

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

Area 1
 P.Paving
 100yr Rainfall Event + CC
 Designed by UKLXB334
 Checked by UKJXW040
 Source Control 2015.1



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

Half Drain Time : 79 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	99.638	0.138	0.0	6.1	9.2	15.3	31.0	O K
30 min Summer	99.652	0.152	0.0	6.7	17.1	23.8	35.0	O K
60 min Summer	99.659	0.159	0.0	6.9	21.3	28.2	36.8	O K
120 min Summer	99.655	0.155	0.0	6.8	19.0	25.8	35.8	O K
180 min Summer	99.650	0.150	0.0	6.6	15.6	22.2	34.2	O K
240 min Summer	99.645	0.145	0.0	6.4	12.7	19.1	32.8	O K
360 min Summer	99.638	0.138	0.0	6.1	8.9	15.0	30.8	O K
480 min Summer	99.633	0.133	0.0	5.8	6.8	12.6	29.4	O K
600 min Summer	99.629	0.129	0.0	5.5	5.0	10.6	28.4	O K
720 min Summer	99.626	0.126	0.0	5.3	3.9	9.2	27.5	O K
960 min Summer	99.621	0.121	0.0	5.0	2.1	7.2	26.1	O K
1440 min Summer	99.613	0.113	0.0	4.5	0.2	4.8	23.7	O K
2160 min Summer	99.597	0.097	0.0	3.6	0.0	3.6	19.0	O K
2880 min Summer	99.586	0.086	0.0	2.9	0.0	2.9	15.9	O K
4320 min Summer	99.571	0.071	0.0	2.2	0.0	2.2	11.5	O K
5760 min Summer	99.562	0.062	0.0	1.8	0.0	1.8	8.9	O K
7200 min Summer	99.557	0.057	0.0	1.5	0.0	1.5	7.4	O K
8640 min Summer	99.553	0.053	0.0	1.3	0.0	1.3	6.5	O K
10080 min Summer	99.550	0.050	0.0	1.2	0.0	1.2	5.8	O K
15 min Winter	99.650	0.150	0.0	6.6	15.6	22.2	34.2	O K
30 min Winter	99.663	0.163	0.0	7.0	24.1	31.1	38.0	O K
60 min Winter	99.663	0.163	0.0	7.0	24.4	31.4	38.2	O K
120 min Winter	99.654	0.154	0.0	6.7	18.4	25.1	35.5	O K
180 min Winter	99.646	0.146	0.0	6.5	13.5	20.0	33.3	O K
240 min Winter	99.641	0.141	0.0	6.2	10.5	16.7	31.7	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	36.5	5.5	16
30 min Summer	84.962	0.0	49.0	14.3	23
60 min Summer	52.662	0.0	61.8	22.3	38
120 min Summer	31.544	0.0	74.9	26.5	70
180 min Summer	23.073	0.0	82.6	26.2	100
240 min Summer	18.380	0.0	87.9	25.0	130
360 min Summer	13.286	0.0	95.5	21.8	192
480 min Summer	10.557	0.0	101.3	18.5	252
600 min Summer	8.826	0.0	105.9	15.2	314
720 min Summer	7.621	0.0	109.7	12.2	376
960 min Summer	6.042	0.0	115.8	7.0	502
1440 min Summer	4.349	0.0	124.6	0.4	766
2160 min Summer	3.126	0.0	133.5	0.0	1144
2880 min Summer	2.471	0.0	139.8	0.0	1500
4320 min Summer	1.771	0.0	148.2	0.0	2244
5760 min Summer	1.398	0.0	153.7	0.0	2944
7200 min Summer	1.162	0.0	157.6	0.0	3672
8640 min Summer	1.000	0.0	160.4	0.0	4408
10080 min Summer	0.880	0.0	162.3	0.0	5136
15 min Winter	130.490	0.0	41.5	9.2	15
30 min Winter	84.962	0.0	55.4	19.6	23
60 min Winter	52.662	0.0	69.8	28.8	40
120 min Winter	31.544	0.0	84.5	33.6	72
180 min Winter	23.073	0.0	93.1	32.8	102
240 min Winter	18.380	0.0	99.1	30.7	134

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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
360 min Winter	99.633	0.133	0.0	5.8	6.8	12.6	29.4	O K
480 min Winter	99.628	0.128	0.0	5.5	4.6	10.1	28.0	O K
600 min Winter	99.625	0.125	0.0	5.3	3.3	8.5	27.0	O K
720 min Winter	99.622	0.122	0.0	5.1	2.3	7.3	26.1	O K
960 min Winter	99.617	0.117	0.0	4.8	0.9	5.7	24.7	O K
1440 min Winter	99.603	0.103	0.0	3.9	0.0	3.9	20.7	O K
2160 min Winter	99.586	0.086	0.0	2.9	0.0	2.9	15.8	O K
2880 min Winter	99.574	0.074	0.0	2.3	0.0	2.3	12.4	O K
4320 min Winter	99.560	0.060	0.0	1.7	0.0	1.7	8.3	O K
5760 min Winter	99.553	0.053	0.0	1.3	0.0	1.3	6.6	O K
7200 min Winter	99.549	0.049	0.0	1.1	0.0	1.1	5.6	O K
8640 min Winter	99.546	0.046	0.0	1.0	0.0	1.0	5.0	O K
10080 min Winter	99.543	0.043	0.0	0.8	0.0	0.8	4.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
360 min Winter	13.286	0.0	107.6	25.8	194
480 min Winter	10.557	0.0	114.1	20.7	256
600 min Winter	8.826	0.0	119.3	15.7	318
720 min Winter	7.621	0.0	123.6	11.2	378
960 min Winter	6.042	0.0	130.5	4.0	518
1440 min Winter	4.349	0.0	140.5	0.0	792
2160 min Winter	3.126	0.0	150.6	0.0	1164
2880 min Winter	2.471	0.0	157.8	0.0	1528
4320 min Winter	1.771	0.0	167.7	0.0	2248
5760 min Winter	1.398	0.0	174.3	0.0	2944
7200 min Winter	1.162	0.0	179.0	0.0	3672
8640 min Winter	1.000	0.0	182.5	0.0	4416
10080 min Winter	0.880	0.0	185.1	0.0	5144

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Micro Drainage

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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)	20.000	Shortest Storm (mins)	15
Ratio R	0.420	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

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