

DATED

17th July

2024

**(1) JASON STUART LOMAS**

and

**(2) EASTLEIGH BOROUGH COUNCIL**

## Unilateral undertaking

Pursuant to Section 106 of the Town and Country Planning Act 1990  
relating to the proposed development at Old Oak Farm, Winchester  
Road, Fair Oak, SO50 7HD

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## Unilateral Undertaking

under section 106 of the Town and Country Planning Act 1990

relating to development at Old Oak Farm, Winchester Road, Fair Oak, SO50 7HD

THIS UNILATERAL UNDERTAKING AND DEED is given on 17<sup>th</sup> July 2024 of by:

### PARTIES

- (1) **JASON STUART LOMAS** of Hotel California, Old Oak Farm, Winchester Road, Fair Oak, SO50 7HD (the **Owner**)

TO **EASTLEIGH BOROUGH COUNCIL** of Eastleigh House, Upper Market Street, Eastleigh, Hampshire, SO50 9YN (the **Council**)

### BACKGROUND

- A The **Council** is the local planning authority for the purposes of s 106 of the 1990 Act for the area in which the Land is situated.
- B The **Owner** owns the freehold interest in the Site which is registered at the Land Registry under title number HP652710 an office copy of this title together with the title plan is annexed to this Deed at Schedule 1.
- C The **Owner** submitted the Planning Application for permission to develop the Site under reference number F/23/96082 in the manner and for the uses set out in the plans specifications and particulars deposited with the **Council** and forming part of that application. The **Council** has refused the Planning Application and the **Owner** has therefore submitted the Appeal to the Secretary of State for Housing, Communities and Local Government against the Council's decision and the **Owner** is willing to give an undertaking to perform the obligations set out in this Unilateral Planning Obligation in the event that the appeal being allowed.
- D The **Owner** intends to develop the Site pursuant to the Planning Permission
- E The **Owner** acknowledges and agrees that the planning obligations in this Deed are necessary to ensure that the Development is acceptable in planning terms and satisfies the requirements of Regulation 122 of the CIL Regulations

IT IS AGREED THAT:

#### 1 Interpretation

- 1.1 In this Undertaking unless the context otherwise requires the following terms (arranged in alphabetical order) shall have the following meanings:

**Accessibility Standard**

means the standards set out in Building Regulations Part M4(3) 2015 edition (as amended by the 2016 Corrections to Approved Document M)

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>the 1990 Act</b>    | means the Town and Country Planning Act 1990 (as amended);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Appeal</b>          | means the appeal against the refusal of the Planning Application, local authority reference number F/23/96082 submitted to the Secretary of State                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>CIL Regulations</b> | means the Community Infrastructure Levy Regulations 2010 (as amended);                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Decision Letter</b> | a letter issued by either the Secretary of State or an Inspector determining the Appeal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Development</b>     | means the development of the Land for the removal of two mobile homes and accompanying buildings and replacement with two self-build dwellings, creation of a new paddock area, improvements to access sight lines, and new landscaping of site frontage in accordance with the Permission;                                                                                                                                                                                                                                                                                                                            |
| <b>Dwelling</b>        | means a flat, maisonette, house or other dwelling as permitted by the Planning Permission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Inspector</b>       | a planning inspector appointed by the Secretary of State to consider the Appeal under delegated powers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Implementation</b>  | means commencement of Development pursuant to the Permission by the carrying out of a 'material operation' (as defined in s 56(4) of the 1990 Act) save that for the purposes of this Agreement the term shall not include works of demolition, surveys, site clearance, works of archaeological or ground investigation or remediation, the erection of fencing or hoardings, the provision of security measures or lighting, the erection of temporary buildings or structures associated with the Development, the laying, removal or diversion of services, the provision of construction compounds, the temporary |

display of site notices or advertisements or piling works (and 'Implement' and 'Implemented' shall be construed accordingly);

**Land**

means the land edged red on the Plan registered at HM Land Registry with title number HP652710;

**Landscape Strategy Drawing**

means the drawing dated 8<sup>th</sup> September 2023 reference number L179/B01 which forms part of the Planning Application and which is annexed at Schedule 4

**Nutrients Report**

means the Nutrient Assessment & Budget reference 23073 dated 19<sup>th</sup> September 2023 annexed to this deed at Schedule 3

**Occupation and Occupied**

means occupation for the purposes permitted by the Planning Permission

**Planning Permission**

means full planning permission (subject to conditions) to be granted by the Secretary of State for the Development;

**Plan**

means the plan attached to this Agreement and marked "The Plan";

**Planning Application**

means the application for planning permission for the Development submitted by the Owner to the Council to which the Council has allocated reference number F/23/96082;

**Planning Obligations**

means those planning obligations listed at Schedule 2 being planning obligations for the purposes of section 106 of the Act.

**Self-build**

means self-build as defined by Section 1 of the Self-build and Custom Housing Building Act 2015 as amended by the Housing and Planning Act 2016 and the Community

**Self-build Dwellings**

means the two Dwellings which meet the Self-build definition and are constructed or commissioned by the **Owner**

**Working Day**

means any day which is not a Saturday, Sunday, Christmas Day, Good Friday or a statutory bank holiday

**2 Interpretation**

- 2.1 Words importing one gender shall be construed as meaning any other gender;
- 2.2 Words in the singular include the plural and vice versa;
- 2.3 References to clauses and schedules are reference to clauses and schedules within this Undertaking only;
- 2.4 A reference to a person includes a company or any legal entity.

**3 Obligations and statutory powers**

- 3.1 This Undertaking is entered into by unilateral undertaking and is a planning obligation for the purposes of s 106 of the 1990 Act and it is acknowledged by the parties that the obligations contained within it are binding on the Land and are enforceable by the **Council** as local planning authority against the Owner of the Land and against the Owner's successors in title and assigns in respect of their interests in each and every part of the Land.

**4 Land Bound**

- 4.1 The Land is bound by the Planning Obligations.

**5 Conditionality**

- 5.1 The obligations in this Undertaking (save for the covenant in paragraph 2.2 of Schedule 2) are unless otherwise specified conditional on:
  - 5.1.1 the grant of the Planning Permission by the Secretary of State and the Secretary of State's Decision Letter containing a clear statement (whether in express terms or by expressly adopting a recommendation to that effect) that he has placed weight upon each Planning Obligation as a reason for granting planning permission in accordance with Regulation 122 of the Community Infrastructure Levy Regulations 2010 PROVIDED ALWAYS if no reference is made to a particular obligation in the Secretary of State's decision letter that obligation shall be considered to be a reason for granting planning permission for the purposes of the aforementioned Regulations and PROVIDED FURTHER THAT if any Planning Obligation is determined by the Secretary of State not to constitute a reason for granting Permission because it either fails to satisfy the requirements of Regulation 122 of the CIL Regulations or falls within the scope of Regulation 123 of the CIL Regulations, then that Planning Obligation (but no other part of this Undertaking) shall have no further force or effect

and shall not be enforceable against any of the parties giving this Undertaking or their respective successors in title; and

5.1.2 Implementation of the Permission.

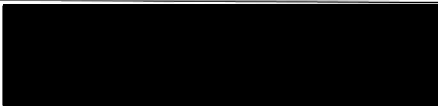
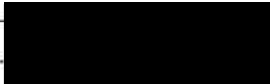
**6 Liability**

- 6.1 Upon parting with all or any interest in the Land no party shall have liability for the breach of any covenant or Planning Obligation in this Undertaking other than in respect of any breach by it at the time when it held such an interest.
- 6.2 Nothing in this Undertaking shall prohibit or limit the right to develop any part of the Land in accordance with a planning permission (other than the Permission) granted (whether or not on appeal) after the date of this Undertaking.

**7 Miscellaneous**

- 7.1 This Undertaking shall be registered as a local land charge by the Council;
- 7.2 Notwithstanding the provisions of the Contracts (Rights of Third Parties) Act 1999 nothing in this Undertaking confers or purports to confer any right to enforce any of the terms of this Undertaking on any person who is not a party hereto;
- 7.3 Any notice served pursuant to this Undertaking shall be deemed to be served correctly if served to the above addresses by registered post and in the case of the **Council** addressed to **HEAD OF HOUSING AND DEVELOPMENT**, the Owner addressed to **JASON STUART LOMAS** of Hotel California, Old Oak Farm, Winchester Road, Fair Oak, SO50 7HD;
- 7.4 This Undertaking is governed by the laws of England and Wales.

This Undertaking has been executed as a deed and delivered on the date stated at the beginning of this Undertaking.

|                                               |   |                                                                                       |
|-----------------------------------------------|---|---------------------------------------------------------------------------------------|
| Signed as a deed by <b>JASON STUART LOMAS</b> | ) |   |
| In the presence of:                           |   |                                                                                       |
| Signature of witness                          | ) |   |
| Name (in BLOCK CAPITALS)                      |   | SUSAN YASUZGA JOSS                                                                    |
| Address                                       |   | Joss Legal Solutions Limited<br>445 Fair Oak Road<br>Fair Oak,<br>Eastleigh, SO50 7AJ |



**SCHEDULE 1**  
**PLAN & OFFICE COPIES OF REGISTERED TITLE**

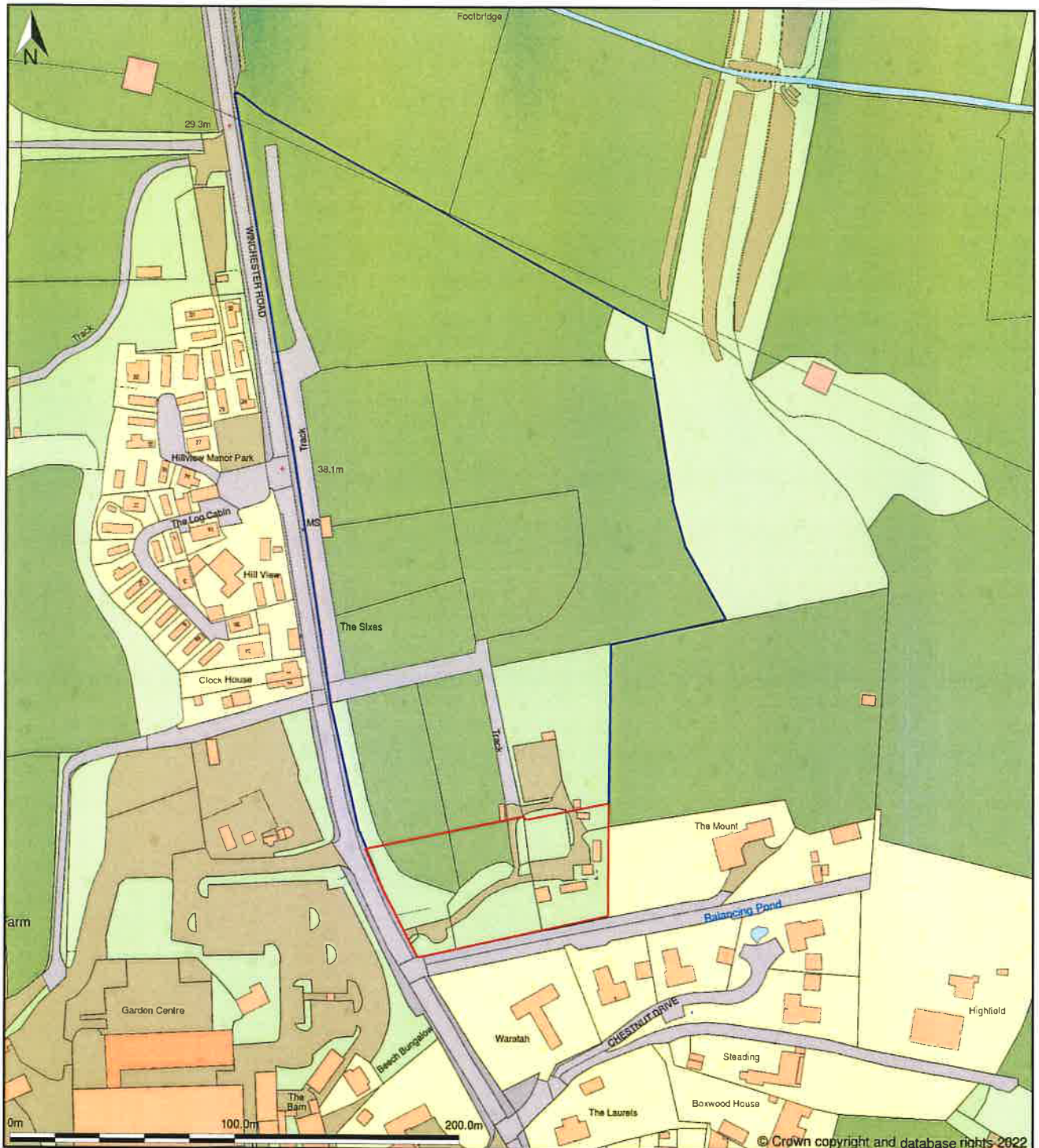
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Site plan as submitted in the Planning Application and office copies of the registered title and registered plan – annexed hereto



# "The Plan"

Old Oak Farm, Winchester Road, Fair Oak, Hampshire, SO50 7HD



Plan shows area bounded by: 448753.81, 120128.52 449211.3, 120637.36 (at a scale of 1:2500), OSGridRef: SU48982038. The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

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The electronic official copy of the register follows this message.

Please note that this is the only official copy we will issue. We will not issue a paper official copy.

Applications are pending in HM Land Registry, which have not been completed against this title.



## Official copy of register of title

Title number HP652710

Edition date 23.12.2021

- This official copy shows the entries on the register of title on 29 NOV 2023 at 15:30:26.
- This date must be quoted as the "search from date" in any official search application based on this copy.
- The date at the beginning of an entry is the date on which the entry was made in the register.
- Issued on 17 Jul 2024.
- Under s.67 of the Land Registration Act 2002, this copy is admissible in evidence to the same extent as the original.
- This title is dealt with by HM Land Registry, Weymouth Office.

### A: Property Register

This register describes the land and estate comprised in the title.

HAMPSHIRE : EASTLEIGH

- 1 (05.01.2005) The Freehold land shown edged with red on the plan of the above title filed at the Registry and being Land at Crowdhill, Winchester Road, Fair Oak, Eastleigh.

### B: Proprietorship Register

This register specifies the class of title and identifies the owner. It contains any entries that affect the right of disposal.

#### Title absolute

- 1 (23.12.2021) PROPRIETOR: JASON STUART LOMAS of Sandeford, Botley Road, Horton Heath, Eastleigh SO50 7DU.
- 2 (05.01.2005) The price stated to have been paid on 25 November 2004 was £155,000.
- 3 (27.06.2008) RESTRICTION: No disposition by a sole proprietor of the registered estate (except a trust corporation) under which capital money arises is to be registered unless authorised by an order of the court.

End of register

**These are the notes referred to on the following official copy**

The electronic official copy of the title plan follows this message.

Please note that this is the only official copy we will issue. We will not issue a paper official copy.

This official copy was delivered electronically and when printed will not be to scale. You can obtain a paper official copy by ordering one from HM Land Registry.

There is an/are application(s) pending in HM Land Registry and if we have only completed the mapping work for a pending application affecting the title concerned, such as a transfer of part:

- additional colour or other references, for example 'numbered 1', may appear on the title plan (or be referred to in the certificate of inspection in form CI), but may not yet be mentioned in the register
- colour or other references may also have been amended or removed from the title plan (or not be referred to in form CI), but this may not be reflected in the register at this stage.

This official copy is issued on 17 July 2024 shows the state of this title plan on 29 November 2023 at 15:30:26. It is admissible in evidence to the same extent as the original (s.67 Land Registration Act 2002). This title plan shows the general position, not the exact line, of the boundaries. It may be subject to distortions in scale.

Measurements scaled from this plan may not match measurements between the same points on the ground.

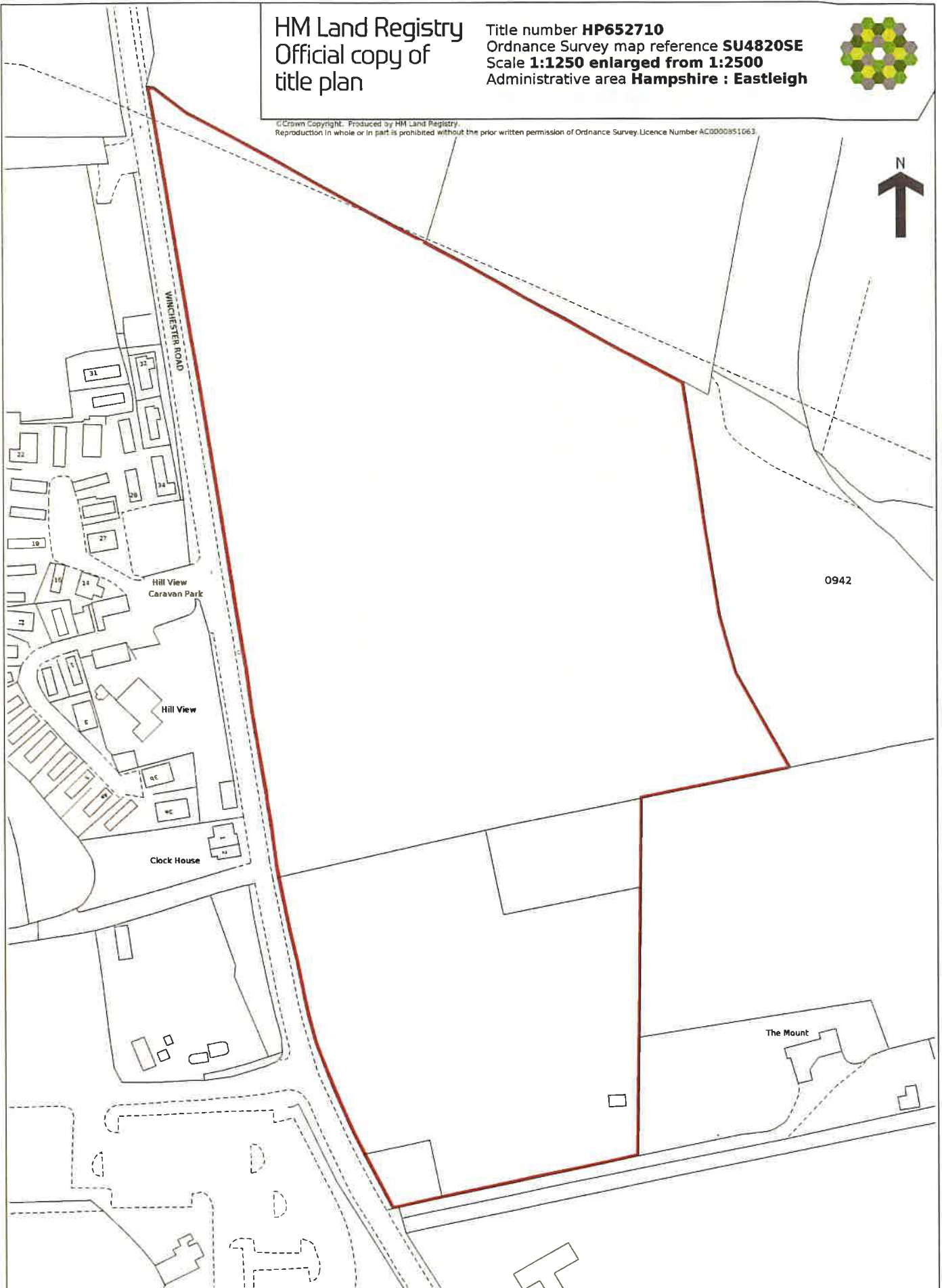
This title is dealt with by the HM Land Registry, Weymouth Office .

HM Land Registry  
Official copy of  
title plan

Title number **HP652710**  
Ordnance Survey map reference **SU4820SE**  
Scale **1:1250 enlarged from 1:2500**  
Administrative area **Hampshire : Eastleigh**



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## **SCHEDULE 2 – THE PLANNING OBLIGATIONS**

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### **1 Notice Provisions**

- 1.1 The **Owner** hereby undertakes not to Implement and not to permit Implementation until:
- 1.2 it has given the **Council** 10 Working Days prior written notice;

### **2 Construction**

- 2.1 The **Owner** undertakes that the Dwellings shall be Self-build and they shall both be constructed in accordance with Accessibility Standard.
- 2.2 The **Owner** undertakes to remove both mobile homes which are currently on the site upon occupation of both Self-build Dwellings.
- 2.3 The **Owner** shall ensure that all other structures which are not part of the Planning Permission are removed from the Site upon occupation of the Self-build Dwellings except the commenced stable block which shall remain on the Site.
- 2.4 The **Owner** undertakes to construct and use the Site in accordance with the separation and delineation of uses as illustrated and defined in the Landscape Strategy Drawing which forms part of the Planning Application.

### **3 Drainage**

- 3.1 The **Owner** undertakes to remove the existing septic tank which is located on the Site and construct the Self-Build Dwellings with a sewage treatment plant in accordance with the submitted nutrients report and shall ensure that the sewage treatment plant relating to the Self-Build Dwellings are maintained and monitored in accordance with the provisions of the Nitrates Report.

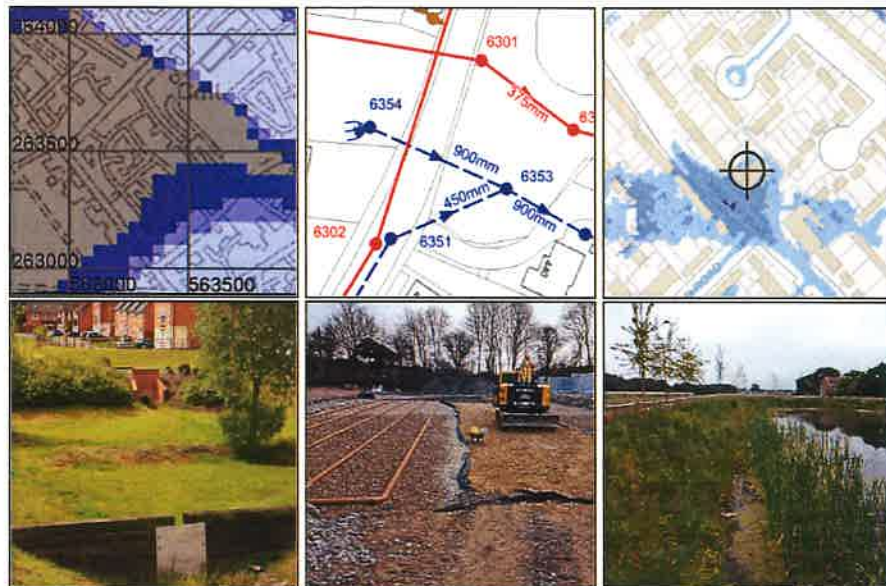


### **SCHEDULE 3 – NUTRIENT REPORT**

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Nutrient Report attached hereto.





## Nutrient Assessment & Budget

**Old Oak Farm, Winchester Road  
Fair Oak, Hants**

**Reference:** 23073

**Issue:** **Date:**

1 19/9/2023 To NE 16/03/2022 methodology with  
replacement NE calculator June 2022

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## Appendices

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| A | Existing & Proposed Site Layouts |
| B | Wastewater Treatment Information |
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## 1. Introduction

- 1.1 Instructions were received from Wessex Planning to undertake an assessment of the nutrient impact for the proposed replacement of 2 dwellings at Old Oak Farm, Winchester Road, Fair Oak, Hants.
- 1.2 This assessment has been undertaken by A P Traves BSc CEng MIStructE MCIHT.
- 1.3 The client's attention is drawn to the conditions and limitations contained in Appendix D.

## 2. Development Description & Location

- 2.1 The site comprises a 0.20 Ha existing residential urban fabric parcel in the south east corner of the land holding and 0.17 Ha parcel of the paddock area towards the south west corner of the land holding at Old Oak Farm, Winchester Road, Fair Oak, Hants.
- 2.2 It is proposed to replace and relocate the two existing dwellings from the 0.20 Ha south east parcel into the 0.17 ha south west paddock parcel and for the south east parcel to become open urban fabric. The proposed layout is indicated Jon Dale Architects plan 128-SL01 contained in appendix A of this report.

## 3. Background to Nitrogen Nutrient Assessment

- 3.1 The background to the issue is set out in current Natural England Advice note version 5 of June 2020 -Achieving Nutrient Neutrality for New Development in The Solent Region (NEv5). Reference should be made to NEv5 for a more in depth understanding which is summarised in the following paragraphs. Reference should also be made to Natural England- Nutrient Neutrality Generic Methodology dated 1 February 2022 (NE-gen1). Whilst NE-gen1 provides update on the calculation approach NEv5 is still current as this contains the catchment specific guidance on mitigation location. NE- gen1 was issued to LPAs on 16 March 2022 inclusive of a defective NE calculator (16/3/2022). This calculator was replaced (20/4/2022) and again in June 2022 which is current.
- 3.2 The Solent water environment is internationally important and is protected under the Water Environment Regulations and the Conservation of Habitats and Species Regulations, as well as national protections. There are high levels of nitrogen and phosphorus nutrients in these waters and the evidence indicates these nutrients are causing eutrophication of the waters (excess mats of dense green algae which deplete oxygen as these subsequently decay)
- 3.3 The total nutrient content comes from a number of component parts:
  - i. Agricultural use of fertilisers, particularly in the latter half of the 20<sup>th</sup> century
  - ii. General coastal background content
  - iii. Nitrate within final discharge from sewage treatment works
  - iv. Diffuse urban rainfall runoff from urban surfaces
- 3.4 Since the late 1980's and early 1990's the agricultural sector has reduced the nitrogen content in applied fertiliser by around 35%. However, the Chalk aquifers which underly the region and which are the dominant source of river flows into The Solent contain a massive amount of legacy nitrogen mainly in the form of soluble nitrate, from decades of previous agricultural practice. It is anticipated that it will take decades from now for the nitrogen content in groundwater to gradually reduce.
- 3.5 Nitrate in treated sewage is the natural product of the breakdown of ammonia contained in human waste. Historic practice was that the permitted concentration of ammoniacal nitrogen in the treated discharge was limited so that the ammonia to nitrate conversion occurred at the treatment works and took up oxygen within the works and did not subsequently take up oxygen from out of the waters into which discharge was made to

protect the receiving waters from deoxygenation ,ie that the discharge made would have a low Biological Oxygen Demand (BOD).

- 3.6 It has been recognised by the Environment Agency, water companies and OFWAT for some time that improvement of the Total Nitrogen (TN) content of discharge needs to be addressed. The water industry works in 5 year spending cycles/programmes referred to as Asset Management Plans (AMPs) and these three parties agree between them how much investment (which comes from increases in sewage bills) can be made in any AMP and what will be delivered in terms of improvement for the investment permitted (affordable). Since the beginning of AMP4 in 2005 Southern Water have begun to systematically upgrade existing treatment works to provide 'nitrogen stripping'. This process has to be artificially 'forced' by careful and continuous control of the treatment process to create a low oxygen environment which 'debonds' the oxygen from the nitrate and stimulates the emission of gaseous nitrogen into the atmosphere (which is 78% nitrogen). This nitrogen release is thus stripped from the effluent that discharges into the receiving waters. It is not practicable to strip 100% of the nitrogen from the sewage, and the upgraded treatment works typically operate to a new TN permit level of around 10 mg/L compared to typical value of around 27 mg/L for traditional works without TN permit limits.
- 3.7 Treatment works upgrades are difficult and complex to plan and deliver in the context of three of the main constraints:
- There is little space at most works for the finished new infrastructure
  - The existing works has to continue to operate during the upgrade and there is little room for this and the working space needed to construct the new infrastructure.
  - The investment cashflow is regulated by OFWAT against bill increases and notwithstanding this there are a finite number of specialists to plan and deliver this so there can only be a limited rate at which the upgrades are delivered.
- The economies of scale and immediate proximity to The Solent has dictated that it is the large coastal treatment works which have been prioritised by Southern Water in AMPs4-6 from 20005-2019. AMP7 investment and construction programme for 2020-2025 is now underway.
- 3.8 Wastewater Treatment Works (WwTW) upgrade programme is ongoing but in short it is not realistic to simply add a TN limit to existing permits as there will be no immediate change in performance of existing WwTWs. The upgrade programme will take decades to eventually deliver across the board improved TN performance.
- 3.9 The NE-gen1 methodology is aimed at planning permissions for proposed developments and does not address agricultural practice or the water industry AMP process. The NE-gen1 methodology is built off a single fundamental premise. This assumes that persons at work or using non-residential offices and commercial/retail premises must also live in the catchment. In the round this is a reasonable basis on which to look at the total sewage volume. However in zero rating commercial development from nitrogen loading it inherently means that residential developers fund the nitrogen nutrient mitigation of all non-residential commercial development in the region.
- 3.10 As set out in paragraph 3.4 there is a massive amount of largely agricultural legacy nitrogen in the Chalk aquifer below the region which forms the base flow to the rivers flowing into The Solent. The drinking water supplies in southern Hampshire are drawn from this groundwater and these rivers, and this typically contains 7-8 mg/L of nitrogen that does not stem from the proposed developments. The previous NEv2 methodology did not recognise that this represents around 85% of the nitrogen returned to the water environment from upgraded WwTWs and around 30% from traditional WwTWs. NEv5 gives a 2 mg/L allowance ie about 20% on upgraded WwTW effluent and 7% on traditional WwTW discharges. Whilst this is only partial recognition it is better that the previous NEv2 that made no recognition at all. In effect residential developers will therefore also be funding the mitigation of the unrecognised legacy nitrogen predominantly from historic agricultural

practices. The 2 mg/L value is still contained within the NE-gen1 assessment spreadsheet but is no longer as transparent as it was previously.

- 3.11 Natural England nitrogen assessment methodology NE-gen1 considers nitrogen for:
- 1) Land use with regard to nitrogen contained in surface water run-off and infiltration.
  - 2) Sanitation with regard to nitrogen content in the final treated discharge from the WwTW serving the development.

The assessment compares pre and post development quantities on nitrogen for the land use (1) and sanitation (2) to establish a final figure and then adds a 20% buffer to this.

- 3.11 Natural England advise the NE-gen1 methodology is advised for all types of development that would result in a net increase in population served by a wastewater system, including new houses, student accommodation, tourism attractions and tourist accommodation.

- 3.12 The site lies within the Itchen catchment. In March 2022 Natural England added a phosphorus neutrality requirement to development affecting the freshwater fluvial Itchen catchment. Similarly to nitrogen nutrients, impact comprises (1) a land use/surface water runoff component and (2) a sanitation component. Increased phosphorus nutrient levels in these waters has potential to generate algal blooms which can reduce oxygen levels in the water and cause death of aquatic organisms. Similarly to nitrogen nutrients the two principal sources are agricultural fertilisers including a large agricultural legacy effect on the massive volumes of groundwater stored in the local Chalk aquifers which feed the local rivers; and human habitation discharges from WwTWs and PTPs.

#### 4. Derivation of Sewage Load

- 4.1 The NEv5 methodology used a blunt 2.4 average household occupancy and 110 litres per person per day (LPD) for housing.

- 4.2 NE-gen1 now recognises that water consumption on sites varies:

- Building Regulations maximum 125 LHD
- Building Regulations higher standard 110 LHD
- Higher standard by water efficiency calculation

NE-gen1 directs that the level of proposed water usage is increased by 10 LPD *"to account for changes to less water efficient fittings through the lifetime of the development"*. This direction is contrary to the industry direction of travel, Southern Water's own water supply policies which NE recognise in their February 2022 advice note regrading water neutrality within the Sussex North Water Supply Zone and associated Frequently Asked Questions document ( December 2021) in which this demonstrates explicit awareness of Southern Water's Target 100 *"to reduce water consumption in Southern Water's whole water supply area in the long term (not just Sussex North), as set out in their Water Resources Management Plan."* The evidence therefore points to a long term reduction in use NOT a long term increase.

- 4.3 There is a further fundamental error in that sewage load is less than not equal to water use. Water efficiency calculations include a 5 LPD for external use that is not returned to the sewer so does not form part of the sewage load. In water metered properties sewage bills are calculated at 95% of the water supply volume in recognition of this.
- 4.4 The calculations attached to this report have been undertaken on the basis of 110 LPD unless a water efficiency calculation has been provided to us and is attached. A +10 LPD has been added as directed by Natural England. The liability and accountability for the impact of this direction rest with Natural England as current evidence set out in 4.2 and 4.3 above indicates their current approach is unsound.

#### 5. Wastewater Treatment Works

- 5.1 The site is remote from the public foul water sewer network.

- 5.2 The existing dwellings are served by an historic septic tank without a certified TN and TP performance. ie a default septic tank.
- 5.3 It is proposed to install a Graf One2Clean package treatment plant(PTP) which has a certified performance of 9.1 mg/L TN and 0.4 mg/L TP. The associated performance certification is contained in Appendix B

## 6. Land Use Component

- 6.1 The site comprises 0.20 Ha of residential urban fabric and 0.17 ha of paddock. There will be a small change in nutrient from the land use component as a result of the proposed development.

## 7. Nutrient Assessment

### NITROGEN

- 7.1 The NE-gen 1 sewage loading, PTP performance for TN and land use component are included in the calculations contained in Appendix C.
- 7.2 The calculations can also include the 2 mg/L allowance in water supply from NEv5 discussed in paragraph 4.41. For the awareness of the LPA the actual nitrogen content removed from the environment in the water supply from the environment but not recognised in NEv5/NE-gen1 in most cases in the Solent area is very significantly greater than the NE methodology acknowledges. The water supply at this location is however made from outside the Solent catchment so no deduction has been included.
- 7.3 The calculations demonstrate an existing nitrogen discharge of 19.84 KgTN/yr (unbuffered) from the existing dwellings on the default septic tank, and a post development discharge of 1.60 KgTN/yr (unbuffered) for the proposed dwellings served by the proposed Graf One2Clean PTP. The proposed development would therefore yield a net **nitrogen reduction of 18.24 KgTN/yr (unbuffered)**. Application of the 20% buffer to nutrient reductions is not applicable.

### PHOSPHORUS

- 7.4 The NE-gen 1 sewage loading, PTP performance for TP and land use component are included in the calculations contained in Appendix C.
- 7.5 There is no deductible allowance for TP in the water supply to the site.
- 7.6 The calculations demonstrate an existing phosphorus discharge of 2.44 KgTP/yr (unbuffered) from the existing dwellings on the current default septic tank, and a post development discharge of 0.11 KgTP/yr (unbuffered) for the proposed dwellings served by the proposed Graf One2Clean PTP. The proposed development would therefore yield a net **phosphorus reduction of 2.33 KgTP/yr (unbuffered)**. Application of the 20% buffer to nutrient reductions is not applicable.

## 8. Mitigation

### NITROGEN

- 8.1 NEv5 Figure 1 subdivides the overall Solent catchment into 6 sub catchments. A copy of this Figure is contained in Appendix C.
- 8.2 The site lies in the Itchen subcatchment. However NEv5 paragraph 5.42 states that for discharges to the ground mitigation land should be within the same catchment at the outfall location of the PTP. The development site and proposed PTP are in the same catchment and inherently meet mitigation location requirements.

- 8.3 **The proposed development will yield a net nitrogen nutrient reduction of 18.24 KgTN/yr and the proposed development therefore exceeds the balance point to achieve neutrality and no mitigation is required.**

#### **PHOSPHORUS**

- 8.4 Whereas the Itchen and Test catchments are interchangeable with respect to nitrogen nutrient mitigation as both discharge to the Southampton Water section of the Solent as the impacted receptor, for phosphorus the receptor is the Itchen SAC which would limit a phosphorus mitigation site to the freshwater fluvial catchment of the Itchen.
- 8.5 The site lies in the Itchen subcatchment. However NEv5 paragraph 5.42 states that for discharges to the ground mitigation land should be within the same catchment at the outfall location of the PTP. The development site and proposed PTP are in the same catchment and inherently meet mitigation location requirements.
- 8.6 **The proposed development will yield a net phosphorus nutrient reduction of 2.33 KgTP/yr and the proposed development therefore exceeds the balance point to achieve neutrality and no mitigation is required.**

## Appendix A



scale 1:500



## JON DALE ARCHITECT LTD.

Jon Dale RIBA 12 Crestwood View, Eastleigh, Hampshire, SO50 4NF Tel: 07787 575126 E-mail: jondalearchitect@gmail.com

Project

Old Oak Farm  
for Oak

Title

Site Plan

Scale  
1:500

Date  
July 23

Drawn  
JP

Checked  
JD

Job No.  
128

Drawing No.  
SLO1

Revision  
-

## Appendix B

## PERFORMANCE RESULTS

**Otto Graf GmbH**  
Carl-Zeiss-Str. 2 - 6, 79331 Teningen, Germany  
**EN 12566-3, Annex B**  
Small wastewater treatment systems for up to 50 PT  
**Small wastewater treatment system one2clean**  
Sequencing Batch Reactor (SBR) process  
Test report PIA2015-208B15.e

|                                          |                             |                 |
|------------------------------------------|-----------------------------|-----------------|
| Nominal organic daily load               | 0.24 kg BOD <sub>5</sub> /d |                 |
| Nominal hydraulic daily load             | 0.75 m <sup>3</sup> /d      |                 |
| Material                                 | polypropylene               |                 |
| Treatment efficiency (nominal sequences) | Efficiency                  | Effluent        |
|                                          | COD                         | 94.7 % 36 mg/l  |
|                                          | BOD <sub>5</sub>            | 98.1 % 6 mg/l   |
|                                          | N <sub>tot</sub> *          | 86.8 % 9.1 mg/l |
|                                          | NH <sub>4</sub> -N          | 88.7 % 4.6 mg/l |
|                                          | P <sub>tot</sub>            | 95.1 % 0.4 mg/l |
|                                          | SS                          | 95.7 % 14 mg/l  |
| Electrical consumption                   | 0.64 kWh/d                  |                 |

\*determined for temperatures  $\geq 12^{\circ}\text{C}$  in the bioreactor

Performance tested by:

**PIA – Prüfinstitut für Abwassertechnik GmbH**  
(PIA GmbH)  
Hergenrather Weg 30  
52074 Aachen, Germany

This document replaces neither the declaration  
of performance nor the CE marking.



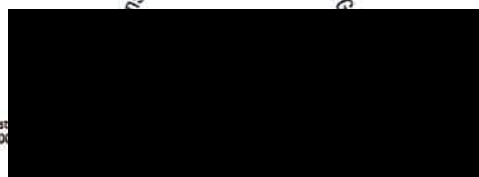
Notified Body  
No 1739



Certified according to  
ISO 9001:2008



Prüfinstitut für Abwassertechnik GmbH



Elmar Lancé

November 2016

## Appendix C

## Development site details

**Date (dd/mm/yyyy):**

19/09/2023

**Site Name:**

Old oak Farm ( existing septic tank)

**Planning Application number:**

to be assigned

**Site Address:**

Winchester Road, Fair Oak

# Stage 1

## User Inputs

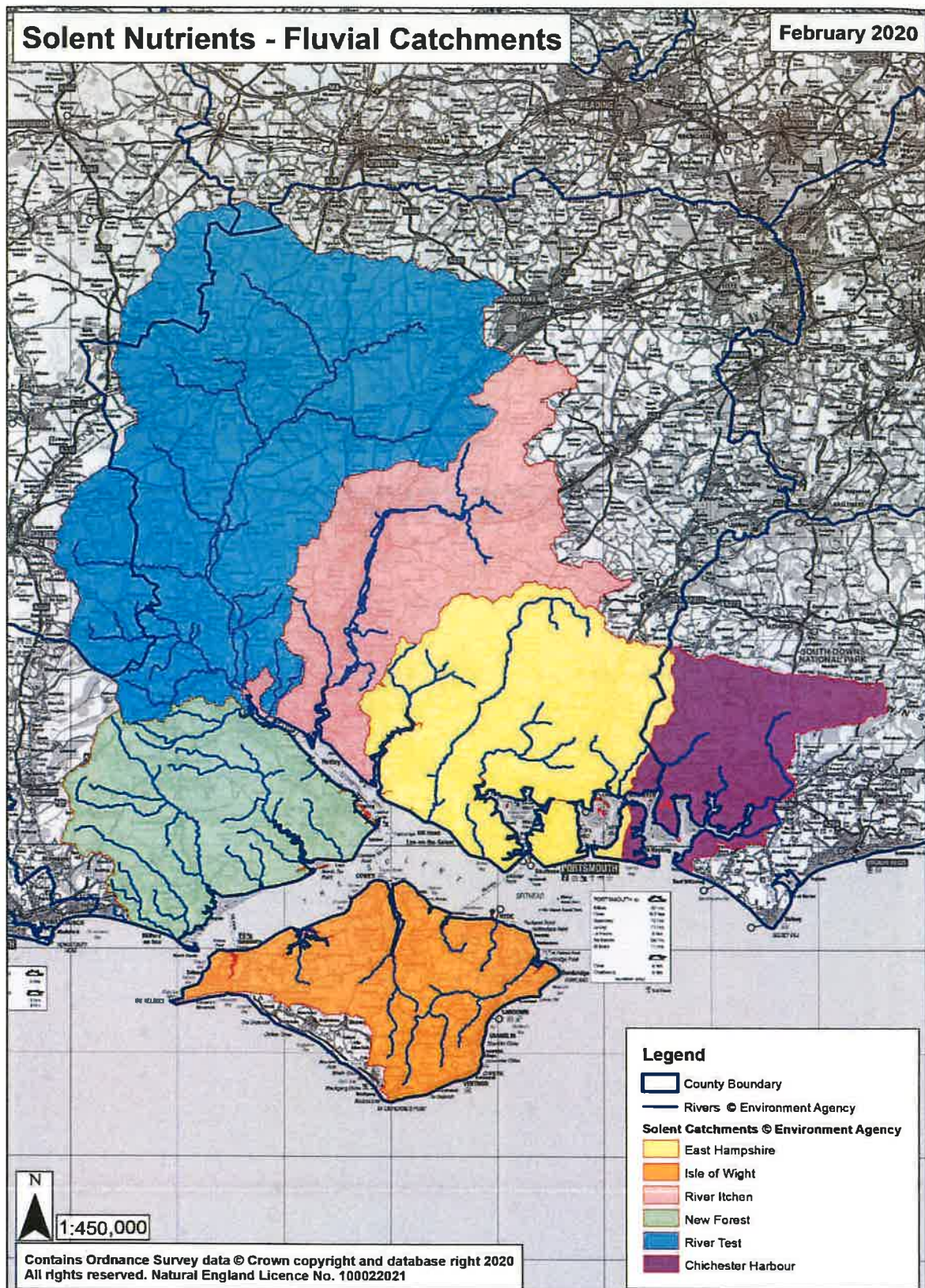
|                                                           |                     |
|-----------------------------------------------------------|---------------------|
| <b>Date of first occupancy:</b>                           | 02/01/2022          |
| <b>Average occupancy rate:</b>                            | 2.40                |
| <b>Water usage (litres/person/day):</b>                   | 120                 |
| <b>Development Proposal (dwellings/units):</b>            | 2                   |
| <b>Include deductible acceptable loading?</b>             | Yes                 |
| <b>Wastewater treatment works:</b>                        | Septic Tank default |
| <b>Wastewater treatment works P permit (mg TP/litre):</b> | 11.6                |
| <b>Wastewater treatment works N permit (mg TN/litre):</b> | 94.3                |

## Stage 1 Calculated Loading

### Stage 1 Nutrient Loading

|                                  |              |                 |
|----------------------------------|--------------|-----------------|
| Additional population            | 4.8          | people          |
| Wastewater by development        | 576          | litres/day      |
| <b>Annual wastewater TP load</b> | <b>2.44</b>  | <b>kg TP/yr</b> |
| <b>Annual wastewater TN load</b> | <b>19.84</b> | <b>kg TN/yr</b> |

**Figure 1 Solent Catchment Area** *Contains public sector information licensed under the Open Government Licence v3.0*



## Development site details

**Date (dd/mm/yyyy):**

19/09/2023

**Site Name:**

Old Oak Farm (proposed PTP)

**Planning Application number:**

to be assigned

**Site Address:**

Winchester Road, Fair Oak

# Stage 1

## User Inputs

|                                                           |                                          |     |
|-----------------------------------------------------------|------------------------------------------|-----|
| <b>Date of first occupancy:</b>                           | 02/01/2022                               |     |
| <b>Average occupancy rate:</b>                            | 2.40                                     |     |
| <b>Water usage (litres/person/day):</b>                   | 120                                      |     |
| <b>Development Proposal (dwellings/units):</b>            | 2                                        |     |
| <b>Include deductible acceptable loading?</b>             | Yes                                      |     |
| <b>Wastewater treatment works:</b>                        | Package Treatment Plant user defined     |     |
| <b>Wastewater treatment works P permit (mg TP/litre):</b> | Please enter value in cell to the right: | 0.4 |
| <b>Wastewater treatment works N permit (mg TN/litre):</b> | Please enter value in cell to the right: | 9.1 |

## Stage 1 Calculated Loading

|                                  |             |                   |
|----------------------------------|-------------|-------------------|
| <b>Additional population</b>     | <b>4.8</b>  | <b>people</b>     |
| <b>Wastewater by development</b> | <b>576</b>  | <b>litres/day</b> |
| <b>Annual wastewater TP load</b> | <b>0.08</b> | <b>kg TP/yr</b>   |
| <b>Annual wastewater TN load</b> | <b>1.49</b> | <b>kg TN/yr</b>   |

## Stage 2

## User Inputs

|                                              |                  |
|----------------------------------------------|------------------|
| <b>Catchment:</b>                            | Itchen           |
| <b>Soil drainage type:</b>                   | Impeded drainage |
| <b>Annual average rainfall (mm):</b>         | 800.1 - 850      |
| <b>Within Nitrate Vulnerable Zone (NVZ):</b> | Yes              |

| Existing land use type(s) | Area (ha)   | Annual phosphorus nutrient export (kg TP) |
|---------------------------|-------------|-------------------------------------------|
| Residential urban land    | 0.20        | 0.33                                      |
| Lowland                   | 0.17        | 0.10                                      |
| <b>Total:</b>             | <b>0.37</b> | <b>0.43</b>                               |



**Annual nitrogen  
nutrient export  
(kg TN)**



## Stage 3

## User Inputs

| New land use type(s)   | Area (ha)   | Annual phosphorus nutrient export (kg TP) |
|------------------------|-------------|-------------------------------------------|
| Residential urban land | 0.17        | 0.28                                      |
| Open urban land        | 0.20        | 0.18                                      |
| <b>Total:</b>          | <b>0.37</b> | <b>0.46</b>                               |

**Annual nitrogen  
nutrient export  
(kg TN)**

**2.61**

**1.81**

**4.43**

## Appendix D

## CONDITIONS AND LIMITATIONS OF NITROGEN NUTRIENT ASSESSMENT

May 2020

Aqua Callidus Consulting Ltd is constituted as a limited liability company in accordance with the Companies Act 1989 (with registered number 11390910 and with its registered office at Kintyre House, 70 High Street, Fareham, Hants, PO16 7BB).



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5. No liability for the contents of this report is accepted to any parties other than the client stated in the report.
6. Unless stated otherwise the nitrogen assessment is based on site specific information provided by the client and manufacturers and wastewater companies public information on the performance of wastewater treatment plants and works. No liability is accepted for the accuracy of such third party information.
7. Unless stated otherwise the nitrogen assessment is undertaken as a desktop assessment and no site visit has been made.





20 September 2023

Wessex Planning  
Meadowsweet Cottage  
Morleys Lane  
Ampfield  
Hants  
SO51 9BJ

✉ 54 Common Lane  
Titchfield, Hants,  
PO14 4BU

☎ 07717 759149  
🌐 [www.aquacallidus.co.uk](http://www.aquacallidus.co.uk)

FAO Louise Cutts

Ref: 23073

**Old Oak Farm, Winchester Road, Fair Oak, Hants, SO50 7HD**  
**PTP O&M Plan (Operation and Maintenance)**

**Accountable for implementation of the plan.**

The following entities are accountable for the implementation of the plan.

- ✓ An individual
- A group of individuals
- A charity, club or similar organisation
- A management company or business

New PTP plot 1

|       |        |
|-------|--------|
| Owner | Plot 1 |
|-------|--------|

New PTP plot 2

|       |        |
|-------|--------|
| Owner | Plot 2 |
|-------|--------|

**Funding**

By virtue of operation of a PTP the discharge is not being made to the public sewer and the costs of PTP operations are met in lieu of a sewer utility bill levied by a statutory undertaker. The following entities will fund the O&M plan actions:

- ✓ An individual
- A group of individuals
- A charity, club or similar organisation
- A management company or business

New PTP plot 1

|       |        | Cost share |
|-------|--------|------------|
| Owner | Plot 1 | 100%       |

New PTP plot 2

|       |        | Cost share |
|-------|--------|------------|
| Owner | Plot 2 | 100%       |

**Actions required to maintain the performance of the PTP**

Actions for all plants

The operation and management of the wastewater treatment plant will accord with the DEFRA General Binding Rules (GBR) for small sewage discharges (SSDs) with effect from January 2015. The following General Binding Rules apply to all small sewage discharges.

9. All works and equipment used for the treatment of sewage effluent and its discharge must comply with the relevant design and manufacturing standards ie the British Standard that was in force at the time of the installation, and guidance issued by the appropriate authority on the capacity and installation of the equipment.
10. The system must be installed and operated in accordance with the manufacturer's specification.
11. Maintenance must be undertaken by someone who is competent.
12. Waste sludge from the system must be safely disposed of by an authorised person.
13. If a property is sold, the operator must give the new operator a written notice stating that a small sewage discharge is being carried out, and giving a description of the wastewater system and its maintenance requirements.
14. The operator must ensure the system is appropriately decommissioned where it ceases to be in operation so that there is no risk of pollutants or polluting matter entering groundwater, inland fresh waters or coastal waters.

General Binding Rules is a term given to legally binding requirements in regulations that set the minimum standards or conditions which apply. In this case the conditions are set in the Environmental Permitting (England and Wales)(Amendment)(England) Regulations 2014.

**Notes:**

- *GBR 9 is consistent with Building Regulations requirements. In satisfying the Building Regulations GBR 9 is met.*
- *GBR 10 a copy of the manufacturer's specification for the proposed treatment plant is attached.*
- *GBR 11 it is recommended that you source maintenance work specialists through listings on recognised trade bodies or organisations such as British Water. Many manufacturers operate their own maintenance service departments or can direct you towards specialists who are familiar with their plant. Bespoke treatment plants are usually maintained by the suppliers through a maintenance contract.*
- *GBR 12 treatment plant sludge is a controlled waste. Your servicing body (GBR 11) may deal with this as part of their activity or you may need to arrange for a specialist contractor to deal with the sludge. It is recommended that you source sludge disposal work specialists through listing on recognised trade bodies or organisations. Most manufacturers can direct you towards local companies who undertake this.*

It is recommended that you retain copies of service reports and maintenance work etc to facilitate any verification of compliance by authorised persons.

*If the proposed discharge exceeds GBR thresholds then an Environment Permit will need to be obtained from the Environment Agency to operate the wastewater treatment plant and make discharge from it. In this case the wastewater treatment plant will be operated and maintained in accordance with the associated Environment Permit, refer to permit for details.*

**Plant specific actions**

Wastewater treatment plant manufacturer's specification including maintenance actions is shown on the following pages.

|              |                |
|--------------|----------------|
| <b>Plant</b> | Graf One2Clean |
|--------------|----------------|



# LOG BOOK

## ONE2CLEAN TANKS

**The drainage system from this property discharges to a wastewater treatment plant (or septic tank, as appropriate). The owner is legally responsible for routine maintenance and to ensure that the system complies with any discharge consent issued by the relevant authority for your area and that it does not present a health and safety hazard or a nuisance.**

**Graf UK recommend service and maintenance should be carried out at least once a year by a qualified engineer.**

**For further details contact Graf UK on 01608 661500.**

## BENEFITS

## One2Clean system

### Benefits of the Graf system

- Extremely strong & robust injection moulded underground tank
- No concrete required, just gravel base and backfill
- Completely groundwater stable up to the centre line
- CE Certified system to EN 12566-3
- Market leading effluent quality of 5, 6, 0.4 guaranteed on a 95 percentile basis. SBR Technology
- Integrated sampling chamber at no extra cost
- No moving parts inside the tank, easy to install, easy to maintain.
- Plug in and play system, no wiring required
- 10 year warranty on the tank, 2 years on compressor and parts, German engineered
- Low energy consumption of just 75 kwh
- Silent operation
- Programmable holiday mode



Only substances with the characteristics of domestic wastewater should enter the systems. Substances which are not biocompatible or biodegradable must not enter the system because they can block the pipes, contaminate the wastewater or kill necessary bacteria.



**The following are not permitted:**

- Rainwater from roofs and yards
- Infiltration water (e.g. drainage water)
- Liquid or solid residue from keeping animals
- Commercial or agricultural wastewater, unless it is comparable to domestic wastewater
- Chemicals, pharmaceuticals, mineral oils, solvents
- Cooling water
- Solids in the form of food waste, plastics and hygiene articles, coffee filters, bottle tops and other domestic items
- Milk and milk products
- Water discharged from swimming pools
- Large volumes of blood

If discharging larger volumes of grease or plant-based oils, we would recommend pre-cleaning the wastewater containing the greases/oils in a grease separator upstream of the wastewater treatment system (caution: faeces must not be allowed to enter the grease separator!).



**Please don't flush or pour**

- |                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| Ash                     | Cleaning agents, except chlorine-free products (environmentally sound) |
| Chemicals               | Razor blades                                                           |
| Disinfectants           | Pipe cleaners                                                          |
| Paints                  | Pesticides                                                             |
| Photochemical           | Panty liners                                                           |
| Chip fat                | Cooking oil                                                            |
| Adhesive plaster        | Food waste                                                             |
| Cat litter              | Wallpaper paste                                                        |
| Cigarette butts         | Textiles (e.g. nylon tights, cleaning cloths, handkerchiefs etc.)      |
| Condoms                 | Thinner                                                                |
| Corks                   | Bird sane, cat litter                                                  |
| Varnishes               | Cotton buds                                                            |
| Medicines               | Toilet blocks                                                          |
| Engine oil              | Nappies                                                                |
| Waste containing oil    | Cement water                                                           |
| Plant protection agents |                                                                        |
| Paintbrush cleaners     |                                                                        |



Otto Graf GmbH, Carl-Zeiss-Str. 2-6, Germany

2014

**EN 12566-3:2013-09**

Packaged domestic wastewater treatment plant  
for treatment of domestic wastewater

SBR-treatment one2clean for 3-18 inhabitants

Material: Polypropylene (PP)

**Effectiveness of treatment**

|                                                                                 |              |
|---------------------------------------------------------------------------------|--------------|
| Treatment efficiency ratios<br>(at tested organis daily load BOD5=0,48<br>kg/d) | COD: 96,2%   |
|                                                                                 | BOD5: 98,6%  |
|                                                                                 | SS: 98,6%    |
| Ammonia nitrogen                                                                | NH4-N: 99,0% |
| Total nitrogen                                                                  | Ntot: 79,1%  |

**Treatment capacity (nominal designation)**

|                                   |              |
|-----------------------------------|--------------|
| Nominal organic daily load (BOD5) | 0,06 kg/d*PE |
| Nominal hydraulic daily flow (QN) | 0,15 m3/d*PE |

**Watertightness**

(water test)

passed

**Crushing resistance**

(pit test)

passed

**Durability**

passed

**Reaction to fire**

Class E

**Release of dangerous substances**

NPD

Valid for one2clean plants build in Carat underground tanks



It is essential that you observe the points described in these instructions. Failure to do so will invalidate all warranty claims. For all additional items ordered from GRAF, separate installation instructions will be provided in the transport packaging.

It is essential that you check the components for possible damage before installation.

## Contents

|     |                                             |    |
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| 1.  | General Notes                               | 6  |
| 2.  | Function of the Wastewater Treatment System | 7  |
| 3.  | Start-up of the Control System              | 8  |
| 4.  | Operation of the Control System             | 9  |
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| 6.  | Fault Messages and Troubleshooting          | 17 |
| 7.  | Operating Notes                             | 19 |
| 8.  | EC Declaration of Conformity                | 21 |
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| 10. | Technical Data of the Control System        | 23 |

## GENERAL NOTES

Important tips for safe & long-lasting operation of the one2clean:

- The SBR system is designed for the treatment of all household sewage. The introduction of other wastewater, such as the wastewater from restaurants and/or business establishments, etc. is permitted if these were already known at the time of design of the system and were taken into account.
- **Biocides, materials with a toxic effect or materials that are not biologically compatible must not enter the system, as these impede bacteria important for wastewater treatment and lead to biological process problems (detailed notes follow on the next pages).**

**It is imperative that you follow the operating and maintenance instructions for compliance with the regulatory requirements for cleaning. These instructions can be found on the following pages.**

Furthermore, we ask that you carefully read and observe the following notes:

- The location of the control system for indoor installation must be a dry, well-ventilated room (basement or garage).
- If an outdoor control cabinet is used, this should be placed in as shaded place as possible to avoid overheating.
- At no time must the cabinet be covered, in particular its air vents, and that it is freely accessible for maintenance.
- There must be a permanent power supply to the one2clean. Ensure that the control cabinet is adequately fused (16 A) and the power supply is fitted with isolator switch for repair & maintenance. Additional electrical components & consumers should not be using the same fuse as they can cause power failure and interfere with one2clean operation.

## 2

## FUNCTION OF THE WASTEWATER TREATMENT SYSTEM

The one2clean small wastewater treatment system is fully biological and works according to the retention process with long-term aeration (sequencing batch reactor). The system is essentially made up of an aerobic stage. This stage is split into a rest area and an activation area. The chambers are connected to one another in the bottom section. During this process, therefore, all domestic sewage is immediately exposed to aerobic wastewater treatment. The entire system is aerated by compressed air being blown in and the sludge activated as a result of this biologically cleans the wastewater.

The coarse and floating solids contained in the wastewater are initially retained in the rest area by means of a baffle. The wastewater then passes through an overflow opening in the lower part of the container from the rest area into the activation area.

As the rest area is also aerated, the solids which remain behind are also degraded aerobically over time. Wastewater treatment is performed in the one2clean without pre-treatment, so that no anaerobic digestion processes can occur.

Operation of the treatment system is carried out via a microprocessor control system which controls the air compressor and air distribution.

The SBR process is a sequence of different steps that occur at set times in a sequence and takes place at least once a day.



### Step 1: Aeration

The wastewater is subjected directly to aerobic treatment for a fixed amount of time. On the one hand the microorganisms (activated sludge) are supplied with the oxygen necessary for degradation; on the other hand mixing is achieved as a result of pressure aeration. The air diffuser of the system is supplied with ambient air by a compressor. The aeration is intermittent, so as to allow targeted wastewater treatment. Thus, different environmental conditions can be achieved.



### Step 2: Settling

There is no aeration in the second phase. The activated sludge and the remaining settleable solids can now settle by gravity. A clear water zone is created at the top and a layer of mud forms at the bottom. Any floating sludge which might develop is located above the clear water zone.



### Step 3: Clear Water Removal

The biologically treated wastewater (clear water) is extracted from the SBR stage. This is done by pumping compressed air according to the mammoth pump principle (air lift pump). The air lift is designed in such a way that no floating sludge which might develop is drained on the clear water layer. A minimum water level in the system is maintained without additional components.

After execution of the third Step, the cleaning process begins again with step 1.

Two cycles are performed per day. The individual adaptation of switching times is possible on the part of the maintenance company.

## 3

**START-UP OF THE CONTROL SYSTEM**

After the system is connected to the power supply, a short system test is run, during which time the LED light is red. The LED then becomes green when the start-up phase is completed.

During the system test, the notification “SYSTEM TEST ... OK”, the program version, and serial number of the control system appear for a short time. Following this, the current operating status of the system is displayed. After the system test is complete, the date and the current time should be checked and adjusted if necessary (see Section 4.2.3).

After checking the date/time, a functional check of the system components must be carried out. This check can only be carried out if the necessary air hoses are connected. The check should be carried out via the menu point “manual mode” in the control system, which is intended for this purpose. The individual parts of the system are tested for functionality. After a successful check, the system is reset to automatic mode.

**CAUTION:** The clear water siphon only functions when the containers are filled.

If the date and time are not set correctly, operating faults will be stored with the incorrect time information.

## 4

## OPERATION OF THE CONTROL SYSTEM

The operation of the system is carried out via a microprocessor in the control unit. The microprocessor allows for the set-up of operating parameters, the display of operating conditions and the query of system parameters as well as the programming of working times through a specialist company.

Adjustments are made by scrolling through numerical values using the two arrow keys  . The settings are then confirmed by pressing the  button.

The individual dialogues can be terminated ahead of time by pressing  or will be terminated automatically after **2 minutes**.

The control system is broken down into the following display pages:

**4. Basic level:** Status of the cycle sequence with the elapsing remaining time, as well as the display of error messages.

**5. Operator level:** The operator can access the operator level by pressing  the button and enter operator- specific settings.

**6. Service level:** A password-protected service level can be accessed from the operator level using an additional code. This level is reserved for trained personnel. Here adjustments or changes can be made and diagnostic data is retrieved.

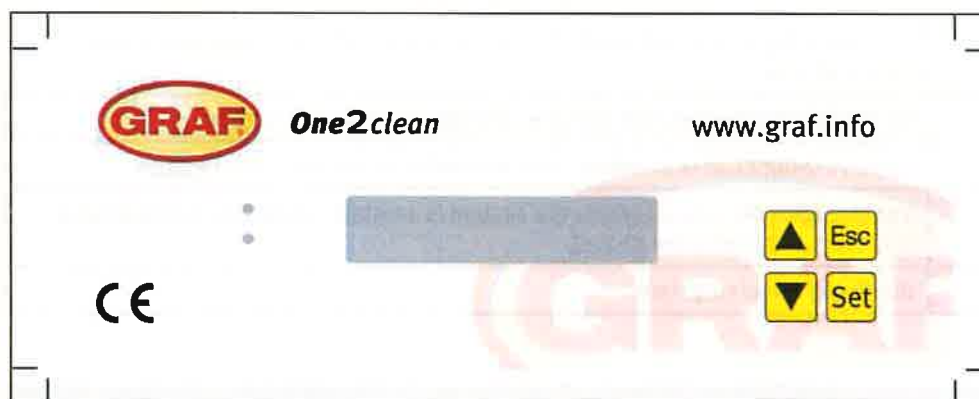


Figure 2: View of the operating unit

#### 4.1 Control Programme

The control system switches the outputs for air compressors and stepper motors on a timer. The timing is determined by the set sequence tables. A complete cleaning cycle is started for each start time in accordance with the selected sequence table.

By setting up holiday times in the operator level, the complete sequence of cleaning cycles can be suppressed for the set period of time. Only one holiday cycle with greatly reduced activity takes place at this time. During this time, no treated wastewater will be removed, as there should be no supply.

## 4

## OPERATION OF THE CONTROL SYSTEM

**4.1.1 Display of Operating Status**

The operating status is indicated by the LEDs (**green** = operational / **red** = fault) and as text on the screen.  
In normal operating mode (aeration mode), the display appears as follows:

Aeration  
Rest: 120:10min

In automatic mode, the liquid crystal display shows the current work phase and the remaining time left in this phase.

If a fault occurs, the red LED is turned on. A message indicating which component is faulty appears in the liquid crystal display (e.g. Fault Compressor o.oA).

**4.1.2 The following work phases are displayed**

| Display                  | Process performed                                                                                                                                                                      |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Denitrification          | Y <sub>3</sub> valve (plug X <sub>1.1</sub> ) is actuated intermittently; the activated sludge is briefly mixed with the wastewater. This is followed by long pauses (response times). |
| Ventilation              | Y <sub>3</sub> valve (plug X <sub>1.1</sub> ) is actuated; the system is aerated in intervals over a long period of time.                                                              |
| Sedimentation phase      | No valves are actuated, the activated sludge settles in the system.                                                                                                                    |
| Activity phase           | Y <sub>4</sub> valve (plug X <sub>1.2</sub> ) is actuated; the clear water is pumped into the drain.                                                                                   |
| Cycle pause/holiday mode | Y <sub>3</sub> valve (plug X <sub>1.1</sub> ) is actuated; the system is aerated in intervals (considerably less than in the aeration phase).                                          |
| Rest: XXX:XXmin          | Display of remaining time.                                                                                                                                                             |

| Symbol                                                                                                                                                                  | Key assignment  | Function                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------|
|                                                                                      | Enter key       | Selection of operating mode, confirmation of entries                                    |
|   | Scroll          | Display of operating modes and queries<br>Programming of the system by entering figures |
|                                                                                      | Acknowledgement | Acknowledgement of entries without saving<br>Acknowledgement of fault messages          |

## 4

## OPERATION OF THE CONTROL SYSTEM

**4.2 Operating the Control System**

You can start different queries from the automatic mode.

You can access the first operating level by pressing . You can now call up the individual queries using the arrow keys   and then pressing :

| Display                          | Meaning                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating mode<br>Remaining time | Remaining time in current work phase                                                                                                                                                                                                                                                                                                |
| Operating hours                  | Display of the operating hours of the valve and compressor                                                                                                                                                                                                                                                                          |
| Manual operation                 | Manual control of the valve                                                                                                                                                                                                                                                                                                         |
| Date<br>Time                     | Current time, day and date. Can be set using                                                                                                                                                                                                     |
| Holiday mode                     | Holiday mode set-up (max. 90 days)                                                                                                                                                                                                                                                                                                  |
| Faults                           | Operational faults which occur are stored here and can be read. It is possible to switch between the error message and the corresponding date using  and  |
| Settings                         | The current settings can be viewed using the arrow keys                                                                                                                                                                                                                                                                             |
| Service menu                     | For qualified personnel                                                                                                                                                                                                                                                                                                             |

**4.2.1 Operating Hours Query**

Press the  button. On the screen will appear:

Operating hours  
meter reading

By pressing  again, the operating hours for the valves and the compressor can be displayed in sequence using the arrow keys  .

Pressing  once will take you back to the display “display operating hours”. You can access the “manual mode” menu by pressing .

→ **Note:** If you do not press any buttons for a period of 10 minutes, normal operation will begin automatically.

## 4

## OPERATION OF THE CONTROL SYSTEM

## 4.2.2 Manual Control of the Valve using "Manual Operation"

During checks, each valve should run for at least 5 seconds, as the monitoring the current consumption of the valves takes some time before any faults are detected.

In automatic mode, first press **Set** then the arrow key **▲** until the following is displayed on the screen:

Manual operation

By pressing on the **Set** button again, you will receive the following message:

Aeration OFF

Pressing **Set** allows you to turn the selected programme on and off.

The other programs can be selected using the arrow keys **▲**.

Pressing **Esc** once will take you back to the display "manual mode".

## 4.2.3 Set Date/Time

Press **Set** and then the arrow keys **▲** until the following is displayed on the screen (example):

19-12-2007 Mon  
20:15:56

By pressing **Set**, the time and date can then be set using the arrow keys **▲** **▼**.

To confirm the correction, you must press **Set** each time.

Pressing **▲** once will take you to the next display in holiday mode.

A correctly set system clock and date display is absolutely mandatory in order to record the hours of operation and so that any faults can be traced. There is no automatic change from summer to winter time.

**NOTE:** If you do not press any buttons for a period of 10 minutes, normal operation will begin automatically.

## 4

## OPERATION OF THE CONTROL SYSTEM

## 4.2.4 Setting-up Holiday Mode

**NOTE:** Holiday mode results in the reduced operation of the wastewater treatment system. It should only be applied when no wastewater is introduced into the wastewater treatment system during the selected time period. Wastewater that passes into the system during the holiday mode period will not be cleaned. Holiday mode is switched on and off automatically for the data you have entered.

Press , then press the arrow buttons   until the following appears on the screen:

Vacation oper.

Press  again to release the input of holiday dates:

Start: YYYY-MM-DD

End: YYYY-MM-DD

**Start of holiday:**

The start of holiday mode is entered in the format YYYY-MM-DD by pressing  . To switch between the different settings, the  button must be pressed in each case.

**End of holiday:**

As with for the start of the holiday, the end of holiday mode is entered in the year, month and day format YYYY-MM-DD by pressing  .

Press the  button to save the input data for holiday mode and to exit this function.

Pressing  returns you to the automatic mode display.

**NOTE:** If you do not press any buttons for a period of 2 minutes, normal operation will begin automatically without the date that you have just entered being saved.

## OPERATION OF THE CONTROL SYSTEM

### 4.2.5 Old Faults

The control system stores all past fault messages and the operation of the control system via the “manual mode” function. Past fault messages with date and time can be read under the menu item “Old faults”. The individual messages can be accessed using the arrow keys. You can exit the menu item by pressing .

Faults are indicated as encoding, in order of their appearance, starting with number 0 (latest signal).

| Coding | Meaning                               |
|--------|---------------------------------------|
| 1      | Power failure (system is currentless) |
| 2      | Net is back (system regains power)    |
| 3      | Compressor has over-current           |
| 4      | Compressor current supply too low     |
| 5      | Manual operation                      |

The faults number 2 (net is back) and number 5 (manual operation) are no faults. They will be registered for a better temporal localization of possibly occurring faults or rather monitoring of manual activities on the control system.

### 4.2.6 Display Settings

This menu item allows the current control system settings to be seen. It is not possible to change these settings. This menu item is used to analyse the settings without making changes. The individual settings can be called up using the arrow keys  . You can exit the menu item by pressing .

### 4.2.7 Service Menu

Operating parameters can be changed in the service menu. Access is protected with a code. This second maintenance level is reserved exclusively for qualified specialist personnel only!

**Any access to the control system settings by unauthorised persons will cause the warranty to expire!**

## 5

## INSPECTION AND MAINTENANCE

**5.1 Obligations of the Operator**

The system must always be turned on. The operator is obliged to ensure the fault-free operation of the system. Almost all operational faults lead to a deterioration of the system's cleaning performance. These should therefore be detected at an early stage and eliminated immediately by you or a qualified service technician.

**5.1.1 Daily checks**

The system should be checked daily for correct operation. The system is operating correctly when the operating control is lit up green and no warning signal can be heard.

**5.1.2 Monthly checks**

- Visual inspection for any sludge output, turbidity or discoloration in the flow
- Check inflows and outflows for blockages (visual inspection)
- Read the operating hours counter on the air compressor (total operating hours), the ventilation (Y<sub>3</sub> valve) and the clear water run-off (Y<sub>4</sub> valve) and record in the operating log

**5.2 Maintenance by a Specialist Company**

Maintenance is carried out by a specialist company (experts) at least twice a year (approximately every 6 months). The time intervals and tasks specified by the local water authority in the consent permit under water laws also apply. For this purpose, the system owner must complete a maintenance contract with a qualified specialist.

- The following tasks should be carried out in relation to maintenance:
- Inspection of the log book with determination of the regular operation (target-actual comparison),
- Check the air filter of the air compressor,
- Maintenance of the air compressor according to the manufacturer's instructions,
- Functional check of the air compressor and stepper motors,
- Carry out general cleaning work, e.g. removal of deposits,
- Check for adequate ventilation,
- Examination of activation tank:
  - Oxygen concentration (O<sub>2</sub>/l > 2 mg), adjust the operating time of the compressor if necessary,
  - Sludge volume (< 900 ml/l),

**If the sludge volume is greater than 900 ml/l, the sludge must be removed.**

Maintenance tasks carried out, any damage detected or repairs made as well as other instances should be summarised by the maintenance company in a maintenance report.

## INSPECTION AND MAINTENANCE

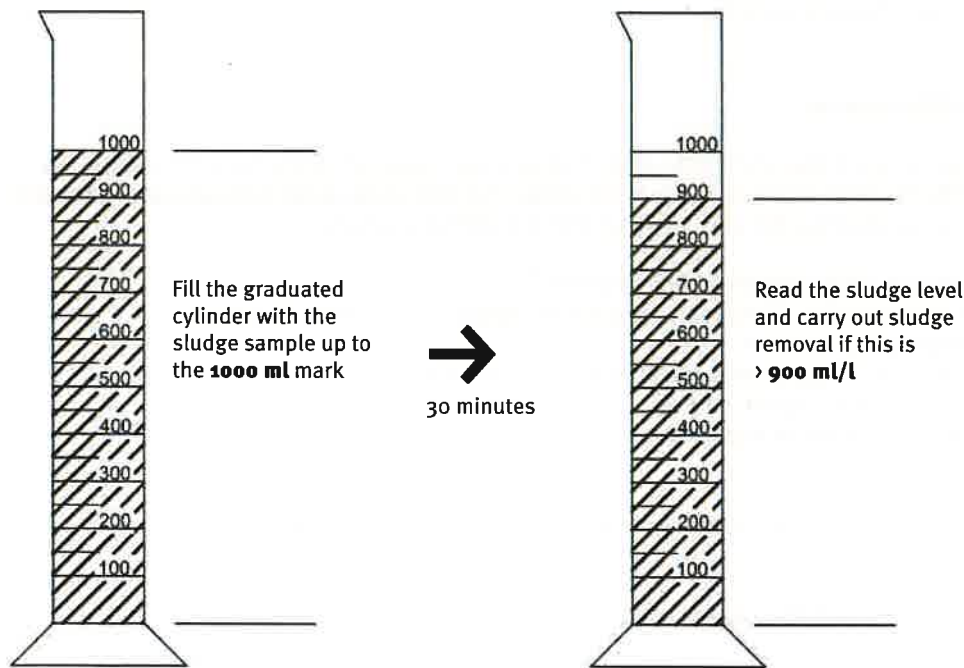
### 5.3 Determination of Sludge Removal

In order to determine the need for sludge removal in the wastewater treatment system, a settling test should be carried out at maintenance intervals. For this settling test, the SV<sub>30</sub> is measured. The SV<sub>30</sub> is the sludge volume occupied by 1000 ml of activated sludge after a settling period of 30 minutes. It is a measure of the amount of sludge present in the wastewater treatment system.

Measurement of the SV<sub>30</sub> is carried out in a 1000 ml graduated cylinder.

The following points must be observed during this measurement:

- A. Turn ventilation on - if not active - and allow to mix for a short time
- B. Submerge the scoop into the tank and remove sludge sample
- C. Fill the graduated cylinder with the sludge sample up to the 1000 ml mark
- D. Let the cylinder containing the sample stand in a place free from vibrations for 30 minutes
- E. Read the sludge level and carry out sludge removal if this is > 900 ml/l
- F. After emptying the tank have to be filled up with fresh water again



### 5.4 Sludge Removal

Removing sludge from the wastewater treatment system should be carried out according to the following points:

- G. Remove the cover
- H. Remove the deposits on the water surface and on all visible surfaces (baffle, sample container, siphon)
- I. Wash down the visible surfaces
- J. Insert the suction hose into the wastewater treatment tank until it reaches the floor  
**(CAUTION: air admittance valves on the ground must not be damaged!)**
- K. Aspirate until about 30 cm of wastewater and sludge remain in the wastewater treatment system

## 6

## FAULT MESSAGES AND TROUBLESHOOTING

Technical problems of system operation (failure of a unit) are visually displayed.

### 6.1 System Behaviour after switching off the Power Supply

If the system is disconnected from the mains (e.g. power failure), the control program and the counted operating hours are retained due to the memory of the control system. The red LED will light up. When the system is supplied with power again, it will self-start.

**NOTE:** If the system is disconnected from the mains for more than 24 hours, cleaning of the existing wastewater is not or is only possible to a very limited extent.

### 6.2 Fault Message in the Display

Faults are shown as text or as numbered codes on the liquid crystal display. The operating control lamp then lights up red.

The numbered fault codes are explained below:

- A. Power failure (system is de-energised)
- B. Power returned (system is supplied with power again)
- C. Compressor has overcurrent
- D. Compressor power supply too low
- E. Manual operation

The displays no. 2 (power returned) and no. 5 (manual mode) are not faults in the proper sense. These are only registered as fault messages for better time limitations of any faults that occur and for monitoring manual activities on the control system.

Table 2: **Fault Causes and Troubleshooting**

| Display                               | Possible cause                                                                                                                                       | Remedy                                                                                                                                                                                                                                          |
|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mains failure<br>No display, no light | <ul style="list-style-type: none"> <li>• Power failure</li> <li>• System turned off</li> <li>• There is no voltage at the control cabinet</li> </ul> | <ul style="list-style-type: none"> <li>• Check the power supply to the system and to the control system</li> <li>• Turn system back on</li> <li>• Check supply to the control cabinet</li> <li>• Wait for resumption of power supply</li> </ul> |
| No display, light is green            |                                                                                                                                                      | <ul style="list-style-type: none"> <li>• Turn system off and back on again after 10 seconds</li> </ul>                                                                                                                                          |
| Mains returned                        | <ul style="list-style-type: none"> <li>• Power available again</li> </ul>                                                                            |                                                                                                                                                                                                                                                 |
| Set the clock                         | <ul style="list-style-type: none"> <li>• Internal clock/date not set</li> </ul>                                                                      | <ul style="list-style-type: none"> <li>• Set date and time via menu item</li> </ul>                                                                                                                                                             |
| Compressor<br>**overcurrent**         | <ul style="list-style-type: none"> <li>• Short-circuit</li> </ul>                                                                                    | <ul style="list-style-type: none"> <li>• Check supply to the control cabinet</li> </ul>                                                                                                                                                         |
| Compressor **current too low**        | <ul style="list-style-type: none"> <li>• Compressor does not work / is not receiving power</li> </ul>                                                | <ul style="list-style-type: none"> <li>• Check the compressor in manual mode</li> </ul>                                                                                                                                                         |
| Manual operation                      | <ul style="list-style-type: none"> <li>• System was activated manually in manual mode</li> </ul>                                                     |                                                                                                                                                                                                                                                 |

## 6

## FAULT MESSAGES AND TROUBLESHOOTING

## 6.3 Unusual Water Levels - Fixing a Fault

| Observation                                                   | Possible cause                                                                                                                                                                                                                                                                                                                                                                                                                              | Remedy                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The water level in the activation tank is unusually high      | <ul style="list-style-type: none"> <li>• System is running in holiday mode</li> <li>• System runs continually in cycle pause</li> <li>• Control system settings are incorrect</li> <li>• The drain siphon is clogged</li> <li>• The air hose to the drain siphon is leaking</li> <li>• System has been flooded from external water source and not allowing water to drain from the system</li> <li>• Control system is defective</li> </ul> | <ul style="list-style-type: none"> <li>• End holiday mode</li> <li>• Have the control system settings checked by the maintenance technician</li> <li>• Allow tank to be pumped out and clean siphons</li> <li>• Seal hose connections</li> <li>• <b>Wait out flooding</b></li> <li>• Get in touch with maintenance company</li> </ul> |
| The system smells, the treated water is cloudy or discoloured | <ul style="list-style-type: none"> <li>• Too little air is entering the system</li> <li>• Single-sided ventilation due to defective air admittance valves</li> </ul>                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• Have service company increase ventilation time</li> <li>• Check the ventilation, get in touch with maintenance company</li> </ul>                                                                                                                                                            |
| Ventilation is onesided or large air bubbles appear at points | <ul style="list-style-type: none"> <li>• Membrane unit is defective</li> <li>• Seal leaky air admittance valves</li> </ul>                                                                                                                                                                                                                                                                                                                  | <ul style="list-style-type: none"> <li>• Get in touch with maintenance company</li> <li>• Get in touch with maintenance company</li> </ul>                                                                                                                                                                                            |

Essentially, the system should only be supplied with materials that correspond to domestic wastewater in their characteristics.

**Biocides, materials with a toxic effect or materials that are not biologically compatible or degradable must not enter the system, as these lead to biological process problems. The following, in particular, should not be introduced into the system:**

- Rainwater from roofs and courtyards,
- Extraneous water (e.g. drain water)
- Residues from livestock in solid or liquid form,
- Industrial or agricultural wastewater, as far as it is not comparable to domestic wastewater,
- Chemicals, pharmaceuticals, mineral oils, solvents,
- Cooling water,
- **Coarse materials in the form of food scraps, plastics and hygiene products, face wipes, coffee filter papers, bottle caps and other household items,**
- Milk and dairy products
- Drain water from swimming pools,
- Large amounts of blood.

In the case of large amounts of fats or vegetable oils, it is recommended that the fatty wastewater is pretreated in one of the grease traps upstream of the wastewater treatment system (Caution: No faeces may be introduced into the grease trap!).

The following is a list of individual substances which must not be disposed of via the wastewater treatment system:

| Solid or liquid substances that do not belong in the sink or in the toilet:      | What it does:                                                                | Where it should go:          |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------|
| Ash                                                                              | Does not decompose                                                           | Dustbin                      |
| Chemicals                                                                        | Contaminates wastewater                                                      | District collection point    |
| Disinfectants                                                                    | Kills bacteria                                                               | Do not use                   |
| Paints                                                                           | Contaminates wastewater                                                      | District collection point    |
| Frying fat                                                                       | Accumulates in pipes and leads to blockages                                  | Dustbin                      |
| Adhesive plasters                                                                | Clogs pipes                                                                  | Dustbin                      |
| Cigarette ends                                                                   | Accumulates in the system                                                    | Dustbin                      |
| Condoms                                                                          | Causes blockages                                                             | Dustbin                      |
| Corks                                                                            | Accumulates in the system                                                    | Dustbin                      |
| Medication                                                                       | Contaminates wastewater                                                      | Pharmacy                     |
| Engine oil                                                                       | Contaminates wastewater                                                      | District collection point    |
| Oily waste                                                                       | Contaminates wastewater                                                      | District collection point    |
| Plant protection products                                                        | Contaminates wastewater                                                      | District collection point    |
| Paintbrush cleaner                                                               | Contaminates wastewater                                                      | District collection point    |
| Cleaning agents, except those which are chlorine-free (environmentally friendly) | Contaminates wastewater, corrodes pipes and seals                            | District collection point    |
| Razorblades                                                                      | Causes risk of injury for workers in sewers and wastewater treatment systems | Dustbin                      |
| Drain cleaner                                                                    | Corrodes pipes and seals, contaminates wastewater                            | District collection point    |
| Pesticides                                                                       | Contaminates wastewater                                                      | District collection point    |
| Panty liners/Sanitary towels                                                     | Leads to blockages, non-degradable plastic film spoil water                  | Dustbin                      |
| Cooking oil                                                                      | Leads to deposits and pipe blockages                                         | District collection point    |
| Food leftovers                                                                   | Leads to blockages, attracts rats                                            | Dustbin                      |
| Wallpaper paste                                                                  | Leads to blockages                                                           | District collection point    |
| Textiles (eg. nylon tights, cloths, handkerchiefs, etc.)                         | Clogs pipelines, can cripple a pumping station                               | Charity shop                 |
| Thinner                                                                          | Contaminates wastewater                                                      | District collection point    |
| Bird sand, cat litter                                                            | Leads to deposits and pipe blockages                                         | Dustbin                      |
| Cotton buds/Face wipes                                                           | Clogs the system                                                             | Dustbin                      |
| Toilet blocks                                                                    | Contaminates wastewater                                                      | Do not use                   |
| Nappies                                                                          | Clog pipes                                                                   | Dustbin                      |
| Cement water                                                                     | Creates deposits, becomes concrete                                           | Send to a specialist company |

Manufacturer: Otto Graf GmbH  
Carl-Zeiss-Straße 2-6  
D-79331 Teningen

hereby declares that the product **one2clean** small sewage treatment system complies with the following Directives:

**2006/42/EC** Directive of the European Parliament and of the Council, dated 17 May 2006, on machinery, and amending Directive 95/16/EC.

**2006/95/EC** "Directive of the Council relating to electrical equipment designed for use within certain voltage limits"

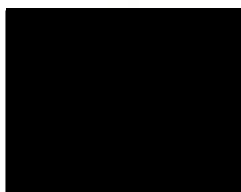
The following harmonised standards have been applied:

**EN 60204-1** Electrical equipment of machines Part 1: General requirements

**EN ISO 13849-1** Safety of machines - Safety-related parts of control systems - Part 1: General principles for design

This EC declaration of conformity becomes invalid if the product is modified without consent.

Teningen, 22.02.14



Arne Schröder  
(Product Management Team Leader)

# Declaration of performance one2clean

Nr. 008/Translation



|                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Unique identification code of the product-type                                                                                                                                                                                                                                                                                             | EN 12566-3: Small wastewater treatment system                                                                                                                   |
| 2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4)                                                                                                                                                                                                | one2clean 3-18 Inhabitants<br>Type size and serial number on control cabinet type plate                                                                         |
| 3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer                                                                                                                                                                                    | Cleaning domestic wastewater in a volume of up to 150 l per inhabitant and day with a maximum pollution load of 0.06 kg/BOD <sub>5</sub> per inhabitant and day |
| 4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5)                                                                                                                                                                                                         | Otto Graf GmbH Kunststoffherzeugnisse<br>Carl-Zeiss-Str. 2-6<br>79331 Teningen<br>Germany                                                                       |
| 5. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V                                                                                                                                                                                                             | System 3                                                                                                                                                        |
| 6. The notifying authority PIA (Prüfinstitut für Abwassertechnik GmbH) - NB 1739 - tested the cleaning performance of the wastewater treatment system. The Carat tank were tested for stability, leaks, durability and fire behaviour, see number 7. The fire behaviour of the Carat XL tank was tested by the Hoch test institute - NB 1508. |                                                                                                                                                                 |

## 7. Declared performance

|                             | Performance                                                                                                                                               | Test report No.           |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| <b>Treatment efficiency</b> | CSB: 96,2 % 26 mg/l<br>BSB <sub>5</sub> : 98,6 % 5 mg/l<br>NH <sub>4</sub> -N: 99,0 % 0,4 mg/l<br>N <sub>ges</sub> : 79,1 % 13 mg/l<br>AFS: 98,6 % 6 mg/l | PIA2013-181B14            |
| <b>Watertightness</b>       | Passed                                                                                                                                                    | PIA2008-WD-AT0805-1027b   |
| <b>Crushing resistance</b>  | Passed                                                                                                                                                    | PIA2008-ST-AT0804-1019    |
| <b>Durability</b>           | Passed                                                                                                                                                    | PIA2008-ST-AT0710-1020+DH |
| <b>Reaction to fire</b>     | Class E                                                                                                                                                   | PIA2013-FR-1306-1039      |

8. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:



i.V. Arne Schröder  
Team leader, product management

Teningen, 22.01.2014

- Programmable logic microcontroller
- T<sub>3,15</sub>A fuse (internal)
- Wide-range 100-240 VAC/50-60 Hz power supply
- Real-time clock with 5 min/a deviation, battery back-up
- Logbook, non-volatile
- Cable break monitoring for compressors by measuring output currents
- Operating/error message display with LED (green/red)
- Operating temperature range: 0°C to +55°C
- Permissible temperature range outside of operation: -20°C to +85°C
- Relative humidity: 10% to 95%, no condensation
- Degree of protection IP54, front side (with properly glued front foil)
- 4-key control panel
- Display: 2 lines of 16 characters with backlighting (blue)
- Outputs:
  - 230 VAC 50Hz compressor (standard),
  - 2x 24 VDC step motors/solenoid valves for compressed air flow

# WARRANTY CERTIFICATE

Otto Graf GmbH  
Kunststofferzeugnisse



Dear Sir or Madam,

Congratulations on the purchase of a quality product from Otto Graf GmbH. Herewith we confirm a 10 years' warranty on the underground rainwater tank

**CARAT RS**



## Warranty clause

Above mentioned 10 years' warranty only refers to the underground tanks and not to individual parts or accessories, even if included in the package price.

Within the warranty period we offer free material replacement, further indemnifications are excluded. In order to grant warranty services we require correct handling, assembly and installation according to the installation manual. The warranty is only valid with the proof of purchase. Please also refer to our general business conditions.

Teningen, March 2016

Otto GRAF GmbH  
Carl-Zeiss-Str. 2-6  
79331 Teningen  
Germany  
[www.graf.info](http://www.graf.info)

# WARRANTY CERTIFICATE

Otto Graf GmbH  
Kunststofferzeugnisse



Dear Sir or Madam,

Congratulations on purchasing a quality product from Otto Graf GmbH. Herewith we confirm a

## 2-YEAR WARRANTY

on the small wastewater treatment system one2clean you have purchased.

The warranty applies to the purifying technology only. Accessories and optional add-ons are not covered by the warranty. During the warranty period, Otto Graf GmbH provides free material replacement; but services extended beyond this are not covered.

### Warranty conditions

The warranty applies under the following conditions:

- 1. The waste water treatment system must be installed and commissioned by a specialist firm.**  
Companies trained by Graf UK are recognised as Accredited Service Providers. If a recognised Accredited Service Provider signs off and services the system, 1 extra year of warranty will be added.
- 2. Maintenance must be carried out in accordance with the logbook and approved by a specialist.**  
In the case of warranty claims, all maintenance reports must be submitted on request.
- 3. Worn parts and any defects or damage resulting from improper operation of the system, maintenance not being carried out, faults caused by the customer and unauthorised changes to the system are not covered by the guarantee.**
- 4. Costs incurred by installing or replacing parts, shutting down the system etc. are not included in the warranty.**

Teningen, March 2016

Graf UK Limited  
Regen House  
Beaumont Road  
Banbury  
OX16 1RH



Lined area for notes.



RAINWATER HARVESTING



STORMWATER MANAGEMENT



WATER BUTTS & COMPOSTERS



MULTIPURPOSE CONTAINERS



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[www.grafuk.co.uk](http://www.grafuk.co.uk)

#### **SCHEDULE 4 – LANDSCAPE STRATEGY DRAWING**

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Landscape Strategy Drawing attached hereto.



Ecological Proposals

An ecological appraisal was carried out in April 2023 and recommendations were made to offset the potential impacts of the proposed development. These mitigation recommendations have been indicated within the design proposals and include:

- a) Provision of bird and bat boxes suitably located by an ecologist. Bird boxes should include House Sparrow, Swift and Nattergal.
- b) Provision of lawn habitats derived from the existing grasslands on site by use of top soil in the two areas of grassland.
- c) Provision of a mixed native species hedgerow around the boundaries of the proposed gardens, joining existing hedgerows and providing a network of linear routes through the landscape and would be a benefit to the local biodiversity.
- d) Planting of native deciduous trees and shrubs as part of garden landscaping.
- e) Provision of a permanent feature in the gardens.
- f) Provision of a permanent feature in the gardens.
- g) Removal of tipped materials from the site, particularly the grassland.
- h) Management of native species hedges for wildlife, with reduced cutting on rotation.

Biodiversity Enhancement

The creation of native species hedgerows along the boundaries of the gardens and around the wider site will deliver a valuable enhancement for the site and will provide mitigation for the loss of habitats over the site. The existing hedgerows are located along the western boundary and within the site. It is recommended that the existing hedgerows be retained and enhanced where possible. The hedgerows should be managed to provide a mix of habitats and to support the movement of mammals and insects, whilst providing an important food source for resident, migratory and overwintering birds. The following species mix provides a variety of native species that are typical of the local landscape and have been included in the hedge mix: Hawthorn, Crataegus monogyna, Blackthorn, Prunus spinosa, Rhamnus cathartica, Holly, Ilex aquifolium.

In order to create a better visual safety for the entrance drive some of the existing boundary hedge adjacent to the entrance from Winchester Road will be removed. This will be replaced by native willow (Salix) grass (known as 'Willow') which will be planted in a row along the site boundary. The hedge will be replaced by the grass created with the removal of the hedge adjacent to the proposed new native hedges.

Reptiles and amphibians: Areas of the paddock will be allowed to develop a tall grassland edge habitat to attract reptiles and amphibians. Areas of the paddock will be allowed to develop a tall grassland edge habitat to attract reptiles and amphibians. Areas of the paddock will be allowed to develop a tall grassland edge habitat to attract reptiles and amphibians.

Lighting

Fluorescent lighting to be avoided, with the saved of directional lights shining away from the eastern boundary tree line and off-site hedgerows. Low level lighting to be used in the gardens and driveways.

Boundary Treatment

Individual gardens will be enclosed where adjacent to the road and footpath with a 1.5m high simple timber post and rail fence with stock fencing. Where possible this will be set within a native hedge, with the hedge whips planted in a staggered row on either side of the fence with the aim of eventually the fence being covered by the hedge. Where not possible, the fence will be located on the outside of the hedge.

Where the hedge to Winchester Road is removed and replaced with woodland planting and a new native hedge, a 1.5m high simple timber post and rail fence with stock fencing will be indicated as above.



Mixed native hedge



Post and rail fence with hedge



Gravel system

Paving

The inner area of the driveway where it meets the carriageway will be surfaced with a permeable block paving such as Marshalls Tegula or stone cobble blocks. This will be laid on a permeable hardcore base to minimise water runoff into the highway.

The inner area of the driveway will be paved with a retained gravel system such as Calveys Gopla or similar, where the gravel is retained in a cellular product to minimise gravel movement and to create a surface suitable to take vehicular loading. Where vehicular loading is not expected the surface may be loose gravel.



Gravel system



Proposed native hedge with post and rail fence



Proposed native hedge



Existing Tree to be retained



Amenity lawn



Proposed native hedges to be removed to improve sightlines



Proposed native hedges to be removed once adjacent to the new native hedge has matured



Woodland planting



Wildflower meadow planting



Proposed native willow and ground cover planting below 500mm high within sightlines from entrance



Natural pond within gardens



Proposed post and rail fence



Proposed native hedges planted as standards or larger within paddock or garden as specimens



|                                           |                    |
|-------------------------------------------|--------------------|
| 0174 222 0754 1153<br>www.landscape.co.uk |                    |
| Client                                    | Old Oak Farm       |
| Project                                   | H. Pinner          |
| Date                                      | 04.05.2023         |
| Scale                                     | 1:300@A1           |
| Title                                     | Landscape Strategy |
| Ref                                       | L1791B01           |





