

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	9.999
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)
1A		5.00	14.550	600	507344.197	104704.518	0.750
1B			14.120	600	507355.308	104699.444	0.750
1C			11.500	600	507361.350	104688.675	0.750
1	0.033	5.00	11.510	600	507356.284	104683.424	1.010
2	0.017	5.00	11.160	1200	507314.142	104657.839	1.200
2A			11.160	1200	507304.142	104657.839	1.220
-TANK IN			11.160		507313.142	104657.839	1.210
-TANK OUT			11.160		507305.142	104657.839	1.210
5	0.011	5.00	11.640	600	507279.300	104679.978	0.750
6			11.940	600	507279.300	104657.839	1.940
8	0.015	5.00	11.230	1200	507295.430	104657.839	1.390
11			10.050		507295.430	104643.728	0.500
4			14.640	600	507279.896	104688.958	0.743
3	0.019	5.00	14.910	600	507279.896	104707.571	0.700

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_1	1A	1B	12.215	0.600	13.800	13.370	0.430	28.4	150	5.11	50.0
1.001_1	1B	1C	12.348	0.600	13.370	10.750	2.620	4.7	150	5.15	50.0
1.002_1	1C	1	7.296	0.600	10.750	10.500	0.250	29.2	150	5.22	50.0
3.000	1	2	49.301	0.600	10.500	9.960	0.540	91.3	150	6.00	50.0
1.004_1	2	-TANK IN	1.000	0.600	9.960	9.950	0.010	100.0	150	6.01	50.0
1.004	8	11	14.111	0.600	9.840	9.550	0.290	48.7	150	6.34	50.0
2.000	2A	8	8.712	0.600	9.940	9.840	0.100	87.1	150	6.18	50.0
1.003	6	8	16.130	0.600	10.000	9.840	0.160	100.8	150	5.79	50.0
1.002	5	6	22.139	0.600	10.890	10.000	0.890	24.9	150	5.53	50.0
1.001	4	5	9.000	0.600	13.897	10.940	2.957	3.0	100	5.34	50.0
1.000	3	4	18.613	0.600	14.210	13.897	0.313	59.5	100	5.31	50.0
1.006	-TANK OUT	2A	1.000	0.600	9.950	9.940	0.010	100.0	150	6.05	50.0
4.000	-TANK IN	-TANK OUT	1.000	0.600	9.950	9.950	0.000	0.0	150	6.03	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	1.896	33.5	0.0	0.600	0.600	0.000	0.0	0	0.000
1.001_1	4.674	82.6	0.0	0.600	0.600	0.000	0.0	0	0.000
1.002_1	1.870	33.1	0.0	0.600	0.860	0.000	0.0	0	0.000
3.000	1.052	18.6	6.2	0.860	1.050	0.033	0.0	60	0.951
1.004_1	1.005	17.8	9.4	1.050	1.060	0.050	0.0	78	1.019
1.004	1.446	25.5	18.0	1.240	0.350	0.095	0.0	93	1.563
2.000	1.077	19.0	9.4	1.070	1.240	0.050	0.0	75	1.075
1.003	1.000	17.7	5.7	1.790	1.240	0.030	0.0	58	0.891
1.002	2.027	35.8	5.7	0.600	1.790	0.030	0.0	40	1.483
1.001	4.466	35.1	3.7	0.643	0.600	0.019	0.0	22	2.927
1.000	1.000	7.9	3.7	0.600	0.643	0.019	0.0	48	0.983
1.006	1.005	17.8	9.4	1.060	1.070	0.050	0.0	78	1.019
4.000	1.000	17.7	9.4	1.060	1.060	0.050	0.0	0	∞

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_1	12.215	28.4	150	PH1	14.550	13.800	0.600	14.120	13.370	0.600
1.001_1	12.348	4.7	150	PH1	14.120	13.370	0.600	11.500	10.750	0.600
1.002_1	7.296	29.2	150	PH1	11.500	10.750	0.600	11.510	10.500	0.860
3.000	49.301	91.3	150	PH1	11.510	10.500	0.860	11.160	9.960	1.050
1.004_1	1.000	100.0	150	PH1	11.160	9.960	1.050	11.160	9.950	1.060
1.004	14.111	48.7	150	PH1	11.230	9.840	1.240	10.050	9.550	0.350
2.000	8.712	87.1	150	PH1	11.160	9.940	1.070	11.230	9.840	1.240
1.003	16.130	100.8	150	PH1	11.940	10.000	1.790	11.230	9.840	1.240
1.002	22.139	24.9	150	PH1	11.640	10.890	0.600	11.940	10.000	1.790
1.001	9.000	3.0	100	PH1	14.640	13.897	0.643	11.640	10.940	0.600
1.000	18.613	59.5	100	PH1	14.910	14.210	0.600	14.640	13.897	0.643
1.006	1.000	100.0	150	PH1	11.160	9.950	1.060	11.160	9.940	1.070
4.000	1.000	0.0	150	DUMMY	11.160	9.950	1.060	11.160	9.950	1.060

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000_1	1A	600	Manhole	Adoptable	1B	600	Manhole	Adoptable
1.001_1	1B	600	Manhole	Adoptable	1C	600	Manhole	Adoptable
1.002_1	1C	600	Manhole	Adoptable	1	600	Manhole	Adoptable
3.000	1	600	Manhole	Adoptable	2	1200	Manhole	Adoptable
1.004_1	2	1200	Manhole	Adoptable	-TANK IN		Junction	
1.004	8	1200	Manhole	Adoptable	11		Junction	
2.000	2A	1200	Manhole	Adoptable	8	1200	Manhole	Adoptable
1.003	6	600	Manhole	Adoptable	8	1200	Manhole	Adoptable
1.002	5	600	Manhole	Adoptable	6	600	Manhole	Adoptable
1.001	4	600	Manhole	Adoptable	5	600	Manhole	Adoptable
1.000	3	600	Manhole	Adoptable	4	600	Manhole	Adoptable
1.006	-TANK OUT		Junction		2A	1200	Manhole	Adoptable
4.000	-TANK IN		Junction		-TANK OUT		Junction	

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1A	507344.197	104704.518	14.550	0.750	600				
						0	1.000_1	13.800	150
1B	507355.308	104699.444	14.120	0.750	600		1	1.000_1	13.370
						0	1.001_1	13.370	150
1C	507361.350	104688.675	11.500	0.750	600		1	1.001_1	10.750
						0	1.002_1	10.750	150
1	507356.284	104683.424	11.510	1.010	600		1	1.002_1	10.500
						0	3.000	10.500	150
2	507314.142	104657.839	11.160	1.200	1200		1	3.000	9.960
						0	1.004_1	9.960	150
2A	507304.142	104657.839	11.160	1.220	1200		1	1.006	9.940
						0	2.000	9.940	150
-TANK IN	507313.142	104657.839	11.160	1.210			1	1.004_1	9.950
						0	4.000	9.950	150
-TANK OUT	507305.142	104657.839	11.160	1.210			1	4.000	9.950
						0	1.006	9.950	150
5	507279.300	104679.978	11.640	0.750	600		1	1.001	10.940
						0	1.002	10.890	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
6	507279.300	104657.839	11.940	1.940	600		1	1.002	10.000 150
8	507295.430	104657.839	11.230	1.390	1200		0	1.003	10.000 150
							1	1.003	9.840 150
							2	2.000	9.840 150
							0	1.004	9.840 150
11	507295.430	104643.728	10.050	0.500			1	1.004	9.550 150
4	507279.896	104688.958	14.640	0.743	600		1	1.000	13.897 100
							0	1.001	13.897 100
3	507279.896	104707.571	14.910	0.700	600		0	1.000	14.210 100

Simulation Settings

Rainfall Methodology	FEH-13	Drain Down Time (mins)	240
Summer CV	0.750	Additional Storage (m³/ha)	20.0
Winter CV	0.840	Check Discharge Rate(s)	x
Analysis Speed	Detailed	Check Discharge Volume	x
Skip Steady State	✓		

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	40	0	0
100	40	0	0

Node 8 Online Hydro-Brake® Control

Flap Valve	x
Replaces Downstream Link	✓
Invert Level (m)	9.840
Design Depth (m)	1.420
Design Flow (l/s)	1.4
Objective	(HE) Minimise upstream storage
Sump Available	✓
Product Number	CTL-SHE-0051-1400-1420-1400
Min Outlet Diameter (m)	0.075
Min Node Diameter (mm)	1200

Node -TANK OUT Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.95
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	9.950
Safety Factor	5.0	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	56.0	0.0	0.800	56.0	0.0	0.801	0.0	0.0

Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 96.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1A	1	13.800	0.000	0.0	0.0000	0.0000	OK
30 minute summer	1B	1	13.370	0.000	0.0	0.0000	0.0000	OK
30 minute summer	1C	1	10.750	0.000	0.0	0.0000	0.0000	OK
30 minute summer	1	18	10.585	0.085	11.6	0.0797	0.0000	OK
180 minute winter	2	176	10.446	0.486	5.0	0.6854	0.0000	SURCHARGED
180 minute winter	2A	176	10.446	0.506	3.1	0.5724	0.0000	SURCHARGED
180 minute winter	-TANK IN	176	10.446	0.496	4.6	0.0000	0.0000	SURCHARGED
180 minute winter	-TANK OUT	176	10.446	0.496	7.4	26.3923	0.0000	SURCHARGED
30 minute summer	5	18	10.946	0.056	10.7	0.0319	0.0000	OK
180 minute winter	6	176	10.446	0.446	3.0	0.1262	0.0000	SURCHARGED
180 minute winter	8	176	10.446	0.606	4.3	0.8162	0.0000	SURCHARGED
30 minute summer	11	1	9.550	0.000	1.0	0.0000	0.0000	OK
30 minute summer	4	18	13.928	0.031	6.9	0.0089	0.0000	OK
30 minute summer	3	18	14.299	0.089	6.9	0.0744	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)
30 minute summer	1A	1.000_1	1B	0.0	0.000	0.000	0.0000	
30 minute summer	1B	1.001_1	1C	0.0	0.000	0.000	0.0000	
30 minute summer	1C	1.002_1	1	0.0	0.000	0.000	0.0378	
30 minute summer	1	3.000	2	11.6	0.751	0.623	0.6893	
180 minute winter	2	1.004_1	-TANK IN	4.6	0.408	0.257	0.0176	
180 minute winter	2A	2.000	8	-3.1	-0.175	-0.162	0.1534	
180 minute winter	-TANK IN	4.000	-TANK OUT	4.4	0.698	0.251	0.0176	
180 minute winter	-TANK OUT	1.006	2A	-2.9	0.440	-0.165	0.0176	
30 minute summer	5	1.002	6	10.7	1.152	0.298	0.2614	
180 minute winter	6	1.003	8	2.8	0.185	0.156	0.2840	
180 minute winter	8	Hydro-Brake®	11	1.0				22.3

30 minute summer	4	1.001	5	6.9	3.404	0.196	0.0182
30 minute summer	3	1.000	4	6.9	1.420	0.875	0.0879

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 96.66%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	1A	1	13.800	0.000	0.0	0.0000	0.0000	OK
30 minute summer	1B	1	13.370	0.000	0.0	0.0000	0.0000	OK
180 minute winter	1C	180	11.024	0.274	0.4	0.0774	0.0000	SURCHARGED
180 minute winter	1	180	11.024	0.524	5.2	0.4886	0.0000	SURCHARGED
180 minute winter	2	180	11.024	1.064	7.8	1.4996	0.0000	FLOOD RISK
180 minute winter	2A	180	11.023	1.083	5.6	1.2254	0.0000	FLOOD RISK
180 minute winter	-TANK IN	180	11.024	1.074	7.1	0.0000	0.0000	FLOOD RISK
180 minute winter	-TANK OUT	180	11.024	1.074	12.2	42.5866	0.0000	FLOOD RISK
180 minute winter	5	180	11.023	0.133	4.8	0.0757	0.0000	OK
180 minute winter	6	180	11.023	1.023	4.8	0.2896	0.0000	SURCHARGED
180 minute winter	8	180	11.023	1.183	6.8	1.5938	0.0000	FLOOD RISK
30 minute summer	11	1	9.550	0.000	1.0	0.0000	0.0000	OK
30 minute summer	4	19	13.935	0.038	9.9	0.0108	0.0000	OK
30 minute summer	3	19	14.700	0.490	11.6	0.4099	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	1A	1.000_1	1B	0.0	0.000	0.000	0.0000	
30 minute summer	1B	1.001_1	1C	0.0	0.000	0.000	0.0304	
180 minute winter	1C	1.002_1	1	-0.4	-0.025	-0.012	0.1284	
180 minute winter	1	3.000	2	5.2	0.401	0.280	0.8679	
180 minute winter	2	1.004_1	-TANK IN	7.1	0.427	0.400	0.0176	
180 minute winter	2A	2.000	8	-5.6	-0.315	-0.292	0.1534	
180 minute winter	-TANK IN	4.000	-TANK OUT	6.9	0.900	0.389	0.0176	
180 minute winter	-TANK OUT	1.006	2A	-5.3	0.346	-0.298	0.0176	
180 minute winter	5	1.002	6	4.8	0.755	0.134	0.3779	
180 minute winter	6	1.003	8	4.4	0.250	0.249	0.2840	
180 minute winter	8	Hydro-Brake®	11	1.3				26.7

30 minute summer	4	1.001	5	9.9	3.750	0.283	0.0238
30 minute summer	3	1.000	4	9.9	1.597	1.264	0.0984



Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	x
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)	Easting (m)	Northing (m)	Depth (m)
2		5.00	14.750	507322.067	104713.560	0.500
1	0.047		14.750	507324.030	104713.560	0.600

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	2	1	1.963	0.600	14.250	14.150	0.100	19.6	50	5.03	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	1.100	2.2	0.0	0.450	0.550	0.000	0.0	0	0.000

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	1.963	19.6	50	DUMMY	14.750	14.250	0.450	14.750	14.150	0.550

Link	US Node	Node Type	DS Node	Node Type
1.000	2	Junction	1	Junction

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Connections	Link	IL (m)	Dia (mm)
2	507322.067	104713.560	14.750	0.500				
						0	1.000	14.250
1	507324.030	104713.560	14.750	0.600		1	1.000	14.150
							1.000	14.150

Simulation Settings

Rainfall Methodology	FEH-13	Drain Down Time (mins)	240
Summer CV	0.750	Additional Storage (m³/ha)	20.0
Winter CV	0.840	Check Discharge Rate(s)	x
Analysis Speed	Detailed	Check Discharge Volume	x
Skip Steady State	✓		

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	40	0	0
100	40	0	0

Node 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	1.03320	Width (m)	4.560
Side Inf Coefficient (m/hr)	0.00000	Length (m)	53.600
Safety Factor	5.0	Slope (1:X)	58.2
Porosity	0.30	Depth (m)	0.440
Invert Level (m)	14.150	Inf Depth (m)	
Time to half empty (mins)	6		

Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 96.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	2	23	14.616	0.366	0.6	0.0000	0.0000	FLOOD RISK
30 minute winter	1	23	14.616	0.466	14.9	4.8867	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute winter	2	1.000	1	-0.6	-0.316	-0.287	0.0038
30 minute winter	1	Infiltration		7.1			

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 96.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	2	23	14.750	0.500	1.0	0.0000	0.0000	FLOOD RISK
30 minute winter	1	20	14.750	0.600	25.2	7.8204	1.8616	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute summer	2	1.000	1	-1.0	-0.523	-0.473	0.0038
30 minute winter	1	Infiltration		9.1			

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	x
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)	Easting (m)	Northing (m)	Depth (m)
3		5.00	14.220	507328.488	104704.529	1.250
2	0.156		14.220	507330.451	104704.529	1.283

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	1.963	0.600	12.970	12.937	0.033	59.5	50	5.05	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	0.626	1.2	0.0	1.200	1.233	0.000	0.0	0	0.000

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	1.963	59.5	50	DUMMY	14.220	12.970	1.200	14.220	12.937	1.233

Link	US Node	Node Type	DS Node	Node Type
1.000	3	Junction	2	Junction

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Connections	Link	IL (m)	Dia (mm)
3	507328.488	104704.529	14.220	1.250				
						0	1.000	12.970
2	507330.451	104704.529	14.220	1.283				
						1	1.000	12.937

Simulation Settings

Rainfall Methodology	FEH-13	Drain Down Time (mins)	240
Summer CV	0.750	Additional Storage (m³/ha)	20.0
Winter CV	0.840	Check Discharge Rate(s)	x
Analysis Speed	Detailed	Check Discharge Volume	x
Skip Steady State	✓		

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	40	0	0
100	40	0	0
200	40	0	0
1000	100	0	0

Node 2 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Width (m)	127.300
Side Inf Coefficient (m/hr)	0.00000	Length (m)	10.000
Safety Factor	6.5	Slope (1:X)	20.0
Porosity	0.30	Depth (m)	0.410
Invert Level (m)	13.650	Inf Depth (m)	
Time to half empty (mins)			

Node 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	1.03320	Porosity	0.30
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	13.500
Safety Factor	6.5	Time to half empty (mins)	5

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	456.0	456.0	0.150	456.0	456.0	0.151	0.0	456.0

Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 98.45%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	3	24	13.623	0.653	2.2	0.0000	0.0000	SURCHARGED
30 minute winter	2	24	13.623	0.686	49.9	18.5150	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute winter	3	1.000	2	-2.2	-1.137	-1.807	0.0038
30 minute winter	2	Infiltration		20.1			

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.45%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	3	26	13.879	0.909	2.8	0.0000	0.0000	SURCHARGED
30 minute winter	2	26	13.879	0.942	84.4	39.4405	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
30 minute winter	3	1.000	2	-2.8	-1.420	-2.259	0.0038
30 minute winter	2	Infiltration		20.1			

Results for 200 year +40% CC Critical Storm Duration. Lowest mass balance: 98.45%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
30 minute winter	3	28	13.927	0.957	2.8	0.0000	0.0000	FLOOD RISK
30 minute winter	2	27	13.927	0.990	95.9	47.0943	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)
30 minute winter	3	1.000	2	-2.8	-1.412	-2.246	0.0038
30 minute winter	2	Infiltration		20.1			

Results for 1000 year +100% CC Critical Storm Duration. Lowest mass balance: 98.45%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
60 minute winter	3	58	14.209	1.239	2.8	0.0000	0.0000	FLOOD RISK
60 minute winter	2	58	14.209	1.272	125.1	120.5877	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)
60 minute winter	3	1.000	2	-2.8	-1.428	-2.271	0.0038
60 minute winter	2	Infiltration		20.1			

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
CV	0.750	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	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Easting (m)	Northing (m)	Depth (m)
4		5.00	14.030	507365.325	104725.204	0.430
3	0.032		14.030	507367.288	104725.204	0.600

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	4	3	1.963	0.600	13.600	13.430	0.170	11.5	50	5.02	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	1.438	2.8	0.0	0.380	0.550	0.000	0.0	0	0.000

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	1.963	11.5	50	DUMMY	14.030	13.600	0.380	14.030	13.430	0.550

Link	US Node	Node Type	DS Node	Node Type
1.000	4	Junction	3	Junction

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Connections	Link	IL (m)	Dia (mm)
4	507365.325	104725.204	14.030	0.430				
						0	1.000	13.600 50
3	507367.288	104725.204	14.030	0.600				
						1	1.000	13.430 50

Simulation Settings

Rainfall Methodology	FEH-13	Drain Down Time (mins)	240
Summer CV	0.750	Additional Storage (m³/ha)	20.0
Winter CV	0.840	Check Discharge Rate(s)	x
Analysis Speed	Detailed	Check Discharge Volume	x
Skip Steady State	✓		

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	40	0	0
100	40	0	0

Node 3 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.28440	Width (m)	14.400
Side Inf Coefficient (m/hr)	0.00000	Length (m)	15.000
Safety Factor	5.0	Slope (1:X)	20.5
Porosity	0.30	Depth (m)	0.440
Invert Level (m)	13.430	Inf Depth (m)	
Time to half empty (mins)	29		

Results for 10 year +40% CC Critical Storm Duration. Lowest mass balance: 96.99%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	4	46	13.878	0.278	0.3	0.0000	0.0000	FLOOD RISK
60 minute winter	3	46	13.878	0.448	7.0	5.8468	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
60 minute winter	4	1.000	3	-0.3	-0.152	-0.099	0.0038
60 minute winter	3	Infiltration		2.1			

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 96.99%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	4	43	14.030	0.430	0.4	0.0000	0.0000	FLOOD RISK
60 minute winter	3	42	14.030	0.600	12.0	10.2690	0.9826	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
60 minute winter	4	1.000	3	-0.4	-0.194	-0.134	0.0038
60 minute winter	3	Infiltration		2.8			