

Design Settings

Rainfall Methodology	FEH-22	Maximum Time of Concentration (mins)	30.00	Preferred Cover Depth (m)	0.600
Return Period (years)	1	Maximum Rainfall (mm/hr)	999.9	Include Intermediate Ground	✓
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00	Enforce best practice design rules	✓
CV	1.000	Connection Type	Level Soffits		
Time of Entry (mins)	5.00	Minimum Backdrop Height (m)	1.200		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Manhole Type	Diameter (mm)	Sump (m)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
✓ 1	0.072	5.00	51.430	Manhole	Adoptable	1200	0.300	104.388	-712.554	1.450	49.980
✓ 2	0.018	5.00	51.360	Manhole	Adoptable	1200	0.300	92.927	-725.069	1.420	49.940
✓ EX6			51.280	Manhole	Adoptable	1200	0.000	79.100	-740.167	1.243	50.037

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	Velocity Equation	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)	Rain (mm/hr)
? 1.000	1	2	16.970	0.600	Colebrook-White	50.280	50.240	0.040	424.2	150	Circular	5.59	27.3
✓ 1.001	2	EX6	20.473	0.600	Colebrook-White	50.240	50.037	0.203	100.9	150	Circular	5.93	26.4

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
? 1.000	1	2	0.482	8.5	7.1	1.000	0.970	0.970	1.000	0.072	0.0	105	0.538
✓ 1.001	2	EX6	1.000	17.7	8.6	0.970	1.093	0.970	1.093	0.090	0.0	74	0.992

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	16.970	424.2	150	Circular	51.430	50.280	1.000	51.360	50.240	0.970
1.001	20.473	100.9	150	Circular	51.360	50.240	0.970	51.280	50.037	1.093

Link	US Node	Dia (mm)	Sump (m)	Node Type	MH Type	DS Node	Dia (mm)	Sump (m)	Node Type	MH Type
1.000	1	1200	0.300	Manhole	Adoptable	2	1200	0.300	Manhole	Adoptable
1.001	2	1200	0.300	Manhole	Adoptable	EX6	1200	0.000	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Sump (m)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
1	104.388	-712.554	51.430	1.450	1200	0.300	Manhole	Adoptable	 0	1.000	50.280	150	Circular
2	92.927	-725.069	51.360	1.420	1200	0.300	Manhole	Adoptable	 1	1.000	50.240	150	Circular
									 0	1.001	50.240	150	Circular
EX6	79.100	-740.167	51.280	1.243	1200	0.000	Manhole	Adoptable	 1	1.001	50.037	150	Circular

Simulation Settings

Rainfall Methodology	FEH-22	Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Rate(s)	x
Rainfall Events	Singular	Analysis Speed	Normal	Additional Storage (m³/ha)	0.0	Check Discharge Volume	x
Summer CV	1.000	Skip Steady State	x	Starting Level (m)			

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440	2160	2880
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0	100	45	0	0
30	40	0	0				

Node 2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	50.240	Product Number	CTL-SHE-0047-1000-1000-1000
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	3.0	Invert Level (m)	50.260
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

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	91.0	91.0	0.800	91.0	118.1	0.801	0.0	118.1

Results for 1 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
360 minute summer	1	240	50.372	0.092	2.4	7.9955	0.0000	OK
360 minute summer	2	240	50.371	0.131	0.8	0.1487	0.0000	OK
360 minute summer	EX6	240	50.058	0.021	0.8	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)
360 minute summer	1	1.000	2	0.7	0.107	0.083	0.2347	
360 minute summer	2	1.001	EX6	0.8	0.502	0.044	0.0316	16.0

Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.86%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	352	50.852	0.572	6.7	50.0502	0.0000	SURCHARGED
360 minute winter	2	352	50.852	0.612	1.5	0.6919	0.0000	SURCHARGED
15 minute summer	EX6	121	50.059	0.022	0.8	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)
360 minute winter	1	1.000	2	0.8	0.051	0.091	0.2988	
360 minute winter	2	1.001	EX6	0.8	0.511	0.047	0.0330	25.3

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	464	51.336	1.056	7.2	68.6254	0.0000	FLOOD RISK
480 minute winter	2	464	51.335	1.095	1.6	1.2386	0.0000	FLOOD RISK
480 minute winter	EX6	464	50.062	0.025	1.0	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)
480 minute winter	1	1.000	2	0.9	0.054	0.110	0.2988	
480 minute winter	2	1.001	EX6	1.0	0.546	0.058	0.0387	33.9