



HORIZONTAL SOAKAWAY CALCULATIONS CIRIA C753 - EQ 25.4 - using FEH 22 rainfall data

PROJECT TITLE:	Sussex Business Centre Site Barnham		JOB No:	1859
SOAKAWAY NO.:	1	LOCATION:	Soakways 1-3 - Front	DATE: Aug-24

1. FEH Rainfall data		2. Design Inflow		3. Test rate calculations			4. Design Outflow results		
Event:	100 year	Roof (m ²):	43	Test pit L:	1.00	Tot vol.:	0.5000	Q ₅₀ (sq.m):	1.00
CC %	1.45	Driveway (m ²):	0	Test pit W:	1.00	Q _{p50} :	2.000	Inflow (cu.m):	0.00
Index:	10	Paths/patios (m ²):	0	Test pit D:	1.00	V _{p75-25} :	0.25000	Outflow(cu.m):	1.00
		Car parking (m ²):	0	Free vol (%):	100	t _{p75-25} :	107	Storage(cu.m):	-2.00
		Total Area (sq.m):	43			Effective depth:	0.500		
						Infiltration rate (f) (m/s):	1.947E-05		

5. Infiltration system data				6. Infiltration coefficient (q) (m/h)		7. FOS
Length (m):	4.000	Width (m):	2.000	q value (m/h):	0.046729	
Eff depth:	0.500	Inlet IL:	48.800	Base IL:	48.300	
Free vol (%):	100			Rate (q) provided by SI:	0.000000	1.5
				Calculated Soil Rate (f):	0.070093	

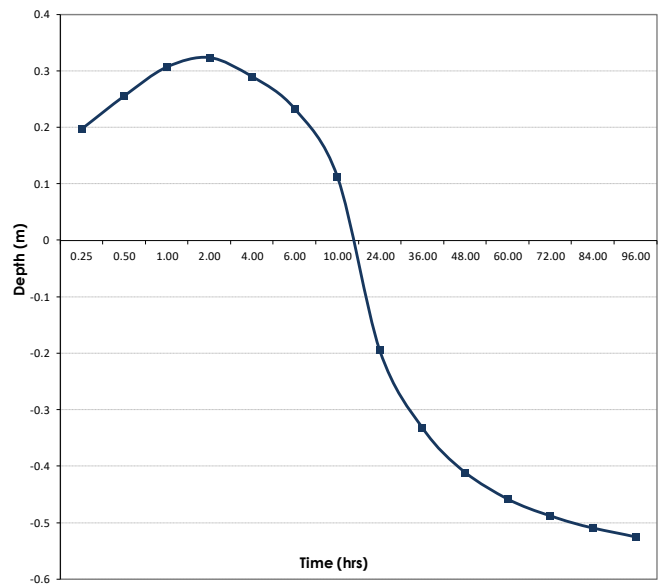
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
4.00	2.00	0.50	8.00	43.00	12.00	5.38	1.00

Soakaway calculations are based on BRE 365 infiltration results and the calculated method shown in CIRIA document C697 & C753 and uses FEH 22 rainfall data. The rainfall depths are factored by the climate change growth factor chases. The porosity rate is further factored for safety to suit risk from long term silting. Always refer to the project construction detail sheets 200 or 201 for the soakaway or permeable pavement make-up and the main general arrangement (GA) showing the size, levels and position of the soakaway.

Calculations used are derived from CIRIA document C753 - SUDS manual Eq 25.4

D (Hrs)	mm	i (m/h)	a	b	h _{max}
0.25	27.05	0.1569	-11.36	0.070093	0.1974
0.50	36.37	0.1055	-7.42	0.070093	0.2556
1.00	46.78	0.0678	-4.53	0.070093	0.3070
2.00	56.52	0.0410	-2.48	0.070093	0.3238
4.00	66.65	0.0242	-1.19	0.070093	0.2900
6.00	72.56	0.0175	-0.68	0.070093	0.2328
10.00	80.05	0.0116	-0.22	0.070093	0.1126
24.00	92.26	0.0056	0.24	0.070093	-0.1947
36.00	98.80	0.0040	0.36	0.070093	-0.3325
48.00	104.26	0.0031	0.43	0.070093	-0.4104
60.00	109.20	0.0026	0.46	0.070093	-0.4574
72.00	113.80	0.0023	0.49	0.070093	-0.4878
84.00	118.16	0.0020	0.51	0.070093	-0.5088
96.00	122.36	0.0018	0.52	0.070093	-0.5243

MAX HEIGHT (H_{max}): 0.3238



Time to empty	
H _{max} :	0.3238
R:	5.38
Time to empty (hrs):	6
Recalculated q (m/h):	q OK
Equivalent f rate:	#VALUE!
EMPTY TIME IS SATISFACTORY	