



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	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	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Depth (m)	Invert Level (m)
Diff1	0.015	5.00	19.293	700	300	0.443	18.850
S23	0.000		19.510	1350		0.736	18.774
S23a	0.000		19.000	1350		0.700	18.300
Headwall	0.000		19.000	1		0.719	18.281

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	Diff1	S23	5.520	0.600	18.850	18.774	0.076	72.6	150	5.08	50.0
1.001	S23	S23a	71.140	0.600	18.774	18.300	0.474	150.1	150	6.53	48.7
1.002	S23a	Headwall	2.910	0.600	18.300	18.281	0.019	150.0	150	6.59	48.5

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	1.181	20.9	2.0	0.293	0.586	0.015	0.0	31	0.747
1.001	0.818	14.5	2.0	0.586	0.550	0.015	0.0	37	0.571
1.002	0.818	14.5	2.0	0.550	0.569	0.015	0.0	37	0.571

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	5.520	72.6	150	Circular	19.293	18.850	0.293	19.510	18.774	0.586
1.001	71.140	150.1	150	Circular	19.510	18.774	0.586	19.000	18.300	0.550
1.002	2.910	150.0	150	Circular	19.000	18.300	0.550	19.000	18.281	0.569

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	Diff1	700	300	Manhole	Adoptable	S23	1350	Manhole	Adoptable
1.001	S23	1350		Manhole	Adoptable	S23a	1350	Manhole	Adoptable
1.002	S23a	1350		Manhole	Adoptable	Headwall	1	Manhole	Adoptable

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
Diff1	19.293	0.443	700	300				
					0	1.000	18.850	150
S23	19.510	0.736	1350		1	1.000	18.774	150
					0	1.001	18.774	150



Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
S23a	19.000	0.700	1350		1	1.001	18.300	150
					0	1.002	18.300	150
Headwall	19.000	0.719	1		1	1.002	18.281	150

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)	20.0		

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 %)
100	45	0	0

Node S23 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	18.774	Product Number	CTL-SHE-0065-1500-0500-1500
Design Depth (m)	0.500	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	1.5	Min Node Diameter (mm)	1200

Node Diff1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.850	Slope (1:X)	20.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	25	Depth (m)	
Safety Factor	2.0	Width (m)	5.300	Inf Depth (m)	
Porosity	0.30	Length (m)	28.300		



Results for 100 year +45% CC 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
60 minute summer	Diff1	38	19.293	0.443	8.9	3.5506	0.6792	FLOOD
30 minute winter	S23	23	19.293	0.519	3.2	0.7430	0.0000	FLOOD RISK
600 minute summer	S23a	330	18.335	0.035	1.5	0.0502	0.0000	OK
600 minute summer	Headwall	330	18.314	0.033	1.5	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)
60 minute summer	Diff1	1.000	S23	3.1	0.557	0.147	0.0972	
30 minute winter	S23	1.001	S23a	1.5	0.594	0.104	0.2109	
600 minute summer	S23a	1.002	Headwall	1.5	0.505	0.104	0.0087	17.2