


Atkins		Page 1
Woodcote Grove Ashley Road Epsom Surrey KT18 5BW		
Date 01/10/2012 16:06 File Network 1.mdx	Designed by mill13494 Checked by	

Micro Drainage Network W.12.6

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.400	Maximum Backdrop Height (m)	5.000
Maximum Rainfall (mm/hr)	50	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	1.000	Min Slope for Optimisation (1:X)	1000
PIMP (%)	100		

Designed with Level Soffits

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	47.487	0.678	70.0	0.218	5.00	0.0	0.600	o	225
2.000	31.216	0.390	80.0	0.137	5.00	0.0	0.600	o	225
1.001	71.119	2.845	25.0	0.022	0.00	0.0	0.600	o	225
1.002	67.652	1.128	60.0	0.502	0.00	0.0	0.600	o	375

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.51	121.795	0.218	0.0	0.0	0.0	1.57	62.2	39.4
2.000	50.00	5.36	122.055	0.137	0.0	0.0	0.0	1.46	58.2	24.7
1.001	50.00	5.96	121.117	0.377	0.0	0.0	0.0	2.63	104.5	68.1
1.002	50.00	6.44	118.122	0.879	0.0	0.0	0.0	2.34	258.8	158.7

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out			Pipes In			Backdrop (mm)
					PN	Invert Level (m)	Diameter (mm)	PN	Invert Level (m)	Diameter (mm)	
1	123.220	1.425	Open Manhole	1050	1.000	121.795	225				
2	123.480	1.425	Open Manhole	1050	2.000	122.055	225				
3	122.600	1.483	Open Manhole	1050	1.001	121.117	225	1.000	121.117	225	548
								2.000	121.665	225	
4	119.860	1.738	Open Manhole	1350	1.002	118.122	375	1.001	118.272	225	
	117.480	0.486	Open Manhole	0		OUTFALL		1.002	116.994	375	

Atkins		Page 3
Woodcote Grove Ashley Road Epsom Surrey KT18 5BW		
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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	225	1	123.220	121.795	1.200	Open Manhole	1050
2.000	o	225	2	123.480	122.055	1.200	Open Manhole	1050
1.001	o	225	3	122.600	121.117	1.258	Open Manhole	1050
1.002	o	375	4	119.860	118.122	1.363	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	47.487	70.0	3	122.600	121.117	1.258	Open Manhole	1050
2.000	31.216	80.0	3	122.600	121.665	0.710	Open Manhole	1050
1.001	71.119	25.0	4	119.860	118.272	1.363	Open Manhole	1350
1.002	67.652	60.0		117.480	116.994	0.111	Open Manhole	0

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF  
 Analysis Timestep Fine Inertia Status OFF  
 DTS Status ON

Profile(s) Summer and Winter  
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600,  
 720, 960, 1440, 2160, 2880, 4320, 5760, 7200,  
 8640, 10080  
 Return Period(s) (years) 2, 30, 100  
 Climate Change (%) 0, 0, 20

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	30	0%	30/15 Summer	100/15 Summer			3
2.000	15 Winter	30	0%	100/15 Summer				
1.001	15 Winter	30	0%	30/15 Summer	100/15 Winter			1
1.002	15 Winter	30	0%	100/15 Summer				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Pipe Flow (l/s)	
1.000	1	122.275	0.255	0.000	1.02	0.0	60.7	SURCHARGED
2.000	2	122.211	-0.069	0.000	0.80	0.0	43.6	OK
1.001	3	121.569	0.227	0.000	1.04	0.0	105.4	SURCHARGED
1.002	4	118.420	-0.077	0.000	0.98	0.0	238.8	OK