(1) **ANTHONY JAMES GROCOTT AND KATHERINE MARGARET ELIZABETH GROCOTT**

(2) **BARCLAYS BANK UK PLC**

(3) **HORSHAM DISTRICT COUNCIL**

AGREEMENT

Section 106 of the Town and Country Planning Act 1990 in respect of
Land at Thistledown Cottage, Harbolets Road, West Chiltington, Pulborough, RH20 2LG

Lauren Kelly – Head of Legal and Democratic Services
Horsham District Council
Albery House
Springfield Road
Horsham
West Sussex
RH12 2GB

Legal Ref: 11829
Application Ref: DC/23/1906 and HRA/24/0005

This Agreement is made as a deed and dated 19th June **2025**

Between:

(1) **ANTHONY JAMES GROCOTT** and **KATHERINE MARGARET ELIZABETH GROCOTT** of Thistledown Cottage, Harbolets Road, West Chiltington, Pulborough, RH20 2LG (**together "the Owners"**);

(2) **BARCLAYS BANK UK PLC (Company Number 9740322)** of 1 Churchill Place, London, E14 5HP (**"the Mortgagee"**); and

(3) **HORSHAM DISTRICT COUNCIL** of Albery House, Springfield Road, Horsham, West Sussex RH12 2GB ("the Council")

together "the Parties"

1. BACKGROUND & RECITALS

Whereas

1.1 The Council is the local planning authority as defined in the Act for the area within which the Application/ Offsetting Site is situated for the purposes of this Agreement and for the purposes of section 106 of the Act.

1.2 The Owners are the registered proprietors with title absolute of land registered at HM Land Registry under title number WSX166567 being Thistledown Cottage, Harbolets Road, West Chiltington, Pulborough, RH20 2LG **("Application Site")**

1.3 The Mortgagee is the registered proprietor of the charge dated 9th October 2020 referred to in entry numbers 4 and 5 of the charges register of title number WSX166567.

1.4 Upon it being recorded that the Offsetting Measures shall be implemented at Property A and the On-site Efficiency Measures shall be implemented at Property B where the Development shall take place.

1.5 The Application for prior approval consent was received and validated by the Council on 16th October 2023, and permitted on 8th December 2023 subject to conditions including obtaining the Regulation 77 Consent. The prior approval reference is DC/23/1906.

1.6 On 9th May 2024 the Application for the Regulation 77 Consent was submitted to the Council and is to be granted by the Council subject to the completion of this Agreement to secure the planning obligations herein.

1.7 The Council's administrative area is situated in an area of serious water stress as identified by the Environment Agency's Water Stressed Areas Classification.

1.8 The water statutory undertaker, Southern Water, supplies drinking water to the Council's administrative area from the SNWSZ.

1.9 In September 2021 Natural England released the Position Statement which requires that any new development within the SNWSZ must be Water Neutral. The Parties agree that the Development must be Water Neutral and have entered into this Agreement to secure the required mitigation by securing the On-site Efficiency Measures and the Offsetting Measures and to bind the Application Site.

1.10 Regulation 75 of the 2017 Regulations requires that any planning permission, granted after 30th November 2017 by virtue of the 2015 Order, that could have a likely significant effect on certain ecologically important sites must not be begun until the developer has received prior approval from the local planning authority under Regulation 77 of the 2017 Regulations.

1.11 The Owner is willing to enter into and be bound by the obligations and be subject to the restrictions in this Agreement on the terms set out herein.

1.12 The Parties are satisfied that the provisions of this Agreement comply with the requirements of regulation 122 of the Community Infrastructure Levy Regulations 2010 (as amended) and, accordingly, that the planning obligations contained in this Agreement are necessary to make the Development acceptable in planning terms, are directly related to the Development and fairly and reasonably relate in scale and kind to the Development.

NOW THIS AGREEMENT WITNESSES as follows:

2. INTERPRETATION

In this Agreement:

2.1 Words importing the one gender include reference to all the genders.

2.2 Words importing the singular include the plural and vice versa.

2.3 Words importing persons include companies and corporations and vice versa.

2.4 Any words following the terms including, include, in particular, for example or any similar expression shall be construed as illustrative and shall not limit the sense of the words, description, definition, phrase or term preceding those.

2.5 Wherever there is more than one person named as a party and where more than one party undertakes an obligation, all their obligations can be enforced against all of them jointly and against each individually.

2.6 Any reference to a clause, schedule, paragraph or plan is to a clause, schedule, paragraph or plan in, to or attached to this Agreement, unless expressly stated otherwise.

2.7 Any reference to a colour or letter is to a colour or letter on the plans attached to this Agreement.

2.8 In the absence of contrary provision, any reference to a statute includes any statutory modification or re-enactment of it and every statutory instrument, direction, specification made or issued under the statute or deriving validity from it.

2.9 A reference to writing or written excludes fax and email.

2.10 An obligation on a party not to do something includes an obligation not to allow that thing to be done.

2.11 References to any party to this Agreement shall include the successors in title to that party and to any person deriving title through or under that party and, in the case of the Council, the successors to their functions as local planning authority.

2.12 The headings are for reference only and shall not affect construction.

3. DEFINITIONS

It is hereby agreed between the parties set out in this Agreement that the following expressions have the following meanings:

"2015 Order"	the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended);
"2017 Regulations"	the Conservation of Habitats and Species Regulations 2017;
"Act"	the Town and Country Planning Act 1990 (as amended);
"Application "	means the application with reference number DC/23/1906 for prior approval for change of use from an agricultural building to two dwellings (Schedule 2, Part 3, Class Q) at Thistledown Cottage, Harbolets Road, West Chiltington, Pulborough, RH20 2LG
"Application Site"	means the land at Thistledown Cottage, Harbolets Road, West Chiltington, Pulborough, RH20 2LG shown for identification purposes edged red on the Application Site Plan;
"Application Site Plan"	means Application Site Plan attached to this Agreement entitled "S106 Agreement Plan" dated 27 February 2025 at Schedule 1;

"Commencement of Development"	means the carrying out of a material operation as defined in section 56(4) of the Act in respect of the Development but excluding (for the purposes of this Agreement and for no other purpose) any operation relating to works of investigations in respect of land contamination or remedial action in respect thereof, enabling works demolition, site clearance works, earthworks, archaeological investigations and digs, exploratory boreholes, operations permitted by the Town and Country Planning (General Permitted Development) Order 2015, the erection of hoardings and fencing, temporary diversion of services and signage (including the formation of temporary construction accesses) and "Commence Development" shall be construed accordingly;
"Commencement Date"	means the date on which the Commencement of the Development occurs;
"Commencement Notice"	means the written notice confirming the Commencement Date referred to in clause 7.1.1 and served in accordance with Clause 7.3;
"Development"	the development of the Application pursuant to the Planning Permission and the Regulation 77 Consent;
"Head of Development and Building Control"	the Head of Development and Building Control at the Council or any successor or other such officer as may be designated by the Council for the purpose of discharging their duties and functions from time to time.
"Monitoring Fee"	means the fee of **£400** payable to the Council for monitoring obligations in the Agreement and which is payable before completion under the provisions of regulation 122 of the Community Infrastructure Regulations 2010, section 111 of the Local Government Act 1972 and section of the Localism Act 2011;
"Occupation"	occupation of the Development for any purpose for which the Planning Permission and Regulation 77 Consent is granted other than occupation for the purposes of construction or fitting out or occupation for security, marketing or display and "Occupy" and "Occupied" shall be construed accordingly;
"Occupation Notice"	means the written notice confirming the Occupation Date referred to in Clause 7.1.2 and served in accordance with Clause 7.3;
"Management and Monitoring Plan"	means a detailed written scheme prepared by the Owners (and approved in writing by the Council) which includes a programme for the ongoing management and maintenance of the rainwater harvesting system referred to in the Water Neutrality Supporting

	Documents at Property A and Property B for the lifetime of the development and which shall include the following: (a) confirmation of the approximate location and details of any apparatus to be installed at Property A and Property B; (b) frequency of maintenance of the rainwater harvesting system at Property A and Property B; and (c) standard of maintenance and repair to be achieved and maintained at Property A and Property B.
"Offsetting Measures"	means the detailed water saving measures that are to be implemented at Property A in order to make the Development Water Neutral as set out in the Section 6 of the Water Neutrality Statement;
"On-site Efficiency Measures"	means the detailed water reduction measures that are to be implemented at Property B as set out in Sections 4 and 5 of the Water Neutrality Statement;
"Planning Permission"	deemed planning permission granted under Schedule 2, Part 3, Class Q of the 2015 Order for which prior approval was granted by the Council for the Application subject to conditions including obtaining the Regulation 77 Consent;
"Property A"	means all the land outlined in green on the Application Site Plan;
"Property B"	means all the land outlined and shaded in blue on the Application Site Plan;
"Position Statement"	means the statement dated 14th September 2021 received by the Council from Natural England which shows that water abstraction for drinking water supplies in the SNWSZ is having a negative impact on the wildlife sites in the Arun Valley;
"Regulation 77 Application"	the application made pursuant to Regulation 77 of the 2017 Regulations, for consent to carry out the Development as the requirement for it to be water neutral has been met, ascribed reference number HRA/24/0005;
"Regulation 77 Consents"	the consent of the Council pursuant to the Regulation 77 Application permitted subject *inter alia* to completion of this Agreement;
"Section 73 Consent"	any planning permission granted pursuant to section 73 of the Act which varies and/or removes any condition subject to which the Planning Permission and/or such planning permission pursuant to section 73 of the Act was granted;
"SNWSZ"	means the Sussex North Water Supply Zone from where Southern Water supplies drinking water;

"Southern Water"	means the statutory undertaker responsible for the supply of water to the Development or any successor organisation which replaces it.
"Water Neutral"	means the use of water in the SNWSZ after the Development has taken place is the same or lower than it was before the Development so as to accord with the Position Statement and "Water Neutrality" shall be construed accordingly;
"Water Neutrality Supporting Documents"	means : (a) The Water Neutrality Statement prepared in support of the Regulation 77 Consent by CGS Civils and dated 23rd April 2024 on behalf of the Applicant and agreed with the Council to demonstrate and ensure that the Development is considered and delivered as Water Neutral and in accordance with the Position Statement by setting out key mitigation measures to achieve Water Neutrality; and (b) CGS Civils Existing Fittings Survey in support of the Water Neutrality Statement, also dated 23rd April 2024. which appear at Schedule 2;
"Water Stressed Areas Classification"	means the Environment Agency's report dated 1st July 2021 setting out the results of the Environment Agency's determination of areas of water stress in England and any subsequent report;
"Working Day"	means Monday to Friday inclusive but excluding any day that is a bank holiday or statutory holiday in England.

4. ENABLING PROVISIONS

4.1 This Agreement is made pursuant to section 106 of the Act, section 111 of the Local Government Act 1972, section 1 of the Localism Act 2011 and all other enabling powers.

5. CONDITIONS PRECEDENT

5.1 This Agreement shall come into effect upon the date hereof but the provisions in Schedule 3 (with the exception of paragraphs 1 and 2 regarding Monitoring Fees) shall only take effect upon the Commencement of Development.

6. COVENANTS

6.1 Subject to clause 5.1:

6.1.1 The Owners covenant with the Council to fully comply with and to perform the obligations contained herein and in Schedule 3 of this Agreement in accordance with the requirements and timescales set out;

6.1.2 The Owners covenant with the Council that the Development and use of the Application Site shall be in strict accordance with this Agreement;

7. NOTICES

7.1 The Owners covenant with the Council as follows:

7.1.1 to give the Commencement Notice to the Council not less than 10 (ten) Working Days before the anticipated Commencement Date; and

7.1.2 to give the Occupation Notice to the Council not less than 10 (ten) Working Days before the anticipated Occupation Date.

7.2 The parties to this Agreement agree that if the Owners fail to give the notice required by clause 7.1.1 and clause 7.1.2 above then the Council shall be entitled in its absolute discretion to determine the Commencement Date and Occupation Date and shall give notice to the Owners of the Council's determination.

7.3 Any notice, certificate or other communication required or permitted to be given under this Agreement shall be given in writing to the relevant party at the relevant address referred to at the start of this Agreement or such other address as may be notified in writing to the other party and must be served personally or by first class registered or first class recorded delivery post and, in the case of the Council, the relevant party shall address any notice to the Head of Development and Building Control.

7.4 Any notice, certificate or other communication sent by post shall be deemed (in the absence of evidence of receipt) to have been delivered 2 (two) Working Days after despatch and in proving the fact of despatch it shall be sufficient to show that the envelope was properly addressed and posted.

7.5 Any notice, certificate or other communication delivered personally shall be deemed to have been delivered at the time it is received provided it is received between 0900 and 1700 on a Working Day but otherwise it shall be deemed to have been received on the next Working Day.

8. COSTS

8.1 The Applicant has undertaken to pay on or before the date hereof the Council's reasonable legal costs incurred in preparing and entering into this Agreement and the Monitoring Fee.

9. MORTGAGEE'S CONSENT AND LIABILITY

9.1 The Mortgagee consents to the completion of this Agreement and declares that their interest in the Application Site shall be bound by the terms of this Agreement as if it had been executed and registered as a land charge prior to the creation of the Mortgagee's interest in the Application Site.

9.2 Any current mortgage or future mortgagee shall not be liable for any breach of the obligations in this Agreement unless committed or continuing at a time when it is in possession of all or any part of the Application Site in which case it will be bound by the obligations in this Agreement as if it were a person deriving title from the Owner.

10. GENERAL

The parties undertake that:

10.1 this Agreement constitutes a planning obligation for the purposes of section 106 of the Act, section 111 of the Local Government Act 1972, section 1 of the Localism Act 2011 and any other enabling powers.

10.2 this Agreement constitutes a deed.

10.3 this Agreement is enforceable by the Council in accordance with section 106 of the Act.

10.4 nothing in this Agreement confers or is intended to confer a benefit on a third party under the Contracts (Rights of Third Parties) Act 1999.

10.5 It is hereby agreed by the Owners that failure by the Council at any time to enforce the provisions of this Agreement or to require performance strictly or otherwise by the Owners of any of the conditions, covenants, agreements or obligations of this Agreement or any failure or delay by the Council to exercise any act, right or remedy shall not be construed as a creating an estoppel in connection with any such condition, covenant, agreement or obligation and shall not affect the validity of this Agreement or any part thereof or the right of the Council to enforce any provision and any variation of this Agreement shall not vitiate the remainder of the Agreement which shall remain in full force and effect subject to such amendment or amendments.

10.6 The Owners hereby undertake that:

10.6.1 this Agreement supersedes and replaces all previous negotiations whether oral or written;

10.6.2 the Owners have not relied on any express or implied statement warranty representation or undertaking given by or on behalf of the Council; and

10.6.3 nothing herein contained excludes the liability of any party in relation to fraud.

10.7 The Owners acknowledge that this Agreement will be registered as a local land charge.

10.8 The Owners hereby give consent for the Application Site Plan to be reproduced by the Council.

10.9 If any provision in this Agreement shall be held to be invalid, illegal or unenforceable the validity, legality and enforceability of the remaining provisions hereof shall not in any way be deemed thereby to be affected or impaired.

10.10 This Agreement shall be governed by and interpreted in accordance with laws of England and the parties submit to the exclusive jurisdiction of the courts of England.

10.11 The obligations in this Agreement (with the exception of clause 8 (Costs)) shall cease to have effect (insofar only as it has not already been complied with) if, before the Commencement of Development, Planning Permission:

10.11.1 expires;

10.11.2 is varied or revoked other than at the request of the Owners or the Applicant; or

10.11.3 is quashed following a successful legal challenge,

but will remain in full force and effect so far as any subsisting Section 73 Consent is concerned.

10.12 The Owners (or any person deriving title to the Application Site from the Owners) shall not be liable for any breach of the restrictions and obligations set out in this Agreement where such breach arises after the Owners have parted with their interest in the Application Site or part of the Application Site to which such breach relates save in respect of liability for antecedent breach of this Agreement.

10.13 Section 33 of the Local Government (Miscellaneous Provisions) Act 1982 applies to the covenants in this agreement.

10.14 References to the Application Site include any part of it.

10.15 Any covenant by the Owners not to do any act or thing includes a covenant not to permit or allow the doing of that act or thing.

10.16 Nothing in this Agreement shall prohibit or limit the right to develop any part of the Site in accordance with any planning permission (other than the Planning Permission or any modification variation or amendment thereof) granted after the date of the Planning Permission.

10.17 Subject to the proviso to this clause if any Section 73 Consent is granted after the date of this Agreement:

10.17.1 the obligations in this Agreement shall relate to and bind such Section 73 Consent; and

10.17.2 the definitions of the Application, Development, Planning Permission (other than for the purposes of clause 1) shall be construed to include reference to (respectively) the planning application for the Section 73 Consent, the development permitted by the Section 73 Consent and the Section 73 Consent itself.

10.17.3 nothing in this clause shall fetter the discretion of the Council in determining any planning application for a Section 73 Consent and the appropriate planning obligations required in connection with the determination of the same;

PROVIDED THAT:

10.17.4 to the extent that any of the obligations in this Agreement have already been discharged at the date that a Section 73 Consent is granted they shall remain discharged for the purposes of the Section 73 Consent; and

10.17.5 the Council reserves the right to insist upon the completion of a separate planning obligation by deed of agreement in connection with any Section 73 Consent if the Council (acting reasonably) considers it desirable to do so.

11. DISPUTE RESOLUTION

11.1 Should a dispute or difference arise between the Owners and the Council concerning anything herein then the provisions of this clause 11 shall apply.

11.2 All differences and disputes which may arise between the parties concerning this Agreement shall be referred to the determination (as an expert and not as an arbitrator) of an independent leading conveyancing/planning counsel agreed upon by the parties but in default of such agreement appointed by the President of the Law Society of England and Wales on the application of any of the parties.

11.3 Any expert appointed pursuant to clause 11.2 shall:

11.3.1 on his appointment serve written notice thereof on the parties in dispute;

11.3.2 consider any written representations by or on behalf of those parties which are received by him within 20 (twenty) Working Days of such service and immediately forward a copy of the written representation of one party to the other party;

11.3.3 allow the parties to the dispute an opportunity of commenting in writing on the other party's representations within 20 (twenty) Working Days of receipt by the other party thereof;

11.3.4 have an unfettered discretion to determine the reference to him;

11.3.5 serve notice of his determination as soon as he has made it;

11.3.6 give full and clear reasons for his decision; and

11.3.7 be paid his proper fee and expenses in connection with such reference by the parties in dispute in equal shares or in such shares as he may determine and his determination shall be final and binding on the parties in dispute (save in the case of manifest error) PROVIDED THAT if any such expert shall die, become insolvent or of unsound mind or if any of the parties in dispute shall serve on him written notice in their opinion he has unreasonably delayed making his determination he shall be ipso facto discharged and be entitled only to his reasonable expenses prior to such discharge and another person shall be appointed in his place as such expert.

11.4 The provisions of this clause shall not affect the ability of the Council to apply for and be granted any of the following: declaratory relief, injunction, specific performance, payment of any sum, damages, and any other means of enforcing this Agreement and consequential and interim orders and relief.

12. OWNERSHIP

12.1 The Owners warrant that no person other than the Owners and Mortgagee have any legal or equitable interest in that part of the Application Site other than as set out in this Agreement.

12.2 The Owners undertake to the Council to give the Council immediate written notice of any change in the ownership of any of their respective interests in the Application Site occurring before all the obligations under this Agreement have been discharged such notice to give details of the transferee's full name and registered office (if a company or usual address if not) together with the area of the Application Site purchased by reference to a plan.

13. GENERAL

13.1 Except for the planning obligations contained in this Agreement specifically regulating the use of land or buildings after construction pursuant to the provisions of this Agreement or the Planning Permission and/or Regulation 77 Consent pursuant to the Application or the planning obligations that relate to the Application/ Offsetting Site, no obligations contained in this Agreement shall be binding on any freehold or leasehold owners or occupiers of individual dwellings constructed pursuant to the Planning Permission and/ or Regulation 77 Consent (or their respective mortgagees) or land held by any of the statutory utilities for their operational purposes.

IN WITNESS whereof this Agreement has been duly executed the day and year first hereinbefore mentioned

SIGNED as a **DEED** by
ANTHONY JAMES GROCOTT

..... [redacted] ..... Signature

In the presence of:

W [redacted] ..... Signature
I GRACE HARGREAVES ..... Print name
T 45 South Street ..... Address 1
N Chichester ..... Address 2
E ..... Address 3
S PO19 1DS ..... Post code
S Paralegal ..... Occupation

SIGNED as a **DEED** by
KATHERINE MARGARET ELIZABETH GROCOTT

[redacted] ..... Signature

In the presence of:

W [redacted] ..... Signature
I GRACE HARGREAVES ..... Print name
T 45 South Street ..... Address 1
N Chichester ..... Address 2
E ..... Address 3
S PO19 1DS ..... Post code
S Paralegal ..... Occupation

EXECUTED as a **DEED** by
BARCLAYS BANK UK PLC (Company Number 9740322)
acting by an Attorney* in the presence of a witness

..... Signature of Attorney

..... Print name

..... Position held

In the presence of a witness:

..... Signature of witness
Mortgage Services
PO Box 8575
Leicester , LE18 9AW
..... Print name

..... Position held

*Note: the Power of Attorney nominating the Attorney who signs this Deed on behalf of the Mortgagee must be submitted to the Council with this Deed.

Signed for and on behalf of BARCLAYS BANK UK PLC by
[redacted] [redacted]
as duly appointed Attorney under a Power of Attorney
dated 22/09/25 in the presence of
Witness
[redacted]

18056 X4

SEALED WITH THE COMMON SEAL of
HORSHAM DISTRICT COUNCIL
in the presence of:

[redacted]
Authorised Officer



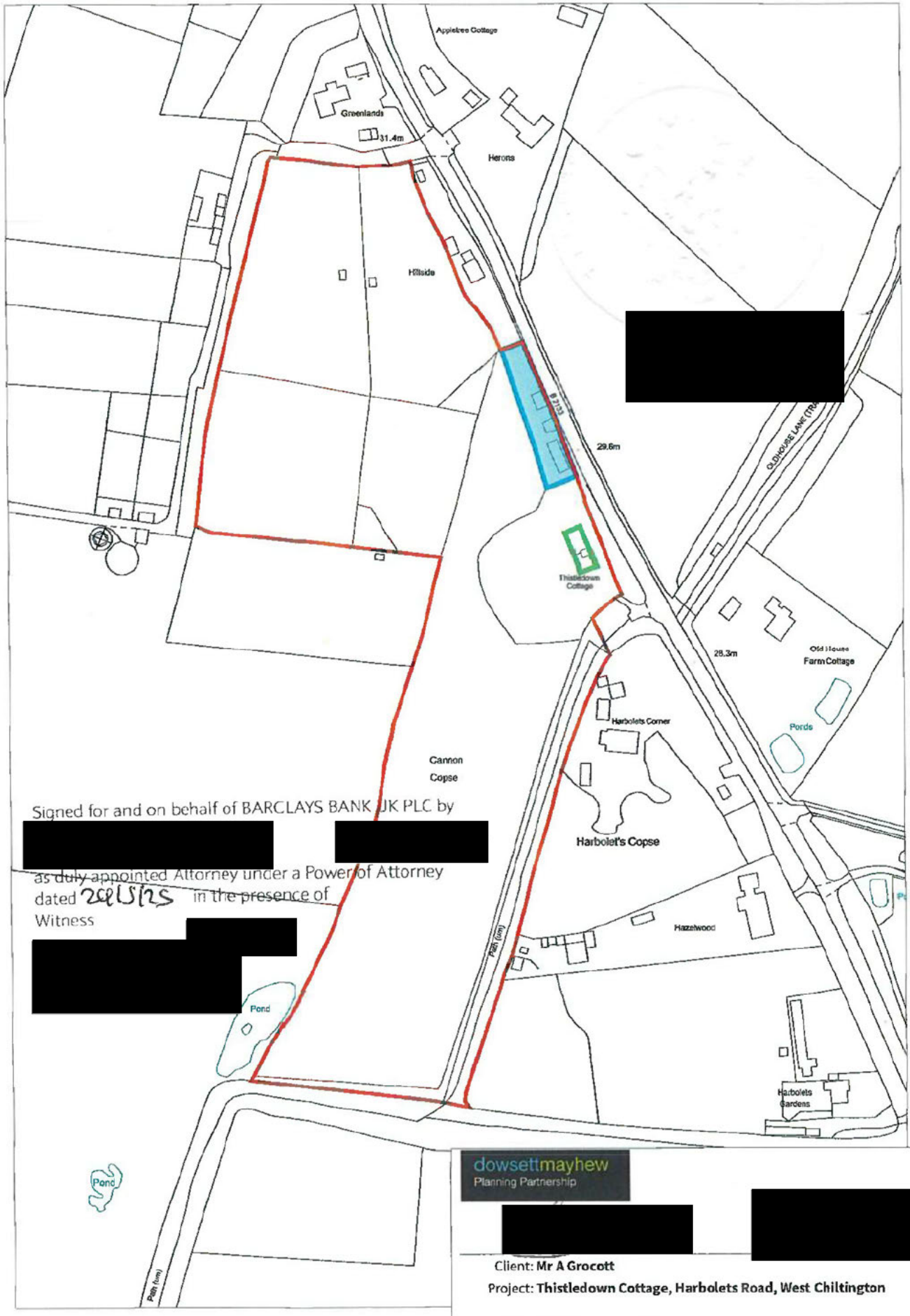
Schedule 1

Application Site Plan

Promap
LANDMARK INFORMATION

Map Centre: 509955,120928

0m 20m 40m 60m



Signed for and on behalf of BARCLAYS BANK UK PLC by

[redacted]

as ~~duly appointed~~ Attorney under a Power of Attorney dated 29/5/25 in the ~~presence~~ of

Witness

[redacted]

dowsettmayhew
Planning Partnership

[redacted]

[redacted]

Client: **Mr A Grocott**

Project: **Thistledown Cottage, Harbolets Road, West Chiltington**

Title: **S106 Agreement Plan**

Scale: 1:2500 @A4 Date: 27 Feb 2025

Drawn By: Drawing No: 782-09-010

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Schedule 2

Water Neutrality Supporting Documents

cgs civils

Consulting Civil Engineers

Water Neutrality Report

Thistledown Cottage, West Chiltington

For

Anthony Grocott

Rev – **P-**

Reference **C3114**

Date **23rd April 2024**

Revision	Date of Issue	Comments	Prepared By	Checked By
P-	15.04.2024	Initial Issue	LT	CS
P1	23.04.2024	Updated to reference the existing fittings survey	LT	CS

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

1 Introduction

1.1.1 CGS Civils Ltd has been appointed by Anthony Grocott to undertake a Water Neutrality Report for a proposed development at Thistledown Cottage, Harbolets Road, West Chiltington, West Sussex. Planning permission is sought for the change of use of an existing agricultural building into two 1-bedroom dwellings. The site falls within the Sussex North Water Supply Zone, in which Natural England have written to all authorities within the zone providing a position statement for applications which may place increased pressure on this zone. This explains that recent case law has established that abstraction from the Supply Zone may be having an impact on protected sites (Arun Valley Special Area of Conservations (SAC), Special Protection Area (SPA) and Ramsar site). As a result, developments within this zone must not add to this impact, as such, the purpose of this report is to therefore provide an overview on the potential water usage changes on the site as a result of the proposed development, and to confirm that the site is water neutral.

Fig 1. Sussex North Water Supply Zone Area

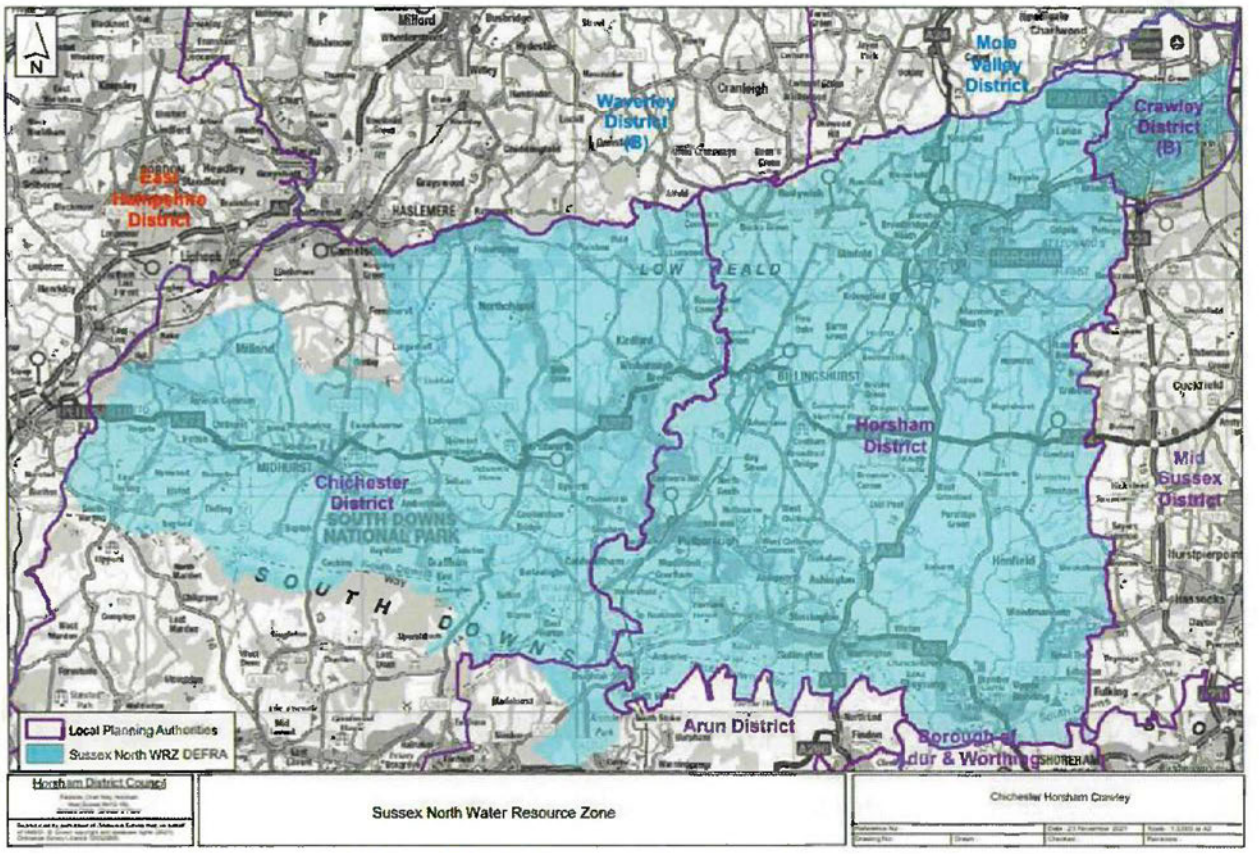


Fig 2. Site Location



1.1.2 The proposed development is located at OS Grid Reference TQ 10018 20985 and has the post code RH20 2LG.

1.1.3 Waterwise defined Water Neutrality as:

'For every new development, total water use in the region after the development must be equal to or less than the total water uses in the region before the new development.'

1.1.4 Achieving water neutrality involves using a three-step approach. First, the demand for water from the new development must be reduced as far as is practicable, followed by the re-use of water; then the remaining demand should be offset within the region. Following this three-step approach allows the volume that requires offsetting to be reduced which ultimately reduces the cost of the overall scheme. This is noted within the Waterwise neutrality definition, which defines the three steps which should be undertaken in order to achieve water neutrality in their recent review dated January 2021.

- Reduce water demand in the new development through improvement in efficiency.
- Re-use water, wherever possible.
- Offset the remaining water demand from the new development if required.

1.1.5 The report will be split into the following sections:

- A Review of Water Neutrality demand reduction
- A calculation of estimate water usage from proposed development
- Identification of measures that can be first used to reduce this demand
- Identification of measures that can be used to re-use water
- Establish solutions to offset that demand in order to achieve neutrality.

1.1.6 This report will follow the methods documented within *'A Review of Water Neutrality in the UK'* carried out by Waterwise in January 2021. The document provides details on how developments can achieve water neutrality by utilising the 3-stage approach.

Fig 2. 3-stage approach



1.1.7 Some increase in water demand within the region from planned development during the local plan period is inevitable. However, it can be minimised by making the site as water efficient as possible.

1.1.8 Per Capita Consumption (PCC) is used as a measure of water use and is the volume of water that is used by one person in one day. It is usually measured in litres per person per day (l/p/d). The average PCC within Southern Water's 'Sussex North Water Resource Zones (WRZ)' is 135 l/p/d. Homes without a water meter consume on average 160 l/p/d and for homes with a water meter, consume on average 131 l/p/d.

1.1.9 Part G of the Building regulations currently states that new build housing should achieve a minimum of 125 l/p/d. A tighter target of 110 l/p/d can be requested if the local authority can establish a clear need based on available evidence.

1.1.10 The table below indicates different demand scenarios including Southern Water's Target 100 Ambition to achieve 100 l/p/d, as well as further scenarios where water demand is cut more dramatically.

Table 1 PCC Demand Scenarios

Demand Scenario	Per Capita Consumption (l/p/d)
British Flows and Loads	150
Building Regulations Standard	125
Building Regulations Optional	110
Target 100	100
Realistic Achievable	85
Ambitious	62

1.1.11 The benefits of water neutrality are wide ranging, from financial and reputational to environment and social. For a new domestic building, they could include:

- **Saving Water** – Over 100,000 litres of water can be saved per year for each water neutral home built
- **Saving Carbon** – A significant CO2 saving can be achieved by reducing the demand for hot water for baths, showers, basins, dishwashers and washing machines
- **Saving Money** – Both water and energy bills will reduce
- **Reducing environmental impact** – Decreasing water abstracted from rivers and groundwater sources
- **Improved Resilience** – For the future by minimising the additional pressure on water resources
- **Enabling future housing growth** – In water scarce areas by reducing the impact of new homes and buildings
- **Reducing discharge to sewage** – by using less water, collecting rainwater and recycling greywater, less water is discharged to the drainage network
- **Short pay-back time** – After approximately 5 years the saving of water neutrality will outweigh the costs of doing so.

2 Executive Summary

2.1.1 The existing site is currently a disused agricultural building, the water demand for which is therefore **0 l/day.** The proposed scheme will consist of converting this building into two 1-bedroom dwellings, the water demand for which will be **290.40 l/day** prior to any mitigation techniques.

2.1.2 As proven within this report, the installation of water efficient fittings and the implementation of rainwater harvesting techniques for both the proposed dwellings and the existing adjacent property will allow for the proposals to achieve water neutrality.

Table 2 Water Usage Comparison

Existing Water usage	**0 l/day**
Proposed Scheme water usage	162.78 l/day
Total water demand offset by other properties within the region	202.54 l/day
Proposed Scheme water usage equal to or lower than existing site	Yes

3 Calculation of estimate water usage from the proposed development

3.1.1 Before any necessary steps to achieve water neutrality can be determined, the total water demand for the proposed development must first be calculated. The proposed scheme will consist of converting the existing agricultural building into two new 1-bedroom dwellings. In accordance with the average occupancy levels set out by Horsham DC, the population for each of the new properties will be 1.32.

Table 3 Average occupancy levels

Number of bedrooms	Average occupancy level
1	1.32
2	1.88
3	2.47
4	2.86
5	3.09

3.1.2 As the proposed property will be a new dwelling, Policy 37 of the Horsham District Planning Framework (HDPF) triggers the requirement for the optional building regulations standard of 110 litres per person per day (l/p/d), therefore:

2 x (1.32 x 110 l/p/d)
= 290.40 l/day

3.1.3 The following sections within this report will cover measures that can be undertaken in order to reduce the water consumption of the proposed property and aim for the 'Ambitious' PCC of 62/l/p/d.

4 Step 1 – Identifying measures that can be used to reduce this demand

4.1.1 The first and most important step in achieving water neutrality will be to ensure that the water used by the proposed development is used as efficiently as possible; the smaller the water demand of the building due to the design and fittings, the less water is needed to be reused and offset. There are a number of ways of achieving a smaller water demand:

- Fitting homes with efficient products, such as:
  - Aerated Taps
  - Aerated Shower heads
  - Low Flush Toilets, or air flush toilets
  - Water efficient white goods
- Installing Smart Meters, this allows the consumer to see how much water they are using, and how this affects their water saving bill. This can help consumers to reduce water usage, identify leaks, and meet water saving targets, with the bonus of reduced bills.
- Designing home to encourage water saving behaviours, this can also help reduce water use and help ensure that other measures that are put in place are effective. Education and awareness are important components of achieving water neutrality.

4.1.2 Building Regulations Part G states that when the new fittings approach is used, the water consumption of the fittings must not exceed a total of 125 l/p/day/. The values are listed in the table 4 below:

Table 4 Maximum Fittings Consumption from Building Regulations Part G

Water Fitting	Maximum Rating
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

4.1.3 Should the proposed development be required to comply with the optional water efficiency as part of the conditions for planning permission, the estimated consumption of water can be calculated via the Optional requirement level of fittings consumption. This is listed within Building Regulations Part G, which also states that the water consumption must not exceed 110 l/p/day, and the maximum fittings consumption for optional requirement can be found in Table 5 below:

Table 5 Maximum fittings consumption optional requirement level from Building Regulations Part G

Water Fitting	National Base Level
WC	4/2.6 litres dual flush
Shower	8 l/min
Bath	170 litres
Basin Taps	5 l/min
Sink Taps	6 l/min
Dishwasher	1.25 l/place setting
Washing Machine	8.17 l/kilogram

4.1.4 However, to improve on the above requirements, the proposed site can implement the following measures in order to focus on becoming a water efficient development. By installing the following features, the development can achieve a water demand of around 85 l/p/d, which aligns with a 'Realistic Achievable' PCC. See Table 6 below:

Table 6 Water efficient fittings consumption

Water Fitting	Consumption Level
WC	4/2.6 litres dual flush
Shower	7 l/min
Bath	145 litres
Basin Taps	2.5 l/min
Sink Taps	5 l/min
Dishwasher	0.67 l/place setting
Washing Machine	5.5 l/kilogram

Please note that by accepting this report, you accept the low flow rates of the proposed fittings required to achieve water neutrality. CGS Civils cannot be held responsible for any reduced comfort levels that may arise from the use of these fittings.

4.1.5 Water demand can also be reduced through fitting metres, which help to identify leaks and track water consumption as a way to support and encourage behavioural changes such as, not leaving the tap running when brushing teeth and using eco settings on the washing machine and dishwasher. It should be noted that behavioural changes have not been used within the calculations within this report as it is impossible to enforce.

Table 7 Practical Summary of Step 1

Step 1: Reduce Water				
Toilets	Cistern displacement devices (toilet hippos)	Retrofit flush devices to dual flush	Fix leaky toilets	
Taps	Tap inserts (aerators)	Low flow restrictors	Push taps	Infrared Taps
Showers/baths	Low flow shower heads (less than 8litres/min)	Shower timers	Reduced bath frequency & volume	
Outdoors	Hosepipe flow restrictors	Hosepipe siphons	Water butts	Mulches and composting to keep soil moist
Smart Metering	Leakage information	Encourage behavioural changes	Innovative tariffs	Savings estimates

4.1.6 By installing the water efficient devices listed above, it is possible to reduce the water demand on site from **290.40 l/day** down to **235.07 l/day.**

2 x (1.32 x 89.04 l/p/d)

= 235.07 l/day

- *2 (number of properties) x 1.32 (average occupancy level for a 1-bedroom dwelling) x 89.04 (Appendix A – Water Calculator for Proposed fittings)*

5 Step 2 – Identify measures that can be used to re-use water

5.1.1 Once the water demand has been reduced via the installation of water efficient products, water reuse should be considered. The term 'water reused' refers to the capture, treatment (if it is required) and the use of alternative water supplies for non-potable purposes. It includes:

- Rainwater and surface water harvesting
- Greywater recycling (typically the used water from baths, showers and hand basins)
- Wastewater recycling.

5.1.2 The installation of water reusing technology has the potential to save significant amounts of water; for example, 24% of water in the home is used for flushing the toilet and only 4% externally in the garden meaning a water reuse system could save at least a quarter of the demand if it was installed for these purposes. Depending on the quality and the system installed, it could also be possible to re-use water for a washing machine which accounts for 12% of total water usage.

Table 8 Practical Summary of Step 2

Step 2: Reuse Water			
Rainwater Harvesting	Small scale water butt	Rainwater Harvesting system for individual homes and buildings	Large scale surface water harvesting
Greywater Recycling		Small systems for individual homes	Largest scale systems for commercial and mixed-use sites

5.1.3 In this instance however, rainwater harvesting is proposed to provide water to the proposed dwellings' toilets, washing machines as well as provide **5 l/p/day** for outdoor use. The installation of water reusing technologies will further reduce the water demand on site, depending on the harvesting tank installed. The proposed roof area is sufficient to provide the required water to the property via a rainwater harvesting tank as well as has sufficient capacity for a 35-day drought period. **See Appendix C.**

5.1.4 By installing the water efficient devices listed above as well as the rainwater harvesting technologies listed above, the total demand will be reduced to:

2 x (1.32 x 61.66)

= 162.78 l/day

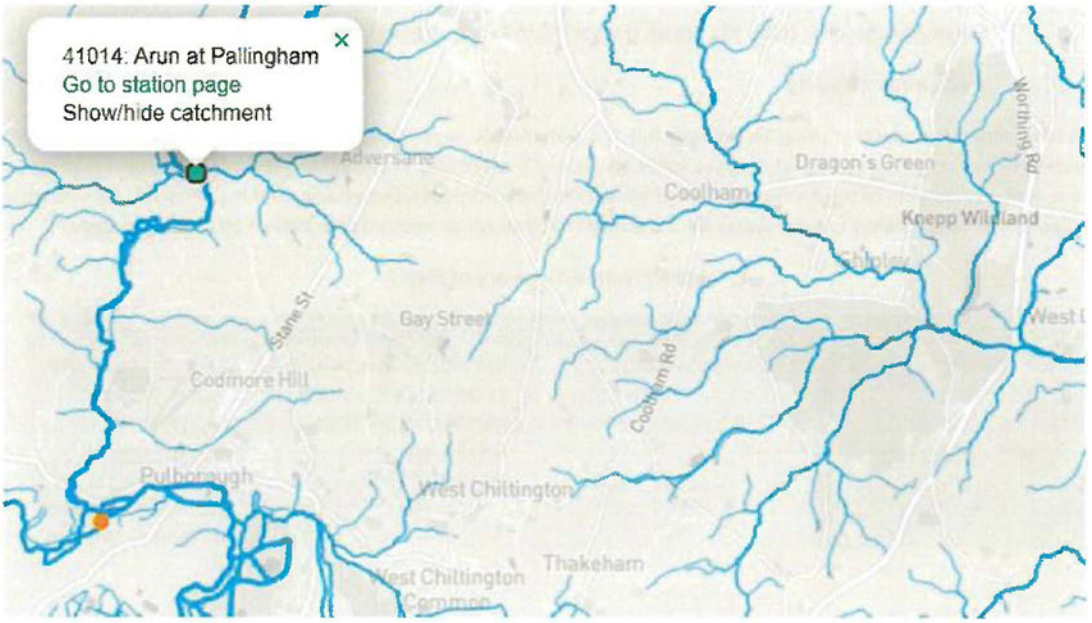
- *2 (number of properties) x 1.32 (average occupancy level for 1-bedroom dwelling) x 61.66 (Appendix B – Water calculator for proposed fittings with RWH)*

Table 9 Part G rainwater collection calculator

Rainwater Collection Calculation	
Collection Area (m^2)	93
Yield Coefficient	0.8
Depth of rainfall (mm/year)	805
Daily rainwater collection (litres)	163.98
Number of occupants	2.64 (2 x 1.32)
Daily Rainwater per person (litres)	62.11

5.1.5 A calculation is to be made to ensure that the rainwater harvested is greater than the rainwater demand within the dwelling. The following is a calculation for 5% of the annual rainwater yield and has been calculated using Rainfall data from the National River Flow Archive which provides annual rainfall data as recorded by the Met office and follows the intermediate approach as detailed within BS 8515:2009.

5.1.6 Using the rainfall catchment data provided by the National River Flow Archives, the closest station point to the site is 41014 – Arun at Pallingham:



5.1.7 The latest data available for this station is SAAR 1961-1990, which shows that the depth of rainfall in the area is 805mm.

$$Y_R = A \times e \times h \times n \times 0.05$$

Where:

Y_R = the annual rainwater yield (l)
A = The collecting area (m^2)
e = yield coefficient (%)
h = depth of rainfall (mm)
n = hydraulic filter efficiency

$$\underline{2,845} = 93 \times 0.8 \times 805 \times 0.95 \times 0.05$$

5.1.8 In order to ensure there is sufficient roof area, another calculation from BS 8515:2009 must be carried out in order to calculate the annual demand within the property. The following is a calculation for 5% of the annual non-potable water demand.

$$D_N = P_d \times n \times 365 \times 0.05$$

Where:

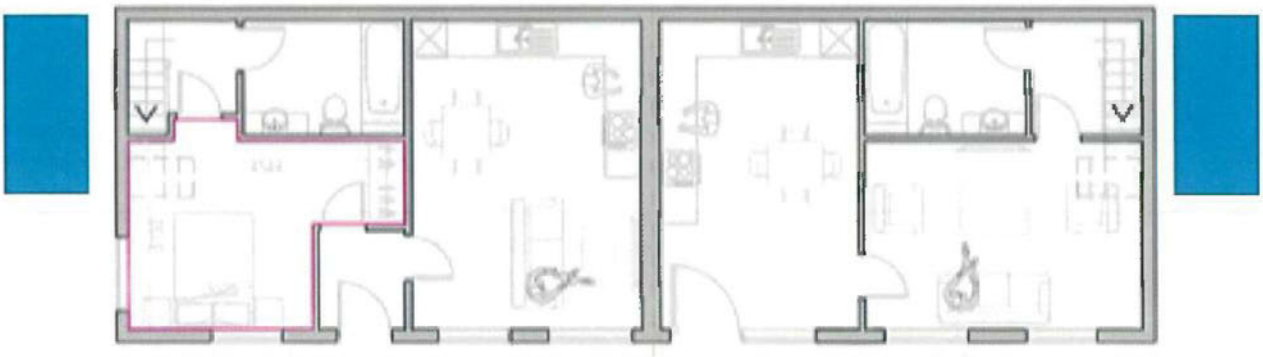
D_N = the annual non-potable water demand (l)
P_d = The daily requirement per person (l)
n = number of persons

$$1,450 = 30.09 \times 2.64 \times 365 \times 0.05$$

5.1.9 To ensure there is sufficient area to allow a 35-day drought storage, an extra 35 days is to be included:

$$\underline{1,589} = 30.09 \times 2.64 \times 400 \times 0.05$$

Fig. 4 Potential Rainwater Harvesting tank locations



5.1.10 From the above water calculations, we have:

- Proposed water usage rate of 110 litres/person/day based on 'HDPF'.
- Which can then be reduced to a proposed water usage rate of 61.66 litres/person/day with water efficient devices and rainwater harvesting.

5.1.11 In order to provide a cumulative consumption comparison between the existing and the proposed water usage, the occupancy rates would be for 'as existing' and 'as proposed':

- Proposed water demand from HDPF – 110 l/p/d at an overall occupancy rate 1.32 people = **145.20 l/day** for each dwelling, or **290.40 l/day** for the entire site.
- Proposed Water Demand with water efficient devices listed in **Table 4** and Rainwater harvesting – 61.66 l/p/d at an overall occupancy rate of 1.32 people = **81.39 l/day** for each dwelling, or **162.78 l/day** for the entire site.

5.1.12 The client is willing to install two 1,500-litre rainwater harvesting tanks in order to store the water required by the two dwellings.

6 Step 3 – Offsetting remaining water demand

6.1.1 Finally, the remaining water demand must be offset. The adjacent property is also owned by the client and can be retrofitted with the water efficient fittings outlined within Section 1 of this report. The existing property is a five-bedroom dwelling with five occupants. Water bills covering the 24th of September 2020 to the 21st of August 2023 are included within Appendix E of this report. Over this period of 1061 days, a total of 542m³, or 542,000L of water was used by the site, averaging out as **510.85 l/day**. This shows that currently **102.17 l/p/day** is used on average for each occupant. In addition to the water bills, an Existing Fittings Survey has been carried out which supports the use of this value (refer to C3114 Existing Fittings Survey).

6.1.2 As outlined within Section 1 of this report, the installation of the water efficient fittings listed in Table 6 will result in a water demand of **89.04 l/p/day.** This results in a total water demand of **445.20 l/day** for all five occupants. This is a total reduction in water demand of **65.65 l/day.**

6.1.3 In order to offset the remaining demand after the existing building has been retrofitted with water efficient fittings, rainwater harvesting techniques should be implemented to supply the existing property with water to the toilets, washing machines along with **5 l/p/day** for outdoor use. As outlined within Section 2 of this report, the use of rainwater harvesting techniques will reduce the existing dwelling's water demand down to **61.66 l/p/day**, or **308.30 l/day** in total. This equates to a total reduction in water demand of **202.55 l/day** over the existing situation, which is enough to offset the proposed site, with a total reduction of **39.77 l/day** within the region.

6.1.4 To ensure there is sufficient rainwater to support the retrofitted building, the calculations outlined within sections 5.1.5 to 5.1.9 should be repeated for the existing building. The closest station point will remain 41014 – Arun at Pallingham.

Table 10 Part G rainwater collection calculator

Rainwater Collection Calculation	
Collection Area (m²)	150
Yield Coefficient	0.8
Depth of rainfall (mm/year)	805
Daily rainwater collection (litres)	264.48
Number of occupants	5
Daily Rainwater per person (litres)	52.90

$$Y_R = A \times e \times h \times n \times 0.05$$

Where:

Y_R = the annual rainwater yield (l)
A = The collecting area (m²)
e = yield coefficient (%)
h = depth of rainfall (mm)
n = hydraulic filter efficiency

$$\underline{4,589} = 150 \times 0.8 \times 805 \times 0.95 \times 0.05$$

6.1.5 In order to ensure there is sufficient roof area, another calculation from BS 8515:2009 must be carried out in order to calculate the annual demand within the property. The following is a calculation for 5% of the annual non-potable water demand.

$$D_N = P_d \times n \times 365 \times 0.05$$

Where:

D_N = the annual non-potable water demand (l)
P_d = The daily requirement per person (l)
n = number of persons

$$2,746 = 30.09 \times 5 \times 365 \times 0.05$$

6.1.6 To ensure there is sufficient area to allow a 35-day drought storage, an extra 35 days is to be included:

$$\underline{3,009} = 30.09 \times 5 \times 400 \times 0.05$$

6.1.7 As shown within the above calculations, there is sufficient roof area to supply the existing building with water to its toilets, washing machines along with **5 l/p/day** for outdoor use.

7 Conclusion

7.1.1 The overall water demand can be reduced by utilising methods listed in the sections above to reduce and re-use water for the proposed development. The remaining water demand can then be offset by retrofitting the existing adjacent property with the same water efficient fittings as well as having rainwater harvesting supply water to the property's toilets, washing machines as well as **5 l/p/day** for outdoor use.

7.1.2 To summarise:

- The proposed development will use on average **290.40 l/day** prior to any mitigation techniques.
- This water demand can be reduced to **235.07 l/day** through the installation of water reducing appliances.
- Re-using the water through rainwater harvesting tanks can further reduce the water demand down to **162.78 l/day.**
- The existing water demand for the adjacent property can be reduced by utilising the above measures in the 'reduce and re-use' sections of this report. The existing dwelling has 5 occupants and a total water demand of **510.84 l/day**. By following the above measures, this can be reduced down to **308.30 l/day.** This is a total reduction in water demand of **202.54 l/day.**
- The overall water demand will be reduced by **39.76 l/day** over the existing site, resulting in the site becoming water neutral.

8 Appendices

8.1 Appendix A:

Table 11 – Water Calculator from Building Regulations Part G – Information input from proposed site with water efficient devices from Table 6.

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	0	4.42	0	0
WC (Dual Flush)	Full Flush Vol.	4	1.46	0	5.84
	Part Flush vol.	2.6	2.96	0	7.70
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2.5	1.58	1.58	5.53
Bath (shower also present)	Capacity to overflow (l)	145	0.11	0	15.95
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.60
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)		5.6	0	0
Kitchen sink taps	Flow rate (l/min)	5	0.44	10.36	12.56
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
		Total Calculated use (l/p/d)			92.35
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			0
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			89.04

8.2 Appendix B:

Table 12 – Water Calculator from Building Regulations Part G – Information input from proposed site with water efficient devices from Table 6 with Rainwater Harvesting.

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	0	4.42	0	0
WC (Dual Flush)	Full Flush Vol.	4	1.46	0	5.84
	Part Flush vol.	2.6	2.96	0	7.70
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2.5	1.58	1.58	5.53
Bath (shower also present)	Capacity to overflow (l)	145	0.11	0	15.95
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.60
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)		5.6	0	0
Kitchen sink taps	Flow rate (l/min)	5	0.44	10.36	12.56
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
	Total Calculated use (l/p/d)				92.35
	Contribution from greywater (l/p/d)				0
	Contribution from rainwater (l/p/d)				30.09
	Normalisation factor				0.91
	External water use				5
	Total water consumption (36(1)) (l/p/d)				61.66

8.3 Appendix C:

Rainwater Harvesting Tank Size Calculator, for each individual dwelling. Not that for the purposes of the calculations below a water demand of 39.72 has been used, this is calculated by multiplying the water demand needed per person (30.09 l/p/day) by the number of occupants (1.32):

COLLECTABLE ROOF AREA (M²)

Main Building	Width:		Length:		Rain Collection Area:	0 m²
Extension one	Width:		Length:		Rain Collection Area:	0 m²
Extension Two	Width:		Length:		Rain Collection Area:	0 m²
Extension Three	Width:		Length:		Rain Collection Area:	0 m²
Or the total roof area, if you already know it:				46.5	Total area of collectable roof space:	46 m²
Select Your Region		England SE & Central			Average rainfall per year in your region:	64 L
Collectable rainwater per annum in litres - discounted by 20% to account for water loss						**23552 L**

USE OF RAINWATER IN THE BUILDING

	people:	bedrooms:	
Number of people or bedrooms in the building -	1	0	
Number of clothes washing cycles per day (*50 litres each*)	0.00 Cycles	0.00	L
Number of toilet flushes per day (*4.42 flushes per person, average 5 litres each*)	0.00 Flushes	0.00	L
Outdoor use in litres, per person per day (*recommended 5 litres per person per day*)	39.7	39.72	L
Amount of water you require every day		39.72	L
Amount of water you require every year	DEMAND	14497	L

FINAL FIGURES

How many days drought protection do you need? Typically 21 (18 minimum)	35	
Capacity of water storage in litres required for drought protection	1390.20	L
The lesser of YIELD (blue) or DEMAND (green) per annum	14497	L
Therefore, volume of rainwater storage required	**1390**	**L**

CONCLUSION

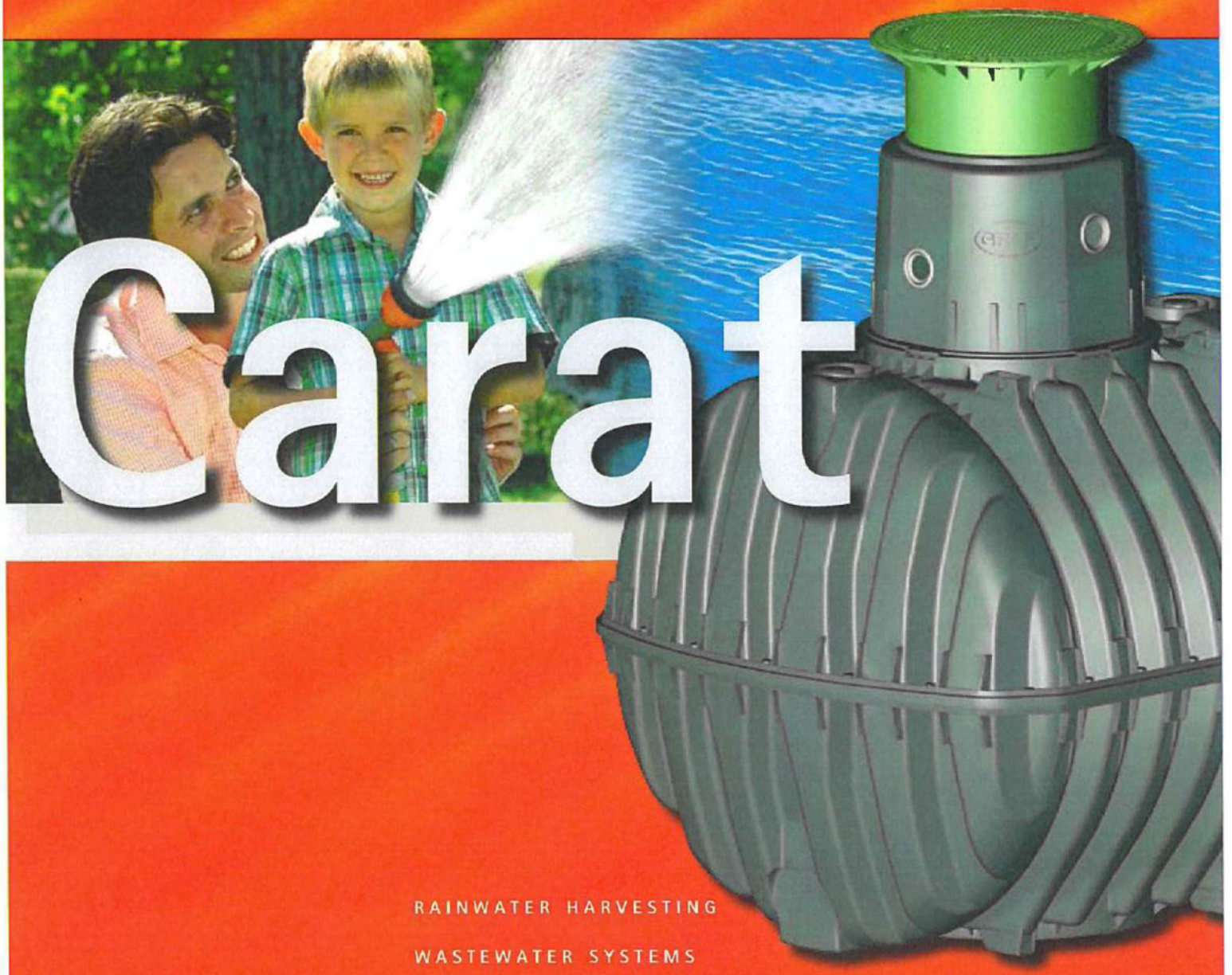
Is there sufficient roof water available:		YES
Recommended tank size from our shallow dig range:	F Line Range:	1500 LITRE F-LINE TANK

8.4 Appendix D:

Example Rainwater Harvesting Tank Brochure:

GRAF

Carat Rainwater Harvesting solutions



RAINWATER HARVESTING

WASTEWATER SYSTEMS

RAINWATER RETENTION

DRINKING WATER RESERVOIRS

Edition 2007
Salesfolder C 27-2 Carat EN

Benefits of the Carat System

Flexible, stackable, user-friendly and better for the environment



① **Mini telescopic dome shaft with PE lid**
Designed for non-vehicle loading and ideal for garden use, the shaft can be adjusted from 750 - 950 mm and tilted up to 5% to sit flush with the ground level. Includes a PE lid with child safety lock. This item is supplied in green.

② **Maxi telescopic dome shaft with PE lid**
Designed for non-vehicle loading and ideal for the Complete Package (Eco-Plus), the shaft can be adjusted from 750 – 1,050 mm and tilted up to 5% to sit flush with the ground level. Includes PE lid with child safety lock. This item is supplied in green.

③ **Vehicle loading telescopic dome shaft with cast iron lid**
Designed for vehicle loading applications, the tank can be adjusted from 750 -1,050 mm and tilted up to 5% to sit flush with the ground level. Includes child-safe cast iron cover. This item is supplied in dark grey.

④ **Extension**
For use with the telescopic dome shaft to increase the height of the lid from 1,000 - 1,500 mm. Always refer to installation instructions when usig this item.







Logistical advantages of the Carat

The Carat tank consists of two half shells which can be stacked on top of each other, allowing multiple tanks to be stacked on a single pallet for shipping. For example, it is possible to stack five 6,500 ltr Carat tanks, or nine 2,700 ltr Carat tanks on a single pallet. This allows a standard 40 ft. shipping container to house a total tank volume of up to 130,000 ltrs! The tanks unique stacking feature directly reduces transport costs and environmental impact from vehicle emissions, whilst allowing shipments to any destination in the world.

Easy and safe assembly

- The patented quick connection (illustrated in green), allows the Carat tank to be assembled without screws in only few minutes. Disassembly is possible at any time.
- The first-class EPDM material used in the profile sealings (illustrated in yellow), has been laboratory tested to last more than 25 years.
- The centering bolt (illustrated in orange) assures the accurate and easy assembly of the two half shells preventing any leaks

The Carat

The first Rainwater underground tank of its kind!

NEW

Unique manufacturing process

The GRAF Carat underground tank is unlike any other underground tank in the world. It is the largest tank of its kind to be manufactured by injection compression moulding. This technique provides the tank with unbeatable stability and ensures that each component is produced with the highest of accuracy.

Unlike other underground tanks, the wall thickness is equal in all areas of the tank. The production tolerances are kept to a minimum, resulting in a product of the highest quality, which is strong, accurate, reliable and extremely user-friendly.

To manufacture the Carat range, one of the worlds largest injection moulding systems had to be developed.



The Carat underground tank is made from Duralen®, a high quality material that is extremely rigid and impact resistant, therefore ideally suited for producing underground tanks. With very low warping characteristics and high stiffness, this material provides high stability and a unique life expectancy. Duralen® can also be easily recycled which reduces waste and environmental impact.

Duralen®

The modular Carat system

Choose your tank size

NEW

Carat, vehicle bearing underground tank

Size 2,700 – 13,000 litres
(700 – 3,400 US-Gallons).
Designed to be used in conjunction with the vehicle loading telescope dome shaft. The access dome is designed in accordance to DIN testing.

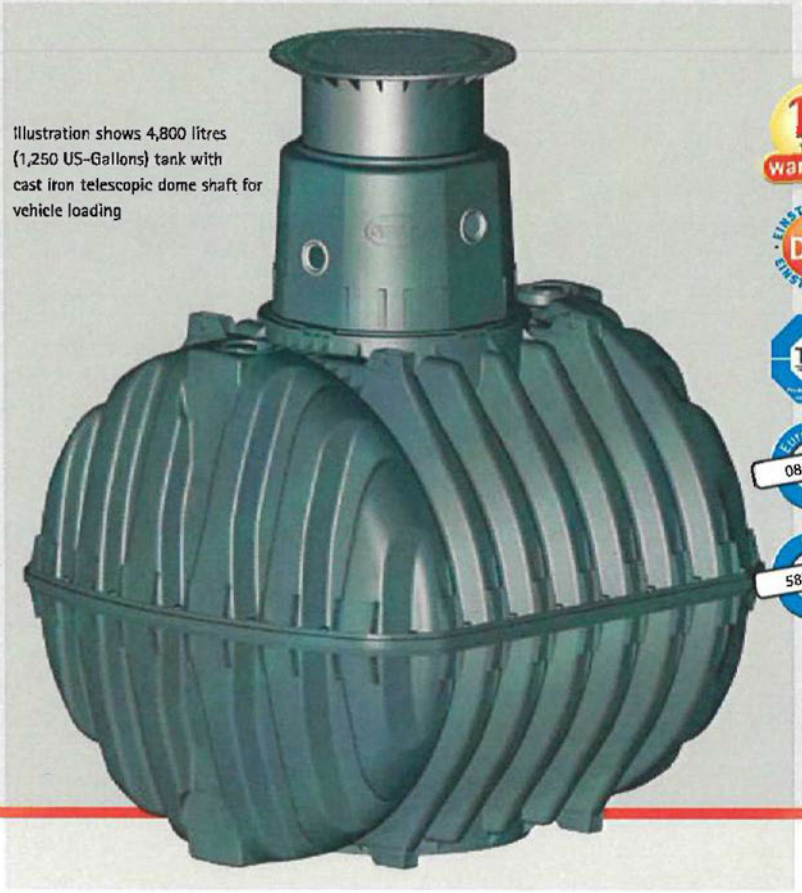


Illustration shows 4,800 litres (1,250 US-Gallons) tank with cast iron telescopic dome shaft for vehicle loading

15 years warranty

EINSTIEGSDOM · EINSTIEGSDOM · bath DIN

TÜV

European 08 70877 Patent

US 5878907 Patent

Volume

Litres	US-Gallons
2,700	700
3,750	1,000
4,800	1,250
6,500	1,700
7,500*	2000*
9,600*	2,500*
13,000*	3,400*

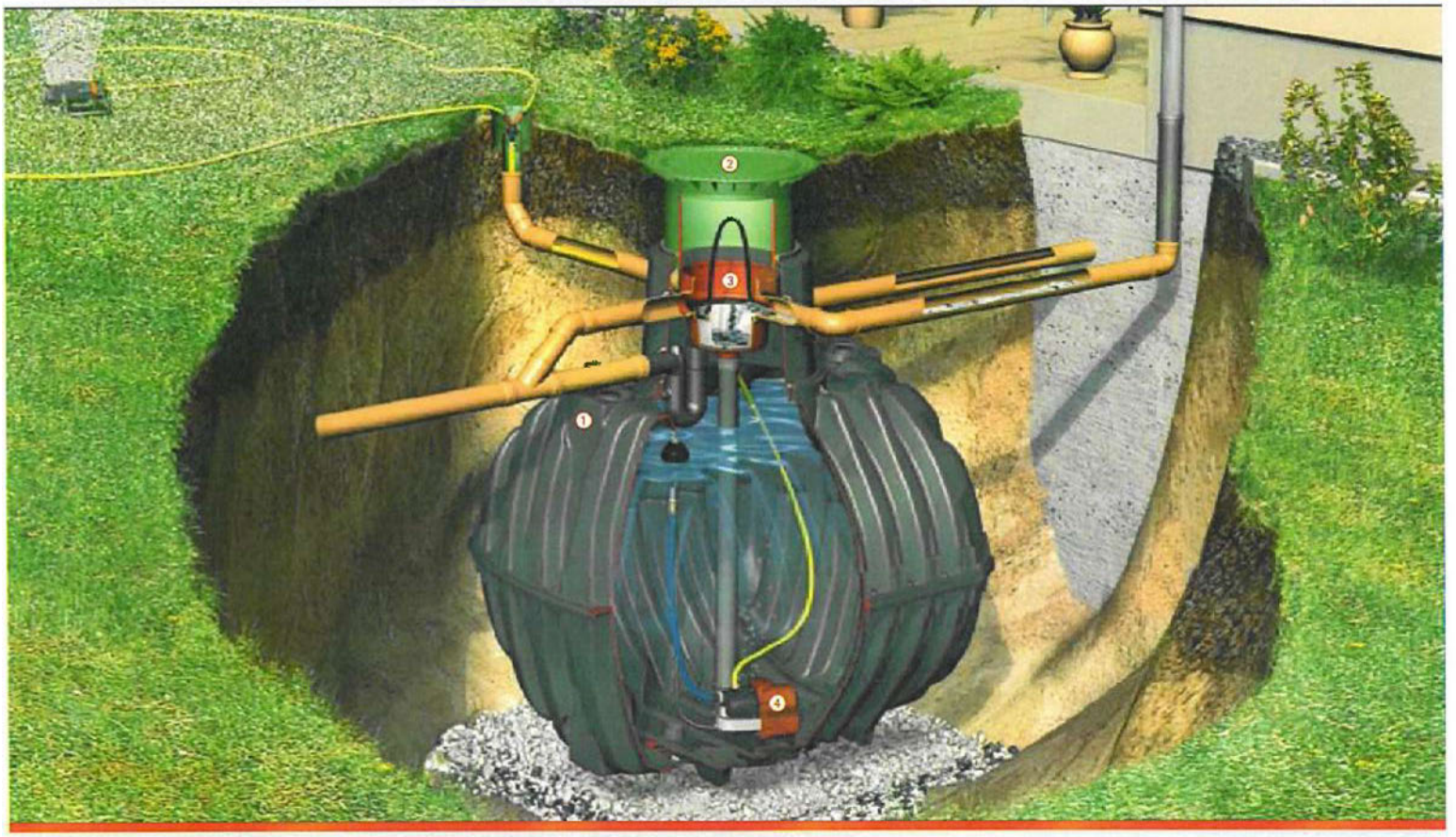
* Set consisting of two Carat underground tanks

Technical data

Dimensions/weight	2,700 L 700 US-Gallons	3,750 L 1000 US-Gallons	4,800 L 1,250 US-Gallons	6,500 L 1,700 US-Gallons	7,500 L* 1,850 US-Gallons	9,600 L* 2,500 US-Gallons	13,000 L* 3,400 US-Gallons
Length	2,080 mm (81.9 inches)	2,280 mm (89.8 inches)	2,280 mm (89.8 inches)	2,390 mm (94.1 inches)	Set consisting of two Carat underground tanks		
Width	1,565 mm (61.6 inches)	1,755 mm (69.1 inches)	1,985 mm (78.1 inches)	2,190 mm (86.2 inches)			
Heigth (including tank dome)	2,010 mm (79.1 inches)	2,200 mm (86.6 inches)	2,430 mm (95.7 inches)	2,710 mm (106.7 inches)			
Height of tank dome	610 mm (24.0 inches)				For dimensions see 3,750 L tank*	For dimensions see 4,800 L tank*	For dimensions see 6,500 L tank*
Internal Ø tank dome	800 mm (31,5 inches)						
Weight	120 kg (265 lbs.)	150 kg (331 lbs.)	185 kg (408 lbs.)	220 kg (485 lbs.)			
Load							
Max. axle load	Car-bearing				see 3,750 L tank	see 4,800 L tank*	see 6,500 L tank*
Earth covering	800 – 1,200 mm (31.5 – 47.2 inches)						
Groundwater							
Groundwater stable	up to the middle of the tank				see 3,750 L tank	see 4,800 L tank	see 6,500 L tank
Required earth covering	800 mm (31.5 inches)						

Garden Comfort package

The simple garden solution with submersible pump system



Carat Garden Comfort underground tank package

- Simple to install and use
- Use a simple hose connection socket and pressure sensitive pump for automatic water activation, purposely designed for the Gardena® system
- Low visual impact
- Reduces electricity consumption by using a pressure drop activation system, so that electricity is only used when required

Scope of supply

① Carat underground tank
② Mini telescopic dome shaft for pedestrian loading with an adjustable PE lid
③ Filter package 2, consisting of:
- Internal Universal Filter 3
- Inflow stilling system for controlling the water inflow
- Overflow siphon and rodent guard
- Spannfix pipe connection sleeve

④ Garden Comfort pump package, consists of:
- Integra-Duo® 1100 Submersible pump, with protection against dry running and automatic Start / Stop function
- Floating water extraction unit
- Water hose connection box
- 10 m of pressure hose

Volume

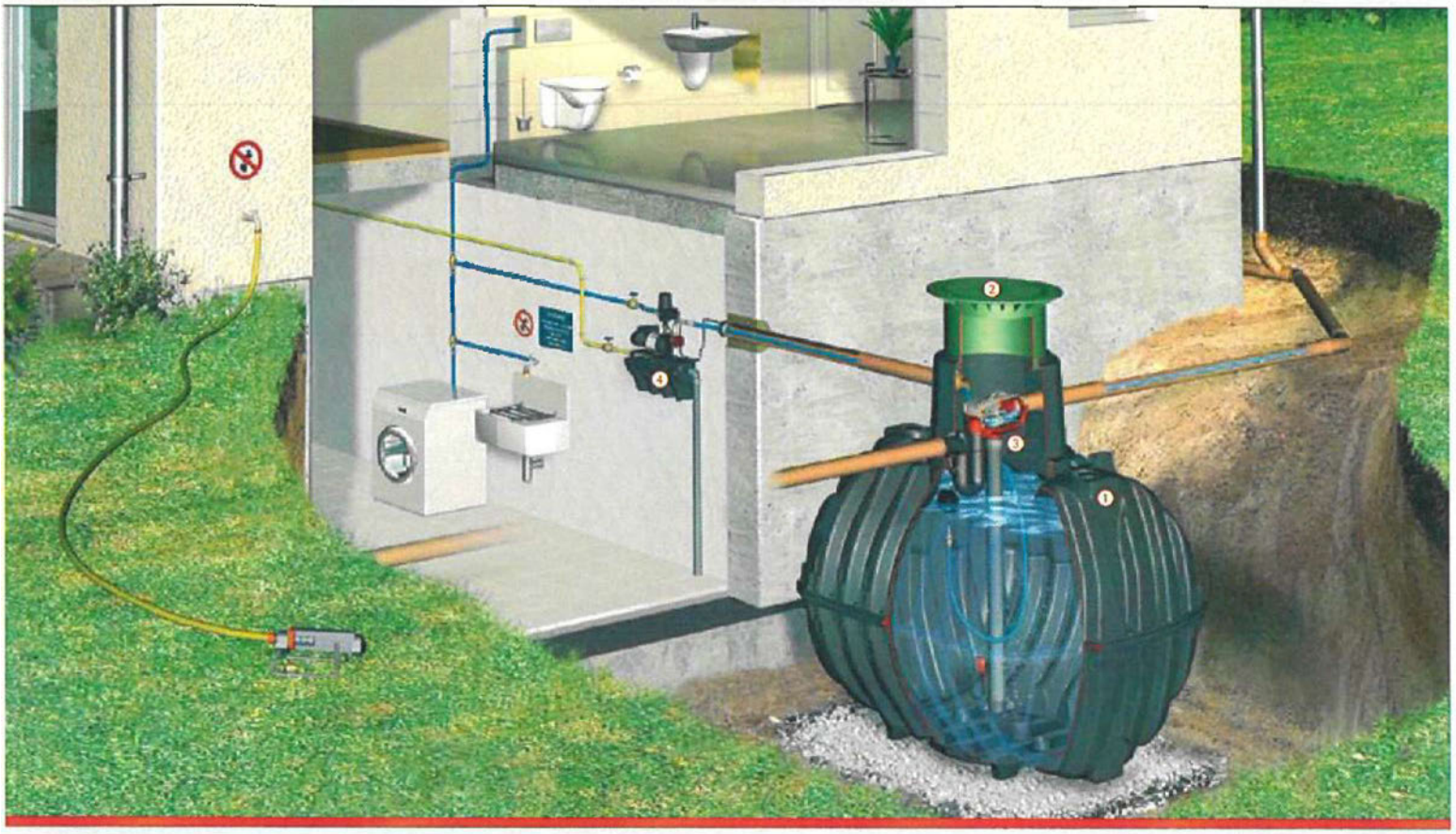
Litres	US-Gallons
2,700	700
3,750	1,000
4,800	1,250
6,500	1,700
7,500*	2,000*
9,600*	2,500*
13,000*	3,400*

* Set consisting of two Carat underground tanks

Vehicle loading version available on request

Eco-Plus package

The ideal solution for use in the home and garden



Carat underground tank package Eco Plus

- Economic package solution
- Patented filter technology and in-house pump system with automatic switch-over to mains water supply
- Easy to assemble due to modular components
- Float switch controlled
- Only one cover viewable on the surface

Scope of supply

① Carat underground tank
② Maxi telescopic dome shaft for pedestrian loading with an adjustable PE lid
③ Filter package 3, consisting of:
- Internal Optimax-Pro (self-cleaning) filter
- Inflow stilling system for controlling the water inflow
- Overflow siphon and rodent guard
- Spannfix pipe connection sleeve

④ Eco-Plus pump package consists of:
- Water supply control unit
- Floating water extraction unit
- DN 100 wall duct
- Labelling set
- Suction pipe

Volume

Litres	US-Gallons
3,750	1,000
4,800	1,250
6,500	1,700
7,500*	2,000*
9,600*	2,500*
13,000*	3,400*

*Set consisting of two Carat underground tanks

Vehicle loading version available on request

Internal filter technology

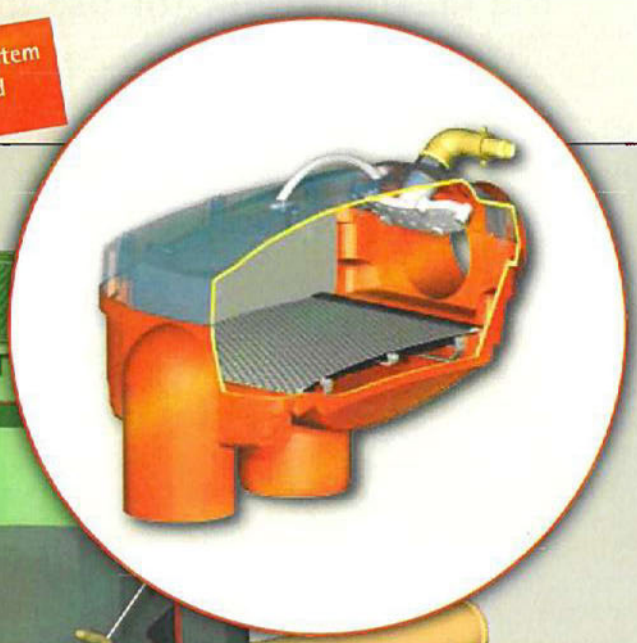
NEW

Efficient cleaning system with high water yield

Optimax Pro, self-cleaning Filter

Advantages

- Provides over 95% water yield
- Utilises patented, high quality filter technology
- Low-maintenance (self-cleaning)
- TÜV-tested to German standards
- Space-saving filter technology inside the tank
- Filter housing can be easily removed without the need for tools
- Transparent lid for filter visibility
- **Can manage roof areas up to 350 m²**
- Standard 100 mm connections
- Self cleaning Opticlean system available as an optional extra
- Low offset height of 165 mm between inlet and outlet

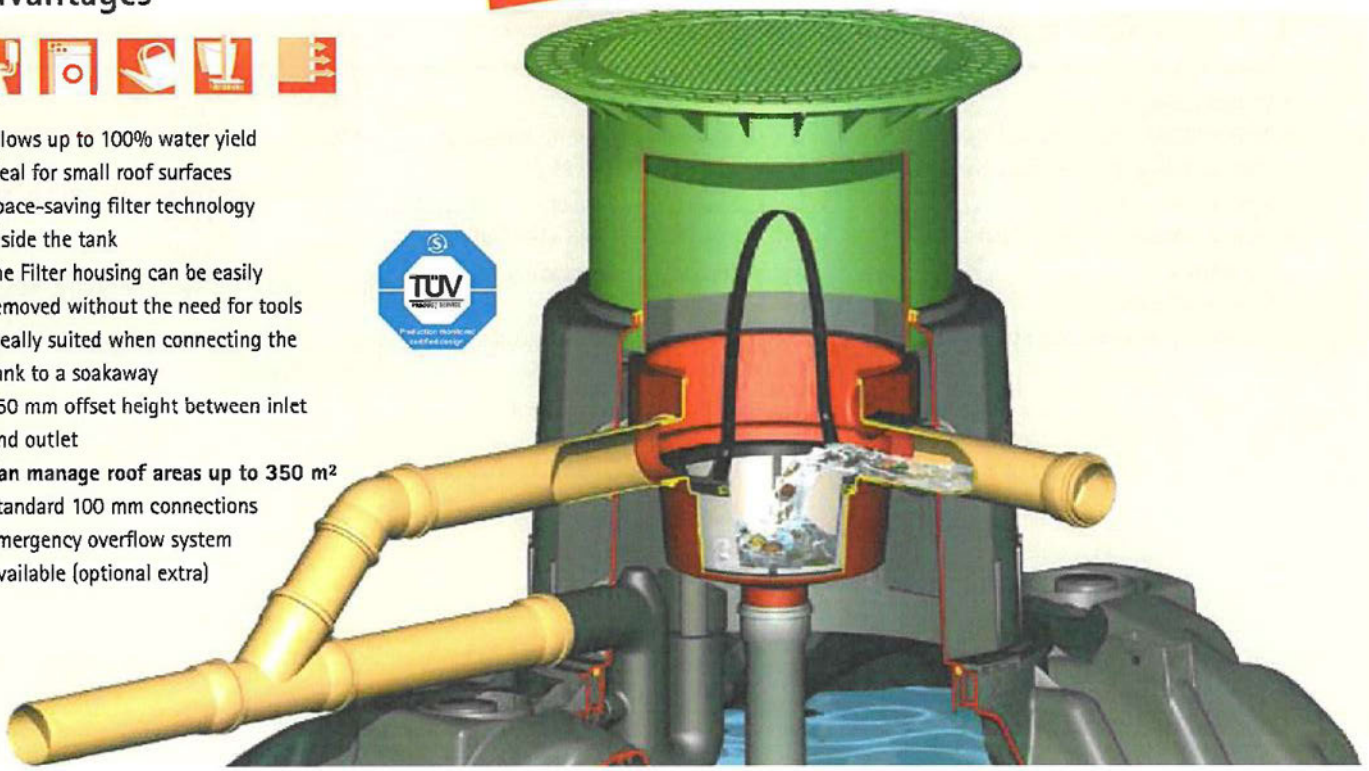


Universal Filter 3

up to 100% water yield

Advantages

- Allows up to 100% water yield
- Ideal for small roof surfaces
- Space-saving filter technology inside the tank
- The Filter housing can be easily removed without the need for tools
- Ideally suited when connecting the tank to a soakaway
- 250 mm offset height between inlet and outlet
- **Can manage roof areas up to 350 m²**
- Standard 100 mm connections
- Emergency overflow system available (optional extra)



GRAF – Setting the standards in quality



Production site at Teningen (Germany) near Freiburg



Production site at Dachstein (France)

High Quality Manufacturing

GRAF has invested more than € 20 million in a new production site specially set up for the new CARAT range. The new facility has an approximate surface area of 155,000 m² - that equals 31 football pitches - one of the most modern production facilities for plastic products in the world

For over 40 years, Otto Graf GmbH has been offering high-class plastic products to its customers. In 1974 GRAF developed its first pioneering range of rainwater harvesting products. Now GRAF is recognised as Germany's number one rainwater harvesting brand and proudly presents the new premium Carat range of the tanks. A range which is manufactured in one of the most modern and efficent plastic manufacturing facilities in the world!

RAINWATER HARVESTING



STORMWATER MANAGEMENT



AGRICULTURAL CONTAINERS



SEWAGE TREATMENT PLANTS



Warranty clause:
The warranty mentioned in this brochure only refers to the tank in question and not to the accessories. Within the warranty period we grant free replacement of the material. Further benefits are excluded. Pre-condition for warranty benefits are proper handling, assembly and installation according to the mounting guidelines.

N.B. Protect tanks from frost when installed above-ground! In case of groundwater installation, please contact us for further information previous to the purchase!

For all indications of measurements in this brochure we reserve a tolerance of +/- 3%. The useful volume of the tanks may be up to 10% lower than the tank capacity, according to the connecting option.

Technical modifications and further development of the different products are subject to change. Errors excepted.

Otto Graf GmbH
Kunststofferzeugnisse
Carl-Zeiss-Straße 2-6
79331 Teningen / Germany

Phone: +49(0)76 41/5 89-0
Fax: +49(0)76 41/5 89-50
info@graf-online.de
www.graf-online.de

Over 40 years of quality and innovation

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8.5 Appendix E:

Water bills for the existing property:

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 7pm
Saturday - 8.30am to 2pm

MR GROCOTT & MRS K GROCOTT
THISTLEDOWN COTTAGE
HARBOLETS ROAD
WEST CHILTINGTON
RH20 2LG

[redacted]mer number

Your payment reference
0004 0598 16271

Dear Mr GROCOTT & Mrs K GROCOTT,

Here's your latest bill based on the meter reading we took on 02 September 2021. 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

175 m³

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

Meter number: 8386186

Latest reading: 2 Sep 2021

			9	9	5	.	0	0

Previous reading: 24 Sep 2020

			8	2	0	.	0	0

Your next meter reading is scheduled to take place by 01 Mar 2022

Previous bill's usage
46.00 m³

Charges

[redacted]

Bill date
08 Sep 2021

Billing period
From: 24 September 2020
To: 02 September 2021

Bill type
Metered - Direct Debit

Previous bill's charges [redacted]

Future payments

Next monthly payment

[redacted]

1 Oct 2021

For full list of future payments, see Your payment summary.

Struggling to pay? See p. 3

Previous bill's payments [redacted]

Water

Period: 24 September 2020 to 31 March 2021

Variable Rate	[redacted]	94.50m³ =	[redacted]
Standing Charge		=	

Period: 01 April 2021 to 02 September 2021

Variable Rate	[redacted] x	80.50m³ =	[redacted]
Standing Charge		=	
Total Water			[redacted]

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.

836 - M - Document 1 of 1 - 09092021 - 3570408 - 3570438

STA-SWH38-2-1220

Your account summary

What you've paid since your last bill	[redacted]
Transfer From account 4053338211	[redacted]
What you've been charged for From 24 September 2020 to 02 September 2021	[redacted]
Outstanding Balance	[redacted]

Your payments summary

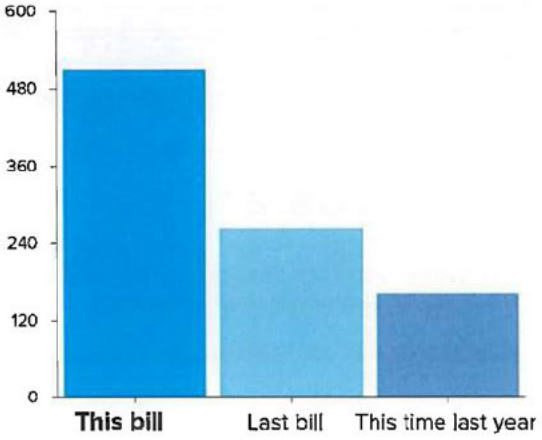
Past monthly payments	
2 Nov 2020	[redacted]
1 Dec 2020	
4 Jan 2021	
1 Feb 2021	
1 Mar 2021	
1 Apr 2021	
4 May 2021	
1 Jun 2021	
1 Jul 2021	
2 Aug 2021	
1 Sep 2021	
Total	

Future monthly payments	
1 Oct 2021	[redacted]
1 Nov 2021	
1 Dec 2021	
4 Jan 2022	
1 Feb 2022	
1 Mar 2022	
1 Apr 2022	
3 May 2022	
1 Jun 2022	
1 Jul 2022	
1 Aug 2022	
1 Sep 2022	
Total	

Your water use

Over the last twelve months your household used an average of 509 litres a day

You're using [redacted] of water a day on average.



Why is my bill higher than usual?

Your water use may have gone up for a number of reasons, for example:

- Are more people living in your home?
- Have you been spending more time at home than usual?
- Have you had problems such as a dripping tap or leaking washing machine?
- Have you carried out building work, repairs or home improvements?
- Have you used your washing machine more than usual?
- Have you regularly used a hosepipe or sprinkler?
- Have you regularly filled up a paddling pool?
- Have you installed appliances or equipment that uses a lot of water?

If none of the above explains why your water use has gone up, call us on **0330 303 0277**. We'll try to help you work out why your bill is higher than usual.

More information

Struggling to pay?

If you're struggling to pay your bill, we're here to help. Please contact us as soon as possible to talk about the support we can offer you.

0800 027 0363

Payless@southernwater.co.uk

southernwater.co.uk/account/help-paying-your-bill

Moving home?

Please give us at least two days' notice before you move, so we can read your meter.

Alternatively, you can check your meter on the day you leave the property and submit your reading here:

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

southernwater.co.uk/account/moving-home

Contact us

Visit our website
You can access your online account and live chat at:
southernwater.co.uk

Call us
0330 303 0277
Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

Write to us
Southern Water Services
PO Box 564, Darlington
DL1 9ZG

Automated payment line
0330 303 1263
24 hours 7 days a week

We're here to help

Minicom text phone for Deaf people
0330 303 1265
Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

About your water supply
0330 303 0368
24 hours 7 days a week

Extra care services, braille or talking bills
0800 027 0800
Weekdays – 8am to 7pm

Spotted a leak?
0800 820 999
Freephone lines open
24 hours 7 days a week

We value your privacy

We're committed to safeguarding your information too, which we use:
- to offer water and wastewater goods and services
- to track trends and create customer profiles
- with credit references agencies for credit management purposes
- with neighbouring water companies to complete the billing process.

For more about what we do visit southernwater.co.uk/privacy

If we get something wrong

Our Code of Practice sets out our standards of service and what we'll do if we fail to meet them, including the amount of compensation we'll pay you. For more information visit southernwater.co.uk/cop

Complaints

If you have a complaint or an ongoing problem with our service, we want to know so we can put things right. Please call:
0330 303 0277

CCW

If you've made a complaint to us and are still unhappy, you can get free independent advice from the **Consumer Council for Water** by calling **0300 034 2222** or visiting **ccwater.org.uk.**

If Southern Water has registered a default on your Consumer Credit File, the charges from this bill will be added to the total amount outstanding. We will have sent you previous correspondence to advise you of our default process.

Southern Water Services Ltd,
Registered office, Southern House,
Yeoman Road, Worthing, BN13 3NX.
Registered in England No: 2366670
VAT Reg No: 813 0378 56

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 7pm
Saturday - 8.30am to 2pm

MR GROCOTT & MRS K GROCOTT
THISTLEDOWN COTTAGE
HARBOLETS ROAD
WEST CHILTINGTON
RH20 2LG

Your customer number [redacted]

Your payment reference
0004 0598 16271

Dear Mr GROCOTT & Mrs K GROCOTT,

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

Meter reading

Water used in cubic metres

166 m³

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

Meter number: 8386186

Latest reading: 10 Aug 2022

1161.00

Previous reading: 2 Sep 2021

995.00

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

Previous bill's usage
175.00 m³

Charges

[redacted]

Bill date
17 Aug 2022

Billing period
From: 03 September 2021
To: 10 August 2022

Bill type
Metered - Direct Debit

Previous bill's charges [redacted]

Future payments

Next monthly payment [redacted]

1 Sep 2022

For full list of future payments, see Your payment summary.

Struggling to pay? See p. 3

Previous bill's payments [redacted]

Water

Period: 03 September 2021 to 31 March 2022

Variable Rate	[redacted]	109.80m³ =	[redacted]
Standing Charge		=	

Period: 01 April 2022 to 10 August 2022

Variable Rate	[redacted]	56.20m³ =	[redacted]
Standing Charge		=	
Total Water			[redacted]

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.

1179 - M - Document 1 of 1 - 18082022 - 4537439 - 4537465

STA-SWF138-2-1220

Your account summary

Balance brought forward from your last bill	[redacted]
What you've paid since your last bill	[redacted]
What you've been charged for From 03 September 2021 to 10 August 2022	[redacted]
Account Balance	[redacted]

Your water usage naturally changes throughout the year. Credit in your account prevents you falling into debt. To learn more please visit southernwater.co.uk/how-my-payment-plan-works.

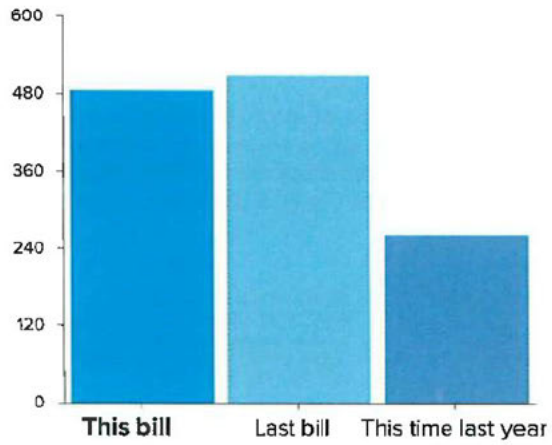
Your payments summary

Past monthly payments	
1 Oct 2021	[redacted]
1 Nov 2021	
1 Dec 2021	
4 Jan 2022	
1 Feb 2022	
1 Mar 2022	
1 Apr 2022	
3 May 2022	
1 Jun 2022	
1 Jul 2022	
1 Aug 2022	
Total	

Future monthly payments	
1 Sep 2022	[redacted]
3 Oct 2022	
1 Nov 2022	
1 Dec 2022	
3 Jan 2023	
1 Feb 2023	
1 Mar 2023	
3 Apr 2023	
2 May 2023	
1 Jun 2023	
3 Jul 2023	
1 Aug 2023	
1 Sep 2023	
Total	

Your water use

Over the last eleven months your household used an average of 485 litres a day
You're using [redacted] 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.



More information

Struggling to pay?

If you're struggling to pay your bill, we're here to help. Please contact us as soon as possible to talk about the support we can offer you.

0800 027 0363

Payless@southernwater.co.uk

southernwater.co.uk/account/help-paying-your-bill

Moving home?

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Alternatively, you can check your meter on the day you leave the property and submit your reading here:

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Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

southernwater.co.uk/account/moving-home

Contact us

Visit our website
You can access your online account and live chat at:
southernwater.co.uk

Call us
0330 303 0277
Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

Write to us
Southern Water Services
PO Box 564, Darlington
DL1 9ZG

Automated payment line
0330 303 1263
24 hours 7 days a week

We're here to help

Minicom text phone for Deaf people
0330 303 1265
Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

About your water supply
0330 303 0368
24 hours 7 days a week

Extra care services, braille or talking bills
0800 027 0800
Weekdays – 8am to 7pm

Spotted a leak?
0800 820 999
Freephone lines open
24 hours 7 days a week

We value your privacy

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- to offer water and wastewater goods and services
- to track trends and create customer profiles
- with credit references agencies for credit management purposes
- with neighbouring water companies to complete the billing process.

For more about what we do visit southernwater.co.uk/privacy

If we get something wrong

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0330 303 0277

CCW

If you've made a complaint to us and are still unhappy, you can get free independent advice from the **Consumer Council for Water** by calling **0300 034 2222** or visiting **ccwater.org.uk.**

If Southern Water has registered a default on your Consumer Credit File, the charges from this bill will be added to the total amount outstanding. We will have sent you previous correspondence to advise you of our default process.

Southern Water Services Ltd,
Registered office, Southern House,
Yeoman Road, Worthing, BN13 3NX.
Registered in England No: 2366670
VAT Reg No: 813 0378 56

from Southern Water | Introducing HomeServe

Plumbing & Drainage Plus
Marketing promotion from Southern Water

Sold, arranged and administered by HomeServe.
Underwritten by Aviva Insurance Limited.

Information about comprehensive plumbing protection for your home

- Did you know that as a homeowner you're generally responsible for the repair and maintenance of the plumbing and drainage system at your property*1?
- You rely on your internal plumbing to transport fresh water around your home to your bath, basins and appliances, while your drainage pipes keep life hygienic.
- Over time, problems caused by aging, blockages and corrosion are more likely to happen. But, if there was a leak, even underneath your property, it would be down to you to get it fixed.
- That's why Southern Water is introducing you to Plumbing & Drainage Plus - comprehensive plumbing protection through HomeServe – one of the UK's leading home assistance providers, who we've worked with for 22 years. They're inviting new customers to experience comprehensive cover for just £1 a month, that's just £12 in the first year.
- It takes care of a wide-range of problems, which is reassuring when you consider that it could cost £296 to unblock your private drains and £154 to replace a toilet flushing mechanism*2.

Trustpilot ★★★★★

To:
The Homeowner

Price:
Just £1 a month in the first year

Reference:
SOEBP23A

Take a look at the benefits of Plumbing & Drainage Plus and turn over for more information on what is and isn't covered:

Major and minor problems – from burst pipes and blocked toilets to leaking overflows, dripping or seized taps - you'd be covered.

An unlimited number of claims – each claim has a generous £4,000 cover limit. All you'd need to pay is the first £30 of each claim.

Access to HomeServe's expert, approved plumbers – available nationwide and ready to help, no matter how big or small the repair.

Help is just a phone call away – HomeServe's dedicated UK helpline is open 365 days a year.

Your price will increase at renewal, but you'll always receive a reminder. If you choose to continue into your second year, the expected price for customers who haven't made a claim is £13.32 a month*3. See 'Important Information' for more details. To get your home covered against the unexpected with improved plumbing protection, simply visit **offer.homeserve.com/SOEBP23A**, or call HomeServe on **0330 0247 240** quoting **SOEBP23A**.

Yours sincerely

Donna Howden

Donna Howden
Head of Customer Service
Southern Water

Don't want to receive any more marketing from Southern Water? Ring us on 0330 303 0277. To find out how else Southern Water uses information about you, visit https://www.southernwater.co.uk/privacy.

*1 In some cases, the water supply pipe responsibility may be outside the property boundary or shared with neighbouring properties.
*2 BCIS Research, September 2021 (prices include labour, parts, call outs and VAT). *3 Price includes any applicable Insurance Premium Tax and is subject to any inflation and tax rate changes. • Southern Water Services Ltd, Registered Office: Southern House, Yeoman Road, Worthing, BN13 3NX. Registered in England No. 2366670 • Southern Water Services Limited is an appointed representative of HomeServe Membership Limited, which is authorised and regulated by the Financial Conduct Authority (FCA) for general insurance and credit broking activities under firm reference number 312518 • HomeServe Membership Limited, Registered Office: Cable Drive, Walsall, WS2 7BN. Registered in England and Wales number 2770612. • HomeServe reserves the right to withdraw this promotion at any time • Diagrams for illustrative purposes only • Information correct as of May 2022.

1753066 SOEBP23A (3)

Remove the stress and cost of unexpected plumbing and drainage problems...

Nobody wants the inconvenience associated with finding a plumber in a hurry, then paying out for parts, labour and VAT. The diagram below shows the typical repair costs for a range of problems covered by Plumbing & Drainage Plus. With this comprehensive cover all you'd need to pay is the first £30 excess of each claim and HomeServe would take care of the rest. So, let them fix your plumbing problems no matter how big or small.



Repair a leaking toilet seal or joint
£137



Drain down and isolate a leaking cold water tank
£127



Cut out and replace 2m of exposed copper pipework
£285



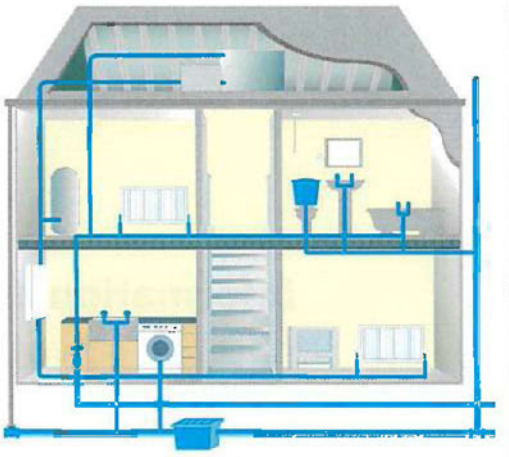
Unblock private drains
£296



Locate, excavate and repair a water supply pipe leak
£548



Replace a tap
£180



Covered areas

BCIS Research, September 2021 (prices include labour, parts, call-out charges and VAT).

Questions & Answers

What am I responsible for?
Shared drains within property boundaries are usually Southern Water's responsibility. Water supply pipes are generally the owner's responsibility up to, and in some cases, beyond the property boundary.

What should I know about this cover?
What's covered: Plumbing & Drainage Plus includes cover for major problems such as water supply pipe leaks, burst pipes, blocked drains and a leaking or seized internal stop tap. Cover also includes minor problems, such as blocked toilets, leaking overflow pipes, blocked sinks and dripping or seized taps.

What's not covered: The main exclusions are a boiler breakdown that leaves you without heating or hot water, guttering, soakaways, shared drains or drains or pipes you're not responsible for, and mixer and digital showers.

What can I expect from a repair?
Your repair will be carried out by HomeServe's expert plumbers, with most repairs guaranteed for one year.

Who is HomeServe?
They're trusted Home Experts who are on hand in your local area, ready to help with a range of home emergencies and repairs, for plumbing, drainage, electrics, heating and much more.

About Southern Water's Leak Repair Service
We offer up to one hour's free leak detection where water is not obviously leaking above the ground. We cannot guarantee to find the source of the leak but we will ensure that we tell you the results of our detection work. We will offer assistance for customers who are on our social tariffs, on our special needs register or on certain means tested benefits. The exact help will be determined by the length and position of the supply pipe.
For full details visit: southernwater.co.uk/leaks-at-your-home

Important Information

If this cover meets your needs and you choose to take out cover:

- There is a 28-day exclusion period before you can make a claim, so you'll be covered for 11 months in the first year.
- If you cancel within the first 28 days, you'll receive a full refund. If you cancel after 28 days and have not made a claim you'll receive a refund less an amount for the number of days you have had cover. If you've made a claim, you'll be required to pay any remaining payments due for the term of the policy.
- Your cover will automatically renew next year but you'll receive a reminder with full details around four weeks before. If you choose not to renew, simply get in touch with HomeServe and your direct debit will be cancelled so no further payment will be taken.
- This first year price is only available to new HomeServe customers who haven't previously held cover for their plumbing, drainage or water supply pipe. But don't worry, if you have previously been a HomeServe customer you can learn more about offers for you by giving them a call on 0330 0247 240.
- **If you choose to continue into your second year, the expected price for customers who haven't made a claim is £13.32 a month, which is £159.84 for the year.**
- Please note, any information you provide will be held by HomeServe.

To apply, visit **offer.homeserve.com/SOEBP23A** or call HomeServe on **0330 0247 240**, quoting **SOEBP23A**.

Please note, any information you provide will be held by HomeServe. Lines open weekdays: 8am – 8pm, Sat: 8am – 4pm and Sun: 10am – 4pm. Calls may be recorded for quality control and training purposes. Calls to 03 numbers will cost you no more than 01 or 02 numbers, charges may vary depending on your network provider. Calls to 03 numbers will be part of inclusive minute plans for landlines and mobiles.

This information can be supplied in large print, braille or audio on request.

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

MR GROCOTT & MRS K GROCOTT
THISTLEDOWN COTTAGE
HARBOLETS ROAD
WEST CHILTINGTON
RH20 2LG

Your customer number [redacted]

Your payment reference
0004 0598 16271

Dear Mr GROCOTT & Mrs K GROCOTT,

Here's your latest bill based on the meter reading we took on 21 August 2023. You currently pay by Direct Debit, so you don't need to do anything – your payments will be taken automatically.

Meter reading

Water used in cubic metres

201 m³

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

Meter number: 8386186

Latest reading: 21 Aug 2023

1362.00

Previous reading: 10 Aug 2022

1161.00

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

Previous bill's usage
166.00 m³

Charges

[redacted]

Bill date
31 Aug 2023

Billing period
From: 11 August 2022
To: 21 August 2023

Bill type
Metered - Direct Debit

Previous bill's charges [redacted]

Future payments

Next monthly payment

[redacted]

2 Oct 2023

For full list of future payments, see Your payment summary.

Struggling to pay? See p. 3

Previous bill's payments [redacted]

Water

Period: 11 August 2022 to 31 March 2023

Variable Rate	[redacted]	x 107.90m³ =	[redacted]
Standing Charge		=	

Period: 01 April 2023 to 21 August 2023

Variable Rate	[redacted]	x 93.10m³ =	[redacted]
Standing Charge		=	
Total Water			[redacted]

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**

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STA-SWF138-2-1220

Your account summary

Balance brought forward from your last bill	[redacted]
What you've paid since your last bill	[redacted]
What you've been charged for From 11 August 2022 to 21 August 2023	[redacted]
Outstanding Balance	[redacted]

Your payments summary

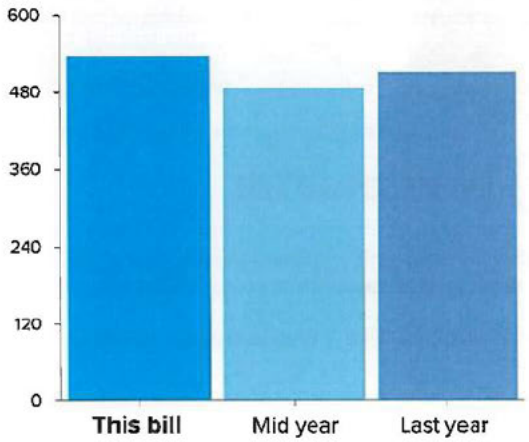
Past monthly payments	
1 Sep 2022	[redacted]
3 Oct 2022	
1 Nov 2022	
1 Dec 2022	
3 Jan 2023	
1 Feb 2023	
1 Mar 2023	
3 Apr 2023	
2 May 2023	
1 Jun 2023	
3 Jul 2023	
1 Aug 2023	
1 Sep 2023	
Total	

Future monthly payments	
2 Oct 2023	[redacted]
1 Nov 2023	
1 Dec 2023	
2 Jan 2024	
1 Feb 2024	
1 Mar 2024	
2 Apr 2024	
1 May 2024	
3 Jun 2024	
1 Jul 2024	
1 Aug 2024	
2 Sep 2024	
Total	

Your water use

Over the last twelve months your household used an average of 535 litres a day

You're using [redacted] of water a day on average.



We noticed your water use has increased by 50 litres of water a day on average.

If you use less water, you'll save money on your bill. Find out how you could reduce your usage here:

southernwater.co.uk/save-water

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.

More information

Struggling to pay?

If you're struggling to pay your bill, we're here to help. Please contact us as soon as possible to talk about the support we can offer you.

0800 027 0363

Payless@southernwater.co.uk

southernwater.co.uk/account/help-paying-your-bill

Moving home?

Please give us at least two days' notice before you move, so we can read your meter.

Alternatively, you can check your meter on the day you leave the property and submit your reading here:

0330 303 0277
Weekdays – 8am to 6pm

southernwater.co.uk/account/moving-home

Contact us

Visit our website
You can access your online account and live chat at:
southernwater.co.uk

Call us
0330 303 0277
Weekdays – 8am to 6pm

Write to us
Southern Water Services
PO Box 564, Darlington
DL1 9ZG

Automated payment line
0330 303 1263
24 hours 7 days a week

We're here to help

Minicom text phone for Deaf people
0330 303 1265
Weekdays – 8am to 7pm
Saturday – 8.30am to 2pm

For a water problem or in an emergency - call anytime
0330 303 0368
24 hours 7 days a week

Extra care services, braille or talking bills
0800 027 0800
Weekdays – 8am to 7pm

Spotted a leak?
0800 820 999
Freephone lines open
24 hours 7 days a week

We value your privacy

We're committed to safeguarding your information too, which we use:
- to offer water and wastewater goods and services
- to track trends and create customer profiles
- with credit references agencies for credit management purposes
- with neighbouring water companies to complete the billing process.

For more about what we do visit southernwater.co.uk/privacy

If we get something wrong

Our Code of Practice sets out our standards of service and what we'll do if we fail to meet them, including the amount of compensation we'll pay you. For more information visit southernwater.co.uk/cop

Need more help?

We aim to get things right first time, but if things do go wrong, we'll fix them quickly for you.

Step 1 – Just call a member of our team on 0330 303 0223 or visit southernwater.co.uk/contact-us

Step 2 – If you are not happy with the resolution or need further help then call 0330 303 0223 or email customerservices@southernwater.co.uk and request to be escalated to a manager.

Step 3 – If:

- You are not happy with the final resolution, or
- Your issue is over eight weeks old, or
- You just want some free, trusted, independent advice

You can call the **Consumer Council for Water (CCW)** the independent voice for water consumers in England and Wales by calling **0300 034 2222** or use its online form at **www.ccwater.org.uk/contact-us**

If Southern Water has registered a default on your Consumer Credit File, the charges from this bill will be added to the total amount outstanding. We will have sent you previous correspondence to advise you of our default process.

Southern Water Services Ltd,
Registered office, Southern House,
Yeoman Road, Worthing, BN13 3NX.
Registered in England No: 2366670
VAT Reg No: 813 0378 56

cgs civils

Consulting Civil Engineers

Existing Fittings Survey

Thistledown Cottage, West Chiltington

For

Anthony Grocott

Rev – P-

Reference C3114

Date 23rd April 2024

Revision	Date of Issue	Comments	Prepared By	Checked By
P-	23.04.2024	Initial Issue	LT	CS

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

1 Introduction

1.1.1 CGS Civils Ltd has been appointed by Anthony Grocott to undertake an Existing Fittings Survey in support of a Water Neutrality Report (C3114 Water Neutrality Report) for a proposed development at Thistledown Cottage, Harbolets Road, West Chiltington, West Sussex. Planning permission is sought for the change of use of an existing agricultural building into two 1-bedroom dwellings.

1.1.2 The purpose of this report is to provide an overview on the existing fittings and their water usages, as well to show the proposed water usage changes on the existing 5-bedroom property adjacent to the site as a result of the recommendations made within the Water Neutrality report. 3 Years of water bills have been provided in the appendix of the Water Neutrality Report. The existing house is currently used by a family of 5.

1.1.3 The water usage calculations within this report have been made using the Water Calculator from Building Regulations G as per the accompanied Water Neutrality Report.

2 Existing 5-bedroom Dwelling

Fittings	Type of Fitting	Existing Water usage (l/day)
	Toilets	Full flush – 5.84 Part flush – 7.70

 		
 	Taps (excluding kitchen)	11.06 Reduced to: 5.53

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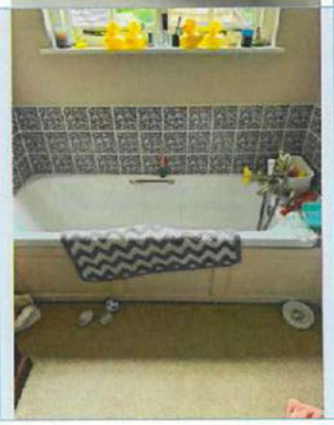
Tel: 01243 933253 E: mail@cgscivils.co.uk W: www.cgscivils.co.uk

  		
	Bath (shower also present)	17.19 Reduced to: 15.95

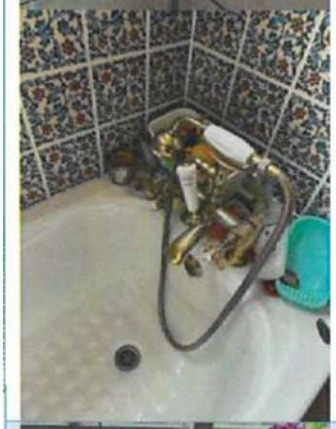
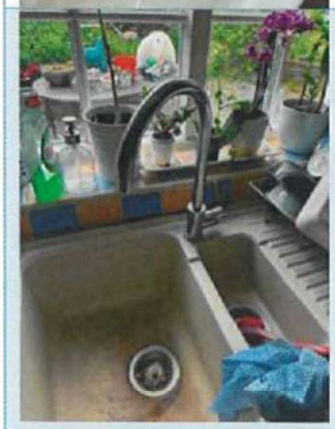
  	Shower (bath also present)	30.59
	Kitchen sink taps	13.88 Reduced to: 12.56

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PHOTO UNAVAILABLE IT HAS BEEN ASSUMED THAT THE FITTINGS ARE ALREADY WATER EFFICIENT AND CANNOT BE IMPROVED	Washing machine	11.55
PHOTO UNAVAILABLE IT HAS BEEN ASSUMED THAT THE FITTINGS ARE ALREADY WATER EFFICIENT AND CANNOT BE IMPROVED	Dishwasher	2.62
	Total (l/p/day) with normalisation factor and 5l/p/day added for outdoor use (refer to appendix A):	102.17
	Total (l/p/day) with normalisation factor and 5l/p/day added for outdoor use (refer to appendix B), with the installation of water efficicient fittings and rainwater harvesting to supply water to the toilets, washing machine as well as 5 l/p/day for outdoor use:	61.66
	Difference in water demand (l/p/day):	40.51
	Total reduction in water demand based on confirmed occupancy of 5:	202.55

3 Conclusion

3.1.1 As indicated within the above calculations, the water demand of existing 5-bedroom property can be reduced by **202.55 l/day**.

3.1.2 The water demand from the proposed annex will be **162.78 l/day** after water efficient fittings are installed and rainwater harvesting techniques are implemented (refer to C3114 Water Neutrality report). This results in a total reduction in water demand of **39.77 l/day** over the existing site, making the proposals water neutral.

4 Appendices

4.1 Appendix A:

Table 2 – Water Calculator from Building Regulations Part G – Information input from existing property.

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	4.5	4.42	0	19.89
WC (Dual Flush)	Full Flush Vol.	0	1.46	0	0
	Part Flush vol.	0	2.96	0	0
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	6	1.58	1.58	11.06
Bath (shower also present)	Capacity to overflow (l)	156	0.11	0	17.19
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.59
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)	0	5.6	0	0
Kitchen sink taps	Flow rate (l/min)	8	0.44	10.36	13.88
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
		Total Calculated use (l/p/d)			106.78
		Contribution from greywater (l/p/d)			0
		Contribution from rainwater (l/p/d)			0
		Normalisation factor			0.91
		External water use			5
		Total water consumption (36(1)) (l/p/d)			102.17

4.2 Appendix B:

Table 3 – Water Calculator from Building Regulations Part G – Information input from existing properties with water efficient fittings and rainwater harvesting supplying water to the toilets, washing machines along with 5 l/p/day for outdoor use.

The Water Calculator for New Dwellings with Water efficient measures					
Installation Type	Unit of measure	Volume/ flow rate	Use factor	Fixed use	Litres/person/day
WC (Single Use)	Flush volume (l)	0	4.42	0	0
WC (Dual Flush)	Full Flush Vol.	4	1.46	0	5.84
	Part Flush vol.	2.6	2.96	0	7.70
WC (Multiple Fittings)	Average effective flush volume (l)	0	4.42	0	0
Taps (excl. Kitchen)	Flow rate (l/min)	2.5	1.58	1.58	5.53
Bath (shower also present)	Capacity to overflow (l)	145	0.11	0	15.95
Shower (bath also present)	Flow rate (l/min)	7	4.37	0	30.60
Bath only	Capacity to overflow (l)	0	0.5	0	0
Shower only	Flow rate (l/min)		5.6	0	0
Kitchen sink taps	Flow rate (l/min)	5	0.44	10.36	12.56
Washing Machine	Litres/kg dry load	5.5	2.1	0	11.55
Dishwasher	litres/place setting	0.73	3.6	0	2.62
Waste disposal unit	litres/use	0	3.08	0	0
Water softener	litres/person/day	0	1	0	0
	Total Calculated use (l/p/d)				92.35
	Contribution from greywater (l/p/d)				0
	Contribution from rainwater (l/p/d)				30.09
	Normalisation factor				0.91
	External water use				5
	Total water consumption (36(1)) (l/p/d)				61.66

Schedule 3

The Owners' Covenant to the Council in relation to the Application Site

With the intention of binding the Application Site, and for the purpose of allowing Development to be delivered and to remain Water Neutral in perpetuity, the Owners covenant with the Council as follows:

Monitoring Fee

1. To pay the Monitoring Fee to the Council on or prior to completion of this Agreement;

2. Not to commence the Development unless and until the Monitoring Fee has been paid to the Council.

Water Neutrality

3. To submit a Management and Monitoring Plan for approval by the Council;

4. To implement the On-site Efficiency Measures at Property B and the Offsetting Measures at Property A in accordance with the Water Neutrality Supporting Documents at Schedule 3;

5. Prior to Occupation of the Development, to submit evidence in writing to the Council that the Offsetting Measures and the On-site Efficiency Measures in the approved Water Neutrality Supporting Documents have been implemented in full, the evidence to include the specifications and photographs of the installed measures and a Part G water calculator (or equivalent) detailing the resultant surveyed water consumption;

6. Not to Occupy the Development until the Council has confirmed in writing that:

    6.1 the On-site Efficiency Measures and the Offsetting Measures in the approved Water Neutrality Supporting Documents have been implemented in full on the Application Site; and

    6.2 the Management and Monitoring Plan has been submitted to the Council and approved in writing pursuant to paragraph 3 above;

7. Not to Occupy the Development until the Council have received evidence in writing that the management and maintenance arrangements are in place at the Application Site in accordance with the approved Management and Monitoring Plan.

8. That the On-site Efficiency Measures and Offsetting Measures shall be:

    8.1 retained in perpetuity;

8.2 not removed or replaced other than with a replacement fixture(s) or fitting(s) which meet(s) an equivalent or more efficient water standard;

8.3 operated, maintained and kept in good repair in accordance with the approved Management and Monitoring Plan and this Agreement at all times.

9. To allow the Council to enter the Application Site for the purpose of inspecting the On-site Efficiency Measures and Offsetting Measures and ensuring that the measures are operated, retained, maintained and kept in good repair as required provided that the Council gives not less than 24 (twenty-four) hours' notice in writing of its intention to inspect the On-site Efficiency Measures and / or Offsetting Measures;

10. That in the event that Property A (or any part of it) and or any part of Property B is transferred, that the transfer contains a direct covenant with the owners of Property B (or part thereof) that they must:

10.1 comply with the restrictions and obligations set out in this Agreement;

10.2 maintain and keep in good repair the On-site Efficiency Measures and/or Offsetting Measures installed on the Property A and or Property B (as appropriate) in accordance with the Water Neutrality Statement and this Agreement;

10.3 consent to the entering of the following restriction on the transferee's title at HM Land Registry following the registration of the transfer and shall provide the transferor with all necessary assistance and/or documentation to permit entry of the restriction:

"No disposition of the registered estate (other than a charge) by the proprietor of the registered estate, or by the proprietor of any registered charge, not being a charge registered before the entry of this restriction, is to be registered without a certificate signed by the proprietor for the time being of the estate registered under titled number [ ] or their conveyancer that the provisions of clause XX of [Details of the Transfer] have been complied with".

BARCLAYS BANK UK PLC

POWER OF ATTORNEY

As employed by Barclays Bank UK PLC, 4 Piccadilly Place, Manchester M1 3BN, jointly and severally as our true and lawful attorneys (the "Attorney" / each an "Attorney" together the "Attorneys") for and in our name and on our behalf:

1. to take all action to sign, deliver, execute and perfect, deeds of easement and indemnities, deeds regulating the priority of mortgages, consents, releases, discharges, transfers under a power of sale, transfers of mortgages, reconveyances and reassignments of real or personal property, mortgages charged or assigned by way of security to the Company (the "Documents"; and/or

2. to take all actions and to execute any additional document as the Attorney may think fit to give effect to the arrangements referred to in the documents described in paragraph 1 above; and/or

3. to make any minor subsequent amendment, as the Attorney may think fit in the Attorney's absolute discretion, to the Documents and any additional document as the Attorney may think fit in order to give effect to the arrangements referred to in the Documents including those documents referred to in paragraphs 1 or 2 above; and/or

4. to consider, settle, approve, sign, execute, deliver and/or issue all agreements, documents, certificates and instruments (whether as a deed or not) and take any steps or do anything which the Attorney considers necessary or desirable in connection with paragraph 1 above.

Any actions authorised by this Deed may be taken by any of the Attorney(s) and if so taken shall be as valid as though done by all Attorneys.

By this Deed we ratify and confirm, any act of the Attorneys undertaken in good faith pursuant to this Deed.

This Deed shall remain in force for 12 (twelve) consecutive calendar months from the date of this Deed.

This Power of Attorney and any non-contractual dispute or claim arising out of or in connection with it, shall be governed and construed in accordance with the laws of England and Wales, to the jurisdiction of whose courts the Company exclusively submits by executing this Deed and the Attorney exclusively submits by purporting to act under its terms

This Deed has been, and has been witnessed as, duly executed and delivered on the day and year first written above.

The COMMON SEAL of

Barclays Bank UK PLC

was hereunto affixed in the Execution of this Deed

in the presence of:

[redacted] .....

Charlie Rogers

Assistant Secretary of Barclays PLC

Authorised Sealing Officer of Barclays Bank UK PLC

I certify this to be a true and complete copy of the original

[redacted]

For Barclays Bank UK Plc

Manager

Date 23/5/23



BARCLAYS BANK UK PLC

POWER OF ATTORNEY

By this POWER OF ATTORNEY made by Deed on 24 April 2025 (the "Deed"), we, Barclays Bank UK PLC, a company incorporated in United Kingdom and registered in England (registered number 09740322), whose registered office is situated at 1 Churchill Place, London E14 5HP (the 'Company') APPOINTS:

Caroline Keogh	Senior Operations Manager
Daniel Spears-O'Neil	Senior Operations Manager
Caroline Hamer	Operations Manager
Karen Sayonas	Operations Manager
Nadeem Aftab	Operations Manager
Steve Castle	Customer Care Colleague
Jack Nightingale	Customer Care Colleague
Judith Lalthwaite	Customer Care Colleague
Amy Walton	Customer Care Colleague
Myles Hampson	Customer Care Colleague
Jack Millar	Customer Care Colleague
Lisa Hargreaves	Customer Care Colleague
Yasmin Abid	Customer Care Colleague
John-Paul Wain	Customer Care Colleague
Will Mews	Customer Care Colleague
Mohammed Khan	Customer Care Colleague
Mehwish Ahmed	Customer Care Colleague
Chanel Egerton	Customer Care Colleague
Steven Hanson	Customer Care Colleague
Jane Groom	Customer Care Colleague
Jordan Brown	Customer Care Colleague
John Walsh	Customer Care Colleague
Matthew Hall	Customer Care Colleague
Catherine Good	Customer Care Colleague
Ben Turnbull	Customer Care Colleague
Holly King	Customer Care Colleague
Paul Savage	Customer Care Colleague
Zach Wild	Customer Care Colleague
Chris Hill	Customer Care Colleague
Sarah Keenan	Customer Care Colleague
Andrew Durkan	Customer Care Colleague
Linda Bullen	Customer Care Colleague
Louis Greenwood	Customer Care Colleague
Carly Turner	Customer Care Colleague
Shabz Akhtar	Customer Care Colleague
Michael Bates	Customer Care Colleague
Michael Hawley	Senior Operations Manager
Jennifer Clarke	Senior Operations Manager
Angela Joyce Nathaniel	Customer Agent
Claire Lucass	Operations Manager
Ryan Illingworth	Customer Agent
Claire Deane	Senior Operations Manager
Steve Anthony Redfern	Customer Agent

BARCLAYS BANK UK PLC

POWER OF ATTORNEY

Jennifer Malgwi	Customer Agent
Rachel Bishop	Operations Manager
Sean Hussey	Operations Manager
Trevor David Richardson	Customer Agent
Martin Phillip	Senior Operations Manager
Jamie Hancox	Operations Manager
Kirsty Leith	Operations Manager
David Liddle	Operations Manager
David Mitchell	Operations Manager
Steven Brown	Operations Manager
Anthony Mackin	Operations Manager
Robert David Kirkpatrick	Customer Agent
Michelle Louise Fairclough	Customer Agent
Alexander James Byrom	Customer Agent
Wendy Helen Parker	Customer Agent
Charlotte Ann Hannick	Customer Agent
Samie-Jo Williams	Operations Manager
Collette Hagan	Operations Manager
Michelle Taylor	Operations Manager
Adam Cooke	Customer Agent
Jennifer Garrett	Customer Agent
Charlotte Poynter	Operations Manager
Eve Lunn	Customer Agent
Sarah Villarubia	Customer Agent