

The Stilwell Partnership				Page 1																																																																																																																																																																																																																			
Satelliet House 2 Nexus Park Ash Vale GU12 5QE		Kings Beach Hotel Porous Surfacing Western Catchment																																																																																																																																																																																																																					
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 1039 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>4.324</td><td>0.154</td><td>0.3</td><td>12.3</td><td>O K</td></tr><tr><td>30 min Summer</td><td>4.367</td><td>0.197</td><td>0.3</td><td>16.1</td><td>Flood Risk</td></tr><tr><td>60 min Summer</td><td>4.408</td><td>0.238</td><td>0.3</td><td>19.8</td><td>Flood Risk</td></tr><tr><td>120 min Summer</td><td>4.446</td><td>0.276</td><td>0.3</td><td>23.2</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>4.464</td><td>0.294</td><td>0.3</td><td>24.8</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>4.474</td><td>0.304</td><td>0.3</td><td>25.8</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>4.484</td><td>0.314</td><td>0.3</td><td>26.6</td><td>Flood Risk</td></tr><tr><td>480 min Summer</td><td>4.487</td><td>0.317</td><td>0.3</td><td>26.9</td><td>Flood Risk</td></tr><tr><td>600 min Summer</td><td>4.486</td><td>0.316</td><td>0.3</td><td>26.8</td><td>Flood Risk</td></tr><tr><td>720 min Summer</td><td>4.483</td><td>0.313</td><td>0.3</td><td>26.5</td><td>Flood Risk</td></tr><tr><td>960 min Summer</td><td>4.473</td><td>0.303</td><td>0.3</td><td>25.7</td><td>Flood Risk</td></tr><tr><td>1440 min Summer</td><td>4.455</td><td>0.285</td><td>0.3</td><td>24.1</td><td>Flood Risk</td></tr><tr><td>2160 min Summer</td><td>4.430</td><td>0.260</td><td>0.3</td><td>21.8</td><td>Flood Risk</td></tr><tr><td>2880 min Summer</td><td>4.406</td><td>0.236</td><td>0.3</td><td>19.7</td><td>Flood Risk</td></tr><tr><td>4320 min Summer</td><td>4.364</td><td>0.194</td><td>0.3</td><td>15.9</td><td>Flood Risk</td></tr><tr><td>5760 min Summer</td><td>4.327</td><td>0.157</td><td>0.3</td><td>12.6</td><td>O K</td></tr><tr><td>7200 min 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Satelliet House 2 Nexus Park Ash Vale GU12 5QE		Kings Beach Hotel Porous Surfacing Western Catchment			
Date 08/01/2019 12:19 File POROUS SURFACE CALC WIT...		Designed by A Johnson Checked by D Brooke			
Micro Drainage		Source Control 2017.1.2			
<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	4.391	0.221	0.3	18.3	Flood Risk
60 min Winter	4.438	0.268	0.3	22.5	Flood Risk
120 min Winter	4.480	0.310	0.3	26.3	Flood Risk
180 min Winter	4.502	0.332	0.3	28.2	Flood Risk
240 min Winter	4.514	0.344	0.3	29.4	Flood Risk
360 min Winter	4.527	0.357	0.3	30.5	Flood Risk
480 min Winter	4.535	0.365	0.3	31.0	Flood Risk
600 min Winter	4.538	0.368	0.3	31.1	Flood Risk
720 min Winter	4.535	0.365	0.3	30.9	Flood Risk
960 min Winter	4.523	0.353	0.3	30.2	Flood Risk
1440 min Winter	4.499	0.329	0.3	28.0	Flood Risk
2160 min Winter	4.466	0.296	0.3	25.0	Flood Risk
2880 min Winter	4.432	0.262	0.3	21.9	Flood Risk
4320 min Winter	4.368	0.198	0.3	16.2	Flood Risk
5760 min Winter	4.314	0.144	0.3	11.4	O K
7200 min Winter	4.270	0.100	0.3	7.4	O K
8640 min Winter	4.238	0.068	0.3	4.5	O K
10080 min Winter	4.220	0.050	0.3	2.9	O K
Storm Event	Rain (mm/hr)		Flooded Volume (m³)	Time-Peak (mins)	
30 min Winter	92.629		0.0	41	
60 min Winter	56.713		0.0	70	
120 min Winter	33.583		0.0	128	
180 min Winter	24.424		0.0	186	
240 min Winter	19.389		0.0	244	
360 min Winter	13.924		0.0	360	
480 min Winter	11.018		0.0	474	
600 min Winter	9.182		0.0	588	
720 min Winter	7.908		0.0	700	
960 min Winter	6.245		0.0	916	
1440 min Winter	4.471		0.0	1154	
2160 min Winter	3.197		0.0	1604	
2880 min Winter	2.518		0.0	2048	
4320 min Winter	1.796		0.0	2864	
5760 min Winter	1.413		0.0	3632	
7200 min Winter	1.172		0.0	4320	
8640 min Winter	1.006		0.0	4920	
10080 min Winter	0.884		0.0	5344	
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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	0.450	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.052

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.017	4 8	0.017	8 12	0.017

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<u>Model Details</u> Storage is Online Cover Level (m) 4.650 <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>4.170</td> <td>Cap Volume Depth (m)</td> <td>0.350</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)	4.170	Cap Volume Depth (m)	0.350
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