

CB3 Consult Ltd				Page 1																																																																																																																																																																																																																			
7 St James Crescent Swansea Wales SA1 6DP		PRIVATE POROUS DRIVEWAY C1941																																																																																																																																																																																																																					
Date 01/11/2022 File Porous private driveway...		Designed by AJ Checked by DH																																																																																																																																																																																																																					
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<u>Summary of Results for 100 year Return Period (+40%)</u> Half Drain Time : 113 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>99.609</td><td>0.139</td><td>0.3</td><td>1.9</td><td>O K</td></tr><tr><td>30 min Summer</td><td>99.654</td><td>0.184</td><td>0.3</td><td>2.5</td><td>O K</td></tr><tr><td>60 min Summer</td><td>99.691</td><td>0.221</td><td>0.3</td><td>3.0</td><td>O K</td></tr><tr><td>120 min Summer</td><td>99.708</td><td>0.238</td><td>0.3</td><td>3.2</td><td>Flood Risk</td></tr><tr><td>180 min Summer</td><td>99.708</td><td>0.238</td><td>0.3</td><td>3.2</td><td>Flood Risk</td></tr><tr><td>240 min Summer</td><td>99.703</td><td>0.233</td><td>0.3</td><td>3.1</td><td>Flood Risk</td></tr><tr><td>360 min Summer</td><td>99.684</td><td>0.214</td><td>0.3</td><td>2.9</td><td>O K</td></tr><tr><td>480 min Summer</td><td>99.665</td><td>0.195</td><td>0.3</td><td>2.6</td><td>O K</td></tr><tr><td>600 min Summer</td><td>99.646</td><td>0.176</td><td>0.3</td><td>2.4</td><td>O K</td></tr><tr><td>720 min Summer</td><td>99.628</td><td>0.158</td><td>0.3</td><td>2.1</td><td>O K</td></tr><tr><td>960 min Summer</td><td>99.595</td><td>0.125</td><td>0.3</td><td>1.7</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>99.548</td><td>0.078</td><td>0.3</td><td>1.0</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>99.518</td><td>0.048</td><td>0.3</td><td>0.6</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>99.509</td><td>0.039</td><td>0.2</td><td>0.5</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>99.499</td><td>0.029</td><td>0.2</td><td>0.4</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>99.493</td><td>0.023</td><td>0.1</td><td>0.3</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>99.489</td><td>0.019</td><td>0.1</td><td>0.3</td><td>O K</td></tr><tr><td>8640 min 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Summer	99.654	0.184	0.3	2.5	O K	60 min Summer	99.691	0.221	0.3	3.0	O K	120 min Summer	99.708	0.238	0.3	3.2	Flood Risk	180 min Summer	99.708	0.238	0.3	3.2	Flood Risk	240 min Summer	99.703	0.233	0.3	3.1	Flood Risk	360 min Summer	99.684	0.214	0.3	2.9	O K	480 min Summer	99.665	0.195	0.3	2.6	O K	600 min Summer	99.646	0.176	0.3	2.4	O K	720 min Summer	99.628	0.158	0.3	2.1	O K	960 min Summer	99.595	0.125	0.3	1.7	O K	1440 min Summer	99.548	0.078	0.3	1.0	O K	2160 min Summer	99.518	0.048	0.3	0.6	O K	2880 min Summer	99.509	0.039	0.2	0.5	O K	4320 min Summer	99.499	0.029	0.2	0.4	O K	5760 min Summer	99.493	0.023	0.1	0.3	O K	7200 min Summer	99.489	0.019	0.1	0.3	O K	8640 min Summer	99.487	0.017	0.1	0.2	O K	10080 min Summer	99.485	0.015	0.1	0.2	O K	15 min Winter	99.629	0.159	0.3	2.1	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)	15 min Summer	121.998	0.0	18	30 min Summer	81.732	0.0	32	60 min Summer	52.299	0.0	60	120 min Summer	32.360	0.0	102	180 min Summer	24.102	0.0	134	240 min Summer	19.429	0.0	168	360 min Summer	14.246	0.0	236	480 min Summer	11.436	0.0	304	600 min Summer	9.636	0.0	368	720 min Summer	8.373	0.0	434	960 min Summer	6.703	0.0	558	1440 min Summer	4.890	0.0	780	2160 min Summer	3.560	0.0	1104	2880 min Summer	2.838	0.0	1472	4320 min Summer	2.059	0.0	2204	5760 min Summer	1.638	0.0	2920	7200 min Summer	1.370	0.0	3672	8640 min Summer	1.184	0.0	4344	10080 min Summer	1.047	0.0	5136	15 min Winter	121.998	0.0	18
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Date 01/11/2022 File Porous private driveway...		Designed by AJ Checked by DH			
XP Solutions		Source Control 2019.1			
<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	99.680	0.210	0.3	2.8	O K
60 min Winter	99.724	0.254	0.3	3.4	Flood Risk
120 min Winter	99.747	0.277	0.3	3.7	Flood Risk
180 min Winter	99.744	0.274	0.3	3.7	Flood Risk
240 min Winter	99.735	0.265	0.3	3.6	Flood Risk
360 min Winter	99.707	0.237	0.3	3.2	Flood Risk
480 min Winter	99.677	0.207	0.3	2.8	O K
600 min Winter	99.647	0.177	0.3	2.4	O K
720 min Winter	99.619	0.149	0.3	2.0	O K
960 min Winter	99.571	0.101	0.3	1.4	O K
1440 min Winter	99.519	0.049	0.3	0.7	O K
2160 min Winter	99.506	0.036	0.2	0.5	O K
2880 min Winter	99.499	0.029	0.2	0.4	O K
4320 min Winter	99.491	0.021	0.1	0.3	O K
5760 min Winter	99.487	0.017	0.1	0.2	O K
7200 min Winter	99.484	0.014	0.1	0.2	O K
8640 min Winter	99.482	0.012	0.1	0.2	O K
10080 min Winter	99.481	0.011	0.1	0.1	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)		
30 min Winter	81.732	0.0	32		
60 min Winter	52.299	0.0	60		
120 min Winter	32.360	0.0	114		
180 min Winter	24.102	0.0	144		
240 min Winter	19.429	0.0	182		
360 min Winter	14.246	0.0	256		
480 min Winter	11.436	0.0	328		
600 min Winter	9.636	0.0	396		
720 min Winter	8.373	0.0	462		
960 min Winter	6.703	0.0	578		
1440 min Winter	4.890	0.0	752		
2160 min Winter	3.560	0.0	1108		
2880 min Winter	2.838	0.0	1496		
4320 min Winter	2.059	0.0	2196		
5760 min Winter	1.638	0.0	2888		
7200 min Winter	1.370	0.0	3640		
8640 min Winter	1.184	0.0	4400		
10080 min Winter	1.047	0.0	5024		
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Date 01/11/2022 File Porous private driveway...	Designed by AJ Checked by DH	
XP Solutions Source Control 2019.1		

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)	18.500	Shortest Storm (mins)	15
Ratio R	0.358	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 0.010

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

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Model Details Storage is Online Cover Level (m) 100.000 Porous Car Park Structure <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.04550</td><td>Width (m)</td><td>3.6</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Length (m)</td><td>12.5</td></tr><tr><td>Max Percolation (l/s)</td><td>12.5</td><td>Slope (1:X)</td><td>0.0</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>99.470</td><td>Membrane Depth (m)</td><td>0</td></tr></table>			Infiltration Coefficient Base (m/hr)	0.04550	Width (m)	3.6	Membrane Percolation (mm/hr)	1000	Length (m)	12.5	Max Percolation (l/s)	12.5	Slope (1:X)	0.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	99.470	Membrane Depth (m)	0
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