



Link Engineering (Manchester)
29 John Dalton Street
Manchester, M2 6FW
Tel: 0121 716 0100

File: F-LE-Network v1.pfd
Network: Storm Network 1
Max Montgomery
Private Surface Water Drainage

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Project: LM3107
Status: Planning
Version: 1.0 (13.06.25)

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	5	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)	18.200	Minimum Backdrop Height (m)	9.999
Ratio-R	0.403	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

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	7.118	37.1	100	Circular	33.600	33.000	0.500	33.600	32.808	0.692
1.001	15.073	36.9	100	Circular	33.600	32.808	0.692	33.600	32.400	1.100
1.002	1.051	10.5	150	Circular	33.600	32.350	1.100	33.600	32.250	1.200

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1-RE	225	Manhole	Private	2	450	Manhole	Private
1.001	2	450	Manhole	Private	3	450	Manhole	Private
1.002	3	450	Manhole	Private	4	450	Manhole	Private

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
1-RE	383.607	393.529	33.600	0.600	225		0	1.000	33.000	100
2	376.492	393.311	33.600	0.792	450		1	1.000	32.808	100
							0	1.001	32.808	100
3	376.492	378.238	33.600	1.250	450		1	1.001	32.400	100
							0	1.002	32.350	150
4	376.492	377.187	33.600	1.350	450		1	1.002	32.250	150
							1	1.002	32.250	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	18.200	Additional Storage (m³/ha)	0.0
Ratio-R	0.403	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x



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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 %)					
2		0		0		0					
30		35		0		0					
100		40		0		0					
200		40		0		0					

Node 3 Online Orifice Control

Flap Valve	x	Invert Level (m)	32.350	Discharge Coefficient	0.600
Replaces Downstream Link	x	Diameter (m)	0.036		

Node 3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	32.350
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	32

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	4.0	0.0	0.400	4.0	0.0	0.401	0.0	0.0



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Results for 2 year Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m ³)	Flood (m ³)	Status
15 minute summer	1-RE	1	33.000	0.000	0.0	0.0000	0.0000	OK
15 minute summer	1.000:50%	10	32.916	0.012	0.3	0.0000	0.0000	OK
15 minute summer	2	11	32.820	0.012	0.3	0.0019	0.0000	OK
15 minute summer	1.001:50%	11	32.622	0.018	0.7	0.0000	0.0000	OK
15 minute winter	3	14	32.472	0.122	2.0	0.4815	0.0000	OK
15 minute winter	4	14	32.263	0.013	0.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m ³)	Discharge Vol (m ³)
15 minute summer	1-RE	1.000	1.000:50%	0.0	0.000	0.000	0.0010	
15 minute summer	1-RE	1.000	2	0.3	0.573	0.030	0.0019	
15 minute summer	2	1.001	1.001:50%	0.3	0.411	0.030	0.0056	
15 minute summer	2	1.001	3	0.7	0.663	0.070	0.0209	
15 minute winter	3	1.002	4	0.9	1.078	0.016	0.0008	0.9



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Results for 30 year +35% 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 summer	1-RE	1	33.000	0.000	0.0	0.0000	0.0000	OK
15 minute winter	1.000:50%	10	32.924	0.020	0.8	0.0000	0.0000	OK
15 minute winter	2	11	32.827	0.019	0.8	0.0031	0.0000	OK
30 minute winter	1.001:50%	24	32.714	0.110	1.5	0.0000	0.0000	SURCHARGED
30 minute winter	3	24	32.713	0.363	4.0	1.4375	0.0000	SURCHARGED
30 minute winter	4	24	32.268	0.018	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 summer	1-RE	1.000	1.000:50%	0.0	0.000	0.000	0.0019	
15 minute summer	1-RE	1.000	2	0.8	0.750	0.078	0.0037	
15 minute winter	2	1.001	1.001:50%	0.8	0.555	0.080	0.0304	
15 minute winter	2	1.001	3	1.8	0.677	0.180	0.0580	
30 minute winter	3	1.002	4	1.6	1.257	0.029	0.0013	3.2



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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 summer	1-RE	1	33.000	0.000	0.0	0.0000	0.0000	OK
15 minute winter	1.000:50%	10	32.927	0.023	1.1	0.0000	0.0000	OK
30 minute winter	2	24	32.921	0.113	0.8	0.0180	0.0000	SURCHARGED
30 minute winter	1.001:50%	24	32.922	0.318	2.2	0.0000	0.0000	SURCHARGED
30 minute winter	3	24	32.920	0.570	5.1	1.6125	0.0000	SURCHARGED
30 minute winter	4	24	32.270	0.020	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 summer	1-RE	1.000	1.000:50%	0.0	0.000	0.000	0.0023	
15 minute summer	1-RE	1.000	2	1.0	0.801	0.100	0.0044	
30 minute winter	2	1.001	1.001:50%	0.8	0.540	0.080	0.0590	
30 minute winter	2	1.001	3	1.7	0.643	0.170	0.0590	
30 minute winter	3	1.002	4	2.0	1.332	0.036	0.0016	4.3



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Results for 200 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
30 minute winter	1-RE	25	33.028	0.028	0.3	0.0011	0.0000	OK
30 minute winter	1.000:50%	25	33.028	0.124	1.0	0.0000	0.0000	SURCHARGED
30 minute winter	2	25	33.027	0.219	2.5	0.0348	0.0000	SURCHARGED
30 minute winter	1.001:50%	24	33.027	0.423	3.0	0.0000	0.0000	SURCHARGED
30 minute winter	3	24	33.025	0.675	5.3	1.6293	0.0000	SURCHARGED
30 minute winter	4	24	32.270	0.020	2.2	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)
30 minute winter	1-RE	1.000	1.000:50%	-0.3	-0.051	-0.026	0.0171	
30 minute winter	1-RE	1.000	2	1.0	0.801	0.100	0.0278	
30 minute winter	2	1.001	1.001:50%	-1.5	0.529	-0.152	0.0590	
30 minute winter	2	1.001	3	-1.8	0.642	-0.180	0.0590	
30 minute winter	3	1.002	4	2.2	1.361	0.040	0.0017	5.0