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

PROJECT TITLE:	Overmead Road Shoreham By Sea		JOB No:	26002
SOAKAWAY NO.:	DB1 & 2	LOCATION:	Front and rear Garden - Drainage blankets	DATE: Mar-26

1. FEH Rainfall data	2. Design Inflow	3. Test rate calculations	4. Design Outflow results
Event: 100 year	Roof (m ²): 25	Test pit L: 1.25	a ₅₀ (sq.m): 1.65
CC %: 1.45	Driveway (m ²): 0	Test pit W: 0.40	Inflow (cu.m): 0.00
Index: 10	Paths/patios (m ²): 0	Test pit D: 1.00	Outflow (cu.m): 0.40
Urban Creep (%): 10	Total Area (sq.m): 28	Free vol (%): 100	Storage (cu.m): -0.80
		Effective depth: 1.000	
		Infiltration rate (f) (m/s): 4.659E-05	

5. Infiltration system data	6. Infiltration coefficient (q) (m/h)	7. FOS
Length (m): 5.000	Rate (q) provided by SI: 1.5	
Width (m): 2.00	Calculated Soil Rate (f): 0.167710	
stimated depth (d): 0.500		
Free vol (%): 30		
Inlet IL: 5.400		
diam inlet: 0.100		
q value (m/h): 0.112		
Calculated base: 5.274		
Top of blanket: 5.535		

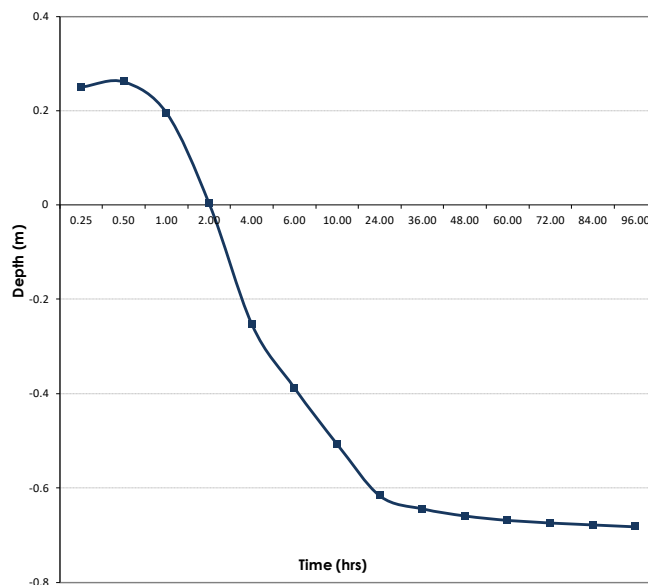
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
5.00	2.00	0.500	10.00	27.50	14.00	2.75	0.30

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 chosen. The porosity rate is further factored for safety to suit risk from long term silt. 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	-2.04	0.521765	0.2497
0.50	36.37	0.1055	-1.14	0.521765	0.2615
1.00	46.78	0.0678	-0.48	0.521765	0.1941
2.00	56.52	0.0410	-0.01	0.521765	0.0036
4.00	66.65	0.0242	0.29	0.521765	-0.2539
6.00	72.56	0.0175	0.41	0.521765	-0.3885
10.00	80.05	0.0116	0.51	0.521765	-0.5076
24.00	92.26	0.0056	0.62	0.521765	-0.6164
36.00	98.80	0.0040	0.64	0.521765	-0.6444
48.00	104.26	0.0031	0.66	0.521765	-0.6590
60.00	109.20	0.0026	0.67	0.521765	-0.6679
72.00	113.80	0.0023	0.67	0.521765	-0.6740
84.00	118.16	0.0020	0.68	0.521765	-0.6785
96.00	122.36	0.0018	0.68	0.521765	-0.6818

MAX HEIGHT (H_{max}): 0.2615



Time to empty	
H _{max} :	0.2615
R:	2.75
Time to empty (hrs):	1
Recalculated q (m/h):	q OK
Equivalent f rate:	#VALUE!
EMPTY TIME IS SATISFACTORY	