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Brook House Weybrook Road Stockport, M19 2QD	9834 Permeable surfaces - Area 1 F=0.05 m/hr	
Date 13/12/2022 14:40 File 9834 - Permeable Surfaces	Designed by HBL Checked by	
Innovyze	Source Control 2020.1.3	

Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 48 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	186.607	0.157	3.7	12.5	O K
30 min Summer	186.633	0.183	4.3	17.1	O K
60 min Summer	186.650	0.200	4.7	20.3	O K
120 min Summer	186.657	0.207	4.9	21.8	O K
180 min Summer	186.655	0.205	4.8	21.4	O K
240 min Summer	186.650	0.200	4.7	20.4	O K
360 min Summer	186.639	0.189	4.4	18.1	O K
480 min Summer	186.627	0.177	4.2	16.0	O K
600 min Summer	186.617	0.167	3.9	14.2	O K
720 min Summer	186.608	0.158	3.7	12.6	O K
960 min Summer	186.592	0.142	3.3	10.2	O K
1440 min Summer	186.568	0.118	2.8	7.1	O K
2160 min Summer	186.545	0.095	2.2	4.6	O K
2880 min Summer	186.529	0.079	1.9	3.2	O K
4320 min Summer	186.510	0.060	1.4	1.8	O K
5760 min Summer	186.499	0.049	1.1	1.2	O K
7200 min Summer	186.495	0.045	0.9	1.0	O K
8640 min Summer	186.492	0.042	0.8	0.9	O K
10080 min Summer	186.489	0.039	0.7	0.8	O K
15 min Winter	186.619	0.169	4.0	14.5	O K
30 min Winter	186.647	0.197	4.6	19.8	O K
60 min Winter	186.664	0.214	5.0	23.4	O K
120 min Winter	186.669	0.219	5.2	24.4	O K
180 min Winter	186.664	0.214	5.0	23.3	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	115.731	0.0	22
30 min Summer	77.804	0.0	33
60 min Summer	49.937	0.0	52
120 min Summer	30.956	0.0	86
180 min Summer	23.058	0.0	120
240 min Summer	18.577	0.0	154
360 min Summer	13.656	0.0	220
480 min Summer	10.974	0.0	282
600 min Summer	9.254	0.0	346
720 min Summer	8.046	0.0	406
960 min Summer	6.447	0.0	528
1440 min Summer	4.709	0.0	768
2160 min Summer	3.432	0.0	1124
2880 min Summer	2.739	0.0	1476
4320 min Summer	1.989	0.0	2204
5760 min Summer	1.583	0.0	2928
7200 min Summer	1.325	0.0	3576
8640 min Summer	1.147	0.0	4312
10080 min Summer	1.015	0.0	5040
15 min Winter	115.731	0.0	23
30 min Winter	77.804	0.0	34
60 min Winter	49.937	0.0	56
120 min Winter	30.956	0.0	92
180 min Winter	23.058	0.0	130

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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
240 min Winter	186.656	0.206	4.8	21.6	O K
360 min Winter	186.639	0.189	4.4	18.1	O K
480 min Winter	186.623	0.173	4.1	15.2	O K
600 min Winter	186.609	0.159	3.7	12.8	O K
720 min Winter	186.596	0.146	3.4	10.9	O K
960 min Winter	186.576	0.126	3.0	8.1	O K
1440 min Winter	186.549	0.099	2.3	5.0	O K
2160 min Winter	186.524	0.074	1.7	2.8	O K
2880 min Winter	186.510	0.060	1.4	1.8	O K
4320 min Winter	186.497	0.047	1.0	1.1	O K
5760 min Winter	186.492	0.042	0.8	0.9	O K
7200 min Winter	186.488	0.038	0.7	0.7	O K
8640 min Winter	186.485	0.035	0.6	0.6	O K
10080 min Winter	186.483	0.033	0.5	0.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
240 min Winter	18.577	0.0	164
360 min Winter	13.656	0.0	232
480 min Winter	10.974	0.0	296
600 min Winter	9.254	0.0	360
720 min Winter	8.046	0.0	420
960 min Winter	6.447	0.0	540
1440 min Winter	4.709	0.0	778
2160 min Winter	3.432	0.0	1128
2880 min Winter	2.739	0.0	1480
4320 min Winter	1.989	0.0	2204
5760 min Winter	1.583	0.0	2912
7200 min Winter	1.325	0.0	3672
8640 min Winter	1.147	0.0	4320
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) 0.090

Time (mins)	Area	Time (mins)	Area	Time (mins)	Area
From: To:	(ha)	From: To:	(ha)	From: To:	(ha)
0 4	0.030	4 8	0.030	8 12	0.030

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Brook House	9834	
Weybrook Road	Permeable surfaces - Area 1	
Stockport, M19 2QD	F=0.05 m/hr	
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Model Details

Storage is Online Cover Level (m) 186.800

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.05000	Width (m)	56.5
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	251.1	Slope (1:X)	60.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	186.450	Cap Volume Depth (m)	0.250