Results for 100 year +30% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	1	30	218.710	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	2	690	218.522	0.022	0.9	0.0232	0.0000	OK
1440 minute winter	3	780	218.271	0.128	1.8	0.1713	0.0000	OK
1440 minute winter	4	810	218.131	0.582	4.2	3.7251	0.0000	SURCHARGED
1440 minute winter	5	840	218.129	0.740	4.6	3.8190	0.0000	SURCHARGED
1440 minute winter	6	960	217.960	0.742	6.0	31.2449	0.0000	FLOOD RISK
1440 minute winter	7	960	217.958	0.868	6.1	3.9225	0.0000	SURCHARGED
1440 minute winter	13	900	218.962	0.298	0.9	0.2014	0.0000	SURCHARGED
1440 minute winter	14	900	218.962	0.449	1.3	1.1982	0.0000	SURCHARGED
1440 minute winter	20	900	218.961	0.486	0.1	0.1454	0.0000	SURCHARGED
1440 minute winter	21	900	218.961	0.570	0.3	1.0223	0.0000	SURCHARGED
1440 minute winter	15	900	218.961	0.659	1.5	3.4572	0.0000	SURCHARGED
1440 minute winter	16	900	218.960	0.924	1.7	4.4524	0.0000	SURCHARGED
1440 minute winter	17	900	218.957	1.137	2.1	5.7101	0.0000	SURCHARGED
1440 minute winter	18	930	217.959	0.470	3.6	2.5879	0.0000	SURCHARGED
1440 minute winter	19	960	217.958	0.653	4.1	2.5193	0.0000	SURCHARGED
1440 minute winter	8	960	217.957	1.110	10.3	22.0257	0.0000	FLOOD RISK
1440 minute winter	9	930	217.497	0.742	8.6	1.6056	0.0000	SURCHARGED
1440 minute winter	22	30	218.616	0.000	0.0	0.0000	0.0000	OK
1440 minute winter	23	780	218.083	0.115	0.8	0.1260	0.0000	OK
1440 minute winter	24	960	217.577	0.263	1.9	0.4285	0.0000	SURCHARGED
1440 minute winter	25	960	217.574	1.328	3.4	10.9682	0.0000	FLOOD RISK
1440 minute winter	28	990	215.639	0.038	2.0	0.0425	0.0000	OK
1440 minute winter	26	990	217.550	1.472	3.4	21.1341	0.0000	FLOOD RISK
1440 minute winter	27	990	217.550	1.056	0.8	6.9096	0.0000	FLOOD RISK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
1440 minute winter	1	1.000	2	0.0	0.000	0.000	0.0252	
1440 minute winter	2	1.001	3	0.9	0.152	0.047	0.2654	
1440 minute winter	3	Orifice	4	1.8				
1440 minute winter	4	1.003	5	3.9	0.238	0.113	1.4353	
1440 minute winter	5	Orifice	6	4.5				
1440 minute winter	6	1.005	7	5.2	0.564	0.151	1.1469	
1440 minute winter	7	1.006	8	5.9	0.203	0.116	1.0030	
1440 minute winter	13	2.000	14	0.9	0.395	0.062	0.3981	
1440 minute winter	14	2.001	15	1.1	0.395	0.076	0.5573	
1440 minute winter	20	3.000	21	0.1	0.150	0.007	0.2211	
1440 minute winter	21	3.001	15	0.3	0.141	0.020	0.2363	
1440 minute winter	15	2.002	16	1.2	0.367	0.086	0.7028	
1440 minute winter	16	2.003	17	1.6	0.121	0.109	0.5717	
1440 minute winter	17	Orifice	18	2.0				
1440 minute winter	18	2.005	19	3.5	0.591	0.083	1.0970	
1440 minute winter	19	2.006	8	4.1	0.144	0.078	1.8341	
1440 minute winter	8	Orifice	9	8.2				
1440 minute winter	9	1.008	10	8.5	0.389	0.200	0.5293	
1440 minute winter	22	4.000	23	0.0	0.000	0.000	0.2314	
1440 minute winter	23	Orifice	24	0.8				
1440 minute winter	24	4.002	25	1.9	0.672	0.074	0.8546	
1440 minute winter	25	Orifice	26	2.7				
1440 minute winter	28	4.005	OUTFALL2	2.0	0.477	0.056	0.0267	143.4
1440 minute winter	26	Hydro-Brake®	28	2.0				
1440 minute winter	27	5.001	26	-0.7	-0.041	-0.053	1.0194	

Results for 100 year +30% CC 1440 minute winter. 1680 minute analysis at 30 minute timestep. Mass balance: 99.76%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	10	930	217.493	0.827	8.7	3.9546	0.0000	FLOOD RISK
1440 minute winter	11	660	216.702	0.091	8.5	0.0257	0.0000	OK
1440 minute winter	OUTFALL1	660	216.662	0.082	8.5	0.0000	0.0000	OK
1440 minute winter	12	990	217.550	0.987	0.1	0.2793	0.0000	FLOOD RISK
1440 minute winter	OUTFALL2	990	215.607	0.035	2.0	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)
1440 minute winter	10	Hydro-Brake®	11	8.5				
1440 minute winter	11	1.010	OUTFALL1	8.5	0.809	0.581	0.0479	487.9
1440 minute winter	12	5.000	27	-0.1	0.013	-0.010	0.2066	

Results for 100 year +30% CC 2160 minute summer. 2400 minute analysis at 60 minute timestep. Mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute summer	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
2160 minute summer	2	1140	218.523	0.023	1.0	0.0246	0.0000	OK
2160 minute summer	3	1140	218.295	0.152	2.0	0.2207	0.0000	SURCHARGED
2160 minute summer	4	1200	218.094	0.545	4.4	3.2585	0.0000	SURCHARGED
2160 minute summer	5	1200	218.092	0.703	4.6	3.5845	0.0000	SURCHARGED
2160 minute summer	6	1320	217.933	0.715	5.9	19.0433	0.0000	FLOOD RISK
2160 minute summer	7	1320	217.931	0.841	5.8	3.7803	0.0000	SURCHARGED
2160 minute summer	13	1260	218.843	0.179	0.9	0.1205	0.0000	SURCHARGED
2160 minute summer	14	1260	218.842	0.329	1.3	0.7854	0.0000	SURCHARGED
2160 minute summer	20	1260	218.842	0.367	0.1	0.1097	0.0000	SURCHARGED
2160 minute summer	21	1260	218.842	0.451	0.3	0.7790	0.0000	SURCHARGED
2160 minute summer	15	1260	218.842	0.540	1.4	2.6903	0.0000	SURCHARGED
2160 minute summer	16	1260	218.840	0.804	1.6	3.7561	0.0000	SURCHARGED
2160 minute summer	17	1260	218.838	1.018	2.1	5.0350	0.0000	SURCHARGED
2160 minute summer	18	1320	217.932	0.443	3.5	2.3792	0.0000	SURCHARGED
2160 minute summer	19	1320	217.931	0.626	4.0	2.3820	0.0000	SURCHARGED
2160 minute summer	8	1320	217.929	1.082	10.0	19.4290	0.0000	FLOOD RISK
2160 minute summer	9	1260	217.480	0.725	8.6	1.5592	0.0000	SURCHARGED
2160 minute summer	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
2160 minute summer	23	1140	218.083	0.115	0.8	0.1258	0.0000	OK
2160 minute summer	24	1320	217.519	0.206	1.9	0.2951	0.0000	SURCHARGED
2160 minute summer	25	1320	217.517	1.271	3.4	8.4784	0.0000	FLOOD RISK
2160 minute summer	28	1320	215.638	0.037	2.0	0.0421	0.0000	OK
2160 minute summer	26	1320	217.493	1.415	3.3	17.2929	0.0000	FLOOD RISK
2160 minute summer	27	1320	217.493	0.999	0.9	6.3077	0.0000	FLOOD RISK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2160 minute summer	1	1.000	2	0.0	0.000	0.000	0.0272	
2160 minute summer	2	1.001	3	1.0	0.151	0.052	0.2919	
2160 minute summer	3	Orifice	4	2.0				
2160 minute summer	4	1.003	5	3.9	0.231	0.114	1.4353	
2160 minute summer	5	Orifice	6	4.3				
2160 minute summer	6	1.005	7	4.9	0.568	0.142	1.1469	
2160 minute summer	7	1.006	8	5.5	0.199	0.109	1.0030	
2160 minute summer	13	2.000	14	0.9	0.374	0.062	0.3981	
2160 minute summer	14	2.001	15	1.1	0.389	0.073	0.5573	
2160 minute summer	20	3.000	21	0.1	0.152	0.007	0.2211	
2160 minute summer	21	3.001	15	0.3	0.133	0.020	0.2363	
2160 minute summer	15	2.002	16	1.1	0.365	0.079	0.7028	
2160 minute summer	16	2.003	17	1.4	0.117	0.100	0.5717	
2160 minute summer	17	Orifice	18	1.9				
2160 minute summer	18	2.005	19	3.3	0.579	0.078	1.0970	
2160 minute summer	19	2.006	8	3.9	0.150	0.075	1.8341	
2160 minute summer	8	Orifice	9	8.1				
2160 minute summer	9	1.008	10	8.4	0.386	0.197	0.5293	
2160 minute summer	22	4.000	23	0.0	0.000	0.000	0.2311	
2160 minute summer	23	Orifice	24	0.8				
2160 minute summer	24	4.002	25	1.9	0.675	0.073	0.8546	
2160 minute summer	25	Orifice	26	2.6				
2160 minute summer	28	4.005	OUTFALL2	2.0	0.475	0.055	0.0263	150.7
2160 minute summer	26	Hydro-Brake®	28	2.0				
2160 minute summer	27	5.001	26	-0.8	-0.044	-0.057	1.0194	

Results for 100 year +30% CC 2160 minute summer. 2400 minute analysis at 60 minute timestep. Mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute summer	10	1260	217.476	0.810	8.7	3.7513	0.0000	FLOOD RISK
2160 minute summer	11	1080	216.701	0.090	8.3	0.0254	0.0000	OK
2160 minute summer	OUTFALL1	1080	216.661	0.081	8.3	0.0000	0.0000	OK
2160 minute summer	12	1320	217.493	0.930	0.1	0.2633	0.0000	FLOOD RISK
2160 minute summer	OUTFALL2	1320	215.606	0.035	2.0	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)
2160 minute summer	10	Hydro-Brake®	11	8.3				
2160 minute summer	11	1.010	OUTFALL1	8.3	0.806	0.573	0.0474	503.5
2160 minute summer	12	5.000	27	-0.1	-0.006	-0.008	0.2066	

Results for 100 year +30% CC 2160 minute winter. 2400 minute analysis at 60 minute timestep. Mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute winter	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
2160 minute winter	2	1080	218.520	0.020	0.7	0.0202	0.0000	OK
2160 minute winter	3	1140	218.231	0.087	1.4	0.1032	0.0000	OK
2160 minute winter	4	1260	217.984	0.435	3.2	2.0507	0.0000	SURCHARGED
2160 minute winter	5	1260	217.983	0.594	3.6	2.8920	0.0000	SURCHARGED
2160 minute winter	6	1380	217.891	0.673	4.6	6.3404	0.0000	FLOOD RISK
2160 minute winter	7	1380	217.889	0.799	5.0	3.5566	0.0000	SURCHARGED
2160 minute winter	13	1260	218.724	0.060	0.7	0.0406	0.0000	OK
2160 minute winter	14	1260	218.724	0.211	1.0	0.4143	0.0000	SURCHARGED
2160 minute winter	20	1260	218.723	0.248	0.1	0.0742	0.0000	SURCHARGED
2160 minute winter	21	1260	218.723	0.332	0.3	0.5382	0.0000	SURCHARGED
2160 minute winter	15	1260	218.723	0.421	1.2	1.9315	0.0000	SURCHARGED
2160 minute winter	16	1260	218.722	0.686	1.5	3.0673	0.0000	SURCHARGED
2160 minute winter	17	1260	218.720	0.900	1.9	4.3671	0.0000	SURCHARGED
2160 minute winter	18	1380	217.889	0.400	3.2	2.0524	0.0000	SURCHARGED
2160 minute winter	19	1380	217.889	0.584	3.5	2.1708	0.0000	SURCHARGED
2160 minute winter	8	1380	217.887	1.040	8.8	15.3867	0.0000	FLOOD RISK
2160 minute winter	9	1320	217.451	0.696	8.5	1.4798	0.0000	SURCHARGED
2160 minute winter	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
2160 minute winter	23	1200	218.041	0.073	0.6	0.0722	0.0000	OK
2160 minute winter	24	1380	217.514	0.201	1.4	0.2860	0.0000	SURCHARGED
2160 minute winter	25	1380	217.513	1.267	2.6	8.2893	0.0000	FLOOD RISK
2160 minute winter	28	1380	215.638	0.037	2.0	0.0420	0.0000	OK
2160 minute winter	26	1380	217.489	1.411	2.8	17.0244	0.0000	FLOOD RISK
2160 minute winter	27	1380	217.489	0.995	0.6	6.2599	0.0000	FLOOD RISK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2160 minute winter	1	1.000	2	0.0	0.000	0.000	0.0212	
2160 minute winter	2	1.001	3	0.7	0.151	0.036	0.1813	
2160 minute winter	3	Orifice	4	1.4				
2160 minute winter	4	1.003	5	3.1	0.236	0.089	1.4353	
2160 minute winter	5	Orifice	6	3.4				
2160 minute winter	6	1.005	7	4.3	0.555	0.126	1.1469	
2160 minute winter	7	1.006	8	4.9	0.199	0.096	1.0030	
2160 minute winter	13	2.000	14	0.7	0.367	0.048	0.2737	
2160 minute winter	14	2.001	15	0.9	0.389	0.062	0.5573	
2160 minute winter	20	3.000	21	0.1	0.004	0.005	0.2211	
2160 minute winter	21	3.001	15	0.2	0.135	0.016	0.2363	
2160 minute winter	15	2.002	16	1.1	0.365	0.073	0.7028	
2160 minute winter	16	2.003	17	1.4	0.118	0.098	0.5717	
2160 minute winter	17	Orifice	18	1.9				
2160 minute winter	18	2.005	19	3.0	0.598	0.070	1.0970	
2160 minute winter	19	2.006	8	3.4	0.158	0.066	1.8341	
2160 minute winter	8	Orifice	9	8.1				
2160 minute winter	9	1.008	10	8.4	0.389	0.198	0.5293	
2160 minute winter	22	4.000	23	0.0	0.000	0.000	0.1343	
2160 minute winter	23	Orifice	24	0.6				
2160 minute winter	24	4.002	25	1.4	0.628	0.055	0.8546	
2160 minute winter	25	Orifice	26	2.2				
2160 minute winter	28	4.005	OUTFALL2	2.0	0.475	0.055	0.0263	168.1
2160 minute winter	26	Hydro-Brake®	28	2.0				
2160 minute winter	27	5.001	26	-0.5	-0.026	-0.034	1.0194	

Results for 100 year +30% CC 2160 minute winter. 2400 minute analysis at 60 minute timestep. Mass balance: 99.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2160 minute winter	10	1320	217.447	0.781	8.6	3.4112	0.0000	FLOOD RISK
2160 minute winter	11	1080	216.702	0.091	8.5	0.0257	0.0000	OK
2160 minute winter	OUTFALL1	1080	216.662	0.082	8.5	0.0000	0.0000	OK
2160 minute winter	12	1380	217.489	0.926	0.1	0.2620	0.0000	FLOOD RISK
2160 minute winter	OUTFALL2	1380	215.606	0.035	2.0	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)
2160 minute winter	10	Hydro-Brake®	11	8.5				
2160 minute winter	11	1.010	OUTFALL1	8.5	0.809	0.581	0.0479	562.5
2160 minute winter	12	5.000	27	-0.1	-0.005	-0.007	0.2066	

Results for 100 year +30% CC 2880 minute summer. 3120 minute analysis at 60 minute timestep. Mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute summer	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
2880 minute summer	2	1500	218.521	0.021	0.8	0.0217	0.0000	OK
2880 minute summer	3	1500	218.249	0.106	1.6	0.1332	0.0000	OK
2880 minute summer	4	1620	217.986	0.437	3.6	2.0728	0.0000	SURCHARGED
2880 minute summer	5	1620	217.985	0.596	3.8	2.9071	0.0000	SURCHARGED
2880 minute summer	6	1680	217.890	0.672	4.9	6.1958	0.0000	FLOOD RISK
2880 minute summer	7	1680	217.888	0.798	5.3	3.5517	0.0000	SURCHARGED
2880 minute summer	13	1620	218.704	0.040	0.8	0.0269	0.0000	OK
2880 minute summer	14	1620	218.704	0.191	1.1	0.3540	0.0000	SURCHARGED
2880 minute summer	20	1620	218.703	0.228	0.1	0.0682	0.0000	SURCHARGED
2880 minute summer	21	1620	218.703	0.312	0.3	0.4968	0.0000	SURCHARGED
2880 minute summer	15	1620	218.703	0.401	1.3	1.8015	0.0000	SURCHARGED
2880 minute summer	16	1620	218.702	0.666	1.5	2.9489	0.0000	SURCHARGED
2880 minute summer	17	1620	218.699	0.879	2.0	4.2524	0.0000	SURCHARGED
2880 minute summer	18	1680	217.888	0.399	3.3	2.0443	0.0000	SURCHARGED
2880 minute summer	19	1680	217.888	0.583	3.5	2.1660	0.0000	SURCHARGED
2880 minute summer	8	1680	217.886	1.039	8.9	15.2961	0.0000	FLOOD RISK
2880 minute summer	9	1620	217.448	0.693	8.6	1.4715	0.0000	SURCHARGED
2880 minute summer	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
2880 minute summer	23	1500	218.060	0.092	0.7	0.0960	0.0000	OK
2880 minute summer	24	1680	217.468	0.155	1.6	0.1959	0.0000	SURCHARGED
2880 minute summer	25	1680	217.466	1.220	2.9	6.4814	0.0000	FLOOD RISK
2880 minute summer	28	1680	215.638	0.037	1.9	0.0417	0.0000	OK
2880 minute summer	26	1680	217.443	1.365	3.0	14.7796	0.0000	FLOOD RISK
2880 minute summer	27	1680	217.443	0.949	0.6	5.7711	0.0000	FLOOD RISK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2880 minute summer	1	1.000	2	0.0	0.000	0.000	0.0232	
2880 minute summer	2	1.001	3	0.8	0.151	0.041	0.2239	
2880 minute summer	3	Orifice	4	1.6				
2880 minute summer	4	1.003	5	3.2	0.236	0.094	1.4353	
2880 minute summer	5	Orifice	6	3.5				
2880 minute summer	6	1.005	7	4.5	0.549	0.132	1.1469	
2880 minute summer	7	1.006	8	5.1	0.199	0.100	1.0030	
2880 minute summer	13	2.000	14	0.8	0.395	0.055	0.2414	
2880 minute summer	14	2.001	15	1.1	0.389	0.076	0.5573	
2880 minute summer	20	3.000	21	0.1	0.004	0.005	0.2211	
2880 minute summer	21	3.001	15	0.2	0.133	0.014	0.2363	
2880 minute summer	15	2.002	16	1.0	0.365	0.072	0.7028	
2880 minute summer	16	2.003	17	1.4	0.117	0.097	0.5717	
2880 minute summer	17	Orifice	18	1.8				
2880 minute summer	18	2.005	19	2.9	0.577	0.069	1.0970	
2880 minute summer	19	2.006	8	3.3	0.153	0.064	1.8341	
2880 minute summer	8	Orifice	9	8.2				
2880 minute summer	9	1.008	10	8.5	0.391	0.200	0.5293	
2880 minute summer	22	4.000	23	0.0	0.000	0.000	0.1812	
2880 minute summer	23	Orifice	24	0.7				
2880 minute summer	24	4.002	25	1.6	0.628	0.063	0.8546	
2880 minute summer	25	Orifice	26	2.4				
2880 minute summer	28	4.005	OUTFALL2	1.9	0.473	0.054	0.0260	169.5
2880 minute summer	26	Hydro-Brake®	28	1.9				
2880 minute summer	27	5.001	26	-0.5	-0.030	-0.040	1.0194	

Results for 100 year +30% CC 2880 minute summer. 3120 minute analysis at 60 minute timestep. Mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute summer	10	1620	217.444	0.778	8.7	3.3740	0.0000	FLOOD RISK
2880 minute summer	11	1440	216.702	0.091	8.5	0.0257	0.0000	OK
2880 minute summer	OUTFALL1	1440	216.662	0.082	8.5	0.0000	0.0000	OK
2880 minute summer	12	1680	217.443	0.880	0.1	0.2490	0.0000	FLOOD RISK
2880 minute summer	OUTFALL2	1680	215.606	0.035	1.9	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)
2880 minute summer	10	Hydro-Brake®	11	8.5				
2880 minute summer	11	1.010	OUTFALL1	8.5	0.809	0.583	0.0480	562.1
2880 minute summer	12	5.000	27	-0.1	-0.005	-0.007	0.2066	

Results for 100 year +30% CC 2880 minute winter. 3120 minute analysis at 60 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute winter	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
2880 minute winter	2	1380	218.518	0.018	0.6	0.0185	0.0000	OK
2880 minute winter	3	1440	218.214	0.071	1.2	0.0796	0.0000	OK
2880 minute winter	4	1440	217.591	0.042	2.7	0.0646	0.0000	OK
2880 minute winter	5	1620	217.576	0.187	3.2	0.5262	0.0000	OK
2880 minute winter	6	1620	217.482	0.264	4.2	1.1009	0.0000	SURCHARGED
2880 minute winter	7	1620	217.480	0.390	4.7	1.4102	0.0000	SURCHARGED
2880 minute winter	13	1440	218.685	0.021	0.6	0.0140	0.0000	OK
2880 minute winter	14	1440	218.537	0.024	0.8	0.0143	0.0000	OK
2880 minute winter	20	1560	218.529	0.054	0.0	0.0161	0.0000	OK
2880 minute winter	21	1560	218.529	0.138	0.2	0.1665	0.0000	OK
2880 minute winter	15	1560	218.529	0.227	1.0	0.7656	0.0000	SURCHARGED
2880 minute winter	16	1560	218.527	0.491	1.3	1.9344	0.0000	SURCHARGED
2880 minute winter	17	1560	218.526	0.705	1.7	3.2689	0.0000	SURCHARGED
2880 minute winter	18	1560	217.528	0.039	2.8	0.0707	0.0000	OK
2880 minute winter	19	1620	217.479	0.174	3.2	0.3366	0.0000	OK
2880 minute winter	8	1620	217.477	0.630	8.1	4.5040	0.0000	SURCHARGED
2880 minute winter	9	1680	216.961	0.206	8.3	0.2974	0.0000	OK
2880 minute winter	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
2880 minute winter	23	1440	218.024	0.056	0.5	0.0534	0.0000	OK
2880 minute winter	24	1800	217.395	0.082	1.2	0.0893	0.0000	OK
2880 minute winter	25	1800	217.394	1.148	2.2	5.2231	0.0000	SURCHARGED
2880 minute winter	28	1800	215.638	0.036	1.9	0.0412	0.0000	OK
2880 minute winter	26	1800	217.374	1.296	2.4	13.2517	0.0000	SURCHARGED
2880 minute winter	27	1800	217.374	0.880	0.4	5.0307	0.0000	FLOOD RISK

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
2880 minute winter	1	1.000	2	0.0	0.000	0.000	0.0190	
2880 minute winter	2	1.001	3	0.6	0.151	0.031	0.1426	
2880 minute winter	3	Orifice	4	1.2				
2880 minute winter	4	1.003	5	2.7	0.236	0.078	0.7274	
2880 minute winter	5	Orifice	6	3.2				
2880 minute winter	6	1.005	7	4.1	0.551	0.119	1.1469	
2880 minute winter	7	1.006	8	4.7	0.229	0.091	1.0030	
2880 minute winter	13	2.000	14	0.6	0.367	0.041	0.0371	
2880 minute winter	14	2.001	15	0.8	0.389	0.055	0.3072	
2880 minute winter	20	3.000	21	0.0	-0.004	-0.002	0.1420	
2880 minute winter	21	3.001	15	0.1	0.134	0.010	0.2318	
2880 minute winter	15	2.002	16	1.0	0.366	0.068	0.7028	
2880 minute winter	16	2.003	17	1.3	0.144	0.089	0.5717	
2880 minute winter	17	Orifice	18	1.7				
2880 minute winter	18	2.005	19	2.8	0.591	0.065	0.5152	
2880 minute winter	19	2.006	8	3.1	0.149	0.060	1.6761	
2880 minute winter	8	Orifice	9	8.0				
2880 minute winter	9	1.008	10	8.3	0.388	0.196	0.5186	
2880 minute winter	22	4.000	23	0.0	0.000	0.000	0.0948	
2880 minute winter	23	Orifice	24	0.5				
2880 minute winter	24	4.002	25	1.2	0.628	0.047	0.6675	
2880 minute winter	25	Orifice	26	1.9				
2880 minute winter	28	4.005	OUTFALL2	1.9	0.470	0.053	0.0255	186.8
2880 minute winter	26	Hydro-Brake®	28	1.9				
2880 minute winter	27	5.001	26	0.3	0.020	0.025	1.0194	

Results for 100 year +30% CC 2880 minute winter. 3120 minute analysis at 60 minute timestep. Mass balance: 99.70%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
2880 minute winter	10	1680	216.957	0.291	8.5	0.7408	0.0000	SURCHARGED
2880 minute winter	11	1620	216.702	0.091	8.5	0.0257	0.0000	OK
2880 minute winter	OUTFALL1	1680	216.662	0.082	8.5	0.0000	0.0000	OK
2880 minute winter	12	1800	217.374	0.811	0.1	0.2294	0.0000	FLOOD RISK
2880 minute winter	OUTFALL2	1800	215.605	0.034	1.9	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)
2880 minute winter	10	Hydro-Brake®	11	8.5				
2880 minute winter	11	1.010	OUTFALL1	8.5	0.809	0.582	0.0480	634.1
2880 minute winter	12	5.000	27	0.1	0.006	0.005	0.2066	

Results for 100 year +30% CC 4320 minute summer. 4560 minute analysis at 60 minute timestep. Mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute summer	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
4320 minute summer	2	2160	218.518	0.018	0.6	0.0185	0.0000	OK
4320 minute summer	3	2220	218.214	0.071	1.2	0.0796	0.0000	OK
4320 minute summer	4	2340	217.596	0.047	2.8	0.0719	0.0000	OK
4320 minute summer	5	2340	217.595	0.206	3.3	0.6143	0.0000	OK
4320 minute summer	6	2340	217.503	0.285	4.4	1.2304	0.0000	SURCHARGED
4320 minute summer	7	2340	217.501	0.411	4.8	1.5220	0.0000	SURCHARGED
4320 minute summer	13	2220	218.685	0.021	0.6	0.0140	0.0000	OK
4320 minute summer	14	2220	218.538	0.025	0.9	0.0154	0.0000	OK
4320 minute summer	20	2280	218.523	0.048	0.0	0.0144	0.0000	OK
4320 minute summer	21	2280	218.523	0.132	0.2	0.1577	0.0000	OK
4320 minute summer	15	2280	218.523	0.221	1.2	0.7326	0.0000	SURCHARGED
4320 minute summer	16	2280	218.522	0.486	1.4	1.9030	0.0000	SURCHARGED
4320 minute summer	17	2280	218.520	0.700	1.7	3.2384	0.0000	SURCHARGED
4320 minute summer	18	2220	217.528	0.039	2.8	0.0715	0.0000	OK
4320 minute summer	19	2340	217.500	0.195	3.3	0.4166	0.0000	OK
4320 minute summer	8	2340	217.499	0.652	8.2	4.7307	0.0000	SURCHARGED
4320 minute summer	9	2340	216.978	0.223	8.3	0.3225	0.0000	OK
4320 minute summer	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
4320 minute summer	23	2220	218.041	0.073	0.6	0.0722	0.0000	OK
4320 minute summer	24	2220	217.336	0.023	1.3	0.0219	0.0000	OK
4320 minute summer	25	2460	217.272	1.026	2.3	4.2596	0.0000	SURCHARGED
4320 minute summer	28	2460	215.637	0.036	1.8	0.0403	0.0000	OK
4320 minute summer	26	2460	217.255	1.177	2.5	11.7726	0.0000	SURCHARGED
4320 minute summer	27	2460	217.255	0.761	0.4	3.7632	0.0000	SURCHARGED

Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
4320 minute summer	1	1.000	2	0.0	0.000	0.000	0.0190	
4320 minute summer	2	1.001	3	0.6	0.151	0.031	0.1426	
4320 minute summer	3	Orifice	4	1.2				
4320 minute summer	4	1.003	5	2.8	0.236	0.081	0.7962	
4320 minute summer	5	Orifice	6	3.3				
4320 minute summer	6	1.005	7	4.2	0.563	0.122	1.1469	
4320 minute summer	7	1.006	8	4.7	0.227	0.092	1.0030	
4320 minute summer	13	2.000	14	0.6	0.351	0.041	0.0388	
4320 minute summer	14	2.001	15	0.9	0.389	0.062	0.3097	
4320 minute summer	20	3.000	21	0.0	-0.006	-0.003	0.1340	
4320 minute summer	21	3.001	15	0.2	0.135	0.012	0.2285	
4320 minute summer	15	2.002	16	1.0	0.365	0.066	0.7028	
4320 minute summer	16	2.003	17	1.3	0.141	0.088	0.5717	
4320 minute summer	17	Orifice	18	1.7				
4320 minute summer	18	2.005	19	2.8	0.595	0.067	0.5662	
4320 minute summer	19	2.006	8	3.2	0.150	0.061	1.7612	
4320 minute summer	8	Orifice	9	8.0				
4320 minute summer	9	1.008	10	8.3	0.391	0.196	0.5288	
4320 minute summer	22	4.000	23	0.0	0.000	0.000	0.1343	
4320 minute summer	23	Orifice	24	0.6				
4320 minute summer	24	4.002	25	1.3	0.653	0.051	0.4688	
4320 minute summer	25	Orifice	26	2.0				
4320 minute summer	28	4.005	OUTFALL2	1.8	0.465	0.050	0.0247	196.5
4320 minute summer	26	Hydro-Brake®	28	1.8				
4320 minute summer	27	5.001	26	-0.3	-0.020	-0.026	1.0194	

Results for 100 year +30% CC 4320 minute summer. 4560 minute analysis at 60 minute timestep. Mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute summer	10	2340	216.973	0.307	8.5	0.7925	0.0000	SURCHARGED
4320 minute summer	11	2340	216.702	0.091	8.5	0.0257	0.0000	OK
4320 minute summer	OUTFALL1	2340	216.662	0.082	8.5	0.0000	0.0000	OK
4320 minute summer	12	2460	217.255	0.692	0.1	0.1957	0.0000	SURCHARGED
4320 minute summer	OUTFALL2	2460	215.605	0.034	1.8	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)
4320 minute summer	10	Hydro-Brake®	11	8.5				
4320 minute summer	11	1.010	OUTFALL1	8.5	0.809	0.583	0.0480	648.6
4320 minute summer	12	5.000	27	-0.1	-0.006	-0.007	0.2066	

Results for 100 year +30% CC 4320 minute winter. 4560 minute analysis at 60 minute timestep. Mass balance: 99.83%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute winter	1	60	218.710	0.000	0.0	0.0000	0.0000	OK
4320 minute winter	2	2100	218.517	0.017	0.5	0.0168	0.0000	OK
4320 minute winter	3	2100	218.200	0.057	1.0	0.0611	0.0000	OK
4320 minute winter	4	2160	217.587	0.038	2.2	0.0585	0.0000	OK
4320 minute winter	5	2220	217.492	0.103	2.6	0.1957	0.0000	OK
4320 minute winter	6	2220	217.265	0.047	3.4	0.0906	0.0000	OK
4320 minute winter	7	2280	217.261	0.171	3.9	0.4437	0.0000	OK
4320 minute winter	13	1920	218.681	0.017	0.4	0.0116	0.0000	OK
4320 minute winter	14	1920	218.534	0.021	0.6	0.0119	0.0000	OK
4320 minute winter	20	60	218.475	0.000	0.0	0.0000	0.0000	OK
4320 minute winter	21	1500	218.400	0.009	0.1	0.0038	0.0000	OK
4320 minute winter	15	2340	218.356	0.054	0.8	0.0621	0.0000	OK
4320 minute winter	16	2340	218.355	0.319	1.1	1.0012	0.0000	SURCHARGED
4320 minute winter	17	2340	218.353	0.533	1.5	2.2942	0.0000	SURCHARGED
4320 minute winter	18	2280	217.525	0.036	2.3	0.0657	0.0000	OK
4320 minute winter	19	2280	217.339	0.034	2.6	0.0325	0.0000	OK
4320 minute winter	8	2280	217.260	0.413	6.8	2.2317	0.0000	SURCHARGED
4320 minute winter	9	2340	216.828	0.073	7.0	0.0783	0.0000	OK
4320 minute winter	22	60	218.616	0.000	0.0	0.0000	0.0000	OK
4320 minute winter	23	2040	218.010	0.042	0.4	0.0389	0.0000	OK
4320 minute winter	24	2040	217.332	0.019	0.9	0.0182	0.0000	OK
4320 minute winter	25	2580	217.064	0.818	1.7	2.7500	0.0000	SURCHARGED
4320 minute winter	28	2580	215.635	0.034	1.6	0.0386	0.0000	OK
4320 minute winter	26	2580	217.050	0.972	1.9	9.2303	0.0000	SURCHARGED
4320 minute winter	27	2580	217.050	0.556	0.2	1.5840	0.0000	SURCHARGED

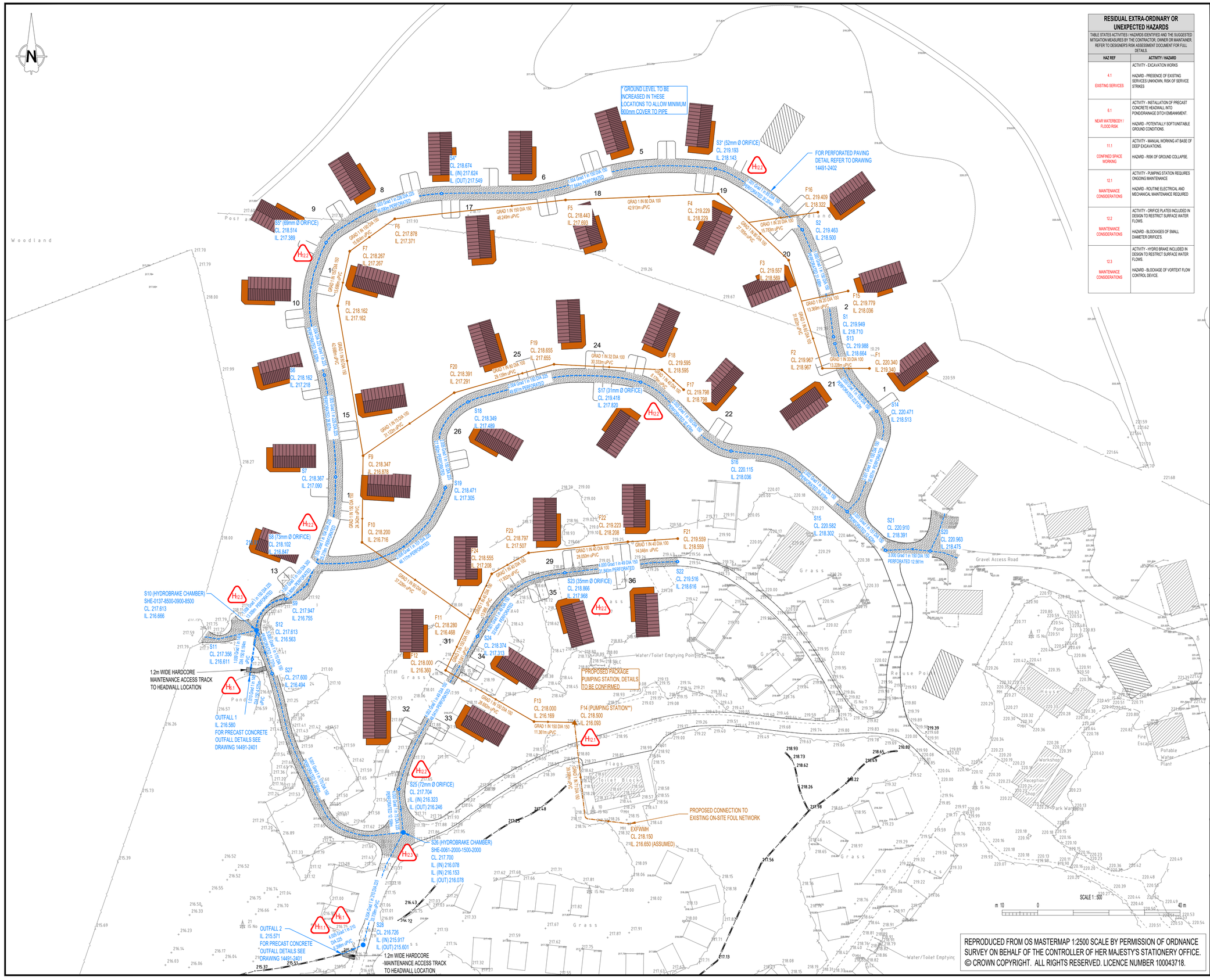
Link Event	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
4320 minute winter	1	1.000	2	0.0	0.000	0.000	0.0168	
4320 minute winter	2	1.001	3	0.5	0.151	0.026	0.1096	
4320 minute winter	3	Orifice	4	1.0				
4320 minute winter	4	1.003	5	2.2	0.236	0.064	0.3997	
4320 minute winter	5	Orifice	6	2.6				
4320 minute winter	6	1.005	7	3.4	0.565	0.099	0.5547	
4320 minute winter	7	1.006	8	3.9	0.234	0.076	0.9102	
4320 minute winter	13	2.000	14	0.4	0.311	0.028	0.0292	
4320 minute winter	14	2.001	15	0.6	0.367	0.042	0.1127	
4320 minute winter	20	3.000	21	0.0	0.000	0.000	0.0027	
4320 minute winter	21	3.001	15	0.1	0.135	0.007	0.0408	
4320 minute winter	15	2.002	16	0.9	0.367	0.059	0.4641	
4320 minute winter	16	2.003	17	1.1	0.144	0.076	0.5717	
4320 minute winter	17	Orifice	18	1.4				
4320 minute winter	18	2.005	19	2.3	0.588	0.055	0.1099	
4320 minute winter	19	2.006	8	2.6	0.151	0.051	1.0051	
4320 minute winter	8	Orifice	9	6.8				
4320 minute winter	9	1.008	10	7.0	0.391	0.166	0.2749	
4320 minute winter	22	4.000	23	0.0	0.000	0.000	0.0641	
4320 minute winter	23	Orifice	24	0.4				
4320 minute winter	24	4.002	25	0.9	0.628	0.035	0.4594	
4320 minute winter	25	Orifice	26	1.5				
4320 minute winter	28	4.005	OUTFALL2	1.6	0.454	0.046	0.0232	217.2
4320 minute winter	26	Hydro-Brake®	28	1.6				
4320 minute winter	27	5.001	26	0.2	0.016	0.014	1.0194	

Results for 100 year +30% CC 4320 minute winter. 4560 minute analysis at 60 minute timestep. Mass balance: 99.83%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
4320 minute winter	10	2340	216.826	0.160	7.1	0.3690	0.0000	SURCHARGED
4320 minute winter	11	2340	216.692	0.081	7.1	0.0229	0.0000	OK
4320 minute winter	OUTFALL1	2340	216.654	0.074	7.1	0.0000	0.0000	OK
4320 minute winter	12	2580	217.050	0.487	0.1	0.1378	0.0000	SURCHARGED
4320 minute winter	OUTFALL2	2580	215.603	0.032	1.6	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)
4320 minute winter	10	Hydro-Brake®	11	7.1				
4320 minute winter	11	1.010	OUTFALL1	7.1	0.778	0.489	0.0419	740.2
4320 minute winter	12	5.000	27	-0.1	-0.009	-0.004	0.2066	

Appendix L Proposed Drainage Layout



RESIDUAL EXTRA-ORDINARY OR UNEXPECTED HAZARDS

TABLE STATES ACTIVITIES / HAZARDS IDENTIFIED AND THE SUGGESTED MITIGATION MEASURES BY THE CONTRACTOR, OWNER OR MAINTAINER. REFER TO DESIGNER'S RISK ASSESSMENT DOCUMENT FOR FULL DETAILS.

HAZ REF	ACTIVITY / HAZARD
4.1 EXISTING SERVICES	ACTIVITY - EXCAVATION WORKS HAZARD - PRESENCE OF EXISTING SERVICES UNKNOWN, RISK OF SERVICE STRIKES
6.1 NEAR WATERBODY / FLOOD RISK	ACTIVITY - INSTALLATION OF PRECAST CONCRETE HEADWALL INTO PONDDRAINAGE DITCH EMBANKMENT. HAZARD - POTENTIALLY SOFT/UNSTABLE GROUND CONDITIONS.
11.1 CONFINED SPACE WORKING	ACTIVITY - MANUAL WORKING AT BASE OF DEEP EXCAVATIONS. HAZARD - RISK OF GROUND COLLAPSE.
12.1 MAINTENANCE CONSIDERATIONS	ACTIVITY - PUMPING STATION REQUIRES ONGOING MAINTENANCE HAZARD - ROUTINE ELECTRICAL AND MECHANICAL MAINTENANCE REQUIRED
12.2 MAINTENANCE CONSIDERATIONS	ACTIVITY - ORIFICE PLATES INCLUDED IN DESIGN TO RESTRICT SURFACE WATER FLOWS. HAZARD - BLOCKAGES OF SMALL DIAMETER ORIFICE'S.
12.3 MAINTENANCE CONSIDERATIONS	ACTIVITY - HYDRO BRAKE INCLUDED IN DESIGN TO RESTRICT SURFACE WATER FLOWS. HAZARD - BLOCKAGE OF VORTEXT FLOW CONTROL DEVICE.

NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES ABOVE ORDNANCE DATUM UNLESS SHOWN OTHERWISE.
2. THIS DESIGN IS PROPOSED ON THE BASIS OF CLIENT BRIEF, SPECIFICATIONS, BEST PRACTICE AND RISK REDUCTION / ELIMINATION. THE DESIGNER MUST BE CONSULTED ON ANY PROPOSED CHANGES, BEFORE THEY ARE CONSIDERED FOR IMPLEMENTATION.
3. TOPOGRAPHICAL SURVEY DATA SHOWN HAS BEEN CARRIED OUT BY 'ALL THE B'S SURVEYS LTD, MAY 2020'.
4. THE POSITIONS OF THE APPARATUS OF STATUTORY UNDERTAKERS, HIGHWAY AUTHORITIES AND OTHERS CLOSE TO THE WORKS HAVE BEEN PROVIDED FOR INFORMATION ONLY, NO WARRANTY IS GIVEN AS TO THE ACCURACY OR COMPLETENESS OF THIS INFORMATION AND ERRORS AND OMISSIONS SHALL NOT BE TAKEN AS A CHANGE TO THE WORKS INFORMATION OR SCOPE OF WORKS. IN PARTICULAR, NO SERVICE CONNECTIONS TO INDIVIDUAL PROPERTIES ARE SHOWN. WHERE SERVICES ARE NOT SHOWN THIS SHALL NOT BE TAKEN AS EVIDENCE THAT NO SERVICES ARE PRESENT AND THE CONTRACTOR SHALL ENSURE HE HAS CONSULTED ALL RELEVANT RECORDS. THE CONTRACTOR SHALL CHECK AND CONFIRM THE POSITION OF ALL SERVICES PRIOR TO EXCAVATION.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWING NUMBERS:
   14491-2400 - HYDROBRAKE DETAILS
   14491-2401 - TYPICAL DETAILS
6. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH SEWERAGE SECTOR GUIDANCE (SSG) - APPENDIX C AND BUILDING REGULATIONS (PART H).

KEY

- AREA OF RESIDUAL EXTRAORDINARY / UNEXPECTED HAZARD. SEE DESIGNER'S RISK ASSESSMENT.
- PROPOSED SW DRAIN
- PROPOSED SW MANHOLE
- PROPOSED SW PPIC
- PROPOSED FW DRAIN
- PROPOSED FW PPIC
- PROPOSED FW PUMPING STATION
- PROPOSED FW RISING MAIN
- PROPOSED PERFORATED PAVING

NYMNPA
02/02/2023

REFERENCE CALCULATIONS
14491-221220-SW HYDRAULIC MODEL

CAUTION: THE MANAGEMENT AND DESIGN OF ANY AND ALL TEMPORARY WORKS REQUIRED TO EXECUTE THIS DESIGN ARE THE RESPONSIBILITY OF THE CONTRACTOR.

SITE LOCATION
GRID REFERENCE: E: 481878 N:508112
SITE ADDRESS: LADYCROSS PLANTATION CARAVAN PARK EGTON, WHITBY, YO21 1UA

REV.	DATE	DESCRIPTION	ORIG	CHK	APP
R00	13-01-2023	FIRST ISSUE	CF	AR	NJ

CLIENT
LADYCROSS PLANTATION HOLIDAY PARK

PRINCIPAL DESIGNER
LAMBE PLANNING & DESIGN

Waterco Ltd., Eden Court, Lon Parcwr Business Park, Ruthin LL15 1NJ
tel (+44) 1824 702220
www.waterco.co.uk

SCHEME
LADYCROSS PLANTATION HOLIDAY PARK, EGTON

TITLE
PROPOSED DRAINAGE LAYOUT

ORIGINATOR	CHECKED	APPROVED
C FREEMAN	A RUSSELL	N JONES

STATUS	SUITABILITY
APPROVAL	-

WATERCO SCHEME NO.	SCALE / SHEET SIZE	REV
14491	1 : 500 / A1	R00

DRAWING NO. 14491-2200

Appendix M Maintenance Schedule

Operation and Maintenance Requirements for Permeable Paving

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional maintenance	Stabilise and move contributing and adjacent areas	As required
	Removal of weeds or management using glyphospate applied directly into the weeds by an applicator rather than spraying	As required – once per year on less frequently used pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level or the paving	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)
Monitoring	Inspect for evidence of poor operation and / or weed growth – if required, take remedial action	Three-monthly, 48hr after large storms in first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

Ref. Table 20.15, CIRIA C753 'The SuDS Manual'

The maintenance requirements detailed above are to be undertaken by the site owner.

Name : ----------

Position : ----------

Date : ----------

Signed on behalf of the site owner : ----------

Appendix N Designers Risk Assessment

DESIGNER'S RISK ASSESSMENT

Project: Ladycross Plantation Holiday Park, Edgton
Client: Ladycross Plantation Holiday Park
Project No: 14491
DRA Revision: A
Rev Date: 13/01/2023

						Initial RR						Revised RR				
Haz Ref	**Risk Area**	**Activity**	**Hazard**	**Affected Parties**	**Possible Consequences for Affected Parties**	**S**	**L**	**R**	**Designer's Measures**	**Contractor/Owner/Maintainer Measures**	**S**	**L**	**R**	**Residual Risks**	**PI**
H4.1	Existing Services	Excavation works	Presence of existing services unknown, risk of service strikes	Contractor	Risk of explosion, electrocution resulting in injury, death	5	2	**10**	Line searches undertaken, design reflects results. Hazards indentified on DWG 14491-2200.	Contractor to conduct own services checks/trial pits prior to commencement of works on site	5	1	**5**	Hazard remains, risk reduced.	☐ ☐
H6.1	Near Waterbody / flood risk	Installation of precast concrete headwall into pond/drainage ditch embankment.	Potentially soft/unstable ground conditions.	Contractor	Risk of slips/trips/falls resulting in injury, drowning, death.	5	3	**15**	Hazards indentified on DWG 14491-2200.	Contractor to provide SSoW prior to commencement of works	5	1	**5**	Hazard remains, risk reduced.	☐ ☐
H11.1	Confined Space Working	Manual working at base of deep excavations.	Risk of ground collapse.	Contractor	Serious injury, asphyxiation, death.	5	3	**15**	Hazards indentified on DWG 14491-2200.	Contractors personnel required to enter any confined spaces must have received the required training and be competent to work in that environment. Adequate temporary ground supports to be installed.	5	1	**5**	Hazard remains, risk reduced.	☐ ☐
H12.1	Maintenance Considerations	Pumping station requires ongoing maintenance	Routine electrical and mechanical maintenance required	Contractor, Site Operator/maintenance Staff	Effluent flooding in event of pump failure. Effluent material entering local ditches/watercourse	3	3	**9**	Hazards indentified on DWG 14491-2200.	Routine maintenance of pumping chamber to be undertaken.	3	1	**3**	Hazard remains, risk reduced.	☐
H12.2	Maintenance Considerations	Orifice plates included in design to restrict surface water flows.	Blockages of small diameter orifice's.	Site Operator/maintenance Staff	Shallow surface water flooding on-site, potential increase in run-off rates to receiving watercourses.	2	3	**6**	Hazards indentified on DWG 14491-2200.	Routine maintenance/visual inpsection of orifice plates to be undertaken to identify blockages.	2	1	**2**	Hazard remains, risk reduced.	☐
H12.3	Maintenance Considerations	Hydro Brake included in design to restrict surface water flows.	Blockage of vortext flow control device.	Site Operator/maintenance Staff	Shallow surface water flooding on-site, potential increase in run-off rates to receiving watercourses.	2	3	**6**	Hazards indentified on DWG 14491-2200. Emergency by-pass pull handle included in design should blockage occur.	Routine maintenance/visual inpsection of hydrobrake chambers to be undertaken to identify blockages.	2	1	**2**	Hazard remains, risk reduced.	☐