

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	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	0.376	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

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	14.356	95.7	150	1 STANDARD	31.450	30.250	1.050	31.500	30.100	1.250
1.001	33.654	96.2	150	1 STANDARD	31.500	30.100	1.250	31.500	29.750	1.600
1.002	11.174	101.6	150	1 STANDARD	31.500	29.750	1.600	31.450	29.640	1.660
1.003	7.551	100.0	150	1 STANDARD	31.450	29.640	1.660	31.350	29.564	1.636

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	RE	150	Manhole	1 STANDARD	CP2	600	Manhole	1 STANDARD
1.001	CP2	600	Manhole	1 STANDARD	CP1	600	Manhole	1 STANDARD
1.002	CP1	600	Manhole	1 STANDARD	FCC	1200	Manhole	1 STANDARD
1.003	FCC	1200	Manhole	1 STANDARD	OUTFALL	150	Manhole	1 STANDARD

Node FCC Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	29.640	Product Number	CTL-SHE-0061-2000-1500-2000
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	2.0	Min Node Diameter (mm)	1200

Node CP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	31.050	Slope (1:X)	400.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	32	Depth (m)	0.260
Safety Factor	2.0	Width (m)	14.600	Inf Depth (m)	
Porosity	0.33	Length (m)	36.500		

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
15 minute winter	RE	10	30.285	0.035	2.2	0.0111	0.0000	OK
30 minute winter	CP2	25	30.172	0.072	3.4	0.0386	0.0000	OK
30 minute winter	CP1	26	30.171	0.421	5.1	0.2054	0.0000	SURCHARGED
30 minute winter	FCC	26	30.170	0.530	2.7	0.5997	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	29.564	0.000	1.6	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)
15 minute winter	RE	1.000	CP2	2.2	0.537	0.120	0.0613	
30 minute winter	CP2	1.001	CP1	3.4	0.593	0.187	0.4356	
30 minute winter	CP1	1.002	FCC	2.7	0.460	0.156	0.1967	
30 minute winter	FCC	Hydro-Brake®	OUTFALL	1.6				4.0

Results for 30 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
30 minute winter	RE	22	31.099	0.849	4.3	0.2700	0.0000	SURCHARGED
30 minute winter	CP2	22	31.094	0.994	7.1	0.5369	0.0000	SURCHARGED
60 minute winter	CP1	48	31.085	1.335	6.2	1.8403	0.0000	SURCHARGED
60 minute winter	FCC	49	31.083	1.443	3.8	1.6324	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	29.564	0.000	1.8	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)
30 minute winter	RE	1.000	CP2	3.5	0.593	0.192	0.2527	
30 minute winter	CP2	1.001	CP1	5.6	0.560	0.308	0.5925	
60 minute winter	CP1	1.002	FCC	3.8	0.460	0.218	0.1967	
60 minute winter	FCC	Hydro-Brake®	OUTFALL	2.0				12.6

Results for 100 year +40% 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
15 minute winter	RE	12	31.433	1.183	9.9	0.3761	0.0000	FLOOD RISK
15 minute winter	CP2	12	31.398	1.298	16.3	0.7008	0.0000	FLOOD RISK
120 minute winter	CP1	98	31.156	1.406	9.8	11.2386	0.0000	SURCHARGED
120 minute winter	FCC	98	31.154	1.514	3.8	1.7121	0.0000	FLOOD RISK
15 minute summer	OUTFALL	1	29.564	0.000	2.0	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)
15 minute winter	RE	1.000	CP2	7.8	0.691	0.431	0.2527	
15 minute winter	CP2	1.001	CP1	15.6	0.887	0.862	0.5925	
120 minute winter	CP1	1.002	FCC	3.8	0.474	0.215	0.1967	
120 minute winter	FCC	Hydro-Brake®	OUTFALL	2.0				28.6