

Job No.: 424861
Job Name: Pevensey Road

Average soil infiltration rate
For carpark and roof design soakaway blanket

Test	Result
1	4.19E-06
2	4.19E-06
3	4.19E-06
Min	4.19E-06
FOS	3.00
Use infiltration rate	1.40E-06 Min

TABLE 25.2 Suggested factors of safety, F, for use in hydraulic design of infiltration systems (designed using Bettess (1996). Note: not relevant for BRE method)			
Size of area to be drained	Consequences of failure		
	No damage or inconvenience	Minor damage to external areas or inconvenience (eg surface water on car parking)	Damage to buildings or structures, or major inconvenience (eg flooding of roads)
< 100 m²	1.5	2	10
100–1000 m²	1.5	3	10
> 1000 m²	1.5	5	10

Soakaway Design

Job No.:						
Job Name: Pevensey Road						
Car park + driveway + roofs						
Area	599	m2				
Run off Coeff	1	m2				
	599	m2				
100 year return period + 40% CC		Storm duration (Min.)	T	N	r	
R5	0.03242	m	5	0.083333	0.1	0.023154
R10	0.04017	m	10	0.166667	0.1	0.028694
R15	0.04546	m	15	0.25	0.1	0.032473
R30	0.05603	m	30	0.5	0.1	0.040022
R60	0.06888	m	60	1	0.1	0.0492
R120	0.08450	m	120	2	0.1	0.060356
R240	0.10348	m	240	4	0.1	0.073917
R360	0.11643	m	360	6	0.1	0.083168
R600	0.13500	m	600	10	0.1	0.096432
R1440	0.17376	m	1440	24	0.1	0.124113
Inflow to attenuation system						
I5	19.417	m3				
I10	24.063	m3				
I15	27.232	m3				
I30	33.563	m3				
I60	41.259	m3				
I120	50.614	m3				
I240	61.987	m3				
I360	69.744	m3				
I600	80.868	m3				
I1440	104.081	m3				
Outflow from Tank						
f	1.40E-06	m3/s	(From site investigation)			
Soakaway dims:						
Plan area	280	m	(Area of driveway to be used as storage blanket)			
	1	m				
Depth	0.4	m	(below invert depth of inlet pipe)			
As50	280	(Base area only)				
Void ratio	95	%	(Permavoid or simiar system)			
Outflow from Tank:						
O5	0.12	m3				
O10	0.23	m3				
O15	0.35	m3				
O30	0.70	m3				
O60	1.41	m3				
O120	2.82	m3				
O240	5.63	m3				
O360	8.45	m3				
O600	14.08	m3				
O1440	33.79	m3	0.000391	m3/s	0.391067	L/s
Storage required:		Time to drain:				
S5	19.30	m3	ts50	6.85	hours	
S10	23.83	m3	ts50	8.46	hours	
S15	26.88	m3	ts50	9.55	hours	
S30	32.86	m3	ts50	11.67	hours	
S60	39.85	m3	ts50	14.15	hours	
S120	47.80	m3	ts50	16.98	hours	
S240	56.36	m3	ts50	20.01	hours	
S360	61.30	m3	ts50	21.77	hours	
S600	66.79	m3	ts50	23.72	hours	
S1440	70.29	m3	ts50	24.96	hours	
Storage provided	106.4	m3	Additional flood water storage mitigation volume			
			35.0	m3		
Critical storm =	S1440					
Storage required =	105.29	Overflow required to culvert		0.391	L/s	
Time to discharge=	24.96	Hours (Should be less than 24 hours)				

Attenuation tank size proposed is satisfactory