

AKS Ward Limited			Page 1																																																																																																																																																																																															
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Summary of Results for 100 year Return Period (+40%) Half Drain Time : 1369 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>6.800</td><td>0.550</td><td>0.1</td><td>9.4</td><td>O K</td></tr><tr><td>30 min Summer</td><td>6.907</td><td>0.657</td><td>0.1</td><td>11.2</td><td>O K</td></tr><tr><td>60 min Summer</td><td>7.030</td><td>0.780</td><td>0.1</td><td>13.3</td><td>O K</td></tr><tr><td>120 min Summer</td><td>7.167</td><td>0.917</td><td>0.2</td><td>15.6</td><td>O K</td></tr><tr><td>180 min Summer</td><td>7.267</td><td>1.017</td><td>0.2</td><td>17.1</td><td>O K</td></tr><tr><td>240 min Summer</td><td>7.751</td><td>1.501</td><td>0.2</td><td>18.1</td><td>FLOOD</td></tr><tr><td>360 min Summer</td><td>7.752</td><td>1.502</td><td>0.2</td><td>19.4</td><td>FLOOD</td></tr><tr><td>480 min Summer</td><td>7.753</td><td>1.503</td><td>0.2</td><td>20.3</td><td>FLOOD</td></tr><tr><td>600 min Summer</td><td>7.753</td><td>1.503</td><td>0.2</td><td>20.9</td><td>FLOOD</td></tr><tr><td>720 min Summer</td><td>7.754</td><td>1.504</td><td>0.2</td><td>21.2</td><td>FLOOD</td></tr><tr><td>960 min Summer</td><td>7.753</td><td>1.503</td><td>0.2</td><td>20.7</td><td>FLOOD</td></tr><tr><td>1440 min Summer</td><td>7.752</td><td>1.502</td><td>0.2</td><td>19.7</td><td>FLOOD</td></tr><tr><td>2160 min Summer</td><td>7.751</td><td>1.501</td><td>0.2</td><td>18.4</td><td>FLOOD</td></tr><tr><td>2880 min Summer</td><td>7.361</td><td>1.111</td><td>0.2</td><td>17.2</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>7.205</td><td>0.955</td><td>0.2</td><td>16.3</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>7.152</td><td>0.902</td><td>0.2</td><td>15.4</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>7.101</td><td>0.851</td><td>0.1</td><td>14.5</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>7.052</td><td>0.802</td><td>0.1</td><td>13.7</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>168.862</td><td>0.0</td><td>27</td></tr><tr><td>30 min Summer</td><td>101.413</td><td>0.0</td><td>41</td></tr><tr><td>60 min Summer</td><td>60.905</td><td>0.0</td><td>70</td></tr><tr><td>120 min Summer</td><td>36.578</td><td>0.0</td><td>130</td></tr><tr><td>180 min Summer</td><td>27.145</td><td>0.0</td><td>188</td></tr><tr><td>240 min Summer</td><td>21.967</td><td>1.0</td><td>248</td></tr><tr><td>360 min Summer</td><td>16.302</td><td>2.4</td><td>366</td></tr><tr><td>480 min Summer</td><td>13.193</td><td>3.2</td><td>484</td></tr><tr><td>600 min Summer</td><td>11.196</td><td>3.8</td><td>604</td></tr><tr><td>720 min Summer</td><td>9.790</td><td>4.2</td><td>722</td></tr><tr><td>960 min Summer</td><td>7.679</td><td>3.7</td><td>922</td></tr><tr><td>1440 min Summer</td><td>5.452</td><td>2.7</td><td>1134</td></tr><tr><td>2160 min Summer</td><td>3.871</td><td>1.3</td><td>1512</td></tr><tr><td>2880 min Summer</td><td>3.036</td><td>0.0</td><td>1908</td></tr><tr><td>4320 min Summer</td><td>2.270</td><td>0.0</td><td>2732</td></tr><tr><td>5760 min Summer</td><td>1.847</td><td>0.0</td><td>3568</td></tr><tr><td>7200 min Summer</td><td>1.574</td><td>0.0</td><td>4336</td></tr><tr><td>8640 min Summer</td><td>1.382</td><td>0.0</td><td>5184</td></tr></table>					Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status	15 min Summer	6.800	0.550	0.1	9.4	O K	30 min Summer	6.907	0.657	0.1	11.2	O K	60 min Summer	7.030	0.780	0.1	13.3	O K	120 min Summer	7.167	0.917	0.2	15.6	O K	180 min Summer	7.267	1.017	0.2	17.1	O K	240 min Summer	7.751	1.501	0.2	18.1	FLOOD	360 min Summer	7.752	1.502	0.2	19.4	FLOOD	480 min Summer	7.753	1.503	0.2	20.3	FLOOD	600 min Summer	7.753	1.503	0.2	20.9	FLOOD	720 min Summer	7.754	1.504	0.2	21.2	FLOOD	960 min Summer	7.753	1.503	0.2	20.7	FLOOD	1440 min Summer	7.752	1.502	0.2	19.7	FLOOD	2160 min Summer	7.751	1.501	0.2	18.4	FLOOD	2880 min Summer	7.361	1.111	0.2	17.2	O K	4320 min Summer	7.205	0.955	0.2	16.3	O K	5760 min Summer	7.152	0.902	0.2	15.4	O K	7200 min Summer	7.101	0.851	0.1	14.5	O K	8640 min Summer	7.052	0.802	0.1	13.7	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	168.862	0.0	27	30 min Summer	101.413	0.0	41	60 min Summer	60.905	0.0	70	120 min Summer	36.578	0.0	130	180 min Summer	27.145	0.0	188	240 min Summer	21.967	1.0	248	360 min Summer	16.302	2.4	366	480 min Summer	13.193	3.2	484	600 min Summer	11.196	3.8	604	720 min Summer	9.790	4.2	722	960 min Summer	7.679	3.7	922	1440 min Summer	5.452	2.7	1134	2160 min Summer	3.871	1.3	1512	2880 min Summer	3.036	0.0	1908	4320 min Summer	2.270	0.0	2732	5760 min Summer	1.847	0.0	3568	7200 min Summer	1.574	0.0	4336	8640 min Summer	1.382	0.0	5184
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File		Checked by			
Innovyze		Source Control 2020.1			
Summary of Results for 100 year Return Period (+40%)					
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
10080 min Summer	7.006	0.756	0.1	12.9	O K
15 min Winter	6.866	0.616	0.1	10.5	O K
30 min Winter	6.987	0.737	0.1	12.6	O K
60 min Winter	7.126	0.876	0.2	14.9	O K
120 min Winter	7.750	1.500	0.2	17.6	FLOOD
180 min Winter	7.752	1.502	0.2	19.2	FLOOD
240 min Winter	7.753	1.503	0.2	20.4	FLOOD
360 min Winter	7.755	1.505	0.2	22.1	FLOOD
480 min Winter	7.756	1.506	0.2	23.2	FLOOD
600 min Winter	7.756	1.506	0.2	23.9	FLOOD
720 min Winter	7.757	1.507	0.2	24.4	FLOOD
960 min Winter	7.757	1.507	0.2	24.1	FLOOD
1440 min Winter	7.755	1.505	0.2	22.9	FLOOD
2160 min Winter	7.754	1.504	0.2	21.2	FLOOD
2880 min Winter	7.752	1.502	0.2	19.5	FLOOD
4320 min Winter	7.750	1.500	0.2	17.9	FLOOD
5760 min Winter	7.214	0.964	0.2	16.4	O K
7200 min Winter	7.134	0.884	0.2	15.1	O K
8640 min Winter	7.060	0.810	0.1	13.8	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
10080 min Summer	1.237	0.0	5952		
15 min Winter	168.862	0.0	26		
30 min Winter	101.413	0.0	41		
60 min Winter	60.905	0.0	70		
120 min Winter	36.578	0.5	128		
180 min Winter	27.145	2.2	186		
240 min Winter	21.967	3.4	244		
360 min Winter	16.302	5.0	360		
480 min Winter	13.193	6.1	476		
600 min Winter	11.196	6.9	590		
720 min Winter	9.790	7.4	704		
960 min Winter	7.679	7.1	926		
1440 min Winter	5.452	5.8	1324		
2160 min Winter	3.871	4.2	1640		
2880 min Winter	3.036	2.5	2084		
4320 min Winter	2.270	0.9	2980		
5760 min Winter	1.847	0.0	3808		
7200 min Winter	1.574	0.0	4624		
8640 min Winter	1.382	0.0	5456		
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AKS Ward Limited			Page 3																					
10 Bonhill Street London EC2A 4QJ		Littleworth School Trench Soakaway to parking Plots 95-103																						
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AKS Ward Limited		Page 4
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Date 05/10/2021 15:08	Designed by KJ	
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Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
FEH Rainfall Version	1999
Site Location	GB 502300 102250 TQ 02300 02250
C (1km)	-0.026
D1 (1km)	0.384
D2 (1km)	0.275
D3 (1km)	0.403
E (1km)	0.313
F (1km)	2.333
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.030

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

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AKS Ward Limited		Page 5
10 Bonhill Street London EC2A 4QJ	Littleworth School Trench Soakaway to parking Plots 95-103	
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Model Details

Storage is Online Cover Level (m) 7.750

Trench Soakaway Structure

Infiltration Coefficient Base (m/hr)	0.00900	Trench Width (m)	1.6
Infiltration Coefficient Side (m/hr)	0.00900	Trench Length (m)	35.5
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.000
Invert Level (m)	6.250	Cap Infiltration Depth (m)	1.000

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