Consulting Civil Engineers

Existing/Installed Fittings Survey

Marlpost Meadows, Bonfire Hill, Marlpost, Southwater RH13 9BU

For

Mr & Mrs M Ellis

Rev – **P1**

Reference **C2041**

Date **22nd July 2024**

Revision	Date of Issue	Comments	Prepared By	Checked By
P	20.06.2024	Initial Issue	LH	CS
P1	22.07.2024	Revised	LH	CS

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1 Introduction

1.1.1 CGS Civils Ltd has been appointed by Mr & Mrs M Ellis to undertake an Installed Fittings report for a proposed development Marlpost Meadows, Bonfire Hill in Marpost, Southwater which proves that the client has followed the required measures that were listed within the Water Efficiency Measures report which was carried out by CGS Civils Ltd – Ref: **C2041 Water Efficiency Measures**

1.1.2 The water neutrality report – Ref: **C2041 Water Neutrality Report** – has stated that the water demand from the proposed 3-bedroom dwelling will be **182.4 l/day.** The water neutrality report also states that 2 No. existing dwellings are to have their fittings changed in order to offset the demand from the proposed dwelling.

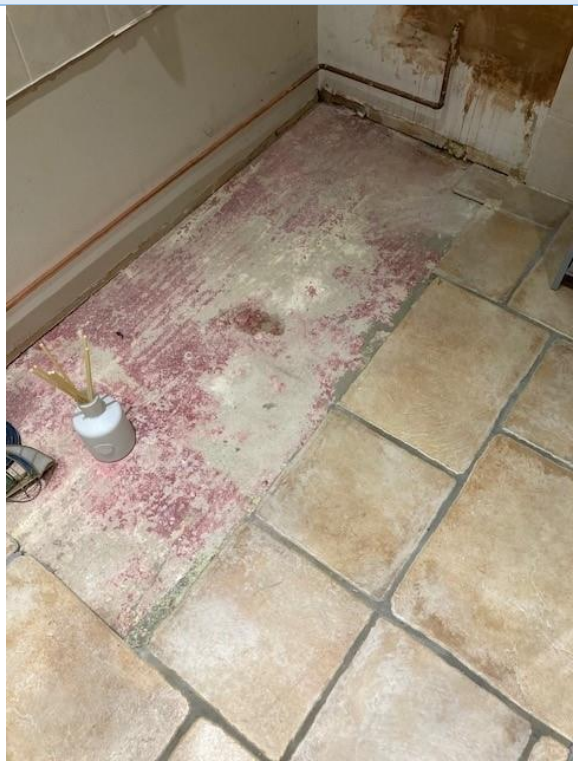
2 Installed Fittings for main house

Fitting Type	Water Reduction Measure:	Does installed measure match required water demand?	Proof of purchase
Toilet	Fitted reduced flush fitting to cistern reducing flush volume	Required Water Demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush) Installed measures water demand: 8.76 + 12.432 = 21.19 l/p/day (dual Flush)	
Basin Taps	Fitted 2l/min tap limiter	Required Water Demand: 5.53 l/p/day Installed Measures Water Demand: 4.74 l/p/day	

Showers	Fitted 7 litres per minute limiter	Required Water Demand: 39.20 l/p/day Installed Water Demand: 30.59 l/p/day	
Kitchen Taps	Not changed	13.88 l/p/day	
Washing Machine	Not changed	17.2 l/p/day	
Dishwasher	Not changed	4.5 l/p/day	
Water demand prior to changes: (Appendix A)			121.09 l/p/day
			X 2 = 242.18
Total Water Demand post changes: (Appendix C)			88.191 l/p/day.
			x 2 = 176.38 l/day
Net change in water demand			-65.8 l/day

3 Installed Fittings in existing 1-bed annexe

Fitting Type	Water Reduction Measure:	Does installed measure match required water demand?	Proof of purchase
Toilet	Fitted reduced flush fitting to cistern reducing flush volume	Required Water Demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush) Installed measures water demand: 8.76 + 12.432 = 21.19 l/p/day (dual Flush)	
Basin Taps	Fitted 2l/min tap limiter	Required Water Demand: 5.53 l/p/day Installed Measures Water Demand: 4.74 l/p/day	

Showers	Fitted 7 litres per minute limiter –	Required Water Demand: 39.2 l/p/day Installed Water Demand: 39.2 l/p/day	
Bath	REMOVED	REMOVED	

Kitchen Taps	Fitted 4 litres per minute	Required Water Demand: 12.56 l/p/day Installed Water Demand: 12.12 l/p/day	
Washing Machine	8.17 l/kg dry	Water usaged removed via rainwater harvesting tank	
Dishwasher	Not changed	Not changed	
Water demand prior to changes: (Appendix B)			115.7 l/p/day
			x 2 = 231.4
Total Water Demand post changes: (Appendix D)			70.9 l/p/day.
			x 2 = 141.8 l/day
Net change in water demand			-89.6 l/day

4 Conclusion

4.1.1 Based upon the purchased and installed fittings, the main house's water demand is reduced from **417.15** to **272.5 l/day** and the annexe's water demand is reduced from **178.2 l/day** to **126.8 l/day.** This is a total saving across the site of **196.04 l/day** which is enough to offset the water demand of **182.41 l/day** from the proposed 3-bedroom dwelling.

5 Appendices:

5.1 Appendix A:

Water Calculator from Building Regulations Part G for existing fittings in 5-bedroom house

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	1.46	0	8.76
	Part Flush vol.	4.2	2.96	0	11.84
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)	180	0.11	0	19.80
Shower (bath also present)	Flow rate (l/min)	11	4.37	0	48.07
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)	0	5.6	0	0
Kitchen sink taps	Flow rate (l/min)	8	0.44	10.36	13.88
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
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)			127.58
		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)			121.09

5.2 Appendix B:

Water Calculator from Building Regulations Part G for existing fittings in 1-bedroom annexe

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	1.46	0	8.76
	Part Flush vol.	4	2.96	0	11.84
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	5	1.58	1.58	9.48
Bath (shower also present)	Capacity to overflow (l)	180	0.11	0	19.80
Shower (bath also present)	Flow rate (l/min)	10	4.37	0	43.7
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)	0	5.6	0	0
Kitchen sink taps	Flow rate (l/min)	8	0.44	10.36	13.88
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
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)			121.63
		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)			115.68

5.3 Appendix C:

Water Calculator from Building Regulations Part G for 5-bedroom house

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	1.46	0	8.76
	Part Flush vol.	4.2	2.96	0	11.84
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2	1.58	1.58	4.74
Bath (shower also present)	Capacity to overflow (l)	0	0.11	0	0
Shower (bath also present)	Flow rate (l/min)	0	4.37	0	0
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)	7	5.6	0	39.20
Kitchen sink taps	Flow rate (l/min)	4	0.44	10.36	12.12
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
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)			91.42
		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)			88.19

5.4 Appendix D:

Water Calculator from Building Regulations Part G for Existing 1-bedroom annexe

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	1.46	0	8.76
	Part Flush vol.	4.2	2.96	0	11.84
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2	1.58	1.58	4.74
Bath (shower also present)	Capacity to overflow (l)	0	0.11	0	0
Shower (bath also present)	Flow rate (l/min)	0	4.37	0	0
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)	7	5.6	0	39.2
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	17.157
Dishwasher	litres/place setting	1.25	3.6	0	4.5
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)			100.077
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			22.157
		Normalisation factor			0.91
		External water use			0
		Total water consumption (36(1)) (l/p/d)			70.9

5.5 Appendix E

Invoices from installed fittings