

Formpave Limited							Page 1
Tufthorn Avenue			155 Middleton Lane				
Coleford			West Sussex				
Gloucestershire			Aquaflow Design				
Date 22/09/2017			Designed by JL				
File FSC3933-Aquaflow Desig...			Checked by				
Micro Drainage			Source Control 2014.1.1				
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 24 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	19.675	0.185	0.0	6.3	6.3	12.3	O K
30 min Summer	19.714	0.224	0.0	7.4	7.4	14.9	O K
60 min Summer	19.739	0.249	0.0	8.1	8.1	16.6	O K
120 min Summer	19.736	0.246	0.0	8.0	8.0	16.4	O K
180 min Summer	19.718	0.228	0.0	7.5	7.5	15.2	O K
240 min Summer	19.700	0.210	0.0	7.0	7.0	13.9	O K
360 min Summer	19.670	0.180	0.0	6.2	6.2	12.0	O K
480 min Summer	19.651	0.161	0.0	5.5	5.5	10.7	O K
600 min Summer	19.639	0.149	0.0	4.9	4.9	9.9	O K
720 min Summer	19.630	0.140	0.0	4.4	4.4	9.3	O K
960 min Summer	19.618	0.128	0.0	3.6	3.6	8.5	O K
1440 min Summer	19.602	0.112	0.0	2.7	2.7	7.5	O K
2160 min Summer	19.587	0.097	0.0	2.0	2.0	6.5	O K
2880 min Summer	19.578	0.088	0.0	1.6	1.6	5.9	O K
4320 min Summer	19.571	0.081	0.0	1.2	1.2	5.4	O K
5760 min Summer	19.566	0.076	0.0	1.0	1.0	5.1	O K
7200 min Summer	19.562	0.072	0.0	0.8	0.8	4.8	O K
8640 min Summer	19.558	0.068	0.0	0.7	0.7	4.5	O K
10080 min Summer	19.556	0.066	0.0	0.6	0.6	4.4	O K
15 min Winter	19.699	0.209	0.0	7.0	7.0	13.9	O K
30 min Winter	19.740	0.250	0.0	8.1	8.1	16.7	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	124.633	0.0	12.9	15			
30 min Summer	83.789	0.0	18.5	24			
60 min Summer	53.779	0.0	24.6	40			
120 min Summer	33.337	0.0	31.3	74			
180 min Summer	24.832	0.0	35.3	106			
240 min Summer	20.006	0.0	38.1	136			
360 min Summer	14.706	0.0	42.3	196			
480 min Summer	11.818	0.0	45.5	254			
600 min Summer	9.966	0.0	48.1	314			
720 min Summer	8.665	0.0	50.3	376			
960 min Summer	6.943	0.0	53.9	494			
1440 min Summer	5.071	0.0	59.1	736			
2160 min Summer	3.696	0.0	64.7	1100			
2880 min Summer	2.949	0.0	68.8	1468			
4320 min Summer	2.142	0.0	74.6	2192			
5760 min Summer	1.705	0.0	78.9	2920			
7200 min Summer	1.427	0.0	82.1	3664			
8640 min Summer	1.235	0.0	84.9	4400			
10080 min Summer	1.093	0.0	87.2	5136			
15 min Winter	124.633	0.0	14.9	16			
30 min Winter	83.789	0.0	21.1	25			
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Micro Drainage			Source Control 2014.1.1				
<u>Summary of Results for 100 year Return Period (+40%)</u>							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control Σ (l/s)	Max Outflow Σ (l/s)	Max Volume (m³)	Status
60 min Winter	19.753	0.269	0.0	8.5	8.5	17.8	O K
120 min Winter	19.739	0.249	0.0	8.1	8.1	16.6	O K
180 min Winter	19.709	0.219	0.0	7.3	7.3	14.6	O K
240 min Winter	19.683	0.193	0.0	6.6	6.6	12.9	O K
360 min Winter	19.649	0.159	0.0	5.5	5.5	10.6	O K
480 min Winter	19.634	0.144	0.0	4.6	4.6	9.6	O K
600 min Winter	19.623	0.133	0.0	3.9	3.9	8.8	O K
720 min Winter	19.615	0.125	0.0	3.4	3.4	8.3	O K
960 min Winter	19.603	0.113	0.0	2.8	2.8	7.5	O K
1440 min Winter	19.587	0.097	0.0	2.0	2.0	6.5	O K
2160 min Winter	19.576	0.086	0.0	1.5	1.5	5.7	O K
2880 min Winter	19.571	0.081	0.0	1.2	1.2	5.4	O K
4320 min Winter	19.564	0.074	0.0	0.9	0.9	4.9	O K
5760 min Winter	19.558	0.068	0.0	0.7	0.7	4.5	O K
7200 min Winter	19.555	0.065	0.0	0.6	0.6	4.3	O K
8640 min Winter	19.553	0.063	0.0	0.5	0.5	4.2	O K
10080 min Winter	19.551	0.061	0.0	0.4	0.4	4.0	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
60 min Winter	53.778	0.0	28.0	44			
120 min Winter	33.337	0.0	35.4	78			
180 min Winter	24.832	0.0	39.9	110			
240 min Winter	20.006	0.0	43.1	140			
360 min Winter	14.706	0.0	47.8	198			
480 min Winter	11.818	0.0	51.4	256			
600 min Winter	9.966	0.0	54.3	318			
720 min Winter	8.665	0.0	56.8	376			
960 min Winter	6.943	0.0	60.8	500			
1440 min Winter	5.071	0.0	66.7	750			
2160 min Winter	3.696	0.0	73.0	1104			
2880 min Winter	2.949	0.0	77.6	1456			
4320 min Winter	2.142	0.0	84.2	2184			
5760 min Winter	1.705	0.0	89.0	2896			
7200 min Winter	1.427	0.0	92.8	3672			
8640 min Winter	1.235	0.0	96.0	4408			
10080 min Winter	1.093	0.0	98.7	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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.069

Time (mins)	Area
From:	To: (ha)
0	4 0.069

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Model Details

Storage is Online Cover Level (m) 20.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.9
Membrane Percolation (mm/hr)	4500	Length (m)	14.9
Max Percolation (l/s)	277.5	Slope (1:X)	100000.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	19.490	Cap Volume Depth (m)	0.000

Pipe Outflow Control

Diameter (m)	0.100	Entry Loss Coefficient	0.500
Slope (1:X)	100.0	Coefficient of Contraction	0.600
Length (m)	5.000	Upstream Invert Level (m)	19.520
Roughness k (mm)	0.600		

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