Consulting Civil Engineers

Existing Fittings Survey

Land at Garden Cottage, Cowfold

For

DMA Building Designs

Rev – **P-**

Reference **C2825**

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P-	27.09.23	Initial Issue	LT	CS

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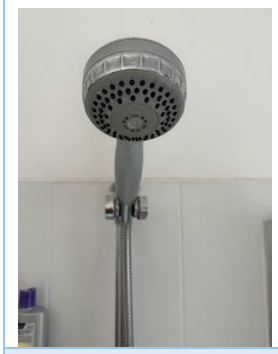
1 Introduction

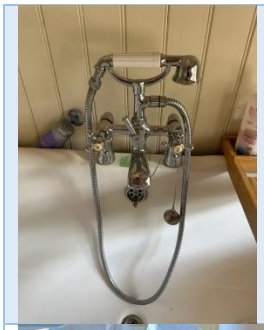
1.1.1 CGS Civils Ltd has been appointed by DMA Building Designs to undertake an Existing Fittings Survey in support of a Water Neutrality Report (C2825 Water Neutrality Report) for the Land at Garden Cottage, Picts Lane, Cowfold. Planning permission is sought to extend and raise the roof of an existing detached outbuilding to form a garage/annexe.

1.1.2 The purpose of this report is to provide an overview on the existing fittings and their water usages within the main house at the Land at Garden Cottage as well also show the proposed water usage changes on the site as a result of the recommendations made within the Water Neutrality report.

1.1.3 The water usage calculations within this report have been made using the Water Calculator from Building Regulations G as per the accompanied Water Neutrality Report.

2 Existing dwelling

Fittings	Type of Fitting	Existing Water usage (l/p/day)
 	Taps (excluding kitchen)	11.06 Reduced to 5.53
	Shower (bath also present)	43.70 Reduced to 30.59
 	Kitchen sink taps	13.88 Reduced to 12.56
	Toilets	9.34 – Full Flush Reduced to 5.84 13.32 – Part Flush Reduced to 7.70

	Baths	20.35
	Washing Machine	17.16
	Dishwasher	4.50
	Total (l/p/day) with normalisation factor and 5l/p/day added for outdoor use (refer to appendix A):	126.31
	Total (l/p/day) with normalisation factor and 5l/p/day added for outdoor use (refer to appendix B), with the installation of water efficicient taps and showers:	99.86
	Difference in water demand (l/day):	26.45
	Total reduction in water demand based on a population value of 4:	105.80

3 Conclusion

3.1.1 The water demand for the existing dwelling prior to any mitigation techniques is **0 l/day**. The proposed site has an anticipated water demand of **81.39 l/p/d**. The water demand from the main house can be reduced by **105.80 l/day**, offsetting the entire demand of the proposed annexe, resulting in a total reduction of **24.41 l/day** within the region.

4 Appendices

4.1 Appendix A:

Table 1 – Water Calculator from Building Regulations Part G – Information input from existing properties prior to any mitigation.

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	0	4.42	0	0
WC (Dual Flush)	Full Flush Vol.	6.4	1.46	0	9.34
	Part Flush vol.	4.5	2.96	0	13.32
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	6	1.58	1.58	11.06
Bath (shower also present)	Capacity to overflow (l)	185	0.11	0	20.35
Shower (bath also present)	Flow rate (l/min)	10	4.37	0	43.70
Bath only	Capacity to overflow (l)		0.5	0	0
Shower only	Flow rate (l/min)		5.6	0	0
Kitchen sink taps	Flow rate (l/min)	8	0.44	10.36	13.88
Washing Machine	Litres/kg dry load	8.17	2.1	0	17.16
Dishwasher	litres/place setting	1.25	3.6	0	4.50
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
		Total Calculated use (l/p/d)			133.31
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			0
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			126.31

4.2 Appendix B:

Table 2 – Water Calculator from Building Regulations Part G – Information input from existing property with water efficient devices

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	0	4.42	0	0
WC (Dual Flush)	Full Flush Vol.	4	1.46	0	5.84
	Part Flush vol.	2.6	2.96	0	7.70
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2.5	1.58	1.58	5.53
Bath (shower also present)	Capacity to overflow (l)	185	0.11	0	20.35
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.60
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)		5.6	0	0
Kitchen sink taps	Flow rate (l/min)	5	0.44	10.36	12.56
Washing Machine	Litres/kg dry load	8.17	2.1	0	17.16
Dishwasher	litres/place setting	1.25	3.6	0	4.50
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
		Total Calculated use (l/p/d)			104.24
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			0
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			99.86