

Mountbatten House  
 Basing View  
 Basingstoke RG21 4HJ  
 Date 12/02/2016  
 File Area 1 Permeable Paving Design...

Area 1  
 P.Paving  
 10yr Rainfall Event  
 Designed by UXLB334  
 Checked by UKJXW040  
 Source Control 2015.1



Summary of Results for 10 year Return Period

Half Drain Time : 62 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	99.577	0.077	0.0	2.4	0.0	2.4	13.3	O K
30 min Summer	99.590	0.090	0.0	3.2	0.0	3.2	17.1	O K
60 min Summer	99.598	0.098	0.0	3.6	0.0	3.6	19.3	O K
120 min Summer	99.602	0.102	0.0	3.9	0.0	3.9	20.6	O K
180 min Summer	99.603	0.103	0.0	3.9	0.0	3.9	20.7	O K
240 min Summer	99.602	0.102	0.0	3.9	0.0	3.9	20.4	O K
360 min Summer	99.598	0.098	0.0	3.6	0.0	3.6	19.2	O K
480 min Summer	99.593	0.093	0.0	3.3	0.0	3.3	18.0	O K
600 min Summer	99.589	0.089	0.0	3.1	0.0	3.1	16.9	O K
720 min Summer	99.586	0.086	0.0	2.9	0.0	2.9	15.8	O K
960 min Summer	99.580	0.080	0.0	2.6	0.0	2.6	14.1	O K
1440 min Summer	99.570	0.070	0.0	2.1	0.0	2.1	11.3	O K
2160 min Summer	99.561	0.061	0.0	1.8	0.0	1.8	8.7	O K
2880 min Summer	99.556	0.056	0.0	1.5	0.0	1.5	7.2	O K
4320 min Summer	99.549	0.049	0.0	1.1	0.0	1.1	5.6	O K
5760 min Summer	99.544	0.044	0.0	0.9	0.0	0.9	4.6	O K
7200 min Summer	99.541	0.041	0.0	0.8	0.0	0.8	3.8	O K
8640 min Summer	99.538	0.038	0.0	0.7	0.0	0.7	3.3	O K
10080 min Summer	99.535	0.035	0.0	0.6	0.0	0.6	2.9	O K
15 min Winter	99.585	0.085	0.0	2.9	0.0	2.9	15.4	O K
30 min Winter	99.599	0.099	0.0	3.7	0.0	3.7	19.7	O K
60 min Winter	99.608	0.108	0.0	4.2	0.0	4.2	22.1	O K
120 min Winter	99.611	0.111	0.0	4.4	0.0	4.4	23.0	O K
180 min Winter	99.609	0.109	0.0	4.3	0.0	4.3	22.5	O K
240 min Winter	99.606	0.106	0.0	4.1	0.0	4.1	21.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	60.901	0.0	14.5	0.0	18
30 min Summer	39.040	0.0	19.9	0.0	31
60 min Summer	24.003	0.0	25.5	0.0	52
120 min Summer	14.387	0.0	31.4	0.0	84
180 min Summer	10.582	0.0	35.1	0.0	118
240 min Summer	8.487	0.0	37.7	0.0	150
360 min Summer	6.204	0.0	41.7	0.0	216
480 min Summer	4.965	0.0	44.6	0.0	282
600 min Summer	4.175	0.0	46.9	0.0	344
720 min Summer	3.622	0.0	48.9	0.0	408
960 min Summer	2.895	0.0	52.0	0.0	532
1440 min Summer	2.109	0.0	56.5	0.0	778
2160 min Summer	1.535	0.0	60.9	0.0	1128
2880 min Summer	1.225	0.0	64.0	0.0	1496
4320 min Summer	0.891	0.0	67.9	0.0	2208
5760 min Summer	0.711	0.0	70.2	0.0	2944
7200 min Summer	0.596	0.0	71.5	0.0	3672
8640 min Summer	0.517	0.0	72.2	0.0	4408
10080 min Summer	0.458	0.0	72.5	0.0	5136
15 min Winter	60.901	0.0	16.8	0.0	17
30 min Winter	39.040	0.0	22.8	0.0	31
60 min Winter	24.003	0.0	29.1	0.0	52
120 min Winter	14.387	0.0	35.8	0.0	88
180 min Winter	10.582	0.0	39.9	0.0	126
240 min Winter	8.487	0.0	42.9	0.0	160

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Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (1/s)	Max Control (1/s)	Max Overflow (1/s)	Max Σ Outflow (1/s)	Max Volume (m³)	Status
360 min Winter	99.599	0.099	0.0	3.7	0.0	3.7	19.6	O K
480 min Winter	99.593	0.093	0.0	3.3	0.0	3.3	17.8	O K
600 min Winter	99.588	0.088	0.0	3.0	0.0	3.0	16.3	O K
720 min Winter	99.583	0.083	0.0	2.7	0.0	2.7	15.0	O K
960 min Winter	99.575	0.075	0.0	2.3	0.0	2.3	12.6	O K
1440 min Winter	99.564	0.064	0.0	1.9	0.0	1.9	9.4	O K
2160 min Winter	99.555	0.055	0.0	1.4	0.0	1.4	7.0	O K
2880 min Winter	99.550	0.050	0.0	1.2	0.0	1.2	5.8	O K
4320 min Winter	99.543	0.043	0.0	0.8	0.0	0.8	4.2	O K
5760 min Winter	99.538	0.038	0.0	0.7	0.0	0.7	3.3	O K
7200 min Winter	99.534	0.034	0.0	0.6	0.0	0.6	2.7	O K
8640 min Winter	99.532	0.032	0.0	0.5	0.0	0.5	2.4	O K
10080 min Winter	99.530	0.030	0.0	0.4	0.0	0.4	2.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
360 min Winter	6.204	0.0	47.3	0.0	230
480 min Winter	4.965	0.0	50.6	0.0	296
600 min Winter	4.175	0.0	53.3	0.0	360
720 min Winter	3.622	0.0	55.5	0.0	426
960 min Winter	2.895	0.0	59.0	0.0	552
1440 min Winter	2.109	0.0	64.2	0.0	794
2160 min Winter	1.535	0.0	69.4	0.0	1148
2880 min Winter	1.225	0.0	73.0	0.0	1504
4320 min Winter	0.891	0.0	77.8	0.0	2248
5760 min Winter	0.711	0.0	80.7	0.0	2944
7200 min Winter	0.596	0.0	82.7	0.0	3680
8640 min Winter	0.517	0.0	83.9	0.0	4464
10080 min Winter	0.458	0.0	84.6	0.0	5104

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Micro Drainage

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	10	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.420	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.169

**Time (mins) Area**  
**From: To: (ha)**

0 4 0.169

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

### Orifice Outflow Control

Diameter (m) 0.100 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