

JS Bloor (Wilmslow) Ltd		Page 0
Dean Court 85 Adlington Road Wilmslow SK9 1BT		
Date 16/06/2022 09:36 File STORM. 31.01.22.MDX	Designed by d_southa Checked by	
Elstree Computing Ltd		Network 2017.1.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Network 3

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	20.000	Add Flow / Climate Change (%)	0
Ratio R	0.407	Minimum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	0.000
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Surface Network 3

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	30.702	1.130	27.2	0.080	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.001	26.491	0.885	29.9	0.109	0.00	0.0	0.600	o	300	Pipe/Conduit	
1.002	14.188	0.756	18.8	0.273	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.000	44.211	0.186	237.9	0.033	5.00	0.0	0.600	o	300	Pipe/Conduit	
2.001	26.624	0.085	312.9	0.075	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.003	40.701	0.729	55.9	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
1.004	11.784	0.395	29.8	0.091	0.00	0.0	0.600	o	375	Pipe/Conduit	
3.000	36.301	0.935	38.8	0.094	5.00	0.0	0.600	o	225	Pipe/Conduit	
1.005	41.183	0.305	135.0	0.111	0.00	0.0	0.600	o	450	Pipe/Conduit	

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	5.20	104.020	0.080	0.0	0.0	0.0	2.52	100.2	10.9
1.001	50.00	5.36	102.815	0.189	0.0	0.0	0.0	2.88	203.9	25.6
1.002	50.00	5.42	101.930	0.462	0.0	0.0	0.0	3.65	257.8	62.5
2.000	50.00	5.73	101.445	0.033	0.0	0.0	0.0	1.01	71.7	4.5
2.001	50.00	6.16	101.184	0.109	0.0	0.0	0.0	1.02	112.5	14.7
1.003	50.00	6.44	101.099	0.570	0.0	0.0	0.0	2.43	268.2	77.2
1.004	50.00	6.50	100.370	0.662	0.0	0.0	0.0	3.33	367.6	89.6
3.000	50.00	5.29	101.060	0.094	0.0	0.0	0.0	2.11	83.7	12.7
1.005	50.00	6.89	99.900	0.867	0.0	0.0	0.0	1.75	278.0	117.4

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Network Design Table for Surface Network 3

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.006	17.288	0.045	385.0	0.120	0.00	0.0	0.600	o	450	Pipe/Conduit	

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)
1.006	50.00	7.17	99.595	0.987	0.0	0.0	0.0	1.03	163.8	133.6

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Manhole Schedules for Surface Network 3

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)
S8073	106.299	2.279	Open Manhole	1200	1.000	104.020	225				
S8074	104.831	2.016	Open Manhole	1200	1.001	102.815	300	1.000	102.890	225	
S8075	104.309	2.379	Open Manhole	1200	1.002	101.930	300	1.001	101.930	300	
S8085	102.883	1.439	Open Manhole	1350	2.000	101.445	300				
S8082	103.219	2.036	Open Manhole	1350	2.001	101.184	375	2.000	101.259	300	
S8086	103.598	2.499	Open Manhole	1350	1.003	101.099	375	1.002	101.174	300	
								2.001	101.099	375	
S8083	102.154	1.784	Open Manhole	1200	1.004	100.370	375	1.003	100.370	375	
S8081	103.365	2.305	Open Manhole	1200	3.000	101.060	225				
S8076	101.889	1.989	Open Manhole	1200	1.005	99.900	450	1.004	99.975	375	
								3.000	100.125	225	
S8077	101.021	1.426	Open Manhole	1200	1.006	99.595	450	1.005	99.595	450	
S2001	101.251	1.701	Open Manhole	1500		OUTFALL		1.006	99.550	450	

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PIPELINE SCHEDULES for Surface Network 3

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	S8073	106.299	104.020	2.054	Open Manhole	1200
1.001	o	300	S8074	104.831	102.815	1.716	Open Manhole	1200
1.002	o	300	S8075	104.309	101.930	2.079	Open Manhole	1200
2.000	o	300	S8085	102.883	101.445	1.139	Open Manhole	1350
2.001	o	375	S8082	103.219	101.184	1.661	Open Manhole	1350
1.003	o	375	S8086	103.598	101.099	2.124	Open Manhole	1350
1.004	o	375	S8083	102.154	100.370	1.409	Open Manhole	1200
3.000	o	225	S8081	103.365	101.060	2.080	Open Manhole	1200
1.005	o	450	S8076	101.889	99.900	1.539	Open Manhole	1200
1.006	o	450	S8077	101.021	99.595	0.976	Open Manhole	1200

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	30.702	27.2	S8074	104.831	102.890	1.716	Open Manhole	1200
1.001	26.491	29.9	S8075	104.309	101.930	2.079	Open Manhole	1200
1.002	14.188	18.8	S8086	103.598	101.174	2.124	Open Manhole	1350
2.000	44.211	237.9	S8082	103.219	101.259	1.661	Open Manhole	1350
2.001	26.624	312.9	S8086	103.598	101.099	2.124	Open Manhole	1350
1.003	40.701	55.9	S8083	102.154	100.370	1.409	Open Manhole	1200
1.004	11.784	29.8	S8076	101.889	99.975	1.539	Open Manhole	1200
3.000	36.301	38.8	S8076	101.889	100.125	1.539	Open Manhole	1200
1.005	41.183	135.0	S8077	101.021	99.595	0.976	Open Manhole	1200
1.006	17.288	385.0	S2001	101.251	99.550	1.251	Open Manhole	1500

Free Flowing Outfall Details for Surface Network 3

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.006	S2001	101.251	99.550	0.000	1500	0

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Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 3

		Water	Surcharged	Flooded		Pipe			
PN	US/MH Name	Level (m)	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
2.000	S8085	102.892	1.147	8.927	1.16		77.7	FLOOD	2
2.001	S8082	103.136	1.578	0.000	1.05		103.4	FLOOD RISK	
1.003	S8086	103.125	1.651	0.000	1.13		276.3	SURCHARGED	
1.004	S8083	102.156	1.411	2.554	1.27		311.2	FLOOD	2
3.000	S8081	102.050	0.765	0.000	0.70		55.0	SURCHARGED	
1.005	S8076	101.607	1.257	0.000	1.67		415.0	FLOOD RISK	
1.006	S8077	100.733	0.688	0.000	3.93		480.6	FLOOD RISK	