	
360 minute winter	SMH 8654	1.002	SMH 8550	1.3	0.387	0.012	0.0433	
360 minute winter	SMH2	2.000	SMH1	1.3	0.814	0.028	0.0353	
360 minute winter	SMH1	2.001	SMH 8550	2.7	1.315	0.064	0.0146	
360 minute winter	SMH 8550	1.003	SMH 7552	4.0	0.749	0.028	0.0899	
360 minute winter	SMH 7552	1.004	SMH 8555	4.0	0.423	0.014	0.6928	
360 minute winter	SMH7	3.000	SMH8	0.8	0.629	0.094	0.0059	
360 minute winter	SMH8	3.001	SMH 8556	1.6	0.945	0.047	0.0127	
360 minute winter	SMH 8556	3.002	SMH 8555	1.6	0.492	0.022	0.0420	
360 minute winter	SMH 8555	1.005	SMH 8457	5.6	0.386	0.020	0.3484	
360 minute winter	SMH11	4.000	SMH10	0.7	0.341	0.033	0.0381	
360 minute winter	SMH10	4.001	SMH 8552	2.7	0.645	0.119	0.0550	
360 minute winter	SMH 8552	4.002	SMH 8553	5.6	0.788	0.127	0.3777	
360 minute winter	GREEN ROOF	GreenRoof	SMH 8552	1.2	0.104	0.049	0.2226	
360 minute winter	SMH 8553	4.003	SMH 8455	6.1	0.799	0.060	0.2301	
360 minute winter	SMH 8455	4.004	SMH 8457	6.1	0.591	0.058	0.2526	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	11.7	0.655	0.042	0.3941	95.7

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Results for 2 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	720	4.065	0.015	0.4	0.0219	0.0000	OK
1440 minute summer	SMH 8655	780	3.978	0.018	0.4	0.0265	0.0000	OK
1440 minute summer	SMH 8654	750	3.927	0.017	0.7	0.0247	0.0000	OK
1440 minute summer	SMH2	750	5.813	0.013	0.7	0.0186	0.0000	OK
1440 minute summer	SMH1	750	4.359	0.019	1.4	0.0274	0.0000	OK
1440 minute summer	SMH 8550	750	3.816	0.026	2.1	0.0365	0.0000	OK
1440 minute summer	SMH 7552	750	3.552	0.032	2.1	0.0570	0.0000	OK
1440 minute summer	SMH7	750	3.835	0.015	0.4	0.0215	0.0000	OK
1440 minute summer	SMH8	750	3.746	0.016	0.8	0.0231	0.0000	OK
1440 minute summer	SMH 8556	750	3.477	0.017	0.8	0.0240	0.0000	OK
1440 minute summer	SMH 8555	750	3.314	0.037	2.9	0.0661	0.0000	OK
1440 minute summer	SMH11	750	4.514	0.014	0.4	0.0205	0.0000	OK
1440 minute summer	SMH10	750	4.275	0.025	1.4	0.0362	0.0000	OK
1440 minute summer	SMH 8552	750	4.089	0.419	2.8	0.5996	0.0000	OK
1440 minute summer	GREEN ROOF	750	4.116	0.016	0.6	0.0026	0.0000	OK
1440 minute summer	SMH 8553	750	3.706	0.036	3.1	0.0521	0.0000	OK
1440 minute summer	SMH 8455	750	3.455	0.035	3.2	0.0507	0.0000	OK
1440 minute summer	SMH 8457	750	3.253	0.055	6.1	0.0964	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.175	0.050	6.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	0.4	0.302	0.009	0.0168	
1440 minute summer	SMH 8655	1.001	SMH 8654	0.4	0.288	0.013	0.0198	
1440 minute summer	SMH 8654	1.002	SMH 8550	0.7	0.318	0.006	0.0278	
1440 minute summer	SMH2	2.000	SMH1	0.7	0.695	0.015	0.0223	
1440 minute summer	SMH1	2.001	SMH 8550	1.4	1.089	0.033	0.0092	
1440 minute summer	SMH 8550	1.003	SMH 7552	2.1	0.612	0.015	0.0577	
1440 minute summer	SMH 7552	1.004	SMH 8555	2.1	0.349	0.008	0.4418	
1440 minute summer	SMH7	3.000	SMH8	0.4	0.517	0.047	0.0036	
1440 minute summer	SMH8	3.001	SMH 8556	0.8	0.769	0.024	0.0078	
1440 minute summer	SMH 8556	3.002	SMH 8555	0.8	0.298	0.011	0.0269	
1440 minute summer	SMH 8555	1.005	SMH 8457	2.9	0.318	0.010	0.2197	
1440 minute summer	SMH11	4.000	SMH10	0.4	0.292	0.019	0.0245	
1440 minute summer	SMH10	4.001	SMH 8552	1.4	0.507	0.062	0.0343	
1440 minute summer	SMH 8552	4.002	SMH 8553	2.8	0.641	0.064	0.2328	
1440 minute summer	GREEN ROOF	GreenRoof	SMH 8552	0.6	0.054	0.025	0.2152	
1440 minute summer	SMH 8553	4.003	SMH 8455	3.1	0.652	0.031	0.1441	
1440 minute summer	SMH 8455	4.004	SMH 8457	3.2	0.485	0.030	0.1606	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	6.1	0.551	0.022	0.2436	129.3

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Results for 2 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	690	4.063	0.013	0.3	0.0191	0.0000	OK
1440 minute winter	SMH 8655	690	3.976	0.016	0.3	0.0230	0.0000	OK
1440 minute winter	SMH 8654	690	3.925	0.015	0.5	0.0211	0.0000	OK
1440 minute winter	SMH2	660	5.810	0.010	0.4	0.0144	0.0000	OK
1440 minute winter	SMH1	720	4.355	0.015	0.9	0.0222	0.0000	OK
1440 minute winter	SMH 8550	720	3.811	0.021	1.4	0.0303	0.0000	OK
1440 minute winter	SMH 7552	720	3.547	0.027	1.4	0.0471	0.0000	OK
1440 minute winter	SMH7	720	3.833	0.013	0.3	0.0186	0.0000	OK
1440 minute winter	SMH8	720	3.744	0.014	0.6	0.0201	0.0000	OK
1440 minute winter	SMH 8556	720	3.475	0.015	0.6	0.0211	0.0000	OK
1440 minute winter	SMH 8555	720	3.308	0.031	2.0	0.0556	0.0000	OK
1440 minute winter	SMH11	600	4.510	0.010	0.2	0.0149	0.0000	OK
1440 minute winter	SMH10	750	4.270	0.020	0.9	0.0292	0.0000	OK
1440 minute winter	SMH 8552	750	4.082	0.412	1.9	0.5899	0.0000	OK
1440 minute winter	GREEN ROOF	690	4.113	0.013	0.4	0.0021	0.0000	OK
1440 minute winter	SMH 8553	750	3.700	0.030	2.1	0.0433	0.0000	OK
1440 minute winter	SMH 8455	750	3.449	0.029	2.1	0.0416	0.0000	OK
1440 minute winter	SMH 8457	750	3.243	0.045	4.1	0.0799	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.165	0.040	4.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.3	0.277	0.007	0.0137	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.3	0.257	0.010	0.0160	
1440 minute winter	SMH 8654	1.002	SMH 8550	0.5	0.302	0.005	0.0214	
1440 minute winter	SMH2	2.000	SMH1	0.4	0.587	0.009	0.0159	
1440 minute winter	SMH1	2.001	SMH 8550	0.9	0.955	0.021	0.0067	
1440 minute winter	SMH 8550	1.003	SMH 7552	1.4	0.538	0.010	0.0436	
1440 minute winter	SMH 7552	1.004	SMH 8555	1.4	0.304	0.005	0.3378	
1440 minute winter	SMH7	3.000	SMH8	0.3	0.476	0.035	0.0029	
1440 minute winter	SMH8	3.001	SMH 8556	0.6	0.702	0.018	0.0064	
1440 minute winter	SMH 8556	3.002	SMH 8555	0.6	0.281	0.008	0.0212	
1440 minute winter	SMH 8555	1.005	SMH 8457	2.0	0.291	0.007	0.1675	
1440 minute winter	SMH11	4.000	SMH10	0.2	0.253	0.009	0.0171	
1440 minute winter	SMH10	4.001	SMH 8552	0.9	0.438	0.040	0.0258	
1440 minute winter	SMH 8552	4.002	SMH 8553	1.9	0.571	0.043	0.1774	
1440 minute winter	GREEN ROOF	GreenRoof	SMH 8552	0.4	0.037	0.016	0.2122	
1440 minute winter	SMH 8553	4.003	SMH 8455	2.1	0.586	0.021	0.1086	
1440 minute winter	SMH 8455	4.004	SMH 8457	2.1	0.421	0.020	0.1214	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	4.1	0.498	0.015	0.1810	128.5

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Results for 30 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 99.72%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.139	0.089	12.9	0.1275	0.0000	OK
15 minute summer	SMH 8655	10	4.064	0.104	12.8	0.1483	0.0000	OK
15 minute summer	SMH 8654	10	4.000	0.090	20.5	0.1292	0.0000	OK
15 minute summer	SMH2	10	5.868	0.068	19.8	0.0980	0.0000	OK
15 minute summer	SMH1	11	4.607	0.267	42.0	0.3825	0.0000	SURCHARGED
15 minute summer	SMH 8550	11	3.940	0.150	60.8	0.2141	0.0000	OK
15 minute summer	SMH 7552	11	3.682	0.162	60.9	0.2855	0.0000	OK
15 minute summer	SMH7	11	4.082	0.262	12.4	0.3744	0.0000	SURCHARGED
15 minute summer	SMH8	11	3.837	0.107	23.6	0.1525	0.0000	OK
15 minute summer	SMH 8556	11	3.548	0.088	23.6	0.1260	0.0000	OK
15 minute summer	SMH 8555	12	3.514	0.237	83.5	0.4181	0.0000	OK
15 minute summer	SMH11	12	5.254	0.754	10.9	1.0783	0.0000	FLOOD RISK
15 minute summer	SMH10	12	5.212	0.962	35.5	1.3770	0.0000	FLOOD RISK
15 minute summer	SMH 8552	12	4.742	1.072	68.6	1.5337	0.0000	SURCHARGED
15 minute summer	GREEN ROOF	12	4.942	0.842	18.4	0.1339	0.0000	FLOOD RISK
15 minute summer	SMH 8553	12	3.871	0.201	72.1	0.2875	0.0000	OK
15 minute summer	SMH 8455	12	3.618	0.198	73.8	0.2837	0.0000	OK
15 minute summer	SMH 8457	12	3.493	0.295	152.1	0.5212	0.0000	OK
15 minute summer	OUTFALL (dummy)	13	3.385	0.260	150.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	12.8	0.788	0.291	0.2033	
15 minute summer	SMH 8655	1.001	SMH 8654	12.6	0.780	0.406	0.2243	
15 minute summer	SMH 8654	1.002	SMH 8550	20.5	0.785	0.188	0.3290	
15 minute summer	SMH2	2.000	SMH1	19.7	1.455	0.426	0.2778	
15 minute summer	SMH1	2.001	SMH 8550	40.3	2.367	0.951	0.1151	
15 minute summer	SMH 8550	1.003	SMH 7552	60.9	1.650	0.430	0.6171	
15 minute summer	SMH 7552	1.004	SMH 8555	59.8	0.859	0.214	5.4715	
15 minute summer	SMH7	3.000	SMH8	11.8	1.506	1.391	0.0361	
15 minute summer	SMH8	3.001	SMH 8556	23.6	1.955	0.698	0.0905	
15 minute summer	SMH 8556	3.002	SMH 8555	23.7	1.113	0.328	0.2577	
15 minute summer	SMH 8555	1.005	SMH 8457	79.3	0.742	0.284	2.5974	
15 minute summer	SMH11	4.000	SMH10	10.8	0.623	0.509	0.3076	
15 minute summer	SMH10	4.001	SMH 8552	30.6	1.741	1.348	0.2160	
15 minute summer	SMH 8552	4.002	SMH 8553	65.9	1.659	1.505	2.0582	
15 minute summer	GREEN ROOF	GreenRoof	SMH 8552	15.2	0.864	0.626	0.4066	
15 minute summer	SMH 8553	4.003	SMH 8455	72.2	1.453	0.716	1.5088	
15 minute summer	SMH 8455	4.004	SMH 8457	72.8	1.178	0.682	1.4346	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	150.7	1.310	0.542	2.5438	74.6

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Results for 30 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 99.72%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.136	0.086	12.1	0.1228	0.0000	OK
15 minute winter	SMH 8655	10	4.059	0.099	12.0	0.1419	0.0000	OK
15 minute winter	SMH 8654	11	3.996	0.086	19.1	0.1232	0.0000	OK
15 minute winter	SMH2	10	5.866	0.066	18.6	0.0945	0.0000	OK
15 minute winter	SMH1	11	4.534	0.194	39.4	0.2775	0.0000	SURCHARGED
15 minute winter	SMH 8550	11	3.933	0.143	56.5	0.2044	0.0000	OK
15 minute winter	SMH 7552	11	3.676	0.156	56.6	0.2751	0.0000	OK
15 minute winter	SMH7	11	4.042	0.222	11.6	0.3175	0.0000	SURCHARGED
15 minute winter	SMH8	10	3.831	0.101	22.2	0.1449	0.0000	OK
15 minute winter	SMH 8556	11	3.545	0.085	22.0	0.1214	0.0000	OK
15 minute winter	SMH 8555	12	3.503	0.226	77.8	0.3986	0.0000	OK
15 minute winter	SMH11	12	5.120	0.620	10.2	0.8865	0.0000	SURCHARGED
15 minute winter	SMH10	12	5.080	0.830	33.6	1.1879	0.0000	SURCHARGED
15 minute winter	SMH 8552	12	4.651	0.981	65.0	1.4036	0.0000	SURCHARGED
15 minute winter	GREEN ROOF	12	4.829	0.729	17.1	0.1160	0.0000	FLOOD RISK
15 minute winter	SMH 8553	12	3.863	0.193	68.4	0.2762	0.0000	OK
15 minute winter	SMH 8455	12	3.608	0.188	69.8	0.2696	0.0000	OK
15 minute winter	SMH 8457	12	3.482	0.284	143.2	0.5025	0.0000	OK
15 minute winter	OUTFALL (dummy)	13	3.377	0.252	142.0	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	12.0	0.779	0.272	0.1925	
15 minute winter	SMH 8655	1.001	SMH 8654	11.8	0.769	0.379	0.2107	
15 minute winter	SMH 8654	1.002	SMH 8550	19.1	0.772	0.175	0.3101	
15 minute winter	SMH2	2.000	SMH1	18.5	1.441	0.400	0.2739	
15 minute winter	SMH1	2.001	SMH 8550	37.4	2.419	0.882	0.1117	
15 minute winter	SMH 8550	1.003	SMH 7552	56.6	1.627	0.400	0.5854	
15 minute winter	SMH 7552	1.004	SMH 8555	55.7	0.843	0.200	5.1600	
15 minute winter	SMH7	3.000	SMH8	11.0	1.411	1.303	0.0361	
15 minute winter	SMH8	3.001	SMH 8556	22.0	1.925	0.650	0.0857	
15 minute winter	SMH 8556	3.002	SMH 8555	22.1	1.110	0.306	0.2526	
15 minute winter	SMH 8555	1.005	SMH 8457	74.2	0.733	0.266	2.4643	
15 minute winter	SMH11	4.000	SMH10	9.8	0.565	0.461	0.3076	
15 minute winter	SMH10	4.001	SMH 8552	29.3	1.663	1.288	0.2160	
15 minute winter	SMH 8552	4.002	SMH 8553	62.6	1.583	1.429	2.0271	
15 minute winter	GREEN ROOF	GreenRoof	SMH 8552	14.4	0.817	0.592	0.4066	
15 minute winter	SMH 8553	4.003	SMH 8455	68.3	1.447	0.678	1.4322	
15 minute winter	SMH 8455	4.004	SMH 8457	69.0	1.164	0.646	1.3876	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	142.0	1.287	0.510	2.4374	74.7

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Results for 30 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.088	0.038	2.7	0.0544	0.0000	OK
360 minute summer	SMH 8655	184	4.006	0.046	2.7	0.0652	0.0000	OK
360 minute summer	SMH 8654	184	3.951	0.041	4.4	0.0581	0.0000	OK
360 minute summer	SMH2	184	5.831	0.031	4.2	0.0437	0.0000	OK
360 minute summer	SMH1	184	4.390	0.050	8.9	0.0714	0.0000	OK
360 minute summer	SMH 8550	184	3.852	0.062	13.2	0.0889	0.0000	OK
360 minute summer	SMH 7552	184	3.596	0.076	13.1	0.1336	0.0000	OK
360 minute summer	SMH7	184	3.861	0.041	2.6	0.0580	0.0000	OK
360 minute summer	SMH8	184	3.772	0.042	5.2	0.0596	0.0000	OK
360 minute summer	SMH 8556	184	3.501	0.041	5.2	0.0581	0.0000	OK
360 minute summer	SMH 8555	184	3.365	0.088	18.1	0.1561	0.0000	OK
360 minute summer	SMH11	184	4.533	0.033	2.3	0.0475	0.0000	OK
360 minute summer	SMH10	184	4.315	0.065	8.7	0.0936	0.0000	OK
360 minute summer	SMH 8552	184	4.153	0.483	18.1	0.6910	0.0000	OK
360 minute summer	GREEN ROOF	184	4.164	0.064	4.1	0.0101	0.0000	OK
360 minute summer	SMH 8553	184	3.762	0.092	19.6	0.1316	0.0000	OK
360 minute summer	SMH 8455	184	3.507	0.087	19.9	0.1238	0.0000	OK
360 minute summer	SMH 8457	184	3.333	0.135	37.6	0.2383	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.251	0.126	37.2	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	2.7	0.530	0.061	0.0636	
360 minute summer	SMH 8655	1.001	SMH 8654	2.7	0.502	0.085	0.0726	
360 minute summer	SMH 8654	1.002	SMH 8550	4.3	0.542	0.040	0.1010	
360 minute summer	SMH2	2.000	SMH1	4.2	1.104	0.091	0.0840	
360 minute summer	SMH1	2.001	SMH 8550	8.9	1.812	0.209	0.0348	
360 minute summer	SMH 8550	1.003	SMH 7552	13.1	1.079	0.093	0.2043	
360 minute summer	SMH 7552	1.004	SMH 8555	12.9	0.604	0.046	1.5638	
360 minute summer	SMH7	3.000	SMH8	2.6	0.855	0.306	0.0140	
360 minute summer	SMH8	3.001	SMH 8556	5.2	1.323	0.153	0.0294	
360 minute summer	SMH 8556	3.002	SMH 8555	5.2	0.551	0.071	0.0919	
360 minute summer	SMH 8555	1.005	SMH 8457	17.8	0.533	0.064	0.8018	
360 minute summer	SMH11	4.000	SMH10	2.3	0.455	0.108	0.0897	
360 minute summer	SMH10	4.001	SMH 8552	8.6	0.850	0.380	0.1242	
360 minute summer	SMH 8552	4.002	SMH 8553	17.9	1.090	0.409	0.8776	
360 minute summer	GREEN ROOF	GreenRoof	SMH 8552	4.0	0.280	0.166	0.2856	
360 minute summer	SMH 8553	4.003	SMH 8455	19.5	1.109	0.193	0.5319	
360 minute summer	SMH 8455	4.004	SMH 8457	19.7	0.837	0.185	0.5701	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	37.2	0.894	0.134	0.9170	209.4

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Results for 30 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.91%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	184	4.081	0.031	1.8	0.0442	0.0000	OK
360 minute winter	SMH 8655	184	3.997	0.037	1.8	0.0536	0.0000	OK
360 minute winter	SMH 8654	184	3.943	0.033	2.9	0.0479	0.0000	OK
360 minute winter	SMH2	184	5.825	0.025	2.7	0.0353	0.0000	OK
360 minute winter	SMH1	184	4.379	0.039	5.7	0.0561	0.0000	OK
360 minute winter	SMH 8550	184	3.840	0.050	8.6	0.0712	0.0000	OK
360 minute winter	SMH 7552	184	3.582	0.062	8.6	0.1096	0.0000	OK
360 minute winter	SMH7	184	3.852	0.032	1.7	0.0456	0.0000	OK
360 minute winter	SMH8	184	3.763	0.033	3.4	0.0476	0.0000	OK
360 minute winter	SMH 8556	184	3.493	0.033	3.4	0.0473	0.0000	OK
360 minute winter	SMH 8555	184	3.350	0.073	11.9	0.1282	0.0000	OK
360 minute winter	SMH11	184	4.527	0.027	1.5	0.0386	0.0000	OK
360 minute winter	SMH10	184	4.301	0.051	5.6	0.0725	0.0000	OK
360 minute winter	SMH 8552	184	4.131	0.461	11.7	0.6596	0.0000	OK
360 minute winter	GREEN ROOF	184	4.136	0.036	2.6	0.0058	0.0000	OK
360 minute winter	SMH 8553	184	3.744	0.074	12.8	0.1054	0.0000	OK
360 minute winter	SMH 8455	184	3.490	0.070	13.1	0.1005	0.0000	OK
360 minute winter	SMH 8457	184	3.307	0.109	24.9	0.1930	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.227	0.102	24.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	1.8	0.474	0.041	0.0476	
360 minute winter	SMH 8655	1.001	SMH 8654	1.8	0.447	0.057	0.0549	
360 minute winter	SMH 8654	1.002	SMH 8550	2.9	0.489	0.026	0.0743	
360 minute winter	SMH2	2.000	SMH1	2.7	0.987	0.058	0.0605	
360 minute winter	SMH1	2.001	SMH 8550	5.7	1.615	0.134	0.0251	
360 minute winter	SMH 8550	1.003	SMH 7552	8.6	0.948	0.061	0.1518	
360 minute winter	SMH 7552	1.004	SMH 8555	8.5	0.532	0.031	1.1736	
360 minute winter	SMH7	3.000	SMH8	1.7	0.768	0.200	0.0102	
360 minute winter	SMH8	3.001	SMH 8556	3.4	1.176	0.100	0.0216	
360 minute winter	SMH 8556	3.002	SMH 8555	3.4	0.478	0.047	0.0698	
360 minute winter	SMH 8555	1.005	SMH 8457	11.9	0.478	0.043	0.5971	
360 minute winter	SMH11	4.000	SMH10	1.5	0.419	0.070	0.0644	
360 minute winter	SMH10	4.001	SMH 8552	5.6	0.753	0.246	0.0915	
360 minute winter	SMH 8552	4.002	SMH 8553	11.7	0.969	0.267	0.6426	
360 minute winter	GREEN ROOF	GreenRoof	SMH 8552	2.6	0.208	0.107	0.2410	
360 minute winter	SMH 8553	4.003	SMH 8455	12.8	0.986	0.127	0.3927	
360 minute winter	SMH 8455	4.004	SMH 8457	13.1	0.739	0.122	0.4282	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	24.9	0.805	0.090	0.6809	209.5

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Results for 30 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	750	4.071	0.021	0.8	0.0301	0.0000	OK
1440 minute summer	SMH 8655	750	3.985	0.025	0.8	0.0365	0.0000	OK
1440 minute summer	SMH 8654	750	3.933	0.023	1.3	0.0329	0.0000	OK
1440 minute summer	SMH2	750	5.817	0.017	1.3	0.0249	0.0000	OK
1440 minute summer	SMH1	750	4.367	0.027	2.7	0.0381	0.0000	OK
1440 minute summer	SMH 8550	750	3.825	0.035	4.0	0.0495	0.0000	OK
1440 minute summer	SMH 7552	750	3.563	0.043	4.0	0.0766	0.0000	OK
1440 minute summer	SMH7	750	3.841	0.021	0.8	0.0305	0.0000	OK
1440 minute summer	SMH8	750	3.753	0.023	1.6	0.0324	0.0000	OK
1440 minute summer	SMH 8556	750	3.483	0.023	1.6	0.0331	0.0000	OK
1440 minute summer	SMH 8555	750	3.328	0.051	5.6	0.0897	0.0000	OK
1440 minute summer	SMH11	750	4.519	0.019	0.7	0.0267	0.0000	OK
1440 minute summer	SMH10	750	4.284	0.034	2.6	0.0490	0.0000	OK
1440 minute summer	SMH 8552	750	4.104	0.434	5.4	0.6213	0.0000	OK
1440 minute summer	GREEN ROOF	750	4.123	0.023	1.2	0.0036	0.0000	OK
1440 minute summer	SMH 8553	750	3.720	0.050	5.9	0.0714	0.0000	OK
1440 minute summer	SMH 8455	750	3.468	0.048	6.0	0.0686	0.0000	OK
1440 minute summer	SMH 8457	750	3.272	0.074	11.6	0.1314	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.195	0.070	11.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	0.8	0.371	0.018	0.0271	
1440 minute summer	SMH 8655	1.001	SMH 8654	0.8	0.350	0.026	0.0314	
1440 minute summer	SMH 8654	1.002	SMH 8550	1.3	0.379	0.012	0.0433	
1440 minute summer	SMH2	2.000	SMH1	1.3	0.814	0.028	0.0353	
1440 minute summer	SMH1	2.001	SMH 8550	2.7	1.315	0.064	0.0146	
1440 minute summer	SMH 8550	1.003	SMH 7552	4.0	0.749	0.028	0.0899	
1440 minute summer	SMH 7552	1.004	SMH 8555	4.0	0.422	0.014	0.6928	
1440 minute summer	SMH7	3.000	SMH8	0.8	0.629	0.094	0.0059	
1440 minute summer	SMH8	3.001	SMH 8556	1.6	0.945	0.047	0.0127	
1440 minute summer	SMH 8556	3.002	SMH 8555	1.6	0.379	0.022	0.0420	
1440 minute summer	SMH 8555	1.005	SMH 8457	5.6	0.387	0.020	0.3466	
1440 minute summer	SMH11	4.000	SMH10	0.7	0.336	0.033	0.0374	
1440 minute summer	SMH10	4.001	SMH 8552	2.6	0.601	0.114	0.0537	
1440 minute summer	SMH 8552	4.002	SMH 8553	5.4	0.780	0.123	0.3694	
1440 minute summer	GREEN ROOF	GreenRoof	SMH 8552	1.2	0.104	0.049	0.2226	
1440 minute summer	SMH 8553	4.003	SMH 8455	5.9	0.792	0.059	0.2258	
1440 minute summer	SMH 8455	4.004	SMH 8457	6.0	0.584	0.056	0.2497	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	11.6	0.652	0.042	0.3910	264.9

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Results for 30 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	750	4.068	0.018	0.6	0.0263	0.0000	OK
1440 minute winter	SMH 8655	750	3.982	0.022	0.6	0.0319	0.0000	OK
1440 minute winter	SMH 8654	750	3.929	0.019	0.9	0.0279	0.0000	OK
1440 minute winter	SMH2	690	5.814	0.014	0.8	0.0198	0.0000	OK
1440 minute winter	SMH1	750	4.362	0.022	1.8	0.0310	0.0000	OK
1440 minute winter	SMH 8550	750	3.819	0.029	2.7	0.0410	0.0000	OK
1440 minute winter	SMH 7552	750	3.556	0.036	2.7	0.0641	0.0000	OK
1440 minute winter	SMH7	690	3.837	0.017	0.5	0.0240	0.0000	OK
1440 minute winter	SMH8	690	3.748	0.018	1.0	0.0257	0.0000	OK
1440 minute winter	SMH 8556	690	3.479	0.019	1.0	0.0266	0.0000	OK
1440 minute winter	SMH 8555	750	3.319	0.042	3.7	0.0739	0.0000	OK
1440 minute winter	SMH11	750	4.516	0.016	0.5	0.0228	0.0000	OK
1440 minute winter	SMH10	750	4.279	0.029	1.8	0.0409	0.0000	OK
1440 minute winter	SMH 8552	750	4.095	0.425	3.7	0.6079	0.0000	OK
1440 minute winter	GREEN ROOF	720	4.119	0.019	0.8	0.0030	0.0000	OK
1440 minute winter	SMH 8553	750	3.711	0.041	4.0	0.0589	0.0000	OK
1440 minute winter	SMH 8455	750	3.460	0.040	4.1	0.0571	0.0000	OK
1440 minute winter	SMH 8457	750	3.259	0.061	7.8	0.1084	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.181	0.056	7.8	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.6	0.340	0.014	0.0222	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.6	0.326	0.019	0.0252	
1440 minute winter	SMH 8654	1.002	SMH 8550	0.9	0.342	0.008	0.0331	
1440 minute winter	SMH2	2.000	SMH1	0.8	0.703	0.017	0.0259	
1440 minute winter	SMH1	2.001	SMH 8550	1.8	1.171	0.042	0.0109	
1440 minute winter	SMH 8550	1.003	SMH 7552	2.7	0.661	0.019	0.0688	
1440 minute winter	SMH 7552	1.004	SMH 8555	2.7	0.375	0.010	0.5237	
1440 minute winter	SMH7	3.000	SMH8	0.5	0.551	0.059	0.0042	
1440 minute winter	SMH8	3.001	SMH 8556	1.0	0.821	0.030	0.0091	
1440 minute winter	SMH 8556	3.002	SMH 8555	1.0	0.325	0.014	0.0315	
1440 minute winter	SMH 8555	1.005	SMH 8457	3.7	0.340	0.013	0.2608	
1440 minute winter	SMH11	4.000	SMH10	0.5	0.308	0.023	0.0291	
1440 minute winter	SMH10	4.001	SMH 8552	1.8	0.540	0.079	0.0414	
1440 minute winter	SMH 8552	4.002	SMH 8553	3.7	0.701	0.084	0.2815	
1440 minute winter	GREEN ROOF	GreenRoof	SMH 8552	0.8	0.071	0.033	0.2178	
1440 minute winter	SMH 8553	4.003	SMH 8455	4.0	0.706	0.040	0.1718	
1440 minute winter	SMH 8455	4.004	SMH 8457	4.1	0.524	0.038	0.1903	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	7.8	0.594	0.028	0.2895	266.1

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Results for 100 year 15 minute summer. 255 minute analysis at 1 minute timestep. Mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SMH 8652	10	4.152	0.102	16.2	0.1463	0.0000	OK
15 minute summer	SMH 8655	10	4.079	0.119	16.0	0.1702	0.0000	OK
15 minute summer	SMH 8654	10	4.014	0.104	25.7	0.1483	0.0000	OK
15 minute summer	SMH2	10	5.878	0.078	24.9	0.1120	0.0000	OK
15 minute summer	SMH1	11	4.886	0.546	52.8	0.7818	0.0000	SURCHARGED
15 minute summer	SMH 8550	11	3.964	0.174	76.0	0.2484	0.0000	OK
15 minute summer	SMH 7552	11	3.701	0.181	76.0	0.3206	0.0000	OK
15 minute summer	SMH7	11	4.235	0.415	15.5	0.5944	0.0000	SURCHARGED
15 minute summer	SMH8	11	3.860	0.130	29.3	0.1866	0.0000	OK
15 minute summer	SMH 8556	12	3.571	0.111	29.4	0.1589	0.0000	OK
15 minute summer	SMH 8555	12	3.554	0.277	103.4	0.4901	0.0000	OK
15 minute summer	SMH11	11	5.520	1.020	13.7	1.4596	0.3955	FLOOD
15 minute summer	SMH10	11	5.470	1.220	44.6	1.7458	1.2143	FLOOD
15 minute summer	SMH 8552	11	5.005	1.335	78.4	1.9099	0.0000	FLOOD RISK
15 minute summer	GREEN ROOF	11	5.100	1.000	24.1	0.1590	1.1333	FLOOD
15 minute summer	SMH 8553	11	3.893	0.223	81.7	0.3186	0.0000	OK
15 minute summer	SMH 8455	12	3.653	0.233	84.1	0.3335	0.0000	OK
15 minute summer	SMH 8457	12	3.528	0.330	182.2	0.5828	0.0000	OK
15 minute summer	OUTFALL (dummy)	12	3.411	0.286	181.5	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SMH 8652	1.000	SMH 8655	16.0	0.827	0.365	0.2431	
15 minute summer	SMH 8655	1.001	SMH 8654	15.8	0.820	0.508	0.2683	
15 minute summer	SMH 8654	1.002	SMH 8550	25.6	0.817	0.235	0.3961	
15 minute summer	SMH2	2.000	SMH1	24.8	1.621	0.536	0.2938	
15 minute summer	SMH1	2.001	SMH 8550	50.3	2.859	1.187	0.1253	
15 minute summer	SMH 8550	1.003	SMH 7552	76.0	1.753	0.538	0.7259	
15 minute summer	SMH 7552	1.004	SMH 8555	74.7	0.883	0.268	6.6028	
15 minute summer	SMH7	3.000	SMH8	14.5	1.853	1.711	0.0361	
15 minute summer	SMH8	3.001	SMH 8556	29.4	2.018	0.868	0.1116	
15 minute summer	SMH 8556	3.002	SMH 8555	28.7	1.199	0.397	0.2821	
15 minute summer	SMH 8555	1.005	SMH 8457	100.3	0.775	0.360	3.0625	
15 minute summer	SMH11	4.000	SMH10	12.0	0.684	0.566	0.3076	
15 minute summer	SMH10	4.001	SMH 8552	33.3	1.893	1.466	0.2160	
15 minute summer	SMH 8552	4.002	SMH 8553	72.2	1.814	1.647	2.1181	
15 minute summer	GREEN ROOF	GreenRoof	SMH 8552	15.3	0.867	0.628	0.4066	
15 minute summer	SMH 8553	4.003	SMH 8455	81.7	1.459	0.810	1.7198	
15 minute summer	SMH 8455	4.004	SMH 8457	81.9	1.201	0.767	1.5498	
15 minute summer	SMH 8457	1.006	OUTFALL (dummy)	181.5	1.380	0.652	2.8939	92.0

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Results for 100 year 15 minute winter. 255 minute analysis at 1 minute timestep. Mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	SMH 8652	10	4.148	0.098	15.2	0.1406	0.0000	OK
15 minute winter	SMH 8655	10	4.074	0.114	15.0	0.1632	0.0000	OK
15 minute winter	SMH 8654	10	4.009	0.099	24.1	0.1421	0.0000	OK
15 minute winter	SMH2	10	5.875	0.075	23.3	0.1076	0.0000	OK
15 minute winter	SMH1	11	4.785	0.445	49.4	0.6373	0.0000	SURCHARGED
15 minute winter	SMH 8550	11	3.956	0.166	71.0	0.2373	0.0000	OK
15 minute winter	SMH 7552	11	3.695	0.175	71.2	0.3096	0.0000	OK
15 minute winter	SMH7	11	4.183	0.363	14.6	0.5200	0.0000	SURCHARGED
15 minute winter	SMH8	11	3.852	0.122	27.5	0.1739	0.0000	OK
15 minute winter	SMH 8556	12	3.556	0.096	27.4	0.1375	0.0000	OK
15 minute winter	SMH 8555	12	3.543	0.266	97.3	0.4699	0.0000	OK
15 minute winter	SMH11	11	5.520	1.020	12.8	1.4596	0.3747	FLOOD
15 minute winter	SMH10	11	5.470	1.220	40.7	1.7458	0.7846	FLOOD
15 minute winter	SMH 8552	11	4.978	1.308	75.7	1.8724	0.0000	FLOOD RISK
15 minute winter	GREEN ROOF	11	5.100	1.000	22.7	0.1590	0.8075	FLOOD
15 minute winter	SMH 8553	11	3.888	0.218	80.3	0.3121	0.0000	OK
15 minute winter	SMH 8455	12	3.645	0.225	81.6	0.3217	0.0000	OK
15 minute winter	SMH 8457	12	3.519	0.321	174.1	0.5669	0.0000	OK
15 minute winter	OUTFALL (dummy)	12	3.405	0.280	173.6	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	SMH 8652	1.000	SMH 8655	15.0	0.816	0.342	0.2308	
15 minute winter	SMH 8655	1.001	SMH 8654	14.8	0.809	0.475	0.2542	
15 minute winter	SMH 8654	1.002	SMH 8550	23.9	0.807	0.220	0.3742	
15 minute winter	SMH2	2.000	SMH1	23.2	1.534	0.501	0.2888	
15 minute winter	SMH1	2.001	SMH 8550	47.1	2.674	1.110	0.1251	
15 minute winter	SMH 8550	1.003	SMH 7552	71.2	1.722	0.503	0.6916	
15 minute winter	SMH 7552	1.004	SMH 8555	69.9	0.864	0.251	6.2679	
15 minute winter	SMH7	3.000	SMH8	13.6	1.744	1.610	0.0361	
15 minute winter	SMH8	3.001	SMH 8556	27.4	2.009	0.810	0.1018	
15 minute winter	SMH 8556	3.002	SMH 8555	27.4	1.195	0.379	0.2662	
15 minute winter	SMH 8555	1.005	SMH 8457	93.2	0.751	0.334	2.9377	
15 minute winter	SMH11	4.000	SMH10	11.5	0.654	0.541	0.3076	
15 minute winter	SMH10	4.001	SMH 8552	33.4	1.897	1.469	0.2160	
15 minute winter	SMH 8552	4.002	SMH 8553	71.5	1.798	1.632	2.1105	
15 minute winter	GREEN ROOF	GreenRoof	SMH 8552	15.3	0.868	0.628	0.4066	
15 minute winter	SMH 8553	4.003	SMH 8455	79.4	1.455	0.787	1.6779	
15 minute winter	SMH 8455	4.004	SMH 8457	80.9	1.202	0.757	1.5246	
15 minute winter	SMH 8457	1.006	OUTFALL (dummy)	173.6	1.361	0.624	2.8064	93.3

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Results for 100 year 360 minute summer. 600 minute analysis at 8 minute timestep. Mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	SMH 8652	184	4.093	0.043	3.4	0.0613	0.0000	OK
360 minute summer	SMH 8655	184	4.011	0.051	3.4	0.0732	0.0000	OK
360 minute summer	SMH 8654	184	3.955	0.045	5.5	0.0647	0.0000	OK
360 minute summer	SMH2	184	5.834	0.034	5.2	0.0486	0.0000	OK
360 minute summer	SMH1	184	4.396	0.056	11.0	0.0805	0.0000	OK
360 minute summer	SMH 8550	184	3.860	0.070	16.4	0.0998	0.0000	OK
360 minute summer	SMH 7552	184	3.604	0.084	16.3	0.1485	0.0000	OK
360 minute summer	SMH7	184	3.866	0.046	3.2	0.0656	0.0000	OK
360 minute summer	SMH8	184	3.777	0.047	6.4	0.0668	0.0000	OK
360 minute summer	SMH 8556	184	3.505	0.045	6.4	0.0643	0.0000	OK
360 minute summer	SMH 8555	184	3.376	0.099	22.5	0.1744	0.0000	OK
360 minute summer	SMH11	184	4.537	0.037	2.9	0.0534	0.0000	OK
360 minute summer	SMH10	184	4.325	0.075	10.8	0.1079	0.0000	OK
360 minute summer	SMH 8552	184	4.167	0.497	22.6	0.7116	0.0000	OK
360 minute summer	GREEN ROOF	184	4.183	0.083	5.1	0.0133	0.0000	OK
360 minute summer	SMH 8553	184	3.774	0.104	24.5	0.1482	0.0000	OK
360 minute summer	SMH 8455	184	3.517	0.097	24.8	0.1389	0.0000	OK
360 minute summer	SMH 8457	184	3.349	0.151	46.7	0.2677	0.0000	OK
360 minute summer	OUTFALL (dummy)	184	3.266	0.141	46.3	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute summer	SMH 8652	1.000	SMH 8655	3.4	0.564	0.077	0.0753	
360 minute summer	SMH 8655	1.001	SMH 8654	3.4	0.540	0.107	0.0852	
360 minute summer	SMH 8654	1.002	SMH 8550	5.4	0.577	0.050	0.1187	
360 minute summer	SMH2	2.000	SMH1	5.2	1.165	0.112	0.0985	
360 minute summer	SMH1	2.001	SMH 8550	11.0	1.912	0.258	0.0408	
360 minute summer	SMH 8550	1.003	SMH 7552	16.3	1.146	0.115	0.2387	
360 minute summer	SMH 7552	1.004	SMH 8555	16.1	0.643	0.058	1.8299	
360 minute summer	SMH7	3.000	SMH8	3.2	0.900	0.376	0.0163	
360 minute summer	SMH8	3.001	SMH 8556	6.4	1.401	0.188	0.0341	
360 minute summer	SMH 8556	3.002	SMH 8555	6.4	0.584	0.088	0.1064	
360 minute summer	SMH 8555	1.005	SMH 8457	22.1	0.561	0.079	0.9426	
360 minute summer	SMH11	4.000	SMH10	2.9	0.478	0.136	0.1072	
360 minute summer	SMH10	4.001	SMH 8552	10.7	0.899	0.472	0.1450	
360 minute summer	SMH 8552	4.002	SMH 8553	22.4	1.155	0.511	1.0330	
360 minute summer	GREEN ROOF	GreenRoof	SMH 8552	5.0	0.322	0.207	0.3196	
360 minute summer	SMH 8553	4.003	SMH 8455	24.3	1.177	0.241	0.6255	
360 minute summer	SMH 8455	4.004	SMH 8457	24.6	0.894	0.231	0.6644	
360 minute summer	SMH 8457	1.006	OUTFALL (dummy)	46.3	0.944	0.166	1.0786	262.8

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Results for 100 year 360 minute winter. 600 minute analysis at 8 minute timestep. Mass balance: 99.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	SMH 8652	184	4.084	0.034	2.2	0.0490	0.0000	OK
360 minute winter	SMH 8655	184	4.001	0.041	2.2	0.0592	0.0000	OK
360 minute winter	SMH 8654	184	3.947	0.037	3.6	0.0530	0.0000	OK
360 minute winter	SMH2	184	5.828	0.028	3.4	0.0395	0.0000	OK
360 minute winter	SMH1	184	4.384	0.044	7.2	0.0636	0.0000	OK
360 minute winter	SMH 8550	184	3.846	0.056	10.8	0.0800	0.0000	OK
360 minute winter	SMH 7552	184	3.589	0.069	10.8	0.1221	0.0000	OK
360 minute winter	SMH7	184	3.856	0.036	2.1	0.0513	0.0000	OK
360 minute winter	SMH8	184	3.767	0.037	4.2	0.0533	0.0000	OK
360 minute winter	SMH 8556	184	3.497	0.037	4.2	0.0525	0.0000	OK
360 minute winter	SMH 8555	184	3.358	0.081	14.9	0.1429	0.0000	OK
360 minute winter	SMH11	184	4.530	0.030	1.9	0.0433	0.0000	OK
360 minute winter	SMH10	184	4.307	0.057	7.0	0.0818	0.0000	OK
360 minute winter	SMH 8552	184	4.142	0.472	14.7	0.6749	0.0000	OK
360 minute winter	GREEN ROOF	184	4.149	0.049	3.3	0.0078	0.0000	OK
360 minute winter	SMH 8553	184	3.753	0.083	16.1	0.1186	0.0000	OK
360 minute winter	SMH 8455	184	3.498	0.078	16.3	0.1123	0.0000	OK
360 minute winter	SMH 8457	184	3.321	0.123	31.2	0.2168	0.0000	OK
360 minute winter	OUTFALL (dummy)	184	3.240	0.115	31.1	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	SMH 8652	1.000	SMH 8655	2.2	0.501	0.050	0.0551	
360 minute winter	SMH 8655	1.001	SMH 8654	2.2	0.474	0.070	0.0634	
360 minute winter	SMH 8654	1.002	SMH 8550	3.6	0.518	0.033	0.0873	
360 minute winter	SMH2	2.000	SMH1	3.4	1.047	0.073	0.0719	
360 minute winter	SMH1	2.001	SMH 8550	7.2	1.719	0.170	0.0298	
360 minute winter	SMH 8550	1.003	SMH 7552	10.8	1.015	0.076	0.1780	
360 minute winter	SMH 7552	1.004	SMH 8555	10.7	0.569	0.038	1.3721	
360 minute winter	SMH7	3.000	SMH8	2.1	0.811	0.248	0.0119	
360 minute winter	SMH8	3.001	SMH 8556	4.2	1.248	0.124	0.0253	
360 minute winter	SMH 8556	3.002	SMH 8555	4.2	0.516	0.058	0.0810	
360 minute winter	SMH 8555	1.005	SMH 8457	14.9	0.507	0.053	0.7022	
360 minute winter	SMH11	4.000	SMH10	1.9	0.445	0.089	0.0759	
360 minute winter	SMH10	4.001	SMH 8552	7.0	0.802	0.307	0.1069	
360 minute winter	SMH 8552	4.002	SMH 8553	14.7	1.031	0.335	0.7579	
360 minute winter	GREEN ROOF	GreenRoof	SMH 8552	3.3	0.245	0.135	0.2613	
360 minute winter	SMH 8553	4.003	SMH 8455	16.0	1.052	0.159	0.4619	
360 minute winter	SMH 8455	4.004	SMH 8457	16.3	0.787	0.153	0.5009	
360 minute winter	SMH 8457	1.006	OUTFALL (dummy)	31.1	0.850	0.112	0.8047	262.1

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Results for 100 year 1440 minute summer. 1680 minute analysis at 30 minute timestep. Mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	SMH 8652	750	4.073	0.023	1.0	0.0335	0.0000	OK
1440 minute summer	SMH 8655	750	3.988	0.028	1.0	0.0405	0.0000	OK
1440 minute summer	SMH 8654	750	3.935	0.025	1.6	0.0363	0.0000	OK
1440 minute summer	SMH2	750	5.819	0.019	1.6	0.0274	0.0000	OK
1440 minute summer	SMH1	750	4.370	0.030	3.4	0.0428	0.0000	OK
1440 minute summer	SMH 8550	750	3.828	0.038	5.0	0.0549	0.0000	OK
1440 minute summer	SMH 7552	750	3.568	0.048	5.0	0.0851	0.0000	OK
1440 minute summer	SMH7	750	3.844	0.024	1.0	0.0343	0.0000	OK
1440 minute summer	SMH8	750	3.755	0.025	2.0	0.0363	0.0000	OK
1440 minute summer	SMH 8556	750	3.486	0.026	2.0	0.0368	0.0000	OK
1440 minute summer	SMH 8555	750	3.334	0.057	7.0	0.0999	0.0000	OK
1440 minute summer	SMH11	750	4.521	0.021	0.9	0.0301	0.0000	OK
1440 minute summer	SMH10	750	4.289	0.039	3.3	0.0553	0.0000	OK
1440 minute summer	SMH 8552	750	4.111	0.441	6.9	0.6316	0.0000	OK
1440 minute summer	GREEN ROOF	750	4.125	0.025	1.5	0.0040	0.0000	OK
1440 minute summer	SMH 8553	750	3.726	0.056	7.5	0.0804	0.0000	OK
1440 minute summer	SMH 8455	750	3.474	0.054	7.7	0.0774	0.0000	OK
1440 minute summer	SMH 8457	750	3.282	0.084	14.7	0.1478	0.0000	OK
1440 minute summer	OUTFALL (dummy)	750	3.203	0.078	14.7	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute summer	SMH 8652	1.000	SMH 8655	1.0	0.397	0.023	0.0316	
1440 minute summer	SMH 8655	1.001	SMH 8654	1.0	0.376	0.032	0.0365	
1440 minute summer	SMH 8654	1.002	SMH 8550	1.6	0.402	0.015	0.0503	
1440 minute summer	SMH2	2.000	SMH1	1.6	0.854	0.035	0.0415	
1440 minute summer	SMH1	2.001	SMH 8550	3.4	1.403	0.080	0.0172	
1440 minute summer	SMH 8550	1.003	SMH 7552	5.0	0.802	0.035	0.1047	
1440 minute summer	SMH 7552	1.004	SMH 8555	5.0	0.450	0.018	0.8090	
1440 minute summer	SMH7	3.000	SMH8	1.0	0.668	0.118	0.0069	
1440 minute summer	SMH8	3.001	SMH 8556	2.0	1.008	0.059	0.0149	
1440 minute summer	SMH 8556	3.002	SMH 8555	2.0	0.406	0.028	0.0490	
1440 minute summer	SMH 8555	1.005	SMH 8457	7.0	0.411	0.025	0.4086	
1440 minute summer	SMH11	4.000	SMH10	0.9	0.363	0.042	0.0444	
1440 minute summer	SMH10	4.001	SMH 8552	3.3	0.643	0.145	0.0635	
1440 minute summer	SMH 8552	4.002	SMH 8553	6.9	0.838	0.158	0.4393	
1440 minute summer	GREEN ROOF	GreenRoof	SMH 8552	1.5	0.127	0.062	0.2259	
1440 minute summer	SMH 8553	4.003	SMH 8455	7.5	0.847	0.074	0.2686	
1440 minute summer	SMH 8455	4.004	SMH 8457	7.7	0.632	0.072	0.2957	
1440 minute summer	SMH 8457	1.006	OUTFALL (dummy)	14.7	0.701	0.053	0.4619	335.0

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Results for 100 year 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	SMH 8652	720	4.070	0.020	0.7	0.0283	0.0000	OK
1440 minute winter	SMH 8655	720	3.984	0.024	0.7	0.0343	0.0000	OK
1440 minute winter	SMH 8654	720	3.931	0.021	1.1	0.0305	0.0000	OK
1440 minute winter	SMH2	750	5.816	0.016	1.1	0.0230	0.0000	OK
1440 minute winter	SMH1	750	4.365	0.025	2.3	0.0351	0.0000	OK
1440 minute winter	SMH 8550	750	3.822	0.032	3.4	0.0458	0.0000	OK
1440 minute winter	SMH 7552	750	3.560	0.040	3.4	0.0711	0.0000	OK
1440 minute winter	SMH7	750	3.840	0.020	0.7	0.0285	0.0000	OK
1440 minute winter	SMH8	750	3.751	0.021	1.4	0.0303	0.0000	OK
1440 minute winter	SMH 8556	750	3.482	0.022	1.4	0.0311	0.0000	OK
1440 minute winter	SMH 8555	750	3.324	0.047	4.8	0.0835	0.0000	OK
1440 minute winter	SMH11	720	4.517	0.017	0.6	0.0249	0.0000	OK
1440 minute winter	SMH10	720	4.282	0.032	2.2	0.0451	0.0000	OK
1440 minute winter	SMH 8552	750	4.100	0.430	4.6	0.6152	0.0000	OK
1440 minute winter	GREEN ROOF	720	4.121	0.021	1.0	0.0033	0.0000	OK
1440 minute winter	SMH 8553	750	3.716	0.046	5.0	0.0658	0.0000	OK
1440 minute winter	SMH 8455	750	3.464	0.044	5.1	0.0634	0.0000	OK
1440 minute winter	SMH 8457	750	3.267	0.069	9.9	0.1216	0.0000	OK
1440 minute winter	OUTFALL (dummy)	750	3.189	0.064	9.9	0.0000	0.0000	OK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	SMH 8652	1.000	SMH 8655	0.7	0.356	0.016	0.0247	
1440 minute winter	SMH 8655	1.001	SMH 8654	0.7	0.338	0.022	0.0284	
1440 minute winter	SMH 8654	1.002	SMH 8550	1.1	0.370	0.010	0.0386	
1440 minute winter	SMH2	2.000	SMH1	1.1	0.775	0.024	0.0314	
1440 minute winter	SMH1	2.001	SMH 8550	2.3	1.256	0.054	0.0130	
1440 minute winter	SMH 8550	1.003	SMH 7552	3.4	0.710	0.024	0.0803	
1440 minute winter	SMH 7552	1.004	SMH 8555	3.4	0.400	0.012	0.6207	
1440 minute winter	SMH7	3.000	SMH8	0.7	0.606	0.083	0.0053	
1440 minute winter	SMH8	3.001	SMH 8556	1.4	0.908	0.041	0.0116	
1440 minute winter	SMH 8556	3.002	SMH 8555	1.4	0.365	0.019	0.0380	
1440 minute winter	SMH 8555	1.005	SMH 8457	4.8	0.372	0.017	0.3096	
1440 minute winter	SMH11	4.000	SMH10	0.6	0.322	0.028	0.0333	
1440 minute winter	SMH10	4.001	SMH 8552	2.2	0.575	0.097	0.0479	
1440 minute winter	SMH 8552	4.002	SMH 8553	4.6	0.746	0.105	0.3290	
1440 minute winter	GREEN ROOF	GreenRoof	SMH 8552	1.0	0.087	0.041	0.2203	
1440 minute winter	SMH 8553	4.003	SMH 8455	5.0	0.755	0.050	0.2008	
1440 minute winter	SMH 8455	4.004	SMH 8457	5.1	0.559	0.048	0.2234	
1440 minute winter	SMH 8457	1.006	OUTFALL (dummy)	9.9	0.629	0.036	0.3459	331.1

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DRAFT

Drainage Maintenance Plan

Montague Quarter, Worthing

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A Site Drainage Plans

Issue	Issue date	Compiled	Checked
First Draft Issue	22.01.2024	PH	MR
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1 Introduction

1.1 This report has been prepared by GTA Civils & Transport Ltd for Trinity Homes in relation to the development at Montague Quarter, Worthing. No responsibility is accepted to any third party for all or part of this study in connection with this or any other development.

1.2 This Draft Drainage Maintenance Plan (DMP) has been prepared for inclusion as an Appendix to the Drainage Statement (DS) report required by Worthing Borough Council (WBC) as part of the application to discharge planning conditions.

1.3 The Draft DMP sets out the framework for the management of the proposed drainage systems at the development. The document will be updated with further information through the next stage of detailed design and coordination. At this stage, what is set out herein is intended to be sufficient to demonstrate the viability of the proposed drainage maintenance regime for planning purposes.

2 Summary Description of Drainage Systems

2.1 Existing: the pre-development Site comprises an existing building complex with commercial uses including a parking/yard deck at Level 01.

2.2 The proposals comprise construction of 42 residential units on the upper floors, Levels 01 to 04.

2.3 Drainage design: the drainage layout drawings are included in Appendix A (for the Draft DMP – see DS Appendix B).

2.4 The surface water drainage design is based on discharging surface water runoff from impermeable surfaces to the existing site outfalls: Southern Water's existing surface water sewer network which surrounds the site.

2.5 Off-site discharges are limited to existing rates. This is achieved by avoiding any increase in impermeable area and by the addition of a green roof area and other planting zones at upper levels.

2.6 The site drainage features include: green roof; gullies, channel drains and manholes/access chambers. These features are included in this draft DMP; however, this document will be updated at detailed design stage. Proprietary components such as green roof system drainage outlets should also be maintained in line with the manufacturer's guidelines.

2.7 Foul drainage will connect to Southern Water's existing foul sewers adjacent to the site.

3 Ownership & Maintenance Responsibilities

3.1 Responsibility for the maintenance of the drainage system will be apportioned generally as follows:

- The developer will remain responsible for each drainage component until such time as it is handed over to the adopting authority, agent or end user.
- Individual property drainage will be cared for by the property owner.
- Drainage features in adopted highway areas will be the responsibility of West Sussex County Council as the Highway Authority.
- Adopted sewers remain the responsibility of Southern Water.
- The communal drainage features in private ownership will be cared for by the Building Management Company.

3.2 The drainage layout plans in Appendix A are colour-coded to illustrate the various ownerships across the development [...TO BE COMPLETED AT THE NEXT STAGE...].

3.3 The following sections set out schedules detailing the maintenance requirements for each of the main drainage items used within the scheme. The Building Management Company will undertake the inspections and maintenance activities in accordance with these schedules. Public bodies will maintain adopted features in line with their established procedures.

3.4 Additional reference should be made to currently established best practice and guidance documents such as The SuDS Manual (CIRIA C753, 2015) and other resources available at the susdrain website (www.susdrain.org).

3.5 This DMP should be considered a live document. The frequency of maintenance intervals may need to be increased or decreased based on the observed performance of the drainage systems over time. Changes should be agreed with the drainage authority and recorded and dated in the DMP.

3.6 Important safety information is set out in the next section.

4 Health and Safety

4.1 All those responsible for and involved in the maintenance of the site drainage systems should be safety-conscious and comply with the relevant health and safety legislation. This includes:

- The Health and Safety at Work etc Act 1974
- The Management of Health and Safety at Work Regulations 1999
- The Workplace (Health, Safety and Welfare) Regulations 1992

4.2 The Building Management Company is responsible for suitable risk assessment and management to ensure safe working conditions and practices. Measures to protect potential visitors also need to be considered.

4.3 Specialist contractors used should work to industry guidelines and be able to demonstrate safe working practices.

4.4 Employers have a duty to employees to inform them about the risks of their work environment and to decrease the risk as far as reasonably practicable. Appropriate personal protective equipment (PPE) should be provided and policies implemented based on risk assessment.

4.5 Operatives should be trained for working near water. Risks of contaminated water should be considered. Checking for open cuts and using nitrile gloves, waterproof plasters etc is advised.

4.6 Entry of pipes, chambers, tanks and culverts should be avoided. Work should be carried out from the surface using appropriate equipment. In the event that entry cannot be avoided to perform a critical task, the required safety training, protection measures and precautions must be implemented prior to entry. Lone working should never be attempted.

4.7 Access to green roof areas requires specialist training and equipment and should be undertaken by competent contractors. Fall protection and working at height safety measures will be mandatory.

4.8 For further information refer to Section 36 of The SuDS Manual (CIRIA C753).

5 Schedule A – Sewers, Manholes, Gullies, Channel Drains

5.1 Regular inspection and maintenance is required to ensure the effective long-term operation of private drains, manholes, gullies & channel drains.

5.2 Prior to construction: a CCTV survey to be carried out on all receiving existing public sewer systems prior to connection with adopted sewers.

5.3 Post Completion: a CCTV survey to be carried out on all new and retained existing drainage systems and any downstream receiving systems, prior to connection with adopted sewers.

5.4 The report will be used to prove the integrity of the as-built drainage system prior to issue of practical completion certificate and will be handed over to the Client & Management Company for future reference.

5.5 Ongoing maintenance responsibility for all adopted sewers is by the sewerage authority and for adoptable highway drainage is by West Sussex County Council. All other private gullies and drainage marked black on the layouts to be maintained by the Management Company in shared areas and the homeowner within any conveyed land. Operation and maintenance requirements for all sewers, manholes, gullies and channel drains are described in the following table:

Schedule	Action	Frequency
Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action. Common yard & car park & other hard standing areas to be swept clear of debris, to prevent possibility of blockages to the receiving drainage systems. Debris removal from gullies & channel drains (where may cause risks to performance). Lift and inspect receiving manholes to check for any blockages.	6 Monthly intervals. Monthly. 6 Monthly intervals, after autumn leaf fall, or as required based on specific observations. Monthly.
Remedial Actions	Repair any damaged gully or channel drain gratings. Replace / fix any loose channel drain covers.	As required. As required.
Monitoring	Carry out full CCTV survey to confirm ongoing integrity of all drains. Inspect all gullies and silt pits & drainage channels during the survey.	10-yearly intervals.

5.6 Where appropriate refer also to specialist drainage manufacturer's information and maintenance requirements.

5.7 In all instances, inspection and cleaning should be carried out only by a specialist contractor and in accordance with the guidelines given in `Safe Working in Sewers and

at Sewage Works' published by National Joint Health and Safety Committee for the Water Services.

5.8 Further information on safety is set out in Section 4.

6 Schedule B – Green Roof

6.1 This schedule is based on an extensive green roof system. Further requirements may need to be added if an intensive green roof system is added to the scheme.

6.2 All maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height. Training and guidance information on operating and maintaining the roof should be provided to all property owners and tenants. Safety fastenings will be required for personnel working on the roof.

6.3 Access routes to the roof should be designed and maintained to be safe and efficient, and walkways should always be kept clear of obstructions. Secure points for harness attachments should be provided when access near to the roof edges is required.

6.4 The supplier/installer will remain responsible for maintenance of the green roof until the establishment stage is complete, typically 12 to 15 months following installation. Ongoing maintenance responsibility will then reside with the Building Management Company; however, green roof maintenance should only be carried out by a specialist contractor.

6.5 Post-establishment stage: the extensive green roof should normally only require biannual or annual visits to remove litter, check fire breaks and drains and, in some cases, remove unwanted invasive plants. These operation and maintenance requirements are scheduled in the following table:

Schedule	Action	Frequency
Regular inspections	Inspect all components including soil substrate, vegetation, drains, irrigation systems (if applicable), membranes and roof structure for proper operation, integrity of waterproofing and structural stability	Annually and after severe storms
	Inspect soil substrate for evidence of erosion channels and identify any sediment sources	Annually and after severe storms
	Inspect drain inlets to ensure unrestricted runoff from the drainage layer to the conveyance or roof drain system	Annually and after severe storms
	Inspect underside of roof for evidence of leakage	Annually and after severe storms
Regular maintenance	Remove debris and litter to prevent clogging of inlet drains and interference with plant growth	Six monthly and annually or as required
	During establishment (ie year one), replace dead plants as required	Monthly (but usually responsibility of manufacturer)
	Post establishment, replace dead plants as required (where > 5% of coverage)	Annually (in autumn)
	Remove nuisance and invasive vegetation – clippings should be removed and not allowed to accumulate	Six monthly

Remedial actions	If erosion channels are evident, these should be stabilised with extra soil substrate similar to the original material, and sources of erosion damage should be identified and controlled If drain inlet has settled, cracked or moved, investigate and repair as appropriate	As required As required

6.6 Where appropriate refer also to specialist manufacturer's information and maintenance requirements.

6.7 Further information on safety is set out in Section 4.

7 Contamination or Dilution of Spillage

7.1 In the event of a spillage it is the responsibility of the landowner to clear up any spillage before it enters the drainage system. The primary method of dealing with any spillage of hydrocarbons should be using sand to soak up the leak and prevent any hydrocarbons entering the drainage system. Once sand has been contaminated it should not be washed into the drainage system but disposed of by a Licensed Contractor.

7.2 Environment Agency – Emergency Contact Number

In the event of a spillage the Environment Agency should be contacted to notify the event and seek advice. The Environment Agency Incident Hotline is **0800 80 70 60** (Freephone 24hrs).

- End of Report -

Appendix A

Site Drainage Layouts

[Refer to Drainage Statement Appendix B]