

Rightwell House  
Bretton  
Peterborough PE3 8DW

Catchment 2B Cellular  
Kent Int. Gateway  
9T4125



Date 16 June 2009  
File 2009.06.16 PQ Catchment 2B Stor...

Designed By RJF  
Checked By

Micro Drainage

Source Control W.11.4

**Summary of Results for 100 year Return Period (+20%)**

Half Drain Time : 1641 minutes

Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	7.5	0.0	7.5	54.3973	0.8973	684.5	0 K
30 Summer	8.3	0.0	8.3	54.5813	1.0813	894.6	0 K
60 Summer	8.9	0.0	8.9	54.7688	1.2687	1108.9	0 K
120 Summer	9.6	0.0	9.6	54.9512	1.4512	1317.5	0 K
180 Summer	9.9	0.0	9.9	55.0487	1.5487	1429.0	0 K
240 Summer	10.1	0.0	10.1	55.1097	1.6097	1498.5	0 K
360 Summer	10.3	0.0	10.3	55.1862	1.6862	1586.1	0 K
480 Summer	10.5	0.0	10.5	55.2322	1.7322	1638.4	0 K
600 Summer	10.5	0.0	10.5	55.2592	1.7592	1669.1	0 K
720 Summer	10.6	0.0	10.6	55.2737	1.7737	1685.9	0 K
960 Summer	10.6	0.0	10.6	55.2802	1.7802	1692.9	0 K
1440 Summer	10.5	0.0	10.5	55.2502	1.7502	1659.1	0 K
2160 Summer	10.3	0.0	10.3	55.1947	1.6947	1595.3	0 K
2880 Summer	10.2	0.0	10.2	55.1347	1.6347	1526.8	0 K
4320 Summer	9.8	0.0	9.8	55.0252	1.5252	1401.8	0 K
5760 Summer	9.5	0.0	9.5	54.9307	1.4307	1294.2	0 K
7200 Summer	9.2	0.0	9.2	54.8458	1.3457	1196.9	0 K
8640 Summer	8.9	0.0	8.9	54.7678	1.2678	1107.7	0 K
10080 Summer	8.7	0.0	8.7	54.6958	1.1958	1025.4	0 K
15 Winter	7.8	0.0	7.8	54.4693	0.9693	767.1	0 K
30 Winter	8.6	0.0	8.6	54.6758	1.1758	1003.0	0 K
60 Winter	9.4	0.0	9.4	54.8872	1.3872	1244.2	0 K
120 Winter	10.0	0.0	10.0	55.0942	1.5942	1481.0	0 K
180 Winter	10.4	0.0	10.4	55.2062	1.7062	1608.7	0 K
240 Winter	10.6	0.0	10.6	55.2767	1.7767	1689.4	0 K
360 Winter	10.9	0.0	10.9	55.3677	1.8677	1792.9	0 K
480 Winter	11.0	0.0	11.0	55.4242	1.9242	1857.3	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	118.42	19
30 Summer	77.75	34
60 Summer	48.61	64
120 Summer	29.35	124
180 Summer	21.56	184
240 Summer	17.21	242
360 Summer	12.50	362
480 Summer	9.96	482
600 Summer	8.35	602
720 Summer	7.22	722
960 Summer	5.74	960
1440 Summer	4.15	1242
2160 Summer	2.99	1620
2880 Summer	2.37	2016
4320 Summer	1.71	2852
5760 Summer	1.35	3688
7200 Summer	1.12	4472
8640 Summer	0.97	5272
10080 Summer	0.85	6056
15 Winter	118.42	19
30 Winter	77.75	34
60 Winter	48.61	64
120 Winter	29.35	122
180 Winter	21.56	180
240 Winter	17.21	240
360 Winter	12.50	356
480 Winter	9.96	474

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Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m <sup>3</sup> )	Status
600 Winter	11.1	0.0	11.1	55.4597	1.9597	1897.9	0 K
720 Winter	11.2	0.0	11.2	55.4812	1.9812	1922.9	0 K
<b>960 Winter</b>	<b>11.2</b>	<b>0.0</b>	<b>11.2</b>	<b>55.4997</b>	<b>1.9997</b>	<b>1943.8</b>	<b>0 K</b>
1440 Winter	11.2	0.0	11.2	55.4807	1.9807	1922.3	0 K
2160 Winter	11.0	0.0	11.0	55.4117	1.9117	1843.3	0 K
2880 Winter	10.8	0.0	10.8	55.3387	1.8387	1760.2	0 K
4320 Winter	10.3	0.0	10.3	55.1882	1.6882	1587.9	0 K
5760 Winter	9.9	0.0	9.9	55.0522	1.5522	1432.8	0 K
7200 Winter	9.5	0.0	9.5	54.9288	1.4287	1291.6	0 K
8640 Winter	9.1	0.0	9.1	54.8163	1.3163	1163.1	0 K
10080 Winter	8.8	0.0	8.8	54.7143	1.2143	1046.8	0 K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
600 Winter	8.35	590
720 Winter	7.22	702
<b>960 Winter</b>	<b>5.74</b>	<b>930</b>
1440 Winter	4.15	1356
2160 Winter	2.99	1704
2880 Winter	2.37	2164
4320 Winter	1.71	3072
5760 Winter	1.35	3976
7200 Winter	1.12	4824
8640 Winter	0.97	5624
10080 Winter	0.85	6456

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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)	20.000	Shortest Storm (mins)	15	Climate Change %	+20
Ratio-R	0.400	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 3.110

Time (mins)	Area (ha)
from: to:	
0 4	3.110

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Cellular Storage Details

Infil Coef - Base (m/hr) 0.000000 Safety Factor 2.0 Invert Level (m) 53.500  
Infil Coef - Sides (m/hr) 0.000000 Porosity 1.00 Ground Level (m) 56.000

Depth (m)	Area (m <sup>2</sup> )	Infil. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Infil. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Infil. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Infil. Area (m <sup>2</sup> )
0.00	386.2	1142.2	0.70	1142.2	1230.4	1.40	1142.2	1318.4	2.10	1142.2	1406.6
0.10	386.2	1154.8	0.80	1142.2	1242.9	1.50	1142.2	1330.9	2.20	1142.2	1418.9
0.20	386.2	1167.4	0.90	1142.2	1255.6	1.60	1142.2	1343.8	2.30	1142.2	1431.6
0.30	386.2	1180.0	1.00	1142.2	1268.1	1.70	1142.2	1356.3	2.40	1142.2	1444.4
0.40	386.2	1192.6	1.10	1142.2	1280.8	1.80	1142.2	1368.7	2.50	1142.2	1457.0
0.50	1142.2	1205.2	1.20	1142.2	1293.3	1.90	1142.2	1381.2			
0.60	1142.2	1217.6	1.30	1142.2	1306.0	2.00	1142.2	1394.0			

Hydro-Brake Outflow Control

Design Head (m) 2.000 Hydro-Brake Type MD4 Invert Level (m) 53.500  
Design Flow (l/s) 11.3 Diameter (mm) 101

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.10	3.0	0.60	6.2	1.60	10.0	2.60	12.8	5.00	17.8	7.50	21.8
0.20	6.4	0.80	7.1	1.80	10.7	3.00	13.8	5.50	18.6	8.00	22.5
0.30	5.7	1.00	7.9	2.00	11.2	3.50	14.9	6.00	19.5	8.50	23.2
0.40	5.3	1.20	8.7	2.20	11.8	4.00	15.9	6.50	20.3	9.00	23.8
0.50	5.7	1.40	9.4	2.40	12.3	4.50	16.9	7.00	21.0	9.50	24.5