

Paul Basham Associates				Page 1																																																																																																																																																																																																																			
Lancaster Court Fareham Hampshire, PO15 5TU		9NO																																																																																																																																																																																																																					
Date 29/04/2019		Designed by JB																																																																																																																																																																																																																					
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<p>Summary of Results for 100 year Return Period (+30%)</p> <p>Half Drain Time : 64 minutes.</p> <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>-1.185</td><td>1.715</td><td>35.6</td><td>170.2</td><td>O K</td></tr><tr><td>30 min Summer</td><td>-0.771</td><td>2.129</td><td>40.8</td><td>211.2</td><td>O K</td></tr><tr><td>60 min Summer</td><td>-0.530</td><td>2.370</td><td>43.8</td><td>235.1</td><td>O K</td></tr><tr><td>120 min Summer</td><td>-0.466</td><td>2.434</td><td>44.6</td><td>241.5</td><td>O K</td></tr><tr><td>180 min Summer</td><td>-0.555</td><td>2.345</td><td>43.5</td><td>232.6</td><td>O K</td></tr><tr><td>240 min Summer</td><td>-0.679</td><td>2.221</td><td>41.9</td><td>220.3</td><td>O K</td></tr><tr><td>360 min Summer</td><td>-0.906</td><td>1.994</td><td>39.1</td><td>197.8</td><td>O K</td></tr><tr><td>480 min Summer</td><td>-1.101</td><td>1.799</td><td>36.7</td><td>178.5</td><td>O K</td></tr><tr><td>600 min Summer</td><td>-1.272</td><td>1.628</td><td>34.5</td><td>161.5</td><td>O K</td></tr><tr><td>720 min Summer</td><td>-1.423</td><td>1.477</td><td>32.6</td><td>146.5</td><td>O K</td></tr><tr><td>960 min Summer</td><td>-1.675</td><td>1.225</td><td>29.5</td><td>121.5</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>-2.044</td><td>0.856</td><td>24.8</td><td>84.9</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>-2.400</td><td>0.500</td><td>20.4</td><td>49.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>-2.626</td><td>0.274</td><td>17.5</td><td>27.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>-2.850</td><td>0.050</td><td>14.7</td><td>4.9</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>-2.860</td><td>0.040</td><td>11.7</td><td>3.9</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>-2.867</td><td>0.033</td><td>9.8</td><td>3.3</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>-2.871</td><td>0.029</td><td>8.5</td><td>2.9</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>-2.874</td><td>0.026</td><td>7.6</td><td>2.5</td><td>O K</td></tr><tr><td>15 min Winter</td><td>-0.960</td><td>1.940</td><td>38.4</td><td>192.5</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>115.731</td><td>0.0</td><td>17</td></tr><tr><td>30 min Summer</td><td>77.804</td><td>0.0</td><td>31</td></tr><tr><td>60 min Summer</td><td>49.937</td><td>0.0</td><td>50</td></tr><tr><td>120 min Summer</td><td>30.956</td><td>0.0</td><td>84</td></tr><tr><td>180 min Summer</td><td>23.058</td><td>0.0</td><td>118</td></tr><tr><td>240 min Summer</td><td>18.577</td><td>0.0</td><td>152</td></tr><tr><td>360 min Summer</td><td>13.656</td><td>0.0</td><td>220</td></tr><tr><td>480 min Summer</td><td>10.974</td><td>0.0</td><td>286</td></tr><tr><td>600 min Summer</td><td>9.254</td><td>0.0</td><td>350</td></tr><tr><td>720 min Summer</td><td>8.046</td><td>0.0</td><td>412</td></tr><tr><td>960 min Summer</td><td>6.447</td><td>0.0</td><td>538</td></tr><tr><td>1440 min Summer</td><td>4.709</td><td>0.0</td><td>780</td></tr><tr><td>2160 min Summer</td><td>3.432</td><td>0.0</td><td>1144</td></tr><tr><td>2880 min Summer</td><td>2.739</td><td>0.0</td><td>1500</td></tr><tr><td>4320 min Summer</td><td>1.989</td><td>0.0</td><td>2164</td></tr><tr><td>5760 min Summer</td><td>1.583</td><td>0.0</td><td>2856</td></tr><tr><td>7200 min Summer</td><td>1.325</td><td>0.0</td><td>3648</td></tr><tr><td>8640 min Summer</td><td>1.147</td><td>0.0</td><td>4272</td></tr><tr><td>10080 min Summer</td><td>1.015</td><td>0.0</td><td>5088</td></tr><tr><td>15 min Winter</td><td>115.731</td><td>0.0</td><td>17</td></tr></table>						Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	-1.185	1.715	35.6	170.2	O K	30 min Summer	-0.771	2.129	40.8	211.2	O K	60 min Summer	-0.530	2.370	43.8	235.1	O K	120 min Summer	-0.466	2.434	44.6	241.5	O K	180 min Summer	-0.555	2.345	43.5	232.6	O K	240 min Summer	-0.679	2.221	41.9	220.3	O K	360 min Summer	-0.906	1.994	39.1	197.8	O K	480 min Summer	-1.101	1.799	36.7	178.5	O K	600 min Summer	-1.272	1.628	34.5	161.5	O K	720 min Summer	-1.423	1.477	32.6	146.5	O K	960 min Summer	-1.675	1.225	29.5	121.5	O K	1440 min Summer	-2.044	0.856	24.8	84.9	O K	2160 min Summer	-2.400	0.500	20.4	49.6	O K	2880 min Summer	-2.626	0.274	17.5	27.2	O K	4320 min Summer	-2.850	0.050	14.7	4.9	O K	5760 min Summer	-2.860	0.040	11.7	3.9	O K	7200 min Summer	-2.867	0.033	9.8	3.3	O K	8640 min Summer	-2.871	0.029	8.5	2.9	O K	10080 min Summer	-2.874	0.026	7.6	2.5	O K	15 min Winter	-0.960	1.940	38.4	192.5	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	115.731	0.0	17	30 min Summer	77.804	0.0	31	60 min Summer	49.937	0.0	50	120 min Summer	30.956	0.0	84	180 min Summer	23.058	0.0	118	240 min Summer	18.577	0.0	152	360 min Summer	13.656	0.0	220	480 min Summer	10.974	0.0	286	600 min Summer	9.254	0.0	350	720 min Summer	8.046	0.0	412	960 min Summer	6.447	0.0	538	1440 min Summer	4.709	0.0	780	2160 min Summer	3.432	0.0	1144	2880 min Summer	2.739	0.0	1500	4320 min Summer	1.989	0.0	2164	5760 min Summer	1.583	0.0	2856	7200 min Summer	1.325	0.0	3648	8640 min Summer	1.147	0.0	4272	10080 min Summer	1.015	0.0	5088	15 min Winter	115.731	0.0	17
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Paul Basham Associates				Page 2	
Lancaster Court Fareham Hampshire, PO15 5TU		9NO			
Date 29/04/2019		Designed by JB			
File 9NO RING SOAKAWAY. 1IN1...		Checked by AS			
Innovyze		Source Control 2018.1.1			
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	-0.476	2.424	44.5	240.5	O K
60 min Winter	-0.197	2.703	48.0	268.1	O K
120 min Winter	-0.148	2.752	48.6	273.0	O K
180 min Winter	-0.290	2.610	46.8	259.0	O K
240 min Winter	-0.478	2.422	44.5	240.3	O K
360 min Winter	-0.819	2.081	40.2	206.4	O K
480 min Winter	-1.096	1.804	36.7	179.0	O K
600 min Winter	-1.329	1.571	33.8	155.9	O K
720 min Winter	-1.528	1.372	31.3	136.1	O K
960 min Winter	-1.847	1.053	27.3	104.5	O K
1440 min Winter	-2.281	0.619	21.9	61.4	O K
2160 min Winter	-2.664	0.236	17.1	23.5	O K
2880 min Winter	-2.850	0.050	14.7	4.9	O K
4320 min Winter	-2.864	0.036	10.7	3.6	O K
5760 min Winter	-2.871	0.029	8.5	2.8	O K
7200 min Winter	-2.876	0.024	7.1	2.4	O K
8640 min Winter	-2.879	0.021	6.1	2.1	O K
10080 min Winter	-2.881	0.019	5.5	1.9	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	77.804	0.0	31		
60 min Winter	49.937	0.0	52		
120 min Winter	30.956	0.0	90		
180 min Winter	23.058	0.0	126		
240 min Winter	18.577	0.0	164		
360 min Winter	13.656	0.0	234		
480 min Winter	10.974	0.0	302		
600 min Winter	9.254	0.0	368		
720 min Winter	8.046	0.0	432		
960 min Winter	6.447	0.0	558		
1440 min Winter	4.709	0.0	808		
2160 min Winter	3.432	0.0	1168		
2880 min Winter	2.739	0.0	1452		
4320 min Winter	1.989	0.0	2204		
5760 min Winter	1.583	0.0	2936		
7200 min Winter	1.325	0.0	3568		
8640 min Winter	1.147	0.0	4272		
10080 min Winter	1.015	0.0	5112		
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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)	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) 0.899

Time (mins)		Area
From:	To:	(ha)
0	4	0.899

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<p style="text-align: center;"><u>Model Details</u></p> <p style="text-align: center;">Storage is Online Cover Level (m) 0.000</p> <p style="text-align: center;"><u>Lined Soakaway Structure</u></p> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>1.81080</td> <td>Ring Diameter (m)</td> <td>3.00</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>1.81080</td> <td>Pit Multiplier</td> <td>1.5</td> </tr> <tr> <td>Safety Factor</td> <td>6.5</td> <td>Number Required</td> <td>9</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>2.900</td> </tr> <tr> <td>Invert Level (m)</td> <td>-2.900</td> <td>Cap Infiltration Depth (m)</td> <td>2.900</td> </tr> </table>			Infiltration Coefficient Base (m/hr)	1.81080	Ring Diameter (m)	3.00	Infiltration Coefficient Side (m/hr)	1.81080	Pit Multiplier	1.5	Safety Factor	6.5	Number Required	9	Porosity	0.30	Cap Volume Depth (m)	2.900	Invert Level (m)	-2.900	Cap Infiltration Depth (m)	2.900
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