

Application Number: APP/20/01127

Site Address: Mill Rythe Holiday Village, 16 Havant Road, Hayling Island, PO11 0PB

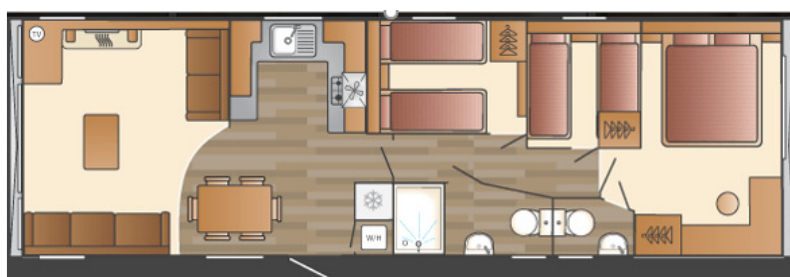
Calculation by: Ben Billington CEng, MCIBSE

Introduction

The following document is provided to support the discharge of planning condition reference 16, as associated with planning application reference APP/20/01127.

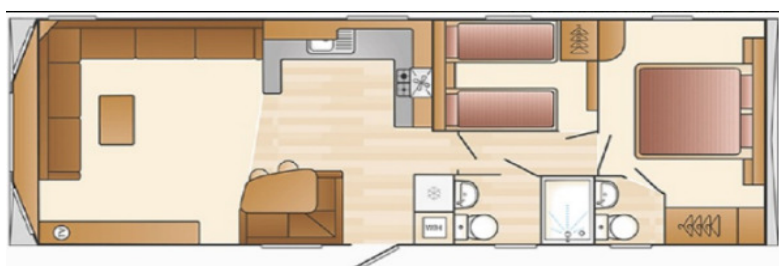
The objective of this document is to prove that the proposed holiday homes, to be installed upon the site, will consume no more than 110 litres of water per person, per day, via use of the Government's National Calculation Methodology for assessing water efficiency.

The Mill Rythe Holiday village scheme will consist of the installation of 112 new caravan units upon its proposed site in Hayling Island. We understand that 52 caravans will be two-bedroom models and 60 caravans three bedroom, with an internal layout and sanitaryware provision as detailed below:



Typical 3 Bedroom Caravan Layout (Assumed Sleep 5 persons)

Sanitaryware Provision: Kitchen Sink, Slimline Dishwasher, 1No. Shower, 2No. Basins, 2No. WCs.



Typical 2 Bedroom Caravan Layout (Assumed Sleep 4 persons)

Sanitaryware Provision: Kitchen Sink, Slimline Dishwasher, 1No. Shower, 2No. Basins, 2No. WCs.

Sanitaryware Consumption Assumptions

For the purposes of the water calculation, it has been necessary for our team to apply a water consumption figure for each sanitary appliance. These consumption figures have been issued to the Architect and will be used as part of the final caravan specification to inform water efficiency performance. The values assumed are detailed below. Please note that we have assumed that both the 2 & 3 bedroom caravans will have the same sanitaryware provision, thus only a single calculation is provided:

Sanitary Appliance	Maximum Consumption	Quantity
Kitchen Sink	6 Litre /min	1No.
Slimline Dishwasher	0.9 Litre / Place Setting	1No.
Shower	5.1 Litre/min	1No.
Basin	5 Litre/min	2No.
Washing Machine	8.17 Litres/kg dry load	N/A
Dual Flush WC	3/6 Lite Dual Flush	2No.

Appendix A – Calculation Sheets

The following calculation has been developed using the method set out in the “Water Efficiency Calculator for New Dwellings”.

The calculation details all consumption allowances used in the assessment, the quantity of appliances assumed, the methodology and the final compliant consumption allowance.

The calculation lists the sanitaryware supplier and model used for each appliance within the calculation.

As detailed, the proposed dwellings calculated water consumption is 80.4 Litres/person/day and thus **achieves compliance** with the 110 litre/person/day planning target value.

Installation Type	Units	Capacity/Flow (1)	Use Factor (2)	Fixed Use (3) Litres/person/day	Litres/person/day [(1)x(2)] + 3 (4)
WC (Single Flush)	Litres	-	4.42	0.00	0.00
WC (Dual Flush)	Full Flush (Litres)	6	1.46	0.00	8.76
	Part Flush (Litres)	3	2.96	0.00	8.88
WC (Multiple Fit)	Average Effective Flush (Litres)	-	4.42	0.00	0.00
Taps (Exc. Kitchen/utility room taps)	Flow (l/min)	5	1.58	1.58	9.48
Bath (Where shower also present)	Capacity to overflow (Litres)	-	0.11	0.00	0.00
Shower (Where bath also present)	Flow (l/min)	5.1	4.37	0.00	22.29
Bath only	Capacity to overflow (Litres)	-	0.5	0.00	0.00
Shower only	Flow (l/min)	-	5.6	0.00	0.00
Kitchen Utility room Sink taps	Flow (l/min)	6	0.44	10.36	13.00
Washing Machine	Litres/kg dry load	8.17	2.1	0.00	17.157
Dishwasher	Litres/place setting	0.9	3.6	0.00	3.24
Waste Disposal Unit	Litre/use	-	3.08	0.00	0.00
Water Softener	Litre/Person/Day	-	1.00	0.00	0.00
	(5)	Total calculated use Litres/Person/Day = SUM column (4)			82.81
	(6)	Contribution from grey water (Litres/person/day)			0.00
	(7)	Contribution from rainwater (Litres/person/day)			0.00
	(8)	Normalisation factor			0.91
	(9)	Total Internal water consumption [(5) – (6) – (7)] x (8) (Litres/person/day)			75.35
	(10)	External Water Use			5.00
	(11)	Total water consumption (Building Regulation 17.K) [(9) + (10)] = (Litres/person/day)			80.4

Sanitaryware Equipment List

Installation Type	Make/Model (mandatory)	Litres/Person/Day
WC (dual flush)	Aspire June Comfort Height Rimless Toilet	20.6
Taps	Hansgrohe Focus Single Lever Basin Mixer 70	9.48
Showers (bath(s) present)	Bristan BL395 W 9.5KW electric shower	43.70
Kitchen Taps	Bristan - Renaissance High Neck Pillar Taps	13.00
Washing Machines	None Installed	NaN
Dishwasher	KENWOOD KDW45W20 Slimline Dishwasher	5.40