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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 1	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): 315.00
Index: 10	Roads/bays (m ²): 315	Test pit D: 1.00	Outflow (cu.m): 1.00
Urban Creep (%): 0	Total Area (sq.m): 315	Free vol (%): 100	Storage (cu.m): 628.00
		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): 27.500	Width (m): 4.80	q value (m/h): 0.003
stimated depth (d): 0.000	Inlet IL: 0.000	Calculated base: -0.654
Free vol (%): 30	diam inlet: 0.100	Top of s/away: 0.135
		Rate (q) provided by SI: 5
		Calculated Soil Rate (f): 0.016920

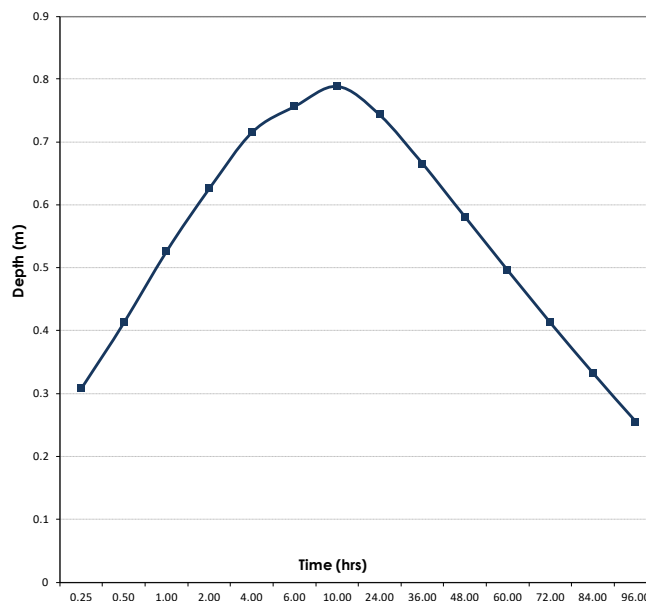
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
27.50	4.80	0.000	132.00	315.00	64.60	2.39	0.30

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	-224.02	0.005521	0.3090
0.50	36.37	0.1055	-149.93	0.005521	0.4133
1.00	46.78	0.0678	-95.69	0.005521	0.5268
2.00	56.52	0.0410	-57.00	0.005521	0.6259
4.00	66.65	0.0242	-32.77	0.005521	0.7157
6.00	72.56	0.0175	-23.22	0.005521	0.7566
10.00	80.05	0.0116	-14.68	0.005521	0.7885
24.00	92.26	0.0056	-5.99	0.005521	0.7431
36.00	98.80	0.0040	-3.69	0.005521	0.6652
48.00	104.26	0.0031	-2.49	0.005521	0.5807
60.00	109.20	0.0026	-1.76	0.005521	0.4960
72.00	113.80	0.0023	-1.26	0.005521	0.4129
84.00	118.16	0.0020	-0.90	0.005521	0.3323
96.00	122.36	0.0018	-0.62	0.005521	0.2549

MAX HEIGHT (H_{max}): 0.7885



Time to empty

H _{max} :	0.7885	Time to empty (hrs):	735
R:	2.39		
		Recalculated q (m/h):	0.00382927
		Equivalent f rate:	0.00000106

EMPTY TIME IS GREATER THAN 24 HOURS
SEE REQUIRED q ABOVE