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104 Yorkshire St Rochdale Lancashire OL16 1JY		
Date 14 August 2026 18:16 File calc-tjba-B&L-star works-attenuatio...	Designed By Pc3 Checked By	
Micro Drainage	Source Control W.10.4	

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

Storm Duration (mins)	Maximum Control (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m³)	Status
15 Summer	5.0	5.0	120.9948	0.1947	3.2	O K
30 Summer	5.0	5.0	121.0123	0.2122	3.5	O K
60 Summer	5.0	5.0	120.9873	0.1872	3.1	O K
120 Summer	5.0	5.0	120.9128	0.1128	1.9	O K
180 Summer	4.6	4.6	120.8628	0.0628	1.0	O K
240 Summer	4.2	4.2	120.8298	0.0297	0.5	O K
360 Summer	3.8	3.8	120.8000	0.0000	0.0	O K
480 Summer	3.1	3.1	120.8000	0.0000	0.0	O K
600 Summer	2.7	2.7	120.8000	0.0000	0.0	O K
720 Summer	2.3	2.3	120.8000	0.0000	0.0	O K
960 Summer	1.9	1.9	120.8000	0.0000	0.0	O K
1440 Summer	1.4	1.4	120.8000	0.0000	0.0	O K
2160 Summer	1.1	1.1	120.8000	0.0000	0.0	O K
2880 Summer	0.9	0.9	120.8000	0.0000	0.0	O K
4320 Summer	0.6	0.6	120.8000	0.0000	0.0	O K
5760 Summer	0.5	0.5	120.8000	0.0000	0.0	O K
7200 Summer	0.4	0.4	120.8000	0.0000	0.0	O K
8640 Summer	0.4	0.4	120.8000	0.0000	0.0	O K
10080 Summer	0.3	0.3	120.8000	0.0000	0.0	O K
15 Winter	5.0	5.0	121.0322	0.2322	3.8	O K
30 Winter	5.0	5.0	121.0423	0.2422	4.0	O K
60 Winter	5.0	5.0	120.9902	0.1902	3.1	O K
120 Winter	4.8	4.8	120.8798	0.0798	1.3	O K
180 Winter	4.1	4.1	120.8203	0.0202	0.3	O K
240 Winter	3.7	3.7	120.8000	0.0000	0.0	O K
360 Winter	2.8	2.8	120.8000	0.0000	0.0	O K
480 Winter	2.3	2.3	120.8000	0.0000	0.0	O K
600 Winter	1.9	1.9	120.8000	0.0000	0.0	O K
720 Winter	1.7	1.7	120.8000	0.0000	0.0	O K
960 Winter	1.4	1.4	120.8000	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	68.99	13
30 Summer	47.08	22
60 Summer	30.81	38
120 Summer	19.53	70
180 Summer	14.75	100
240 Summer	12.05	128
360 Summer	9.05	0
480 Summer	7.38	0
600 Summer	6.29	0
720 Summer	5.52	0
960 Summer	4.49	0
1440 Summer	3.35	0
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	14
30 Winter	47.08	24
60 Winter	30.81	42
120 Winter	19.53	72
180 Winter	14.75	100
240 Winter	12.05	0
360 Winter	9.05	0
480 Winter	7.38	0
600 Winter	6.29	0
720 Winter	5.52	0
960 Winter	4.49	0

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

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	1.0	1.0	120.8000	0.0000	0.0	O K
2160 Winter	0.8	0.8	120.8000	0.0000	0.0	O K
2880 Winter	0.6	0.6	120.8000	0.0000	0.0	O K
4320 Winter	0.5	0.5	120.8000	0.0000	0.0	O K
5760 Winter	0.4	0.4	120.8000	0.0000	0.0	O K
7200 Winter	0.3	0.3	120.8000	0.0000	0.0	O K
8640 Winter	0.3	0.3	120.8000	0.0000	0.0	O K
10080 Winter	0.2	0.2	120.8000	0.0000	0.0	O K

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

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) = 0.037

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