

Bloor Homes		Page 0
Ashby Road Measham Swadlincote DE12 7JP		
Date 09/04/2026 09:24 File PH7B - FITCHETT STORM. ...	Designed by d_southa Checked by	
Innovyze	Network 2020.1.3	

STORM SEWER DESIGN by the Modified Rational Method

Pipe Sizes STANDARD Manhole Sizes STANDARD

Designed with Level Soffits

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	56.304	1.220	46.2	0.066	5.00	0.0	0.600	o	300	Pipe/Conduit		
1.001	27.593	0.541	51.0	0.196	0.00	0.0	0.600	o	450	Pipe/Conduit		
2.000	39.001	0.570	68.4	0.138	5.00	0.0	0.600	o	300	Pipe/Conduit		
2.001	18.449	0.271	68.0	0.117	0.00	0.0	0.600	o	300	Pipe/Conduit		
1.002	47.406	0.924	51.3	0.024	0.00	0.0	0.600	o	450	Pipe/Conduit		
1.003	44.109	1.160	38.0	0.145	0.00	0.0	0.600	o	450	Pipe/Conduit		
1.004	54.866	0.939	58.5	0.227	0.00	0.0	0.600	o	525	Pipe/Conduit		
3.000	41.004	0.172	238.0	0.158	5.00	0.0	0.600	o	300	Pipe/Conduit		
4.000	28.032	1.540	18.2	0.135	5.00	0.0	0.600	o	300	Pipe/Conduit		

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	5.40	99.040	0.066	0.0	0.0	0.0	2.32	164.0	9.0
1.001	50.00	5.57	97.670	0.262	0.0	0.0	0.0	2.85	453.6	35.5
2.000	50.00	5.34	98.190	0.138	0.0	0.0	0.0	1.90	134.5	18.7
2.001	50.00	5.50	97.620	0.255	0.0	0.0	0.0	1.91	135.0	34.6
1.002	50.00	5.84	97.129	0.541	0.0	0.0	0.0	2.84	452.3	73.3
1.003	50.00	6.07	96.205	0.686	0.0	0.0	0.0	3.31	525.7	92.8
1.004	50.00	6.38	94.970	0.912	0.0	0.0	0.0	2.93	635.1	123.6
3.000	50.00	5.67	95.432	0.158	0.0	0.0	0.0	1.01	71.7	21.3
4.000	50.00	5.13	96.800	0.135	0.0	0.0	0.0	3.70	261.7	18.3

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Synthetic Rainfall Details <table><tr><td>Rainfall Model</td><td>FSR</td><td>Profile Type</td><td>Summer</td></tr><tr><td>Return Period (years)</td><td>2</td><td>Cv (Summer)</td><td>0.750</td></tr><tr><td>Region</td><td>England and Wales</td><td>Cv (Winter)</td><td>0.840</td></tr><tr><td>M5-60 (mm)</td><td>20.000</td><td>Storm Duration (mins)</td><td>30</td></tr><tr><td>Ratio R</td><td>0.400</td><td></td><td></td></tr></table>			Rainfall Model	FSR	Profile Type	Summer	Return Period (years)	2	Cv (Summer)	0.750	Region	England and Wales	Cv (Winter)	0.840	M5-60 (mm)	20.000	Storm Duration (mins)	30	Ratio R	0.400		
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Online Controls for Surface Network 6

Crown Vortex Valve® Manhole: S7024 Control Chamber, DS/PN: 1.009, Volume (m³): 15.7

Design Head (m) 1.000 Vortex Valve® Type R1 SW Only Invert Level (m) 93.600
Design Flow (l/s) 8.0 Diameter (mm) 116

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.0	1.200	8.7	3.000	13.8	7.000	21.1
0.200	4.1	1.400	9.4	3.500	14.9	7.500	21.8
0.300	4.4	1.600	10.1	4.000	15.9	8.000	22.5
0.400	5.0	1.800	10.7	4.500	16.9	8.500	23.2
0.500	5.6	2.000	11.3	5.000	17.8	9.000	23.9
0.600	6.2	2.200	11.8	5.500	18.7	9.500	24.5
0.800	7.1	2.400	12.3	6.000	19.5		
1.000	8.0	2.600	12.8	6.500	20.3		

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Storage Structures for Surface Network 6

Tank or Pond Manhole: S7024 Control Chamber, DS/PN: 1.009

Invert Level (m) 93.600

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	1144.8	0.500	1463.7	1.000	1818.9	1.500	2209.1
0.100	1204.8	0.600	1531.9	1.100	1894.1	1.600	2291.4
0.200	1267.4	0.700	1601.5	1.200	1970.8	1.700	2375.1
0.300	1331.4	0.800	1672.6	1.300	2048.8		
0.400	1396.8	0.900	1745.0	1.400	2128.3		

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Summary of Critical Results by Maximum Level (Rank 1) for Surface Network 6

PN	US/MH Name	First (Z) Overflow	Overflow Act.	Water	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)
				Level (m)	Depth (m)	Volume (m³)		
1.000	S8045			99.145	-0.195	0.000	0.26	
1.001	S8046			97.880	-0.240	0.000	0.44	
2.000	S8042			98.419	-0.071	0.000	0.68	
2.001	S8043			98.150	0.230	0.000	1.34	
1.002	S8170			97.709	0.130	0.000	0.80	
1.003	S7016			97.273	0.618	0.000	0.78	
1.004	S7019			96.623	1.128	0.000	0.80	
3.000	S8070			96.510	0.778	0.000	1.34	
4.000	S8072			96.924	-0.176	0.000	0.36	
3.001	S8071			96.187	0.627	0.000	0.33	
3.002	S8062			96.080	1.425	0.000	0.74	
1.005	S8063			95.982	1.426	5.524	4.27	
1.006	S8073			95.524	1.009	0.000	2.17	
1.007	S7022 Headwall			94.425	0.000	0.000	0.14	
1.008	S7023 Headwall			94.375	0.075	0.000	0.13	
1.009	S7024 Control Chamber			94.431	0.381	0.000	0.03	

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	S8045		40.4	OK	
1.001	S8046		170.1	OK	
2.000	S8042		84.3	OK	
2.001	S8043		156.1	SURCHARGED	
1.002	S8170		326.2	SURCHARGED	
1.003	S7016		366.4	SURCHARGED	
1.004	S7019		457.5	SURCHARGED	
3.000	S8070		89.2	SURCHARGED	
4.000	S8072		83.9	OK	
3.001	S8071		161.2	SURCHARGED	
3.002	S8062		230.3	FLOOD RISK	
1.005	S8063		708.8	FLOOD	2
1.006	S8073		772.7	SURCHARGED	
1.007	S7022 Headwall		45.9	SURCHARGED*	
1.008	S7023 Headwall		45.2	SURCHARGED*	
1.009	S7024 Control Chamber		7.3	SURCHARGED	