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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 30 year Return Period

Half Drain Time : 334 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	119.6842	0.1842	12.6	O K
30 Summer	0.8	0.8	119.7513	0.2512	17.2	O K
60 Summer	0.9	0.9	119.8217	0.3217	22.0	O K
120 Summer	0.9	0.9	119.8812	0.3812	26.1	O K
180 Summer	0.9	0.9	119.9072	0.4072	27.9	O K
240 Summer	0.9	0.9	119.9177	0.4177	28.6	O K
360 Summer	0.9	0.9	119.9222	0.4222	28.9	O K
480 Summer	0.9	0.9	119.9337	0.4337	29.7	O K
600 Summer	0.9	0.9	119.9297	0.4297	29.4	O K
720 Summer	0.9	0.9	119.9232	0.4232	29.0	O K
960 Summer	0.9	0.9	119.9077	0.4077	27.9	O K
1440 Summer	0.9	0.9	119.8722	0.3722	25.5	O K
2160 Summer	0.9	0.9	119.8172	0.3172	21.7	O K
2880 Summer	0.8	0.8	119.7653	0.2652	18.1	O K
4320 Summer	0.8	0.8	119.6787	0.1787	12.2	O K
5760 Summer	0.8	0.8	119.6162	0.1163	7.9	O K
7200 Summer	0.8	0.8	119.5748	0.0748	5.1	O K
8640 Summer	0.8	0.8	119.5527	0.0527	3.6	O K
10080 Summer	0.7	0.7	119.5462	0.0462	3.2	O K
15 Winter	0.8	0.8	119.7028	0.2027	13.9	O K
30 Winter	0.9	0.9	119.7858	0.2857	19.6	O K
60 Winter	0.9	0.9	119.8622	0.3622	24.8	O K
120 Winter	0.9	0.9	119.9392	0.4392	30.1	O K
180 Winter	0.9	0.9	119.9707	0.4707	32.2	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	68.99	18
30 Summer	47.08	33
60 Summer	30.81	62
120 Summer	19.53	122
180 Summer	14.75	180
240 Summer	12.05	240
360 Summer	9.05	298
480 Summer	7.38	364
600 Summer	6.29	432
720 Summer	5.52	500
960 Summer	4.49	638
1440 Summer	3.35	912
2160 Summer	2.49	1316
2880 Summer	2.02	1700
4320 Summer	1.50	2424
5760 Summer	1.21	3120
7200 Summer	1.03	3760
8640 Summer	0.90	4408
10080 Summer	0.81	5144
15 Winter	68.99	18
30 Winter	47.08	33
60 Winter	30.81	62
120 Winter	19.53	120
180 Winter	14.75	176

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Summary of Results for 30 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	0.9	0.9	119.9862	0.4862	33.3	O K
360 Winter	0.9	0.9	120.0062	0.5062	34.6	O K
480 Winter	0.9	0.9	120.0027	0.5027	34.4	O K
600 Winter	0.9	0.9	119.9962	0.4962	34.0	O K
720 Winter	0.9	0.9	119.9867	0.4867	33.3	O K
960 Winter	0.9	0.9	119.9612	0.4612	31.6	O K
1440 Winter	0.9	0.9	119.9032	0.4032	27.6	O K
2160 Winter	0.9	0.9	119.8152	0.3152	21.6	O K
2880 Winter	0.8	0.8	119.7363	0.2362	16.2	O K
4320 Winter	0.8	0.8	119.6143	0.1143	7.8	O K
5760 Winter	0.8	0.8	119.5508	0.0507	3.5	O K
7200 Winter	0.7	0.7	119.5427	0.0427	2.9	O K
8640 Winter	0.6	0.6	119.5378	0.0377	2.6	O K
10080 Winter	0.5	0.5	119.5338	0.0337	2.3	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
240 Winter	12.05	232
360 Winter	9.05	340
480 Winter	7.38	388
600 Winter	6.29	464
720 Winter	5.52	542
960 Winter	4.49	696
1440 Winter	3.35	992
2160 Winter	2.49	1408
2880 Winter	2.02	1792
4320 Winter	1.50	2472
5760 Winter	1.21	2952
7200 Winter	1.03	3688
8640 Winter	0.90	4384
10080 Winter	0.81	5024

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Rainfall Details

Region	ENG+WAL	Shortest Storm (mins)	15
Return Period (years)	30	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 (m ³)	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		