



Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	18.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.390	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.087	5.00	57.831	2100	382819.287	387368.866	2.936
S2	0.000		57.785	2400	382825.944	387372.732	2.909
S3	0.000		57.695	1500	382833.337	387383.677	2.951
EX MH			57.400	1500	382829.739	387389.326	2.740

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	S1	S2	7.698	0.600	54.895	54.876	0.019	400.0	675	5.10	50.0
1.001	S2	S3	13.208	0.600	54.876	54.744	0.132	100.0	150	5.32	50.0
1.002	S3	EX MH	6.698	0.600	54.744	54.660	0.084	80.0	150	5.42	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	1.304	466.6	11.8	2.261	2.234	0.087	0.0	73	0.569
1.001	1.005	17.8	11.8	2.759	2.801	0.087	0.0	89	1.073
1.002	1.125	19.9	11.8	2.801	2.590	0.087	0.0	83	1.170

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	7.698	400.0	675	Circular	57.831	54.895	2.261	57.785	54.876	2.234
1.001	13.208	100.0	150	Circular	57.785	54.876	2.759	57.695	54.744	2.801
1.002	6.698	80.0	150	Circular	57.695	54.744	2.801	57.400	54.660	2.590

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S1	2100	Manhole	Adoptable	S2	2400	Manhole	Adoptable
1.001	S2	2400	Manhole	Adoptable	S3	1500	Manhole	Adoptable
1.002	S3	1500	Manhole	Adoptable	EX MH	1500	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
S1	382819.287	387368.866	57.831	2.936	2100		0	1.000	54.895	675
S2	382825.944	387372.732	57.785	2.909	2400		1	1.000	54.876	675
						0	1.001	54.876	150	
S3	382833.337	387383.677	57.695	2.951	1500		1	1.001	54.744	150
						0	1.002	54.744	150	
EX MH	382829.739	387389.326	57.400	2.740	1500		1	1.002	54.660	150

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	✓
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	18.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.390	Check Discharge Rate(s)	✓
Summer CV	0.750	Check Discharge Volume	✓
Winter CV	0.840	100 year 360 minute (m³)	
Analysis Speed	Normal		

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 %)
1	0	10	0
2	0	10	0
30	0	10	0
100	45	10	0

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 (m³)	

Node S2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	54.876	Product Number	CTL-SHE-0098-5000-1500-5000
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300