folkes architects

Water Neutrality Statement

Proposed Conversion of outbuilding to form Self-contained Gym and Home Office

Chantry Mill
Chantry Lane
Storrington
West Sussex
RH20 4AB

Revision: A

Date of issue:
15th November 2024

1.0 Introduction

On 14th September 2021, Natural England identified and issued a Position Statement noting that the Sussex North Water Resource Zone (WRZ) is in an area of serious water stress, as defined by the Environment Agency. The Position Statement requires developments within the region to demonstrate that they will not increase the water demand and demonstrate how they will achieve water neutrality. This impacts Applications in Horsham District, the majority of Crawley District, the Northern region of Chichester District, and areas within the South Downs National Park.

In response to the Position Statement, it is necessary for Planning Applications to provide evidence within three key categories:

1. Reduction of water usage;
2. Reuse of water on site;
3. Offsetting of residual water demand.

This Statement is to accompany the Planning Application for the conversion of an existing detached building/ outbuilding into a garden office and home gym. Although a householder application and the proposed usage of the building is not going to increase occupancy of the site, we will demonstrate how the development will respond to the water neutrality requirements.

The existing single storey detached building comprises a total Gross Internal Area (GIA) of 42m²
The existing building contains a workshop and provides storage for materials and equipment used within the site.

The proposed garden office and home gym will have a shower room with a toilet and wash hand basin as well as a basic kitchenette for the preparation of food and drink during the working day. There will be no bedrooms, as such the occupancy level could be contended to be nil.

However, it may be contended that the addition of the gym and home office may generate a small increase in water usage, as it encourages occupants to work from home more often, whilst the gym facilities would arguably create no intensification on water usage, as the possible absence of shower and WC facilities from the stables would result in the use of the existing facilities within the main house.
As such it is contended that there will be a negligible prospect of an increase in water usage.

The most effective and important aspect of achieving water neutrality is by reducing water usage through the use of water-efficient devices.

The current UK Building Regulations *Approved Document G – Sanitation, Hot Water Safety and Water Efficiency* requires all new dwellings to achieve a water consumption of less than or equal to 125 litres/person/day (l/p/d). Although the accommodation is not going to be used as a dwelling for the sake of pragmatism, we will apply the higher threshold associated with the use of the space as a dwelling. Applying this logic the accommodation would meet the minimum space standards for dwelling for a one-bedroom single-storey dwelling, as such we propose to assess its water usage using this metric.

The water usage requirement of dwellings is calculated by both the efficiency of the fittings in the property and the number of occupants. An appropriate way to calculate the water efficiency of the fittings is through the UK Building Regulations Part G calculations. The latest Census data gives average and expected occupancy levels to properties based on the number of bedrooms, and Horsham District provides the following occupancy levels:

Number of bedrooms in dwelling	Average number of occupants
1	1.32
2	1.88
3	2.47
4	2.86
5+	3.09

2.0 Baseline & Proposed Water Usage

2.01: Existing Baseline Water Usage: In order to determine a baseline, the existing water usage must be calculated. Chantry Mill is a former mill, which after falling in to disuse was converted into a family dwelling. The house is formed of 6 bedrooms, with 5 occupants. Water bills have been provided by the applicant for the last 24 months. Appendix A Refers. The Water bills demonstrate the following:

Period 1: 02/03/22 - 10/08/22 = 125m^3 of water usage
Period 2: 11/08/22 – 14/02/23 = 131m^3 of water usage
Period 3: 15/02/23 – 01/09/23 = 147m^3 of water usage
Period 4: 02/09/23 – 13/02/24 = 165m^3 of water usage
Sum of Periods 1-4 = 568m^3

The period of time is a just shy of 2 years, totalling 714 days and amounts to a total of water usage in that time of 568m^3 or 568,000litres.

Based on the water bills we can calculate the daily average to be:

Daily Average Water Usage (l//d) = $\frac{568,000}{714}$ = **795.5 l/d**

Based on occupancy level it may be determined that the average water consumption per person per day (l/p/d) = $\frac{\text{Daily Average water usage}}{\text{Occupancy Level}} = \frac{795.5 \text{ l/d}}{5} = 159.1 \text{l/p/d}$

This level being higher than that expected for a new dwelling as defined by Approved Document G Building Regulations.

:. Baseline Water usage for the existing property is **795.5 l/d**

Baseline Water Usage – 795.5 l/d

2.02: Proposed Water Usage: To calculate a proposed baseline water usage for the Conversion of the stable an Approved Document G Water Usage Calculation for domestic properties is completed (Appendix B refers). This demonstrates water usage per person per day of 97.4 l/p/d.
:. Daily water usage is calculated as follows:

:. Daily water usage = Average water usage per person (l/p/d) x Average Occupancy Level

:. Daily water usage = 97.4l/p/d x 1.32 = 128.6 l/d.

Therefore, additional measures are required to ensure compliance with the Water Neutrality requirements.

Proposed Water Usage = 128.6 l/d

3.0 Water Saving Measures & Reuse of Water on Site

3.01: Water Saving and Reuse Measures: The following sections will demonstrate that through the specification of specific sanitaryware when applied to the baseline water usage the water usage for the proposed development can be drastically reduced.

3.02: Water Reduction Measures: Prior to conversion of the stables the specification of more efficient fittings for it can reduce its water consumption. Through the specification of aerated taps and dual flush toilets it is possible to reduce the water usage to 60.2 l/p/d (appendix C refers). A schedule of the fittings is included below for the proposed conversion of the stables.

Appliance	Flow Rate (Part G)	Proposed Fixtures
w.c.'s	6/4 dual flush	4/ 2.6 dual flush
Basin Taps	6 l/min	4 l/min Hansgrohe Rebris E110 Eco smart+ Basin Tap
Shower	10 l/min	6 l/min Mira Décor Dual Warm 10.8Kw Shower
Kitchen Tap	8 l/min	6 l/min

Therefore, based on the average occupancy of 1.32, the water usage is calculated:

:. Daily water usage = 1.32 x 60.26 l/p/d = 79.5 l/d. The Part G Calculation sheet is contained in Appendix C refers.

:. Water saving for proposal = 128.6 l/d – 79.5 l/d = 49.1 l/d

Although this is reduction in proposed water demand, further savings will be required if the proposal is to be water-neutral.

It is proposed that a similar approach may be made with the Chantry Mill itself (main house)

Appendix D provides a breakdown of the Calculation of existing water demand based on the Approved Document Part G, this provides a water demand per person of approximately 147.4 l/p/d, which is slightly less than the calculation daily average as depicted in 2.1 based on actual water usage derived from water bills.

Prior to the conversion of the stables the specification of more efficient fittings for the main house can reduce overall water consumption. Through the specification of aerated shower and more water-efficient washing machine it is possible to reduce the water usage to 125.3 l/p/d (appendix E refers). A schedule of the fittings is included below for the main house.

Appliance	Flow Rate (Part G)	Proposed Fixtures
Shower	10 l/min	6 l/min Mira Décor Dual Warm 10.8Kw Shower
Washing Machine	8.17 l/kilogram	4.9 l/kilogram Bosch WGB256A1GB

Therefore, based on the occupancy of 5, the water usage is calculated:

:. Daily water usage = 5 x 125.3 l/p/d = 626.5 l/d. The Part G Calculation sheet is contained in Appendix E refers.

:. Therefore, water reduction from the house is calculated as follows.

:. Reduction = Actual water usage (house) – projected water usage due water efficient fittings

:. Reduction = 795.5 l/d – 626.5 l/d

:. Reduction = 169 l/d

The proposed water reduction strategy for the house combined with the projected water usage of the converted stables produces a total water reduction of 89.5 l/d for the site. This reduction comfortably reduces water usage to a level that more than compensates for the conversion of the stables and generates an overall betterment of water usage for the site, therefore there is no need for further water-saving measures.

Total water usage = Projected water usage (house) + Projected water usage (stables)

:. Total water usage = 626.5 l/d + 79.5 l/d = 706 l/d

:. Total water saving = Baseline water usage – Total water usage (projected)

:. Total water saving =795.5 l/d – 706 l/d = 89.5 l/d

Proposed Total Water Usage with reductions measures = 706 l/d

3.03 : Water Reuse Introduction:

There are three methods of water reuse that can be used within a scheme,

a) **Rainwater Harvesting**: capturing rainwater from the building's roof and using it for uses as basic as watering landscaped areas through to use within a building for non-potable uses, such as toilet flushes.
b) **Greywater Recycling**: captures and recycles used water from showers, baths, and basins, which requires a separate drainage system to separate foul water from toilets to allow the grey water to be treated and recycled for non-potable uses within the building.
c) **Blackwater Recycling:** captures and recycles contaminated wastewater, including from toilets, and greywater, and includes wastewater from industrial processes. The wastewater requires extensive treatment prior to being recycled and reused for non-potable purposes.

3.04: Water Reuse Proposals: As the proposed development, through the use of water-saving fittings, is demonstrably water neutral, there is no requirement for additional measures such as water reuse.

4.0 Offsetting Residual Water Demand

4.01: Offsetting Methods: The Waterwise Practical Guidance note to assist with achieving water neutrality advises that the final step to achieving water neutrality is offsetting any of the development's residual demand by improvements to the local community, within the same Water Resource Zone (WRZ).

As the proposed development, through the use of water saving fittings, is demonstrably water neutral, there is no requirement for offsetting measures.

5.0 Conclusion

The applicant acknowledges that the issues raised by Water Neutrality are important, and to address the required water usage offset value the proposals are to include water-saving measures to reduce the impact of the scheme within the Sussex North Water Resource Zone.

As demonstrated above, the specification of water-efficient fixtures and fittings within the building creates a **89.5 l/d reduction** in water use from a baseline assessment of the proposals using the flow rates as set out within Part G.

A summary of the proposals is as follows;

Baseline (Total Site):	**795.5 l/d**
Proposals:	**128.6 l/d**
Water Saving Measures to Proposal:	**-49.1 l/d**
Water Saving Measure to the house:	**-169 l/d**
Proposed Water Usage:	**706.0 l/d**

Overall Residual Water Usage:	**-89.5 l/d**

Based on the calculations within this Water Neutrality Statement it has been demonstrated that the proposed development is deemed as **water neutral**, and in fact is demonstrably water positive, as the proposed conversion and proposed water saving would reduce overall water usage.

Appendix A -Water Bills from 20/03/22 – 13/02/24

WATER for LIFE from Southern Water

DR M STANIFORTH & MRS STANIFORTH
CHANTRY MILL
CHANTRY LANE
STORRINGTON
RH20 4AB

We're making things right
We didn't manage and report compliance correctly at our wastewater treatment works between 2010–17. This means we need to make things right for our customers and the environment. As agreed with Ofwat, we've reduced our wastewater charges by £123m until 2025 (bills will still rise with inflation and depend on your water use).
We're also investing in fixing pipes, pumping stations, wastewater plants and sewers to protect the environment.
Find out more at:
southernwater.co.uk/making-amends

Visit our website for live chat or to log into your account
southernwater.co.uk/help

0330 303 0277
Weekdays - 8am to 7pm
Saturday - 8.30am to 2pm

Your customer number
12972560

Your payment reference
0004 5181 46011

Invoice number
720001587768

Dear Dr M STANIFORTH & Mrs STANIFORTH,

Here's your latest bill based on the meter reading we took on 10 August 2022. You currently pay by Direct Debit, so you don't need to do anything – your payments will be taken automatically.

Meter reading

Water used in cubic metres

125 m³

One cubic metre = 1,000 litres
This is equivalent to: 11 baths, 31 (4 min) showers or 166 toilet flushes

Meter number: 3M308793

Latest reading: 10 Aug 2022

		3	4	7	1	.	0	0

Previous reading: 1 Mar 2022

		3	3	4	6	.	0	0

Your next meter reading is scheduled to take place by 01 Mar 2023

Previous bill's usage
45.80 m³

Charges

£422.26

Bill date
22 Aug 2022

Billing period
From: 02 March 2022
To: 10 August 2022

Bill type
Metered - Direct Debit

Previous bill's charges
£415.58

Future payments

Balance outstanding of

£597.10

Water

Period: 02 March 2022 to 31 March 2022

Variable Rate	£1.487 x	23.10m³ =	£34.35
Standing Charge		=	£0.00

Period: 01 April 2022 to 10 August 2022

Variable Rate	£1.550 x	101.90m³ =	£157.95
Standing Charge		=	£0.00
Total Water			**£192.30**

Wastewater

Period: 02 March 2022 to 31 March 2022

Variable Rate	£2.045 x	21.37m³ =	£43.70
Standing Charge		=	£0.00

Period: 01 April 2022 to 10 August 2022

Variable Rate	£1.976 x	94.26m³ =	£186.26
Standing Charge		=	£0.00
Total Wastewater			**£229.96**

WATER for LIFE from Southern Water

DR M STANIFORTH & MRS STANIFORTH
CHANTRY MILL
CHANTRY LANE
STORRINGTON
RH20 4AB

We're making things right
We didn't manage and report compliance correctly at our wastewater treatment works between 2010–17. This means we need to make things right for our customers and the environment. As agreed with Ofwat, we've reduced our wastewater charges by £123m until 2025 (bills will still rise with inflation and depend on your water use).
We're also investing in fixing pipes, pumping stations, wastewater plants and sewers to protect the environment.
Find out more at: **southernwater.co.uk/making-amends**

Visit our website for live chat or to log into your account
southernwater.co.uk/help

0330 303 0277
Weekdays - 8am to 7pm
Saturday - 8.30am to 2pm

Your customer number
12972560

Your payment reference
0004 5181 46011

Invoice number
715001851525

Dear Dr M STANIFORTH & Mrs STANIFORTH,

Here's your latest bill based on the meter reading we took on 14 February 2023. You currently pay by Direct Debit, so you don't need to do anything – your payments will be taken automatically.

Meter reading

Water used in cubic metres

131 m³

One cubic metre = 1,000 litres
This is equivalent to: 11 baths, 31 (4 min) showers or 166 toilet flushes

Meter number: 3M308793

Latest reading: 14 Feb 2023
3602.00

Previous reading: 10 Aug 2022
3471.00

Your next meter reading is scheduled to take place by 29 Aug 2023

Previous bill's usage
0.00 m³

Charges

£442.50

Bill date
15 Feb 2023

Billing period
From: 11 August 2022
To: 14 February 2023

Bill type
Metered - Direct Debit

Previous bill's charges
£422.26

Future payments

Balance outstanding of

£875.20

Water

Period: 11 August 2022 to 14 February 2023

Variable Rate	£1.550 x	131.00m³ =	£203.05
Standing Charge		=	£0.00
Total Water			**£203.05**

Wastewater

Period: 11 August 2022 to 14 February 2023

Variable Rate	£1.976 x	121.18m³ =	£239.45
Standing Charge		=	£0.00
Total Wastewater			**£239.45**

WATER for LIFE from Southern Water

DR M STANIFORTH & MRS STANIFORTH
CHANTRY MILL
CHANTRY LANE
STORRINGTON
RH20 4AB

We're making things right
We didn't manage and report compliance correctly at our wastewater treatment works between 2010–17. This means we need to make things right for our customers and the environment. As agreed with Ofwat, we've reduced our wastewater charges by £123m until 2025 (bills will still rise with inflation and depend on your water use).
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Visit our website for live chat or to log into your account
southernwater.co.uk/help

0330 303 0277
Weekdays - 8am to 6pm

Your customer number
12972560

Your payment reference
0004 5181 4601 1

Invoice number
722001606670

Dear Dr M STANIFORTH & Mrs STANIFORTH,

Here's your latest bill based on the meter reading we took on 01 September 2023. You currently pay by Direct Debit, so you don't need to do anything – your payments will be taken automatically.

Meter reading

Water used in cubic metres

147 m³

One cubic metre = 1,000 litres
This is equivalent to: 11 baths, 31 (4 min) showers or 166 toilet flushes

Meter number: 3M308793

Latest reading: 1 Sep 2023
3749.00

Previous reading: 14 Feb 2023
3602.00

Your next meter reading is scheduled to take place by 29 Feb 2024

Previous bill's usage
9.00 m³

Charges

£536.49

Bill date
05 Sep 2023

Billing period
From: 15 February 2023
To: 01 September 2023

Bill type
Metered - Direct Debit

Previous bill's charges
£442.50

Future payments

Balance outstanding of

£1,187.29

Water

Period: 15 February 2023 to 31 March 2023			
Variable Rate	£1.550 x	33.20m³ =	£51.46
Standing Charge		=	£0.00
Period: 01 April 2023 to 01 September 2023			
Variable Rate	£1.716 x	113.80m³ =	£195.28
Standing Charge		=	£0.00
Total Water			**£246.74**

Wastewater

Period: 15 February 2023 to 31 March 2023			
Variable Rate	£1.976 x	30.71m³ =	£60.68
Standing Charge		=	£0.00
Period: 01 April 2023 to 01 September 2023			
Variable Rate	£2.176 x	105.27m³ =	£229.07
Standing Charge		=	£0.00
Total Wastewater			**£289.75**

WATER for LIFE from Southern Water

DR M STANIFORTH & MRS STANIFORTH
CHANTRY MILL
CHANTRY LANE
STORRINGTON
RH20 4AB

We're making things right
We didn't manage and report compliance correctly at our wastewater treatment works between 2010–17. This means we need to make things right for our customers and the environment. As agreed with Ofwat, we've reduced our wastewater charges by £123m until 2025 (bills will still rise with inflation and depend on your water use).
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Visit our website for live chat or to log into your account
southernwater.co.uk/help

0330 303 0277
Weekdays - 8am to 6pm

Your customer number
12972560

Your payment reference
0004 5181 4601 1

Invoice number
722001606670

Dear Dr M STANIFORTH & Mrs STANIFORTH,

Here's your latest bill based on the meter reading we took on 01 September 2023. You currently pay by Direct Debit, so you don't need to do anything – your payments will be taken automatically.

Meter reading

Water used in cubic metres

147 m³

One cubic metre = 1,000 litres
This is equivalent to: 11 baths, 31 (4 min) showers or 166 toilet flushes

Meter number: 3M308793

Latest reading: 1 Sep 2023
3749.00

Previous reading: 14 Feb 2023
3602.00

Your next meter reading is scheduled to take place by 29 Feb 2024

Previous bill's usage
9.00 m³

Charges

£536.49

Bill date
05 Sep 2023

Billing period
From: 15 February 2023
To: 01 September 2023

Bill type
Metered - Direct Debit

Previous bill's charges
£442.50

Future payments

Balance outstanding of

£1,187.29

Water

Period: 15 February 2023 to 31 March 2023			
Variable Rate	£1.550 x	33.20m³ =	£51.46
Standing Charge		=	£0.00
Period: 01 April 2023 to 01 September 2023			
Variable Rate	£1.716 x	113.80m³ =	£195.28
Standing Charge		=	£0.00
Total Water			**£246.74**

Wastewater

Period: 15 February 2023 to 31 March 2023			
Variable Rate	£1.976 x	30.71m³ =	£60.68
Standing Charge		=	£0.00
Period: 01 April 2023 to 01 September 2023			
Variable Rate	£2.176 x	105.27m³ =	£229.07
Standing Charge		=	£0.00
Total Wastewater			**£289.75**

Appendix B

Approved Document G - Water Use Calculator for Proposed Usage Stables only

Click here for instructions on using the Water Calculator

Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	6	1.46	0.00	8.76
	Part flush Volume (litres)	4	2.96	0.00	11.84
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	6.00	1.58	1.58	11.06
Bath (where shower also present)	Capacity to overflow(litres)		0.11	0.00	0
Shower (where bath also present)	Flow Rate(litres / minute)		4.37	0.00	0
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)	10.00	5.60	0.00	56.00
Kitchen/Utility room sink taps	Flow rate (litres/minute)	8.00	0.44	10.36	13.88
Washing Machine	(Litres/kg dry load)	0.00	2.1	0.00	0.00
Dishwasher	(Litres/place setting)	0.00	3.6	0.00	0.00
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	**Total Calculated use (litres/person/day) =SUM(column 4)**			101.54
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			92.40
	(10)	External water use			5.0
	(11)	**Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)**			97.4

Click here to fill in details before printing:

Appendix C

Approved Document G - Water Use Calculator for Proposal with more efficient fittings (Stables only)

Click here for instructions on using the Water Calculator

Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)		4.42	0.00	0
WC (dual flush)	Full flush Volume (litres)	4	1.46	0.00	5.84
	Part flush Volume (litres)	2.6	2.96	0.00	7.70
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	4.00	1.58	1.58	7.90
Bath (where shower also present)	Capacity to overflow(litres)		0.11	0.00	0
Shower (where bath also present)	Flow Rate(litres / minute)	6.00	4.37	0.00	26.22
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	6.00	0.44	10.36	13.00
Washing Machine	(Litres/kg dry load)	0.00	2.1	0.00	0.00
Dishwasher	(Litres/place setting)	0.00	3.6	0.00	0.00
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	**Total Calculated use (litres/person/day) =SUM(column 4)**			60.66
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			55.20
	(10)	External water use			5.0
	(11)	**Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)**			60.2

Click here to fill in details before printing:

Appendix D

Approved Document G - Water Use Calculator for house

Click here for instructions on using the Water Calculator

Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)	10.00	4.42	0.00	44.20
WC (dual flush)	Full flush Volume (litres)		1.46	0.00	0
	Part flush Volume (litres)		2.96	0.00	0
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	6.00	1.58	1.58	11.06
Bath (where shower also present)	Capacity to overflow(litres)	200.00	0.11	0.00	22.00
Shower (where bath also present)	Flow Rate(litres / minute)	10.00	4.37	0.00	43.70
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	8.00	0.44	10.36	13.88
Washing Machine	(Litres/kg dry load)	8.17	2.1	0.00	17.16
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.50
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	Total Calculated use (litres/person/day) =SUM(column 4)			156.50
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			142.42
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			147.4

Click here to fill in details before printing:

Appendix E

Approved Document G - Water Use Calculator for the house, with water-efficient fittings

Click here for instructions on using the Water Calculator

Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

Installation Type	Unit of Measure	Capacity/Flow rate (1)	Use Factor (2)	Fixed use (litres/person/day) (3)	Litres/person/day = [(1)x(2)] + (3) (4)
WC (single flush)	Flush Volume (litres)	10.00	4.42	0.00	44.20
WC (dual flush)	Full flush Volume (litres)		1.46	0.00	0
	Part flush Volume (litres)		2.96	0.00	0
WC (multiple fittings)	Average effective flushing Volume (litres)		4.42	0.00	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	6.00	1.58	1.58	11.06
Bath (where shower also present)	Capacity to overflow(litres)	200.00	0.11	0.00	22.00
Shower (where bath also present)	Flow Rate(litres / minute)	6.00	4.37	0.00	26.22
Bath Only	Capacity to overflow(litres)		0.50	0.00	0
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	8.00	0.44	10.36	13.88
Washing Machine	(Litres/kg dry load)	4.90	2.1	0.00	10.29
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.50
Waste disposal unit	(Litres/use)	☐ Present	3.08	0.00	0
Water Softener	(Litres/person/day)		1.00	0.00	0
	(5)	Total Calculated use (litres/person/day) =SUM(column 4)			132.15
	(6)	Contribution from greywater (litres/person/day)			0
	(7)	Contribution from rainwater (litres/person/day)			0
	(8)	Normalisation factor			0.91
	(9)	Total internal water consumption = [(5)-(6)-(7)]x(8) (litres/person/day)			120.26
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			125.3

Click here to fill in details before printing: