

Meridian House
1 Meridian Way
Norwich NR7 0TA

PLEASURE & LEISURE
MULTI-STOREY CARPARK
(1 IN 100 YR + 20%)

Date 06.12.07

Designed By CGA (07211300WST)

File FRA 3 Soakaway (multi-...

Checked By

Micro Drainage

Source Control W.10.3



Summary of Results for 100 year Return Period (+20%)

Half Drain Time : 28 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	32.5	32.5	4.6038	1.2038	77.2	O K
30 Summer	34.6	34.6	4.7672	1.3672	87.7	O K
60 Summer	34.9	34.9	4.7867	1.3867	89.0	O K
120 Summer	33.2	33.2	4.6578	1.2578	80.7	O K
180 Summer	31.3	31.3	4.5078	1.1078	71.1	O K
240 Summer	29.4	29.4	4.3653	0.9653	61.9	O K
360 Summer	26.3	26.3	4.1233	0.7233	46.4	O K
480 Summer	23.9	23.9	3.9412	0.5412	34.7	O K
600 Summer	22.1	22.1	3.7982	0.3982	25.6	O K
720 Summer	20.6	20.6	3.6862	0.2862	18.4	O K
960 Summer	18.7	18.7	3.5318	0.1318	8.5	O K
1440 Summer	15.6	15.6	3.4443	0.0442	2.8	O K
2160 Summer	11.2	11.2	3.4318	0.0317	2.0	O K
2880 Summer	8.9	8.9	3.4253	0.0252	1.6	O K
4320 Summer	6.4	6.4	3.4183	0.0183	1.2	O K
5760 Summer	5.2	5.2	3.4148	0.0148	1.0	O K
7200 Summer	4.3	4.3	3.4123	0.0123	0.8	O K
8640 Summer	3.8	3.8	3.4108	0.0108	0.7	O K
10080 Summer	3.3	3.3	3.4093	0.0093	0.6	O K
15 Winter	34.7	34.7	4.7757	1.3757	88.3	O K
30 Winter	37.3	37.3	4.9742	1.5742	101.0	O K
60 Winter	37.5	37.5	4.9882	1.5882	101.9	O K
120 Winter	34.7	34.7	4.7712	1.3712	88.0	O K
180 Winter	31.8	31.8	4.5463	1.1463	73.5	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
15 Summer	93.82	16
30 Summer	61.65	26
60 Summer	38.62	42
120 Summer	23.40	78
180 Summer	17.23	110
240 Summer	13.79	144
360 Summer	10.01	206
480 Summer	7.98	268
600 Summer	6.69	328
720 Summer	5.79	386
960 Summer	4.60	502
1440 Summer	3.33	720
2160 Summer	2.40	1100
2880 Summer	1.90	1464
4320 Summer	1.37	2164
5760 Summer	1.08	2848
7200 Summer	0.90	3640
8640 Summer	0.78	4368
10080 Summer	0.69	5104
15 Winter	93.82	16
30 Winter	61.65	27
60 Winter	38.62	46
120 Winter	23.40	84
180 Winter	17.23	118

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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	29.1	29.1	4.3438	0.9438	60.6	O K
360 Winter	25.0	25.0	4.0213	0.6213	39.9	O K
480 Winter	22.0	22.0	3.7912	0.3912	25.1	O K
600 Winter	19.8	19.8	3.6222	0.2222	14.2	O K
720 Winter	18.3	18.3	3.5018	0.1018	6.5	O K
960 Winter	15.6	15.6	3.4443	0.0442	2.8	O K
1440 Winter	11.2	11.2	3.4318	0.0317	2.0	O K
2160 Winter	8.2	8.2	3.4233	0.0232	1.5	O K
2880 Winter	6.4	6.4	3.4183	0.0183	1.2	O K
4320 Winter	4.7	4.7	3.4133	0.0132	0.8	O K
5760 Winter	3.8	3.8	3.4108	0.0108	0.7	O K
7200 Winter	3.1	3.1	3.4088	0.0088	0.6	O K
8640 Winter	2.7	2.7	3.4078	0.0078	0.5	O K
10080 Winter	2.4	2.4	3.4068	0.0068	0.4	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
240 Winter	13.79	152
360 Winter	10.01	216
480 Winter	7.98	278
600 Winter	6.69	336
720 Winter	5.79	390
960 Winter	4.60	480
1440 Winter	3.33	710
2160 Winter	2.40	1092
2880 Winter	1.90	1448
4320 Winter	1.37	2124
5760 Winter	1.08	2976
7200 Winter	0.90	3544
8640 Winter	0.78	4464
10080 Winter	0.69	4968



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Rainfall Details

Region	ENG+WAL	Shortest Storm (mins)	15
Return Period (years)	100	Longest Storm (mins)	10080
M5-60 (mm)	19.100	Summer Storms	Yes
Ratio-R	0.400	Winter Storms	Yes
Cv (Summer)	0.750	Climate Change %	+20
Cv (Winter)	0.840		

Time / Area Diagram

Total Area (ha) = 0.474

Time	(mins)	Area
from:	to:	(ha)
0	4	0.474

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Lined Soakaway Details

Infil Coef - Base (m/hr)	0.738000	Pit Multiplier	2.5
Infil Coef - Sides (m/hr)	0.738000	Number Required	6
Safety Factor	2.0	Invert Level (m)	3.400
Porosity	0.30	Cover Level (m)	5.200
Ring Diameter (m)	2.1		