

Aventus Design Limited				Page 1																																																																																																																																																																																																																			
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Elstree Computing Ltd		Source Control 2020.1.3																																																																																																																																																																																																																					
<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 813 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>52.985</td><td>0.335</td><td>0.8</td><td>38.2</td><td>O K</td></tr><tr><td>30 min Summer</td><td>53.087</td><td>0.437</td><td>0.9</td><td>49.9</td><td>O K</td></tr><tr><td>60 min Summer</td><td>53.189</td><td>0.539</td><td>0.9</td><td>61.4</td><td>O K</td></tr><tr><td>120 min Summer</td><td>53.282</td><td>0.632</td><td>1.0</td><td>72.0</td><td>O K</td></tr><tr><td>180 min Summer</td><td>53.326</td><td>0.676</td><td>1.0</td><td>77.1</td><td>O K</td></tr><tr><td>240 min Summer</td><td>53.350</td><td>0.700</td><td>1.0</td><td>79.8</td><td>O K</td></tr><tr><td>360 min Summer</td><td>53.371</td><td>0.721</td><td>1.0</td><td>82.2</td><td>O K</td></tr><tr><td>480 min Summer</td><td>53.376</td><td>0.726</td><td>1.0</td><td>82.8</td><td>O K</td></tr><tr><td>600 min Summer</td><td>53.371</td><td>0.721</td><td>1.0</td><td>82.2</td><td>O K</td></tr><tr><td>720 min Summer</td><td>53.364</td><td>0.714</td><td>1.0</td><td>81.3</td><td>O K</td></tr><tr><td>960 min Summer</td><td>53.347</td><td>0.697</td><td>1.0</td><td>79.5</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>53.312</td><td>0.662</td><td>1.0</td><td>75.4</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>53.259</td><td>0.609</td><td>1.0</td><td>69.5</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>53.212</td><td>0.562</td><td>0.9</td><td>64.0</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>53.127</td><td>0.477</td><td>0.9</td><td>54.4</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>53.054</td><td>0.404</td><td>0.9</td><td>46.1</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>52.992</td><td>0.342</td><td>0.8</td><td>38.9</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>52.937</td><td>0.287</td><td>0.8</td><td>32.7</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>52.890</td><td>0.240</td><td>0.7</td><td>27.4</td><td>O K</td></tr><tr><td>15 min Winter</td><td>53.026</td><td>0.376</td><td>0.8</td><td>42.9</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>138.153</td><td>0.0</td><td>26</td></tr><tr><td>30 min Summer</td><td>90.705</td><td>0.0</td><td>41</td></tr><tr><td>60 min Summer</td><td>56.713</td><td>0.0</td><td>70</td></tr><tr><td>120 min Summer</td><td>34.246</td><td>0.0</td><td>128</td></tr><tr><td>180 min Summer</td><td>25.149</td><td>0.0</td><td>188</td></tr><tr><td>240 min Summer</td><td>20.078</td><td>0.0</td><td>246</td></tr><tr><td>360 min Summer</td><td>14.585</td><td>0.0</td><td>364</td></tr><tr><td>480 min Summer</td><td>11.622</td><td>0.0</td><td>482</td></tr><tr><td>600 min Summer</td><td>9.738</td><td>0.0</td><td>580</td></tr><tr><td>720 min Summer</td><td>8.424</td><td>0.0</td><td>626</td></tr><tr><td>960 min Summer</td><td>6.697</td><td>0.0</td><td>750</td></tr><tr><td>1440 min Summer</td><td>4.839</td><td>0.0</td><td>1012</td></tr><tr><td>2160 min Summer</td><td>3.490</td><td>0.0</td><td>1428</td></tr><tr><td>2880 min Summer</td><td>2.766</td><td>0.0</td><td>1844</td></tr><tr><td>4320 min Summer</td><td>1.989</td><td>0.0</td><td>2640</td></tr><tr><td>5760 min Summer</td><td>1.573</td><td>0.0</td><td>3416</td></tr><tr><td>7200 min Summer</td><td>1.311</td><td>0.0</td><td>4184</td></tr><tr><td>8640 min Summer</td><td>1.129</td><td>0.0</td><td>4928</td></tr><tr><td>10080 min Summer</td><td>0.994</td><td>0.0</td><td>5648</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	52.985	0.335	0.8	38.2	O K	30 min Summer	53.087	0.437	0.9	49.9	O K	60 min Summer	53.189	0.539	0.9	61.4	O K	120 min Summer	53.282	0.632	1.0	72.0	O K	180 min Summer	53.326	0.676	1.0	77.1	O K	240 min Summer	53.350	0.700	1.0	79.8	O K	360 min Summer	53.371	0.721	1.0	82.2	O K	480 min Summer	53.376	0.726	1.0	82.8	O K	600 min Summer	53.371	0.721	1.0	82.2	O K	720 min Summer	53.364	0.714	1.0	81.3	O K	960 min Summer	53.347	0.697	1.0	79.5	O K	1440 min Summer	53.312	0.662	1.0	75.4	O K	2160 min Summer	53.259	0.609	1.0	69.5	O K	2880 min Summer	53.212	0.562	0.9	64.0	O K	4320 min Summer	53.127	0.477	0.9	54.4	O K	5760 min Summer	53.054	0.404	0.9	46.1	O K	7200 min Summer	52.992	0.342	0.8	38.9	O K	8640 min Summer	52.937	0.287	0.8	32.7	O K	10080 min Summer	52.890	0.240	0.7	27.4	O K	15 min Winter	53.026	0.376	0.8	42.9	O K	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	41	60 min Summer	56.713	0.0	70	120 min Summer	34.246	0.0	128	180 min Summer	25.149	0.0	188	240 min Summer	20.078	0.0	246	360 min Summer	14.585	0.0	364	480 min Summer	11.622	0.0	482	600 min Summer	9.738	0.0	580	720 min Summer	8.424	0.0	626	960 min Summer	6.697	0.0	750	1440 min Summer	4.839	0.0	1012	2160 min Summer	3.490	0.0	1428	2880 min Summer	2.766	0.0	1844	4320 min Summer	1.989	0.0	2640	5760 min Summer	1.573	0.0	3416	7200 min Summer	1.311	0.0	4184	8640 min Summer	1.129	0.0	4928	10080 min Summer	0.994	0.0	5648	15 min Winter	138.153	0.0	26
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Elstree Computing Ltd		Source Control 2020.1.3			
<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	53.141	0.491	0.9	56.0	O K
60 min Winter	53.256	0.606	1.0	69.1	O K
120 min Winter	53.363	0.713	1.0	81.2	O K
180 min Winter	53.415	0.765	1.1	87.2	O K
240 min Winter	53.444	0.794	1.1	90.5	O K
360 min Winter	53.483	0.833	1.1	93.9	O K
480 min Winter	53.618	0.968	1.1	95.1	O K
600 min Winter	53.571	0.921	1.1	95.0	O K
720 min Winter	53.490	0.840	1.1	94.2	O K
960 min Winter	53.453	0.803	1.1	91.6	O K
1440 min Winter	53.410	0.760	1.1	86.6	O K
2160 min Winter	53.338	0.688	1.0	78.4	O K
2880 min Winter	53.269	0.619	1.0	70.5	O K
4320 min Winter	53.146	0.496	0.9	56.5	O K
5760 min Winter	53.043	0.393	0.8	44.8	O K
7200 min Winter	52.957	0.307	0.8	35.0	O K
8640 min Winter	52.884	0.234	0.7	26.7	O K
10080 min Winter	52.823	0.173	0.7	19.8	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	70		
120 min Winter	34.246	0.0	126		
180 min Winter	25.149	0.0	184		
240 min Winter	20.078	0.0	242		
360 min Winter	14.585	0.0	356		
480 min Winter	11.622	0.0	470		
600 min Winter	9.738	0.0	580		
720 min Winter	8.424	0.0	684		
960 min Winter	6.697	0.0	784		
1440 min Winter	4.839	0.0	1086		
2160 min Winter	3.490	0.0	1540		
2880 min Winter	2.766	0.0	1992		
4320 min Winter	1.989	0.0	2820		
5760 min Winter	1.573	0.0	3640		
7200 min Winter	1.311	0.0	4400		
8640 min Winter	1.129	0.0	5184		
10080 min Winter	0.994	0.0	5856		
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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	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.151

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.051	4 8	0.050	8 12	0.050

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Model Details

Storage is Online Cover Level (m) 53.850

Cellular Storage Structure

Invert Level (m) 52.650 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.03600 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.03600

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	120.0	120.0	0.900	0.0	219.2
0.800	120.0	219.2			