

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)	1.200
CV	1.000	Preferred Cover Depth (m)	0.900
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	999.9		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.030	5.00	56.070	600	371689.673	192119.995	1.050
2	0.030	5.00	55.500	600	371704.144	192131.669	1.050
Tank			55.475		371706.934	192125.623	1.800
3	0.030	5.00	55.300	600	371707.724	192116.541	1.700
4	0.027	5.00	55.040	1200	371719.358	192086.417	1.640
Outfall			55.040	600	371724.664	192087.014	1.673

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	1	Tank	18.155	0.600	55.020	53.675	1.345	13.5	150	5.11	46.3
2.000	2	Tank	6.659	0.600	54.450	53.675	0.775	8.6	150	5.03	46.6
1.001	Tank	3	9.116	0.600	53.675	53.600	0.075	121.5	225	5.24	45.8
1.002	3	4	32.292	0.600	53.600	53.400	0.200	161.5	225	5.76	44.5
1.003	4	Outfall	5.339	0.600	53.400	53.367	0.033	161.8	225	5.85	44.1

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Additional Storage (m ³ /ha)	0.0
Summer CV	1.000	Skip Steady State	x	Check Discharge Rate(s)	x
Winter CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
30	45	0	0
100	0	0	0
100	45	0	0

Node 4 Online Hydro-Brake® Control

Flap Valve	x	Objective (HE)	Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	53.400	Product Number	CTL-SHE-0042-1000-1500-1000
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	53.675
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	930

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	80.0	0.0	1.200	80.0	0.0	1.201	0.0	0.0

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	1	9	55.054	0.034	4.6	0.0095	0.0000	OK
15 minute summer	2	9	54.480	0.030	4.6	0.0085	0.0000	OK
360 minute summer	Tank	296	53.878	0.203	4.2	15.3937	0.0000	OK
360 minute summer	3	296	53.878	0.278	1.8	0.0785	0.0000	SURCHARGED
360 minute summer	4	296	53.878	0.478	1.2	0.5401	0.0000	SURCHARGED
15 minute summer	Outfall	1	53.367	0.000	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	1	1.000	Tank	4.6	2.269	0.095	0.0740	
15 minute summer	2	2.000	Tank	4.6	2.600	0.076	0.0268	
360 minute summer	Tank	1.001	3	-1.6	0.309	-0.034	0.3530	
360 minute summer	3	1.002	4	1.0	0.119	0.024	1.2843	
360 minute summer	4	Hydro-Brake®	Outfall	0.7				28.7

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	55.070	0.050	11.8	0.0142	0.0000	OK
15 minute summer	2	10	54.495	0.045	11.8	0.0126	0.0000	OK
600 minute summer	Tank	555	54.197	0.522	5.8	39.6629	0.0000	SURCHARGED
600 minute summer	3	555	54.197	0.597	2.5	0.1689	0.0000	SURCHARGED
600 minute summer	4	555	54.197	0.797	1.5	0.9012	0.0000	SURCHARGED
15 minute summer	Outfall	1	53.367	0.000	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	Tank	11.8	2.445	0.241	0.1995	
15 minute summer	2	2.000	Tank	11.8	2.726	0.193	0.0709	
600 minute summer	Tank	1.001	3	-2.4	0.295	-0.051	0.3626	
600 minute summer	3	1.002	4	1.1	0.110	0.027	1.2843	
600 minute summer	4	Hydro-Brake®	Outfall	0.8				66.7

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	1	10	55.081	0.061	17.1	0.0174	0.0000	OK
720 minute winter	2	675	54.530	0.080	1.5	0.0226	0.0000	OK
720 minute winter	Tank	675	54.530	0.855	4.9	64.9723	0.0000	SURCHARGED
720 minute winter	3	675	54.530	0.930	2.0	0.2632	0.0000	SURCHARGED
720 minute winter	4	675	54.530	1.130	1.3	1.2778	0.0000	SURCHARGED
15 minute summer	Outfall	1	53.367	0.000	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	1	1.000	Tank	17.0	2.419	0.350	0.2197	
720 minute winter	2	2.000	Tank	1.5	0.922	0.025	0.0904	
720 minute winter	Tank	1.001	3	-1.9	0.318	-0.041	0.3626	
720 minute winter	3	1.002	4	0.9	0.092	0.021	1.2843	
720 minute winter	4	Hydro-Brake®	Outfall	0.9				91.5

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	1	10	55.077	0.057	14.9	0.0161	0.0000	OK
15 minute summer	2	10	54.500	0.050	14.9	0.0143	0.0000	OK
600 minute winter	Tank	570	54.393	0.718	5.0	54.6052	0.0000	SURCHARGED
600 minute winter	3	570	54.393	0.793	2.1	0.2246	0.0000	SURCHARGED
600 minute winter	4	570	54.393	0.993	1.3	1.1236	0.0000	SURCHARGED
15 minute summer	Outfall	1	53.367	0.000	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	1	1.000	Tank	14.8	2.439	0.305	0.2137	
15 minute summer	2	2.000	Tank	14.9	2.743	0.243	0.0754	
600 minute winter	Tank	1.001	3	-2.0	0.313	-0.042	0.3626	
600 minute winter	3	1.002	4	1.1	0.109	0.026	1.2843	
600 minute winter	4	Hydro-Brake®	Outfall	0.8				82.5

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	1	10	55.090	0.070	21.5	0.0197	0.0000	OK
960 minute winter	2	885	54.832	0.382	1.5	0.1081	0.0000	SURCHARGED
960 minute winter	Tank	885	54.832	1.157	5.0	87.9382	0.0000	SURCHARGED
960 minute winter	3	885	54.832	1.232	2.0	0.3487	0.0000	SURCHARGED
960 minute winter	4	885	54.832	1.432	1.4	1.6196	0.0000	FLOOD RISK
15 minute summer	Outfall	1	53.367	0.000	0.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	1	1.000	Tank	21.4	2.429	0.440	0.2326	
960 minute winter	2	2.000	Tank	1.5	1.100	0.025	0.1172	
960 minute winter	Tank	1.001	3	-2.0	0.323	-0.042	0.3626	
960 minute winter	3	1.002	4	1.0	0.094	0.024	1.2843	
960 minute winter	4	Hydro-Brake®	Outfall	1.0				113.7