

T J Booth Associates		Page 1
104 Yorkshire St Rochdale Lancashire OL16 1JY		
Date 14 August 2026 18:17 File calc-tjba-B&L-star works-attenuatio...	Designed By Pc3 Checked By	
Micro Drainage	Source Control W.10.4	

Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Control (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	4.0	4.0	120.8083	0.0083	0.1	O K
30 Summer	3.9	3.9	120.8038	0.0038	0.1	O K
60 Summer	3.5	3.5	120.8000	0.0000	0.0	O K
120 Summer	2.5	2.5	120.8000	0.0000	0.0	O K
180 Summer	2.0	2.0	120.8000	0.0000	0.0	O K
240 Summer	1.7	1.7	120.8000	0.0000	0.0	O K
360 Summer	1.3	1.3	120.8000	0.0000	0.0	O K
480 Summer	1.1	1.1	120.8000	0.0000	0.0	O K
600 Summer	0.9	0.9	120.8000	0.0000	0.0	O K
720 Summer	0.8	0.8	120.8000	0.0000	0.0	O K
960 Summer	0.7	0.7	120.8000	0.0000	0.0	O K
1440 Summer	0.5	0.5	120.8000	0.0000	0.0	O K
2160 Summer	0.4	0.4	120.8000	0.0000	0.0	O K
2880 Summer	0.3	0.3	120.8000	0.0000	0.0	O K
4320 Summer	0.3	0.3	120.8000	0.0000	0.0	O K
5760 Summer	0.2	0.2	120.8000	0.0000	0.0	O K
7200 Summer	0.2	0.2	120.8000	0.0000	0.0	O K
8640 Summer	0.2	0.2	120.8000	0.0000	0.0	O K
10080 Summer	0.1	0.1	120.8000	0.0000	0.0	O K
15 Winter	4.0	4.0	120.8088	0.0088	0.1	O K
30 Winter	3.9	3.9	120.8000	0.0000	0.0	O K
60 Winter	2.7	2.7	120.8000	0.0000	0.0	O K
120 Winter	1.8	1.8	120.8000	0.0000	0.0	O K
180 Winter	1.4	1.4	120.8000	0.0000	0.0	O K
240 Winter	1.2	1.2	120.8000	0.0000	0.0	O K
360 Winter	0.9	0.9	120.8000	0.0000	0.0	O K
480 Winter	0.8	0.8	120.8000	0.0000	0.0	O K
600 Winter	0.7	0.7	120.8000	0.0000	0.0	O K
720 Winter	0.6	0.6	120.8000	0.0000	0.0	O K
960 Winter	0.5	0.5	120.8000	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	28.17	11
30 Summer	19.18	18
60 Summer	12.80	0
120 Summer	8.41	0
180 Summer	6.56	0
240 Summer	5.47	0
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	11
30 Winter	19.18	0
60 Winter	12.80	0
120 Winter	8.41	0
180 Winter	6.56	0
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
960 Winter	2.25	0

Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Control (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
1440 Winter	0.4	0.4	120.8000	0.0000	0.0	O K
2160 Winter	0.3	0.3	120.8000	0.0000	0.0	O K
2880 Winter	0.2	0.2	120.8000	0.0000	0.0	O K
4320 Winter	0.2	0.2	120.8000	0.0000	0.0	O K
5760 Winter	0.2	0.2	120.8000	0.0000	0.0	O K
7200 Winter	0.1	0.1	120.8000	0.0000	0.0	O K
8640 Winter	0.1	0.1	120.8000	0.0000	0.0	O K
10080 Winter	0.1	0.1	120.8000	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
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

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) = 0.037

Time	(mins)	Area
from:	to:	(ha)
	0	4
		0.037

Tank/Pond Details

Invert Level (m) 120.800 Ground Level (m) 121.700

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	16.5	0.40	16.5	0.80	16.5	1.20	16.5	1.60	16.5	2.00	16.5	2.40	16.5
0.10	16.5	0.50	16.5	0.90	16.5	1.30	16.5	1.70	16.5	2.10	16.5	2.50	16.5
0.20	16.5	0.60	16.5	1.00	16.5	1.40	16.5	1.80	16.5	2.20	16.5		
0.30	16.5	0.70	16.5	1.10	16.5	1.50	16.5	1.90	16.5	2.30	16.5		

Depth / Flow Outflow Control

Invert Level of Control 120.700

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	3.9	0.60	5.4	1.60	7.9	2.60	10.1	5.00	14.0	7.50	17.2
0.20	5.0	0.80	5.7	1.80	8.4	3.00	10.9	5.50	14.7	8.00	17.8
0.30	4.8	1.00	6.3	2.00	8.9	3.50	11.7	6.00	15.4	8.50	18.3
0.40	4.5	1.20	6.9	2.20	9.3	4.00	12.6	6.50	16.0	9.00	18.8
0.50	5.0	1.40	7.4	2.40	9.7	4.50	13.3	7.00	16.6	9.50	19.4