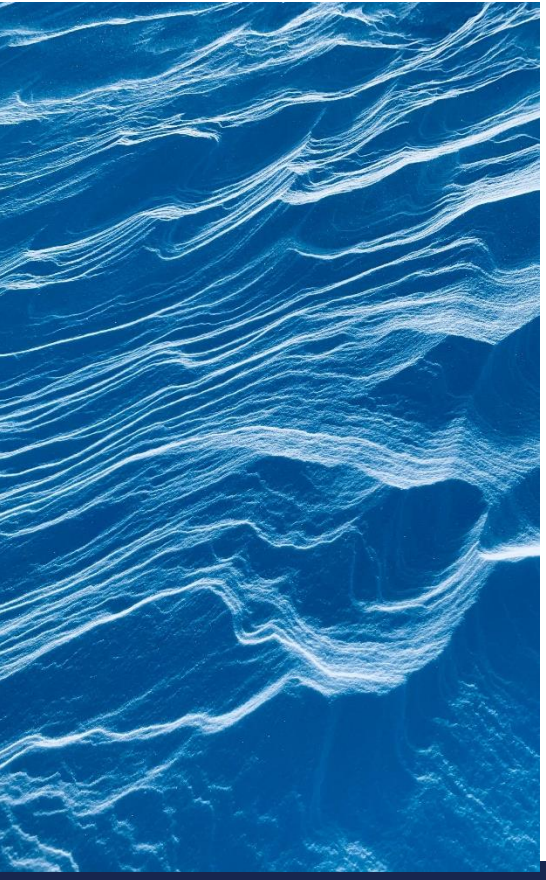
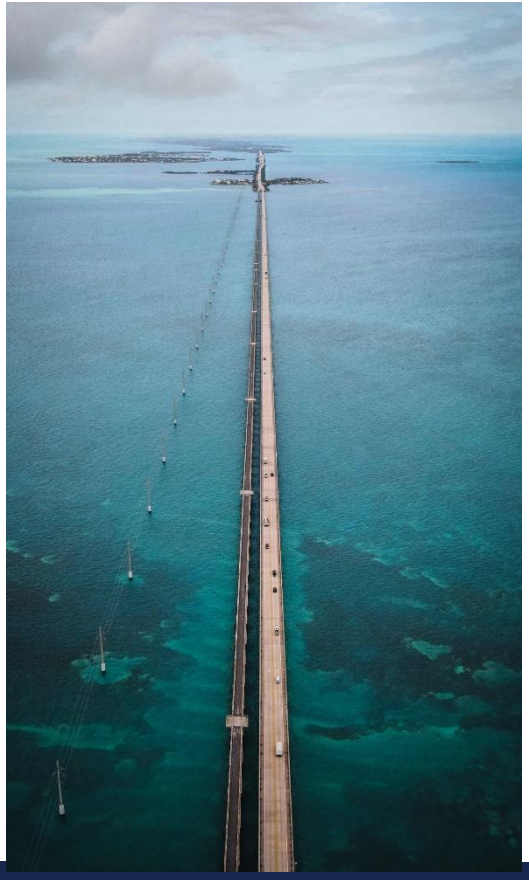




Water Neutrality Statement

AEG0829_RH12_Horsham_08

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Site Address: The Dairy Barn, Bognor Road,
Broadbridge Heath,
Horsham,
RH12 3PS

UK Experts in Flood Modelling, Flood Risk Assessments, and Surface Water Drainage Strategies

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fra@aegaea.com
02081 640 550
02081 641 282
www.aegaea.com

V1.0

Document Issue Record

Project: Water Neutrality Statement

Prepared for: The Dairy Barn

Reference: AEG0829_RH12_Horsham_08

Site Location: The Dairy Barn, Bognor Road, Broadbridge Heath, Horsham, RH12 3PS

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02081 640 550
02081 641 282
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02081 641 282
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1. Introduction

1.1. Aegaea were commissioned on behalf of the applicants to undertake a Water Neutrality Statement to facilitate a planning application for the proposed development of the conversion of a garage to residential dwelling at The Dairy Barn, Bognor Road, Broadbridge Heath, Horsham, RH12 3PS. This document has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.

1.2. This Water Neutrality Statement is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

1.3. The site of the proposed development is located within the land associated with Dairy Barn, Bognor Road, Broadbridge Heath, Horsham, RH12 3PS (Figure 1).

1.4. It is understood that the proposed development is for the change of use of a garage to become a one-bedroom dwelling.



Figure 1: Site Location (Base map and data from Bing Ariel Mapping © and contributors. Contains public sector information licensed under the Open Government Licence v3.0)

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Water Neutrality Statement

1.5. The calculations in this document show that the consumption of wholesome water by persons occupying the new dwelling could be 44.87 litres per person per day(l/p/d) with rainwater harvesting which is less than 85 l/p/d required by Horsham District Council for new developments and in accordance with Natural England Position Statement regarding Water Neutrality.

1.6. The new dwelling 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.

1.7. To establish a baseline for consumption of wholesome water for persons occupying the existing dwelling, which is to provide offset for the new dwelling, an average rate of 135 l/p/d has been used. Occupancy rates for both existing and new dwellings have been used to calculate dwelling wholesome water consumption in litres per day(l/d).

1.8. To achieve neutrality the total wholesome water consumption of the existing and new dwellings shall not exceed the water consumption of the existing dwelling as is i.e. prior to retrofit.

1.9. Our client has an existing property in the same area for which calculations are included in this document to show the potential for offsetting the wholesome water consumption in the new dwelling by undertaking retrofits to the existing dwelling.

1.10. The existing dwelling to be retrofitted is 'The Dairy Barn - RH12 3PS' which is discussed in Appendix 2.

1.11. Through discussions with Horsham District Council, they have advised that this approach is acceptable and in accordance with Horsham District Council and Natural England guidance.

1.12. Calculations are included in this document, see Appendix 2, to show the potential for offsetting the wholesome water consumption of the new dwelling by reducing the wholesome water consumption of the existing dwelling by retrofit to achieve water neutrality.

1.13. This document indicates the maximum flow rates, averaged where more than one unit, from the proposed appliances for the new dwelling. If during the development of the new dwelling the appliances are changed the calculation is recommended to be resubmitted.

1.14. Note the actual water consumption will vary depending on the actual behavior of the occupants throughout the dwelling. This is discussed and recognised in the Water Efficiency Calculator for 'New Dwellings' of The Building Regulations Approved Document G.

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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
Rain Water	1	As required to offset wholesome water usage.	Aquaco

Supporting Comments to Table A1

1)WC (Dual Flush)- the average capacity (2.66l) stated above is derived by multiplying the number of units (1) by the manufacturer's 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 manufactures 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).

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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).

1.15. Appliance manufactures data is included in Appendix 1.1.

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Table A2 -Water Efficiency Calculator (New Dwelling)

		(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	0.5	0	0
Shower only	Flow rate (litres/minute)	3.5	5.6	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	2.1	0	10.77
Dishwasher	Litres/place setting	0.92	3.6	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)				22.53
	(8) Normalisation factor				0.91
	(9) Total water consumption (litres/person/day) = [(5)-(6)-(7)]x8				39.87
	(10) External water use (litres/person/day). **Not to pe provided by rainwater as advised by Horsham District Council.**				5
	(11) Total water consumption= (9)+(10) (litres/person/day)				44.87

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2. Conclusion

New Dwelling

2.1. Rainwater harvested from the roof could reduce wholesome water consumption to 44.87 l/p/d. See Appendix 1.2 for rain water harvesting/storage calculation.

2.2. Grey water recycling is not considered required at this stage.

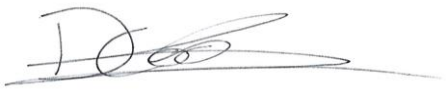
Existing Dwelling

2.3. Water neutrality is potentially feasible by retrofitting 'The Dairy Barn' as detailed below;

- Showers – Flow Limiters or replacement
- Taps (Basin) – Flow Limiters or replacement

2.4. For more details and calculations see Appendix 2.

2.5. We trust that the information in this letter provides the Council's Flood and Water Management Team with sufficient information to progress the application.



Daniel Cook BSc (Hons) MSc C.WEM MCIWEM

t: +44 (0) 20 8164 1282

e: daniel@aegaea.com

Appendix 1.1 - Appliances

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



1`  `

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

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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	3.5 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

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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
Range Name	T80
Shower Head Shape	Round
Shower Head Size	110 mm
Shower Product Type	Electric
Smart Compatibility	Not Smart
Temperature Control Type	Rotary Temperature Control
Total Product Weight	3.10 kg
Water Entry Points	Top, Bottom, Left, Right & Rear
Water Failure Shutdown	Automatic

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STORM TOUCH & FLOW TAP FLOW RESTRICTOR & AERATOR



SPECIFICATION

With adjustable flow rate that can be adapted between 3Ltr/min and 8Ltr/min dependent 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

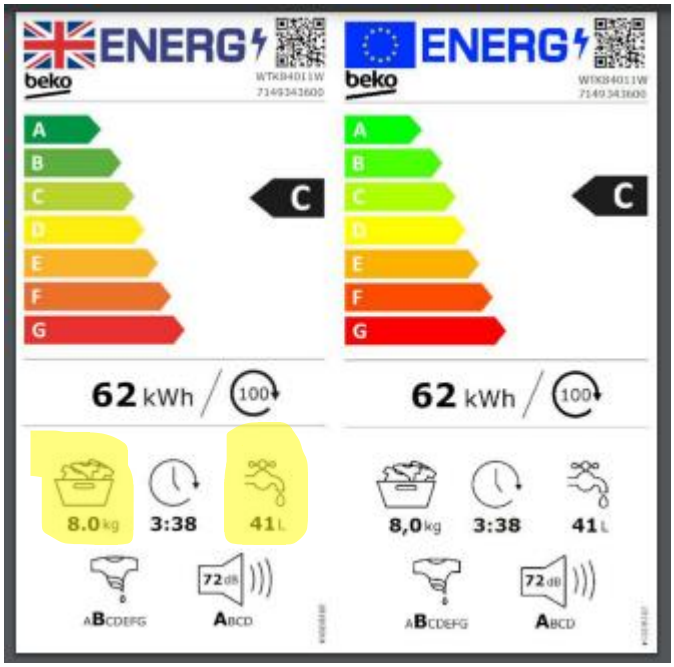
Product Type Tap Flow Restrictor & Aerator

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



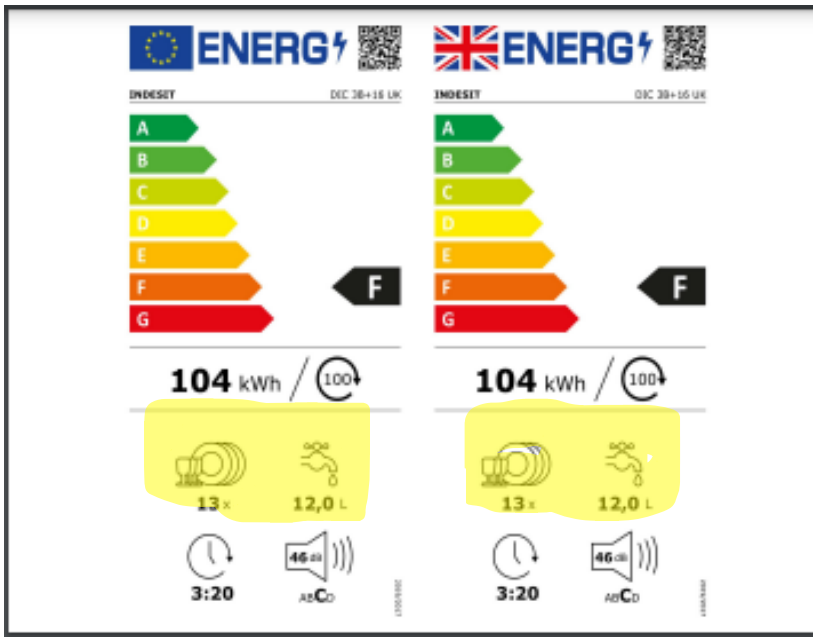


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INDESIT DIC 3B+16 UK Full-size Fully Integrated Dishwasher





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Appendix 1.2 – Rain Water Collection/Storage

Rain Water Collection

Calculation based on an occupancy rate of 1.32

Rainwater collection calculation – BS 8515 intermediate approach

(a) Collection area (m2) – approx. 25m2

(b) Yield coefficient and hydraulic filter efficiency e.g. 0.7

(c) Rainfall (average mm/year) – 833.69/year

(d) Daily rainwater collection (litres) = [(a) x (b) x ((c)/365)

25 x 0.7 x (833.69/365) = 39.97l/d

(e) Occupancy Rate – 1.32

(f) Daily rainwater per person (litres) = (d)/(e)

39.97/1.32 = 30.28l/p/d

Rain Water Storage

Calculation based on an occupancy rate of 1.32

Rainwater storage calculation – BS8515 intermediate approach based on non – potable water demand (less than rainwater yield)

(a)Rainwater demand = 22.53l/p/d (WC (11.76l/p/d) +Washing Machine (10.77l/p/d)

(b)Drought storage capacity = 35 days

(c)Occupancy Rate = 1.32

(d)Storage capacity = (a)x(b)x(c)

22.53 x 35 x 1.32 = 1040.88 (F-line 1500l flat tank, to be optimised)

Notes

1)**Occupancy rates used as against number of occupants, as advised by Horsham District Council**.

2)Rainfall (average mm/year) from Met Office Climate Station Charlwood (1991-2020)

3)Storage capacity in accordance with BS8515 intermediate approach is 5% (18 days) of the annual rainwater yield or the non- potable water demand whichever is the lesser. Horsham District Council require 35 days drought storage capacity which for this development equates to 1040.88 litres as per calculation above and to meet with the current guidance is to be prefilled before occupation sourcing water from outside of the restriction zones.

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The F-line 1500L flat tank, with lockable cover and shaft is one of the most popular tanks in the UK. With its 25 year warranty, sump for pump location, and childproof lock.

Size	Length	Width	Height Tank Body	Height inc 235mm Entrance shaft	Weight	Inflow	Overflow
1500 Litre	2400mm	1200mm	650mm	1015mm	80kg	330mm	385mm
3000 Litre	2400mm	2400mm	650mm	1015mm	170kg	330mm	385mm
5000 Litre	2960mm	2220mm	920mm	1350mm	250kg	330mm	385mm
7500 Litre	3340mm	2310mm	1125mm	1415mm	310kg	325mm	375mm

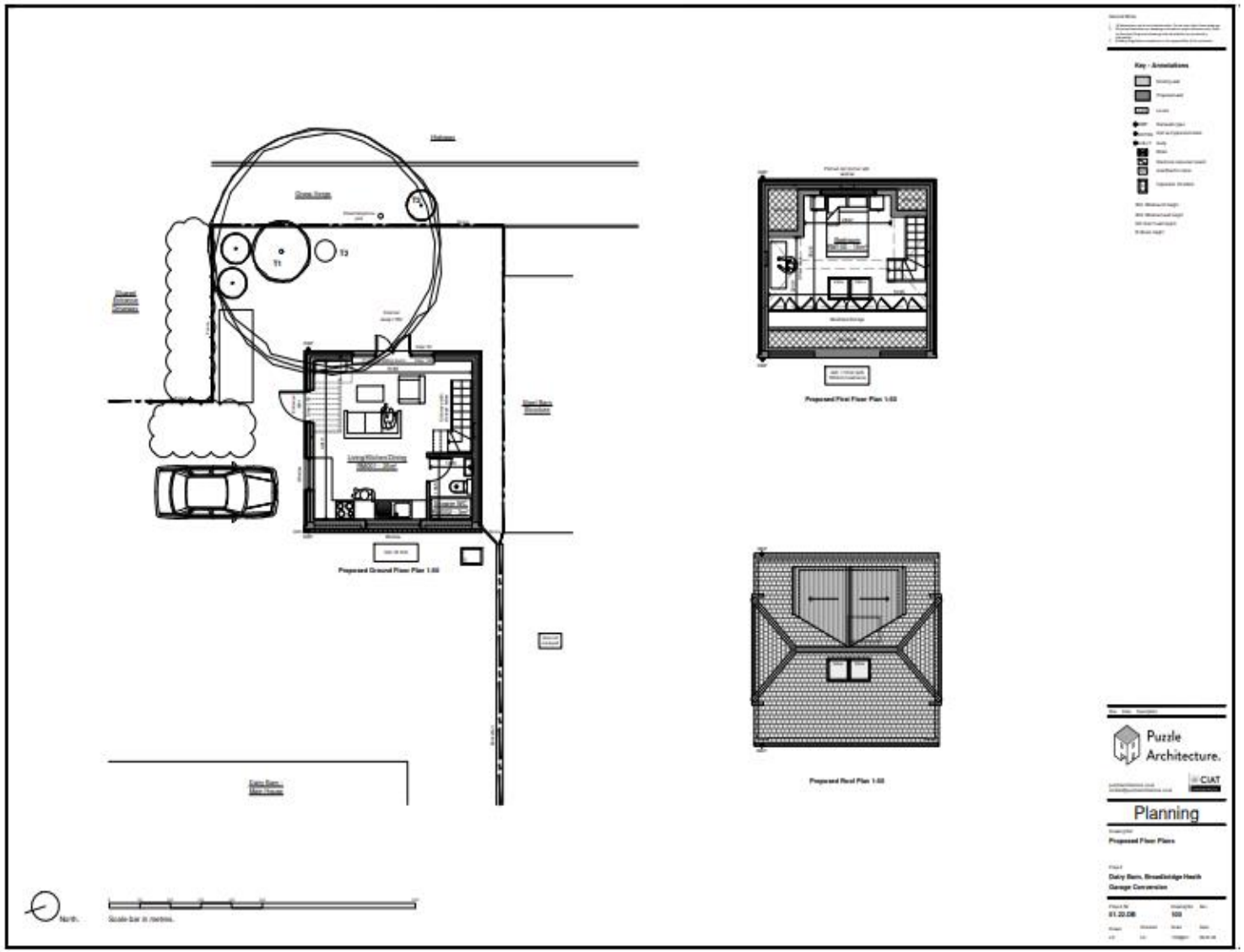
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Appendix 1.3 – Proposed Layout of New Dwelling

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Appendix 2 - Existing Dwelling (Offset)

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Appendix 2.1 - Existing Dwelling (Offset)

Existing dwelling is a three bedroomed detached house with a roof area of approx. 115m2, comprising the following consumers;

Sink – 1

Washing Machine – 1

Dishwasher -1

Shower – 2

Bath - 1

WC – 2

Basin – 2

In accordance with discussions and guidelines published by Horsham District Council the existing property baseline daily water consumption is to be calculated by multiplying the average water usage l/p/d by the occupancy rate. In accordance with the guide lines the average water usage is 135 l/p/d and the occupancy rate is 2.47(three bedrooms), this equates to 333.45 l/d.

To achieve neutrality the total water consumption of the new and existing dwelling must not exceed the existing dwelling daily water consumption i.e.333.45l/d.

The daily water consumption of the new dwelling is 59.23 l/d, 44.87 li/p/d multiplied by the occupancy rate i.e.1.32(one bedroom), giving a reduced water consumption for the existing dwelling of 274.22 l/d (333.45 l/d – 59.23 l/d). The latter is than divided by the existing dwelling occupancy rate 2.47 to give the revised required l/p/d, which is 111.02 l/p/d. Thus, the reduction required is 23.98 l/p/d to achieve neutrality (135 l/p/d– 111.02 l/p/d), this is achieved by retrofitting the existing dwelling as detailed below.

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 (less than 125l/p/d using fittings approach) where no information is available, replicated below for ease of reference.

Table 2.1 Maximum fittings consumption

Water fitting	Maximum consumption
WC	6/4 litres dual flush or 4.5 litres single flush
Shower	10 l/min
Bath	185 litres
Basin taps	6 l/min
Sink taps	8 l/min
Dishwasher	1.25 l/place setting
Washing machine	8.17 l/kilogram

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02081 640 550
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This approach is deemed conservative.

Table 2.2 Appliances (Existing Dwelling- The Dairy Barn)

Installation	Number	Units of Measure	Source
WC (Dual Flush)	2	6/4l	Table 2.1
Taps (excluding kitchen/ utility room taps)	2	11.7l/min	Measured
Bath	1	185l	Table 2.1
Shower	4(including attached hand showers)	7.95l/min	Measured
Kitchen/Utility Room Taps	2	6l/min	Measured
Washing Machine (Hoover H – Wash 300 Lite)	1	5.5l/kg	Energy Label
Dishwasher (BEKO DW601)	1	1.25l/place Setting	Manufacturers Manual

Supporting Comments to Table A1

1)WC (Dual Flush)- the average capacity (2.66l) stated above is derived by multiplying the number of units (2) by the manufacturer's dual flush capacity (4.0l*0.33 +2.0l*0.67) for each unit and dividing the total capacity by the number of units (2).

2)Taps (excluding kitchen/utility room)- the average flow (11.7l/min) stated above is derived by multiplying the number of units (2) by the measured flow rate (15l/min + 8.4l/min) for each unit and dividing the total flow by the number of units (2). Average flow is higher than the highest flow rate multiplied by 0.7(10.5l/min).

3)Shower – the average flow (7.95l/min) stated above is derived by multiplying the number of units (4) by the by the measured flow rate (9l/min+9l/min+5.1l/min+8.7l/min) for each unit and dividing the total flow by the number of units (4). Average flow is higher than the highest flow rate multiplied by 0.7(6.3l/min)

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

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5)Washing machine - the capacity (5.5l/kg) stated above is derived by dividing the manufacturers stated water usage (according to the energy label 44l) by the load(8kg).

6)Dishwasher - the capacity (1.25l/place setting) stated above is derived by dividing the manufacturers stated water usage (according to the energy label 15l) by the place settings (12).

7)Measure flows undertaken by client see Appendix 3.3.

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To reduce the per capita consumption per day by 23.98 litres per day from the existing dwelling by retrofitting the following approach is proposed.

The numbers in brackets are the reduction in water usage litres per person per day which are calculated using the 'Use Factor', 'Fixed Use Factor' and 'Optimisation Factor' in accordance with Appendix A 'Water Efficiency Calculator for New Dwellings' of The Building Regulations Approved Document G. For clarity of calculation methodology see attached Table 2.1.3(a) & (b) – Existing Dwelling – Before/After Retrofit.

First Step

Flow Limiters (Taps)

Taps(basin) – 11.7l/min to 4l/min (-11.07l/p/d)

Taps(kitchen/utility) – Not required.

First step equates to a reduction in consumption of (-11.07 l/p/d), resulting in reducing offset to 12.91l/p/d

Second Step

Flow Limiters (Showers)

Shower – 7.95l/min to 3.5l/min (l/p/d)

Second step equates to a reduction in consumption of (-17.70l/p/d), resulting in reducing offset to –4.79l/p/d i.e. credit of 4.79l/p/d.

Third Step

Dual Flush WC - Not required

Fourth Step

Replace washing machine -Not required

Five Step

Re-use grey water for external use – Not required.

Sixth Step

Retrofit rain water harvesting

Retrofit rainwater harvesting 32.15l/p/d to supply washing machine (-10.51l/p/d) and (-18.75l/p/d).

As can be seen above, steps one and two, water neutrality (23.98l/p/d) is potentially feasible by retrofitting the showers(-17.70l/p/d) and basin taps(-11.07l/p/d) on the existing property by either flow limiters or replacement. Former represents a credit of 4.79l/p/d. See Table 2.1.3(a).

As can be seen above, step six, water neutrality (23.98l/p/d) is also potentially feasible by retrofitting rainwater harvesting (29.26l/p/d) to supply the existing WC (-18.75) and existing washing machine (-10.51) thus negating the need to undertake retrofitting of the showers and basin taps. Former represents a credit of 5.28l/p/d. See Table 2.1.3(b).

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Water neutrality (23.98l/p/d) is also potentially feasible by undertaking the following;

a) retrofitting rainwater harvesting to supply only the existing WC (-18.75l/p/d) thus requiring only the showers (-17.70l/p/d) or basin taps(-11.07l/p/d) to be retrofitted. Former, represents credits of 12.47l/p/d and 5.84l/p/d respectively.

b) retrofitting rainwater harvesting to supply only the existing washing machine (-10.51l/p/d) could also potentially require only the showers(-17.70l/p/d) to be retrofitted. Former, represents a credit of -4.22l/p/d.

a) and b) could see a reduction in capacity for the rainwater storage tank.

It is potentially feasible that credits could be offset against increasing the shower or basin tap base line flowrates, 3.5 l/min and 4l/min respectively, whilst still achieving water neutrality.

See Appendix 2.1 for calculation of rain water harvesting, storage is based on retaining the existing washing machine and existing WCs which are considered water efficient.

At this stage grey water re-use is not considered at 'The Dairy Barn'.

fra@aegaea.com
02081 640 550
02081 641 282
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Table 2.1.3(a) - 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 Factc	Fixed use (litres/person/day)	Litres/person/day= [(1)Ax(2)+(3)]	Litres/person/day= [(1)Bx(2)+(3)]	Shower	Taps
Shower (where bath also present)	Flow rate (litres/minute)	7.95	3.5	4.37	0	34.74	15.30	-19.45	
Taps(Basin)	Flow rate (litres/minute)	11.7	4	1.58	0	18.49	6.32		-12.17
	Total Calculated(litres/person/day)					53.23	21.62		
	Difference total before and after retrofit(litres/person/day)						31.61		
	Normalisation factor						0.91	0.91	0.91
	Total Calculated after application of Normalisation Factor(litres/person/day)						-28.77	-17.70	-11.07
	Reduction after retrofit(litres/person/day)						-28.77		
	Offset required to achieve neutrality(litres/person/day)						23.98		
	Difference between Offset and Reduction						-4.79		
	Credit						4.79		

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.

3)The capacity/flow rates in (1)B are inaccordance Table A1 - Appliances (New Dwelling) of this report.

fra@aegaea.com
02081 640 550
02081 641 282
www.aegaea.com

Table 2.1.3(b) - 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)]	Rainwater
WC(Dual Flush)	Full flush volume (litres)	6	6	1.46	0	8.76	8.76	0.00
	Part flush volume (litres)	4	4	2.96	0	11.84	11.84	
Washing Machine	Flow rate (litres/minute)	5.5	5.5	2.1	0	11.55	11.55	
	Total Calculated(litres/person/day)					32.15	32.15	32.15
	Contribution from rainwater(litres/person/day)						32.15	
	Difference total before and after retrofit(litres/person/day)						0.00	
	Normalisation factor						0.91	0.91
	Total Calculated after application of Normalisation Factor(litres/person/day)						29.26	29.26
	Reduction after retrofit(litres/person/day)						29.26	
	Offset required to achieve neutrality(litres/person/day)						23.98	
	Difference between Offset and Reduction						-5.28	
	Credit						5.28	

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.

3)The capacity/flow rates in (1)B are inaccordance Table A1 - Appliances (New Dwelling) of this report.

fra@aegaea.com
02081 640 550
02081 641 282
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Appendix 2.1 – Rain Water Collection/Storage

Rain Water Collection

Calculation based on an occupancy rate of 2.47

Rainwater collection calculation – BS 8515 intermediate approach

(a) Collection area (m2) – approx. 115m2

(b) Yield coefficient and hydraulic filter efficiency e.g. 0.7

(c) Rainfall (average mm/year) – 833.69/year

(d) Daily rainwater collection (litres) = [(a) x (b) x ((c)/365)

115 x 0.7 x (833.69/365) = 183.87l/d

(e) Number of occupants – 2.47

(f) Daily rainwater per person (litres) = (d)/(e)

= 74.44l/p/d

Rain Water Storage

Calculation based on occupancy rate of 2.47

Rainwater storage calculation – BS8515 intermediate approach based on non-potable water demand (less than rainwater yield)

(a)Rainwater demand =32.15 l/p/d (existing washing machine/WCs)

(b)Drought storage capacity = 35 days

(c)Number of occupants = 2.47

(d)Storage capacity = (a)x(b)x(c)

32.15 x 35 x 2.47 = 2779.37 litres (F-line 3000 flat tank)

Notes

1)Occupancy rates used as against number of occupants, as advised by Horsham District Council

2)Rainfall (average mm/year) from Met Office Climate Station Charlwood (1991-2020)

3)Storage capacity in accordance with BS8515 intermediate approach is 5% (18 days) of the annual rainwater yield or the non- potable water demand whichever is the lesser. Horsham District Council require 35 days drought storage capacity which for this development equates to 2779.37 litres as per calculation above and to meet with the current guidance is to be prefilled before occupation sourcing water from outside of the restriction zones.

fra@aegaea.com
02081 640 550
02081 641 282
www.aegaea.com



The F-line 3000L flat tank, with lockable cover and shaft is one of the most popular tanks in the UK. With its 25 year warranty, sump for pump location, and childproof lock.

Size	Length	Width	Height Tank Body	Height inc 235mm Entrance shaft	Weight	Inflow	Overflow
1500 Litre	2400mm	1200mm	650mm	1015mm	80kg	330mm	385mm
3000 Litre	2400mm	2400mm	650mm	1015mm	170kg	330mm	385mm
5000 Litre	2960mm	2220mm	920mm	1350mm	250kg	330mm	385mm
7500 Litre	3340mm	2310mm	1125mm	1415mm	310kg	325mm	375mm

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fra@aegaea.com
02081 640 550
02081 641 282
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Appendix 2.2 – Analysis of Existing Water Usage (Water Bills) and Photographic of Water Consuming Assets.

Existing Dwelling Water Consumption – l/p/d

The following calculation is based on the existing dwelling water bills for the period from 01/10/21 to 31/03/22(181 days) and 08/04/22 to 05/10/22(180 days);

Date	01/10/21 – 31/03/22	08/04/22 – 05/10/22
Consumption(l)	51000	108000

Water Consumption = 51000 +108000 = 159000 litres (l)

Daily Water Consumption = Water Consumption/Days

= 159000/361(181 +180)

= 440.44l/d

l/p/d= Daily Water Consumption/Occupancy Rate

= 440.44/2.47 (three bedrooms)

= 178.31l/p/d

The above is greater than 135l/p/d the value used as a base line for the existing dwelling in the Water Neutrality Statement (WNS)

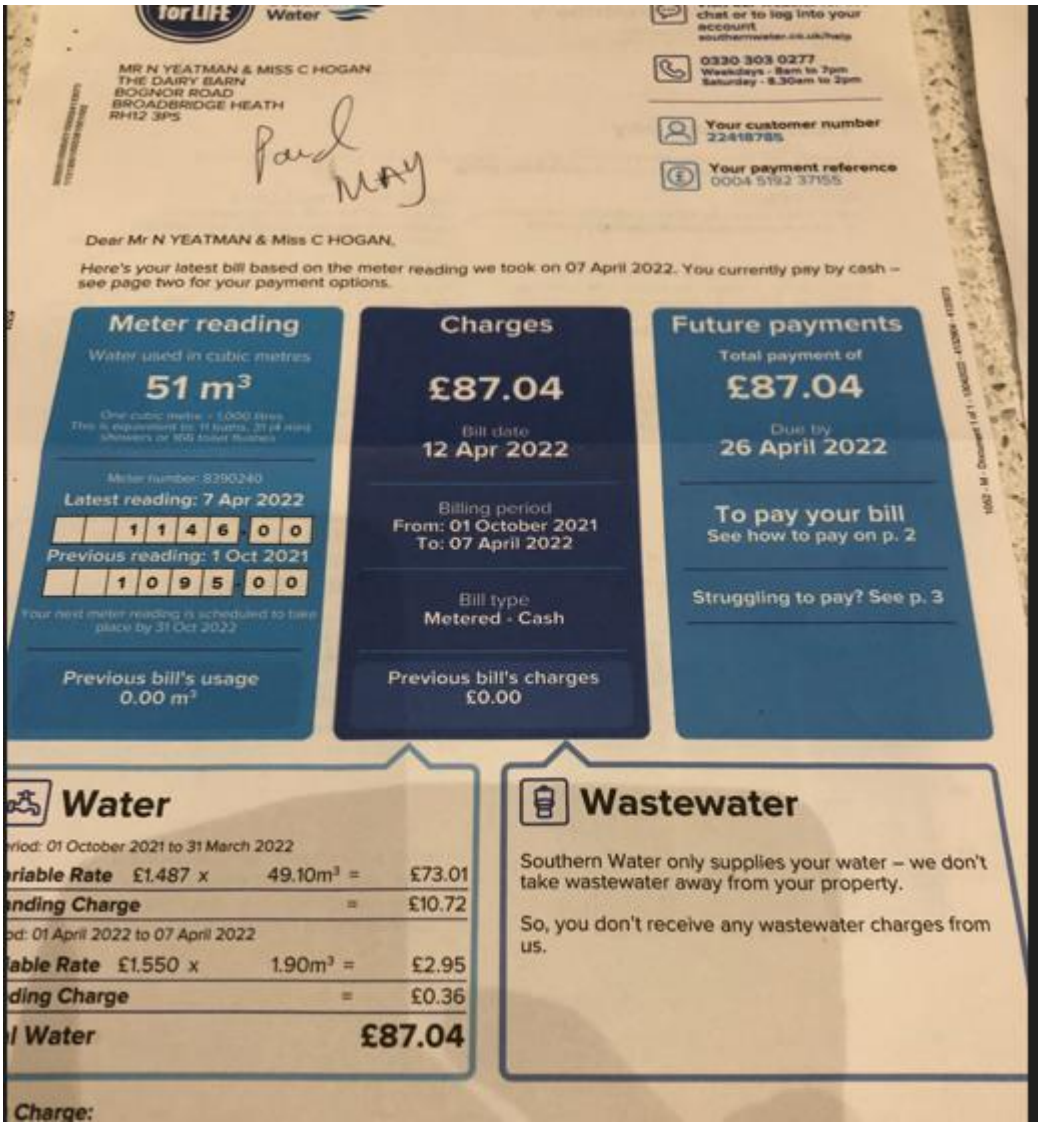
Copies of water bills are attached along with photographs of the existing dwelling appliances and measured flows.

The washing machine is a Hoover H – Wash 300 Lite with an 8kg capacity. According to the energy label it consumes 44l, which gives a value of 5.50l/kg.

The dishwashing machine is a BEKO DW601 with a '12 place' capacity. According to the manual it consumes 15l, which gives a value of 1.25l/place setting.

Both the washing machine and dishwashing machine are considered water efficient as the values are equal to or less than that stated in Table 2.1 of Part G of the Building Regulations i.e.8.17l/kg and 1,25l/place setting respectively. The former also applies to the kitchen tap.

The existing dwelling has already installed water efficient appliances as discussed above along with dual flush WC's . Finally, it is noted that the actual water consumption will vary depending on the actual behavior of the occupants throughout the dwelling



for LIFE Water

MR N YEATMAN & MISS C HOGAN
THE DAIRY BARN
BOGNOR ROAD
BROADBRIDGE HEATH
RH12 3PS

Paid MAY

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
22418785

Your payment reference
0004 5192 3715S

Dear Mr N YEATMAN & Miss C HOGAN,

Here's your latest bill based on the meter reading we took on 07 April 2022. You currently pay by cash – see page two for your payment options.

Meter reading
Water used in cubic metres
51 m³
One cubic metre = 1,000 litres
This is equivalent to: 11 baths, 21 24 min showers or 555 toilet flushes
Meter number: 8390240
Latest reading: 7 Apr 2022
1 1 4 6 . 0 0
Previous reading: 1 Oct 2021
1 0 9 5 . 0 0
Your next meter reading is scheduled to take place by 31 Oct 2022
Previous bill's usage
0.00 m³

Charges
£87.04
Bill date
12 Apr 2022
Billing period
From: 01 October 2021
To: 07 April 2022
Bill type
Metered - Cash
Previous bill's charges
£0.00

Future payments
Total payment of
£87.04
Due by
26 April 2022
To pay your bill
See how to pay on p. 2
Struggling to pay? See p. 3

Water

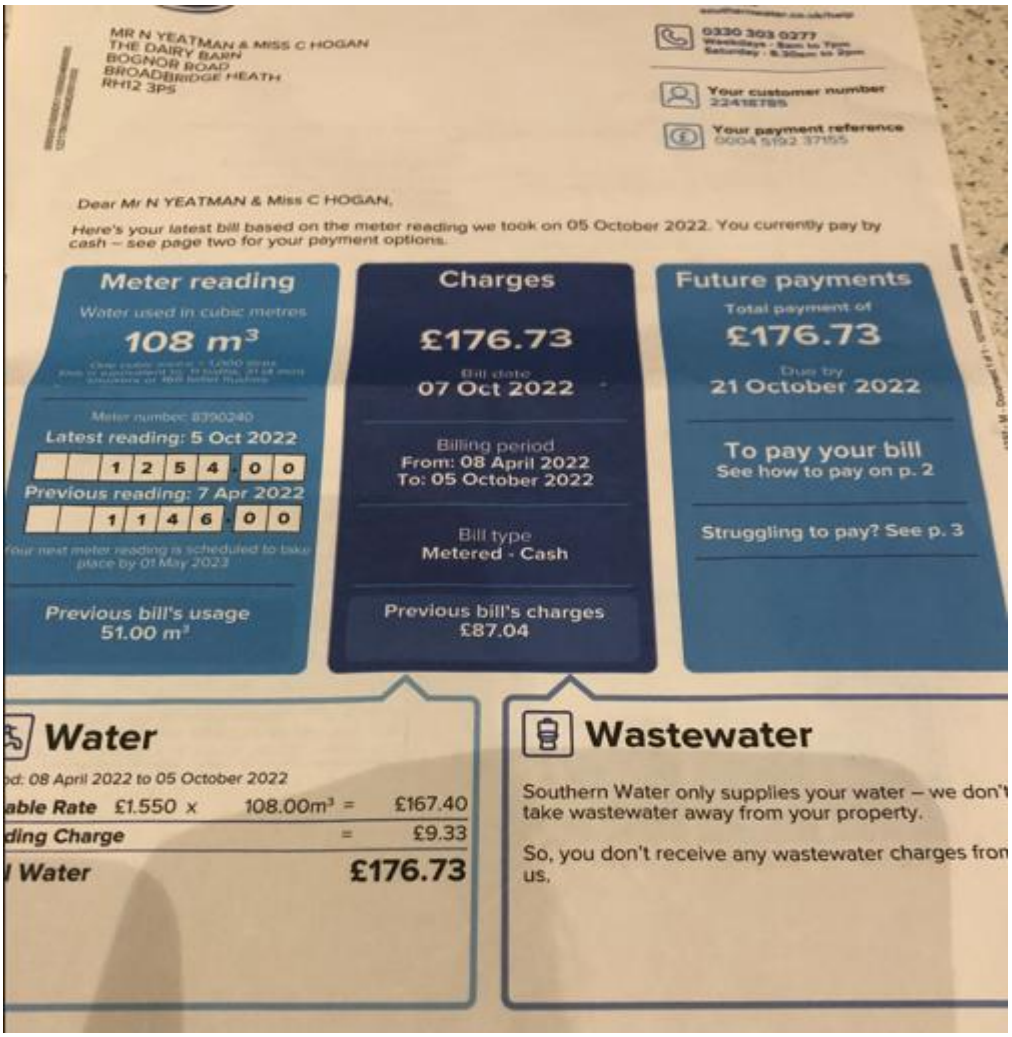
riod: 01 October 2021 to 31 March 2022			
riable Rate	£1.487 x	49.10m³ =	£73.01
nding Charge		=	£10.72
od: 01 April 2022 to 07 April 2022			
able Rate	£1.550 x	1.90m³ =	£2.95
ding Charge		=	£0.36
l Water			£87.04

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.

Charge:



MR N YEATMAN & MISS C HOGAN
THE DAIRY BARN
BOGNOR ROAD
BROADBRIDGE HEATH
RH12 3PS

0330 303 0277

Your customer number
2241ET85

Your payment reference
0604 5192 37155

Dear Mr N YEATMAN & Miss C HOGAN,

Here's your latest bill based on the meter reading we took on 05 October 2022. You currently pay by cash – see page two for your payment options.

Meter reading
Water used in cubic metres
108 m³
Meter number: 8390240
Latest reading: 5 Oct 2022
1 2 5 4 0 0
Previous reading: 7 Apr 2022
1 1 4 6 0 0
Your next meter reading is scheduled to take place by 01 May 2023
Previous bill's usage
51.00 m³

Charges
£176.73
Bill date
07 Oct 2022
Billing period
From: 08 April 2022
To: 05 October 2022
Bill type
Metered - Cash
Previous bill's charges
£87.04

Future payments
Total payment of
£176.73
Due by
21 October 2022
To pay your bill
See how to pay on p. 2
Struggling to pay? See p. 3

Water
od: 08 April 2022 to 05 October 2022
able Rate £1.550 x 108.00m³ = £167.40
ding Charge = £9.33
l Water £176.73

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.

WC’s

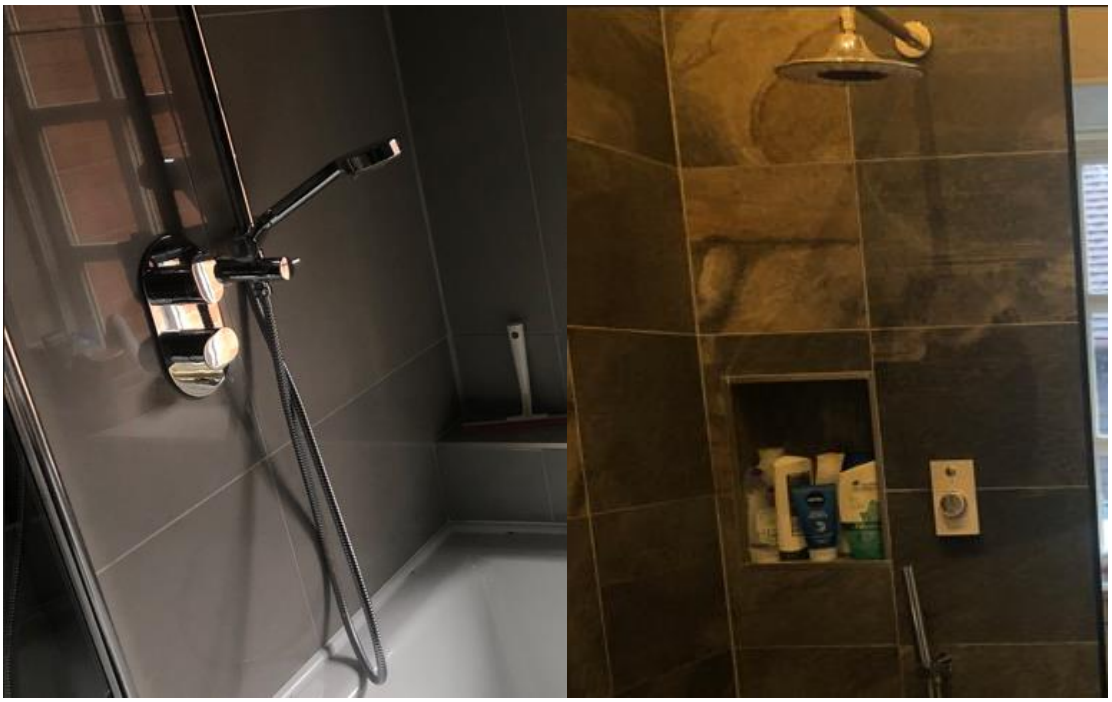




Basin Taps



Showers



Measured Flows by Client (litres measured over 10 seconds)

Kitchen - Tap has Hot and Cold
Hot Tap : 1 litre
Cold : 1 litre

Bathroom
Sink : 2.5 litres
Shower Head : 1 1/2 litres
Shower Hand : 1.5 litres

Ensuite
Sink Tap : 1.4 liters
Shower Head : 850 ml
Shower Handle : 1.45 liters