



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	0.543	18.750
S23	0.000		19.510	1350		0.797	18.713
S23a	0.000		19.000	1350		0.761	18.239
Headwall	0.000		19.000	1		0.780	18.220

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	18.750	18.713	0.037	150.0	150	5.11	50.0
1.001	S23	S23a	71.140	0.600	18.713	18.239	0.474	150.1	150	6.56	48.5
1.002	S23a	Headwall	2.910	0.600	18.239	18.220	0.019	150.0	150	6.62	48.3

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	0.818	14.5	2.0	0.393	0.647	0.015	0.0	38	0.577
1.001	0.818	14.5	2.0	0.647	0.611	0.015	0.0	37	0.571
1.002	0.818	14.5	2.0	0.611	0.630	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	150.0	150	Circular	19.293	18.750	0.393	19.510	18.713	0.647
1.001	71.140	150.1	150	Circular	19.510	18.713	0.647	19.000	18.239	0.611
1.002	2.910	150.0	150	Circular	19.000	18.239	0.611	19.000	18.220	0.630

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	0.543	700	300				
					0	1.000	18.750	150
S23	19.510	0.797	1350		1	1.000	18.713	150
					0	1.001	18.713	150



Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
S23a	19.000	0.761	1350		1	1.001	18.239	150
					0	1.002	18.239	150
Headwall	19.000	0.780	1		1	1.002	18.220	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)	18.713	Product Number	CTL-SHE-0065-1500-0526-1500
Design Depth (m)	0.526	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)	18.750	Slope (1:X)	20.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	40	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	47	19.251	0.501	8.9	4.4064	0.0000	FLOOD RISK
60 minute summer	S23	47	19.250	0.537	2.3	0.7684	0.0000	FLOOD RISK
360 minute winter	S23a	208	18.274	0.035	1.5	0.0502	0.0000	OK
360 minute winter	Headwall	208	18.253	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	2.3	0.475	0.159	0.0972	
60 minute summer	S23	1.001	S23a	1.5	0.516	0.104	0.2111	
360 minute winter	S23a	1.002	Headwall	1.5	0.505	0.104	0.0087	15.1