

The Stilwell Partnership				Page 1																																																																																																																																																																																																																			
Satelliet House 2 Nexus Park Ash Vale GU12 5QE		Kings Beach Hotel Porous Surfacing																																																																																																																																																																																																																					
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 545 minutes. <table><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><tr><td>15 min Summer</td><td>9.704</td><td>0.084</td><td>0.3</td><td>6.0</td><td>Flood Risk</td></tr><tr><td>30 min Summer</td><td>9.730</td><td>0.110</td><td>0.3</td><td>8.3</td><td>Flood Risk</td></tr><tr><td>60 min Summer</td><td>9.755</td><td>0.135</td><td>0.3</td><td>10.6</td><td>Flood Risk</td></tr><tr><td>120 min Summer</td><td>9.778</td><td>0.158</td><td>0.3</td><td>12.6</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>9.788</td><td>0.168</td><td>0.3</td><td>13.5</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>9.793</td><td>0.173</td><td>0.3</td><td>13.9</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>9.796</td><td>0.176</td><td>0.3</td><td>14.2</td><td>Flood Risk</td></tr><tr><td>480 min 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Summer</td><td>11.622</td><td>0.0</td><td>446</td></tr><tr><td>600 min Summer</td><td>9.738</td><td>0.0</td><td>500</td></tr><tr><td>720 min Summer</td><td>8.424</td><td>0.0</td><td>560</td></tr><tr><td>960 min Summer</td><td>6.697</td><td>0.0</td><td>686</td></tr><tr><td>1440 min Summer</td><td>4.839</td><td>0.0</td><td>958</td></tr><tr><td>2160 min Summer</td><td>3.490</td><td>0.0</td><td>1364</td></tr><tr><td>2880 min Summer</td><td>2.766</td><td>0.0</td><td>1740</td></tr><tr><td>4320 min Summer</td><td>1.989</td><td>0.0</td><td>2472</td></tr><tr><td>5760 min Summer</td><td>1.573</td><td>0.0</td><td>3168</td></tr><tr><td>7200 min Summer</td><td>1.311</td><td>0.0</td><td>3816</td></tr><tr><td>8640 min Summer</td><td>1.129</td><td>0.0</td><td>4496</td></tr><tr><td>10080 min Summer</td><td>0.994</td><td>0.0</td><td>5240</td></tr><tr><td>15 min Winter</td><td>138.153</td><td>0.0</td><td>26</td></tr></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	9.704	0.084	0.3	6.0	Flood Risk	30 min Summer	9.730	0.110	0.3	8.3	Flood Risk	60 min Summer	9.755	0.135	0.3	10.6	Flood Risk	120 min Summer	9.778	0.158	0.3	12.6	Flood Risk	180 min Summer	9.788	0.168	0.3	13.5	Flood Risk	240 min Summer	9.793	0.173	0.3	13.9	Flood Risk	360 min Summer	9.796	0.176	0.3	14.2	Flood Risk	480 min Summer	9.795	0.175	0.3	14.1	Flood Risk	600 min Summer	9.793	0.173	0.3	14.0	Flood Risk	720 min Summer	9.791	0.171	0.3	13.8	Flood Risk	960 min Summer	9.786	0.166	0.3	13.3	Flood Risk	1440 min Summer	9.774	0.154	0.3	12.3	Flood Risk	2160 min Summer	9.755	0.135	0.3	10.6	Flood Risk	2880 min Summer	9.737	0.117	0.3	9.0	Flood Risk	4320 min Summer	9.708	0.088	0.3	6.3	Flood Risk	5760 min Summer	9.686	0.066	0.3	4.4	O K	7200 min Summer	9.673	0.053	0.3	3.2	O K	8640 min Summer	9.666	0.046	0.2	2.6	O K	10080 min Summer	9.662	0.042	0.2	2.2	O K	15 min Winter	9.715	0.095	0.3	7.0	Flood Risk	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	138.153	0.0	26	30 min Summer	90.705	0.0	40	60 min Summer	56.713	0.0	70	120 min Summer	34.246	0.0	128	180 min Summer	25.149	0.0	186	240 min Summer	20.078	0.0	244	360 min Summer	14.585	0.0	362	480 min Summer	11.622	0.0	446	600 min Summer	9.738	0.0	500	720 min Summer	8.424	0.0	560	960 min Summer	6.697	0.0	686	1440 min Summer	4.839	0.0	958	2160 min Summer	3.490	0.0	1364	2880 min Summer	2.766	0.0	1740	4320 min Summer	1.989	0.0	2472	5760 min Summer	1.573	0.0	3168	7200 min Summer	1.311	0.0	3816	8640 min Summer	1.129	0.0	4496	10080 min Summer	0.994	0.0	5240	15 min Winter	138.153	0.0	26
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Satelliet House 2 Nexus Park Ash Vale GU12 5QE		Kings Beach Hotel Porous Surfacing			
Date 10/12/2018 14:03 File Porous Surface Calc.srcx		Designed by A Johnson Checked by D Brooke			
Micro Drainage		Source Control 2016.1			
<u>Summary of Results for 100 year Return Period (+40%)</u>					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	9.743	0.123	0.3	9.5	Flood Risk
60 min Winter	9.772	0.152	0.3	12.1	Flood Risk
120 min Winter	9.798	0.178	0.3	14.4	Flood Risk
180 min Winter	9.810	0.190	0.3	15.5	Flood Risk
240 min Winter	9.816	0.196	0.3	16.0	Flood Risk
360 min Winter	9.821	0.201	0.3	16.5	Flood Risk
480 min Winter	9.821	0.201	0.3	16.5	Flood Risk
600 min Winter	9.819	0.199	0.3	16.3	Flood Risk
720 min Winter	9.815	0.195	0.3	16.0	Flood Risk
960 min Winter	9.808	0.188	0.3	15.3	Flood Risk
1440 min Winter	9.791	0.171	0.3	13.8	Flood Risk
2160 min Winter	9.762	0.142	0.3	11.2	Flood Risk
2880 min Winter	9.735	0.115	0.3	8.8	Flood Risk
4320 min Winter	9.693	0.073	0.3	5.0	O K
5760 min Winter	9.669	0.049	0.2	2.9	O K
7200 min Winter	9.662	0.042	0.2	2.2	O K
8640 min Winter	9.656	0.036	0.2	1.7	O K
10080 min Winter	9.654	0.034	0.2	1.5	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	90.705	0.0	40		
60 min Winter	56.713	0.0	68		
120 min Winter	34.246	0.0	126		
180 min Winter	25.149	0.0	182		
240 min Winter	20.078	0.0	240		
360 min Winter	14.585	0.0	354		
480 min Winter	11.622	0.0	464		
600 min Winter	9.738	0.0	568		
720 min Winter	8.424	0.0	610		
960 min Winter	6.697	0.0	742		
1440 min Winter	4.839	0.0	1044		
2160 min Winter	3.490	0.0	1476		
2880 min Winter	2.766	0.0	1876		
4320 min Winter	1.989	0.0	2560		
5760 min Winter	1.573	0.0	3120		
7200 min Winter	1.311	0.0	3824		
8640 min Winter	1.129	0.0	4512		
10080 min Winter	0.994	0.0	5136		
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Satelliet House 2 Nexus Park Ash Vale GU12 5QE	Kings Beach Hotel Porous Surfacing	
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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)	20.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.030

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From:	To:	From:	To:	From:	To:
0	4	0.010	4	8	0.010
				8	12
					0.010

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<u>Model Details</u> Storage is Online Cover Level (m) 10.000 <u>Porous Car Park Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00608</td> <td>Width (m)</td> <td>17.3</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>17.3</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>83.1</td> <td>Slope (1:X)</td> <td>500.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>9.620</td> <td>Cap Volume Depth (m)</td> <td>0.250</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	0.00608	Width (m)	17.3	Membrane Percolation (mm/hr)	1000	Length (m)	17.3	Max Percolation (l/s)	83.1	Slope (1:X)	500.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	9.620	Cap Volume Depth (m)	0.250
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