

Robert Clark Associates					Page 1																																																																																																																																																																																																																			
Willow Cottage Herne Lane Rustington BN16 3EE			10 Elm Grove Barnham Front Soakaway																																																																																																																																																																																																																					
Date 6.2.18 File Front geocell.SRCX			Designed by RTFC Checked by																																																																																																																																																																																																																					
Micro Drainage			Source Control 2016.1																																																																																																																																																																																																																					
Summary of Results for 100 year Return Period (+30%) Half Drain Time : 138 minutes. <table><thead><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr></thead><tbody><tr><td>15 min Summer</td><td>7.312</td><td>0.212</td><td>0.1</td><td>1.0</td><td>0 K</td></tr><tr><td>30 min Summer</td><td>7.375</td><td>0.275</td><td>0.1</td><td>1.3</td><td>0 K</td></tr><tr><td>60 min Summer</td><td>7.427</td><td>0.327</td><td>0.1</td><td>1.6</td><td>0 K</td></tr><tr><td>120 min Summer</td><td>7.452</td><td>0.352</td><td>0.1</td><td>1.7</td><td>0 K</td></tr><tr><td>180 min Summer</td><td>7.455</td><td>0.355</td><td>0.1</td><td>1.7</td><td>0 K</td></tr><tr><td>240 min Summer</td><td>7.450</td><td>0.350</td><td>0.1</td><td>1.7</td><td>0 K</td></tr><tr><td>360 min Summer</td><td>7.434</td><td>0.334</td><td>0.1</td><td>1.6</td><td>0 K</td></tr><tr><td>480 min Summer</td><td>7.416</td><td>0.316</td><td>0.1</td><td>1.5</td><td>0 K</td></tr><tr><td>600 min Summer</td><td>7.397</td><td>0.297</td><td>0.1</td><td>1.4</td><td>0 K</td></tr><tr><td>720 min Summer</td><td>7.380</td><td>0.280</td><td>0.1</td><td>1.3</td><td>0 K</td></tr><tr><td>960 min Summer</td><td>7.347</td><td>0.247</td><td>0.1</td><td>1.2</td><td>0 K</td></tr><tr><td>1440 min Summer</td><td>7.293</td><td>0.193</td><td>0.1</td><td>0.9</td><td>0 K</td></tr><tr><td>2160 min Summer</td><td>7.232</td><td>0.132</td><td>0.1</td><td>0.6</td><td>0 K</td></tr><tr><td>2880 min Summer</td><td>7.190</td><td>0.090</td><td>0.1</td><td>0.4</td><td>0 K</td></tr><tr><td>4320 min Summer</td><td>7.150</td><td>0.050</td><td>0.1</td><td>0.2</td><td>0 K</td></tr><tr><td>5760 min Summer</td><td>7.140</td><td>0.040</td><td>0.1</td><td>0.2</td><td>0 K</td></tr><tr><td>7200 min Summer</td><td>7.134</td><td>0.034</td><td>0.1</td><td>0.2</td><td>0 K</td></tr><tr><td>8640 min Summer</td><td>7.129</td><td>0.029</td><td>0.0</td><td>0.1</td><td>0 K</td></tr><tr><td>10080 min Summer</td><td>7.126</td><td>0.026</td><td>0.0</td><td>0.1</td><td>0 K</td></tr><tr><td>15 min Winter</td><td>7.339</td><td>0.239</td><td>0.1</td><td>1.1</td><td>0 K</td></tr></tbody></table> <table><thead><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr></thead><tbody><tr><td>15 min Summer</td><td>115.731</td><td>0.0</td><td>18</td></tr><tr><td>30 min Summer</td><td>77.804</td><td>0.0</td><td>32</td></tr><tr><td>60 min Summer</td><td>49.937</td><td>0.0</td><td>62</td></tr><tr><td>120 min Summer</td><td>30.956</td><td>0.0</td><td>104</td></tr><tr><td>180 min Summer</td><td>23.058</td><td>0.0</td><td>136</td></tr><tr><td>240 min Summer</td><td>18.577</td><td>0.0</td><td>168</td></tr><tr><td>360 min Summer</td><td>13.656</td><td>0.0</td><td>238</td></tr><tr><td>480 min Summer</td><td>10.974</td><td>0.0</td><td>306</td></tr><tr><td>600 min Summer</td><td>9.254</td><td>0.0</td><td>374</td></tr><tr><td>720 min Summer</td><td>8.046</td><td>0.0</td><td>442</td></tr><tr><td>960 min Summer</td><td>6.447</td><td>0.0</td><td>576</td></tr><tr><td>1440 min Summer</td><td>4.709</td><td>0.0</td><td>824</td></tr><tr><td>2160 min Summer</td><td>3.432</td><td>0.0</td><td>1188</td></tr><tr><td>2880 min Summer</td><td>2.739</td><td>0.0</td><td>1532</td></tr><tr><td>4320 min Summer</td><td>1.989</td><td>0.0</td><td>2204</td></tr><tr><td>5760 min Summer</td><td>1.583</td><td>0.0</td><td>2936</td></tr><tr><td>7200 min Summer</td><td>1.325</td><td>0.0</td><td>3672</td></tr><tr><td>8640 min Summer</td><td>1.147</td><td>0.0</td><td>4400</td></tr><tr><td>10080 min Summer</td><td>1.015</td><td>0.0</td><td>5136</td></tr><tr><td>15 min Winter</td><td>115.731</td><td>0.0</td><td>18</td></tr></tbody></table>							Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	7.312	0.212	0.1	1.0	0 K	30 min Summer	7.375	0.275	0.1	1.3	0 K	60 min Summer	7.427	0.327	0.1	1.6	0 K	120 min Summer	7.452	0.352	0.1	1.7	0 K	180 min Summer	7.455	0.355	0.1	1.7	0 K	240 min Summer	7.450	0.350	0.1	1.7	0 K	360 min Summer	7.434	0.334	0.1	1.6	0 K	480 min Summer	7.416	0.316	0.1	1.5	0 K	600 min Summer	7.397	0.297	0.1	1.4	0 K	720 min Summer	7.380	0.280	0.1	1.3	0 K	960 min Summer	7.347	0.247	0.1	1.2	0 K	1440 min Summer	7.293	0.193	0.1	0.9	0 K	2160 min Summer	7.232	0.132	0.1	0.6	0 K	2880 min Summer	7.190	0.090	0.1	0.4	0 K	4320 min Summer	7.150	0.050	0.1	0.2	0 K	5760 min Summer	7.140	0.040	0.1	0.2	0 K	7200 min Summer	7.134	0.034	0.1	0.2	0 K	8640 min Summer	7.129	0.029	0.0	0.1	0 K	10080 min Summer	7.126	0.026	0.0	0.1	0 K	15 min Winter	7.339	0.239	0.1	1.1	0 K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	115.731	0.0	18	30 min Summer	77.804	0.0	32	60 min Summer	49.937	0.0	62	120 min Summer	30.956	0.0	104	180 min Summer	23.058	0.0	136	240 min Summer	18.577	0.0	168	360 min Summer	13.656	0.0	238	480 min Summer	10.974	0.0	306	600 min Summer	9.254	0.0	374	720 min Summer	8.046	0.0	442	960 min Summer	6.447	0.0	576	1440 min Summer	4.709	0.0	824	2160 min Summer	3.432	0.0	1188	2880 min Summer	2.739	0.0	1532	4320 min Summer	1.989	0.0	2204	5760 min Summer	1.583	0.0	2936	7200 min Summer	1.325	0.0	3672	8640 min Summer	1.147	0.0	4400	10080 min Summer	1.015	0.0	5136	15 min Winter	115.731	0.0	18
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status																																																																																																																																																																																																																			
15 min Summer	7.312	0.212	0.1	1.0	0 K																																																																																																																																																																																																																			
30 min Summer	7.375	0.275	0.1	1.3	0 K																																																																																																																																																																																																																			
60 min Summer	7.427	0.327	0.1	1.6	0 K																																																																																																																																																																																																																			
120 min Summer	7.452	0.352	0.1	1.7	0 K																																																																																																																																																																																																																			
180 min Summer	7.455	0.355	0.1	1.7	0 K																																																																																																																																																																																																																			
240 min Summer	7.450	0.350	0.1	1.7	0 K																																																																																																																																																																																																																			
360 min Summer	7.434	0.334	0.1	1.6	0 K																																																																																																																																																																																																																			
480 min Summer	7.416	0.316	0.1	1.5	0 K																																																																																																																																																																																																																			
600 min Summer	7.397	0.297	0.1	1.4	0 K																																																																																																																																																																																																																			
720 min Summer	7.380	0.280	0.1	1.3	0 K																																																																																																																																																																																																																			
960 min Summer	7.347	0.247	0.1	1.2	0 K																																																																																																																																																																																																																			
1440 min Summer	7.293	0.193	0.1	0.9	0 K																																																																																																																																																																																																																			
2160 min Summer	7.232	0.132	0.1	0.6	0 K																																																																																																																																																																																																																			
2880 min Summer	7.190	0.090	0.1	0.4	0 K																																																																																																																																																																																																																			
4320 min Summer	7.150	0.050	0.1	0.2	0 K																																																																																																																																																																																																																			
5760 min Summer	7.140	0.040	0.1	0.2	0 K																																																																																																																																																																																																																			
7200 min Summer	7.134	0.034	0.1	0.2	0 K																																																																																																																																																																																																																			
8640 min Summer	7.129	0.029	0.0	0.1	0 K																																																																																																																																																																																																																			
10080 min Summer	7.126	0.026	0.0	0.1	0 K																																																																																																																																																																																																																			
15 min Winter	7.339	0.239	0.1	1.1	0 K																																																																																																																																																																																																																			
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)																																																																																																																																																																																																																					
15 min Summer	115.731	0.0	18																																																																																																																																																																																																																					
30 min Summer	77.804	0.0	32																																																																																																																																																																																																																					
60 min Summer	49.937	0.0	62																																																																																																																																																																																																																					
120 min Summer	30.956	0.0	104																																																																																																																																																																																																																					
180 min Summer	23.058	0.0	136																																																																																																																																																																																																																					
240 min Summer	18.577	0.0	168																																																																																																																																																																																																																					
360 min Summer	13.656	0.0	238																																																																																																																																																																																																																					
480 min Summer	10.974	0.0	306																																																																																																																																																																																																																					
600 min Summer	9.254	0.0	374																																																																																																																																																																																																																					
720 min Summer	8.046	0.0	442																																																																																																																																																																																																																					
960 min Summer	6.447	0.0	576																																																																																																																																																																																																																					
1440 min Summer	4.709	0.0	824																																																																																																																																																																																																																					
2160 min Summer	3.432	0.0	1188																																																																																																																																																																																																																					
2880 min Summer	2.739	0.0	1532																																																																																																																																																																																																																					
4320 min Summer	1.989	0.0	2204																																																																																																																																																																																																																					
5760 min Summer	1.583	0.0	2936																																																																																																																																																																																																																					
7200 min Summer	1.325	0.0	3672																																																																																																																																																																																																																					
8640 min Summer	1.147	0.0	4400																																																																																																																																																																																																																					
10080 min Summer	1.015	0.0	5136																																																																																																																																																																																																																					
15 min Winter	115.731	0.0	18																																																																																																																																																																																																																					
©1982-2016 XP Solutions																																																																																																																																																																																																																								

Robert Clark Associates		Page 2
Willow Cottage Herne Lane Rustington BN16 3EE	10 Elm Grove Barnham Front Soakaway	
Date 6.2.18 File Front geocell.SRCX	Designed by RTFC Checked by	
Micro Drainage	Source Control 2016.1	

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	7.411	0.311	0.1	1.5	0 K
60 min Winter	7.472	0.372	0.1	1.8	0 K
120 min Winter	7.505	0.405	0.1	1.9	Flood Risk
180 min Winter	7.506	0.406	0.1	1.9	Flood Risk
240 min Winter	7.498	0.398	0.1	1.9	0 K
360 min Winter	7.473	0.373	0.1	1.8	0 K
480 min Winter	7.446	0.346	0.1	1.6	0 K
600 min Winter	7.418	0.318	0.1	1.5	0 K
720 min Winter	7.392	0.292	0.1	1.4	0 K
960 min Winter	7.345	0.245	0.1	1.2	0 K
1440 min Winter	7.269	0.169	0.1	0.8	0 K
2160 min Winter	7.191	0.091	0.1	0.4	0 K
2880 min Winter	7.150	0.050	0.1	0.2	0 K
4320 min Winter	7.137	0.037	0.1	0.2	0 K
5760 min Winter	7.129	0.029	0.0	0.1	0 K
7200 min Winter	7.125	0.025	0.0	0.1	0 K
8640 min Winter	7.121	0.021	0.0	0.1	0 K
10080 min Winter	7.119	0.019	0.0	0.1	0 K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	77.804	0.0	32
60 min Winter	49.937	0.0	60
120 min Winter	30.956	0.0	114
180 min Winter	23.058	0.0	142
240 min Winter	18.577	0.0	182
360 min Winter	13.656	0.0	258
480 min Winter	10.974	0.0	332
600 min Winter	9.254	0.0	404
720 min Winter	8.046	0.0	474
960 min Winter	6.447	0.0	608
1440 min Winter	4.709	0.0	866
2160 min Winter	3.432	0.0	1216
2880 min Winter	2.739	0.0	1496
4320 min Winter	1.989	0.0	2188
5760 min Winter	1.583	0.0	2880
7200 min Winter	1.325	0.0	3648
8640 min Winter	1.147	0.0	4400
10080 min Winter	1.015	0.0	5136

Robert Clark Associates		Page 3
Willow Cottage Herne Lane Rustington BN16 3EE	10 Elm Grove Barnham Front Soakaway	
Date 6.2.18 File Front geocell.SRCX	Designed by RTFC Checked by	
Micro Drainage Source Control 2016.1		

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)	19.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.005

Time (mins)	Area (ha)
From:	To:
0	4 0.005

©1982-2016 XP Solutions

Robert Clark Associates		Page 4
Willow Cottage Herne Lane Rustington BN16 3EE	10 Elm Grove Barnham Front Soakaway	
Date 6.2.18 File Front geocell.SRCX	Designed by RTFC Checked by	
Micro Drainage Source Control 2016.1		

Model Details

Storage is Online Cover Level (m) 7.800

Cellular Storage Structure

Invert Level (m)	7.100
Infiltration Coefficient Base (m/hr)	0.07700
Infiltration Coefficient Side (m/hr)	0.07700
Safety Factor	1.5
Porosity	0.95

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	5.0	5.0	0.500	0.0	9.8
0.400	5.0	9.8			

©1982-2016 XP Solutions