[redacted]

[redacted]

Sent: 15 April 2024 14:12
To: Planning
Subject: FW: 2024-04-26 472007 COU office to dwellings, Bentons Cottage Bentons Lane West Sussex RH13 8NP DC/24/0284
Attachments: ufm2_Water_Neutrality_consult.pdf; DC-24-0284 WNS.pdf; DC-24-0284 - HRA APPROPRIATE ASSESSMENT.pdf; Annex A to standard letters - April 2023 (PDF).PDF

Categories: Consultations

Thank you for consulting with Natural England regarding the following consultation(s).

The proposed development(s) falls within the Sussex North water supply zone; As set out in Natural England's Advice Note regarding Water Neutrality within the Sussex North Water Supply Zone, the existing water supply in the Sussex North water supply zone cannot be ruled out as contributing to the declines in wildlife within internationally protected sites in the Arun Valley SPA, SAC and Ramsar site. Achieving water neutrality is recognised as a suitable method to rule out potential adverse effects on the integrity of these sites arising from development.

Considering the supporting information provided by the applicant(s) and your authority's habitats regulation assessment (HRA) our advice is as follows.

Our ref	LPA ref	Planning Consultation and Location	Natural England's advice
472007	DC/24/0284 HRA/AA and WNS. COU from office and barn storage to two single storey dwellings, as alternative to permissions DC/23/1069 and DC/23/2158 (resubmission of DC/23/1708).	**Planning Consultation**: HRA/AA and WNS. COU from office and barn storage to two single storey dwellings, as alternative to permissions DC/23/1069 and DC/23/2158 (resubmission of DC/23/1708). **Location**: Bentons Cottage Bentons Lane Dial Post West Sussex RH13 8NP	We concur with the conclusion of your authority's HRA appropriate assessment insofar that adverse effects on the integrity of the Arun Valley Designated sites can be ruled out, as such: We have no objections subject to the: delivery, management and maintenance of measures identified in the water neutrality statement to achieve water neutrality.

Further general advice on the protected species and other natural environment issues is provided in the attached Annex A.

If you have any queries relating to this advice please let us know.

From: planning@horsham.gov.uk <planning@horsham.gov.uk>
Sent: Friday, April 5, 2024 8:12 AM
[redacted]
Subject: Planning Application Water Neutrality Consultation - DC/24/0284

Please see the attached consultation letter regarding Water Neutrality from Horsham District Council Re:DC/24/0284

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Water Neutrality Statement

For: Change of Use from Office and Barn Storage to No. 2 1-Bed Dwellinghouses.

At Bentons Cottage – Bentons Lane

Contents:

- Previous Permission (DC/23/1069)
- Introduction
- Background
- Water Neutrality
- Baseline Calculations
- Baseline Calculations (Bentons Cottage)
- Proposed Additional Demand
- Offsetting measures
- Conclusion
- Appendix (1-5)

Previous Permission (DC/23/1069):

The previous application for holiday lets (DC/23/1069) established that water neutrality could be achieved for two 1-bed holiday let dwellings via the water neutrality strategy provided. The water neutrality strategy was completed on the basis of 1.32 occupants occupying both buildings on a permanent basis, which is the same as what this current application now proposes.

The same strategy is therefore proposed for this application for unrestricted residential use and the water neutrality statement for DC/23/1069 has therefore been carried forward and can be found below.

Many thanks.

[redacted]

DMH Stallard LLP

Introduction:

This statement has been prepared for the application for change of use of existing office and barn storage to two 1-bed dwellinghouses at Bentons Cottage, Bentons Lane, in order to show that the development can meet the necessary requirement of demonstrating "water neutrality" due to the current concerns over the protected Arun Valley sites in Horsham District.

The site is located within Horsham District and importantly within the North Sussex Water Supply Zone and therefore there is a requirement to demonstrate water neutrality.

Water neutrality is defined as ensuring the development does not result in an increased water usage as compared to before the development has occurred.

This statement has been prepared in accordance with all the relevant guidance from Natural England and Horsham District Council including the following:

- Natural England (NE) Position Statement (September 2021)
- Natural England FAQ's (December 2021)
- Horsham District Council Water Neutrality FAQ's (Water Neutrality and Planning Applications) – Updated July 2023.

Calculations are included in this document to show the potential for offsetting the water consumption in the new dwellings by undertaking the retrofitting of the existing dwelling Bentons Cottage, RH13 8NP. Through discussions Local Planning Authorities within the Sussex North Water Supply Zone, have advised that this approach is acceptable and it adopts the methodology and guidance set out by Horsham District Council and Natural England guidance as well as guidance set out by Part G of the Building Regulations.

The statement concludes that water neutrality can be achieved via offsetting measures as is subsequently laid out below.

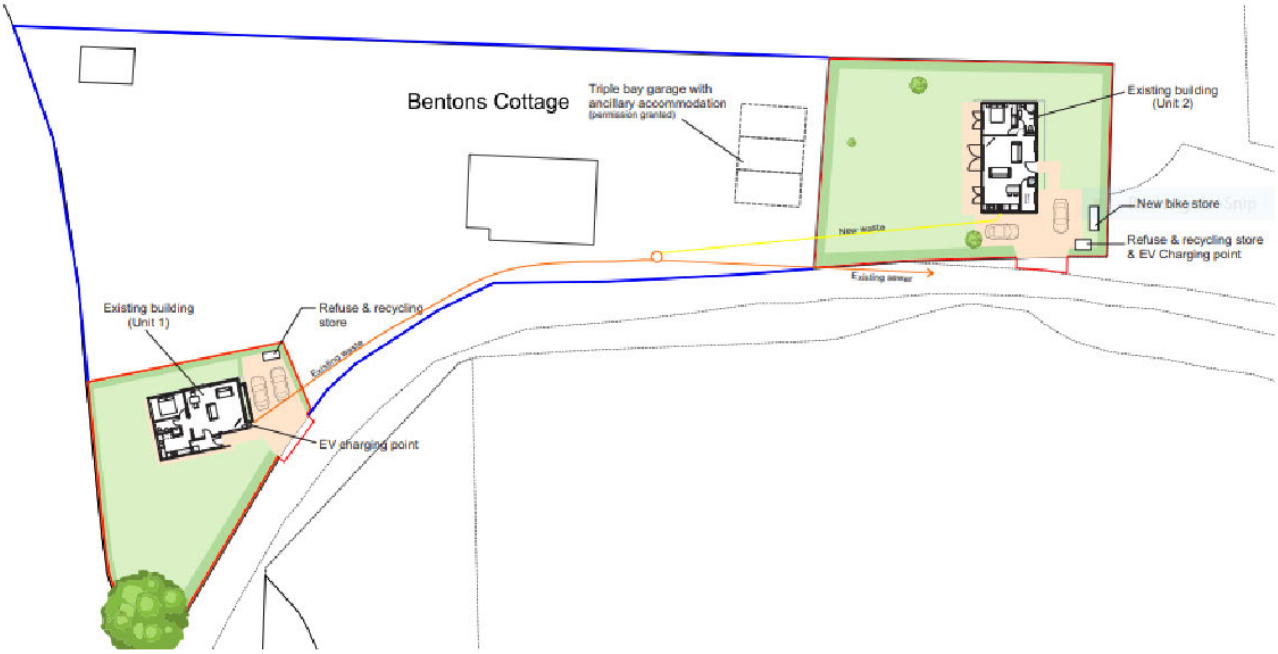
Background:

Bentons Cottage is a 4-bedroom residential property with no. of current occupants – (4). The Bentons Site hosts two further buildings – the office and storage barn, which are the buildings subject to the application for change of use. Water is supplied to the existing dwelling Bentons Cottage from Knepp Estate which is a neighbouring farm/estate, and not directly from Southern Water. However Knepp Estate is ultimately supplied by Southern Water.

As it cannot be demonstrated that the use of the office building has created additional demand for water above and beyond that of the occupation of Bentons Cottage as a whole, both new dwellings are considered to create an additional water demand on top of the use and occupation of Bentons Cottage.

The site plan below shows the overall site, and the locations of Bentons Cottage and the proposed new dwellings.

Site Plan



Baseline Calculations

The baseline water consumption for the office and barn buildings is considered to be nil.

Therefore, the new dwellings will increase water demand and usage from a starting point of zero and therefore all of the additional water demand as a result must be offset through retrofitting measures at Bentons Cottage.

The baseline calculations for Bentons Cottage are subsequently laid out and evidenced.

Baseline Calculations (Bentons Cottage)

Water bills are provided by the client to substantiate and evidence the metered water consumption for Bentons Cottage, please see Appendix 1.

The water bills refer to "Pink Cottage" – this is the historic name for Bentons Cottage (which has not been updated on the water bills) and is the same dwelling. Furthermore, the metered bills refer to "units" consumed, where one unit is equal to 1,000 litres of water consumption.

The water usage of Bentons Cottage varies over the 3-year period of bills, and an average water consumption is therefore calculated over that time period.

According to the metered information and evidence provided by the client the average water consumption per day over the 3-year period is as follows:

Average Daily Water Consumption = 685.97 litres/day(l/d).

Please also see Appendix 2 for a table summary of the water usage and calculation to arrive at the average daily use over the time period.

In order to meet the requirement of water neutrality, the total water consumption of Bentons Cottage and the proposed new dwellings combined must not exceed the baseline of 685.97 l/d after the development.

To calculate the Litres/per person/per day (l/p/d) = the Daily Water Consumption divided by the Number of Occupants (4)

= 685.97/4 (four occupants) = 171.49l/p/d

Therefore, the water usage per person, per day from Bentons Cottage is currently 171.49 l/p/d – as based on the current number of occupants (4) and evidenced via the water bills.

Proposed Additional Demand

It is now necessary to determine the increase in water usage and consumption which will be attributable to the proposed new dwellings.

The expected occupancy is assumed to be 1.32 occupants year-round, with 1.32 being the recommended figure for a 1-bed dwelling in line with Horsham District's guidance and FAQ's.

The new dwellings l/p/d has been calculated in accordance with the methodologies set out in Appendix A 'Water Efficiency Calculator for New Dwellings' of The Building Regulations Approved Document G.

The proposed appliances that will be installed in both dwellings are listed in Appendix 3 and in Table 1 below. The maximum flow rates are indicated, and are averaged where from more than one unit.

Table 1 - Proposed Appliances for Both New Dwellings

Table A1 - Appliances (New Dwelling)

Installation	Number	Units of Measure	Manufacturer
WC (Dual Flush)	1	2.66l	Roca 4.0l/2.0l
Taps (excluding kitchen/ utility room taps)	2	4l/min	Storm
Shower	1	3.5l/min	Triton
Kitchen/Utility Room Taps	2	6l/min	Storm
Washing Machine	1	5.13l/kg	Beko
Dishwasher	1	0.92l/place setting	Indesit

The following supporting comments show how the water consumption for each appliance or fixture has been calculated in the Table above and these figures are used in the following Water Efficiency Calculator.

Supporting Comments:

*1)WC (Dual Flush)- the average capacity (2.66l) stated above is derived by multiplying the number of units (1) by the manufacturers stated dual flush capacity (4.0l*0.33 +2.0l*0.67) for each unit and dividing the total capacity by the number of units (1).*

2)Taps (excluding kitchen/utility room)- the average flow(4l/min) stated above is derived by multiplying the number of units (2) by the manufacturers maximum stated flow rate (4l/min) for each unit and dividing the total flow by the number of units (2).

3)Shower – the average flow (3.5l/min) stated above is derived by multiplying the number of units (1) by the by the manufacturers maximum stated flow rate (3.5l/min) for each unit and dividing the total flow by the number of units (1).

4)Kitchen/Utility Room Taps - the average flow(6l/min) stated above is derived by multiplying the number of units (2) by the manufactures maximum stated flow rate(6l/min) for each unit and dividing the total flow by the number of units (2).

5)Washing machine - the capacity (5.13l/kg) stated above is derived by dividing the manufacturers stated water usage (according to the energy label 41l) by the load(8kg).

6)Dishwasher - the capacity (0.92l/place setting) stated above is derived by dividing the manufacturers stated water usage (according to the energy label 12l) by the place settings (13).

7)Appliance manufactures data is included in Appendix 3.

Table 2 – Water Efficiency Calculator

The water efficiency calculator has been completed and is provided below to clearly demonstrate the final daily water consumption per person of each new dwelling.

Please note the actual water consumption will vary depending on the actual behaviour of the occupants throughout the dwelling. This is discussed and recognised in The Building Regulations Approved Document G.

Table A2 -Water Efficiency Calculator (New Dwellings)

		(1)	(2)	(3)	(4)
Installation Type	Unit of Measure	Capacity/flow rate	Use Factor	Fixed use (litres/person/day)	Litres/person/day= [(1)x(2)+(3)]
WC (single flush)	Flush volume (litres)	0	4.42	0	0
WC (dual flush)	Full flush volume (litres)	4	1.46	0	5.84
	Part flush volume (litres)	2	2.96	0	5.92
WC (multiple fittings)	Average effective flushing volume (litres)	0	4.42	0	0
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	4	1.58	1.58	7.90
Bath (where shower also present)	Capacity to overflow (litres)	0	0.11	0	0
Shower (where bath also present)	Flow rate (litres/minute)	0	4.37	0	0
Bath only	Capacity to overflow (litres)	0	0.50	0	0
Shower only	Flow rate (litres/minute)	3.50	5.60	0	19.60
Kitchen/utility room taps	Flow rate (litres/minute)	6	0.44	10.36	13.00
Washing Machine	Litres/kg dry load	5.13	2.10	0	10.77
Dishwasher	Litres/place setting	0.92	3.60	0	3.31
Waste disposal unit	Litres/use(If present = 1. If absent = 0)	0	3.08	0	0
Water softener	Litres/person/day	0	1	0	0
	(5) Total calculated use (litres/person/day) = (Sum column 4)				66.34
	(6) Contribution from greywater (litres /person/day)				0
	(7) Contribution from rainwater (litres /person/day).				0
	(8) Normalisation factor				0.91
	(9) Total water consumption (litres/person/day) = [(5)-(6)-(7)]x8				60.37
	(10) External water use (litres/person/day).				5.00
	(11) Total water consumption= (9)+(10) (litres/person/day)				65.37

Therefore, as detailed the wholesome water consumption is calculated for the new dwellings at 65.37 l/p/d. This is less than 85 l/p/d required by Horsham District Council for new developments and is in accordance with Natural England Position Statement regarding Water Neutrality.

By applying the estimated occupancy of 1.32 persons, the daily water consumption of each of the new dwellings is **86.29l/d**. (65.37 l/p/d multiplied by the occupancy rate 1.32).

By multiplying this by 2x for each dwelling calculates the total additional demand that both new dwellings will create is as follows:

86.29 * 2 = 172.58l/d of new water demand.

Therefore, the offsetting measures at Bentons Cottage will need to show daily water savings of at least 172.58 l/d.

The offsetting measures are now detailed below in the next section.

Offsetting measures

Bentons Cottage comprises of the following water consuming appliances and fixtures;

Upstairs:

- Main Bathroom –Basin, Shower, WC (Dual Flush)
- En- Suite Bathroom – Basin, Shower, WC (Dual Flush)

Down Stairs:

- Kitchen – Sink, Dishwasher, Washer Machine
- Utility – Basin
- Cloakroom – Basin, WC (Single Flush)

Photos of these appliances are shown in Appendix 4

Measured flows have also been provided for each appliance within Bentons Cottage (please see Appendix 5), as evidenced by the readings taken by the client.

Table 3 below summarises the appliances in the existing dwelling.

Table 3 – Flow Rates and Water Consumption From Bentons Cottage Existing Appliances.

Installation	Number	Units of Measure	Source
WC (Dual Flush)	2	3.99l(6/3l)	Manufacturers Data
WC (Single Flush)	1	9l	Manufacturers Data
Taps (excluding kitchen/ utility room taps)	3(external tap not included)	22.75/min	Measured
Shower	2	18.05l/min	Measured
Kitchen/Utility Room Taps	2	23.50l/min	Measured
Washing Machine (MIELE CAPE W5740)	1	7.86l/kg	Manufacturers Data
Dishwasher (BEKO)	1	1.19l/place setting	Manufacturers Data

The following supporting comments show how the water consumption for each appliance or fixture has been calculated.

Supporting Comments to Table 3

*1)WC (Dual Flush)- the average capacity (3.99l) stated above is derived by multiplying the number of units (2) by the manufacturer's dual flush capacity (6.0l*0.33+3.0l*0.67) for each unit and dividing the total capacity by the number of units (2).*

2)WC (Single Flush)- the average capacity (9l) stated above is derived by multiplying the number of units (1) by the manufacturer's single flush capacity (9l) for each unit and dividing the total capacity by the number of units (1).

3)Taps (excluding kitchen/utility room)- the average flow (22.75l/min) stated above is derived by multiplying the number of units (4) by the measured flow (18.6l/min + 20.3l/min + 25.2l/min+25.0) for each unit and dividing the total flow by the number of units (4). Average flow used as higher than the highest flow rate multiplied by 0.7(17.64l/min).

4)Shower – the average flow (18.05l/min) stated above is derived by multiplying the number of units (2) by the by the measured flow rate (17.7l/min+18.4l/min) for each unit and dividing the total flow by the number of units (2). Average flow used as higher than the highest flow rate multiplied by 0.7(12.88l/min)

5)Kitchen/Utility Room Taps - the average flow (23.5l/min) stated above is derived by multiplying the number of units (3) by the measured flow rate (20.2l/min+25.2l/min+25.1) for each unit and dividing the total flow by the number of units (3). Average flow used as higher than the highest flow rate multiplied by 0.7(17.64l/min)

6)Washing machine - the capacity (7.86l/kg) stated above is derived by dividing the manufacturers stated water usage by the load.

7)Dishwasher - the capacity (1.04l/place setting) stated above is derived by dividing the manufacturers stated water usage by the place settings.

8)Measured flows undertaken by client, see Appendix 5.

It is assumed that the existing dwelling fittings consumption does not exceed that stated in Table 2.1 of Part G of the Building Regulations where no information is available. However, information has been provided in this case via evidenced readings.

Savings from the retrofitting of the appliances in Bentons Cottage as detailed in Table 3 will need to meet the required savings amount of 172.58 l/d.

The water consumption after retrofitting which is therefore required for Bentons Cottage to be equal to or less than is 513.39 l/d (685.97l/d – 172.58l/d). This is then divided by the actual number of occupants (4) to give the required l/p/d after retrofitting on a per person, per day basis, which is 128.35l/p/d.

The existing baseline consumption is 685.97l/d and the actual number of occupants is 4 which equates to 171.49l/p/d as things stand.

Thus, the reduction required on a per person, per day basis is **43.14l/p/d** in order to achieve water neutrality (171.49l/p/d – 128.351l/p/d).

To reduce the per capita consumption by 43.14 l/p/d from the existing dwelling by Retrofitting, the following approach is proposed:

- **Showers: (Flow Limiters To Be Installed)**

The Shower Flow Will Reduce – From 18.05l/min to 9.0l/min by installing the flow restrictors. This change equates to a reduction in consumption of (-46.12l/p/d) for each occupant as detailed in Table 4.

This results in a - 2.98l/p/d water saving after the development i.e., a credit of 2.98l/p/d.

Water neutrality can therefore be achieved by partially retrofitting the existing dwelling Bentons Cottage as detailed: Showers – Installation of Flow limiters. (Strom Restrictors)

The detailed calculation is laid out in Table 4 below:

Table 4 - Existing Dwelling Appliances - Before/After Retrofit

		(1)A - Before Retrofit	(1)B - After Retrofit	(2)	(3)	(4)A-Before Retrofit	(4)B-After Retrofit	
Installation Type	Unit of Measure	Capacity/flow rate	Capacity/flow rate	Use Factor	Fixed use (litres/person/day)	Litres/person/day = [(1)Ax(2)+(3)]	Litres/person/day = [(1)Bx(2)+(3)]	Shower only
Shower only	Flow rate (litres/minute)	18.05	9	5.6	0	101.08	50.4	-50.68
	Total Calculated(litres/person/day)					101.08	50.40	
	Contribution from rainwater (litres /person/day)					0.00	0.00	
	Normalisation factor					0.91	0.91	0.91
	Total Calculated after application of Normalisation Factor(litres/person/day)					91.98	45.86	-46.12
	Reduction						-46.12	
	Offset						43.14	
	Difference between Offset and Reduction						-2.98	
	Credit						2.98	

Notes

1)The 'Use Factor', 'Fixed Use Factor' and 'Optimisation Factor' are in accordance with Appendix A 'Water Efficiency Calculator for New Dwellings' of The Building Regulations Approved Document G.

2)The capacity/flow rates in (1)A are as measured by the client.

Conclusion

The calculations in this document show that the consumption of wholesome water consumption by persons occupying the new dwellings could be 65.37 litres per person per day (l/p/d) which is less than 85 l/p/d required by Horsham District Council for new developments and in accordance with the Natural England Position Statement regarding Water Neutrality.

This additional increase in demand can be offset by the retrofitting of the shower units in Bentons Cottage to reduce the daily water consumption by the necessary 172.58 l/d, based on the current occupancy of 4 persons.

It is therefore considered that water neutrality can be achieved by installing the offsetting measures as detailed in this report.

If during the development of the new dwellings the appliances are changed the calculation is recommended to be resubmitted as per the relevant guidance.

Appendix 1 – WATER BILLS

From:- [redacted]

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

INVOICE

Invoice No: SI8361 Date: 01/09/20 Due Date: 01/09/20

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
MAP 17 Water Supplied to Pink Cottage Water Volume Charge From 16/04/2020 to 01/07/2020 Previous reading 3242 ✓ Current reading 3316 ✓ Total volume used 74	74	[redacted]			
Water Standing Charge Total number of days 76 0.97 / day	76				

[redacted]

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

INVOICE

Invoice No: SI8752 Date: 05/11/20 Due Date: 05/11/20

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
MAP 17 Water Supplied to Pink Cottage Water Volume Charge From 01/07/2020 to 06/10/2020 Previous reading 3316 ✓ Current reading 3391 ✓ Total volume used 75	75	[redacted]			
Water Standing Charge Total number of days 97 0.77 / day	97				

DMH Stallard

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI9429 Date: 01/02/21 Due Date: 01/02/21

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
MAP 17 Water Supplied to Pink Cottage Water Volume Charge From 06/10/2020 to 12/01/2021 Previous reading 3391✓ Current reading 3474✓ Total volume used 83	83	[redacted]			
Water Standing Charge Total number of days 98 0.85/day 11/21	98				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI9687 Date: 31/03/21 Due Date: 31/03/21

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
MAP 17 Water Supplied to Pink Cottage Water Volume Charge From 12/01/2021 to 31/03/2021 Previous reading 3474✓ Current reading 3522 Total volume used 48	48	[redacted]			
Water Standing Charge Total number of days 78 0.61/day	78				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI10468 Date: 24/08/21 Due Date: 24/08/21

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
MAP 17 Water Supplied to Pink Cottage Water Volume Charge From 31/03/2021 to 26/06/2021 Previous reading 3522 Current reading 3583 Total volume used 61	61	[redacted]			
Water Standing Charge Total number of days 87 0.70/day	87				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI10878 Date: 27/10/21 Due Date: 27/10/21

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
Water Supplied via Meter MAP 17 PINK to C Pink Cottage Water Volume Charge From 26/06/2021 to 27/10/2021 Previous reading 3583 Current reading 3648 Actual Total volume used 65 If you have any inquiries regarding meeter reading, don't hesitate to contact Knepp Estate admin or the maintenance team.	65	[redacted]			
Water Standing Charge Total number of days 123	123				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI11728 Date: 01/02/22 Due Date: 01/02/22

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
Water Supplied via Meter MAP 17 PINK to C Pink Cottage Water Volume Charge From 27/10/2021 to 20/12/2021 Previous reading 3648 Current reading 3696 Actual Total volume used 48 If you have any inquiries regarding meeter reading, don't hesitate to contact Knepp Estate admin or the maintenance team.	48	[redacted]			
Water Standing Charge Total number of days 54	54				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI11731 Date: 09/03/22 Due Date: 09/03/22

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
Water Supplied via Meter MAP 17 PINK to C Pink Cottage Water Volume Charge From 20/12/2021 to 01/03/2022 Previous reading 3696 Current reading 3762 Actual Total volume used 66 If you have any inquiries regarding meeter reading, don't hesitate to contact Knepp Estate admin or the maintenance team.	66	[redacted]			
Water Standing Charge Total number of days 71	71				

DMH Stallard

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI12560 Date: 21/06/22 Due Date: 21/06/22

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
Water Supplied via Meter MAP 17 PINK to C Pink Cottage Water Volume Charge From 01/03/2022 to 06/06/2022 Previous reading 3762 Current reading 3802 Actual Total volume used 40 If you have any inquiries regarding meeter reading, don't hesitate to contact Knepp Estate admin or the maintenance team.	40	[redacted]			
Water Standing Charge Total number of days 97	97				

To:- [redacted]
Pink Cottage
Bentons Lane
Dial Post, Horsham
West Sussex
RH13 8NP

[redacted]

[redacted]

[redacted]

INVOICE

Invoice No: SI13481 Date: 01/11/22 Due Date: 01/11/22

Description	Quantity	Unit Price	Amount	VAT%	VAT Amount
Water Supplied via Meter MAP 17 PINK to C Pink Cottage Water Volume Charge From 06/06/2022 to 30/09/2022 Previous reading 3802 Current reading 3858 Customer Total volume used 56 If you have any inquiries regarding meeter reading, don't hesitate to contact Knepp Estate admin or the maintenance team.	56	[redacted]			
Water Standing Charge Total number of days 116	116				

Appendix 2 – TABLE SUMMARY OF BENTONS COTTAGE WATER USAGE AND AVERAGE USE CALCULATION

Baseline Water Usage (Using 3 - Yr, Data for House)

The Existing Water Usage as follows (evidenced for 3 years)

Bentons Cottage: Average 685.97l/d

Date Of Usage	Unit Usage	Litre Usage	Average TOTAL Usage Per Day
06/06/22 → 30/09/22 (86 days)	56 Units	56,000	651 l/day
01/03/2022 → 06/06/2022 (98 days)	40 Units	40,000	408 l/day
20/12/2021 → 01/03/2022 (71 days)	66 Units	66,000	929 l/day
27/10/2021 → 20/12/2021 (54 Days)	48 Units	48,000	888 l/day
26/06/2021 → 27/10/2021 (123 days)	65 Units	65,000	528 l/day
31/03/2021 → 26/06/2021 (87 Days)	61 Units	61,000	701 l/day
12/01/2021 → 31/03/2021 (78 Days)	48 Units	48,000	615 l/day
06/10/2020 → 12/01/2021 (98 Days)	83 Units	83,000	846 l/day
01/07/2020 → 06/10/2020 (91 Days)	75 Units	75,000	824 l/day
16/04/2020 → 01/07/2020 (83 Days)	74 Units	74,000	891 l/day
AVERAGE (898 Days)	**616 Units**	**616,000**	**685.97 l/day**

Notes

- 1 Unit equals 1000litres

Appendix 3 – Proposed Appliances for the new 1-Bed Dwellings.

Appendix 1.1 -Proposed Appliances

Roca The Gap Rimless Dual Flush Cistern 4/2 Litres - 34173C000

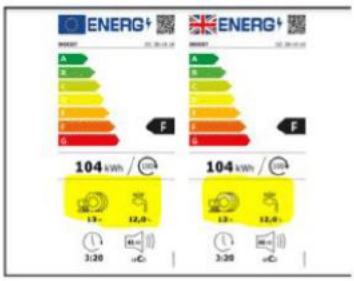


Features

- Dimensions (HxWxD): 405 x 365 x 140mm
- Dual Flush - 4 or 2 Litres
- Quick & easy to install
- Made of Vitreous China
- Supplied with fixing kit
- 25 Years manufacturer guarantee

INDESIT DIC 3B+16 UK Full-size Fully Integrated Dishwasher





TRITON

TRITON T80 EASI-FIT + WHITE / CHROME 8.5KW ELECTRIC SHOWER

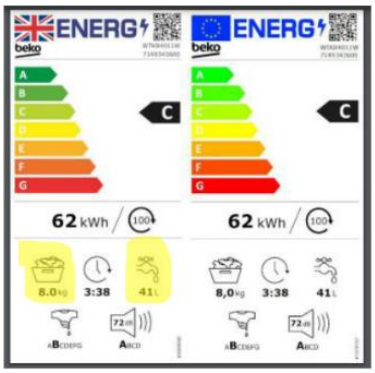


SPECIFICATION

Brand	Triton
Cable Entry Points	Top, Bottom, Left, Right & Rear
Colour	White / Chrome
Fixings Supplied	Fixings & Fittings Supplied
Manufacturer Guarantee	2 Year Manufacturer's Guarantee (T&Cs Apply)
Max. Shower Flow Rate	9.5 Ltr/min
Maximum Bar Pressure	10 bar
Max Water Temperature	47 °C
Min. Shower Flow Rate	3.5 Ltr/min
Minimum Bar Pressure	1 bar
Mixer Type	Manual
Model Name	T80 Easi-Fit +
Pack Size	1
Parent Colour	White
Pieces in Pack/Case	1
Power Output (Watts/Kw)	8.5 kW
Product Depth	101 mm
Product Height	333 mm
Product Type	Electric Shower
Product Width	225 mm

BEKO Recycled Tub WTK84011W 8 kg 1400 Spin Washing Machine - White





Strom TOUCH & FLOW TAP FLOW RESTRICTOR & AERATOR



SPECIFICATION

With adjustable flow rate that can be adapted between 3Ltr/min and 8Ltr/min dependant upon incoming mains pressure. Outlet design provides optimum presentation for medium flow rate applications. Quick and easy installation with no specialist tools required.

Adjustable Flow Rate	Adjustable Flow Rate
Aerator Thread Type	M24x1 Male Thread
Brand	Strom
Fixings Supplied	Fixings Not Required
Manufacturer Guarantee	1 Year Guarantee
Max. Flow Rate	8.0 Ltr/min
Min. Flow Rate	3.0 Ltr/min
Model Name	Maxi Flow
Model No	SSFR30LM
Pack Size	1
Pieces in Pack/Case	1
Product Type	Tap Flow Restrictor & Aerator

Appendix 4 – EXISTING APPLIANCES BENTONS COTTAGE

WC's



Basin Taps



Showers





Kitchen Taps



Appendix 5 – MEASURED FLOWS

Measured Flows by Client

Existing Fixtures (Bentons Cottage)	Flow Rate	Source:
Upstairs		
Main Shower – 1.01	17.7 Lpm	Measured
Bathroom Tap – 1.02	20.3 Lpm	Measured
En-Suite Shower – 1.03	18.4 Lpm	Measured
En-Suite Tap – 1.04	18.6 Lpm	Measured
Bathroom Toilet – 1.05	6L/3L	Manufacturers Data
En-Suite Toilet – 1.06	6L/3L	Manufacturers Data
Downstairs		
Kitchen Tap – 2.01	20.2 Lpm	Measured
Utility Tap 1 (HOT) – 2.02	25.2 Lpm	Measured
Utility Tap 2 (COLD) – 2.02	25.1 Lpm	Measured
Utility Bathroom Tap (HOT) - 2.03	25.2 Lpm	Measured
Utility Bathroom Tap (COLD) - 2.03	25.0 Lpm	Measured
Downstairs Toilet (Single Flush) – 2.04	9L	Manufacturers Data
Washing Machine – 2.05	7.86 l/kg	Manufacturers Manual
Dishwasher – 2.06	1.19 l/place setting	Manufacturers Manual

Annex A – Additional advice

Natural England offers the following additional advice:

Landscape
Paragraph 174 of the National Planning Policy Framework (NPPF) highlights the need to protect and enhance valued landscapes through the planning system. This application may present opportunities to protect and enhance locally valued landscapes, including any local landscape designations. You may want to consider whether any local landscape features or characteristics (such as ponds, woodland, or dry-stone walls) could be incorporated into the development to respond to and enhance local landscape character and distinctiveness, in line with any local landscape character assessments. Where the impacts of development are likely to be significant, a Landscape & Visual Impact Assessment should be provided with the proposal to inform decision making. We refer you to the Landscape Institute Guidelines for Landscape and Visual Impact Assessment for further guidance.

Best and most versatile agricultural land and soils
Local planning authorities are responsible for ensuring that they have sufficient detailed agricultural land classification (ALC) information to apply NPPF policies (Paragraphs 174 and 175). This is the case regardless of whether the proposed development is sufficiently large to consult Natural England. Further information is contained in GOV.UK guidance Agricultural Land Classification information is available on the Magic website on the Data.Gov.uk website. If you consider the proposal has significant implications for further loss of 'best and most versatile' agricultural land, we would be pleased to discuss the matter further.

Guidance on soil protection is available in the Defra Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, and we recommend its use in the design and construction of development, including any planning conditions. For mineral working and landfilling separate guidance on soil protection for site restoration and aftercare is available on Gov.uk website. Detailed guidance on soil handling for mineral sites is contained in the Institute of Quarrying *Good Practice Guide for Handling Soils in Mineral Workings*.

Should the development proceed, we advise that the developer uses an appropriately experienced soil specialist to advise on, and supervise soil handling, including identifying when soils are dry enough to be handled and how to make the best use of soils on site.

Protected Species
Natural England has produced standing advice[1] to help planning authorities understand the impact of particular developments on protected species. We advise you to refer to this advice. Natural England will only provide bespoke advice on protected species where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Local sites and priority habitats and species
You should consider the impacts of the proposed development on any local wildlife or geodiversity sites, in line with paragraphs 175 and179 of the NPPF and any relevant development plan policy. There may also be opportunities to enhance local sites and improve their connectivity. Natural England does not hold locally specific information on local sites and recommends further information is obtained from appropriate bodies such as the local records centre, wildlife trust, geoconservation groups or recording societies.

Priority habitats and Species are of particular importance for nature conservation and are included in the England Biodiversity List published under section 41 of the Natural Environment and Rural Communities Act 2006. Most priority habitats will be mapped either as Sites of Special Scientific Interest, on the Magic website or as Local Wildlife Sites. List of priority habitats and species can be found on Gov.uk.
Natural England does not routinely hold species data, such data should be collected when impacts on priority habitats or species are considered likely. Consideration should also be given to the potential environmental value of brownfield sites, often found in urban areas and former industrial land, further information including links to the open mosaic habitats inventory can be found here.

[1] https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals

Annex A – Additional advice

Ancient woodland, ancient and veteran trees
You should consider any impacts on ancient woodland and ancient and veteran trees in line with paragraph 180 of the NPPF. Natural England maintains the Ancient Woodland Inventory which can help identify ancient woodland. Natural England and the Forestry Commission have produced standing advice for planning authorities in relation to ancient woodland and ancient and veteran trees. It should be taken into account by planning authorities when determining relevant planning applications. Natural England will only provide bespoke advice on ancient woodland, ancient and veteran trees where they form part of a Site of Special Scientific Interest or in exceptional circumstances.

Environmental gains
Development should provide net gains for biodiversity in line with the NPPF paragraphs 174(d), 179 and 180. Development also provides opportunities to secure wider environmental gains, as outlined in the NPPF (paragraphs 8, 73, 104, 120,174, 175 and 180). We advise you to follow the mitigation hierarchy as set out in paragraph 180 of the NPPF and firstly consider what existing environmental features on and around the site can be retained or enhanced or what new features could be incorporated into the development proposal. Where onsite measures are not possible, you should consider off site measures. Opportunities for enhancement might include:

- Restoring a neglected hedgerow.
- Creating a new pond as an attractive feature on the site.
- Planting trees characteristic to the local area to make a positive contribution to the local landscape.
- Using native plants in landscaping schemes for better nectar and seed sources for bees and birds.
- Incorporating swift boxes or bat boxes into the design of new buildings.
- Designing lighting to encourage wildlife.
- Adding a green roof to new buildings.

Natural England's Biodiversity Metric 4.0 may be used to calculate biodiversity losses and gains for terrestrial and intertidal habitats and can be used to inform any development project. For small development sites the Small Sites Metric may be used. This is a simplified version of Biodiversity Metric 4.0 and is designed for use where certain criteria are met.

Natural England's Environmental Benefits from Nature tool may be used to identify opportunities to enhance wider benefits from nature and to avoid and minimise any negative impacts. It is designed to work alongside Biodiversity Metric 4.0 and is available as a beta test version.

Green Infrastructure
Natural England's Green Infrastructure Framework provides evidence-based advice and tools on how to design, deliver and manage green infrastructure (GI) . GI should create and maintain green liveable places that enable people to experience and connect with nature, and that offer everyone, wherever they live, access to good quality parks, greenspaces, recreational, walking and cycling routes that are inclusive, safe, welcoming, well-managed and accessible for all. GI provision should enhance ecological networks, support ecosystems services and connect as a living network at local, regional and national scales.

Development should be designed to meet the 15 Green Infrastructure Principles. The Green Infrastructure Standards can be used to inform the quality, quantity and type of green infrastructure to be provided. Major development should have a GI plan including a long-term delivery and management plan. Relevant aspects of local authority green infrastructure strategies should be delivered where appropriate.

GI mapping resources are available here and here. These can be used to help assess deficiencies in greenspace provision and identify priority locations for new GI provision.

Access and Recreation
Natural England encourages any proposal to incorporate measures to help improve people's access to the natural environment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways should be considered. Links to urban fringe areas should also be explored to strengthen access networks, reduce fragmentation, and promote wider green infrastructure.

Annex A – Additional advice

Rights of Way, Access land, Coastal access and National Trails
Paragraphs 100 and 174 of the NPPF highlight the important of public rights of way and access. Development should consider potential impacts on access land, common land, rights of way and coastal access routes in the vicinity of the development. Consideration should also be given to the potential impacts on the any nearby National Trails. The National Trails website www.nationaltrail.co.uk provides information including contact details for the National Trail Officer. Appropriate mitigation measures should be incorporated for any adverse impacts.

Biodiversity duty
Your authority has a duty to have regard to conserving biodiversity as part of your decision making. Conserving biodiversity can also include restoration or enhancement to a population or habitat. Further information is available here.