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One Little London Chichester Sussex PO19 1PP	ELM GROVE SOUTH PIPE NETWORK M20 EVENT	
Date July 2020 File SOUTH M20.sws	Designed By PF Checked By	
Micro Drainage	System1 W.11.2	

STORM SEWER DESIGN by the Modified Rational Method

Global Variables

Pipe Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.PIP
Manhole Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.MHS

Location - England & Wales

Return Period (years)	20	Maximum Backdrop Height (m)	1.500
M5-60 (mm)	20.000	Min Cover Depth for Optimisation (m)	0.100
Ratio R	0.350	Min Vel for Auto Design Only (m/s)	1.00
Maximum Rainfall (mm/hr)	50	Min Slope for Optimisation (1:X)	500
Foul Sewage (l/s/ha)	0.00	Minimum Outfall Invert (m)	0.000
O'flow Setting (*Foul only)	0	Ground Level at Outfall (m)	0.000
Volumetric Runoff Coeff.	1.00	Outfall Manhole Name	
Add Flow / Climate Change (%)	0	Outfall Manhole Dia/Length (mm)	0
Minimum Backdrop Height (m)	0.200	Outfall Manhole Width (mm)	0

Designed with Level Inverts

Network Design Table

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	9.75	0.065	150.0	0.007	5.00	0.0	0.600	o	150
1.001	9.00	0.060	150.0	0.013	0.00	0.0	0.600	o	150
2.000	6.50	0.043	151.2	0.040	5.00	0.0	0.600	o	225
1.002	6.75	0.045	150.0	0.003	0.00	0.0	0.600	o	225
1.003	20.25	0.135	150.0	0.010	0.00	0.0	0.600	o	225
1.004	4.00	0.067	59.7	0.003	0.00	0.0	0.600	o	150

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E.Area (ha)	E.DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	CAP (l/s)	Flow (l/s)
1.000	50.0	5.2	5.605	0.007	0.0	0.0	0.0	0.82	14.5	1.3
1.001	50.0	5.4	5.540	0.020	0.0	0.0	0.0	0.82	14.5	3.6
2.000	50.0	5.1	5.525	0.040	0.0	0.0	0.0	1.06	42.2	7.2
1.002	50.0	5.5	5.480	0.063	0.0	0.0	0.0	1.07	42.4	11.4
1.003	50.0	5.8	5.435	0.073	0.0	0.0	0.0	1.07	42.4	13.2
1.004	50.0	5.9	5.300	0.076	0.0	0.0	0.0	1.30	23.0	13.7

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Time Area Diagram

Time From (mins)	Time To (mins)	Area (ha)
0	4	0.057
4	8	0.019

Total Area Contributing (ha) = 0.076

Total Pipe Volume (m³) = 1.734

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PIPELINE SCHEDULES

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	0	150	1	6.300	5.605	0.545	1050
1.001	0	150	2	6.300	5.540	0.610	1050
2.000	0	225	3	6.300	5.525	0.550	1050
1.002	0	225	4	6.300	5.480	0.595	1050
1.003	0	225	5	6.300	5.435	0.640	1050
1.004	0	150	6	6.300	5.300	0.850	1050

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	9.75	150.0	2	6.300	5.540	0.610	1050
1.001	9.00	150.0	4	6.300	5.480	0.670	1050
2.000	6.50	151.2	4	6.300	5.482	0.593	1050
1.002	6.75	150.0	5	6.300	5.435	0.640	1050
1.003	20.25	150.0	6	6.300	5.300	0.775	1050
1.004	4.00	59.7		0.000	5.233	-5.383	0