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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 30 year Return Period (+40%)

Half Drain Time : 48 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	5.0	0.0	5.0	162.2598	0.3197	13.7	O K
30 Summer	5.0	0.0	5.0	162.3313	0.3912	16.7	O K
60 Summer	5.0	0.0	5.0	162.3618	0.4217	18.0	O K
120 Summer	5.0	0.0	5.0	162.3533	0.4132	17.7	O K
180 Summer	5.0	0.0	5.0	162.3177	0.3777	16.2	O K
240 Summer	5.0	0.0	5.0	162.2767	0.3367	14.4	O K
360 Summer	5.0	0.0	5.0	162.1978	0.2577	11.0	O K
480 Summer	5.0	0.0	5.0	162.1308	0.1907	8.2	O K
600 Summer	4.9	0.0	4.9	162.0793	0.1393	6.0	O K
720 Summer	4.9	0.0	4.9	162.0413	0.1013	4.3	O K
960 Summer	4.3	0.0	4.3	161.9962	0.0563	2.4	O K
1440 Summer	3.7	0.0	3.7	161.9467	0.0068	0.3	O K
2160 Summer	2.8	0.0	2.8	161.9400	0.0000	0.0	O K
2880 Summer	2.3	0.0	2.3	161.9400	0.0000	0.0	O K
4320 Summer	1.7	0.0	1.7	161.9400	0.0000	0.0	O K
5760 Summer	1.4	0.0	1.4	161.9400	0.0000	0.0	O K
7200 Summer	1.2	0.0	1.2	161.9400	0.0000	0.0	O K
8640 Summer	1.0	0.0	1.0	161.9400	0.0000	0.0	O K
10080 Summer	0.9	0.0	0.9	161.9400	0.0000	0.0	O K
15 Winter	5.0	0.0	5.0	162.3107	0.3707	15.9	O K
30 Winter	5.0	0.0	5.0	162.4048	0.4647	19.9	O K
60 Winter	5.0	0.0	5.0	162.4492	0.5092	21.8	O K
120 Winter	5.0	0.0	5.0	162.4218	0.4817	20.6	O K
180 Winter	5.0	0.0	5.0	162.3568	0.4167	17.8	O K
240 Winter	5.0	0.0	5.0	162.2843	0.3442	14.7	O K
360 Winter	5.0	0.0	5.0	162.1588	0.2187	9.3	O K
480 Winter	4.9	0.0	4.9	162.0688	0.1288	5.5	O K
600 Winter	4.6	0.0	4.6	162.0193	0.0793	3.4	O K
720 Winter	4.2	0.0	4.2	161.9863	0.0462	2.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	68.99	16
30 Summer	47.08	30
60 Summer	30.81	48
120 Summer	19.53	82
180 Summer	14.75	116
240 Summer	12.05	150
360 Summer	9.05	212
480 Summer	7.38	272
600 Summer	6.29	330
720 Summer	5.52	386
960 Summer	4.49	504
1440 Summer	3.35	736
2160 Summer	2.49	0
2880 Summer	2.02	0
4320 Summer	1.50	0
5760 Summer	1.21	0
7200 Summer	1.03	0
8640 Summer	0.90	0
10080 Summer	0.81	0
15 Winter	68.99	17
30 Winter	47.08	31
60 Winter	30.81	56
120 Winter	19.53	92
180 Winter	14.75	128
240 Winter	12.05	162
360 Winter	9.05	224
480 Winter	7.38	280
600 Winter	6.29	334
720 Winter	5.52	392

SW attenuation

davies

bank top farm shop

Designed By ds

Checked By

Source Control W.10.4



Summary of Results for 30 year Return Period (+40%)

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	3.6	0.0	3.6	161.9433	0.0033	0.1	O K
1440 Winter	2.8	0.0	2.8	161.9400	0.0000	0.0	O K
2160 Winter	2.1	0.0	2.1	161.9400	0.0000	0.0	O K
2880 Winter	1.7	0.0	1.7	161.9400	0.0000	0.0	O K
4320 Winter	1.2	0.0	1.2	161.9400	0.0000	0.0	O K
5760 Winter	1.0	0.0	1.0	161.9400	0.0000	0.0	O K
7200 Winter	0.9	0.0	0.9	161.9400	0.0000	0.0	O K
8640 Winter	0.7	0.0	0.7	161.9400	0.0000	0.0	O K
10080 Winter	0.7	0.0	0.7	161.9400	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
960 Winter	4.49	500
1440 Winter	3.35	0
2160 Winter	2.49	0
2880 Winter	2.02	0
4320 Winter	1.50	0
5760 Winter	1.21	0
7200 Winter	1.03	0
8640 Winter	0.90	0
10080 Winter	0.81	0

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Rainfall Details

Region	ENG+WAL	Cv (Summer)	0.750	Summer Storms	Yes
Return Period (years)	30	Cv (Winter)	0.840	Winter Storms	Yes
M5-60 (mm)	20.000	Shortest Storm (mins)	15	Climate Change %	+40
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