

Design Settings

Rainfall Methodology	FEH-22	Maximum Time of Concentration (mins)	30.00	Preferred Cover Depth (m)	1.200
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0	Include Intermediate Ground	✓
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00	Enforce best practice design rules	x
CV	1.000	Connection Type	Level Soffits		
Time of Entry (mins)	5.00	Minimum Backdrop Height (m)	1.000		

Nodes

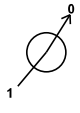
	Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Manhole Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
✓	S1	0.310	5.00	16.400	Manhole	Adoptable	1200	120794.414	526615.279	0.800
✓	S2			16.600	Manhole	Adoptable	1200	120790.900	526628.925	1.150
✓	S3			16.650	Manhole	Adoptable	1200	120806.308	526647.194	1.330
✓	S4			16.650	Manhole	Adoptable	1200	120809.421	526652.163	1.360
✓	S5			16.600	Manhole	Adoptable	1350	120803.915	526670.651	1.400

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	14.091	93.9	225	Circular	16.400	15.600	0.575	16.600	15.450	0.925
1.001	23.899	183.8	225	Circular	16.600	15.450	0.925	16.650	15.320	1.105
1.002	5.864	195.5	225	Circular	16.650	15.320	1.105	16.650	15.290	1.135
1.003	19.290	214.3	225	Circular	16.650	15.290	1.135	16.600	15.200	1.175

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	1200	Manhole	Adoptable	S2	1200	Manhole	Adoptable
1.001	S2	1200	Manhole	Adoptable	S3	1200	Manhole	Adoptable
1.002	S3	1200	Manhole	Adoptable	S4	1200	Manhole	Adoptable
1.003	S4	1200	Manhole	Adoptable	S5	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
S1	120794.414	526615.279	16.400	0.800	1200	Manhole	Adoptable		0	1.000	15.600	225 Circular
S2	120790.900	526628.925	16.600	1.150	1200	Manhole	Adoptable		1	1.000	15.450	225 Circular
S3	120806.308	526647.194	16.650	1.330	1200	Manhole	Adoptable		1	1.001	15.320	225 Circular
S4	120809.421	526652.163	16.650	1.360	1200	Manhole	Adoptable		1	1.002	15.290	225 Circular
S5	120803.915	526670.651	16.600	1.400	1350	Manhole	Adoptable		1	1.003	15.200	225 Circular

Simulation Settings

Rainfall Methodology	FEH-22	Winter CV	1.000	Drain Down Time (mins)	1440	Check Discharge Rate(s)	x
Rainfall Events	Singular	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0	Check Discharge Volume	x
Summer CV	1.000	Skip Steady State	x	Starting Level (m)			

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	45	0	0
30	35	0	0				

Node S4 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	15.290	Product Number	CTL-SHE-0064-1800-1000-1800
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	1.8	Min Node Diameter (mm)	1200

Node S1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	186.900	Depth (m)
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	15.720	Length (m)	10.000	Inf Depth (m)
Safety Factor	2.0	Time to half empty (mins)		Slope (1:X)	300.0	

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	110.261	31.200	2 year 360 minute winter	11.757	4.654
2 year 15 minute winter	77.376	31.200	2 year 480 minute summer	14.377	3.799
2 year 30 minute summer	72.800	20.600	2 year 480 minute winter	9.552	3.799
2 year 30 minute winter	51.088	20.600	2 year 600 minute summer	11.820	3.233
2 year 60 minute summer	49.192	13.000	2 year 600 minute winter	8.076	3.233
2 year 60 minute winter	32.682	13.000	2 year 720 minute summer	10.551	2.828
2 year 120 minute summer	34.871	9.215	2 year 720 minute winter	7.091	2.828
2 year 120 minute winter	23.167	9.215	2 year 960 minute summer	8.673	2.284
2 year 180 minute summer	28.355	7.297	2 year 960 minute winter	5.745	2.284
2 year 180 minute winter	18.431	7.297	2 year 1440 minute summer	6.304	1.690
2 year 240 minute summer	23.091	6.102	2 year 1440 minute winter	4.237	1.690
2 year 240 minute winter	15.341	6.102	30 year +35% CC 15 minute summer	380.711	107.728
2 year 360 minute summer	18.086	4.654	30 year +35% CC 15 minute winter	267.165	107.728

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year +35% CC 30 minute summer	253.780	71.811	100 year +45% CC 15 minute winter	360.840	145.500
30 year +35% CC 30 minute winter	178.091	71.811	100 year +45% CC 30 minute summer	344.353	97.440
30 year +35% CC 60 minute summer	172.345	45.546	100 year +45% CC 30 minute winter	241.651	97.440
30 year +35% CC 60 minute winter	114.502	45.546	100 year +45% CC 60 minute summer	236.954	62.620
30 year +35% CC 120 minute summer	106.319	28.097	100 year +45% CC 60 minute winter	157.427	62.620
30 year +35% CC 120 minute winter	70.636	28.097	100 year +45% CC 120 minute summer	143.062	37.807
30 year +35% CC 180 minute summer	81.521	20.978	100 year +45% CC 120 minute winter	95.047	37.807
30 year +35% CC 180 minute winter	52.991	20.978	100 year +45% CC 180 minute summer	108.976	28.043
30 year +35% CC 240 minute summer	64.217	16.971	100 year +45% CC 180 minute winter	70.837	28.043
30 year +35% CC 240 minute winter	42.664	16.971	100 year +45% CC 240 minute summer	85.679	22.642
30 year +35% CC 360 minute summer	48.543	12.492	100 year +45% CC 240 minute winter	56.923	22.642
30 year +35% CC 360 minute winter	31.554	12.492	100 year +45% CC 360 minute summer	64.852	16.689
30 year +35% CC 480 minute summer	37.864	10.006	100 year +45% CC 360 minute winter	42.156	16.689
30 year +35% CC 480 minute winter	25.156	10.006	100 year +45% CC 480 minute summer	50.797	13.424
30 year +35% CC 600 minute summer	30.744	8.409	100 year +45% CC 480 minute winter	33.748	13.424
30 year +35% CC 600 minute winter	21.006	8.409	100 year +45% CC 600 minute summer	41.423	11.330
30 year +35% CC 720 minute summer	27.194	7.288	100 year +45% CC 600 minute winter	28.303	11.330
30 year +35% CC 720 minute winter	18.276	7.288	100 year +45% CC 720 minute summer	36.789	9.860
30 year +35% CC 960 minute summer	22.058	5.808	100 year +45% CC 720 minute winter	24.725	9.860
30 year +35% CC 960 minute winter	14.611	5.808	100 year +45% CC 960 minute summer	30.043	7.911
30 year +35% CC 1440 minute summer	15.725	4.215	100 year +45% CC 960 minute winter	19.901	7.911
30 year +35% CC 1440 minute winter	10.568	4.215	100 year +45% CC 1440 minute summer	21.594	5.787
100 year +45% CC 15 minute summer	514.197	145.500	100 year +45% CC 1440 minute winter	14.513	5.787

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S1	344	15.828	0.228	10.1	51.1438	0.0000	SURCHARGED
360 minute winter	S2	344	15.828	0.378	2.8	0.4275	0.0000	SURCHARGED
360 minute winter	S3	344	15.828	0.508	2.2	0.5742	0.0000	SURCHARGED
360 minute winter	S4	344	15.828	0.538	1.9	0.6080	0.0000	SURCHARGED
240 minute summer	S5	64	15.233	0.033	1.7	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)
360 minute winter	S1	1.000	S2	2.8	0.559	0.052	0.5604	
360 minute winter	S2	1.001	S3	2.2	0.367	0.059	0.9505	
360 minute winter	S3	1.002	S4	1.9	0.132	0.052	0.2332	
360 minute winter	S4	1.003	S5	1.7	0.466	0.048	0.0709	86.8

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	S1	585	16.097	0.497	18.1	200.9691	0.0000	SURCHARGED
600 minute winter	S2	585	16.096	0.646	2.8	0.7311	0.0000	SURCHARGED
600 minute winter	S3	585	16.096	0.776	2.4	0.8778	0.0000	SURCHARGED
600 minute winter	S4	585	16.096	0.806	1.9	0.9116	0.0000	SURCHARGED
30 minute winter	S5	1190	15.233	0.033	1.7	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)
600 minute winter	S1	1.000	S2	2.8	0.579	0.052	0.5604	
600 minute winter	S2	1.001	S3	2.4	0.231	0.064	0.9505	
600 minute winter	S3	1.002	S4	1.9	0.091	0.051	0.2332	
600 minute winter	S4	1.003	S5	1.7	0.466	0.048	0.0709	183.8

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.77%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
960 minute winter	S1	930	16.267	0.667	17.1	296.1805	0.0000	FLOOD RISK
960 minute winter	S2	930	16.266	0.816	2.7	0.9234	0.0000	SURCHARGED
960 minute winter	S3	930	16.266	0.946	2.1	1.0700	0.0000	SURCHARGED
960 minute winter	S4	930	16.266	0.976	1.9	1.1038	0.0000	SURCHARGED
960 minute winter	S5	930	15.233	0.033	1.8	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)
960 minute winter	S1	1.000	S2	2.7	0.578	0.050	0.5604	
960 minute winter	S2	1.001	S3	2.1	0.269	0.056	0.9505	
960 minute winter	S3	1.002	S4	1.9	0.107	0.051	0.2332	
960 minute winter	S4	1.003	S5	1.8	0.469	0.050	0.0721	233.5