

JS Bloor (Wilmslow) Ltd		Page 0
Dean Court 85 Adlington Road Wilmslow SK9 1BT		
Date 11/08/2025 14:01 File PH7B - STORM.MDX	Designed by d_southa Checked by	
Elstree Computing Ltd		Network 2020.1.3

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Network 6

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	0.405	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
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 6

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	39.600	0.450	88.0	0.152	5.00	0.0	0.600	o	300	Pipe/Conduit	
1.001	20.454	0.190	107.7	0.108	0.00	0.0	0.600	o	300	Pipe/Conduit	
2.000	56.304	1.220	46.2	0.079	5.00	0.0	0.600	o	300	Pipe/Conduit	
1.002	74.998	1.465	51.2	0.192	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.003	44.109	1.160	38.0	0.176	0.00	0.0	0.600	o	450	Pipe/Conduit	
1.004	54.425	1.005	54.2	0.226	0.00	0.0	0.600	o	525	Pipe/Conduit	
3.000	41.004	0.172	238.0	0.148	5.00	0.0	0.600	o	300	Pipe/Conduit	
4.000	28.032	1.540	18.2	0.103	5.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	5.39	98.460	0.152	0.0	0.0	0.0	1.68	118.5	20.6
1.001	50.00	5.62	98.010	0.261	0.0	0.0	0.0	1.51	107.1	35.3
2.000	50.00	5.40	99.040	0.079	0.0	0.0	0.0	2.32	164.0	10.6
1.002	50.00	6.06	97.670	0.532	0.0	0.0	0.0	2.85	452.7	72.0
1.003	50.00	6.28	96.205	0.708	0.0	0.0	0.0	3.31	525.7	95.8
1.004	50.00	6.58	94.970	0.934	0.0	0.0	0.0	3.05	659.9	126.5
3.000	50.00	5.67	95.432	0.148	0.0	0.0	0.0	1.01	71.7	20.1
4.000	50.00	5.13	96.800	0.103	0.0	0.0	0.0	3.70	261.7	13.9

JS Bloor (Wilmslow) Ltd		Page 2
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<u>Synthetic Rainfall Details</u> Ratio R 0.405 Cv (Winter) 0.840 Profile Type Summer Storm Duration (mins) 30 Cv (Summer) 0.750		
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JS Bloor (Wilmslow) Ltd		Page 3
Dean Court 85 Adlington Road Wilmslow SK9 1BT		
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Online Controls for Surface Network 6

Hydro-Brake® Optimum Manhole: S7024 Control Chamber, DS/PN: 1.009, Volume (m³): 15.7

Unit Reference	MD-SHE-0132-8000-1000-8000
Design Head (m)	1.000
Design Flow (l/s)	8.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	132
Invert Level (m)	93.600
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	8.0
Flush-Flo™	0.302	8.0
Kick-Flo®	0.664	6.6
Mean Flow over Head Range	-	6.9

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.7	1.200	8.7	3.000	13.4	7.000	20.1
0.200	7.8	1.400	9.4	3.500	14.5	7.500	20.8
0.300	8.0	1.600	10.0	4.000	15.4	8.000	21.5
0.400	7.9	1.800	10.5	4.500	16.3	8.500	22.1
0.500	7.7	2.000	11.1	5.000	17.1	9.000	22.7
0.600	7.2	2.200	11.6	5.500	17.9	9.500	23.3
0.800	7.2	2.400	12.1	6.000	18.7		
1.000	8.0	2.600	12.6	6.500	19.4		

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