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104 Yorkshire St Rochdale Lancashire OL16 1JY	soakaway calc full site soakaway crates baxter - buxton st	
Date Jan 2023 File CALC-T~1.SRC	Designed By ds Checked By	
Micro Drainage	Source Control W.10.4	

Summary of Results for 1 year Return Period

Half Drain Time : 134 minutes

Storm Duration (mins)	Maximum Filtration (1/s)	Maximum Outflow (1/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	0.8	0.8	119.5628	0.0628	4.3	O K
30 Summer	0.8	0.8	119.5878	0.0878	6.0	O K
60 Summer	0.8	0.8	119.6103	0.1103	7.6	O K
120 Summer	0.8	0.8	119.6328	0.1328	9.1	O K
180 Summer	0.8	0.8	119.6543	0.1542	10.5	O K
240 Summer	0.8	0.8	119.6582	0.1582	10.8	O K
360 Summer	0.8	0.8	119.6602	0.1602	11.0	O K
480 Summer	0.8	0.8	119.6578	0.1577	10.8	O K
600 Summer	0.8	0.8	119.6537	0.1537	10.5	O K
720 Summer	0.8	0.8	119.6492	0.1493	10.2	O K
960 Summer	0.8	0.8	119.6383	0.1383	9.5	O K
1440 Summer	0.8	0.8	119.6152	0.1153	7.9	O K
2160 Summer	0.8	0.8	119.5863	0.0863	5.9	O K
2880 Summer	0.8	0.8	119.5648	0.0648	4.4	O K
4320 Summer	0.7	0.7	119.5468	0.0467	3.2	O K
5760 Summer	0.6	0.6	119.5393	0.0392	2.7	O K
7200 Summer	0.5	0.5	119.5348	0.0347	2.4	O K
8640 Summer	0.5	0.5	119.5307	0.0307	2.1	O K
10080 Summer	0.4	0.4	119.5277	0.0277	1.9	O K
15 Winter	0.8	0.8	119.5703	0.0703	4.8	O K
30 Winter	0.8	0.8	119.5987	0.0988	6.7	O K
60 Winter	0.8	0.8	119.6292	0.1293	8.8	O K
120 Winter	0.8	0.8	119.6663	0.1662	11.4	O K
180 Winter	0.8	0.8	119.6758	0.1757	12.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	28.17	18
30 Summer	19.18	32
60 Summer	12.80	60
120 Summer	8.41	102
180 Summer	6.56	140
240 Summer	5.47	174
360 Summer	4.21	244
480 Summer	3.50	314
600 Summer	3.03	382
720 Summer	2.70	450
960 Summer	2.25	582
1440 Summer	1.73	838
2160 Summer	1.33	1192
2880 Summer	1.11	1536
4320 Summer	0.85	2212
5760 Summer	0.71	2944
7200 Summer	0.61	3664
8640 Summer	0.54	4408
10080 Summer	0.49	5144
15 Winter	28.17	18
30 Winter	19.18	32
60 Winter	12.80	60
120 Winter	8.41	116
180 Winter	6.56	150

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Summary of Results for 1 year Return Period

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
240 Winter	0.8	0.8	119.6797	0.1797	12.3	O K
360 Winter	0.8	0.8	119.6793	0.1792	12.3	O K
480 Winter	0.8	0.8	119.6732	0.1732	11.8	O K
600 Winter	0.8	0.8	119.6647	0.1647	11.3	O K
720 Winter	0.8	0.8	119.6553	0.1553	10.6	O K
960 Winter	0.8	0.8	119.6357	0.1358	9.3	O K
1440 Winter	0.8	0.8	119.5977	0.0978	6.7	O K
2160 Winter	0.8	0.8	119.5573	0.0573	3.9	O K
2880 Winter	0.7	0.7	119.5452	0.0452	3.1	O K
4320 Winter	0.5	0.5	119.5352	0.0352	2.4	O K
5760 Winter	0.5	0.5	119.5293	0.0292	2.0	O K
7200 Winter	0.4	0.4	119.5253	0.0252	1.7	O K
8640 Winter	0.4	0.4	119.5228	0.0227	1.5	O K
10080 Winter	0.3	0.3	119.5202	0.0202	1.4	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
240 Winter	5.47	188
360 Winter	4.21	266
480 Winter	3.50	342
600 Winter	3.03	414
720 Winter	2.70	486
960 Winter	2.25	626
1440 Winter	1.73	872
2160 Winter	1.33	1192
2880 Winter	1.11	1504
4320 Winter	0.85	2208
5760 Winter	0.71	2936
7200 Winter	0.61	3672
8640 Winter	0.54	4416
10080 Winter	0.49	5136

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Rainfall Details

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

Pipe Network

Volume in Pipe Network (m³)	1	Dia of Outfall Pipe (m)	0.100
Slope of Outfall Pipe (1:x)	100.0	Roughness of Outfall Pipe	0.600

Time / Area Diagram

Total Area (ha) = 0.110

Time	(mins)	Area
from:	to:	(ha)
0	4	0.110

Cellular Storage Details

Infil Coef - Base (m/hr) 0.076149 Porosity 0.95
Infil Coef - Sides (m/hr) 0.076149 Invert Level (m) 119.500
Safety Factor 2.0 Ground Level (m) 121.800

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	72.0	0.50	72.0	1.00	72.0	1.50	72.0	2.00	72.0	2.50	72.0
0.10	72.0	0.60	72.0	1.10	72.0	1.60	72.0	2.10	72.0		
0.20	72.0	0.70	72.0	1.20	72.0	1.70	72.0	2.20	72.0		
0.30	72.0	0.80	72.0	1.30	72.0	1.80	72.0	2.30	72.0		
0.40	72.0	0.90	72.0	1.40	72.0	1.90	72.0	2.40	72.0		