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Woodcote Grove Ashley Road Epsom Surrey KT18 5BW		
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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)	3.000
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	23.658	1.972	12.0	0.030	5.00	0.0	0.600	o	225
1.001	36.235	3.020	12.0	0.114	0.00	0.0	0.600	o	225
1.002	60.351	2.414	25.0	0.143	0.00	0.0	0.600	o	225

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	5.10	111.900	0.030	0.0	0.0	0.0	3.80	151.0	5.4
1.001	50.00	5.26	109.929	0.144	0.0	0.0	0.0	3.80	151.0	26.0
1.002	50.00	5.65	106.909	0.287	0.0	0.0	0.0	2.63	104.5	51.8

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
1	113.250	1.350	Open Manhole	1050	1.000	111.900	225				
2	111.280	1.352	Open Manhole	1050	1.001	109.929	225	1.000	109.929	225	
3	108.500	1.591	Open Manhole	1050	1.002	106.909	225	1.001	106.909	225	
	105.940	1.445	Open Manhole	0		OUTFALL		1.002	104.495	225	

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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	113.250	111.900	1.125	Open Manhole	1050
1.001	o	225	2	111.280	109.929	1.127	Open Manhole	1050
1.002	o	225	3	108.500	106.909	1.366	Open Manhole	1050

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	23.658	12.0	2	111.280	109.929	1.127	Open Manhole	1050
1.001	36.235	12.0	3	108.500	106.909	1.366	Open Manhole	1050
1.002	60.351	25.0		105.940	104.495	1.220	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 Act.	O/F Lvl	Exc.
1.000	15 Winter	30	0%					
1.001	15 Winter	30	0%					
1.002	15 Winter	30	0%	100/15 Summer	100/15 Summer			2

PN	US/MH Name	Water		Flooded			Pipe	
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1	111.939	-0.186	0.000	0.07	0.0	9.7	OK
1.001	2	110.020	-0.134	0.000	0.34	0.0	49.0	OK
1.002	3	107.086	-0.048	0.000	0.97	0.0	98.0	OK