



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:	Plots 1-3 - Rear Rain gardens gardens	DATE: Aug-24

1. FEH Rainfall data		2. Design Inflow		3. Test rate calculations			4. Design Outflow results	
Event:	100 year	Roof (m ²):	22	Test pit L:	1.00	Tot vol.:	a ₅₀ (sq.m):	1.00
CC %:	1.45	Driveway (m ²):	0	Test pit W:	1.00	Q _{p50} :	Inflow (cu.m):	0.00
Index:	10	Paths/patios (m ²):	0	Test pit D:	1.00	V _{p75-25} :	Outflow (cu.m):	1.00
		Car parking (m ²):	0	Free vol (%):	100	I _{p75-25} :	Storage (cu.m):	0.00
		Total Area (sq.m):	22			Effective depth:		
						Infiltration rate (f) (m/s):		

5. Infiltration system data				6. Infiltration coefficient (q) (m/h)		7. FOS
Length (m):	3.000	Width (m):	2.500	q value (m/h):	0.046723	Rate (q) provided by SI:
Eff depth:	0.500	Inlet IL:	48.600	Base IL:	48.200	Calculated Soil Rate (f):
Free vol (%):	100					

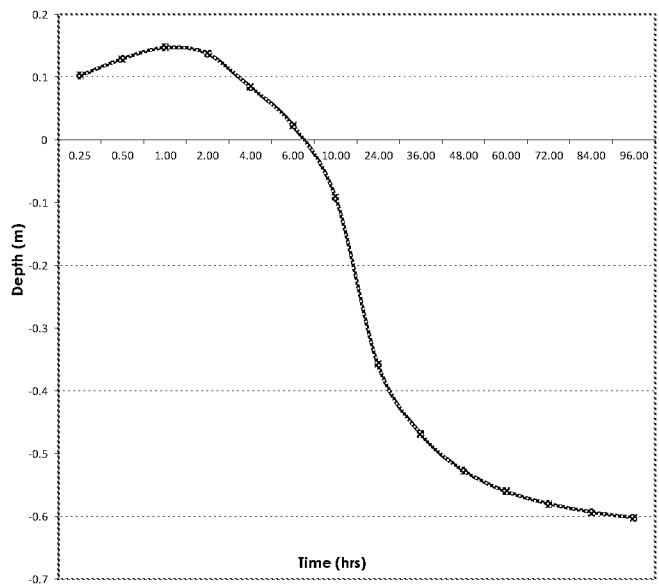
Summary of designer's sizes for chosen D min duration for 100 year storm

L	W	d	Ab	Ad	P	R	n
3.00	2.50	0.50	7.50	22.00	11.00	2.93	1.00

Soakaway calculations are based on BS 8463 infiltration results and the calculated method shown in CIRIA document C697 & C753 and use FEH 22 rainfall data. The rainfall results are modified by the climate change growth factor chosen. The rainfall rate is further reduced for water to soil ratio, non-paved areas, etc. Always refer to the project construction details sheet at 201 for the soakaway or permeable pavement make-up and the main general arrangement (G/A) showing the design levels and position of the soakaway.

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

D (Hrs)	mm	f (m/h)	a	b	h _{max}
0.25	27.05	0.1569	-4.03	0.046723	0.1025
0.50	34.37	0.1055	-3.83	0.046723	0.1297
1.00	44.78	0.0678	-3.23	0.046723	0.1477
2.00	56.52	0.0410	-1.57	0.046723	0.1373
4.00	66.45	0.0242	-0.30	0.046723	0.0845
6.00	72.56	0.0175	-0.07	0.046723	0.0632
10.00	80.05	0.0116	0.19	0.046723	-0.0918
24.00	92.26	0.0056	0.44	0.046723	-0.3277
36.00	98.80	0.0040	0.51	0.046723	-0.4281
48.00	104.26	0.0031	0.58	0.046723	-0.5264
60.00	109.20	0.0026	0.57	0.046723	-0.6094
72.00	113.80	0.0023	0.50	0.046723	-0.6750
84.00	118.16	0.0020	0.37	0.046723	-0.8926
96.00	122.34	0.0018	0.20	0.046723	-0.9019

MAX HEIGHT (H_{max}): 0.1477

Time to empty

H_{max}: 0.1477
R: 2.93

Time to empty (hrs): 5

Recalculated q (m/h): 0.0467

Equivalent f rate: 0.0467

EMPTY TIME IS SATISFACTORY