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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
SOAKAWAY NO.:	SA1	LOCATION:	Car park	DATE: Apr-26

1. FEH Rainfall data	2. Design Inflow	3. Test rate calculations	4. Design Outflow results
Event: 100 year	Roof (m ²): 262	Test pit L: 2.00	a ₅₀ (sq.m): 3.00
CC %: 1.45	Driveway (m ²): 0	Test pit W: 1.00	Inflow (cu.m): 0.00
Index: 10	Paths/patios (m ²): 0	Test pit D: 1.00	Outflow (cu.m): 1.00
Urban Creep (%): 10	Total Area (sq.m): 288	Free vol (%): 100	Storage (cu.m): -2.00
		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): 24.000	Width (m): 8.00	q value (m/h): 0.003
estimated depth (d): 0.500	Inlet IL: 9.355	Calculated base: 9.345
Free vol (%): 96	diam inlet: 0.100	Top of s/away: 9.490
		Rate (q) provided by SI: 5
		Calculated Soil Rate (f): 0.016920

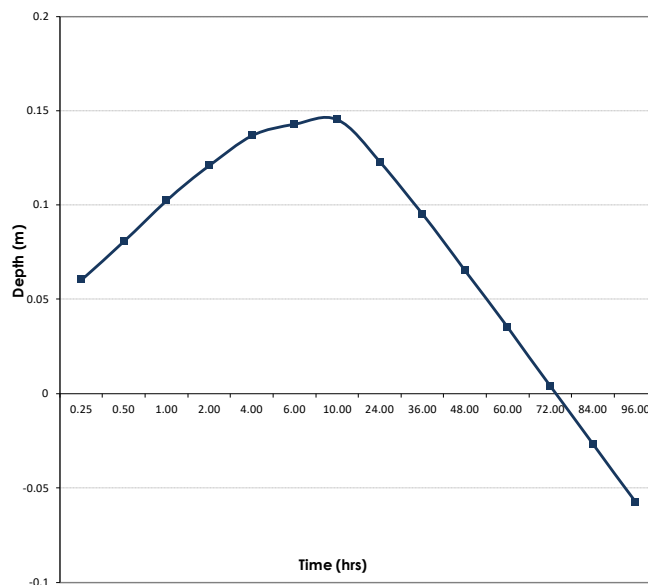
Summary of designer's sizes for chosen D min duration for 100 year storm							
L	W	d	Ab	Ad	P	R	n
24.00	8.00	0.500	192.00	288.20	64.00	1.50	0.96

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 siltting. 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	-205.77	0.001175	0.0604
0.50	36.37	0.1055	-137.35	0.001175	0.0807
1.00	46.78	0.0678	-87.26	0.001175	0.1025
2.00	56.52	0.0410	-51.53	0.001175	0.1209
4.00	66.65	0.0242	-29.15	0.001175	0.1367
6.00	72.56	0.0175	-20.33	0.001175	0.1429
10.00	80.05	0.0116	-12.45	0.001175	0.1454
24.00	92.26	0.0056	-4.42	0.001175	0.1228
36.00	98.80	0.0040	-2.30	0.001175	0.0951
48.00	104.26	0.0031	-1.19	0.001175	0.0653
60.00	109.20	0.0026	-0.51	0.001175	0.0348
72.00	113.80	0.0023	-0.05	0.001175	0.0040
84.00	118.16	0.0020	0.29	0.001175	-0.0269
96.00	122.36	0.0018	0.54	0.001175	-0.0577

MAX HEIGHT (H_{max}): 0.1454



Time to empty	
H _{max} :	0.1454
R:	1.50
Time to empty (hrs):	848
Recalculated q (m/h):	0.00280580
Equivalent f rate:	0.00000078
EMPTY TIME IS GREATER THAN 24 HOURS SEE REQUIRED q ABOVE	