

7 Museum Street
Ipswich
Suffolk IP1 1HQ

IA21/085 HILL HOUSE
NEEDHAM MARKET
PERMEABLE DRIVEWAYS



Date 01/06/2021
File PERMEABLE DRIVEWAYS.SRCX

Designed by JBB
Checked by

Micro Drainage

Source Control 2020.1

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 97 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m ³)	Status
15 min Summer	0.270	0.270	0.2	1.8	Flood Risk
30 min Summer	0.310	0.310	0.3	2.3	Flood Risk
60 min Summer	0.338	0.338	0.3	2.8	Flood Risk
120 min Summer	0.349	0.349	0.3	2.9	Flood Risk
180 min Summer	0.350	0.350	0.3	3.0	Flood Risk
240 min Summer	0.347	0.347	0.3	2.9	Flood Risk
360 min Summer	0.337	0.337	0.3	2.7	Flood Risk
480 min Summer	0.326	0.326	0.3	2.6	Flood Risk
600 min Summer	0.314	0.314	0.3	2.4	Flood Risk
720 min Summer	0.302	0.302	0.3	2.2	Flood Risk
960 min Summer	0.281	0.281	0.3	1.9	Flood Risk
1440 min Summer	0.247	0.247	0.2	1.5	Flood Risk
2160 min Summer	0.208	0.208	0.2	1.0	Flood Risk
2880 min Summer	0.180	0.180	0.2	0.8	Flood Risk
4320 min Summer	0.142	0.142	0.1	0.5	Flood Risk
5760 min Summer	0.117	0.117	0.1	0.3	Flood Risk
7200 min Summer	0.100	0.100	0.1	0.2	O K
8640 min Summer	0.086	0.086	0.1	0.2	O K
10080 min Summer	0.076	0.076	0.1	0.1	O K
15 min Winter	0.289	0.289	0.3	2.0	Flood Risk
30 min Winter	0.333	0.333	0.3	2.7	Flood Risk
60 min Winter	0.362	0.362	0.3	3.2	Flood Risk
120 min Winter	0.373	0.373	0.3	3.4	Flood Risk
180 min Winter	0.373	0.373	0.3	3.4	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
15 min Summer	138.153	0.0	18
30 min Summer	90.705	0.0	32
60 min Summer	56.713	0.0	60
120 min Summer	34.246	0.0	94
180 min Summer	25.149	0.0	126
240 min Summer	20.078	0.0	162
360 min Summer	14.585	0.0	230
480 min Summer	11.622	0.0	296
600 min Summer	9.738	0.0	362
720 min Summer	8.424	0.0	428
960 min Summer	6.697	0.0	556
1440 min Summer	4.839	0.0	796
2160 min Summer	3.490	0.0	1164
2880 min Summer	2.766	0.0	1524
4320 min Summer	1.989	0.0	2244
5760 min Summer	1.573	0.0	2944
7200 min Summer	1.311	0.0	3672
8640 min Summer	1.129	0.0	4408
10080 min Summer	0.994	0.0	5136
15 min Winter	138.153	0.0	18
30 min Winter	90.705	0.0	32
60 min Winter	56.713	0.0	60
120 min Winter	34.246	0.0	98
180 min Winter	25.149	0.0	136

7 Museum Street
Ipswich
Suffolk IP1 1HQ

IA21/085 HILL HOUSE
NEEDHAM MARKET
PERMEABLE DRIVEWAYS



Date 01/06/2021
File PERMEABLE DRIVEWAYS.SRCX

Designed by JBB
Checked by

Micro Drainage 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 (m ³)	Status
240 min Winter	0.367	0.367	0.3	3.3	Flood Risk
360 min Winter	0.351	0.351	0.3	3.0	Flood Risk
480 min Winter	0.334	0.334	0.3	2.7	Flood Risk
600 min Winter	0.318	0.318	0.3	2.4	Flood Risk
720 min Winter	0.302	0.302	0.3	2.2	Flood Risk
960 min Winter	0.273	0.273	0.2	1.8	Flood Risk
1440 min Winter	0.228	0.228	0.2	1.3	Flood Risk
2160 min Winter	0.181	0.181	0.2	0.8	Flood Risk
2880 min Winter	0.149	0.149	0.1	0.5	Flood Risk
4320 min Winter	0.110	0.110	0.1	0.3	Flood Risk
5760 min Winter	0.088	0.088	0.1	0.2	O K
7200 min Winter	0.073	0.073	0.1	0.1	O K
8640 min Winter	0.062	0.062	0.1	0.1	O K
10080 min Winter	0.055	0.055	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Time-Peak (mins)
240 min Winter	20.078	0.0	174
360 min Winter	14.585	0.0	248
480 min Winter	11.622	0.0	318
600 min Winter	9.738	0.0	386
720 min Winter	8.424	0.0	454
960 min Winter	6.697	0.0	580
1440 min Winter	4.839	0.0	826
2160 min Winter	3.490	0.0	1188
2880 min Winter	2.766	0.0	1532
4320 min Winter	1.989	0.0	2248
5760 min Winter	1.573	0.0	2944
7200 min Winter	1.311	0.0	3672
8640 min Winter	1.129	0.0	4400
10080 min Winter	0.994	0.0	5136

7 Museum Street
 Ipswich
 Suffolk IP1 1HQ

IA21/085 HILL HOUSE
 NEEDHAM MARKET
 PERMEABLE DRIVEWAYS



Date 01/06/2021

Designed by JBB

File PERMEABLE DRIVEWAYS.SRCX

Checked by

Micro Drainage

Source Control 2020.1

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)	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) 0.009

Time (mins)	Area
From: To:	(ha)
0	4 0.009

7 Museum Street
 Ipswich
 Suffolk IP1 1HQ

IA21/085 HILL HOUSE
 NEEDHAM MARKET
 PERMEABLE DRIVEWAYS



Date 01/06/2021

Designed by JBB

File PERMEABLE DRIVEWAYS.SRCX

Checked by

Micro Drainage

Source Control 2020.1

Model Details

Storage is Online Cover Level (m) 0.400

Porous Car Park Structure

Infiltration Coefficient Base (m/hr)	0.06120	Width (m)	6.2
Membrane Percolation (mm/hr)	1000	Length (m)	14.0
Max Percolation (l/s)	24.1	Slope (1:X)	26.0
Safety Factor	3.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	0.000	Membrane Depth (m)	0