Consulting Civil Engineers

Installed Fittings

Land at Garden Cottage, Cowfold

For

DMA Building Designs

Rev – **P2**

Reference **C2825**

Date **16th October 2024**

Revision	Date of Issue	Comments	Prepared By	Checked By
P	26.07.2024	Initial Issue	LH	CS
P1	02.10.2024	Revised	LH	
P2	16.10.2024	Revised	LH	CS

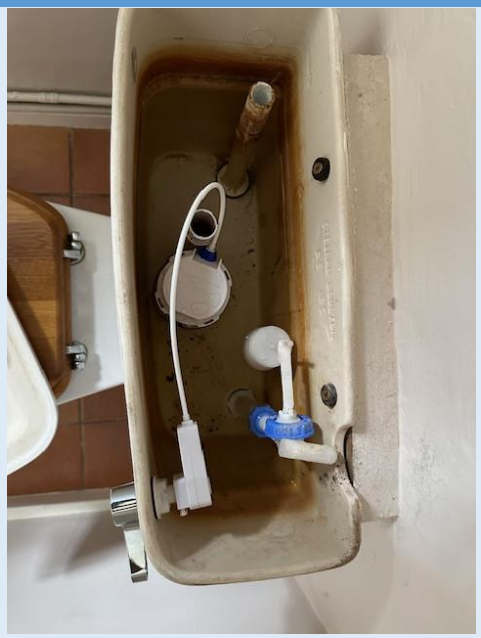
Richard Cobden House, Lion Street, Chichester, West Sussex, PO19 1LW
Tel: 01243 933253 E: mail@cgscivils.co.uk **W:** www.cgscivils.co.uk

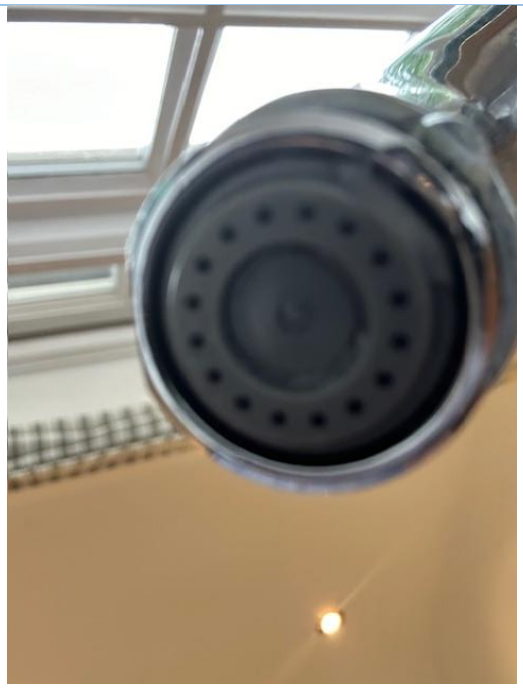
1 Introduction

1.1.1 CGS Civils Ltd has been appointed by DMA Building Designs to undertake an Installed Fittings report for a proposed development at Land at Garden Cottage, Picts Lane, Cowfold 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: **C2825 Water Neutrality Report**

1.1.2 The proposals are to extend and raise the roof of an existing detached outbuilding to form a garage/annexe. The water neutrality report has stated that the proposed 1-bedroom annexe is to have water efficient fittings and rainwater harvesting installed which will result in a water demand of **81.39 l/day** for the average occupancy of 1.32 as per HDC guidelines. The water neutrality report also states that the existing Garden Cottage is also to have the fittings changed in order to offset the demand from the proposed dwelling and they will therefore follow this report.

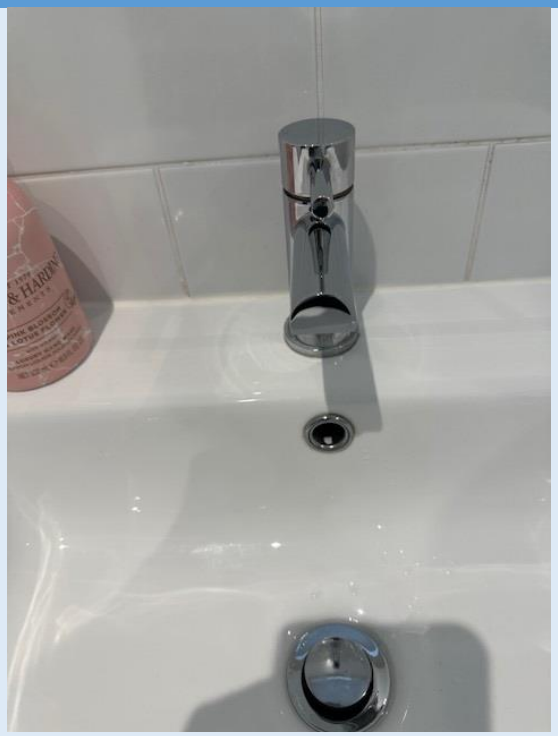
2 Installed Fittings for main house

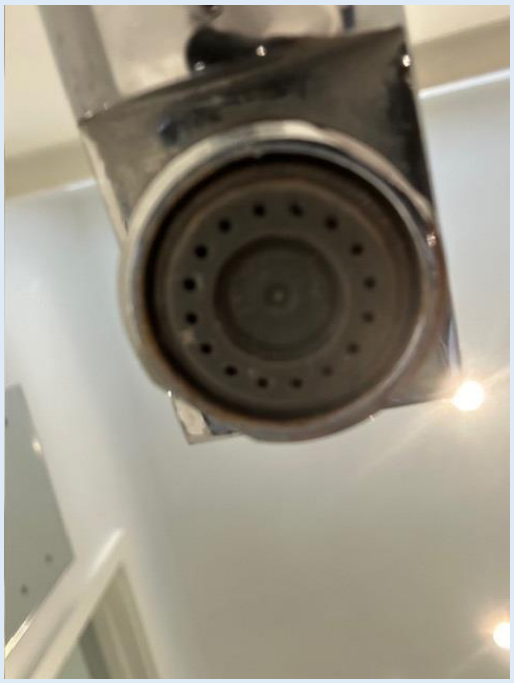
Fitting Type	Water Reduction Measure:	Does installed measure match required water demand?	Proof of purchase
Toilet	Fitted reduced flush fitting to cistern reducing flush volume	Required Water Demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush) Installed measures water demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush)	

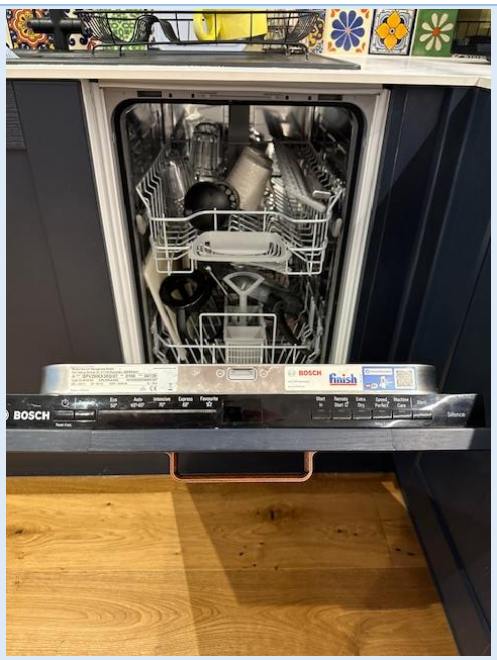
Basin Taps	Fitted 2l/min tap limiter	Required Water Demand: 5.53 l/p/day Installed Measures Water Demand: 4.74 l/p/day	
Showers	Fitted 7 litres per minute limiter	Required Water Demand: 39.20 l/p/day Installed Water Demand: 39.20 l/p/day	

Kitchen Taps	Fitted 4 l/min	Required Water Demand: 12.56 l/p/day Installed Water Demand: 12.12 l/p/day	
Washing Machine	Not changed	17.16 l/p/day	
Dishwasher	Not changed	4.5 l/p/day	
Total Water Demand:			88.04 l/p/day.
			x 4 = 352.16 l/day

3 Installed fittings for Annexe

Fitting Type	Water Reduction Measure:	Does installed measure match required water demand?	Proof of purchase
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: 39.20 l/p/day	
Kitchen Taps	Fitted 4 l/min	Required Water Demand: 12.56 l/p/day Installed Water Demand: 12.12 l/p/day	

Toilet	Fitted Dual flush cistern	Required Water Demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush) Installed measures water demand: 5.84 + 7.70 = 13.54 l/p/day (dual Flush)	
Dishwasher	Water demand: 0.94 l per place setting	Required Water Demand: 2.62 l/p/day Installed measures water demand: 3.384	

Rainwater Harvesting Tank	Installed 3000l		
Total Water Demand:	81.23 l/p/day.		70.16 l/p/day.
			x 1.32 = 92.6 l/day

4 Conclusion

4.1.1 Based upon the purchased and installed fittings, the existing house's water demand is reduced from **505.24 l/day** to **352.16 l/day.** This is a total saving site of **153.08 l/day** which is enough to offset the water demand of **92.6 l/day** from the proposed 1-bedroom annexe.

4.1.2 It should be noted that the annexe is not fitted with a washing machine and will therefore utilise the washing machine within the main house. Rainwater harvesting has not been applied to the washing machine within the calculations in order to reflect this. Despite this change, the proposed site is still water neutral whilst providing a total reduction of **60.48 l/day** within the region which is a significant degree of betterment over the existing situation.

5 Appendices:

5.1 Appendix A:

Water Calculator from Building Regulations Part G following changes to existing dwelling

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	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)	4	0.44	10.36	12.12
Washing Machine	Litres/kg dry load	8.17	2.1	0	17.16
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)			91.26
		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)			88.04

5.2 Appendix B:

Water Calculator from Building Regulations Part G for installed fittings in proposed 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.	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	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)	4	0.44	10.36	12.12
Washing Machine	Litres/kg dry load	8.17	2.1	0	17.16
Dishwasher	litres/place setting	0.94	3.6	0	3.384
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)			90.144
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			18.54
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			70.16

5.3 Appendix C

Invoices from installed fittings

Warren House | Staplefield Rd | Cuckfield | Haywards Heath | West Sussex | RH17 5JE
01403 597 598 | hello@abcgas.co.uk | http://abcgas.co.uk

RECIPIENT:

Mr. Martin Bugler
Garden Cottage
Picts Lane
Horsham, West Sussex RH13 8AW

Invoice #12767

Issued	19/06/2024
Due	19/06/2024
Total	**£648.00**
Account Balance	£648.00

For Services Rendered by ABC Gas Plumbing & Heating Ltd

Product/Service	Description	Qty.	Unit Price	Total
18/06/2024				
Upstairs toilet down hallway	All toilets need to be dual flush for water saving Upstairs toilet down hallway Corner toilet with 4 rusted screws holding toilet to wall (We will try to gentle remove screws but there may be a time we need to consult you if stuck) Fluidmaster flush valve with button Straight through bolt kit Has an ISO valve on toilet Supply and fit wc flush valve - FLUIDMASTER PUSH BUTTON CABLE DUAL-FLUSH VALVE (51173)	1	£540.00	£540.00
Upstairs main bathroom	 Supply and fit -FLUIDMASTER LEVER DUAL-FLUSH VALVE (57025) a closed couple kit & new fill valve fluidmaster as current one is part 3 and will be in the way No iso valve on toilet as no room but looks like can isolate on gate valve in airing cupboard	1	£0.00	£0.00
Downstairs under stairs toilet	Supply and fit - FLUIDMASTER LEVER DUAL-FLUSH VALVE (57025) Fluidmaster flush valve with handle Closed couple kit ISO valve on toilet already Handle holes are 20mm And button hole is large so will be fine	1	£0.00	£0.00

Warren House | Staplefield Rd | Cuckfield | Haywards Heath | West Sussex | RH17 5JE
01403 597 598 | hello@abcgas.co.uk | http://abcgas.co.uk

Cheques payable to - Abc Gas Ltd , Warren House , Staplefield Rd , Cuckfield , West Sussex,RH17 5JE

BACS payments to-
Nat West Bank , Sort 54-30-36 , Acct 39226034

All parts and products remain property of Abc Gas Ltd until invoice is paid in full.

Vat number 257018214

Subtotal	£540.00
VAT (20.0%)	£108.00
Total	£**648.00**
Account balance	£**648.00**

Rainwater Harvesting Limited
Rainwater Harvesting Limited
Peterborough
PE2 6YQ
accounts@rainwaterharvesting.co.uk

Receipt

Received From
Martin Bugler
Martin Bugler [BUG001]
Martin Bugler
Garden Cottage
Picts Lane
Cowfold
RH13 8AW

Date: 25/06/2024

Reference No: 29840

Invoice Number	Invoice Date	Due Date	Original Amount	Balance	Payment

Memo:

Amount Credited:	£2,484.00
Total:	£0.00

Bank Details:
Barclays Bank
Sort Code: 20-67-45
Account Number: 30406139

Rainwater Harvesting Limited
Unit A Harrier Park, Southgate Way, Orton Southgate,
Peterborough, PE2 6YQ
+44 (0) 1733 405111

VAT Number : GB 940 8955 90

TAX INVOICE

SI-00029840

Invoice Date: 28/06/2024

Customer Code	BUG001	Deliver To:	Martin Bugler
Martin Bugler [BUG001]			Garden Cottage
Martin Bugler			Picts Lane
Garden Cottage			Cowfold
Picts Lane			RH13 8AW
Cowfold			
RH13 8AW		Order Ref	222783

Code	Description	Qty
RWH-3099FL-GUK1	F-LINE 3000L TANK SYSTEM/GARDEN	1.00
RWFT3006RV	3000L FLINE TANK WITH Vantage FILTER	1.00
RWH-RWDS0062	F-LINE 635mm SHAFT - VS60	1.00
RWH-RWDS0066	F-LINE TANK WALK ON LID	1.00
RWH-RWDS0072	F-LINE TANK SEAL	1.00
RWH-HYD04	HYDROFORCE SERIES 4 PUMP	1.00
4103266		
RWH-HDPE25/25	HDPE 25mm RAINWATER PIPE / 25m	1.00
RWH-HDPE25/15&30	HDPE 25mm RAINWATER PIPE/1500L & 3000L F-LINE	1.00
P46221	90° BSP ELBOW 25X25MM	1.00
RWH-ST01	RAINWATER WARNING LABEL PACK	1.00
BWWDelivery	Delivery By Big Web Warehouse	1.00
Z1-1100001955	ULTRA-PRO 19-LITRE WALL-MOUNTED POTABLE-WAT	1.00

Charge	Price	Tax Rate

Sub Total	2,070.00
Charge Sub Total	0.00
20% Tax Total	414.00
Total	2,484.00

PAID WITH THANKS

Bank Details: Barclays Bank. Sort Code: 20-67-45. Account Number: 30406139