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	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	6.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	200.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
08	0.051	6.00	7.196	1350	612806.372	132682.934	1.446
10	0.068	6.00	7.396	1350	612826.500	132695.550	1.796
12	0.063	6.00	7.048	1350	612848.567	132726.339	1.698
14	0.076	6.00	6.768	1350	612868.095	132749.544	1.568
16	0.085	6.00	6.817	1350	612900.057	132772.667	1.917
18	0.103	6.00	7.246	1350	612838.614	132819.970	1.446
20	0.006	6.00	6.900	1350	612854.394	132814.554	1.450
22	0.042	6.00	6.653	1350	612866.016	132813.545	1.453
24	0.008	6.00	6.516	1350	612871.586	132816.419	1.943
26	0.045	6.00	6.337	1350	612871.911	132827.432	1.792
28	0.000		6.506	1350	612876.894	132852.904	2.026

Links (Input)

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	08	10	23.755	0.600	5.750	5.600	0.150	158.4	225	6.38	49.0
1.001	10	12	37.880	0.600	5.600	5.425	0.175	216.5	225	7.10	47.6
1.002	12	14	30.328	0.600	5.350	5.200	0.150	202.2	300	7.55	46.5
1.003	14	16	39.449	0.600	5.200	4.975	0.225	175.3	300	8.11	45.5
1.004	16	24	52.200	0.600	4.900	4.648	0.252	207.1	375	8.80	44.2
2.000	18	20	16.684	0.600	5.800	5.450	0.350	47.7	225	6.15	49.8
2.001	20	22	11.666	0.600	5.450	5.200	0.250	46.7	225	6.25	49.4
2.002	22	24	6.268	0.600	5.200	4.798	0.402	15.6	225	6.28	49.1
1.005	24	26	11.018	0.600	4.573	4.545	0.028	393.5	450	8.98	44.0
1.006	26	28	25.955	0.600	4.545	4.480	0.065	399.3	450	9.41	43.4

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	23.755	158.4	225	Circular_Default Sewer Type	7.196	5.750	1.221	7.396	5.600	1.571
1.001	37.880	216.5	225	Circular_Default Sewer Type	7.396	5.600	1.571	7.048	5.425	1.398
1.002	30.328	202.2	300	Circular_Default Sewer Type	7.048	5.350	1.398	6.768	5.200	1.268
1.003	39.449	175.3	300	Circular_Default Sewer Type	6.768	5.200	1.268	6.817	4.975	1.542
1.004	52.200	207.1	375	Circular_Default Sewer Type	6.817	4.900	1.542	6.516	4.648	1.493
2.000	16.684	47.7	225	Circular_Default Sewer Type	7.246	5.800	1.221	6.900	5.450	1.225
2.001	11.666	46.7	225	Circular_Default Sewer Type	6.900	5.450	1.225	6.653	5.200	1.228

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	08	1350	Manhole	Adoptable	10	1350	Manhole	Adoptable
1.001	10	1350	Manhole	Adoptable	12	1350	Manhole	Adoptable
1.002	12	1350	Manhole	Adoptable	14	1350	Manhole	Adoptable
1.003	14	1350	Manhole	Adoptable	16	1350	Manhole	Adoptable
1.004	16	1350	Manhole	Adoptable	24	1350	Manhole	Adoptable
2.000	18	1350	Manhole	Adoptable	20	1350	Manhole	Adoptable
2.001	20	1350	Manhole	Adoptable	22	1350	Manhole	Adoptable

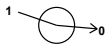
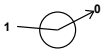
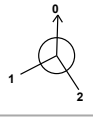
Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

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)
2.002	6.268	15.6	225	Circular_Default Sewer Type	6.653	5.200	1.228	6.516	4.798	1.493
1.005	11.018	393.5	450	Circular_Default Sewer Type	6.516	4.573	1.493	6.337	4.545	1.342
1.006	25.955	399.3	450	Circular_Default Sewer Type	6.337	4.545	1.342	6.506	4.480	1.576

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.002	22	1350	Manhole	Adoptable	24	1350	Manhole	Adoptable
1.005	24	1350	Manhole	Adoptable	26	1350	Manhole	Adoptable
1.006	26	1350	Manhole	Adoptable	28	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
08	612806.372	132682.934	7.196	1.446	1350		0	1.000	5.750	225
10	612826.500	132695.550	7.396	1.796	1350		1 0	1.000 1.001	5.600 5.600	225 225
12	612848.567	132726.339	7.048	1.698	1350		1 0	1.001 1.002	5.425 5.350	225 300
14	612868.095	132749.544	6.768	1.568	1350		1 0	1.002 1.003	5.200 5.200	300 300
16	612900.057	132772.667	6.817	1.917	1350		1 0	1.003 1.004	4.975 4.900	300 375
18	612838.614	132819.970	7.246	1.446	1350		0	2.000	5.800	225
20	612854.394	132814.554	6.900	1.450	1350		1 0	2.000 2.001	5.450 5.450	225 225
22	612866.016	132813.545	6.653	1.453	1350		1 0	2.001 2.002	5.200 5.200	225 225
24	612871.586	132816.419	6.516	1.943	1350		1 2 0	2.002 1.004 1.005	4.798 4.648 4.573	225 375 450
26	612871.911	132827.432	6.337	1.792	1350		1 0	1.005 1.006	4.545 4.545	450 450
28	612876.894	132852.904	6.506	2.026	1350		1	1.006	4.480	450

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

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 %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	40	0	0
30	35	0	0				

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	08	11	5.817	0.067	8.0	0.0954	0.0000	OK
15 minute summer	10	11	5.718	0.118	18.7	0.1695	0.0000	OK
15 minute summer	12	11	5.478	0.128	28.2	0.1831	0.0000	OK
15 minute summer	14	12	5.350	0.150	39.9	0.2142	0.0000	OK
15 minute summer	16	12	5.063	0.163	52.1	0.2333	0.0000	OK
15 minute summer	18	11	5.873	0.073	16.1	0.1040	0.0000	OK
15 minute summer	20	11	5.527	0.077	17.0	0.1101	0.0000	OK
15 minute summer	22	11	5.272	0.072	23.6	0.1028	0.0000	OK
15 minute summer	24	12	4.821	0.248	76.3	0.3552	0.0000	OK
15 minute summer	26	12	4.780	0.235	82.9	0.3360	0.0000	OK
15 minute summer	28	12	4.679	0.199	82.8	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)
15 minute summer	08	1.000	10	8.0	0.539	0.194	0.3682	
15 minute summer	10	1.001	12	18.3	0.898	0.519	0.7736	
15 minute summer	12	1.002	14	28.0	0.884	0.359	0.9614	
15 minute summer	14	1.003	16	39.5	1.158	0.472	1.3471	
15 minute summer	16	1.004	24	52.4	1.111	0.378	2.4975	
15 minute summer	18	2.000	20	16.1	1.397	0.213	0.1924	
15 minute summer	20	2.001	22	17.0	1.487	0.223	0.1334	
15 minute summer	22	2.002	24	23.6	2.340	0.178	0.0633	
15 minute summer	24	1.005	26	76.3	0.880	0.471	0.9546	
15 minute summer	26	1.006	28	82.8	1.094	0.515	1.9645	41.8

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	08	12	6.922	1.172	27.0	1.6771	0.0000	FLOOD RISK
15 minute summer	10	12	6.867	1.267	56.1	1.8124	0.0000	SURCHARGED
15 minute summer	12	12	6.401	1.051	84.5	1.5035	0.0000	SURCHARGED
15 minute summer	14	12	6.185	0.985	120.7	1.4102	0.0000	SURCHARGED
15 minute summer	16	12	5.630	0.730	161.9	1.0446	0.0000	SURCHARGED
15 minute summer	18	11	5.955	0.155	54.5	0.2220	0.0000	OK
15 minute summer	20	11	5.625	0.175	57.7	0.2504	0.0000	OK
15 minute summer	22	12	5.462	0.262	79.6	0.3753	0.0000	SURCHARGED
15 minute summer	24	12	5.224	0.651	242.6	0.9317	0.0000	SURCHARGED
15 minute summer	26	12	5.101	0.556	265.0	0.7958	0.0000	SURCHARGED
15 minute summer	28	12	4.841	0.361	265.0	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 summer	08	1.000	10	25.6	0.682	0.621	0.9448	
15 minute summer	10	1.001	12	55.7	1.401	1.584	1.5065	
15 minute summer	12	1.002	14	85.4	1.213	1.096	2.1357	
15 minute summer	14	1.003	16	120.2	1.707	1.436	2.7780	
15 minute summer	16	1.004	24	161.7	1.466	1.167	5.7575	
15 minute summer	18	2.000	20	54.5	1.776	0.722	0.5200	
15 minute summer	20	2.001	22	57.5	1.841	0.753	0.4253	
15 minute summer	22	2.002	24	76.9	2.658	0.581	0.2493	
15 minute summer	24	1.005	26	242.6	1.531	1.498	1.7457	
15 minute summer	26	1.006	28	265.0	1.703	1.648	3.8267	141.1

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.97%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	08	11	7.196	1.446	37.1	2.0692	5.1008	FLOOD
30 minute summer	10	18	7.235	1.635	60.6	2.3392	0.0000	FLOOD RISK
15 minute summer	12	11	6.905	1.555	92.9	2.2250	0.0000	FLOOD RISK
15 minute summer	14	11	6.690	1.490	136.3	2.1329	0.0000	FLOOD RISK
15 minute summer	16	11	5.985	1.085	193.4	1.5528	0.0000	SURCHARGED
15 minute summer	18	12	6.470	0.670	70.3	0.9586	0.0000	SURCHARGED
15 minute summer	20	12	6.112	0.662	70.7	0.9466	0.0000	SURCHARGED
15 minute summer	22	12	5.804	0.604	97.7	0.8648	0.0000	SURCHARGED
15 minute summer	24	12	5.416	0.843	293.5	1.2066	0.0000	SURCHARGED
15 minute summer	26	12	5.236	0.691	322.8	0.9893	0.0000	SURCHARGED
15 minute summer	28	12	4.873	0.393	323.2	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 summer	08	1.000	10	26.5	0.667	0.644	0.9448	
30 minute summer	10	1.001	12	58.7	1.476	1.669	1.5065	
15 minute summer	12	1.002	14	90.0	1.278	1.156	2.1357	
15 minute summer	14	1.003	16	135.5	1.924	1.618	2.7780	
15 minute summer	16	1.004	24	192.1	1.742	1.386	5.7575	
15 minute summer	18	2.000	20	66.7	1.784	0.883	0.6635	
15 minute summer	20	2.001	22	70.7	1.840	0.926	0.4640	
15 minute summer	22	2.002	24	98.0	2.689	0.740	0.2493	
15 minute summer	24	1.005	26	293.9	1.855	1.814	1.7457	
15 minute summer	26	1.006	28	323.2	2.045	2.010	3.9628	176.1

Flow+ v14.0 Copyright © 1988-2025 Causeway Technologies Ltd