Consulting Civil Engineers

Existing Fittings Survey

Thistledown Cottage, West Chiltington

For

Anthony Grocott

Rev – **P-**

Reference **C3114**

Date **23rd April 2024**

Revision	Date of Issue	Comments	Prepared By	Checked By
P-	23.04.2024	Initial Issue	LT	CS

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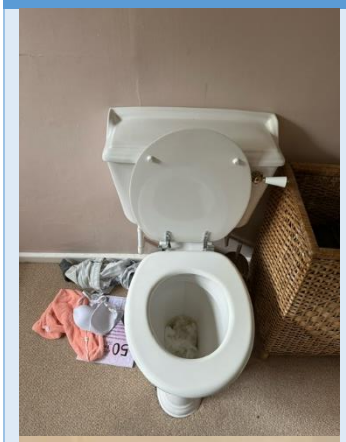
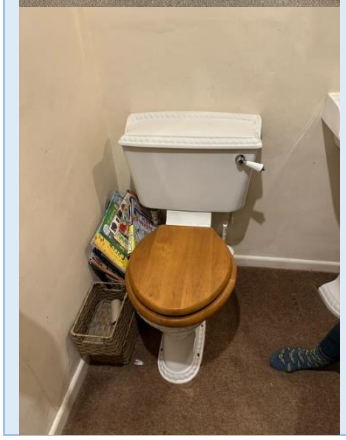
1 Introduction

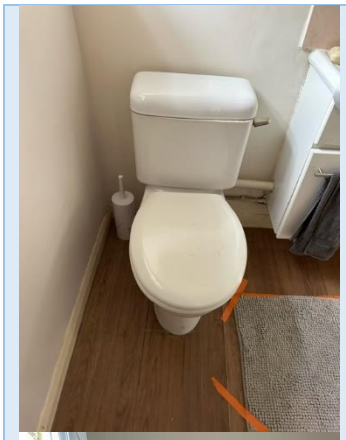
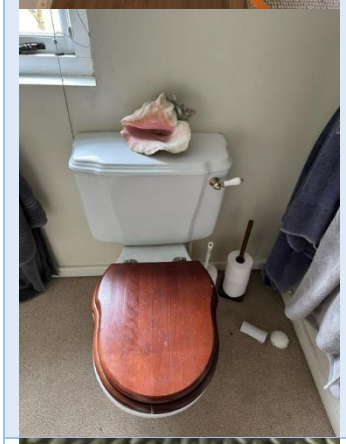
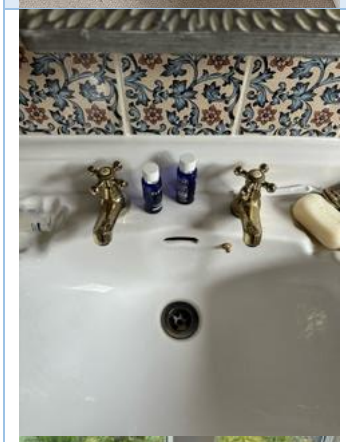
1.1.1 CGS Civils Ltd has been appointed by Anthony Grocott to undertake an Existing Fittings Survey in support of a Water Neutrality Report (C3114 Water Neutrality Report) for a proposed development at Thistledown Cottage, Harbolets Road, West Chiltington, West Sussex. Planning permission is sought for the change of use of an existing agricultural building into two 1-bedroom dwellings.

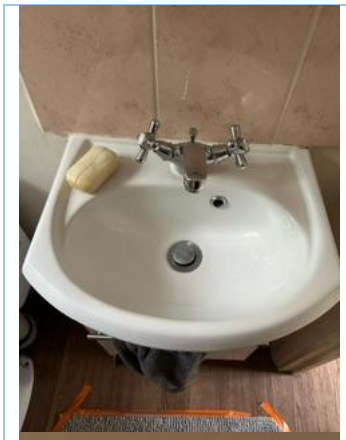
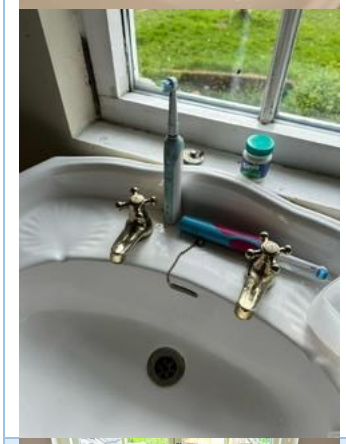
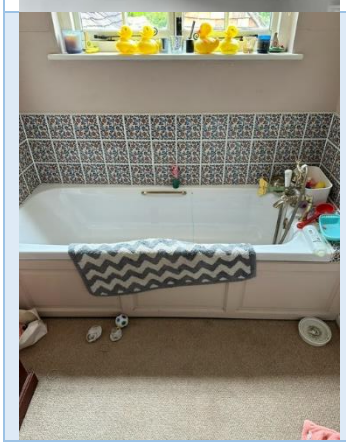
1.1.2 The purpose of this report is to provide an overview on the existing fittings and their water usages, as well to show the proposed water usage changes on the existing 5-bedroom property adjacent to the site as a result of the recommendations made within the Water Neutrality report. 3 Years of water bills have been provided in the appendix of the Water Neutrality Report. The existing house is currently used by a family of 5.

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 5-bedroom Dwelling

Fittings	Type of Fitting	Existing Water usage (l/day)
 	Toilets	Full flush – 5.84 Part flush – 7.70

 		
 	Taps (excluding kitchen)	11.06 Reduced to: 5.53

  		
	Bath (shower also present)	17.19 Reduced to: 15.95

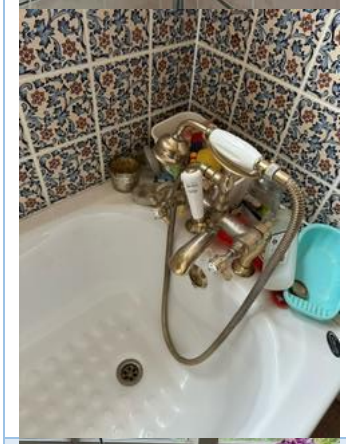
  	Shower (bath also present)	30.59
	Kitchen sink taps	13.88 Reduced to: 12.56

PHOTO UNAVAILABLE IT HAS BEEN ASSUMED THAT THE FITTINGS ARE ALREADY WATER EFFICIENT AND CANNOT BE IMPROVED	Washing machine	11.55
PHOTO UNAVAILABLE IT HAS BEEN ASSUMED THAT THE FITTINGS ARE ALREADY WATER EFFICIENT AND CANNOT BE IMPROVED	Dishwasher	2.62
	Total (l/p/day) with normalisation factor and 5l/p/day added for outdoor use (refer to appendix A):	102.17
	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 fittings and rainwater harvesting to supply water to the toilets, washing machine as well as 5 l/p/day for outdoor use:	61.66
	Difference in water demand (l/p/day):	40.51
	Total reduction in water demand based on confirmed occupancy of 5:	202.55

3 Conclusion

3.1.1 As indicated within the above calculations, the water demand of existing 5-bedroom property can be reduced by **202.55 l/day**.

3.1.2 The water demand from the proposed annex will be **162.78 l/day** after water efficient fittings are installed and rainwater harvesting techniques are implemented (refer to C3114 Water Neutrality report). This results in a total reduction in water demand of **39.77 l/day** over the existing site, making the proposals water neutral.

4 Appendices

4.1 Appendix A:

Table 2 – Water Calculator from Building Regulations Part G – Information input from existing property.

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)	4.5	4.42	0	19.89
WC (Dual Flush)	Full Flush Vol.	0	1.46	0	0
	Part Flush vol.	0	2.96	0	0
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)	156	0.11	0	17.19
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.59
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)			106.78
		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)			102.17

4.2 Appendix B:

Table 3 – Water Calculator from Building Regulations Part G – Information input from existing properties with water efficient fittings and rainwater harvesting supplying water to the toilets, washing machines along with 5 l/p/day for outdoor use.

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)	145	0.11	0	15.95
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	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)			92.35
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			30.09
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			61.66