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104 Yorkshire St Rochdale Lancashire OL16 1JY	1800 SW soakaway khan - kings road rochdale	
Date dec 2023 File CALC-T~2.SRC	Designed By ds Checked By	
Micro Drainage		Source Control W.10.4

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

Half Drain Time : 169 minutes

Storm Duration (mins)	Maximum Filtration (l/s)	Maximum Outflow (l/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	0.6	0.6	147.5362	0.5362	6.1	O K
30 Summer	0.7	0.7	147.7973	0.7973	9.1	O K
60 Summer	0.8	0.8	147.9948	0.9948	11.3	O K
120 Summer	0.8	0.8	148.1413	1.1413	13.0	O K
180 Summer	0.9	0.9	148.1718	1.1718	13.4	O K
240 Summer	0.9	0.9	148.2538	1.2538	14.3	O K
360 Summer	0.9	0.9	148.2417	1.2418	14.2	O K
480 Summer	0.9	0.9	148.2113	1.2113	13.8	O K
600 Summer	0.9	0.9	148.1768	1.1768	13.4	O K
720 Summer	0.8	0.8	148.1408	1.1408	13.0	O K
960 Summer	0.8	0.8	148.0678	1.0678	12.2	O K
1440 Summer	0.8	0.8	147.9263	0.9263	10.6	O K
2160 Summer	0.7	0.7	147.7438	0.7438	8.5	O K
2880 Summer	0.6	0.6	147.5957	0.5958	6.8	O K
4320 Summer	0.6	0.6	147.3767	0.3767	4.3	O K
5760 Summer	0.5	0.5	147.2283	0.2282	2.6	O K
7200 Summer	0.5	0.5	147.1272	0.1273	1.5	O K
8640 Summer	0.4	0.4	147.0672	0.0673	0.8	O K
10080 Summer	0.4	0.4	147.0477	0.0477	0.5	O K
15 Winter	0.7	0.7	147.6533	0.6533	7.4	O K
30 Winter	0.8	0.8	147.9063	0.9063	10.3	O K
60 Winter	0.9	0.9	148.1488	1.1488	13.1	O K
120 Winter	0.9	0.9	148.3282	1.3282	15.1	O K
180 Winter	1.0	1.0	148.4307	1.4307	16.3	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	120
180 Summer	14.75	148
240 Summer	12.05	180
360 Summer	9.05	250
480 Summer	7.38	320
600 Summer	6.29	388
720 Summer	5.52	458
960 Summer	4.49	594
1440 Summer	3.35	856
2160 Summer	2.49	1236
2880 Summer	2.02	1616
4320 Summer	1.50	2336
5760 Summer	1.21	3064
7200 Summer	1.03	3752
8640 Summer	0.90	4408
10080 Summer	0.81	5120
15 Winter	68.99	18
30 Winter	47.08	32
60 Winter	30.81	60
120 Winter	19.53	116
180 Winter	14.75	164

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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	1.0	1.0	148.4417	1.4417	16.4	O K
360 Winter	1.0	1.0	148.4192	1.4192	16.2	O K
480 Winter	0.9	0.9	148.3667	1.3667	15.6	O K
600 Winter	0.9	0.9	148.3073	1.3072	14.9	O K
720 Winter	0.9	0.9	148.2473	1.2473	14.2	O K
960 Winter	0.8	0.8	148.1303	1.1303	12.9	O K
1440 Winter	0.8	0.8	147.9188	0.9188	10.5	O K
2160 Winter	0.7	0.7	147.6638	0.6638	7.6	O K
2880 Winter	0.6	0.6	147.4702	0.4702	5.4	O K
4320 Winter	0.5	0.5	147.2047	0.2047	2.3	O K
5760 Winter	0.4	0.4	147.0578	0.0577	0.7	O K
7200 Winter	0.4	0.4	147.0437	0.0437	0.5	O K
8640 Winter	0.3	0.3	147.0383	0.0382	0.4	O K
10080 Winter	0.3	0.3	147.0347	0.0347	0.4	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
240 Winter	12.05	190
360 Winter	9.05	268
480 Winter	7.38	344
600 Winter	6.29	418
720 Winter	5.52	494
960 Winter	4.49	634
1440 Winter	3.35	910
2160 Winter	2.49	1300
2880 Winter	2.02	1676
4320 Winter	1.50	2384
5760 Winter	1.21	2992
7200 Winter	1.03	3632
8640 Winter	0.90	4328
10080 Winter	0.81	5024

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 %	+40
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) = 0.045

Time	(mins)	Area
from:	to:	(ha)
0	4	0.045

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Lined Soakaway Details

Infil Coef - Base (m/hr)	0.150000	Pit Multiplier	2.5
Infil Coef - Sides (m/hr)	0.150000	Number Required	1
Safety Factor	2.0	Invert Level (m)	147.000
Porosity	0.50	Cover Level (m)	149.500
Ring Diameter (m)	1.8		