

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)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	75.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
DBSA			140.500	1200	403.399	341.868	1.550	138.950
S2	0.015	4.00	140.500	450	408.942	334.260	1.350	139.150
S4	0.015	4.00	140.500	450	402.247	343.394	1.350	139.150

Links

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	S2	DBSA	9.413	0.600	139.150	138.950	0.200	47.1	150	4.11	55.2
2.000	S4	DBSA	1.000	0.600	139.150	139.140	0.010	100.0	150	4.02	55.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.470	26.0	3.0	1.200	1.400	0.015	0.0	34	0.982
2.000	1.005	17.8	3.0	1.200	1.210	0.015	0.0	42	0.751

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	9.413	47.1	150	Circular	140.500	139.150	1.200	140.500	138.950	1.400
2.000	1.000	100.0	150	Circular	140.500	139.150	1.200	140.500	139.140	1.210

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S2	450	Manhole	Adoptable	DBSA	1200	Manhole	Adoptable
2.000	S4	450	Manhole	Adoptable	DBSA	1200	Manhole	Adoptable

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	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	0	0

Node DBSA Deep Bore Soakaway Storage Structure

Base Inf Coefficient (m/hr)	5.74000	Invert Level (m)	138.500	Borehole Diameter	0.125
Side Inf Coefficient (m/hr)	5.74000	Time to half empty (mins)	3	Borehole Depth (m)	22.000
Safety Factor	2.0	Diameter (m)	1.200	Inf Depth (m)	17.000
Porosity	1.00	Depth (m)	2.000	Number Required	1

Node S2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	140.080	Slope (1:X)	9999.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	8	Depth (m)	0.420
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	0.300
Porosity	0.30	Length (m)	16.000		

Results for 10 year Critical Storm Duration. Lowest 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	DBSA	12	139.257	0.307	12.2	1.4769	0.0000	OK
15 minute summer	S2	12	139.262	0.112	6.1	0.0178	0.0000	OK
15 minute summer	S4	12	139.258	0.108	6.1	0.0172	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DBSA	Infiltration		5.3			
15 minute summer	S2	1.000	DBSA	6.1	1.152	0.235	0.1491
15 minute summer	S4	2.000	DBSA	6.1	0.815	0.344	0.0142

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.55%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	DBSA	13	139.528	0.578	16.0	2.0888	0.0000	OK
15 minute summer	S2	13	139.529	0.379	8.1	0.0603	0.0000	SURCHARGED
15 minute summer	S4	13	139.528	0.378	8.1	0.0601	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	DBSA	Infiltration		5.3			
15 minute summer	S2	1.000	DBSA	8.0	1.165	0.309	0.1657
15 minute summer	S4	2.000	DBSA	7.9	0.872	0.447	0.0176

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.75%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	DBSA	23	140.055	1.105	15.2	3.2822	0.0000	OK
30 minute summer	S2	23	140.057	0.907	10.0	0.1443	0.0000	SURCHARGED
30 minute summer	S4	23	140.056	0.906	10.0	0.1440	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute summer	DBSA	Infiltration		5.3			
30 minute summer	S2	1.000	DBSA	7.8	1.119	0.299	0.1657
30 minute summer	S4	2.000	DBSA	7.5	0.857	0.420	0.0176

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.59%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	DBSA	22	139.890	0.940	14.6	2.9088	0.0000	OK
30 minute summer	S2	22	139.893	0.743	9.2	0.1181	0.0000	SURCHARGED
30 minute summer	S4	22	139.890	0.740	9.2	0.1177	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute summer	DBSA	Infiltration		5.3			
30 minute summer	S2	1.000	DBSA	7.1	1.179	0.275	0.1657
30 minute summer	S4	2.000	DBSA	7.5	0.836	0.422	0.0176

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 98.67%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	DBSA	23	140.163	1.213	16.5	3.5265	0.0000	OK
30 minute summer	S2	24	140.166	1.016	15.5	2.6068	0.0000	SURCHARGED
30 minute summer	S4	23	140.163	1.013	13.2	0.1611	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute summer	DBSA	Infiltration		5.3			
30 minute summer	S2	1.000	DBSA	8.2	1.109	0.318	0.1657
30 minute summer	S4	2.000	DBSA	10.5	0.848	0.590	0.0176