

JMS Chelmsford Ltd

BIC110 - The MedBIC

Alan Cherry Drive

Chelmsford CM1 1SQ

Date 16/08/2024 15:45

File Attenuation 100 Years+4...

XP Solutions

Designed by BenNorman

Checked by

Source Control 2018.1

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Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 54 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	66.798	0.098	0.0	1.0	1.0	4.5	Flood Risk
30 min Summer	66.821	0.121	0.0	1.2	1.2	5.5	Flood Risk
60 min Summer	66.834	0.134	0.0	1.2	1.2	6.1	Flood Risk
120 min Summer	66.838	0.138	0.0	1.3	1.3	6.3	Flood Risk
180 min Summer	66.834	0.134	0.0	1.2	1.2	6.1	Flood Risk
240 min Summer	66.827	0.127	0.0	1.2	1.2	5.8	Flood Risk
360 min Summer	66.812	0.112	0.0	1.1	1.1	5.1	Flood Risk
480 min Summer	66.799	0.099	0.0	1.0	1.0	4.5	Flood Risk
600 min Summer	66.789	0.089	0.0	1.0	1.0	4.0	O K
720 min Summer	66.780	0.080	0.0	0.9	0.9	3.6	O K
960 min Summer	66.767	0.067	0.0	0.8	0.8	3.0	O K
1440 min Summer	66.751	0.051	0.0	0.7	0.7	2.3	O K
2160 min Summer	66.740	0.040	0.0	0.5	0.5	1.8	O K
2880 min Summer	66.734	0.034	0.0	0.4	0.4	1.5	O K
4320 min Summer	66.726	0.026	0.0	0.3	0.3	1.2	O K
5760 min Summer	66.721	0.021	0.0	0.3	0.3	1.0	O K
7200 min Summer	66.718	0.018	0.0	0.2	0.2	0.8	O K
8640 min Summer	66.715	0.015	0.0	0.2	0.2	0.7	O K
10080 min Summer	66.713	0.013	0.0	0.2	0.2	0.6	O K
15 min Winter	66.811	0.111	0.0	1.1	1.1	5.1	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	128.336	0.0	5.0	17
30 min Summer	84.360	0.0	6.7	31
60 min Summer	52.892	0.0	8.4	48
120 min Summer	32.091	0.0	10.3	82
180 min Summer	23.662	0.0	11.4	116
240 min Summer	18.958	0.0	12.2	150
360 min Summer	13.760	0.0	13.3	214
480 min Summer	10.974	0.0	14.2	278
600 min Summer	9.199	0.0	14.8	340
720 min Summer	7.961	0.0	15.4	400
960 min Summer	6.333	0.0	16.3	520
1440 min Summer	4.580	0.0	17.7	752
2160 min Summer	3.307	0.0	19.1	1108
2880 min Summer	2.622	0.0	20.2	1472
4320 min Summer	1.888	0.0	21.7	2204
5760 min Summer	1.494	0.0	22.8	2936
7200 min Summer	1.245	0.0	23.6	3672
8640 min Summer	1.073	0.0	24.3	4376
10080 min Summer	0.946	0.0	24.9	5136
15 min Winter	128.336	0.0	5.7	17

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Micro Drainage

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max E Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	66.838	0.138	0.0	1.3	1.3	6.3	Flood Risk
60 min Winter	66.852	0.152	0.0	1.3	1.3	6.9	Flood Risk
120 min Winter	66.853	0.153	0.0	1.3	1.3	6.9	Flood Risk
180 min Winter	66.844	0.144	0.0	1.3	1.3	6.5	Flood Risk
240 min Winter	66.833	0.133	0.0	1.2	1.2	6.0	Flood Risk
360 min Winter	66.811	0.111	0.0	1.1	1.1	5.0	Flood Risk
480 min Winter	66.794	0.094	0.0	1.0	1.0	4.3	Flood Risk
600 min Winter	66.781	0.081	0.0	0.9	0.9	3.7	O K
720 min Winter	66.770	0.070	0.0	0.9	0.9	3.2	O K
960 min Winter	66.755	0.055	0.0	0.7	0.7	2.5	O K
1440 min Winter	66.741	0.041	0.0	0.6	0.6	1.9	O K
2160 min Winter	66.732	0.032	0.0	0.4	0.4	1.5	O K
2880 min Winter	66.727	0.027	0.0	0.3	0.3	1.2	O K
4320 min Winter	66.720	0.020	0.0	0.2	0.2	0.9	O K
5760 min Winter	66.715	0.015	0.0	0.2	0.2	0.7	O K
7200 min Winter	66.713	0.013	0.0	0.2	0.2	0.6	O K
8640 min Winter	66.711	0.011	0.0	0.1	0.1	0.5	O K
10080 min Winter	66.710	0.010	0.0	0.1	0.1	0.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
30 min Winter	84.360	0.0	7.5	30
60 min Winter	52.892	0.0	9.5	50
120 min Winter	32.091	0.0	11.6	88
180 min Winter	23.662	0.0	12.8	124
240 min Winter	18.958	0.0	13.7	160
360 min Winter	13.760	0.0	14.9	228
480 min Winter	10.974	0.0	15.9	290
600 min Winter	9.199	0.0	16.7	354
720 min Winter	7.961	0.0	17.3	414
960 min Winter	6.333	0.0	18.4	530
1440 min Winter	4.580	0.0	19.9	766
2160 min Winter	3.307	0.0	21.5	1128
2880 min Winter	2.622	0.0	22.7	1480
4320 min Winter	1.888	0.0	24.4	2204
5760 min Winter	1.494	0.0	25.6	2936
7200 min Winter	1.245	0.0	26.6	3680
8640 min Winter	1.073	0.0	27.4	4408
10080 min Winter	0.946	0.0	28.0	5048

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.700	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.022

Time (mins)		Area
From:	To:	(ha)
0	4	0.022

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BIC110 - The MedBIC Alan Cherry Drive Chelmsford CM1 1SQ																				
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Model Details Storage is Online Cover Level (m) 67.000 Complex Structure Cellular Storage Invert Level (m) 66.700 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.00000 <table><thead><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr></thead><tbody><tr><td>0.000</td><td>32.0</td><td>32.0</td><td>0.201</td><td>0.0</td><td>36.8</td></tr><tr><td>0.200</td><td>32.0</td><td>36.8</td><td></td><td></td><td></td></tr></tbody></table> Porous Car Park Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 5.0 Membrane Percolation (mm/hr) 1000 Length (m) 10.0 Max Percolation (l/s) 13.9 Slope (1:X) 0.0 Safety Factor 2.0 Depression Storage (mm) 5 Porosity 0.30 Evaporation (mm/day) 3 Invert Level (m) 66.700 Membrane Depth (m) 110 Orifice Outflow Control Diameter (m) 0.041 Discharge Coefficient 0.600 Invert Level (m) 66.690			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	32.0	32.0	0.201	0.0	36.8	0.200	32.0	36.8			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)															
0.000	32.0	32.0	0.201	0.0	36.8															
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