

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.500
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
S6	0.009	5.00	51.600	450	472048.239	164782.922	0.750	50.850
S7	0.017	5.00	51.600	450	472044.155	164776.976	0.822	50.778
S8	0.012	5.00	51.600	450	472032.780	164784.787	0.914	50.686
S9	0.009	5.00	51.600	1200	472027.649	164792.684	0.977	50.623
S2	0.019	5.00	51.600	450	472059.470	164799.282	0.750	50.850
S1	0.075	5.00	51.350	600	472084.403	164805.553	0.825	50.525
Attenuation Tank		5.00	51.400	1	472072.532	164818.318	1.300	50.100
S3	0.009	5.00	51.600	1200	472070.159	164814.852	1.850	49.750
S4	0.009	5.00	51.600	1200	472051.609	164827.586	1.650	49.950
S5	0.019	5.00	51.600	1200	472044.979	164817.928	1.702	49.898
SW1			51.000	1200	472025.734	164831.140	1.206	49.794
EX. SW			51.000	1200	472018.202	164851.500	1.340	49.660

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)	Design Flow (l/s)
1.000	S6	S7	7.213	0.600	50.850	50.778	0.072	100.2	150	5.12	50.0	
1.001	S7	S8	13.799	0.600	50.778	50.686	0.092	150.0	150	5.40	50.0	
1.002	S8	S9	9.418	0.600	50.686	50.623	0.063	150.0	150	5.59	49.6	
1.003	S9	S5	30.620	0.600	50.623	49.973	0.650	47.1	150	5.94	48.2	
2.000	S2	S3	18.886	0.600	50.850	50.662	0.188	100.5	150	5.31	50.0	
3.000	S1	S3	17.011	0.600	50.525	50.050	0.475	35.8	225	5.13	50.0	
4.000	Attenuation Tank	S3	4.201	0.600	50.100	50.050	0.050	84.0	225	5.05	50.0	
2.001	S3	S4	22.500	0.600	50.050	49.950	0.100	225.0	225	5.75	49.0	
2.002	S4	S5	11.715	0.600	49.950	49.898	0.052	225.3	225	5.97	48.1	
1.004	S5	SW1	23.344	0.600	49.898	49.794	0.104	225.0	225	6.42	46.5	1.0
1.005	SW1	EX. SW	21.709	0.600	49.794	49.660	0.134	162.0	225	6.77	45.3	5.0

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	0.840	Additional Storage (m³/ha)	20.0		

Storm Durations

60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	35	0	0
100	40	0	0

Node S5 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	49.898	Product Number	CTL-SHE-0039-8000-1300-8000
Design Depth (m)	1.300	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.8	Min Node Diameter (mm)	1200

Node Attenuation Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	50.100
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	156.0	156.0	0.800	156.0	191.4	0.801	0.0	191.4

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	34	50.870	0.020	0.7	0.0081	0.0000	OK
60 minute summer	S7	33	50.817	0.039	2.1	0.0221	0.0000	OK
60 minute summer	S8	33	50.735	0.049	3.1	0.0207	0.0000	OK
60 minute summer	S9	33	50.662	0.039	3.8	0.0508	0.0000	OK
60 minute summer	S2	33	50.881	0.031	1.6	0.0205	0.0000	OK
60 minute summer	S1	33	50.566	0.041	6.2	0.0851	0.0000	OK
240 minute winter	Attenuation Tank	236	50.254	0.154	4.9	22.7858	0.0000	OK
60 minute summer	S3	31	50.296	0.246	16.2	0.3066	0.0000	SURCHARGED
60 minute summer	S4	31	50.299	0.349	7.0	0.4333	0.0000	SURCHARGED
60 minute summer	S5	31	50.301	0.403	5.4	0.5455	0.0000	SURCHARGED
1440 minute summer	SW1	1500	49.812	0.018	0.5	0.0206	0.0000	OK
1440 minute summer	EX. SW	1500	49.678	0.018	0.5	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	0.7	0.292	0.039	0.0180	
60 minute summer	S7	1.001	S8	2.1	0.491	0.145	0.0592	
60 minute summer	S8	1.002	S9	3.1	0.722	0.214	0.0405	
60 minute summer	S9	1.003	S5	3.8	0.539	0.145	0.3245	
60 minute summer	S2	2.000	S3	1.6	0.620	0.090	0.0486	
60 minute summer	S1	3.000	S3	6.2	0.607	0.071	0.3791	
60 minute summer	Attenuation Tank	4.000	S3	-18.2	-0.987	-0.321	0.0865	
60 minute summer	S3	2.001	S4	-8.1	0.391	-0.234	0.8948	
60 minute summer	S4	2.002	S5	-6.3	0.185	-0.183	0.4659	
60 minute summer	S5	1.004	SW1	0.5	0.384	0.016	0.0376	
1440 minute summer	SW1	1.005	EX. SW	0.5	0.360	0.013	0.0325	35.9

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.10%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	33	50.892	0.042	3.0	0.0166	0.0000	OK
60 minute summer	S7	33	50.865	0.087	8.7	0.0496	0.0000	OK
60 minute summer	S8	33	50.802	0.116	12.8	0.0491	0.0000	OK
60 minute summer	S9	34	50.725	0.102	15.7	0.1343	0.0000	OK
60 minute summer	S2	33	50.914	0.064	6.4	0.0429	0.0000	OK
600 minute winter	S1	585	50.724	0.199	3.5	0.4188	0.0000	OK
600 minute winter	Attenuation Tank	585	50.724	0.624	7.5	92.5226	0.0000	SURCHARGED
600 minute winter	S3	585	50.724	0.674	7.6	0.8409	0.0000	SURCHARGED
600 minute winter	S4	585	50.724	0.774	2.8	0.9601	0.0000	SURCHARGED
600 minute winter	S5	585	50.724	0.826	3.1	1.1187	0.0000	SURCHARGED
600 minute winter	SW1	585	49.814	0.020	0.7	0.0226	0.0000	OK
600 minute winter	EX. SW	585	49.680	0.020	0.7	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	3.0	0.417	0.169	0.0524	
60 minute summer	S7	1.001	S8	8.7	0.695	0.603	0.1739	
60 minute summer	S8	1.002	S9	12.7	1.020	0.878	0.1289	
60 minute summer	S9	1.003	S5	15.3	0.932	0.589	0.4651	
60 minute summer	S2	2.000	S3	6.4	0.907	0.361	0.1332	
60 minute summer	S1	3.000	S3	25.4	0.812	0.291	0.4508	
60 minute summer	Attenuation Tank	4.000	S3	-56.8	-1.458	-1.001	0.1671	
60 minute summer	S3	2.001	S4	-23.2	-0.583	-0.673	0.8948	
60 minute summer	S4	2.002	S5	-20.5	-0.515	-0.594	0.4659	
600 minute winter	S5	1.004	SW1	0.7	0.354	0.019	0.0429	
600 minute winter	SW1	1.005	EX. SW	0.7	0.382	0.016	0.0370	28.7

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.11%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	S6	705	51.283	0.433	0.5	0.1728	0.0000	SURCHARGED
720 minute winter	S7	705	51.283	0.505	1.4	0.2893	0.0000	SURCHARGED
720 minute winter	S8	705	51.283	0.597	2.0	0.2519	0.0000	SURCHARGED
720 minute winter	S9	705	51.283	0.660	2.5	0.8678	0.0000	SURCHARGED
720 minute winter	S2	705	51.283	0.433	1.0	0.2883	0.0000	SURCHARGED
720 minute winter	S1	705	51.283	0.758	3.9	1.5924	0.0000	FLOOD RISK
720 minute winter	Attenuation Tank	705	51.283	1.183	8.5	118.6341	0.0000	FLOOD RISK
720 minute winter	S3	705	51.283	1.233	8.6	1.5375	0.0000	SURCHARGED
720 minute winter	S4	705	51.283	1.333	3.3	1.6528	0.0000	SURCHARGED
720 minute winter	S5	705	51.283	1.385	3.5	1.8751	0.0000	SURCHARGED
720 minute winter	SW1	705	49.816	0.022	0.8	0.0252	0.0000	OK
720 minute winter	EX. SW	705	49.682	0.022	0.8	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	1.000	S7	3.9	0.429	0.217	0.1270	
60 minute summer	S7	1.001	S8	10.6	0.704	0.736	0.2429	
60 minute summer	S8	1.002	S9	14.5	1.020	1.005	0.1658	
60 minute summer	S9	1.003	S5	17.5	0.992	0.672	0.5391	
60 minute summer	S2	2.000	S3	8.7	0.979	0.491	0.1679	
60 minute summer	S1	3.000	S3	33.9	1.026	0.389	0.5046	
60 minute summer	Attenuation Tank	4.000	S3	-72.1	-1.814	-1.271	0.1671	
60 minute summer	S3	2.001	S4	-27.5	-0.693	-0.799	0.8948	
60 minute summer	S4	2.002	S5	-24.1	-0.606	-0.700	0.4659	
720 minute winter	S5	1.004	SW1	0.8	0.379	0.024	0.0505	
720 minute winter	SW1	1.005	EX. SW	0.8	0.409	0.020	0.0436	35.9