

Mountbatten House  
 Basing View  
 Basingstoke RG21 4HJ

Area 1  
 P.Paving  
 100yr Rainfall Event + CC



Date 03/05/2016  
 File Area 1 Permeable Paving Design 100cc year OP 400...

Designed by UKLXB334  
 Checked by MW

Micro Drainage

Source Control 2015.1

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 111 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	99.645	0.145	0.0	3.8	12.7	16.5	32.8	O K
30 min Summer	99.660	0.160	0.0	4.1	22.3	26.5	37.2	O K
60 min Summer	99.665	0.165	0.0	4.2	25.5	29.7	38.6	O K
120 min Summer	99.662	0.162	0.0	4.1	23.4	27.5	37.7	O K
180 min Summer	99.657	0.157	0.0	4.1	20.0	24.1	36.2	O K
240 min Summer	99.652	0.152	0.0	4.0	16.8	20.8	34.9	O K
360 min Summer	99.645	0.145	0.0	3.8	12.7	16.5	32.8	O K
480 min Summer	99.640	0.140	0.0	3.8	10.0	13.7	31.3	O K
600 min Summer	99.636	0.136	0.0	3.7	8.0	11.6	30.3	O K
720 min Summer	99.633	0.133	0.0	3.6	6.6	10.2	29.4	O K
960 min Summer	99.629	0.129	0.0	3.5	4.8	8.4	28.1	O K
1440 min Summer	99.622	0.122	0.0	3.4	2.4	5.9	26.3	O K
2160 min Summer	99.616	0.116	0.0	3.3	0.7	4.0	24.4	O K
2880 min Summer	99.604	0.104	0.0	3.0	0.0	3.0	21.1	O K
4320 min Summer	99.587	0.087	0.0	2.3	0.0	2.3	16.0	O K
5760 min Summer	99.576	0.076	0.0	1.9	0.0	1.9	12.9	O K
7200 min Summer	99.568	0.068	0.0	1.6	0.0	1.6	10.8	O K
8640 min Summer	99.563	0.063	0.0	1.4	0.0	1.4	9.2	O K
10080 min Summer	99.558	0.058	0.0	1.2	0.0	1.2	7.9	O K
15 min Winter	99.655	0.155	0.0	4.0	18.7	22.7	35.7	O K
30 min Winter	99.669	0.169	0.0	4.3	28.4	32.6	39.7	O K
60 min Winter	99.670	0.170	0.0	4.3	29.1	33.4	40.0	O K
120 min Winter	99.661	0.161	0.0	4.1	22.7	26.8	37.4	O K
180 min Winter	99.653	0.153	0.0	4.0	17.8	21.8	35.2	O K
240 min Winter	99.647	0.147	0.0	3.9	14.1	18.0	33.5	O K
360 min Winter	99.639	0.139	0.0	3.7	9.7	13.5	31.2	O K
480 min Winter	99.634	0.134	0.0	3.7	7.2	10.9	29.7	O K
600 min Winter	99.631	0.131	0.0	3.6	5.7	9.3	28.7	O K
720 min Winter	99.628	0.128	0.0	3.5	4.4	8.0	27.8	O K
960 min Winter	99.624	0.124	0.0	3.4	2.9	6.4	26.7	O K
1440 min Winter	99.618	0.118	0.0	3.3	1.1	4.5	25.0	O K
2160 min Winter	99.605	0.105	0.0	3.0	0.0	3.0	21.3	O K
2880 min Winter	99.591	0.091	0.0	2.4	0.0	2.4	17.2	O K
4320 min Winter	99.574	0.074	0.0	1.8	0.0	1.8	12.4	O K
5760 min Winter	99.564	0.064	0.0	1.4	0.0	1.4	9.6	O K
7200 min Winter	99.557	0.057	0.0	1.2	0.0	1.2	7.7	O K
8640 min Winter	99.552	0.052	0.0	1.0	0.0	1.0	6.2	O K
10080 min Winter	99.547	0.047	0.0	0.9	0.0	0.9	5.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	130.490	0.0	39.2	8.8	21
30 min Summer	84.962	0.0	52.5	19.8	28
60 min Summer	52.662	0.0	66.2	30.4	44
120 min Summer	31.544	0.0	80.1	37.9	74
180 min Summer	23.073	0.0	88.3	39.4	104
240 min Summer	18.380	0.0	93.9	38.9	134
360 min Summer	13.286	0.0	102.1	36.6	194
480 min Summer	10.557	0.0	108.2	33.9	256
600 min Summer	8.826	0.0	113.1	31.0	316
720 min Summer	7.621	0.0	117.2	28.1	378
960 min Summer	6.042	0.0	123.8	22.4	498
1440 min Summer	4.349	0.0	133.2	12.5	746
2160 min Summer	3.126	0.0	142.8	2.5	1132
2880 min Summer	2.471	0.0	149.5	0.0	1528
4320 min Summer	1.771	0.0	158.7	0.0	2248
5760 min Summer	1.398	0.0	164.8	0.0	2952
7200 min Summer	1.162	0.0	169.1	0.0	3680
8640 min Summer	1.000	0.0	172.2	0.0	4416
10080 min Summer	0.880	0.0	174.5	0.0	5144
15 min Winter	130.490	0.0	44.5	13.3	21
30 min Winter	84.962	0.0	59.3	26.1	29
60 min Winter	52.662	0.0	74.7	38.1	44
120 min Winter	31.544	0.0	90.3	46.8	76
180 min Winter	23.073	0.0	99.5	48.8	106
240 min Winter	18.380	0.0	105.9	48.2	136
360 min Winter	13.286	0.0	115.0	44.5	196
480 min Winter	10.557	0.0	121.9	40.6	256
600 min Winter	8.826	0.0	127.4	36.2	320
720 min Winter	7.621	0.0	132.0	31.7	376
960 min Winter	6.042	0.0	139.4	23.1	500
1440 min Winter	4.349	0.0	150.1	8.8	758
2160 min Winter	3.126	0.0	161.0	0.0	1188
2880 min Winter	2.471	0.0	168.8	0.0	1540
4320 min Winter	1.771	0.0	179.4	0.0	2256
5760 min Winter	1.398	0.0	186.6	0.0	3000
7200 min Winter	1.162	0.0	191.8	0.0	3752
8640 min Winter	1.000	0.0	195.7	0.0	4416
10080 min Winter	0.880	0.0	198.7	0.0	5144

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Rainfall Details

Rainfall Model FSR M5-60 (mm) 20.000 Winter Storms Yes Shortest Storm (mins) 15  
 Return Period (years) 100 Ratio R 0.420 Cv (Summer) 0.750 Longest Storm (mins) 10080  
 Region England and Wales Summer Storms Yes Cv (Winter) 0.840 Climate Change % +30

Time Area Diagram

Total Area (ha) 0.180

Time (mins)		Area	Time (mins)		Area	Time (mins)		Area
From:	To:	(ha)	From:	To:	(ha)	From:	To:	(ha)
0	4	0.060	4	8	0.060	8	12	0.060

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Model Details

Storage is Online Cover Level (m) 100.000

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	500.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	99.500	Depression Storage (mm)	5
Max Percolation (l/s)	266.9	Width (m)	31.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	31.0	Cap Volume Depth (m)	0.000

Orifice Outflow Control

Diameter (m) 0.075 Discharge Coefficient 0.600 Invert Level (m) 99.500

Weir Overflow Control

Discharge Coef 0.544 Width (m) 1.200 Invert Level (m) 99.611