

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

Area 1
 P.Paving
 30yr Rainfall Event
 Designed by UKLXB334
 Checked by UKJXW040
 Source Control 2015.1



Summary of Results for 30 year Return Period

Half Drain Time : 61 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	99.593	0.093	0.0	3.3	0.0	3.3	18.0	O K
30 min Summer	99.610	0.110	0.0	4.4	0.0	4.4	22.9	O K
60 min Summer	99.618	0.118	0.0	4.9	1.3	6.1	25.2	O K
120 min Summer	99.622	0.122	0.0	5.1	2.3	7.3	26.1	O K
180 min Summer	99.621	0.121	0.0	5.0	2.0	7.0	25.9	O K
240 min Summer	99.619	0.119	0.0	4.9	1.5	6.4	25.4	O K
360 min Summer	99.615	0.115	0.0	4.7	0.6	5.2	24.3	O K
480 min Summer	99.610	0.110	0.0	4.4	0.0	4.4	22.9	O K
600 min Summer	99.605	0.105	0.0	4.1	0.0	4.1	21.4	O K
720 min Summer	99.600	0.100	0.0	3.8	0.0	3.8	20.0	O K
960 min Summer	99.593	0.093	0.0	3.3	0.0	3.3	17.8	O K
1440 min Summer	99.581	0.081	0.0	2.6	0.0	2.6	14.5	O K
2160 min Summer	99.569	0.069	0.0	2.1	0.0	2.1	11.1	O K
2880 min Summer	99.562	0.062	0.0	1.8	0.0	1.8	9.0	O K
4320 min Summer	99.554	0.054	0.0	1.4	0.0	1.4	6.8	O K
5760 min Summer	99.549	0.049	0.0	1.1	0.0	1.1	5.6	O K
7200 min Summer	99.546	0.046	0.0	0.9	0.0	0.9	4.8	O K
8640 min Summer	99.542	0.042	0.0	0.8	0.0	0.8	4.1	O K
10080 min Summer	99.539	0.039	0.0	0.7	0.0	0.7	3.6	O K
15 min Winter	99.603	0.103	0.0	3.9	0.0	3.9	20.7	O K
30 min Winter	99.620	0.120	0.0	5.0	1.8	6.8	25.7	O K
60 min Winter	99.626	0.126	0.0	5.3	3.9	9.2	27.5	O K
120 min Winter	99.627	0.127	0.0	5.4	4.0	9.4	27.5	O K
180 min Winter	99.624	0.124	0.0	5.2	2.9	8.1	26.8	O K
240 min Winter	99.621	0.121	0.0	5.0	2.1	7.2	26.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	77.297	0.0	19.7	0.0	18
30 min Summer	49.920	0.0	26.8	0.0	31
60 min Summer	30.811	0.0	34.1	1.3	46
120 min Summer	18.462	0.0	41.8	2.4	78
180 min Summer	13.543	0.0	46.3	2.4	112
240 min Summer	10.827	0.0	49.6	1.9	144
360 min Summer	7.872	0.0	54.3	0.7	212
480 min Summer	6.278	0.0	57.9	0.0	280
600 min Summer	5.265	0.0	60.7	0.0	344
720 min Summer	4.558	0.0	63.1	0.0	406
960 min Summer	3.628	0.0	66.9	0.0	530
1440 min Summer	2.628	0.0	72.3	0.0	780
2160 min Summer	1.902	0.0	77.7	0.0	1144
2880 min Summer	1.511	0.0	81.4	0.0	1500
4320 min Summer	1.091	0.0	86.2	0.0	2204
5760 min Summer	0.866	0.0	89.1	0.0	2936
7200 min Summer	0.724	0.0	90.9	0.0	3672
8640 min Summer	0.625	0.0	91.9	0.0	4408
10080 min Summer	0.552	0.0	92.5	0.0	5136
15 min Winter	77.297	0.0	22.6	0.0	17
30 min Winter	49.920	0.0	30.6	1.0	30
60 min Winter	30.811	0.0	38.8	4.1	46
120 min Winter	18.462	0.0	47.4	5.4	80
180 min Winter	13.543	0.0	52.5	4.8	116
240 min Winter	10.827	0.0	56.2	3.7	150

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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	99.616	0.116	0.0	4.7	0.7	5.4	24.4	O K
480 min Winter	99.609	0.109	0.0	4.3	0.0	4.3	22.6	O K
600 min Winter	99.602	0.102	0.0	3.9	0.0	3.9	20.6	O K
720 min Winter	99.597	0.097	0.0	3.6	0.0	3.6	18.9	O K
960 min Winter	99.587	0.087	0.0	3.0	0.0	3.0	16.2	O K
1440 min Winter	99.574	0.074	0.0	2.3	0.0	2.3	12.3	O K
2160 min Winter	99.561	0.061	0.0	1.8	0.0	1.8	8.7	O K
2880 min Winter	99.555	0.055	0.0	1.4	0.0	1.4	7.0	O K
4320 min Winter	99.548	0.048	0.0	1.0	0.0	1.0	5.3	O K
5760 min Winter	99.542	0.042	0.0	0.8	0.0	0.8	4.1	O K
7200 min Winter	99.538	0.038	0.0	0.7	0.0	0.7	3.4	O K
8640 min Winter	99.535	0.035	0.0	0.6	0.0	0.6	2.9	O K
10080 min Winter	99.533	0.033	0.0	0.5	0.0	0.5	2.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
360 min Winter	7.872	0.0	61.5	1.1	222
480 min Winter	6.278	0.0	65.5	0.0	294
600 min Winter	5.265	0.0	68.7	0.0	358
720 min Winter	4.558	0.0	71.4	0.0	420
960 min Winter	3.628	0.0	75.7	0.0	550
1440 min Winter	2.628	0.0	81.9	0.0	796
2160 min Winter	1.902	0.0	88.1	0.0	1148
2880 min Winter	1.511	0.0	92.4	0.0	1500
4320 min Winter	1.091	0.0	98.2	0.0	2244
5760 min Winter	0.866	0.0	101.9	0.0	2944
7200 min Winter	0.724	0.0	104.3	0.0	3696
8640 min Winter	0.625	0.0	105.9	0.0	4400
10080 min Winter	0.552	0.0	106.9	0.0	5104

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Micro Drainage

Source Control 2015.1

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	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