CALCULATION OF WASTEWATER FLOWS FROM A TREATMENT PLANT TO A SOAKAWAY

PROJECT

LAND WEST OF BUNGALOW HALTON CHIRK

26 September 2022

TITLE

Calculation of Wastwater Flows from 8 Properties

DETAILS	Number of Properties	Washbasin	Shower	Urinal	Bath	Kitchen Sink	Dishwasher	Household Washing Machine	Commercial Washing Machine	WCs	Floor Drains
Communal Building	1	3	2		1	2	2		2	3	
Existing Static Caravan	1	2	2			1	1	1		2	
Lodge	6	12	6		6	6	6	6		12	
TOTAL	8	17	10		7	9	9	7	2	17	

DETERMINATION OF FOUL DRAINAGE FLOW RATES

FROM: BS EN 752-4:1998 Annex C Table Nos. C.1 & C.2

NOTE - The discharge unit will depend on the type of drainage system inside the building and the size of the appliance. Where no specific information is available, the higher value should be used.

Appliances	Typical Values of Discharge Units k_{DU}	Discharge Unit Value *DU*	Number of Appliances	Discharge Units per Appliance
Washbasin	0.3 to 0.6	0.6	17	**10.2**
Shower	0.3 to 0.6	0.6	10	**6.0**
Urinal	0.3 to 0.8	0.8		
Bath	0.8 to 1.3	1.3	7	**9.1**
Kitchen Sink	0.8 to 1.3	1.3	9	**11.7**
Dishwasher	0.2 to 0.8	0.8	9	**7.2**
Household Washing Machine	0.5 to 0.8	0.8	7	**5.6**
Commercial Washing Machine	1.0 to 1.5	1.5	2	**3.0**
WCs (4.0 l to 9.0 l cistern)	1.2 to 2.5	2.5	17	**42.5**
Floor Drains (DN 50 to DN 100)	0.6 to 2.0	2		
			Total number of discharge units	**95.3**

FREQUENCY FACTORS

TYPE OF BUILDING	k_{DU}
Dwelling, Guesthouse, Office (intermittent use)	0.5

	k_{DU}		
Dwelling, Guesthouse, Office (intermittent use)	**0.5**	**TOTAL PEAK FLOW =**	**4.9** **l/s**

From Daily Discharge Calculator for Domestic Properties (GOV.UK/Environment Agency)

Mobile home type caravans	**150**	Per person/activity/day			As a check assume maximum water usage occurs twice a day, morning & evening over one interval of	30.0	mins
Number of Persons	**32**						
Cubic Metres a Day	**4.8**	or	**4800**	Litres/Day	4800	Litres/Day	
					1.33	l/s	
Peak Flow	**4.88**	Litres/Second					
Assumed Average % Peak Flow Discharge	**27%**	=	**1.32**	Litres/Second	113.87	m^3/day	
					113866.0	litres/day	

DISCHARGE TO SOAKAWAY = 1.32 Litres/Second

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