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104 Yorkshire St Rochdale Lancashire OL16 1JY	full site SW soakaway iqbal belfield lane	
Date nov 2023 File calc-tjba-iqbal-belfield lane-full site ...	Designed By ds Checked By	
Micro Drainage	Source Control W.10.4	

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

Half Drain Time : 354 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	1.1	1.1	97.7833	0.2932	18.7	O K
30 Summer	1.1	1.1	97.8827	0.3927	25.0	O K
60 Summer	1.1	1.1	97.9852	0.4952	31.6	O K
120 Summer	1.2	1.2	98.0773	0.5873	37.4	O K
180 Summer	1.2	1.2	98.1138	0.6238	39.8	O K
240 Summer	1.2	1.2	98.1293	0.6393	40.7	O K
360 Summer	1.2	1.2	98.1368	0.6468	41.2	O K
480 Summer	1.2	1.2	98.1348	0.6448	41.1	O K
600 Summer	1.2	1.2	98.1288	0.6388	40.7	O K
720 Summer	1.2	1.2	98.1208	0.6308	40.2	O K
960 Summer	1.2	1.2	98.1003	0.6103	38.9	O K
1440 Summer	1.2	1.2	98.0533	0.5632	35.9	O K
2160 Summer	1.1	1.1	97.9787	0.4887	31.2	O K
2880 Summer	1.1	1.1	97.9072	0.4172	26.6	O K
4320 Summer	1.1	1.1	97.7843	0.2942	18.8	O K
5760 Summer	1.0	1.0	97.6903	0.2002	12.8	O K
7200 Summer	1.0	1.0	97.6208	0.1308	8.3	O K
8640 Summer	1.0	1.0	97.5738	0.0838	5.3	O K
10080 Summer	1.0	1.0	97.5468	0.0567	3.6	O K
15 Winter	1.1	1.1	97.8202	0.3302	21.0	O K
30 Winter	1.1	1.1	97.9328	0.4427	28.2	O K
60 Winter	1.2	1.2	98.0507	0.5607	35.7	O K
120 Winter	1.2	1.2	98.1603	0.6703	42.7	O K
180 Winter	1.2	1.2	98.2078	0.7178	45.8	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	304
480 Summer	7.38	368
600 Summer	6.29	434
720 Summer	5.52	502
960 Summer	4.49	644
1440 Summer	3.35	920
2160 Summer	2.49	1320
2880 Summer	2.02	1704
4320 Summer	1.50	2464
5760 Summer	1.21	3168
7200 Summer	1.03	3824
8640 Summer	0.90	4496
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 (+40%)

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	1.2	1.2	98.2313	0.7413	47.3	O K
360 Winter	1.2	1.2	98.2448	0.7548	48.1	O K
480 Winter	1.2	1.2	98.2398	0.7498	47.8	O K
600 Winter	1.2	1.2	98.2313	0.7413	47.3	O K
720 Winter	1.2	1.2	98.2183	0.7283	46.4	O K
960 Winter	1.2	1.2	98.1853	0.6953	44.3	O K
1440 Winter	1.2	1.2	98.1078	0.6178	39.4	O K
2160 Winter	1.1	1.1	97.9892	0.4992	31.8	O K
2880 Winter	1.1	1.1	97.8807	0.3907	24.9	O K
4320 Winter	1.0	1.0	97.7043	0.2142	13.6	O K
5760 Winter	1.0	1.0	97.5843	0.0943	6.0	O K
7200 Winter	0.9	0.9	97.5383	0.0482	3.1	O K
8640 Winter	0.8	0.8	97.5323	0.0422	2.7	O K
10080 Winter	0.7	0.7	97.5278	0.0377	2.4	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	694
1440 Winter	3.35	996
2160 Winter	2.49	1424
2880 Winter	2.02	1816
4320 Winter	1.50	2552
5760 Winter	1.21	3176
7200 Winter	1.03	3672
8640 Winter	0.90	4408
10080 Winter	0.81	5144

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		

Time / Area Diagram

Total Area (ha) = 0.108

Time	(mins)	Area
from:	to:	(ha)
0	4	0.108

Cellular Storage Details

Infil Coef - Base (m/hr) 0.100000 Porosity 0.95
Infil Coef - Sides (m/hr) 0.100000 Invert Level (m) 97.490
Safety Factor 2.0 Ground Level (m) 100.000

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	67.1	0.50	67.1	1.00	67.1	1.50	67.1	2.00	67.1	2.50	67.1
0.10	67.1	0.60	67.1	1.10	67.1	1.60	67.1	2.10	67.1		
0.20	67.1	0.70	67.1	1.20	67.1	1.70	67.1	2.20	67.1		
0.30	67.1	0.80	67.1	1.30	67.1	1.80	67.1	2.30	67.1		
0.40	67.1	0.90	67.1	1.40	67.1	1.90	67.1	2.40	67.1		