

Soakaway Design

Job No.: 404134
Job Name: Nyton House
New extension

Area 46.5 m2
Runoff Coeff 1 m2
46.5 m2

100 year return period + 40%		Storm duration (Min.)		Storm duration (Min.)		T	N	F
R5	0.032	mm	5	5	0.08 mm	0.059333	0.1	0.029154
R10	0.040	mm	10	10	0.17 mm	0.166667	0.1	0.026664
R15	0.045	mm	15	15	0.25 mm	0.25	0.1	0.032473
R30	0.056	mm	30	30	0.50 mm	0.5	0.1	0.040022
R60	0.069	mm	60	60	1.00 mm	1	0.1	0.0492
R120	0.084	mm	120	120	2.00 mm	2	0.1	0.050356
R240	0.103	mm	240	240	4.00 mm	4	0.1	0.079917
R360	0.116	mm	360	360	6.00 mm	6	0.1	0.089168
R600	0.135	mm	600	600	10.00 mm	10	0.1	0.096432
R1440	0.174	mm	1440	1440	24.00 mm	24	0.1	0.124113

Inflow to attenuation system
I5 1.507310055 m3
I10 1.867966812 m3
I15 2.113985819 m3
I30 2.605452893 m3
I60 3.202889197 m3
I120 3.929143621 m3
I240 4.811991693 m3
I360 5.414219161 m3
I600 6.277726865 m3
I1440 8.079734856 m3

Outflow from Tank f 3.56E-04 m3/s (Min. from site test results)
Factor of safety 3.00

Soakaway dims:
Length 1.5 m
Width 1.5 m
Depth 0.8 m (below invert depth of inlet pipe)

As50 4.65 (Base only + halfsides)
Void ratio 95 %

Outflow from Tank:
O5 0.17 m3
O10 0.33 m3
O15 0.50 m3
O30 0.99 m3
O60 1.99 m3
O120 3.97 m3
O240 7.95 m3
O360 11.92 m3
O600 19.86 m3
O1440 47.68 m3

Storage required:
S5 1.34 m3 ts50 0.11 hours
S10 1.54 m3 ts50 0.13 hours
S15 1.62 m3 ts50 0.14 hours
S30 1.61 m3 ts50 0.14 hours
S60 1.22 m3 ts50 0.10 hours
S120 -0.04 m3 ts50 0.00 hours
S240 -3.13 m3 ts50 -0.26 hours
S360 -6.50 m3 ts50 -0.55 hours
S600 -13.59 m3 ts50 -1.14 hours
S1440 -39.60 m3 ts50 -3.32 hours

Storage provided 1.7 m3

Critical storm = S15
Storage required = 1.62
Time to discharge= 0.14 Hours (Should be less than 24 hours)

Soakaway size proposed is satisfactory

Location	Stratum	Trial Pit Base Depth	Infiltration Rate (m/sec)	Notes
SA101 Test 1	Silty CLAY with rare gravels	0.82	5.14x10 ⁻⁴	Three tests conducted
SA101 Test 2		0.82	4.55x10 ⁻⁴	
SA101 Test 3		0.82	3.56x10 ⁻⁴	