

T J Booth Associates		Page 1
104 Yorkshire St Rochdale Lancashire OL16 1JY	SW attenuation davies bank top farm shop	
Date april 2026 - rev0 File calc-tjba-davies-bank top farm sho...	Designed By ds Checked By	
Micro Drainage	Source Control W.10.4	

Summary of Results for 1 year Return Period

Half Drain Time : 7 minutes

Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	4.3	0.0	4.3	161.9953	0.0553	2.4	O K
30 Summer	4.4	0.0	4.4	161.9987	0.0588	2.5	O K
60 Summer	4.3	0.0	4.3	161.9933	0.0533	2.3	O K
120 Summer	4.1	0.0	4.1	161.9747	0.0347	1.5	O K
180 Summer	3.9	0.0	3.9	161.9593	0.0192	0.8	O K
240 Summer	3.7	0.0	3.7	161.9483	0.0083	0.4	O K
360 Summer	3.4	0.0	3.4	161.9400	0.0000	0.0	O K
480 Summer	2.9	0.0	2.9	161.9400	0.0000	0.0	O K
600 Summer	2.5	0.0	2.5	161.9400	0.0000	0.0	O K
720 Summer	2.2	0.0	2.2	161.9400	0.0000	0.0	O K
960 Summer	1.8	0.0	1.8	161.9400	0.0000	0.0	O K
1440 Summer	1.4	0.0	1.4	161.9400	0.0000	0.0	O K
2160 Summer	1.1	0.0	1.1	161.9400	0.0000	0.0	O K
2880 Summer	0.9	0.0	0.9	161.9400	0.0000	0.0	O K
4320 Summer	0.7	0.0	0.7	161.9400	0.0000	0.0	O K
5760 Summer	0.6	0.0	0.6	161.9400	0.0000	0.0	O K
7200 Summer	0.5	0.0	0.5	161.9400	0.0000	0.0	O K
8640 Summer	0.4	0.0	0.4	161.9400	0.0000	0.0	O K
10080 Summer	0.4	0.0	0.4	161.9400	0.0000	0.0	O K
15 Winter	4.4	0.0	4.4	162.0047	0.0648	2.8	O K
30 Winter	4.5	0.0	4.5	162.0058	0.0658	2.8	O K
60 Winter	4.3	0.0	4.3	161.9917	0.0518	2.2	O K
120 Winter	3.9	0.0	3.9	161.9622	0.0222	0.9	O K
180 Winter	3.6	0.0	3.6	161.9427	0.0028	0.1	O K
240 Winter	3.2	0.0	3.2	161.9400	0.0000	0.0	O K
360 Winter	2.5	0.0	2.5	161.9400	0.0000	0.0	O K
480 Winter	2.1	0.0	2.1	161.9400	0.0000	0.0	O K
600 Winter	1.8	0.0	1.8	161.9400	0.0000	0.0	O K
720 Winter	1.6	0.0	1.6	161.9400	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	28.17	13
30 Summer	19.18	21
60 Summer	12.80	38
120 Summer	8.41	70
180 Summer	6.56	100
240 Summer	5.47	128
360 Summer	4.21	0
480 Summer	3.50	0
600 Summer	3.03	0
720 Summer	2.70	0
960 Summer	2.25	0
1440 Summer	1.73	0
2160 Summer	1.33	0
2880 Summer	1.11	0
4320 Summer	0.85	0
5760 Summer	0.71	0
7200 Summer	0.61	0
8640 Summer	0.54	0
10080 Summer	0.49	0
15 Winter	28.17	14
30 Winter	19.18	23
60 Winter	12.80	40
120 Winter	8.41	72
180 Winter	6.56	98
240 Winter	5.47	0
360 Winter	4.21	0
480 Winter	3.50	0
600 Winter	3.03	0
720 Winter	2.70	0

T J Booth Associates		Page 2
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Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Control (l/s)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
960 Winter	1.3	0.0	1.3	161.9400	0.0000	0.0	O K
1440 Winter	1.0	0.0	1.0	161.9400	0.0000	0.0	O K
2160 Winter	0.8	0.0	0.8	161.9400	0.0000	0.0	O K
2880 Winter	0.7	0.0	0.7	161.9400	0.0000	0.0	O K
4320 Winter	0.5	0.0	0.5	161.9400	0.0000	0.0	O K
5760 Winter	0.4	0.0	0.4	161.9400	0.0000	0.0	O K
7200 Winter	0.4	0.0	0.4	161.9400	0.0000	0.0	O K
8640 Winter	0.3	0.0	0.3	161.9400	0.0000	0.0	O K
10080 Winter	0.3	0.0	0.3	161.9400	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
960 Winter	2.25	0
1440 Winter	1.73	0
2160 Winter	1.33	0
2880 Winter	1.11	0
4320 Winter	0.85	0
5760 Winter	0.71	0
7200 Winter	0.61	0
8640 Winter	0.54	0
10080 Winter	0.49	0

T J Booth Associates		Page 3
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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	1	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+0
Ratio-R	0.300	Longest Storm (mins)	10080		

Time / Area Diagram

Total Area (ha) = 0.100

Time (mins)		Area
from:	to:	(ha)
0	4	0.100

Cellular Storage Details

Infil Coef - Base (m/hr) 0.000000 Porosity 0.95
Infil Coef - Sides (m/hr) 0.000000 Invert Level (m) 161.940
Safety Factor 2.0 Ground Level (m) 163.650

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.00	45.0	0.40	45.0	0.80	45.0	1.20	45.0	1.60	45.0	2.00	45.0	2.40	45.0
0.10	45.0	0.50	45.0	0.90	45.0	1.30	45.0	1.70	45.0	2.10	45.0	2.50	45.0
0.20	45.0	0.60	45.0	1.00	45.0	1.40	45.0	1.80	45.0	2.20	45.0		
0.30	45.0	0.70	45.0	1.10	45.0	1.50	45.0	1.90	45.0	2.30	45.0		

Depth / Flow Outflow Control

Invert Level of Control 161.840

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.10	3.6	0.60	4.1	1.60	6.7	2.60	8.6	5.00	11.9	7.50	14.6
0.20	4.9	0.80	4.7	1.80	7.1	3.00	9.2	5.50	12.5	8.00	15.1
0.30	5.0	1.00	5.2	2.00	7.5	3.50	10.0	6.00	13.0	8.50	15.5
0.40	4.9	1.20	5.8	2.20	7.9	4.00	10.7	6.50	13.6	9.00	16.0
0.50	4.6	1.40	6.3	2.40	8.3	4.50	11.3	7.00	14.1	9.50	16.4