Water Neutrality Statement

Development at

Little Wantley
Fryern Road
West Chiltington
West Sussex
RH20 4BJ

Revision: C

Date of Issue:
09 August 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 and will demonstrate how the development will respond to the water neutrality requirements.

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

However, as the property is occupied and in accordance with Horsham policy relating to water neutrality, the existing occupation level will be used for the aspects of the property which are used wholly or in part by the householder as accommodation.

This Statement is to accompany the Retrospective Planning Application for a one-bedroom house boat referred to as the Cruiser, which will be used as Air B&B style holiday accommodation and will demonstrate how the development will respond to the water neutrality requirements.

Little Wantley is a large dwelling house, set off Fryern Road Storrington, the house is nestled into around 4.5 acres of gardens, which also includes a large lake. In 2021 Consent was granted for the use of part of the house as Bed & Breakfast style accommodation, planning reference DC/21/0348 refers.

The large garden has a spattering of existing structures, comprising of sheds, a boat house, jetties and a timber chalet. The gardens, lake and most of the structures were created by renowned Gardener Hillary Barnes. The houseboat (The Cruiser) is a modest structure and reflects the scale of structures that have popped up during the evolution of the garden's creation over the last 25 years. It is moored at the edge of the north bank of the lake and accessed via an existing jetty. The Cruiser was originally built as ancillary accommodation for the house, providing tranquil and beautiful views across the lake to one of two small islands and the mature gardens on the southern bank. However, after being used by the visiting family, it soon became apparent that the accommodation could be used for tourism as an extension of their already successful business.

The Cruiser has been used for 22 months and has been occupied on average for 20 days per month during this period. Although the usage will be assessed on full-time

basis, the actual occupancy level is likely to be much lower. The Cruiser offers no cooking facilities which will reduce water demand.

Little Wantley Existing accommodation



Figure 1- Photograph of the front elevation of Little Wantley

The main property forming Little Wantley (figure 1 refers) is to the west of the 4.5-acre site and has an approximate Gross Internal Area (GIA) of 466m^2. This represents the equivalent floor space of the 3.75 typical four-bedroom house (figure based on the 2016 Nationally Described Space Standards Technical Guidance for dwellings). It is to be noted that all the buildings and land discussed are under the same ownership and are within the property's residential curtilage.

The House is split into 4 elements (figure 2 refers) all of which form one cohesive and linked footprint:

1) The main mass of the building is the family home, which has a GIA of approximately 300m^2, offers four bedrooms and is presently occupied by **5 family members.** The property offers 2 bathrooms, 3 WC's with wash hand basins, 1 kitchen and utility space, a washing machine, dishwasher and a 1050 litre hot tub.
2) Annex (1), has a GIA of approximately 41 m^2 single-storey, that provides permanent accommodation for the live-in housekeeper and her partner (Occupation level 2). The property offers 1 bathroom, 1 WC with wash hand, 1 kitchen, washing machine, dishwasher and a 1000 litre hot tub.
3) Holiday Accommodation/ Annex (2), has a GIA of approximately 77m^2 two-storey self-contained unit, which is offered as holiday accommodation. The property offers 1 shower, WC with wash hand, 1 kitchen, washing machine, dishwasher and a 1050 litre hot tub.
4) Occasional Holiday Accommodation Annex (3), has a GIA of approximately 40m^2 two-storey self-contained unit, which is used as holiday accommodation and is also used by the family for visiting family and friends. The property offers 1 shower, WC with wash hand, 1 kitchen without cooking facilities and a 240-litre whirl pool bath tub.

There is also a detached Chalet which has been present on site for over a decade, this is not subject to this application.

As already referred to, Little Wantley rests within 4.5 Acres of gardens which have been meticulously designed by the late Hilary Barnes and have been subject to several national awards. The current owners have a team of staff maintaining these gardens, with all the water used in its maintenance being drawn from the mains water supply.

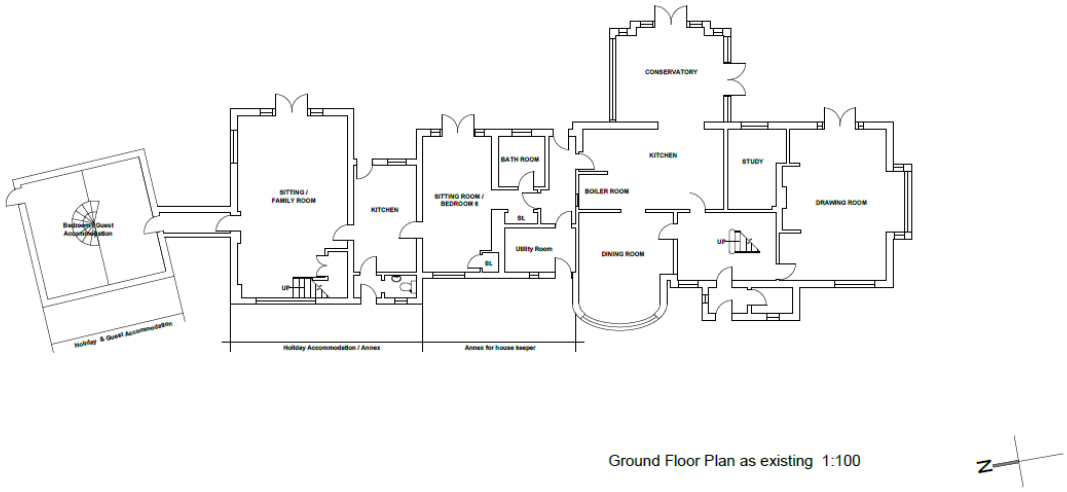


Figure 2- Ground Floor of the House forming Little Wantley n.t.s.

The detached Cruiser offers around 30m^2 of accommodation (figure 3 refers) and consists of one bedroom, 1 shower, 1 WC with wash hand basin a kitchen without cooking facilities and a Ponfit Nova-530 PFDJJ-53 hot tub (Appendix 2 provides full specifications) in situ 1050 litre hot tub (figure 4 refers).

The Proposed Plans indicated are for reference only.

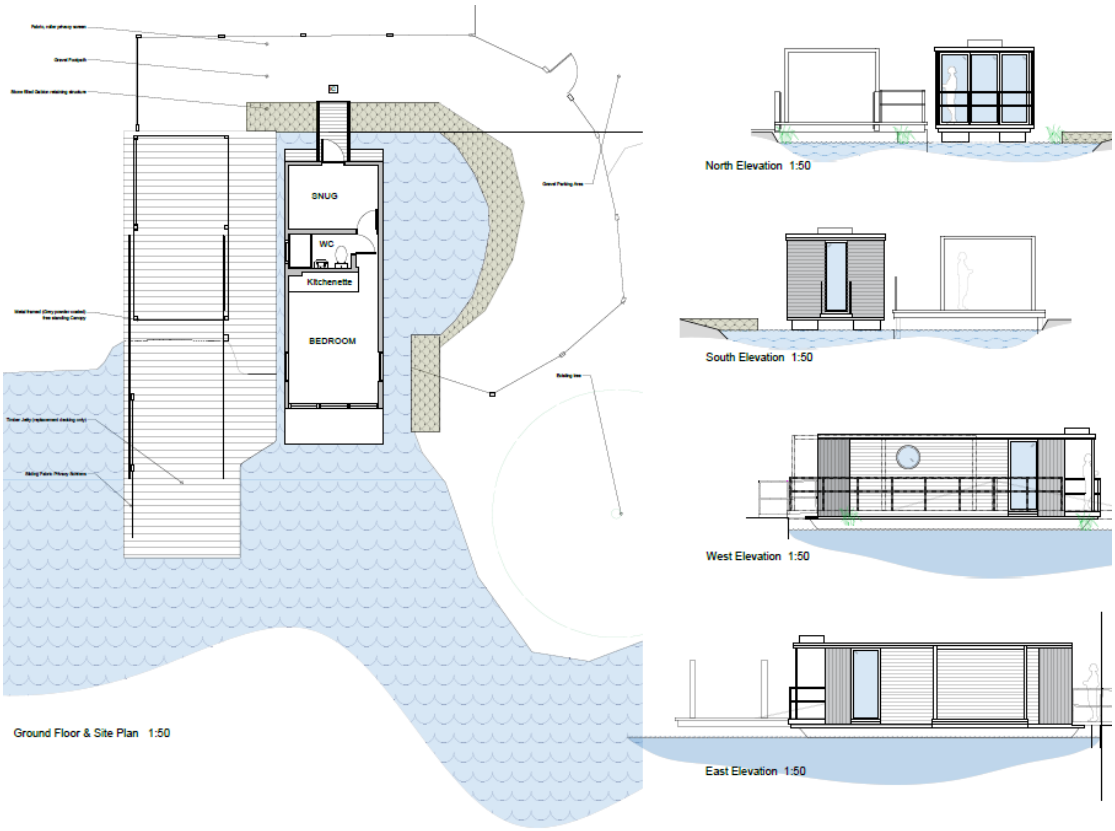


Figure 3- Plan and Elevations showing the Cruiser (n.t.s)



Figure 4, Ponfit PFDJJ53 1050 litre hot tub in situ within the site of the Cruiser

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/d).

2.0 Baseline Water Use Assessment (The Cruiser)

2.01: Existing Baseline Water Usage: In order to determine a baseline for the Cruiser, the existing water usage must be calculated. However, this is not a replacement structure or accommodation the baseline usage can only be accepted as (zero) 0 l/d (litres per day)

Baseline Water Usage – 0 l/d

2.02: Proposed Baseline Water Usage of The Cruiser : To calculate a proposed baseline water usage for the Cruiser an average of 99.1 l/p/d (litre per person per day) is used, which is to be multiplied by 1.32 as an average occupation level, therefore equalling 130.8 l/d (Appendix A refers).

The cleaning regime for the hot tub sees the water change between occupants *(this is defined as best practice in accordance with guidelines for the commercial use of pools and spas as defined by the Health and Safety Executive guide HSG282, in order to control the spread of legionella and other infectious agents Appendix 4 refers),* with a requirement of 1050 litres of water. As such it is contended the daily level of water usage should be combined with the average stay of guests, this would equate to:

$$\text{Hot tub water usage} = \frac{\text{hot tub capacity (litres)}}{\text{Average guest stay (days)}}$$

$$\text{Hot tub water usage} = \frac{1050\ \text{l}}{2\ \text{days}}$$

$$\text{Hot tub water usage} = 525\ \text{l/d}$$

:. Proposed baseline water usage = 113.8l/d + 525 l/d
:. Proposed total baseline water usage = 655.8 l/d

In order to achieve water neutrality this means that a calculated saving of 655.8 l/d needs to be made in order to achieve Water Neutrality.

Proposed Baseline Water Usage – 655.8 l/d

2.03: Proposed Water Usage of Little Wantley: In order to calculate improvements over the baseline water usage, an Approved Document G Water Usage Calculation for domestic properties (forming Little Wantley) is required to ascertain the proposed water usage of the Cruiser and ensure compliance with the Building Regulations.

As discussed in 1.0 the main property is formed of four distinct elements. However in compliance with Horsham District guidance each element will be based on actual occupancy. In the case of Annex (3), as this is used as guest accommodation and occasional holiday accommodation, this will be combined with the main house. Water usage will be expressed based on the surveyed flow rates for the fixtures and fittings found within the accommodation. The Part G Calculation sheet is contained in the Appendices for each element.

1) **Family Home & Annex 3**

Daily water usage per person for 4-bedroom family home – 205.6 l/p/p/d (Appendix B refers)

:. Daily family home water usage = 205.6 l/p/p/d x Actual occupancy level

:. Daily family home water usage = 205.6 l/p/p/d x 5 (Actual Occupancy Level)

:. Daily family home water usage = 1028 l/d

It is also noted that the family home has one Ponfit PFDJJ -82 1050 litre hot tub (figure 5 refers). Appendix 3 provides a data sheet on the appliance.



Figure 5, Image of Ponfit PFDJJ -82 hot tub in situ, outside the main house.

The water is estimated to be changed every 7-10 days equating:

:. Daily water usage relating to hot tub = $\frac{1050\ l}{\text{Ave days between changes of water}}$

:. Daily water usage relating to hot tub = $\frac{1050\ l}{7\ \text{days}}$

:. Daily water usage relating to hot tub = 150 l/d

:. Total daily water usage relating to the family home (l/d) = 1028 l + 150 l

:. Total daily water usage relating to the family home (l/d) = **1178 l/d**

2) Annex (1) - Housekeeper's accommodation

Daily water usage per person for Annex (1) – 198.0 l/p/p/d (appendix C refers)

:. Daily family home water usage = 198.0 l/p/p/d x Occupancy level

:. Daily family home water usage = 198.0 l/p/p/d x 2

:. Daily family home water usage = **396 l/d**

It is also noted that the Annex (1) has one 1000 litre Sunran839 hot tub



Figure 6, Image of Sunran 839A hot tub in situ, outside Annex 1.

The water is estimated to be changed every 7- 10 days equating:

:. Daily water usage relating to hot tub = $\frac{1000\ l}{\text{Ave days between changes of water}}$

:. Daily water usage relating to hot tub = $\frac{1000\ l}{7\ \text{days}}$

:. Daily water usage relating to hot tub = 142.9 l/d

:. Total daily water usage relating to the Annex (1) (l/d) = 396 l + 142.9 l

:. Total daily water usage relating to the family home (l/d) = **538.9 l/d**

3) Annex (2) – Holiday accommodation (based on average occupancy, as not permanently occupied)

Daily water usage per person for Annex (2)– 105.9 l/p/p/d (appendix D refers)

:. Daily family home water usage = 105.9 l/p/p/d x Average census occupancy level

:. Daily family home water usage = 105.9 l/p/p/d x 1.32 (Ave for 1 bedroom home)

:. Daily family home water usage = 139.8 l/d

It is also noted that the Annex (2) has one Ponfit PFDJJ -82 hot tub with a capacity of 1050litres (appendix 2 refers). The water is changed after each guest, with the average guest staying 2 nights.

:. Daily water usage relating to hot tub = $\frac{1050\ l}{\text{Ave days between changes of water}}$

:. Daily water usage relating to hot tub = $\frac{1050\ l}{2\text{days}}$

:. Daily water usage relating to hot tub = 525 l/d

:. Total daily water usage relating to the Annex (2) (l/d) = 139.8 l + 525 l

:. Total daily water usage relating to the family home (l/d) = **664.8 l/d**



Figure 7, Shows the Ponfit PFDJJ -82 hot tub for Annex 2

To determine the total water usage per day for Little Wantley (excluding the Cruiser) the sum of the 4 elements of Little Wantley is calculated as follows:

:. Total water usage per day for Little Wantley (l/d) = Family home (inc Annex 3) + Annex(1) + Annex(2) + Annex(3)hot tub only.

:. Total water usage per day for Little Wantley (l/d) = 1101.5+ 496 + 664.8

:. Total water usage per day for Little Wantley (l/d) = 2262.3 l/d

The water usage calculations based on the maximum flow rates for the fixtures and fittings still exceed the baseline water usage of 0 l/d, therefore additional measures are required to ensure compliance with the Water Neutrality requirements.

Existing Water Usage is calculated to be = 2262.3 l/d

Although a water audit has been carried out appendix 6 demonstrates through a metered water bill that water usage on average from September 2023 to February 2024 was 2287 litres per day. This assists in supporting the accuracy of the calculations provided.

Establishing the existing water usage of the site is imperative to determining the net impact of the development on the water use.

3.0 Reduction of Water Usage

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 of the family house only that the overall site water usage can be reduced.

3.02: Water Reduction Measures: Through the specification of aerated taps and dual flush toilets it is possible to reduce the total water usage of the existing property. A schedule of the fittings and breakdown based on accommodation is included below:

Owing to the age of the Cruiser and the use of modern fittings, it has been decided that water savings will have little benefit, however, the age of the Family House and its fittings offer a much greater opportunity for water savings, thus the limited of changes to fitting will be limited solely to the Family House and Annex 3element.

1) Water Savings Family Home

Existing baseline **1178 l/d** (inc. Hot tub water usage)
Existing baseline 1028 l/d (exc. Hot tub water usage)

It is proposed that all 3 Toilets are replaced in the main house with new dual flush versions, it also proposed that the basin taps in each of the of Bathroom and WC are fitted with retrofitted flow limiters as detailed below.

Appliance	Flow Rate (Part G)	Proposed Fixtures
w.c.'s	6/4 dual flush	6/3 l/min Nexo Close-Coupled Cistern 6/3 Litre Dual Flush
Basin Taps	6/lmin	Retro fit - Basin Mixer Tap Flow Limiter 6 Litres Per Minute - BAS6L

Therefore, based on the actual occupancy of 5, the water usage is calculated by 5 x 173.1 l/d = 865.5 l/d. The Part G Calculation sheet is contained in Appendix E refers.

:. The existing water usage (excluding hot tub use) = 205.6 l/p/d
:. Water usage saving by using efficient fittings = 173.1 l/p/d

Existing water usage(excluding hot tub use) – proposed water usage

:. Water usage saving by using efficient fittings = 205.6 l/p/d – 173.1 l/p/d
:. Water usage saving by using efficient fittings = 32.5 l/p/d
:. Total daily water saving by using efficient fittings = 32.5/p/d x 5 (Occ level)
:. Total daily water saving by using efficient fittings = 162.5 l/d

Therefore there is a reduction of **162.5 l/d** over the baseline assessment for the Family Home.

Therefore offsetting the total water usage saving using efficient fittings against the proposed water demand for the Cruiser equates to:

:. Offset Cruiser water demand =

Cruiser water demand – Total water usage saving based on efficient fittings

:. Offset Cruiser water demand = 655.8 l/d – 162.5 l/d

:. Offset Cruiser water demand = **493.3 l/d**

Although offsetting water usage of the Cruiser against water usage savings based on the use of water-efficient fittings offers some savings, there still remains an excess in water usage above the 0/l baseline of 476.3 l/d, therefore additional measures are required to satisfy the water neutrality requirements. These are set out within the following sections.

2) Water Savings Housekeeper Accommodation Annex 1

Existing baseline **538.8 l/d** (inc. Hot tub water usage)
Existing baseline 396 l/d (exc. Hot tub water usage)

It is proposed that the Toilet in the bathroom is replaced in the Annex 1 with new dual flush version.

Appliance	**Flow Rate (Part G)**	**Proposed Fixtures**
w.c.'s	6/4 dual flush	6/3 l/min Nexo Close-Coupled Cistern 6/3 Litre Dual Flush

Therefore, based on the actual occupancy of 2, the water usage is calculated by 2 x 178.5 l/d = 357 l/d. The Part G Calculation sheet is contained in Appendix E refers.

:. The existing water usage (excluding hot tub use) = 198 l/p/d
:. Water usage saving by using efficient fittings = 178.5 l/p/d

Existing water usage(excluding hot tub use) – proposed water usage

:. Water usage saving by using efficient fittings = 198 l/p/d – 178.5 l/p/d
:. Water usage saving by using efficient fittings = 19.5 l/p/d
:. Total daily water saving by using efficient fittings = 19.5/p/d x 2 (Occ level)
:. Total daily water saving by using efficient fittings = 39 l/d

Therefore there is a reduction of **39 l/d** over the baseline assessment for the Housekeeper Accommodation / Annex 1/

Therefore offsetting the total water usage saving using efficient fittings against the proposed water demand for the Cruiser equates to:

:. Offset Cruiser water demand =

Cruiser water demand (less water saving measure for House) – Total water usage saving based on efficient fittings (Annex 1)

:. Offset Cruiser water demand = (655.8 l/d – 162.5 l/d) – 39 l/d

:. Offset Cruiser water demand = 493.3 l/d – 39/d

:. Offset Cruiser water demand = **454.3 l/d**

Although offsetting water usage of the Cruiser against water usage savings based on the use of water-efficient fittings offers some savings, there still remains an excess in water usage above the 0/l baseline of 454.3 l/d, therefore additional measures are required to satisfy the water neutrality requirements. These are set out within the following sections.

3) Water saving relating to Existing hot tubs.

It is proposed that further savings may be achieved through revising the regime for water changing with the hot tubs. For hygiene and safety purposes and to comply with HSE guidance in relation to the commercial use of hot tubs, it is not proposed to change the regime for water changes to the hot tubs used in the holiday accommodation (Annex 2 and the Cruiser). However, for the hot tubs used domestically, they are not subject to the Health and Safety at Work Act, and do not fall within the scope of the HSE guidance (Appendix 4 refers). This is due to private use and use by the householders (the Family House and Annex 1). The present regime used by the occupiers for the domestic use hot tubs of water changes every 7-10 days, was informed by HSE guidance which suggest water changes between clients or every week (albeit this is based on commercial use).
It is also corroborated to a certain extent by Appendix 6 (water bill), which corroborates the calculations provided in respect of existing water usage on the site.

It is proposed as the hot tub remains solely for domestic that water changes can be extended providing the occupier complies with Ponfit / manufacturers guidance (Appendix 5 refers), the guidance indicates that through chemical treatment water life may be extended to 6-12 months. The approach seeks to use a strict testing and treatment regime. It is noted that the regime proposed may be extended to 12 months, however for the purposes of this process, the client is opting to change the water on a 6 monthly / 180 day basis.

1) The Family home

:. Current water usage relating to hot tub (l) =

$$\frac{\text{Hot Tub Capacity(l)}}{\text{Total days between water change}}$$

:. Current water usage relating to hot tub (l) = $\frac{1050\ l}{7\ \text{days}}$

:. Current water usage relating to hot tub (l) = **150 l/d**

:. Proposed water usage relating to hot tub (l) =

$$\frac{\text{Hot Tub Capacity(l)}}{\text{Total days between water change}}$$

:. Proposed water usage relating to hot tub (l) = $\frac{1050\ l}{180\ \text{days / 6months}}$

:. Proposed water usage relating to hot tub (l) = **5.8 l/d**

2) The Annex(1) – house Keepers Accommodation

:. Current water usage relating to hot tub (l) =

$$\frac{\text{Hot Tub Capacity(l)}}{\text{Total days between water change}}$$

:. Current water usage relating to hot tub (l) = $\frac{1000\ l}{7\ \text{days}}$

:. Current water usage relating to hot tub (l) = **142.9 l/d**

:. Proposed water usage relating to hot tub (l) =

$$\frac{\text{Hot Tub Capacity(l)}}{\text{Total days between water change}}$$

:. Proposed water usage relating to hot tub (l) = $\frac{1000\ l}{180\ \text{days / 6months}}$

:. Proposed water usage relating to hot tub (l) = 5.6 **l/d**

Total water saving relating to change in regime for hot tubs

:. Total existing water usage of hot tubs
For Family Home and Annex 1 = 150l/d + 142.9 l/d = 292.9 l/d

:. Total proposed water usage of hot tubs
For Family Home and Annex 1 = 5.8 l/d + 5.6 l/d = 11.4 l/d

:. Total saving through use of changing water treatment regime =

Total existing water usage (hot tubs Family house + Annex 1) _ Total proposed water usage (hot tubs Family house + Annex 1)

:. Total saving through changing the water treatment regime = 292.9 l – 11.4 l

:. Total saving through changing the water treatment regime = **281.5 l/d**

Annex (2) it is proposed that the existing Ponfit PFDJJ -82 1050-litre hot tub be replaced with a smaller HONOUR-690 l PFDJJ-69 700-litre tub or similar, this will significantly contribute to reducing water usage as highlighted below.

:. Current water usage relating to hot tub (l) = $\frac{1050\ l}{2\ days}$

:. Current water usage relating to hot tub (l) = 525 l/d

:. Proposed water usage relating to 1050l tub = $\frac{700}{2\ days}$

:. Proposed water usage relating to 1050l tub = 350 l/d

:. Proposed water saving = 525 l – 350 l

:. Proposed water saving = **175 l/d**

<u>Proposed Total Water Usage with Reduction Measures</u>

:. Proposed total water saving with reduction measures (l/d)= Combined savings using efficient fittings + total savings for hot tub use + replacement (reduced) hot tub

:. Proposed total water saving with reduction measures l/d = (162.5 l + 39l) + 281.5 l + 175.0 l

:. Proposed total water saving with reduction measures l/d = (201.5 l) + 281.5 l + 175.0 l

:. Proposed total water saving with reduction measures (l/d = **658 l/d**

Therefore, the residual water usage demand for the Cruiser after the proposed offsetting and changes to the regime of water changes relating to the hot tubs = 655.8 l/d – 658 l/d
:. Residual water demand for the Cruiser = **<u>2.2 l/d</u>**

4.0 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 creates a **201.5 l/d**, reduction in water use from a baseline assessment of the proposals using the flow rates as set out within Part G.

Whilst the water treatment of the hot tubs used by the householders will reduce this further by an additional **281.5 l/d.**

Finally the replacement of the Ponfit PFDJJ -82 1050l hot tub associated within Annex 2 with a smaller Ponfit PFDJJ -82 700 l hot tub will provide an additional **175 l/d** saving.

Therefore, through this WNS, that the Cruiser can be water neutral, and the applicants' desires to improve the water efficiency of the proposals, it has been proven that a saving of **2.2 l/d** a day can be made from the baseline water usage figures of the proposed scheme and should therefore be seen as a positive approach to reducing water usage.

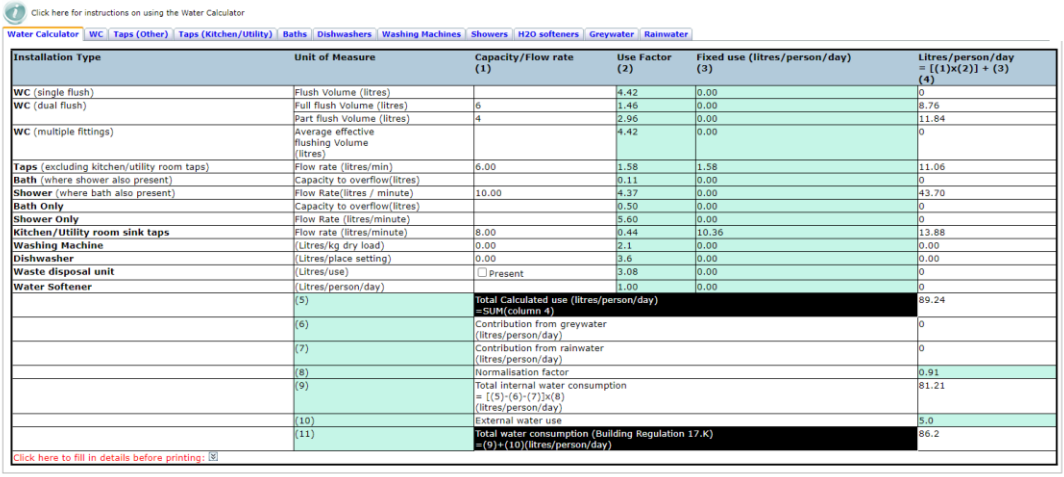
A summary of the proposals is as follows;

Baseline: For the Cruiser (2.01 refers)	**0 l/d**
Proposals: For the Cruiser (2.02 refers)	**655.8 l/d**
Water Saving Measures Proposed to Little Wantley:	**201.5 l/d**
Proposed saving from Existing hot tub use:	**281.50 l/d**
Proposed replacement of 1050l hot tub with 800l hot tub:	**175.0 l/d**
Overall Proposed Water Usage after water saving measures: = 655.8 l/d – 658 l/d	**-2.2 l/d**

Based on the calculations within this Water Neutrality Statement it has been demonstrated that the proposed development is deemed as **water neutral**, as the proposed Cruiser and combination of works to Little Wantley would not cause a significant effect on water usage, the works proposed would reduce overall water usage on the site by 2.2 l/d.

Appendices

Appendix A (The Cruiser proposed water usage)



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)	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)	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)**			89.24
	(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)			81.21
	(10)	External water use			5.0
	(11)	**Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)**			86.2

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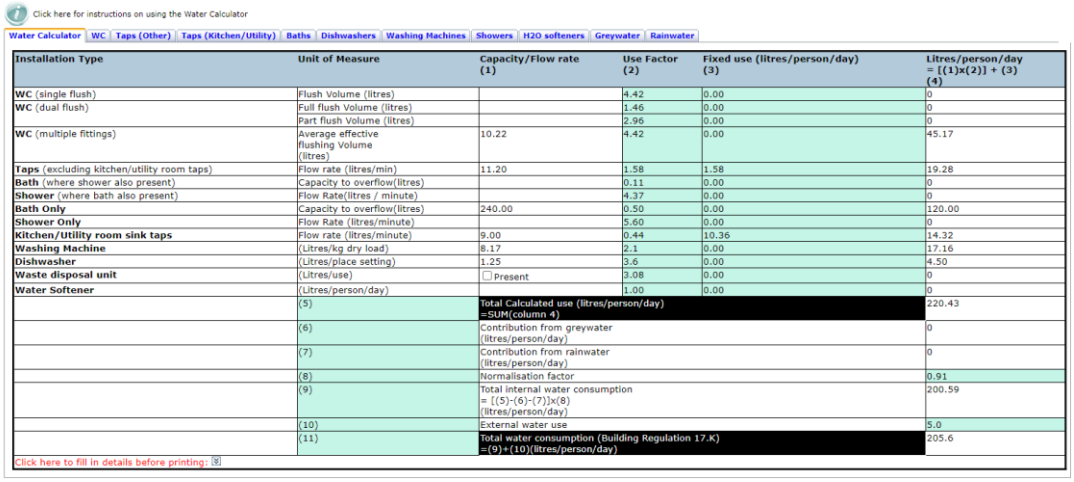
Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G. Note figures are based on survey of existing fittings.

Appendix B (Family House Existing & Annex 3 excluding hot tubs)



Click here for instructions on using the Water Calculator

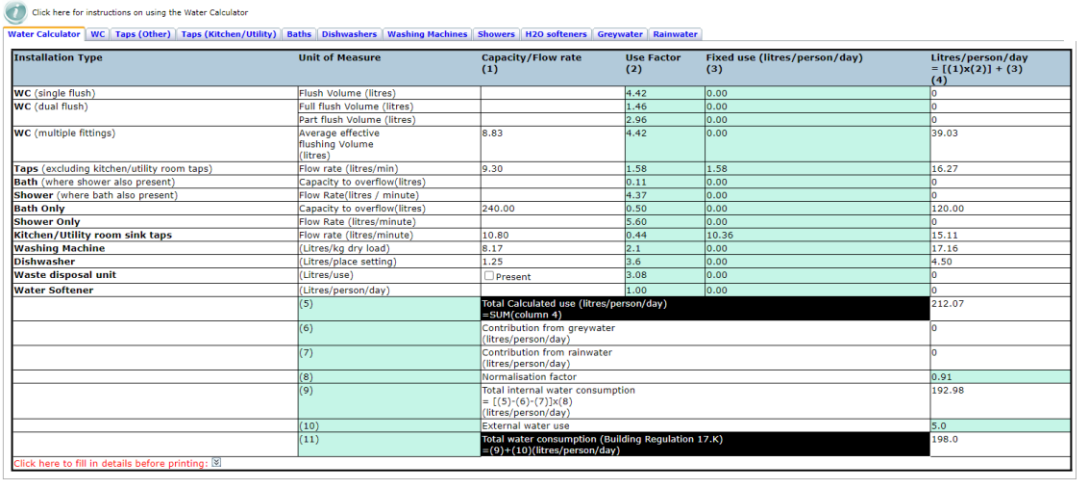
Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

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)		1.46	0.00	0
	Part flush Volume (litres)		2.96	0.00	0
WC (multiple fittings)	Average effective flushing Volume (litres)	10.22	4.42	0.00	45.17
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	11.20	1.58	1.58	19.28
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)	240.00	0.50	0.00	120.00
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	9.00	0.44	10.36	14.32
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)**			220.43
	(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)			200.59
	(10)	External water use			5.0
	(11)	**Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)**			205.6

Click here to fill in details before printing:

Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G. Note figures are based on survey of existing fittings.

Appendix C (Annex 1, Housekeepers Accommodation)



Click here for instructions on using the Water Calculator

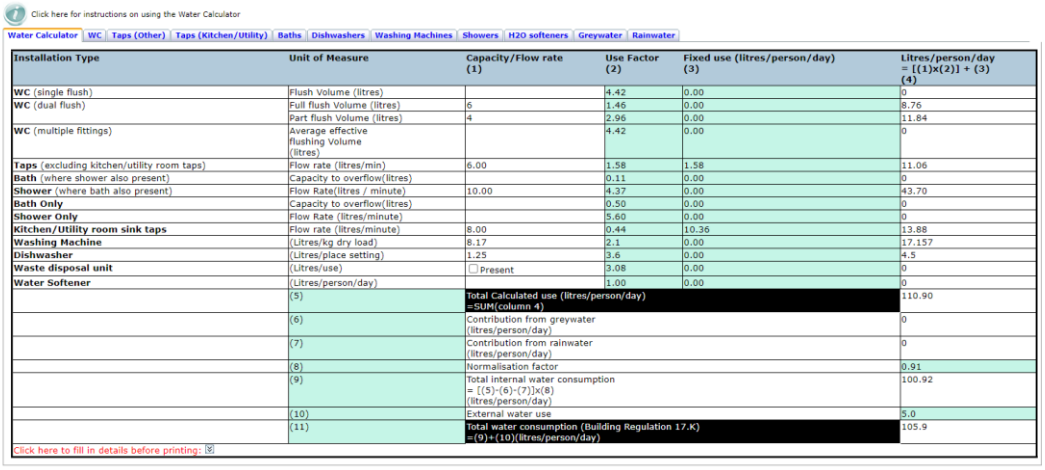
Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

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)		1.46	0.00	0
	Part flush Volume (litres)		2.96	0.00	0
WC (multiple fittings)	Average effective flushing Volume (litres)	8.83	4.42	0.00	39.03
Taps (excluding kitchen/utility room taps)	Flow rate (litres/min)	9.30	1.58	1.58	16.27
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)	240.00	0.50	0.00	120.00
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	10.80	0.44	10.36	15.11
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)**			212.07
	(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)			192.98
	(10)	External water use			5.0
	(11)	**Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)**			198.0

Click here to fill in details before printing:

Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G. Note figures are based on survey of existing fittings.

Appendix D (Annex 2/ Holiday Accommodation Existing)



Click here for instructions on using the Water Calculator

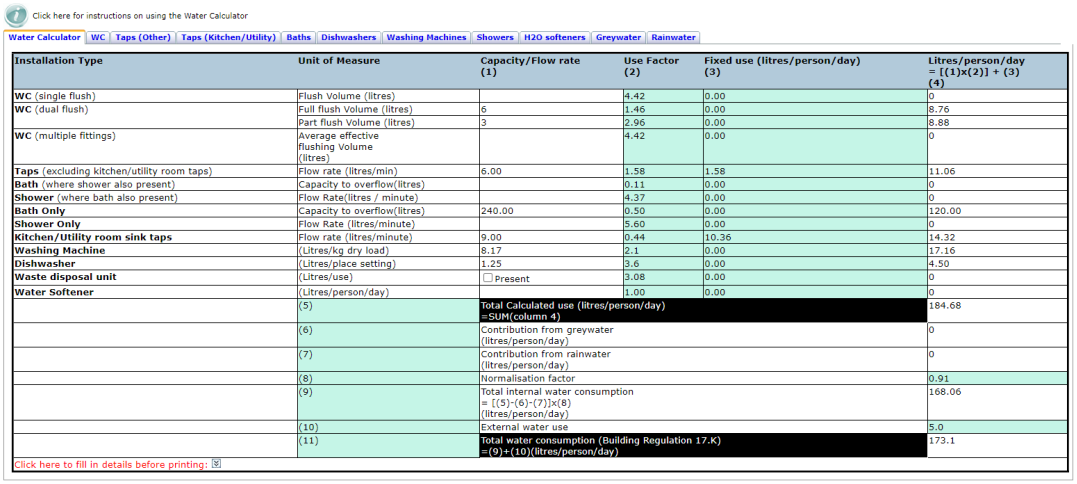
Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

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)	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	17.157
Dishwasher	(Litres/place setting)	1.25	3.6	0.00	4.5
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)			110.90
	(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)			100.92
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			105.9

Click here to fill in details before printing:

Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G. Note figures are based on survey of existing fittings.

Appendix E (Family House Proposed)



Click here for instructions on using the Water Calculator

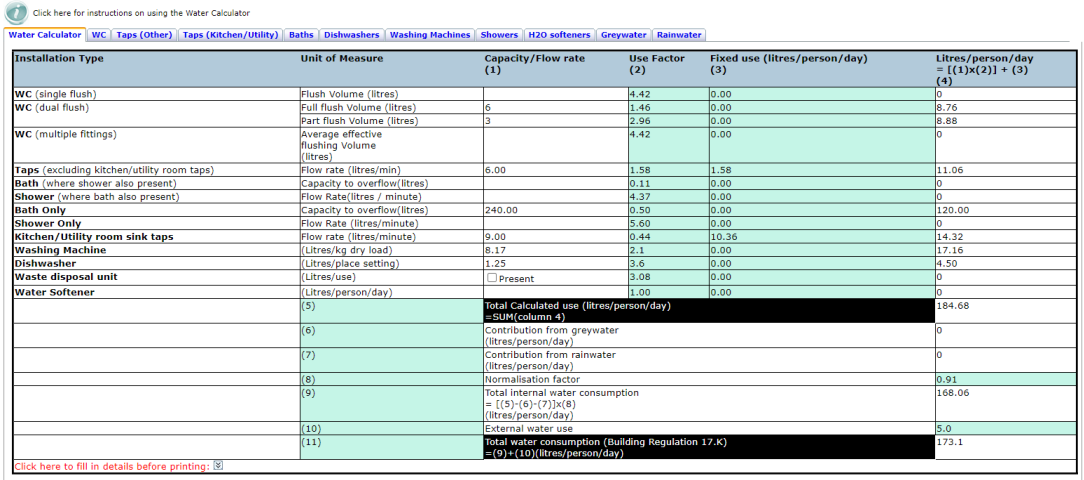
Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

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)	3	2.96	0.00	8.88
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)	240.00	0.50	0.00	120.00
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	9.00	0.44	10.36	14.32
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)			184.68
	(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)			168.06
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			173.1

Click here to fill in details before printing:

Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G.

Appendix F (Houskeeper Accommodation / Annex 1 Proposed)



Click here for instructions on using the Water Calculator

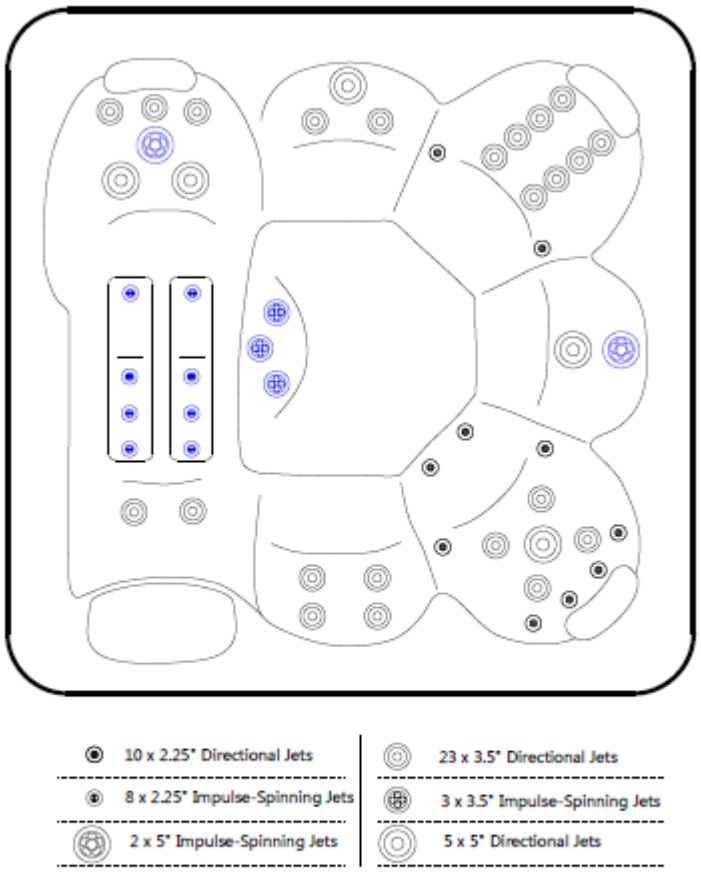
Water Calculator | WC | Taps (Other) | Taps (Kitchen/Utility) | Baths | Dishwashers | Washing Machines | Showers | H2O softeners | Greywater | Rainwater

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)	3	2.96	0.00	8.88
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)	240.00	0.50	0.00	120.00
Shower Only	Flow Rate (litres/minute)		5.60	0.00	0
Kitchen/Utility room sink taps	Flow rate (litres/minute)	9.00	0.44	10.36	14.32
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)			184.68
	(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)			168.06
	(10)	External water use			5.0
	(11)	Total water consumption (Building Regulation 17.K) =(9)+(10)(litres/person/day)			173.1

Click here to fill in details before printing:

Table, Water usage, based on calculations by the Government's National Calculation Methodology for assessing water efficiency in new dwellings in accordance with Part G

Appendix 2 Ponfit PFDJJ -82 – Specification -1050litre



PFDJJ-82

Description

Type: Spa bathtubs
Place of Origin: Guangdong, China
Brand: Ponfit SPA
Model Number: PFDJJ-82
Amperage: 25”
Capacity: 1050l
Number of jets: 86
Function: Massage
Application: Garden/Outdoor
Material: acrylic
Massage type: Whirlpool Outdoor Spa
Color: optional
Size: 2100*2100*900mm
Product Name: Hydrotherapy Pool
Control System: Balboa or Gecko Control System
Certification: SAA/CE/FCC
Name: Ponfit outdoor hot tub

Appendix 3 Sunran SR839 – Specification – 1000 litre



Model SR839

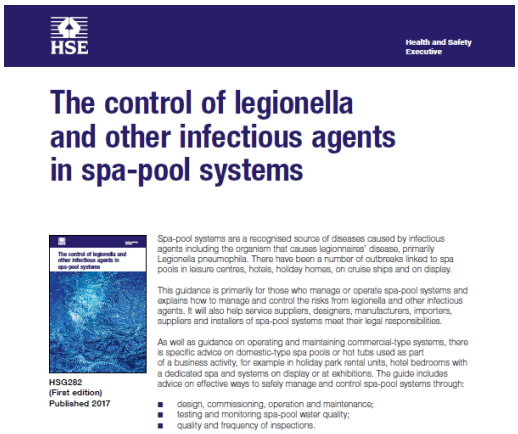
Size:1600mmx1600mmx850mm

seat capacity: 4 Persons
Gross weight: 210kg
Packing dimension: 1700mmx1700mmx950mm
Container load: 7pcs/20ft; 14pcs/40ft

share

Seating Capacity	4 Persons
Lounge 0 Person	
Dimensions/Weight/ Container load	
Product dimension	1600mmx1600mmx850mm
Packing dimension	1700mmx1700mmx950mm
Weight - Dry/Filled	210KG/ 1210KG
Water capacity	1000Liters
Container load	7pcs/20ft; 14pcs/40ft
Shell	
Shell colors	19 color available
Shell material	Aristech Acrylic
Pumps (UL,CE, KC approved)	
Jet pump 1	2.0HP
Jet pump 2	2.0HP
Circulation pump	0.53HP
Air blower	1HP
Electrics	
Control system	America Balboa control
Max power consumption:	6735 Watt 30.6A in 220V 50Hz
Heater (America Balboa brand)	3KW
Underwater lighting	5″ LED
Jet Configurations	
Jets total (pc)	53
Massage jets (pc)	40
Air jets (pc)	13
Filtration	
Filter	Front access filters
Effective Filtration Area	100 sq. ft.
Ozone Generator	50mg/h
Features	
Water diverter(pc)	1
Air regulater(pc)	2
Suctions (pc)	3
Gate valves (pc)	6
Drain valve (pc)	1
Headrest pillows(pc)	2
Support frame	#304 Stainless steel
Overflow outlet (pc)	1
Skirt:	Brown/ Grey / Black color

Appendix 4 (Extract) HSE guidance (HSG282 First Edition) The control of legionella and other infectious agents in spa-pool systems) for hot tubs in respect none domestic usage



HSE

Health and Safety Executive

The control of legionella and other infectious agents in spa-pool systems

HSG282
(First edition)
Published 2017

Spa-pool systems are a recognised source of diseases caused by infectious agents including the organism that causes legionnaires' disease, primarily Legionella pneumophila. There have been a number of outbreaks linked to spa pools in leisure centres, hotels, holiday homes, on cruise ships and on display.

This guidance is primarily for those who manage or operate spa-pool systems and explains how to manage and control the risks from legionella and other infectious agents. It will also help service suppliers, designers, manufacturers, importers, suppliers and installers of spa-pool systems meet their legal responsibilities.

As well as guidance on operating and maintaining commercial-type systems, there is specific advice on domestic-type spa pools or hot tubs used as part of a business activity, for example in holiday park rental units, hotel bedrooms with a dedicated spa and systems on display or at exhibitions. The guide includes advice on effective ways to safely manage and control spa-pool systems through:

- design, commissioning, operation and maintenance;
- testing and monitoring spa-pool water quality;
- quality and frequency of inspections.

Pp 22. Domestic-type spa pools – used as a business activity

76 Domestic-type spa pools or hot tubs used as part of a business activity (eg in a holiday park rental unit or hotel bedroom(s) with their own dedicated spa, or as part of a rental agreement for a single family or group use) are subject to the general duties under the HSW Act. There is a legal requirement for these systems to be managed and controlled in proportion to the risk and the risk assessment should consider the type of pool and its use. Domestic-type spa pools are for use by a small, discrete group of people at any one time and are typically:

of either a rigid or inflatable/foam-filled structure with freeboard and skimmer;
systems where the water should be **changed after each rental**/week, whichever is the shorter;
disinfected using bromine or chlorine through the use of an inline disinfectant feeder.

Appendix 5 (User guide) as supplied by Ponfit – Detailing Maintenance schedule for domestic use.

Hot Tub Quick Start Up Guide



Step 1: Filling

Fill up your spa with following instructions.

A. **Your water level should be higher than the sign.**

B. **Keep your overflow valve pulled out if you have.**

*Remind:
Filling your spa by removing a filter and putting the hose in the fitting hole.



Step 2: Activating

Activating your spa by qiuckly switching on&off pump botton for several times if the spa just filled.

Filling spa water incorrectly may damage your pumps and heater, by activating them can quickly find the problem.

If you have, music stereo is bluetooth connected, the name of the device is called P-20.

You are free to link it with any bluetooth device.

*Quick Hit ™ bluetooth:
the stereo system is password protected, the number would be "8888" .



Step 3: Treating

Ensure your spa cover is *off* and the pump is running. Before you add in chemicals, use test strips to check water balance first. Follow the instructions on the test strip container, and make sure water PH is in balance.

Unbalanced spa water can damage your spa pumps and heater.

*Reference: 6 grams per 1,000 litres.



Step 4: Heating

Heat up your spa to the temperature you need.

Ensure your spa cover is on while heating, air cooling down water qiuck.

*Note: See the system instruction if you need.

Having a hot tub in your house is wonderful, good quality spa is performanced to relax you after a day, but don't forget to take care of it.

Beautiful spa, beautiful life.

** Water quality may effect to your health, make sure your water is clean when you having your spa.*

P 09/06/19

Hot Tub Regular Maintenance Guide

Daily Maintenance:



Does spa with water testing.
Keep electricity on.

Ensure your spa cover is on and pump is running.

Monthly Maintenance:

A. Test the water using a test strip – follow instructions on the container.
Compare the wet test strip to the test strip container.

Chemicals in spa can be soild like tablets, or fluid like potions. It depending on how you do with it. (Bromine or Chlorine) They both effective. However, the keypoint is the PH banlance of spa water.

If you have UV sanitizer installed, you could reduce the dosage of spa chemicals.

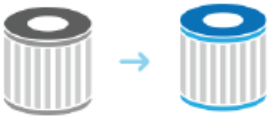


B. Adjusting PH, keep water fresh and clean.

Filter Maintenance:

A. Spa filter can be cleaned with water. You can wash it with your garden hose, or a specialized tool.

B. Dirty filter can cause bad health condition, don't forget to change your filter when it's used for a while. we recommend to change filters 3-4 months at a time.



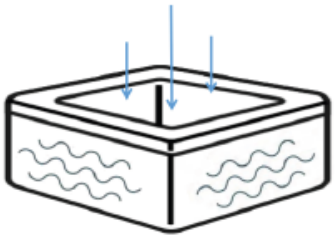
Water Maintenance:

Spa water has to be drained and refilled every 6-12 months, 12-24 months for swim spa, but it also depending on bather load and w ater quality. Follow instructions.

A. Keep your filter and water clean.
*Note: Blue filter is made by anti-bacterial materials, it often lasts longer. Hygiene is important in spa .

B. Drain your spa with the drainage on the cabinet.

C. Restart your spa once refilled by following the quick start up guide on the previous page.



Does your spa works at least 2-3 times a week, whether you have a regular spa or swim spa.

IMPORTANT NOTE:

Read instructions on the chemical container before you do spa works.

The quality of spa chemicals will directly influence water quality, poor quality chemicals is not recommended.

We recommend using chemical products from your dealer or related service company only. Any of the use of other chemical products which results in issues not covered in your spas warranty.

*Water quality may effect to your health, make sure your water is clean when you having your spa.

P 09/06/19

Appendix 6 Water Bill 05 September 2023 - 01 February 2024

WATER for LIFE from Southern Water

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

0330 303 0277
Weekdays - 8am to 6pm

[redacted]
LITTLE WANTLEY
FRYERN ROAD
STORRINGTON
RH20 4BJ

Your customer number [redacted]

Your payment reference
0004 5086 78800

Dear Mr S OLIPHANT-HOPE & Mrs V OLIPHANT-HOPE,

Here's your latest bill based on the meter reading we took on 01 February 2024. 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

343 m³

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

Meter number: 8985316

Latest reading: 1 Feb 2024

4 2 8 4 . 0 0

Previous reading: 4 Sep 2023

3 9 4 1 . 0 0

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

Previous bill's usage
600.00 m³

Charges

£597.18

Bill date
02 Feb 2024

Billing period
From: 05 September 2023
To: 01 February 2024

Bill type
Metered - Direct Debit

Previous bill's charges
£1,017.44

Future payments

Your Direct Debit payment

£597.18

To be taken on
10 Mar 2024

Struggling to pay? See p. 3

1715 - M - Document 1 of 1 - 05022024 - 6166358 - 6166398

Water

Period: 05 September 2023 to 01 February 2024

Variable Rate	£1.716 x	343.00m³ =	£588.59
Standing Charge		=	£8.59
Total Water			**£597.18**

Wastewater

Southern Water only supplies your water – we don't take wastewater away from your property.

So, you don't receive any wastewater charges from us.

Standing Charge:
This covers essential service costs such as sending bills, collecting payments and dealing with enquiries.

If you would like to know more about how we calculate our charges, please go to **www.southernwater.co.uk/account/how-we-calculate-your-bill**

STA-BWP39-2-0220

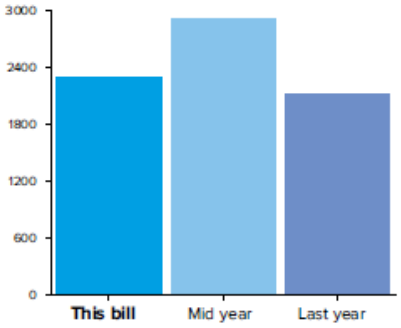
Your account summary

Balance brought forward from your last bill	£1,017.44
What you've paid since your last bill	£1,017.44 Credit
What you've been charged for From 05 September 2023 to 01 February 2024	£597.18
Outstanding Balance	**£597.18**

Your water use

Over the last five months your household used an average of **2287** litres a day

You're using £4.01 of water a day on average.



Your water meter is read twice a year. We can read most meters from the street – so you may not have noticed when we read yours.

