



Design Settings

Rainfall Methodology	FSR	M5-60 (mm)	20.000	Maximum Time of Concentration (mins)	30.00	Minimum Backdrop Height (m)	0.200
Return Period (years)	100	Ratio-R	0.335	Maximum Rainfall (mm/hr)	50.0	Preferred Cover Depth (m)	0.500
Additional Flow (%)	40	CV	1.000	Minimum Velocity (m/s)	1.00	Include Intermediate Ground	✓
FSR Region	England and Wales	Time of Entry (mins)	5.00	Connection Type	Level Soffits	Enforce best practice design rules	✓

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	PPS	MAC	21.000	0.600	48.150	47.800	0.350	60.0	100	5.35	50.0
2	MAC	HydroBrake	6.000	0.600	47.750	47.140	0.610	9.8	150	5.38	50.0
3	HydroBrake	Sewer	8.000	0.600	47.140	44.640	2.500	3.2	150	5.41	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	0.996	7.8	3.8	0.900	0.300	0.015	0.0	49	0.986
2	3.231	57.1	5.3	0.300	1.150	0.021	0.0	31	2.030
3	5.675	100.3	7.1	1.150	3.210	0.028	0.0	27	3.275

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	21.000	60.0	100	Circular_Default Sewer Type	49.150	48.150	0.900	48.200	47.800	0.300
2	6.000	9.8	150	Circular_Default Sewer Type	48.200	47.750	0.300	48.440	47.140	1.150
3	8.000	3.2	150	Circular_Default Sewer Type	48.440	47.140	1.150	48.000	44.640	3.210

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1	PPS	1200	Manhole	Private	MAC	450	Manhole	Private
2	MAC	450	Manhole	Private	HydroBrake	1000	Manhole	Private
3	HydroBrake	1000	Manhole	Private	Sewer	150	Manhole	Private

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
PPS	49.150	1.000	1200				
				0	1	48.150	100
MAC	48.200	0.450	450		1	47.800	100
				0	2	47.750	150
HydroBrake	48.440	1.300	1000		1	47.140	150
				0	3	47.140	150
Sewer	48.000	3.360	150		1	44.640	150



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Network: Storm Network

Richard White

25/06/2026

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Simulation Settings

Rainfall MethodologyFEH-22

Rainfall EventsSingular

Summer CV1.000

Winter CV1.000

Analysis SpeedNormal

Skip Steady Statex

Drain Down Time (mins)240

Additional Storage (m³/ha)20.0

Starting Level (m)

Check Discharge Rate(s)x

Check Discharge Volume

x

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

0

0

2

0

0

0

Return Period (years)

Climate Change (CC %)

Additional Area (A %)

Additional Flow (Q %)

30

0

0

0

100

0

0

0

Return Period (years)

Climate Change (CC %)

Additional Area (A %)

Additional Flow (Q %)

100

45

0

0

Node PPS Online Pump Control

Flap Valvex

Replaces Downstream Link✓

Invert Level (m)48.150

Switch on depth (m)0.200

Switch off depth (m)0.001

Depth (m)

Flow (l/s)

0.010

0.300

Depth (m)

Flow (l/s)

0.500

0.300

Depth (m)

Flow (l/s)

1.000

0.300

Node HydroBrake Online Orifice Control

Flap Valvex

Replaces Downstream Linkx

Invert Level (m)47.140

Diameter (m)0.020

Discharge Coefficient0.600

Node PPS Soakaway Storage Structure

Base Inf Coefficient (m/hr)0.00000

Safety Factor2.0

Side Inf Coefficient (m/hr)0.00000

Porosity0.95

Invert Level (m)48.150

Pit Width (m)5.000

Time to half empty (mins)

Pit Length (m)6.000

Depth (m)0.400

Number Required1

Inf Depth (m)

Node HydroBrake Soakaway Storage Structure

Base Inf Coefficient (m/hr)0.00000

Safety Factor2.0

Side Inf Coefficient (m/hr)0.00000

Porosity0.95

Invert Level (m)47.140

Pit Width (m)5.000

Time to half empty (mins)

Pit Length (m)4.500

Depth (m)0.400

Number Required1

Inf Depth (m)

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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
480 minute winter	PPS	464	48.282	0.132	0.3	3.9360	0.0000	SURCHARGED
15 minute summer	MAC	9	47.762	0.012	0.7	0.0052	0.0000	OK
360 minute summer	HydroBrake	240	47.196	0.056	0.5	1.2447	0.0000	OK
360 minute summer	Sewer	240	44.645	0.005	0.2	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)
480 minute winter	PPS	Pump	MAC	0.0				
15 minute summer	MAC	2	HydroBrake	0.7	1.258	0.012	0.0071	
360 minute summer	HydroBrake	3	Sewer	0.2	1.094	0.002	0.0013	2.1

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Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00% <table><thead><tr><th>Node Event</th><th>US Node</th><th>Peak (mins)</th><th>Level (m)</th><th>Depth (m)</th><th>Inflow (l/s)</th><th>Node Vol (m³)</th><th>Flood (m³)</th><th>Status</th></tr></thead><tbody><tr><td>720 minute winter</td><td>PPS</td><td>690</td><td>48.330</td><td>0.180</td><td>0.3</td><td>5.3999</td><td>0.0000</td><td>SURCHARGED</td></tr><tr><td>15 minute summer</td><td>MAC</td><td>10</td><td>47.764</td><td>0.014</td><td>1.1</td><td>0.0062</td><td>0.0000</td><td>OK</td></tr><tr><td>240 minute summer</td><td>HydroBrake</td><td>156</td><td>47.220</td><td>0.080</td><td>0.8</td><td>1.7720</td><td>0.0000</td><td>OK</td></tr><tr><td>240 minute summer</td><td>Sewer</td><td>156</td><td>44.645</td><td>0.005</td><td>0.2</td><td>0.0000</td><td>0.0000</td><td>OK</td></tr></tbody></table> <table><thead><tr><th>Link Event (Upstream Depth)</th><th>US Node</th><th>Link</th><th>DS Node</th><th>Outflow (l/s)</th><th>Velocity (m/s)</th><th>Flow/Cap</th><th>Link Vol (m³)</th><th>Discharge Vol (m³)</th></tr></thead><tbody><tr><td>720 minute winter</td><td>PPS</td><td>Pump</td><td>MAC</td><td>0.0</td><td></td><td></td><td></td><td></td></tr><tr><td>15 minute summer</td><td>MAC</td><td>2</td><td>HydroBrake</td><td>1.1</td><td>1.318</td><td>0.019</td><td>0.0123</td><td></td></tr><tr><td>240 minute summer</td><td>HydroBrake</td><td>3</td><td>Sewer</td><td>0.2</td><td>1.164</td><td>0.002</td><td>0.0015</td><td>2.8</td></tr></tbody></table>				Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status	720 minute winter	PPS	690	48.330	0.180	0.3	5.3999	0.0000	SURCHARGED	15 minute summer	MAC	10	47.764	0.014	1.1	0.0062	0.0000	OK	240 minute summer	HydroBrake	156	47.220	0.080	0.8	1.7720	0.0000	OK	240 minute summer	Sewer	156	44.645	0.005	0.2	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)	720 minute winter	PPS	Pump	MAC	0.0					15 minute summer	MAC	2	HydroBrake	1.1	1.318	0.019	0.0123		240 minute summer	HydroBrake	3	Sewer	0.2	1.164	0.002	0.0015	2.8
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Results for 100 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
960 minute summer	PPS	615	48.434	0.284	0.9	8.5021	0.0000	SURCHARGED
15 minute summer	MAC	10	47.775	0.025	3.5	0.0107	0.0000	OK
480 minute summer	HydroBrake	480	47.436	0.296	1.4	6.5840	0.0000	SURCHARGED
480 minute summer	Sewer	480	44.647	0.007	0.4	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)
960 minute summer	PPS	Pump	MAC	0.3				
15 minute summer	MAC	2	HydroBrake	3.5	1.443	0.061	0.0518	
480 minute summer	HydroBrake	3	Sewer	0.4	1.420	0.004	0.0025	13.8

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.81%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute summer	PPS	510	48.862	0.712	1.5	12.4332	0.0000	FLOOD RISK
15 minute summer	MAC	10	47.780	0.030	5.1	0.0129	0.0000	OK
240 minute winter	HydroBrake	228	47.705	0.565	2.3	9.0649	0.0000	SURCHARGED
240 minute winter	Sewer	228	44.648	0.008	0.6	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)
720 minute summer	PPS	Pump	MAC	0.3				
15 minute summer	MAC	2	HydroBrake	5.1	1.525	0.089	0.0593	
240 minute winter	HydroBrake	3	Sewer	0.6	1.566	0.006	0.0032	11.7