Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	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)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
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)
3	0.015	5.00	7.452	600	503114.248	103682.390	1.350	6.102
1	0.007	5.00	7.100	1800	503158.875	103676.487	2.061	5.039
2	0.050	5.00	7.217	1800	503135.489	103679.594	1.883	5.334
4	0.011	5.00	7.449	600	503136.740	103689.762	1.350	6.099

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	3	2	21.425	0.600	6.102	5.834	0.268	80.0	150	5.32	50.0
2.000	4	2	10.245	0.600	6.099	5.835	0.264	38.8	150	5.11	50.0
1.001	2	1	23.591	0.600	5.834	5.539	0.295	80.0	150	5.67	50.0

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	1.125	19.9	2.7	1.200	1.233	0.015	0.0	37	0.787
2.000	1.620	28.6	2.0	1.200	1.232	0.011	0.0	27	0.931
1.001	1.125	19.9	13.7	1.233	1.411	0.076	0.0	92	1.212

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	✓	Check Discharge Rate(s)	✓
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	✓
Winter CV	1.000	Additional Storage (m³/ha)	0.0	100 year 360 minute (m³)	

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 %)
2	0	0	0
10	45	0	0
30	20	0	0
100	20	0	0

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Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)		Betterment (%)	0
SAAR (mm)		QBar	
Soil Index	1	Q 1 year (l/s)	
SPR	0.10	Q 30 year (l/s)	
Region	1	Q 100 year (l/s)	
Growth Factor 1 year	0.85		

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)		Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m^3)	

Node 1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.03600	Invert Level (m)	3.950	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03600	Time to half empty (mins)	1439	Inf Depth (m)	0.400
Safety Factor	3.0	Pit Width (m)	5.000	Number Required	1
Porosity	0.95	Pit Length (m)	5.000		

Node 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	6.740	Slope (1:X)	300.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	16.800		

Node 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	6.440	Slope (1:X)	300.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	15.200		

Node 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	6.590	Slope (1:X)	300.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node 4 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	6.790	Slope (1:X)	300.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Depth (m)	0.450
Safety Factor	2.0	Width (m)	6.000	Inf Depth (m)	
Porosity	0.30	Length (m)	8.300		

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Node 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	3.0	Invert Level (m)	6.040
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	90.0	90.0	0.400	90.0	103.5	0.401	0.0	103.5

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Results for 2 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	3	10	6.140	0.038	2.8	0.0107	0.0000	OK
1440 minute winter	1	1080	5.862	0.323	0.9	19.9134	0.0000	OK
15 minute summer	2	11	5.931	0.097	14.2	0.2462	0.0000	OK
15 minute summer	4	10	6.126	0.027	2.1	0.0078	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	3	1.000	2	2.8	0.378	0.139	0.1654
1440 minute winter	1	Infiltration		0.1			
15 minute summer	2	1.001	1	14.0	1.194	0.702	0.2759
15 minute summer	4	2.000	2	2.1	0.325	0.073	0.0718

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Results for 10 year +45% CC Critical Storm Duration. Lowest mass balance: 97.46%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	3	1410	6.428	0.326	0.4	0.0922	0.0000	SURCHARGED
1440 minute winter	1	1410	6.428	0.889	1.6	21.3537	0.0000	OK
1440 minute winter	2	1410	6.428	0.594	1.9	34.7036	0.0000	SURCHARGED
1440 minute winter	4	1410	6.428	0.329	0.3	0.0930	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
1440 minute winter	3	1.000	2	0.4	0.214	0.020	0.3772
1440 minute winter	1	Infiltration		0.1			
1440 minute winter	2	1.001	1	1.5	0.661	0.075	0.4153
1440 minute winter	4	2.000	2	0.3	0.197	0.010	0.1804

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Results for 30 year +20% CC Critical Storm Duration. Lowest mass balance: 97.54%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute summer	3	1440	6.482	0.380	0.5	0.1074	0.0000	SURCHARGED
1440 minute summer	1	1440	6.482	0.943	2.2	21.4908	0.0000	OK
1440 minute summer	2	1440	6.482	0.648	2.8	36.3997	0.0000	SURCHARGED
1440 minute summer	4	1440	6.482	0.383	0.4	0.1083	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
1440 minute summer	3	1.000	2	0.5	0.226	0.025	0.3772
1440 minute summer	1	Infiltration		0.1			
1440 minute summer	2	1.001	1	2.0	0.717	0.100	0.4153
1440 minute summer	4	2.000	2	0.4	0.198	0.014	0.1804

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Results for 100 year +20% CC Critical Storm Duration. Lowest mass balance: 97.58%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
1440 minute winter	3	1440	6.836	0.734	0.5	0.2076	0.0000	SURCHARGED
1440 minute winter	1	1440	6.836	1.297	1.6	22.3921	0.0000	OK
1440 minute winter	2	1440	6.836	1.002	2.3	53.1317	0.0000	SURCHARGED
1440 minute winter	4	1440	6.836	0.737	0.3	0.6830	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
1440 minute winter	3	1.000	2	0.5	0.214	0.024	0.3772
1440 minute winter	1	Infiltration		0.1			
1440 minute winter	2	1.001	1	1.5	0.661	0.075	0.4153
1440 minute winter	4	2.000	2	0.3	0.194	0.010	0.1804

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