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Caversham Bridge House Waterman Place Reading RG1 8DN	Green Park Village Phase 1- Village Terrace Permeable Paving Depths	
Date 16th July 2010 File Village Terrace.SRC	Designed By VH Checked By	
Micro Drainage	Source Control W.11.4 net	

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

Half Drain Time : 528 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	0.2	0.2	39.4642	0.4642	6.1	0 K
30 Summer	0.2	0.2	39.6008	0.6008	8.0	0 K
60 Summer	0.2	0.2	39.7318	0.7318	9.8	0 K
120 Summer	0.2	0.2	39.8443	0.8443	11.3	0 K
180 Summer	0.2	0.2	39.8898	0.8898	11.9	0 K
240 Summer	0.2	0.2	39.9058	0.9058	12.1	FLOOD RISK
360 Summer	0.2	0.2	39.8963	0.8963	12.0	0 K
480 Summer	0.2	0.2	39.8693	0.8693	11.6	0 K
600 Summer	0.2	0.2	39.8423	0.8423	11.3	0 K
720 Summer	0.2	0.2	39.8178	0.8178	10.9	0 K
960 Summer	0.2	0.2	39.7733	0.7733	10.3	0 K
1440 Summer	0.2	0.2	39.6918	0.6918	9.2	0 K
2160 Summer	0.2	0.2	39.5773	0.5772	7.6	0 K
2880 Summer	0.2	0.2	39.4722	0.4722	6.2	0 K
4320 Summer	0.2	0.2	39.2968	0.2967	3.8	0 K
5760 Summer	0.2	0.2	39.1708	0.1707	2.1	0 K
7200 Summer	0.2	0.2	39.0913	0.0913	1.0	0 K
8640 Summer	0.2	0.2	39.0538	0.0537	0.5	0 K
10080 Summer	0.2	0.2	39.0453	0.0452	0.4	0 K
15 Winter	0.2	0.2	39.5213	0.5212	6.9	0 K
30 Winter	0.2	0.2	39.6763	0.6763	9.0	0 K
60 Winter	0.2	0.2	39.8268	0.8268	11.1	0 K
120 Winter	0.2	0.2	39.9603	0.9603	12.9	FLOOD RISK
180 Winter	0.2	0.2	40.0188	1.0188	13.7	FLOOD RISK
240 Winter	0.2	0.2	40.0448	1.0448	14.0	FLOOD RISK
360 Winter	0.2	0.2	40.0493	1.0493	14.1	FLOOD RISK
480 Winter	0.2	0.2	40.0303	1.0303	13.8	FLOOD RISK
600 Winter	0.2	0.2	39.9973	0.9973	13.4	FLOOD RISK
720 Winter	0.2	0.2	39.9613	0.9613	12.9	FLOOD RISK
960 Winter	0.2	0.2	39.9023	0.9023	12.1	FLOOD RISK
1440 Winter	0.2	0.2	39.7833	0.7833	10.5	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	119.87	19
30 Summer	78.79	33
60 Summer	49.39	64
120 Summer	29.96	122
180 Summer	22.08	182
240 Summer	17.69	242
360 Summer	12.84	360
480 Summer	10.24	432
600 Summer	8.58	488
720 Summer	7.43	550
960 Summer	5.91	676
1440 Summer	4.27	952
2160 Summer	3.08	1344
2880 Summer	2.45	1732
4320 Summer	1.76	2464
5760 Summer	1.39	3168
7200 Summer	1.16	3816
8640 Summer	1.00	4408
10080 Summer	0.88	5136
15 Winter	119.87	19
30 Winter	78.79	33
60 Winter	49.39	62
120 Winter	29.96	120
180 Winter	22.08	178
240 Winter	17.69	236
360 Winter	12.84	350
480 Winter	10.24	460
600 Winter	8.58	562
720 Winter	7.43	592
960 Winter	5.91	734
1440 Winter	4.27	1038

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

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
2160 Winter	0.2	0.2	39.6083	0.6083	8.1	0 K
2880 Winter	0.2	0.2	39.4487	0.4487	5.9	0 K
4320 Winter	0.2	0.2	39.1963	0.1962	2.4	0 K
5760 Winter	0.2	0.2	39.0573	0.0572	0.5	0 K
7200 Winter	0.2	0.2	39.0433	0.0432	0.3	0 K
8640 Winter	0.2	0.2	39.0378	0.0377	0.3	0 K
10080 Winter	0.1	0.1	39.0353	0.0352	0.2	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
2160 Winter	3.08	1468
2880 Winter	2.45	1848
4320 Winter	1.76	2552
5760 Winter	1.39	3048
7200 Winter	1.16	3640
8640 Winter	1.00	4360
10080 Winter	0.88	5136

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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	100	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	18.800	Shortest Storm (mins)	15	Climate Change %	+30
Ratio-R	0.400	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.029

Time from:	(mins) to:	Area (ha)
0	4	0.029

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Porous Car Park Details

Infil Coef - Base (m/hr)	0.036000	Invert Level (m)	39.000
Membrane Percolation (mm/hr)	1000	Cover Level (m)	40.100
Safety Factor	2.0	Slope (1:x)	500.0
Porosity	0.30	Max Percolation (l/s)	12.7
Length (m)	19.0	Depression Storage (mm)	5
Width (m)	2.4	Evaporation (mm/day)	3

Note:

Effective depth

$$D=1.1\text{m Volume} = 19.0 \times 2.4 \times 1.1 = 50.16\text{m}^3$$

$$\text{Area of lined paved} = 56.159\text{m}^2$$

$$\text{Effective depth} = 50.16 / (56.159 + 50.16) = 0.472\text{m} = 0.500\text{m}$$

The depth includes sub-base and lower sub-base