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

PROJECT TITLE:	Gardeners Arms Ardingly		JOB No:	25049
Permeable Area:	1	LOCATION:	Permeable Area 3	DATE: Apr-26

1. FEH Rainfall data	2. Design Inflow	3. Test rate calculations	4. Design Outflow results
Event: 100 year	Roof (m ²): 0	Test pit L: 2.00	q ₅₀ (sq.m): 3.00
CC %: 1.45	Driveway (m ²): 0	Test pit W: 1.00	Inflow (cu.m): 531.00
Index: 10	roads/bays (m ²): 531	Test pit D: 1.00	Outflow (cu.m): 1.00
Urban Creep (%): 0	Total Area (sq.m): 531	Free vol (%): 100	Storage (cu.m): 1060.00
		Effective depth: 1.000	
		Infiltration rate (f) (m/s): 4.700E-06	

5. Infiltration system data	6. Infiltration coefficient (q) (m/h)	7. FOS
Length (m): 45.300	Rate (q) provided by SI: 5	
Width (m): 4.80	Calculated Soil Rate (f): 0.016920	
stimulated depth (d): 0.000		
Free vol (%): 30		
Inlet IL: 0.000		
diam inlet: 0.100		
q value (m/h): 0.003		
Calculated base: -0.676		
Top of s/away: 0.135		

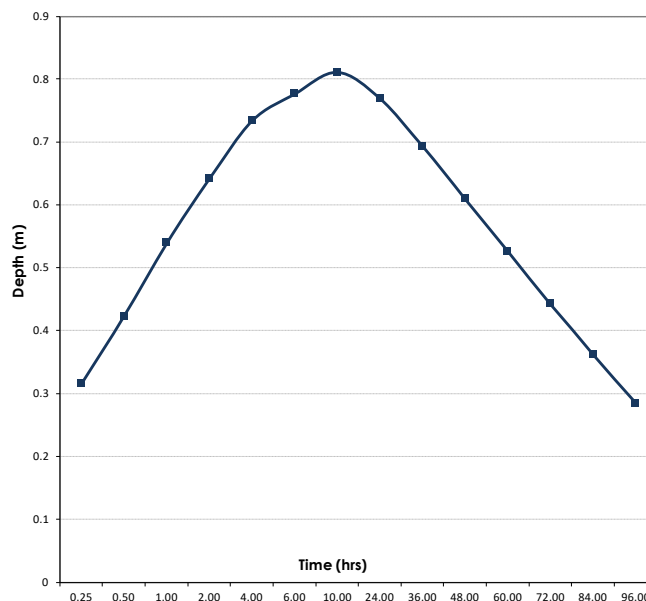
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
45.30	4.80	0.000	217.44	531.00	100.20	2.44	0.30

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 chases. The porosity rate is further factored for safety to suit risk from long term siting. 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	-243.52	0.005198	0.3163
0.50	36.37	0.1055	-163.00	0.005198	0.4231
1.00	46.78	0.0678	-104.05	0.005198	0.5395
2.00	56.52	0.0410	-62.00	0.005198	0.6412
4.00	66.65	0.0242	-35.66	0.005198	0.7339
6.00	72.56	0.0175	-25.29	0.005198	0.7766
10.00	80.05	0.0116	-16.01	0.005198	0.8108
24.00	92.26	0.0056	-6.56	0.005198	0.7693
36.00	98.80	0.0040	-4.06	0.005198	0.6932
48.00	104.26	0.0031	-2.76	0.005198	0.6099
60.00	109.20	0.0026	-1.96	0.005198	0.5258
72.00	113.80	0.0023	-1.42	0.005198	0.4430
84.00	118.16	0.0020	-1.02	0.005198	0.3623
96.00	122.36	0.0018	-0.72	0.005198	0.2845

MAX HEIGHT (H_{max}): 0.8108



Time to empty

H _{max} :	0.8108	Time to empty (hrs):	1154
R:	2.44		
		Recalculated q (m/h):	0.00396531
		Equivalent f rate:	0.00000110

EMPTY TIME IS GREATER THAN 24 HOURS
SEE REQUIRED q ABOVE