

Dated

14th October

2025

Broadland District Council

-and-



-and-

Newbury Building Society

**DEED OF PLANNING OBLIGATION
UNDER SECTION 106
OF THE TOWN AND COUNTRY PLANNING
ACT 1990**

relating to land at
Winston House, Felthorpe Road, Attlebridge, Norfolk, NR9 5TF

nplaw
Public Sector Legal Expertise

THIS DEED is dated

day of

2025

PARTIES:

- (1) **BROADLAND DISTRICT COUNCIL** of The Horizon Centre, Peachman Way, Broadland Business Park, Norwich NR7 0WF (referred to as the "Council")
- (2) [REDACTED] of Winston House, Felthorpe Road, Attlebridge, Norwich, NR9 5TF (referred to as the "Owner")
- (3) **NEWBURY BUILDING SOCIETY** (FCA. No. 206077) of 90 Bartholomew Street, Newbury, Berkshire, RG14 5EE (referred to as the "Mortgagee")

together referred to as 'the Parties'

INTRODUCTION

- (A) The Council is a local planning authority for the purposes of this deed for the area within which the Site is located.
- (B) The Owner has made an application for the Approval and the Council has resolved to grant the Approval provided the Parties enter into this Deed.
- (C) The Owner owns the freehold of the Site which is registered at HM Land Registry under title number NK378737 and held free from encumbrances other than the matters referred to below.
- (D) The Mortgagee has a charge over the Site.
- (E) The Owner and the Mortgagee have entered into a Unilateral Undertaking with the Council dated 14/10/2025 ("the UU"). The UU secures the Green Infrastructure Contribution and the Recreational impact Avoidance and Mitigation Contribution required as a result of the Development.

1. DEFINITIONS

In this Deed the following expressions have the following meanings:

Act

The Town and Country Planning Act 1990 as amended

Approval	The prior approval to be granted by the Council in connection with a proposed change of use and associated building works of an agricultural building to a dwellinghouse (QA and QB) under Class Q with reference 2024/2077 and in accordance with paragraph W of Schedule 2 Part 3 of the GPDO
Catchment Area	Means the catchment area of the River Yare, within The Protected Site
Class Q	Means the permitted development right in Class Q of Schedule 2 Part 3 of the GPDO
Commencement	The date on which a material operation as defined in section 56(4) of the Act is first carried out, except (for the purposes of this Deed only) operations consisting of: • site clearance • demolition • archaeological investigations • ground surveys • removal of contamination or other adverse ground conditions • erection of temporary fences • temporary display of site notices and/or advertisements and 'Commence' and 'Commenced' will be construed accordingly
Completion Notice	Means the notice submitted to the Council confirming that the Property PTP has been installed and is operational, such notice to include a copy of the building control certificate which approves the

installation of the Property PTP

Development The Development of the Site in accordance with the Approval and Class Q

Dwelling the dwelling to be built on the Site as part of the Development

GPDO Means the Town and Country Planning (General Permitted Development) (England) Order 2015/596

Maintenance and means the report to be prepared by the Owner
Monitoring Report which has been submitted to and approved by the Council to secure the details of the measures required for maintaining and monitoring the Property PTP until the expiry of the Management Period

Management Period A period of 90 years from the date of first Occupation of the Dwelling

Monitoring Fee The sum of £4,500 towards the Council's costs of monitoring compliance with the Owner's obligations in this Deed

Nitrogen Mitigation measures to reduce the discharge of nitrogen to the Catchment Area to mitigate the effects of increased nitrogen levels in the Protected Site caused by the Development in line with Natural England requirements at date of this Deed

Nutrient Assessment means the report dated ^{20 January 2025} ~~26 February 2024~~ appended to this Deed at Appendix 2 which contains the assessment methodology and location for the

HP LLP

Property PTP and the calculation of the volume of Nitrogen Mitigation and Phosphorus Mitigation provided by the installation of the Property PTP and which may be revised from time to time subject to the Council's approval

Nominated Officer

The senior officer of the Council responsible for development management or other officer of the Council notified to the Owner

Occupation

Occupation of the Site, or any part of it, for any purpose authorised by Class Q and the Approval, but excluding occupation for the purposes of:

- construction
- internal and external refurbishment
- decoration
- fitting-out
- marketing

and 'Occupy' and 'Occupied' will be construed accordingly

Phosphorus Mitigation

Measures to reduce the discharge of phosphorus to the Catchment Area to mitigate the effects of increased phosphorus levels in the Protected Site caused in line with Natural England requirements at the date of this Deed

Plan
PTP

The plan appended to this Deed at Appendix 1
Means package treatment plant

Property PTP

A treatment plant of the model and specification set out within the approved Nutrient Assessment Report and the Property PTP Specification to be installed on

the Site in accordance with the Nutrient Assessment Report unless otherwise agreed in writing by the Council

Property Specification	PTP	The detailed specification for the decommissioning and remaining in situ of the existing septic tank and the installation and management of the Property PTP to be agreed with the Council together with any revisions to the specification as may be agreed in writing between the Council and the Owner
Protected Site		Means the Broads SAC/Broadland Ramsar Site
Service Engineer		a person who is suitably qualified and approved by the manufacturer of the PTP for the purposes of fulfilling the management and maintenance of the PTP in accordance with the manufacturer's requirements
Site		The land known as Winston House, Felthorpe Road, Attlebridge, Norwich NR9 5TF and registered at HM Land Registry under title number NK378737 shown edged red on the Plan
Trigger		The Commencement date and any trigger or threshold in this Deed linked to the taking of specified steps, payment of money, or linked to the prohibition of a specified action
Working Day		Any day which is not a Saturday, a Sunday, a bank holiday or a public holiday in England

2. LEGAL BASIS

- 2.1. This Deed is made pursuant to section 106 of the Act and, to the extent that it does not contain planning obligations, under section 111 of the Local Government Act 1972, section 1 of the Localism Act 2011, section 93 of the Local Government Act 2003, and any and all other enabling powers.
- 2.2. The covenants and obligations contained in this Deed create planning obligations for the purposes of section 106 of the Act enforceable by the Council and relate to the Site and to the extent that any provision is not capable of being made pursuant to section 106 of the Act it is made pursuant to section 111 of the Local Government Act 1972, section 1 of the Localism Act 2011, section 93 of the Local Government Act 2003 and any and all other enabling powers.
- 2.3. Covenants given by more than one party can be enforced against them individually or jointly.
- 2.4. A reference to an act of Parliament includes any later modification or re-enactment, including any statutory instruments made under that act, and reference to a gender or person includes all genders or classes of person.
- 2.5. Any covenant in this Deed not to do something includes an obligation not to allow or permit it to be done.
- 2.6. References to any party to this Deed shall include successors in title to that party and to any person deriving title through or under that party and in the case of the Council the successors to their respective statutory functions.
- 2.7. For a period of 90 (ninety) years from the date that the Property PTP is first installed pursuant to the obligations in Part 2 of Schedule 1 of this Deed or until such time as the Council has confirmed in writing that the obligations in the Schedule have otherwise been discharged or are no longer applicable representatives of the Council may enter the Site at any reasonable time and on reasonable notice to the Owner to ascertain whether the terms of this Deed are being or have been complied with provided that:
 - 2.7.1. they do not enter any individual Dwelling; and
 - 2.7.2. they adhere to all reasonable health and safety requirements.

2.8. This Deed is conditional upon:

2.8.1. The grant of the Approval; and

2.8.2. The Commencement of Development,

save for the provisions of this clause and clauses 4.4 and 4.10 which shall come into effect immediately on completion of this Deed and any obligation contained in this Deed which must be performed prior to Commencement of the Development which shall come into effect immediately on the grant of the Approval.

3. COVENANTS

3.1. The Owner covenants with the Council for himself and his successors in title to observe and perform the obligations and stipulations contained in this Deed.

3.2. The Council covenant with the Owner to comply with its respective requirements contained in this Deed.

4. OTHER PROVISIONS

4.1. No person will be liable for any breach of this Deed if he no longer has an interest in the Site (unless the breach occurred before he disposed of his interest).

4.2. The Owner confirms that he is the owner of the Site with full power to enter into this Deed and that there is no person or body (other than the Mortgagee) with an interest in the Site whose consent is necessary to make this Deed binding on all interests in the Site.

4.3. The covenants, restrictions and requirements contained in this Deed shall not be enforceable against:

4.3.1. any statutory undertaker or other person who acquires any part of the Site or an interest in it for the purposes of the supply of electricity gas

water telecommunications or highways in connection with the Development of the Site;

- 4.3.2. any mortgagee or chargee of the whole or any part of the Owner's interest in the Site unless such mortgagee or chargee takes possession of the Site or part thereof in which case pursuant to Clause 3.1 it will be bound by the obligations as a person deriving title from the Owner.
- 4.4. On completion the Owner will pay the Council's reasonable legal costs in connection with this Deed.
- 4.5. If any payment due to the Council is paid late interest will be added from the date payment is due to the date of payment at the rate of 4% above the base lending rate of the Bank of England from time to time.
- 4.6. All payments under this Deed are exclusive of value added tax (VAT) and any VAT due must also be paid
- 4.7. No provisions of this Deed shall be enforceable under the Contracts (Rights of Third Parties) Act 1999.
- 4.8. If any provision of this Deed is held to be invalid, illegal or unenforceable it will not affect the remaining provisions.
- 4.9. No waiver, express or implied, by the Council of any breach or failure to perform or observe any of the covenants, terms or conditions of this Deed constitutes a continuing waiver, nor prevents the Council from enforcing any of the provisions in this Deed.
- 4.10. If the Approval is quashed revoked or the time limit to complete the Development under Class Q in accordance with the Approval expires then, save for clause 4.4, this Deed will cease to have effect (insofar only as it has not already been complied with).
- 4.11. Subject to clause 4.12, nothing in this Deed prohibits or limits the right to develop any part of the Site in accordance with a planning permission (other than the permission granted by Class Q and the Approval) granted after the

date of this Deed.

- 4.12. If the Approval is subject to an application under Section 73 of the Act for the removal or amendment of any condition attached to the Approval then the obligations in this Deed shall also apply to the new planning permission resulting from such application if so agreed by the Council (acting in its absolute discretion).
- 4.13. This Deed is registrable as a local land charge by the Council.
- 4.14. Following the performance and satisfaction of all the obligations contained in this Deed the Council will, upon the written request of the Owner, cancel all relevant entries contained in the Register of Local Land Charges.
- 4.15. An agreement, approval, consent or expression of satisfaction required by the Owner from the Council under the terms of this deed must be given in writing and shall not be unreasonably withheld or delayed.
- 4.16. The provisions of this Deed (other than this clause which takes immediate effect) will be of no effect until this Deed has been dated.
- 4.17. Nothing contained or implied in this Deed will fetter, prejudice or affect the rights, discretions, powers, duties and obligations of the Council in the exercise of any of its functions as local authority.

5. DISPUTES

- 5.1. If any dispute is not resolved between the Parties, any of the Parties may refer it for determination by an expert. The expert will be appointed by agreement between the parties or, in default of agreement, by the President for the time being of the Royal Institution of Chartered Surveyors and the expert's decision shall be final and binding.
- 5.2. The expert is to be replaced by a fresh appointee in the event that they become at any time unable or unwilling for any reason to proceed to discharge their

functions. The fresh appointee is to be appointed in the manner prescribed in this clause.

- 5.3. The expert is to make their decision within 6 weeks of being appointed.
- 5.4. The costs of appointing the expert are to be shared equally by the parties to the dispute except where the expert takes the view that one party has acted unreasonably. In that case the expert has binding discretion as to apportionment of the costs.
- 5.5. Nothing in this clause will apply to the recovery of liquidated sums or prevent the parties from commencing or continuing court proceedings.

6. NOTIFICATIONS

- 6.1. Any notice or written communication given under this Deed is validly given if hand delivered or sent by recorded delivery post to the address set out at the beginning of this Deed, unless written notification of another address has been received.
- 6.2. The Owner will notify the Nominated Officer in writing of the relevant
 - 6.2.1. anticipated Triggers seven days in advance of each anticipated date,
 - 6.2.2. actual Triggers within seven days of each actual date.
- 6.3. If the Owner disposes of his interest in all or part of the Site he will notify the Nominated Officer within 7 days of the name and address of the new owner and sufficient details to identify the Site or part of the Site AND FOR THE AVOIDANCE OF DOUBT this Clause 6.3 shall not apply to any disposals of all or part of the Site to a statutory undertaker.

7. MORTGAGEE CONSENT

The Mortgagee consents to this Deed so that its interest in the Site is bound by the obligations contained in this Deed and agrees that its security over the Site takes effect subject to the provisions of this Deed PROVIDED THAT the Mortgagee is not required

to observe or perform the obligations in this Deed unless it takes possession of the Site (for the avoidance of doubt any person acquiring title to all or part of the Site as a result of the Mortgagee enforcing its security will be bound by the terms of this Deed).

8. JURISDICTION

This Deed is governed by and interpreted in accordance with the law of England and Wales.

Appendix 2
Nutrient Assessment Report

SCHEDULE 1

Owner Covenants

Part 1

The Owner with the full intention to bind the Site hereby covenants with the Council as follows:

1. To pay the Monitoring Fee to the Council prior to the Commencement of the Development and not to Commence the Development until the Monitoring Fee has been paid to the Council
2. Not to Commence the Development until the Property PTP Specification has been approved by the Council
3. To decommission and remain in situ the existing package treatment plant from the Site and not to Occupy or allow Occupation of any Dwelling until the existing package treatment plant has been decommissioned on the Site
4. To install the Property PTP in accordance with the Property PTP Specification and not to Occupy or allow the Occupation of the Dwelling until such installation has taken place
5. To submit the Completion Notice to the Council prior to Occupation and not Occupy or allow Occupation until the Completion Notice has been submitted to and validated by the Council
6. To submit the Maintenance and Monitoring Report to the Council prior to Occupation of any Dwelling and not to Occupy the Dwelling until the Maintenance and Monitoring Report have been submitted to and approved by the Council

Part 2

The Owner with the full intention to bind the Site hereby covenants with the Council from the date of the Council's validation of the Completion Notice until the expiration of the Management Period as follows (unless otherwise agreed in writing with the Council):

1. To operate and maintain the Property PTP in accordance with the Property PTP Specification and ensure that its operation meets the level of Phosphorus Mitigation and Nitrogen Mitigation indicated in the Nutrient Assessment Report unless otherwise agreed in writing with the Council

2. Subject to paragraph 8 of this Part 2 Schedule 1, not to do anything which may cause or permit the Property PTP to function less effectively or cease functioning
3. Procure and maintain servicing to the Property PTP (at least once every twelve months or such other period as specified by the approved Maintenance and Monitoring Report) by a Service Engineer to ensure that its operation meets the level of Phosphorus Mitigation and Nitrogen Mitigation indicated in the Nutrient Assessment Report unless otherwise agreed in writing with the Council
4. Keep up-to-date records of all maintenance and monitoring undertaken to the Property PTP by the Owner and Service Engineer in accordance with the Property PTP Specification and submit any information required to be submitted to the Council in terms of on-going monitoring of the performance of the Property PTP as set out in the approved Maintenance and Monitoring Report to the Council together with any other records which may reasonably be required by the Council on an annual basis unless otherwise agreed in writing by the Council
5. Provide any other information reasonably required by the Council on request which relates to the installation, operation, management and maintenance of the Property PTP
6. If the Owner becomes aware that the Property PTP is failing to meet the level of Phosphorus Mitigation and/or Nitrogen Mitigation indicated in the Nutrient Assessment Report, the Owner shall remedy the said failure within 30 Working Days of becoming aware of such failure
7. Renew or replace the Property PTP at the end of its operational life with an alternative package treatment plan in accordance with paragraph 8 of this Part 2 Schedule 1
8. To retain the Property PTP as installed and not to replace the Property PTP with another package treatment plant or any other form of Phosphorus Mitigation or Nitrogen Mitigation unless
 - i. the Owner has submitted a plan for another package treatment plant or any other form of Phosphorus Mitigation or Nitrogen Mitigation Replacement Plan ("**Replacement Plan**") to the Council which demonstrates that any such Replacement Plan and/or its implementation shall provide at least the same amount of Phosphorus Mitigation and Nitrogen Mitigation indicated in the Nutrient Assessment Report at the Site at the date of Council's approval of the Replacement Plan; and
 - ii. the Council has approved in writing the plan for the Replacement Plan submitted by the Owner;
9. Where a plan for a Replacement Plan is approved in writing by the Council, reference in this Schedule to the Property PTP shall where appropriate if the Replacement Plan

provides for another package treatment plan be read as reference to the Replacement Plan or, where more than one plan for a Replacement Plan is approved in writing by the Council, reference in this Schedule to the Property PTP shall be read as reference to the latest Replacement Plan as approved by the Council.

Schedule 2

Council Covenants

The Council Covenants with the Owner as follows:

1. Unless stated otherwise, where the approval, satisfaction, agreement, confirmation or consent of the Council or any officer of the Council is required for any purpose under or in connection with the terms of this Deed such approval, satisfaction, agreement, confirmation or consent shall not be unreasonably withheld or delayed
2. The Council shall confirm to the Owner in writing whether or not a Maintenance and Monitoring Report submitted to the Council for approval under paragraph 6 of Part 1 of Schedule 1 is approved by the Council within 30 Working Days or receipt of such a proposed Maintenance and Monitoring Report and in the event the Council considers that a submitted Maintenance and Monitoring Report is not satisfactory the Council shall provide the Owner with written reasons for not considering a submitted Maintenance and Monitoring Report to be satisfactory
3. Following receipt of a Replacement Plan from the Owner pursuant to Paragraph 8 of Schedule 1 Part 2 of this Schedule the Council shall confirm to the Owner in writing whether or not the Replacement Plan is approved within 30 Working Days receiving the Replacement Plan from the Owner and in the event the Council does not approve the Replacement Plan the Council shall provide the Owner with written reasons for not approving the Replacement Plan.
4. The Council shall confirm to the Owner in writing whether or not a Property PTP Specification submitted to the Council for approval under paragraph 2 of Part 1 of Schedule 1 is approved by the Council within 30 Working Days or receipt of such a proposed Property PTP Specification and in the event the Council considers that a submitted Property PTP Specification is not satisfactory the Council shall provide the Owner with written reasons for not considering a submitted Property PTP Specification to be satisfactory
5. Following submission of the Completion Notice by the Owner the Council shall validate the Completion Notice within 10 Working Days of receipt.

IN WITNESS whereof the parties hereto have executed this document as a Deed on the day and year first before written.

THE COMMON SEAL OF
BROADLAND DISTRICT COUNCIL
was affixed hereto in the presence of:

)
)
)

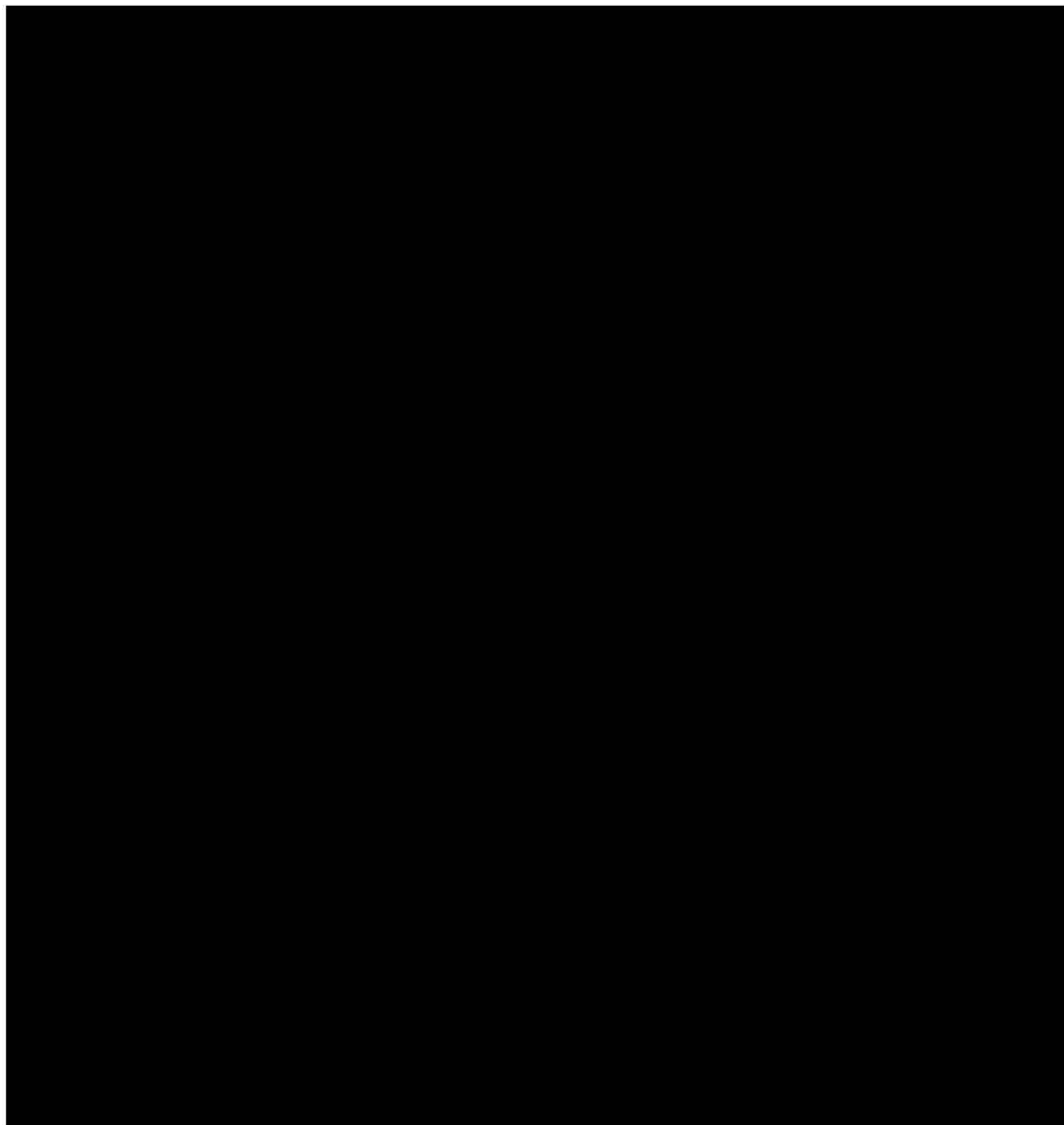


Authorised Signatory:

Deputy Monitoring Officer
Linda Mockford.

8710.

and this deed has been duly and properly executed
in accordance with the constitution of Broadland District Council



EXECUTED AS A DEED)
by affixing the common seal of)
NEWBURY BUILDING SOCIETY)
in the presence of:)

.....
By Authority of the Board of Directors



LYNN SMALL
OPERATIONS QUALITY
ASSURANCE ANALYST



CHARLOTTE COURTONAI-WRIGHT
MORTGAGE UNDERWRITING MANAGER

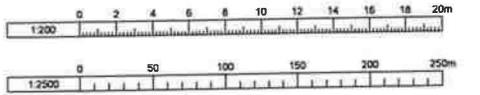
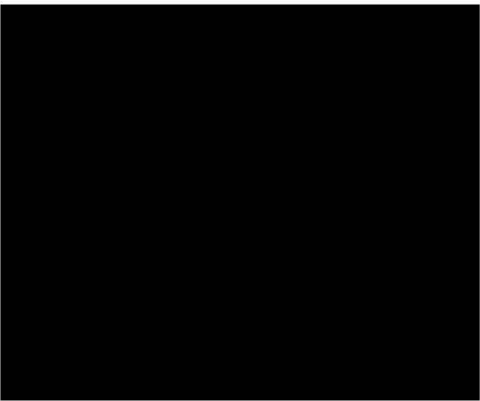
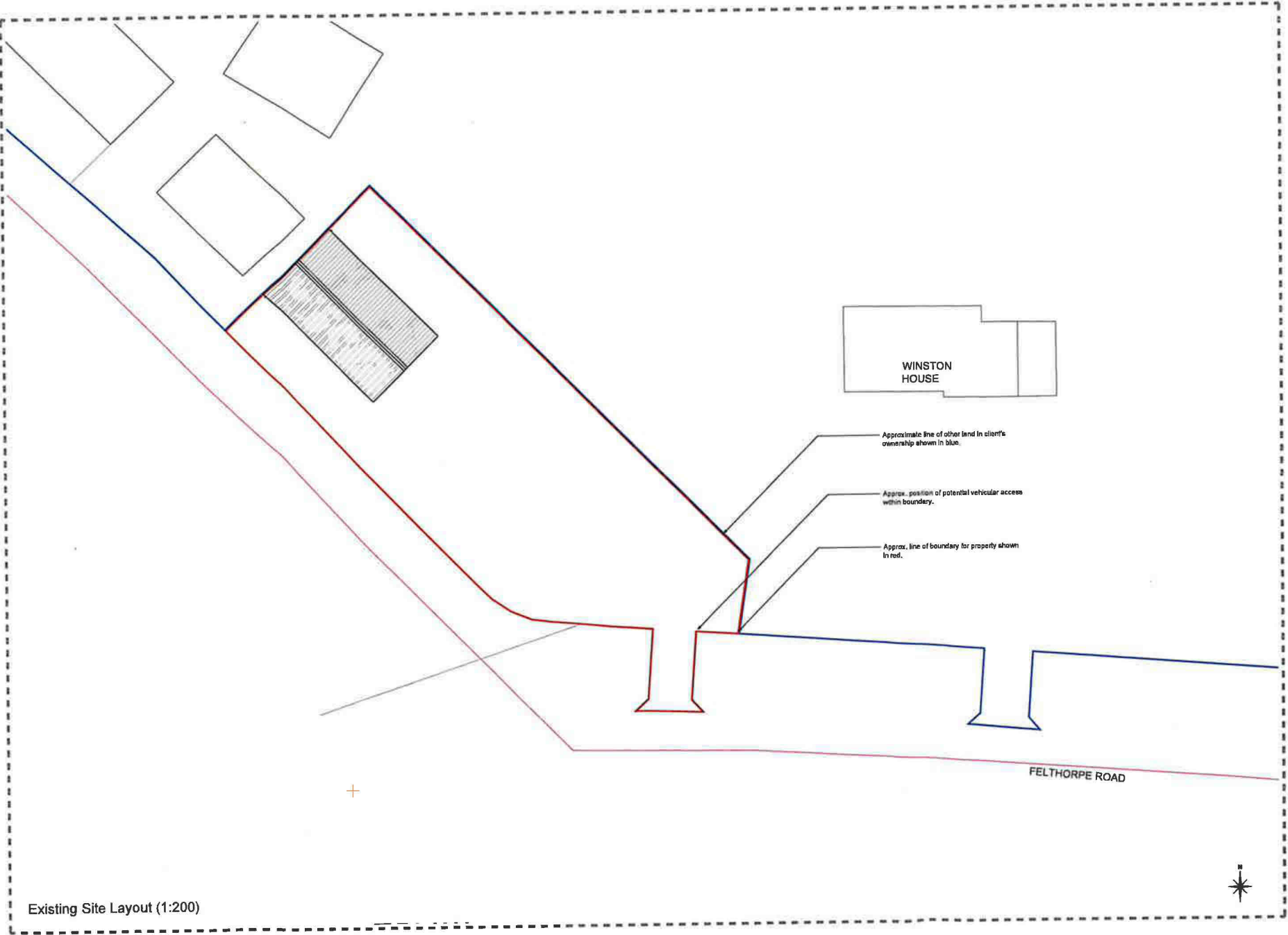
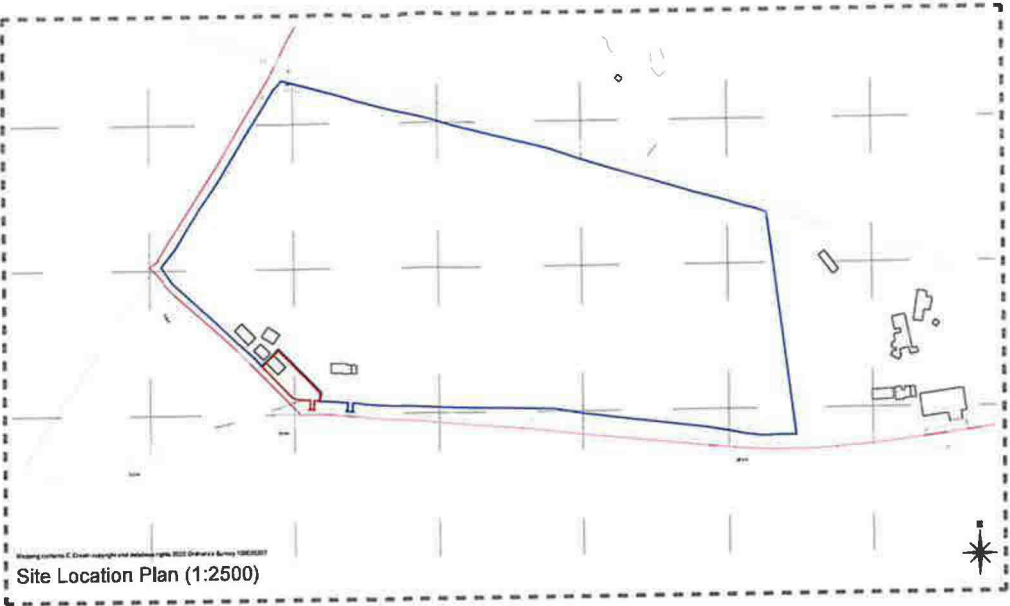
Appendix 1
Plan

Mr Charles Fisher, Winston House, Felthorpe Road, Attlebridge, Norwich, NR9 5TF

[Redacted]
LYNN SHALL
OPERATIONS QUALITY
ASSURANCE ANALYST

[Redacted]
CHARLOTTE COURTNEY-WRIGHT
MORTGAGE UNDERWRITING
MANAGER

8710
[Redacted]
Deputy Monitoring Officer
Linda Mockford



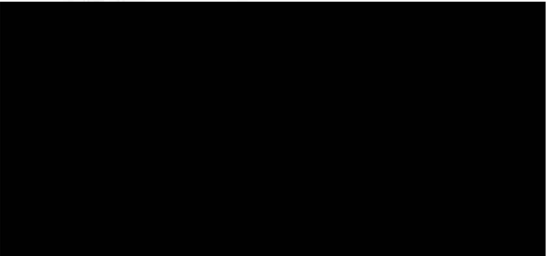
SMG ARCHITECTS



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[REDACTED]
1 Fellowes Close,
Scale,
Diss,
Norfolk,
IP21 4HE

Date 20/01/25
Reference 0361_NN_E
Recipient
[REDACTED]

Winston House, Felthorpe Road, Attlebridge

This report is intended to summarise the Nutrient Neutrality budget and mitigation options for the development of 1 residential Annexe [subject to Class Q approval] at Winston House, Felthorpe Road, Attlebridge. The arrow within Figure 1 below shows the location of Winston House.



Figure 1 - Site Location Map - 1:25,000 Scale (streetmap.co.uk)

It should be noted, the proposed development lies within a larger area of land within the client ownership as shown within Drawing SK001 in Appendix A. The area of land owned by the client is approximately 7.26ha, comprising of an existing dwelling, existing agricultural buildings / barns to the northwest of the dwelling, some areas of woodland with the majority of the land covered by general arable land.

The site is located inside the Nutrient Neutrality catchment area, of the River Wensum, as shown below in Figure 2 within data from North Norfolk District Council - Cadcorp SIS WebMap 9:

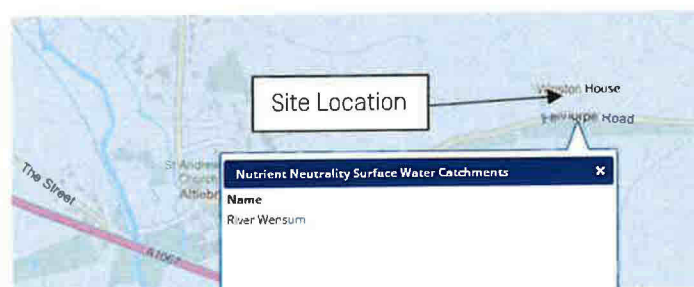


Figure 2 - River Wensum NN Catchment Map [North Norfolk District Council]

At the site, an existing house is located, with external existing agricultural building / barn areas, served by a septic tank. The development proposes to convert an existing agricultural building / barn into a one bedroom Annexe (subject to Class Q approval), using the same footprint as the current agricultural building / barn area. Figure 3 below shows the proposed layout of the Class Q site with the areas noted as Building 89.6m² and curtilage 81.8m² – these figures are used within the calculations and can also be seen on the proposed site plan in Appendix A.

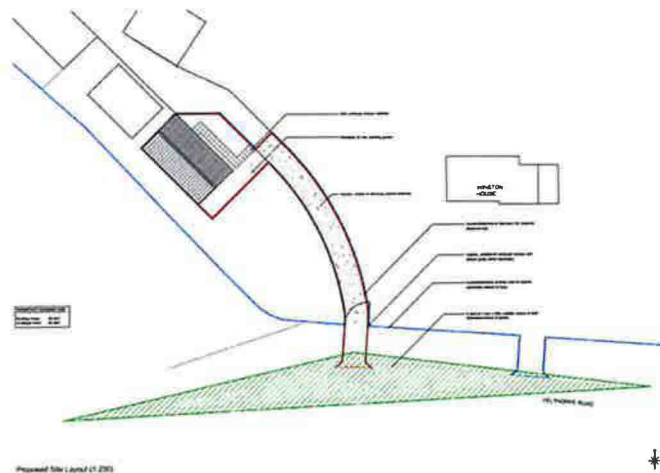


Figure 3 – Proposed Site Plan (SMG Architects)

The areas of the site are not changing from their current location and size for the upgraded PTP at Winston House. Therefore, the nutrient neutrality calculator has been run using the Norfolk Budget Calculator V2.2, Stage 1 only for the existing scenario to assess the impact of the upgraded septic tank at the site. Stages 1 – 4 have been used for the proposed development due to the change in use of the building subject to Class Q approval.

As the site is currently served by a septic tank, it is proposed the existing septic tank will be upgraded to a packaged treatment plant (PTP) to serve the existing property and the proposed Annexe (subject to Class Q approval) building. Therefore, a mains connection calculation has not been completed for the site. Figure 4 below indicates the location of the site compared to the location of the nearest foul water nutrient neutrality catchment area:

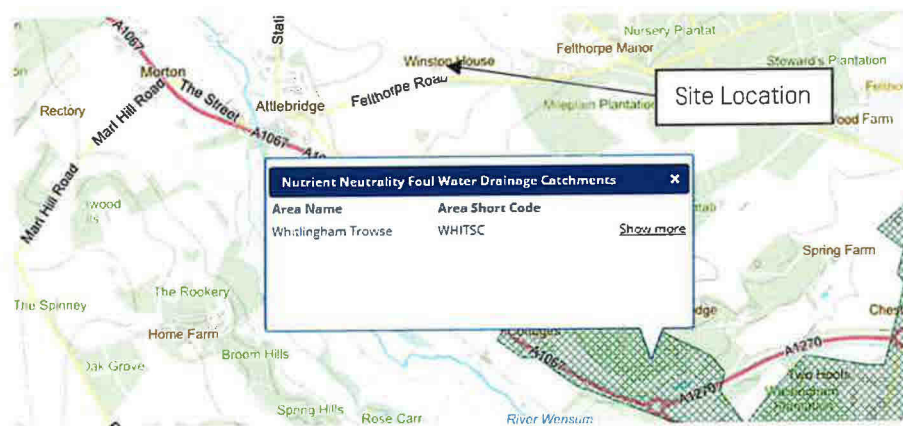


Figure 4 – Foul Water Drainage NN Catchment Map (North Norfolk District Council)

Figure 5 below shows an extract of Drawing SK001, shown in Appendix A, displaying an indicative sketch layout of the existing and proposed infrastructure across the site:



Figure 5 – An extract of Drawing SK001 (Schema Drawing)

This statement aims to provide calculations and a summary of the mitigation options available at the site and are outlined as follows:

Option 1 - Upgrading existing septic tank to a GRAF One2Clean package treatment plant (PTP)

- Step 1: Produce a calculator of the existing single dwelling on the existing septic tank.
- Step 2: Produce a calculator of the existing single dwelling on the proposed GRAF package treatment plant.
- Step 3: Manually deduct Step 1 from Step 2 to confirm the total mitigation produced by the upgrade
- Step 4: Produce a calculator of proposed Class Q Annexe development on the proposed GRAF package treatment plant.
- Step 5: Manually deduct Step 2 from Step 4 to confirm the site is nutrient neutral

Option 2 - Nutrient Neutrality Small Scale Discharge – Low Risk Zone

- Providing evidence to support the development lies within and meets the Small Scale Discharge Zone criteria.

Both options are provided as the client intends to upgrade the existing septic tank irrespective of nutrient neutrality requirements.

Option 1 - Upgrading existing septic tank to a GRAF One2Clean package treatment plant (PTP)

Step 1: Produce a calculator of the existing single dwelling on the existing septic tank.

The initial calculation is to portray the current circumstances of the Existing Septic Tank on the existing single dwelling.

Calculations have been completed using Stage 1 of the Norfolk Budget Calculator V2.2, to establish the current total phosphorus and nitrogen at the existing septic tank. For the population serving the septic tank, the following has been assumed regarding population and water usage:

Number of existing dwellings – 1

Average occupancy – 1.88

Total population – 2 people

With regards to the water usage per person, the rate of 132.2 l/person/day has been used, as per guidance from Norfolk County Council and Natural England. For the calculation, a Default single-source Septic Tank has been used with phosphorus and nitrogen discharge levels of 11.6 mg/l and 96.3 mg/l, respectively, as provided within the NN Calculator.

Overall, the existing septic tank has a total wastewater loading as shown in Table 1, and within Appendix B:

Table 1 – Existing Septic Tank Nutrient Budget Assessment

Nutrients	Current Loading of proposed development (kg/year)	Post 2030 Loading of proposed development (kg/year)
Total Phosphorus	1.05	1.05
Total Nitrogen	8.72	8.72

To be robust regarding following the Norfolk budget calculator guidelines, an additional 20% buffer should be added to the proposed nutrient budget assessment, as shown in Table 2.

Table 2 – Existing Septic Tank Nutrient Budget Assessment + 20% buffer

Nutrients	Current Loading of proposed development (kg/year)	Post 2030 Loading of proposed development (kg/year)
Total Phosphorus	1.05	1.05
20% buffer	0.21	0.21
Total Phosphorus + 20% buffer	1.26	1.26
Total Nitrogen	8.72	8.72
20% buffer	1.744	1.744
Total Nitrogen + 20% buffer	10.464	10.464

The full calculation is located within Appendix B.

Step 2: Produce a calculator of the existing single dwelling on the proposed GRAF package treatment plan

Stage 1 of the Norfolk Budget Calculator V2.2 has been repeated, investigating the impact of the existing septic tank being upgraded to a biological PTP system. For clarity, the proposed PTP system used in this calculation is a GRAF One2Clean system, with phosphorus and nitrogen discharge levels of 1.6 mg/l and 7.9 mg/l, respectively, as shown on the performance certificate in Appendix C.

For the proposed development, the following parameters have been used:

Number of existing dwellings – 1

Average occupancy – 1.88

Total population – 2 people

The calculation assumes the existing water usage remains at 132.2 l/person/day has been used, as per guidance from Norfolk County Council and Natural England, serving a population of 2 people.

Overall, the proposed PTP has a total wastewater loading as shown in Table 3 and Appendix C:

Table 3 – Existing Single Dwelling Proposed GRAF Nutrient Budget

Nutrients	Current Loading (kg/year)	Post 2030 Loading (kg/year)
Total Phosphorus	0.14	0.14
Total Nitrogen	0.72	0.72

To be robust with regards to following the Norfolk budget calculator guidelines, an additional 20% buffer should be added to the proposed nutrient budget assessment, as shown in Table 4.

Table 4 – Existing Single Dwelling Proposed GRAF Nutrient Budget + 20% buffer

Nutrients	Current Loading of proposed development (kg/year)	Post 2030 Loading of proposed development (kg/year)
Total Phosphorus	0.14	0.14
20% buffer	0.028	0.028
Total Phosphorus + 20% buffer	0.168	0.168
Total Nitrogen	0.72	0.72
20% buffer	0.144	0.144
Total Nitrogen + 20% buffer	0.864	0.864

As both the current and post 2030 figures are the same due to the addition of the proposed septic tank replacement, only the current loadings have been assessed further, as the results would be the same for both current and post 2030.

Step 3: Manually deduct Step 1 from Step 2 to confirm the total mitigation produced by the upgrade

Table 5 below shows the different nutrient loading of the existing septic tank and the proposed GRAF One2Clean package treatment plant:

Table 5 – Existing Septic Tank V Proposed GRAF Nutrient Loading

Item	P Load [mg/l]	N Load [mg/l]
Existing Standard Septic Tank [NN calculator]	11.60	96.30
GRAF One2Clean	1.60	7.90

Table 6 shows the impact of the proposed package treatment plant upgrade creating surplus TP and TN at the site.

Table 6 – Surplus from Proposed GRAF PTP Upgrade at Winston House Nutrient Budget Assessment

Item	TP Load [kg/year]	TN Load [kg/year]
Existing Septic Tank [Step 1]	1.26	10.464
Standard ST to GRAF [Step 2]	0.168	0.864
New Overall Budget for proposed site (Step 2 – Step 1)	-1.092	-9.6
Net Benefit	1.09	9.60

The overall net benefit from the upgrade is 1.09 TP kg/yr (1.26–0.168) and 9.60 TN kg/yr (10.464–0.864), which could be used to mitigate the proposed Class Q development. To accommodate the flows from the development, and to replace the system to accommodate the existing capacity with the addition of the proposed Annexe (subject to Class Q approval), a GRAF One2Clean biological treatment plant is recommended.

With this approach, the total phosphorus and nitrogen is nutrient neutral, as shown in the summary calculation in Appendix E.

Step 4: Produce a calculator of proposed Class Q Annexe development on the proposed GRAF package treatment plant.

This step of the calculation uses Stage 1 – 4 of the Norfolk Budget Calculator.

Stage 1 is completed with the following inputs:

- Number of dwellings – 1
- Average Occupancy – 1.88 (as provided within the calculator)

This generates an assumed population of 2. The water use per person is assumed as 110 l/per/day in accordance with recent Anglian Water performance figures for the last three years.

The proposed package treatment plant (PTP) is to be GRAF One2Clean system with the following phosphorus and nitrogen discharge levels:

- Phosphorus Discharge Levels – 1.60 mg/l (as provided within performance data)
- Nitrogen Discharge Levels – 7.90 mg/l (as provided within performance data)

Stage 2 is completed with the following inputs, as taken from the North Norfolk District Council Review Calculation:

- Catchment – Wensum
- Soil Drainage Type – Freely Draining
- Annual Average Rainfall – 700-750 mm/yr
- Nitrate Vulnerable Zone – Yes
- Existing land use is determined as 'Pigs' with area 0.009ha and 'General arable' with area 0.008ha. The total area for the site is 0.017ha.

Stage 3 is completed with the following inputs:

- Proposed land use is determined as 'Low Intensity Urban Land' with area 0.017ha.

Overall, the proposed PTP has a total wastewater loading as shown in Table 7 and Appendix D:

Table 7 – Proposed GRAF Annexe Nutrient Budget

Nutrients	Current Loading (kg/year)	Post Loading (kg/year)
Total Phosphorus	0.15	0.15
Total Nitrogen	-0.55	-0.55

To be robust regarding following the Norfolk budget calculator guidelines, an additional 20% buffer should be added to the proposed nutrient budget assessment, as shown in Table 8.

Table 8 – Proposed GRAF Annexe Nutrient Budget + 20% buffer

Nutrients	Current Loading of proposed development (kg/year)	Post 2030 Loading of proposed development (kg/year)
Total Phosphorus	0.15	0.15
20% buffer	0.028	0.028
Total Phosphorus + 20% buffer	0.15	0.15
Total Nitrogen	-0.55	-0.55
20% buffer	0.144	0.144
Total Nitrogen + 20% buffer	-0.55	-0.55

As both the current and post 2030 figures are the same due to the addition of the proposed septic tank replacement, only the current loadings have been assessed further, as the results would be the same for both current and post 2030.

Step 5: Manually deduct Step 2 from Step 4 to confirm the site is nutrient neutral

In terms of offset this surplus from the site, Table 9 shows the impact of the surplus generated from the proposed package treatment plant upgrade [Table 6] in comparison with the proposed Annexe development outputs:

Table 9 – Updated Proposed Annexe Development Nutrient Budget Assessment with GRAF

Item	TP Load (kg/year)	TN Load (kg/year)
Existing Septic Tank to GRAF PTP Upgrade (Step 2)	1.09	9.60
Proposed Development (Step 4)	0.15	-0.55
New Overall Budget for proposed site (Step 4 – Step 2)	-0.94	-10.15
Net Benefit	0.94	10.15

The overall net benefit from the upgrade is 0.94 TP kg/yr (0.15 – 1.09) and 10.15 TN kg/yr (-0.55-9.60), which could be used to mitigate other developments in the future within the catchment area. To accommodate the flows from the development, and to replace the system to accommodate the existing capacity with the addition of the proposed Annexe (subject to Class Q approval), a GRAF One2Clean biological treatment plant is recommended.

With this approach, the total phosphorus and nitrogen is nutrient neutral, as shown with the calculation summary in Appendix E.

Mechanisms for Delivery of the Septic Tank Replacement Scheme

A Grampian Condition is proposed for the identified septic tank upgrades whereby proposed works will be secured through a Section 106 and works undertaken and certified prior to occupation of the proposed development.

It is understood that the private homeowners will be responsible for providing the maintenance and management of the upgraded asset. In the event the property is sold the new owners will take responsibility of the maintenance and management of the asset.

Package treatment system management and monitoring plan.

The proposed management and monitoring plans for the new package treatment plants are detailed below. The management and monitoring below is applicable to the installed GRAF One2Clean system.

Management

The treatment system will be managed in accordance with the Environment Agency's "General binding rules: small sewage discharge to ground." Should this guidance be revoked or changed over the period of the system's use the management will adhere to the new guidance or regulations that replace them.

The plant will be maintained and serviced according to the manufacturer's requirements and will be replaced by one of at least the same, if not better, nutrient removal performance when it reaches end of life.

Desludging

The treatment plant will be desludged as per manufacturer's instructions. Desludging will be conducted by a registered waste carrier.

At the time of desludging, in line with the manufacturer's instructions, the package treatment plant will be inspected to ensure it is in good working order. This inspection will include, but is not limited to leaks, cracks, blockages, smells and operation of motor, pump, or other features. Inspections will be conducted by a competent person, ideally an individual or company registered on the British Water's list of accredited service engineers.

Recording

A record of all maintenance and management works will be kept by the operator of the package treatment plant (homeowner) and the local authority. Data will be supplied to the Environment Agency on request.

New Ownership

If the property is sold, the new operator (the owner or person responsible for the sewage treatment plant) will be informed in writing that a sewage discharge is in place and is related to a nutrient mitigation strategy.

The details to be passed on will include:

- A description of the treatment plant and drainage system
- The location of the main parts of the treatment plant, drainage system and discharge point.
- Details of any changes made to the treatment plant and drainage system.

- Details of how the treatment plant should be maintained and the maintenance manual, if relevant to the package treatment plant.
- The maintenance records.
- Any communication with the Local Authority relevant to the treatment system.

EA Permit Information

The mitigation elements discussed within this Statement indicate the upgrading works of an existing septic tank. As the existing septic tank is in current in use for disposing of the volume of waste to the arranged discharge location, the replacement tank would conform to the EA general binding rules for discharge.

The proposals for the development outline the existing 4 bed dwelling is being redesigned to a 3 bedroom dwelling, with the addition of one room within the proposed Annexe. The total number of rooms for the site, being served by the septic tank, will not change and therefore, it is assumed the volume of discharge from the site would remain the same.

The mitigation methods proposed are to maintain the existing discharge location and the quantity of waste entering the current discharge location, only upgrading the system itself, and an EA Permit is not required.

Option 2 - Nutrient Neutrality Small Scale Discharge – Low Risk Zone

In addition to the above assessment, it is also noted that the site lies within the nutrient neutrality small scale discharge low risk catchment area, as can be seen on Figure 6 below:

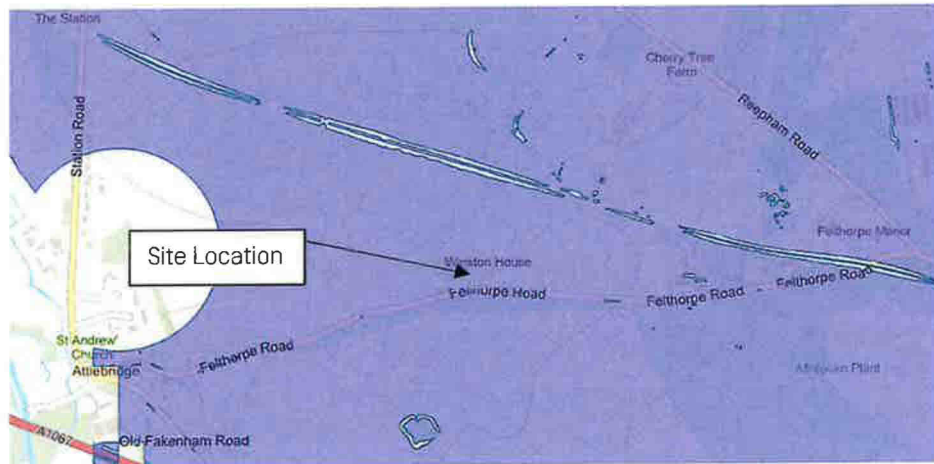


Figure 6 – Nutrient Neutrality small scale discharge low risk catchment area map [North Norfolk District Council]

In accordance with the local guidance document 'Small scale discharges of phosphorus: Low risk mapping' published December 2022, the following criteria is outlined, which is required to ensure a site can be classed as low risk, in Figure 7:

2.2 Thresholds for small scale discharges

The thresholds proposed by May et al. (2016) on the basis of the evidence presented in Section 2.1 only apply to small discharges from PTPs or STs of less than 2m³/day directly to ground. Discharges that exceed the flow rate or are direct to a watercourse would not meet the thresholds.

Small discharges will present a low risk that the phosphorus will have a significant effect on the designated site where certain conditions are met:

- a) The drainage field is more than 50m from the designated site boundary (or sensitive interest feature); and
- b) The drainage field is more than 40m from any surface water feature e.g. ditch, drain, watercourse; and
- c) The drainage field in an area with a slope no greater than 15%; and
- d) The drainage field is in an area where the high-water table groundwater depth is at least 2m below the surface at all times; and
- e) The drainage field will not be subject to significant flooding, e.g. it is not in flood zone 2 or 3; and
- f) There are no other known factors which would expedite the transport of phosphorus, for example fissured geology, insufficient soil below the drainage pipes, known sewer flooding, conditions in the soil/geology that would cause remobilisation phosphorus, presence of mineshafts, etc; and
- g) To ensure that there is no significant in combination effect, the discharge to ground should be at least 200m from any other discharge to ground; and
- h) For the proposed location of the drainage field, the percolation test has been performed with results lying within the Building Regulations (2015) required range of an average Vp value between 12 and 100.

Figure 7 – An extract from 'Small scale discharges of phosphorus: Low risk mapping' 2022

As the site is located within the low risk mapping area, it is assumed points a, b, c, d, e, and g have been achieved, in accordance with this extract from the Guidance Document, as shown in Figure 8:

A small sewage discharge low risk zone map has been created for the River Wensum SAC and The Broads SAC which are subject to nutrient neutrality guidance. The mapping defines the areas which meet the requirements of conditions a, b, c, d, e and g. Conditions f and h require site specific information and cannot be modelled via GIS.

Figure 8 – An extract from 'Small scale discharges of phosphorus: Low risk mapping' 2022 [1]

The remaining points to be examined for the site are:

- *"The thresholds proposed by May et al. (2016) on the basis of the evidence presented in Section 2.1 only apply to small discharges from PTPs or STs of less than 2m³/day directly to ground"*

Using the Tekneka Wastewater Services Daily Discharge calculator for domestic properties (<https://tekneka.co.uk/resources/daily-discharge-calculator/>), it is deemed the total site is likely to produce 1.35m³ per day of waste, in line with Nutrient Neutrality Generic Methodology. Therefore, the site can be considered within the small discharge zone.

- *"f) There are no other known factors which would expedite the transport of phosphorus, for example: fissured geology, insufficient soil below the drainage pipes, known sewer flooding, conditions in the soil / geology that would cause remobilisation phosphorus, presence of mineshafts etc."*

As the site is an existing house, with an existing functioning Septic Tank, with no records of any of the above listed information, it is deemed the site meets this criteria.

- *"h) For the proposed location of the drainage field, the percolation test has been performed with results lying within the Building Regulations (2015) required range of an average Vp value between 12 and 100. "*

The site contains an existing house, with an existing functioning Septic Tank and drainage field, as shown within Drawing SK001 in Appendix A. The proposals for the site include decommissioning the septic tank, relocating the new PTP and using the existing drainage as shown indicatively within Figure 9 below.

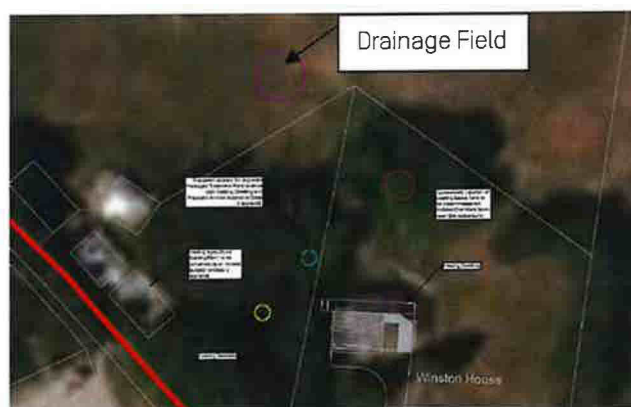


Figure 9 – An extract of Drawing SK001 of proposed drainage field [Schema Drawing]

To understand the likely ground composition across the site, online research at the site has been detailed below. Online mapping from Soilscape indicates the site lies within Soilscape 10 and is considered 'freely draining', as shown in Figure 10 below:

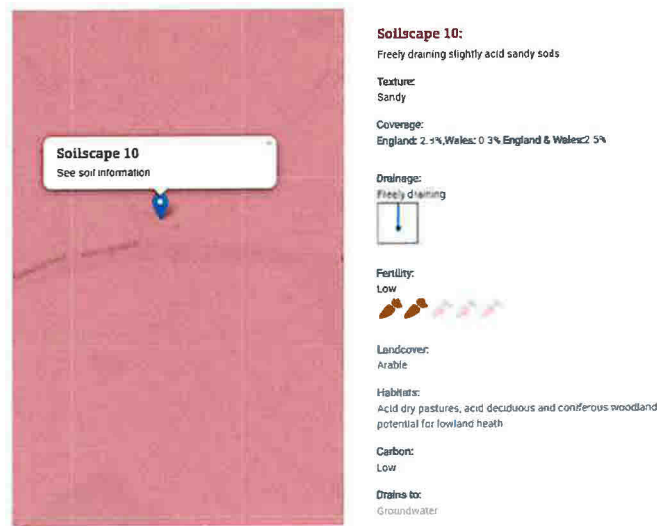


Figure 10 – Soilscape information [Soilscape]

Additionally, a borehole log record from the site, detailed on the British Geological Survey (BGS) site, has also been investigated. The location of the borehole log is shown within Figure 11 below:



Figure 11 – Historical Borehole Log Map Location [BGS]

A copy of the borehole log is located with Appendix F, with an extract noted within Figure 12 below:

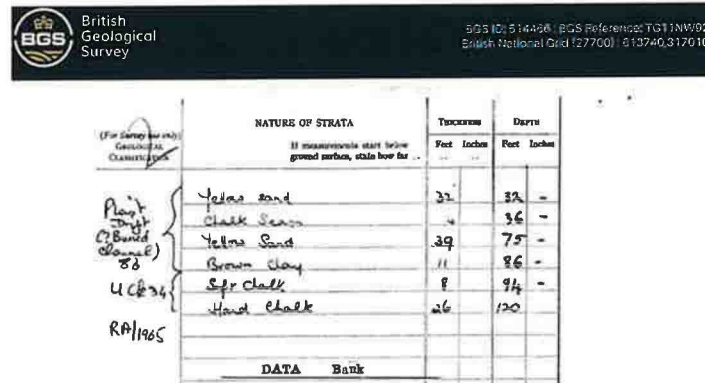


Figure 12 – Historical Borehole Log (BGS)

The historic borehole log indicates sand within the first 32ft (9.75m) below ground level, and groundwater recorded at 36ft (10.97m) below ground level at the site. It is noted this borehole record was completed in 1965; however, the results show the expected ground composition in comparison to the online Soilsmap information in Figure 10, supporting the likely 'freely draining' soil conditions at the site.

Further testing was completed by the Kellie Fisher BEng MSc MCIWEM C.WEM CEng, to the north of the site at the drainage field, showing clay and sand soil composition, in alignment with the results from the online research results above. No water was detected during the tests. The depth of the tests are 0.7m at all three Trial Pits. The percolation test results are shown below in Table 10, and in Appendix F.

Table 10 – Percolation Test Results

Test Result Names	Average Vp
TP01	46 s/mm
TP02	41.1 s/mm
TP03	42.7 s/mm

The average values above are within the Building Regulations 2015 Part H requirements between the required range of an average Vp value between 12 and 100 in accordance with the thresholds for the small scale discharge.

Conclusion

Overall, it is deemed the site achieves the criteria to be classed a small scale discharge – low risk area, however, the Nutrient Neutrality Budget Calculator also shows the site is Nutrient Neutral with the upgraded PTP. Regardless of the requirement of the Nutrient Neutrality, it is understood that the client will be upgrading the existing Septic Tank to the upgraded PTP and therefore will be providing a betterment to the existing conditions of the site.

In conclusion, two mitigation strategies have been established with this report, and are summarised in Table 11 below:

Table 11 – Mitigation Indicative Credit Summary

Mitigation Method	Remaining credits required after mitigation
Mitigation Option 1: PTP Replacement - GRAF	0
Mitigation Option 2: Low risk	N/A

Overall, the calculations presented above conclude that the proposed development can achieve phosphorus and nitrogen neutrality through septic tank upgrades within the river catchment area or may also be acceptable under the small scale discharge – low risk area. It can therefore be concluded that this proposed development will not prevent the Conservation Objectives of The Broads SAC from being achieved.

Yours sincerely,



Prepared by Lauren Gray

BSc (Hons)
Civil Engineer



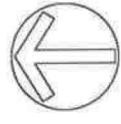
Checked by James Savage

BSc (Hons) CIHT GMICE VR
Associate

Appendix A

Existing and Proposed Site Layout January 2025

NOTES: 1. The proposed site is shown in red. 2. The proposed site is shown in red. 3. The proposed site is shown in red.	NOTES: 1. The proposed site is shown in red. 2. The proposed site is shown in red. 3. The proposed site is shown in red.	NOTES: 1. The proposed site is shown in red. 2. The proposed site is shown in red. 3. The proposed site is shown in red.
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NOTES:

1. The proposed site is shown in red.

2. The proposed site is shown in red.

3. The proposed site is shown in red.

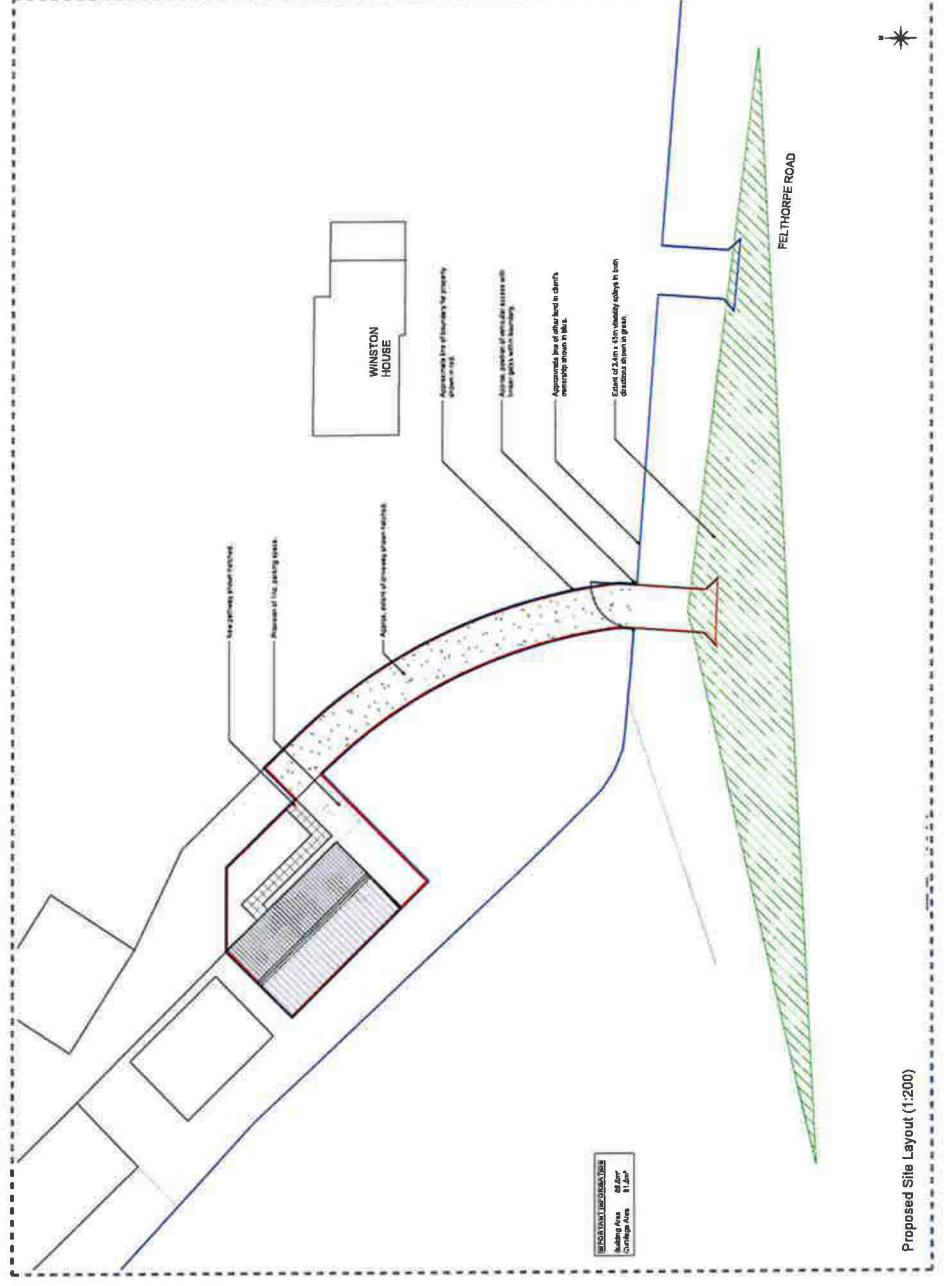
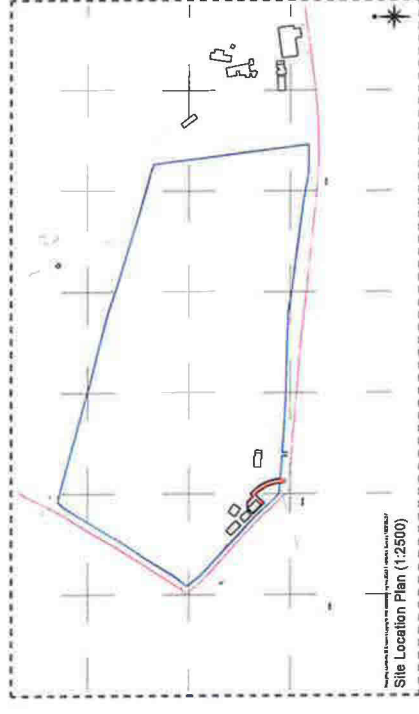
Full Extent of Client Land Demership:
Scale: 1:2500



Indicative Sketch of Existing Infrastructure and Proposed Septic Tank Location:
Scale: 1:250



Mr Charles Fisher, Winston House, Felthorpe Road, Attlebridge, Norwich, NR9 5TF



Appendix B

Existing Septic Tank Phosphate Budget Calculation

[Step 1]

January 2025

Planning Application Reference No.	
Site address:	Winston House, Felthorpe Road, Attlebridge NR9 5TF
Site proposal:	Development of 1 residential Annexe (subject to Class Q approval) at Winston House, Felthorpe Road, Attlebridge
Date:	25/11/2024 - Issued 20/01/25
Additional information:	
Step 1: Produce a calculator of the existing single dwelling on the existing septic tank.	

Stage 1				Calculate nutrient load (kg/year) derived from the development as a result of increased population			
Note: This calculation should only include the additional units resulting from the proposed development, including any development that will result in overnight accommodation, for land not currently in residential use, this will be the total units proposed by the development. However, for land already in residential use, this should only be the increase in units. The user should input the relevant number of dwellings into options a, b or c below. In the case of residential developments, only option a is required.							
1. Calculate the additional population		Value	Unit				
a	Number of dwellings proposed	1	dwellings				
	Average occupancy	1.36	persons/dwelling				
b	Number of additional rooms above 6 residents (full guests) for houses in multiple occupation	1.65	dwellings				
	Average occupancy	1.65	persons/dwelling				
c	Number of rooms in a hotel or guest house proposed	1.65	dwellings				
	Average occupancy	1.65	persons/dwelling				
d	Number of lodgings in student accommodation	1	dwellings				
	Average occupancy	1	persons/dwelling				
	Number of weeks open per year (1-52)		Weeks				
	Average occupancy rate (1-100)		%				
Total population increase generated by the development		2	Persons				
2. Wastewater volume generated		Value	Unit				
Water use per person		132	Litres/person/day				
Wastewater volume generated by the development		248	Litres/day				
Please select how the sewage from the proposed development will be handled, noting that a development must be handled by either a water recycling centre or on-site treatment plants, and cannot be handled by both. Consideration of wastewater loading is not required where a site drains to a WRC that does not drain to the River Wensum or the Broads catchments							
Is sewage to be handled by water recycling centre?				Is sewage to be handled by On-site treatment plants?			
3a. TP budget that would exit the Water Recycling Centre (WRC) after treatment				3b. TP budget for On-site treatment plants			
Note: If the sewage is to be treated by WRC then the user should select "Yes" in the list above. If package treatment plants are to be used instead, then the user should select "No" above. This is the process of collecting wastewater from houses and guiding it, via the sewage network, to a WRC (also known as sewage works). The nutrient concentration of the influent is calculated by multiplying the number of people by the expected water usage per day. The nutrient concentration within the effluent is calculated by applying the discharge level of the appropriate WRC. The nutrient loading is expressed in kg/year.				Note: If the sewage is to be treated by on-site treatment plants then the user should select "Yes" in the list above. If wastewater treatment works are to be used instead, then the user should select "No" above. On-site treatment plants are pre-manufactured treatment facilities used to treat wastewater in smaller communities or on individual properties. This concept is defined as decentralized wastewater treatment. The nutrient loading is calculated by multiplying the number of people by the expected loading per person. The nutrient loading is calculated by applying the reduction efficiency. The nutrient loading is expressed in kg/year.			
Confirm receiving WRC and discharge level		Value	Unit	Calculate nutrient load after treatment		Value	Unit
Select the WRC the development will connect to				Select the type of On-site treatment works			
Phosphorus WRC discharge level		1.57	mg/l	Phosphorus discharge level		11.60	mg/l
Nitrogen WRC discharge level		25.00	mg/l	Nitrogen discharge level		96.30	mg/l
Note: Please use the drop down lists to select the WRC that the proposed development will be connected to. If the WRC is not known, then please select "Unknown from the drop down list." The 2030 permit limits are included for guidance purposes only and cannot be relied upon until the Levelling Up and Regeneration Bill is passed into legislation.				Note: The user must input the reduction efficiency of the PTP. The efficiency of the PTP used must be evidenced. The evidence should include the test result documents from the lab (in English) only, or measured effluent concentrations from real world applications. If the efficiency is unknown then a precautionary default value can be used			
Calculate the nutrient load discharged by the WRC		Value	Unit	Calculate loading from wastewater with on-site treatment plants		Value	Unit
TP discharged by WRC		0.00	kg/year	TP discharged by on-site treatment plant		1.05	kg/year
TN discharged by WRC		0.00	kg/year	TN discharged by on-site treatment plant		8.72	kg/year
4. Additional population load				Value			
Additional population load				Post 2030			
TP load from additional population				1.05			
TN load from additional population				8.72			
				kg/year			
				kg/year			

Appendix C

Existing Septic Tank Replacement GRAF Phosphate Budget Calculation

[Step 2]

January 2025

Planning Application Reference No.	
Site address:	Winston House, Felthorpe Road, Attlebridge NR9 5TF
Site proposal:	Development of 1 residential Annexe (subject to Class Q approval) at Winston House, Felthorpe Road, Attlebridge
Date:	25/11/2024 - Issued 20/01/25
Additional information:	
Step 2: Produce a calculator of the existing single dwelling on the proposed GRAF package treatment plant.	

Stage 1 Calculate nutrient load (kg/year) derived from the development as a result of increased population

Note: This calculation should only include the additional units resulting from the proposed development, including any development that will result in overnight accommodation, for land not currently in residential use, this will be the total units proposed by the development. However, for land already in residential use, this should only be the increase in units.

The user should input the relevant number of dwellings into options a, b or c below. In the case of residential developments, only option a is required.

	Value	Unit
1. Calculate the additional population		
a. Number of dwellings proposed	1	dwellings
Average occupancy	1.88	persons/dwelling
b. Number of additional rooms above 6 residents (full tenets) for houses in multiple occupation		
Average occupancy	1.65	persons/dwelling
c. Number of rooms in a hotel or guest house proposed		
Average occupancy	1.65	dwellings
Number of weeks open per year (1-52)		persons/dwelling
Average occupancy rate (1-100)		%
d. Number of bedspaces in student accommodation		
Average occupancy	1	dwellings
Number of weeks open per year (1-52)		persons/dwelling
Average occupancy rate (1-100)		%
Total population increase generated by the development	2	Persons

2. Wastewater volume generated	
Water use per person	132 Litres/person/day
Wastewater volume generated by the development	248 Litres/day

Please select how the sewage from the proposed development will be handled, noting that a development must be handled by either a water recycling centre or on-site treatment plants, and cannot be handled by both. Consideration of wastewater loading is not required where a site drains to a WRC that does not drain to the sewer. Wastewater or the Broad's catchment.

Is sewage to be handled by water recycling centre?

No

Yes

3a. TP budget that would exit the Water Recycling Centre (WRC) after treatment.

Note: If the sewage is to be treated by WRC then the user should select "Yes" in the list above. If package treatment plants are to be used instead, then the user should select "No" above.

This is the process of collecting wastewater from houses and guiding it, via the sewage network, to a WRC (also known as sewage works). The nutrient concentration of the influent is calculated by multiplying the number of people by the expected water usage per day. The nutrient concentration within the effluent is calculated by applying the discharge level of the appropriate WRC. The nutrient loading is expressed in kg/year.

	Value	Unit
Confirm receiving WRC and discharge level		
Select the WRC the development will connect to	Albion Water Recycling Centre	
Phosphorus WRC discharge level	1.57	mg/l
Nitrogen WRC discharge level	25.00	mg/l

Note: Please use the drop down lists to select the WRC that the proposed development will be connected to. If the WRC is not known, then please select 'Unknown' from the drop down list.

The 2030 permit limits are included for guidance purposes only and cannot be relied upon until the Levelling Up and Regeneration Bill is passed into legislation.

	Value	Unit
Calculate the nutrient load discharged by the WRC		
TP discharged by WRC	0.00	kg/year
TN discharged by WRC	0.00	kg/year

4. Additional population load

TP load from additional population

TN load from additional population

	Value	Unit
Additional population load	0.14	kg/year
TP load from additional population	0.72	kg/year
TN load from additional population	0.72	kg/year

3b. TP budget for On-site treatment plants

Note: If the sewage is to be treated by on-site treatment plants then the user should select "Yes" in the list above. If wastewater treatment works are to be used instead, then the user should select "No" above.

On-site treatment plants are pre-manufactured treatment facilities used to treat wastewater in smaller communities or on individual properties. This concept is defined as decentralized wastewater treatment. The nutrient loading is calculated by multiplying the number of people by the expected loading per person. The nutrient loading is expressed in kg/year.

	Value	Unit
Calculate nutrient load after treatment		
Select the type of On-site treatment works	Package treatment plant (user-defined)	
Phosphorus discharge level	1.50	mg/l
Nitrogen discharge level	7.90	mg/l

Note: The user must input the reduction efficiency of the PTP. The efficiency of the PTP used must be evidenced. The evidence should include the test results from the PTP (in English) and/or measured effluent concentrations from real world applications. If the efficiency is unknown then a precautionary default value can be used.

	Value	Unit
Calculate loading from wastewater with on-site treatment plants		
TP discharged by on-site treatment plant	0.14	kg/year
TN discharged by on-site treatment plant	0.72	kg/year



Prüfinstitut für
Abwassertechnik
GmbH

PERFORMANCE RESULTS

Otto Graf GmbH

Carl-Zeiss-Str. 2 - 6, 79331 Teningen, Germany

EN 12566-3

Small wastewater treatment systems for up to 50 PT

Small wastewater treatment system one2clean

SBR plant in one two-zone polypropylene tank

Test report PIA2014-216B14.01.e

Nominal organic daily load*	0.27	kg/d		
Nominal hydraulic daily load	0.75	m³/d		
Material	polypropylene			
Treatment efficiency (nominal sequences)		Efficiency	Effluent	
	COD	94.2 %	43 mg/l	
	BOD ₅	98.0 %	7 mg/l	
	SS	96.3 %	14 mg/l	
	NH ₄ -N**	98.3 %	0.5 mg/l	
	N _{tot} **	87.0 %	7.9 mg/l	
	P _{tot}	80.2 %	1.6 mg/l	
Electrical consumption	0.63	kWh/d		
*at a test influent of ≥ 300 mg/l BOD ₅ (mean)				
**determined for temperatures ≥ 12°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
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Prüfinstitut für Abwassertechnik GmbH
[Signature]
geprüft - tested - testé

Elmar Lancé

November 2014

Appendix D

Proposed Phosphate Budget Calculation (Step 4) January 2025

Planning Application Reference No.	
Site address:	Winston House, Felthorpe Road, Attlebridge NR9 5TF
Site proposal:	Development of 1 residential Annexe (subject to Class Q approval) at Winston House, Felthorpe Road, Attlebridge
Date:	25/11/2024 - Issued 20/01/25
Additional information:	
Step 4: Produce a calculator of proposed Class Q Annexe development on the proposed GRAF PTP.	

Stage 1																	
Calculate nutrient load (kg/year) derived from the development as a result of increased population																	
Note: This calculation should only include the additional units resulting from the proposed development, including any development that will result in overnight parking for the development currently in residential use, this will be the total units proposed by the development. However, for land already in residential use, this should only be the increase in units. The user should input the relevant number of dwellings into options a, b or c below. In the case of residential developments, only option a is required.																	
1.	Calculate the additional population	Value	Unit														
a.	Number of dwellings proposed	1	dwellings														
	Average occupancy	1.58	persons/dwelling														
b.	Number of additional rooms above 6 residents (suit generic) for houses in multiple occupation	1.65	dwellings														
	Average occupancy	1.65	persons/dwelling														
c.	Number of rooms in a hotel or guest house proposed	1.65	dwellings														
	Average occupancy	1.65	persons/dwelling														
	Number of weeks open per year (1-52)		Weeks %														
	Average occupancy rate (1-100)		%														
d.	Number of beds in student accommodation	1	dwellings														
	Number of weeks open per year (1-52)		Weeks %														
	Average occupancy rate (1-100)		%														
	Total population increase generated by the development	2	Persons														
2.	Wastewater volume generated	110	Litres/person/day														
	Water use per person	206	Litres/day														
	Wastewater volume generated by the development																
Please select how the sewage from the proposed development will be handled, noting that a development must be handled by either a water recycling centre or on-site treatment plants, and cannot be handled by both. Consideration of wastewater loading is not required where a site drains to a WRC that does not drain to the River Wensum or the Broadland catchment.																	
Is sewage to be handled by water recycling centre?		Is sewage to be handled by On-site treatment plants?															
3a. TP budget that would exit the Water Recycling Centre (WRC) after treatment.		3b. TP budget for On-site treatment plants															
Note: If the sewage is to be treated by WRC then the user should select "Yes" in the list above. If package treatment plants are to be used instead, then the user should select "No" above. This is the process of collecting wastewater from houses and guiding it, via the sewage network, to a WRC (also known as sewage works). The nutrient concentration of the influent is calculated by multiplying the number of people by the expected water usage per day. The nutrient concentration within the effluent is calculated by applying the discharge level of the appropriate WRC. The nutrient loading is expressed in kg/year.		Note: If the sewage is to be treated by on-site treatment plants then the user should select "Yes" in the list above. If wastewater treatment works are to be used instead, then the user should select "No" above. On-site treatment plants are pre-manufactured treatment facilities used to treat wastewater in smaller communities or on individual properties. This concept is defined as decentralized wastewater treatment. The nutrient influent is calculated by multiplying the number of people by the expected loading per person. The nutrient effluent is calculated by applying the reduction efficiency. The nutrient loading is expressed in kg/year.															
Confirm receiving WRC and discharge level Select the WRC the development will connect to <table border="1"> <thead> <tr> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Aldborough Water Recycling Centre</td> <td></td> </tr> <tr> <td>Current discharge</td> <td>1.57 mg/l</td> </tr> <tr> <td>Post 2030 discharge</td> <td>25.00 mg/l</td> </tr> </tbody> </table> Phosphorus WRC discharge level Nitrogen WRC discharge level Note: Please use the drop down lists to select the WRC that the proposed development will be connected to. If the WRC is not known, then please select "Unknown" from the drop down list. The 2030 permit limits are included for guidance purposes only and cannot be relied upon until the Levelling Up and Regeneration Bill is passed into legislation.		Value	Unit	Aldborough Water Recycling Centre		Current discharge	1.57 mg/l	Post 2030 discharge	25.00 mg/l	Calculate nutrient load after treatment Select the type of On-site treatment works <table border="1"> <thead> <tr> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Phosphorus discharge level</td> <td>1.60 mg/l</td> </tr> <tr> <td>Nitrogen discharge level</td> <td>7.30 mg/l</td> </tr> </tbody> </table> Note: Please enter effluent concentration in cell to right. Package treatment plant (user-defined) Please enter effluent concentration in cell to right: 0.12 0.60 Note: The user must input the reduction efficiency of the PTP. The efficiency of the PTP used must be evidenced. The evidence should include the test result documents from the lab (in English) and/or measured effluent concentrations from real world applications. If the efficiency is unknown then a precautionary default value can be used		Value	Unit	Phosphorus discharge level	1.60 mg/l	Nitrogen discharge level	7.30 mg/l
Value	Unit																
Aldborough Water Recycling Centre																	
Current discharge	1.57 mg/l																
Post 2030 discharge	25.00 mg/l																
Value	Unit																
Phosphorus discharge level	1.60 mg/l																
Nitrogen discharge level	7.30 mg/l																
Calculate the nutrient load discharged by the WRC <table border="1"> <thead> <tr> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>Current discharge</td> <td>0.00 kg/year</td> </tr> <tr> <td>Post 2030 discharge</td> <td>0.00 kg/year</td> </tr> </tbody> </table> TP discharged by WRC TN discharged by WRC		Value	Unit	Current discharge	0.00 kg/year	Post 2030 discharge	0.00 kg/year	Calculate loading from wastewater with on-site treatment plants <table border="1"> <thead> <tr> <th>Value</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>TP discharged by on-site treatment plant</td> <td>0.12 kg/year</td> </tr> <tr> <td>TN discharged by on-site treatment plant</td> <td>0.60 kg/year</td> </tr> </tbody> </table>		Value	Unit	TP discharged by on-site treatment plant	0.12 kg/year	TN discharged by on-site treatment plant	0.60 kg/year		
Value	Unit																
Current discharge	0.00 kg/year																
Post 2030 discharge	0.00 kg/year																
Value	Unit																
TP discharged by on-site treatment plant	0.12 kg/year																
TN discharged by on-site treatment plant	0.60 kg/year																
4. Additional population load TP load from additional population TN load from additional population		Value Current Post 2030 0.12 0.60 0.60 Unit kg/year kg/year kg/year															

Stage 2 Calculate existing (pre-development) nutrient load from current land use of the development

Note: Where development sites include existing areas that are to be retained, these areas can be excluded from the calculations in both Stages 2 and 3.

1. Identify current land uses of the development site Value Unit

The user should select the value from the following drop-down list that applies to the development. Use the links below or navigate to the 'Introduction' tab to find instructions on how this information can be acquired.

Select the Catchment	Wensum	
Select the soil drainage type	Freely draining	
Select annual average rainfall band	700-750	mm/yr
Within Nitrate Vulnerable Zone (NVZ)	Yes	

[Note: Use the Link in the introduction tab to find the appropriate catchment](#)

[Note: Use the criteria table in the introduction tab to identify if the soil type](#)

[Note: Rainfall can be identified using the map on the Rainfall tab](#)

[Note: Use the Link in the introduction tab to find out whether the development is in a Nitrate Vulnerable Zone \(NVZ\)](#)

2. Input the area of the existing land use type(s) TP loading TN loading

High density residential		Hectares	0.00	0.00	Kg/yr
Medium density residential		Hectares	0.00	0.00	Kg/yr
Low density residential		Hectares	0.00	0.00	Kg/yr
Commercial / Industrial		Hectares	0.00	0.00	Kg/yr
Urban open space		Hectares	0.00	0.00	Kg/yr
Dairy		Hectares	0.00	0.00	Kg/yr
Lowland grazing		Hectares	0.00	0.00	Kg/yr
Mixed		Hectares	0.00	0.00	Kg/yr
Poultry		Hectares	0.00	0.00	Kg/yr
Pigs	0.009	Hectares	0.00	0.98	Kg/yr
Horticulture		Hectares	0.00	0.00	Kg/yr
Cereals		Hectares	0.00	0.00	Kg/yr
General arable	0.008	Hectares	0.00	0.25	Kg/yr
Allotments and city farms		Hectares	0.00	0.00	Kg/yr
Woodland (e.g. conifer, mixed, broad-leaved)		Hectares	0.00	0.00	Kg/yr
Greenspace		Hectares	0.00	0.00	Kg/yr
Shrub / heathland / bracken / bog		Hectares	0.00	0.00	Kg/yr
Water		Hectares	0.00	0.00	Kg/yr
Sum total	0.017	Hectares	0.00	1.23	Kg/yr

3. Calculate loading from current land usage

	Value	Unit
TP load from proposed land usage	0.00	Kg/yr
TN load from proposed land usage	1.23	Kg/yr

Stage 3**Calculate nutrient load for the proposed development**

Note: This section should include all land uses within the proposed development. Where the proposed scheme is to create new wetlands, woodlands, nature reserves, etc. within the development site area, then this should be included within this section. Any offsite mitigation should not be included below, and should instead be inputted in the mitigation stages (if mitigation is required).

1.	Identify proposed land uses of the development site	Value	Unit
	High intensity urban land	0.017	Hectares
	Medium intensity urban land		Hectares
	Low intensity urban land		Hectares
	Commercial / Industrial		Hectares
	Open urban space		Hectares
	Allotments and city farms		Hectares
	Woodland (e.g. conifer, mixed, broad-leaved)		Hectares
	Green space		Hectares
	Shrub / heathland / bracken / bog		Hectares
	Water		Hectares
2.	Designed Wetlands / SuDS		
	Wetland / SuDS area		Hectares
	TP Banking coefficient		kg/ha/year
	TN Banking coefficient		kg/ha/year
<i>Note: Please input the banking coefficient (i.e. the nutrient removal amount in kg/ha/yr) calculated for the designed wetland / SuDS. The calculated value should be justifiable with supporting evidence.</i>			
	Sum total of land uses	0.017	Hectares
<i>Note: The sum total of land uses must equal the development site area inputted in Stage 2 - the box will colour red if the areas do not match. Wetland refers to specific wetland related to a watercourse. For more information, please refer to the land use definitions in the help tab.</i>			
3.	Calculate loading from proposed land usage	Value	Unit
	TP load from proposed land usage	0.00	kg/year
	TN load from proposed land usage	0.08	kg/year

Stage 4

Calculate the net change in nutrient load from the proposed development

Note: This stage calculates the net change in TP and TN load to the catchment from the proposed development. This is derived by calculating the difference between the load calculated for the proposed development (wastewater, urban area, open space, etc.) and that for the existing land uses. The nutrient budget for the site has been calculated under current and post-2025 WRC permit levels, where applicable. The nutrient budgets under proposed Post 2030 permit limits are for guidance purposes only until the permit limits are put into legislation.

1.	Identify the load from additional population	Current		Post 2030		Summary	
		Value	Unit	Value	Unit	No. of dwellings	Package treatment plant (user-defined)
	TP Loading from additional population	0.12	kg/year	0.12	kg/year	Current TP discharge concentr	1.60
	TN Loading from additional population	0.60	kg/year	0.60	kg/year	Current TN discharge concentr	7.90
						Post 2030 TP discharge conce	1.60
						Post 2030 TN discharge conce	7.90

2. Calculate net change in nutrient load from land use change

TP load from land use change	Value	Unit
	0.00	kg/year
TN load from land use change	-1.15	kg/year

3. Calculate nutrient budget for the development site

TP budget for the site	Value	Unit
	0.12	kg/year
TN budget for the site	-0.55	kg/year

4. Calculate precautionary buffer

Buffer amount	Value	Unit
	20	%
TP Precautionary buffer	0.02	kg/year
TN Precautionary buffer	0.00	kg/year

Note: The figures used throughout this model are based on scientific research, evidence and modelled catchments and represent the best available evidence. However, it is important that a precautionary buffer is used that recognises the uncertainty with these figures and ensures, with reasonable certainty, that there will be no adverse effect on site integrity. As such, a 20% precautionary buffer added to the nutrient budget.

5. Total nutrient budget for the development site

Total Phosphorus budget for the site	Value	Unit
	0.15	Kg/year
Total Nitrogen budget for the site	-0.55	Kg/year

Current TP loading

Development will generate additional Phosphate (Mitigation required) - Please progress to 'Mitigation current' tab

Post 2030 TP loading

Development will generate additional Phosphate (Mitigation required) - Please progress to 'Mitigation - post 2030' tab

Current TN loading

Development will be Nitrate neutral - no mitigation will be required

Post 2030 TN loading

Development will be Nitrate neutral - no mitigation will be required

Appendix E

Summary Phosphate Budget Calculation Overview

[Step 3 and 5]

January 2025

Septic Tank Replacement – GRAF One2Clean

Based on 132.2 l/person/day

Replacement of Tank to be Like for Like in terms of PE

1 dwelling

Summary of Existing Septic Tank (Step 1)			
Single Source Septic Tank	TP	TN	11.6 mg/l 96.3 mg/l
Total Loading from wastewater	TP	TN	Current [kg/year] Post 2030 [kg/year]
			1.05 1.05 8.72 8.72
20% buffer			
Total Loading from Wastewater	TP	TN	0.21 0.21 1.744 1.744
Total Loading + 20% buffer			
Total Loading from Wastewater	TP	TN	1.28 1.28 10.484 10.484

Summary of Replacement Septic Tank (Step 2)			
GRAF PTP One2Clean	TP	TN	1.8 mg/l 7.9 mg/l
Total Loading from Wastewater	TP	TN	Current [kg/year] Post 2030 [kg/year]
			0.14 0.14 0.72 0.72
20% buffer			
Total Loading from Wastewater	TP	TN	0.028 0.028 0.144 0.144
Total Loading + 20% buffer			
Total Loading from Wastewater	TP	TN	0.168 0.168 0.864 0.864

Existing Septic Tank - Difference between Septic Tank and PTP GRAF Upgrades				
Current and Post 2030 as the figures are the same				
Step 1		Step 2		
Existing Septic Tank (Kg/year)	Proposed PTP (Kg/year)	Proposed (Step 2) - Existing (Step 1)		Surplus Generated (Step 3)
TP	1.26	0.168	-1.092	kg/year
TN	10.484	0.864	-9.6	kg/year
				can offset approx. can offset approx.
				-1.09 kg/year -9.60 kg/year

can offset approx.
can offset approx.

Based on 110 l/person/day

Class Q Proposed Annex Development

Proposed Annex Site (Step 4) – 110 l/person/day for 1 dwelling			
Current and Post 2030 as the figures are the same			
Current [kg/year]		Post 2030 [kg/year]	
TP	0.15	0.15 kg/year	
TN	-0.55	-0.55 kg/year	
Offset from PTP upgrades			
Current [kg/year]		Post 2030 [kg/year]	
TP	-1.09	-1.09 kg/year	
TN	-9.6	-9.6 kg/year	

Proposed Annex Site with Surplus Applied (Step 5) - Updated Final Assessment			
Current [kg/year]	Post 2030 [kg/year]		
TP -0.94	-0.94 kg/year		
TN -10.15	-10.15 kg/year		

Appendix F

BGS Data – Borehole Log Including Percolation Test Results



**NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM**

QUARTER SHEET TG11NW

BH REGISTRATION NUMBER 44 - 97

RECORDS ENTERED AND HELD BY WALLINGFORD

BH REGISTRATION NUMBER(S)



147/382 Bloggs Croft, Swannington

TG 1374 1701

TG11/37

Surface +78. Lining tubes: 100 x 4 in from surface. Water struck at +46. R.W.L.
+39. P.W.L. +27. Recovered to +39 in 12 min. Suction +18. Yield 500 g.p.h. (3 d. test).
Handpump. Bull. Nov. 1951.

Pleist. Drift (? Buried channel) ...
Uk ...

86
34

86
120

PLEIST. DRIFT [BURIED channel] 86 U. CHALK. 34	YELLOW SAND	32	32
	CHALK SEAM	4	36
	YELLOW SAND	39	75
	BROWN CLAY	11	86
	SOFT CHALK	8	94
	HARD CHALK	26	120



RECORD OF WELL (SHAFT OR BORE)

TG11/37
147 N 6598
382

EXACT SITE
OF WELL

At BLOGGS CROFT

Town or Village SWANNINGTON

Licence No. _____

County NORFOLK

Six-inch quarter sheet SO NE/W.

For O.A. Bone

State whether owner, tenant, builder,
contractor, consultant, etc.:— owner

Address (if different from above) _____

Level of ground surface
above sea-level (O.D.) 78 ft.

If well-top is not at ground level, state how far { above: _____ ft.
below: _____ ft.

SHAFT _____ ft.; diameter _____ ft.; Full details of headings (dimensions and directions) _____

BORE 120 ft.; diameter of bore: at top 4 ins.; at bottom 4 ins.

Full details of permanent lining tubes (position, length, diameter, plain, slotted etc.) _____

lined 100 ft.

Water struck at depths of 32 ft. below well-top.

TEST
CONDITIONS

Rest level of water 39 ft. ^{above} well-top. Suction at 60 ft. Yield on 3 ^{hours} test

pumping at 500 galls. per hour with depression to 51 ft. below well-top.

Recovery to rest-level in 12 mins. Capacity of pump 500 g.p.h. Date of measurements 16.11.51

NORMAL
CONDITIONS

DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:

Make and/or type CLIMAX Motive power HAND

Capacity _____ gallons per hour. Suction at 60 ft.

Amount pumped _____ galls. per day. Estimated consumption _____ galls. per week.

Well made by Bull & Hussey Ltd, Cromer Rd, Norwich Date of well 15.11.51

Information from Norfolk H.E.C. file WS 1602/120. 2.12.54. ROK & REIT

ADDITIONAL NOTES

ANALYSIS (please attach copy if available)

Sited by G on 6" map Norfolk SO NE/W.
Visited . O.D. + 78. mase for house and
poultry. Handpump inaccessible.
mgs 21/7/60.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM,
SOUTH KENSINGTON,
LONDON, S.W.7.

Section 6.

Date
Received

21.2.54

1" O.S. Map
No.

Site marked
on 1" Map

0

(use symbol)
on 6" Map

0

Contact BGS: ngdc@bgs.ac.uk



AL NO 47868

Broadland District Council
Environmental Services

TG11 NW92
TG11/37

SMU V7.08a

REPORT PREPARED ON 27/11/06 AT 13:35

Sample reference number: 012147

NAME AND ADDRESS DETAILS

PREMISES REF: B12YGFELTH/3
TRADER: Mr A.G. Smith
LA REFERENCE: Winston House

ADDRESS: Winston House
Felthorpe Road
Attlebridge
Norwich
NR9 5TF

AREA: David Humphrey
WARD: ATTLEBRIDGE
GRID:

TELNO: 01603 860452
OSAPR: APA8E68D5KM58T304G
UPRN/USRN: 000000002888
EASTING: 6137299
NORTHING: 3170323

DATE SAMPLE TAKEN: 08/11/2006
DATE CLOSED: 27/11/2006

SAMPLE ANALYSIS DETAILS

DESCRIPTION	QUANTITATIVE RESULT	GUIDELINE VALUE	RESULT
Atrazine	<0.004	< 0.1 ug/l	
Simazine	<0.004	< 0.1 ug/l	
linuron	<0.003	< 0.1 ug/l	
Trietazine	<0.002	< 0.1 ug/l	
Propazine	<0.003	< 0.1 ug/l	
Prometryne	<0.002	< 0.1 ug/l	
Terbutryne	<0.002	< 0.1 ug/l	
Dichlorprop	<0.003	< 0.1 ug/l	
2,4 D	<0.01	< 0.1 ug/l	
2,4,5-T	<0.01	< 0.1 ug/l	
Dicamba	<0.003	< 0.1 ug/l	
MCPA	<0.01	< 0.1 ug/l	
MCPS	<0.004	< 0.1 ug/l	
Mecoprop (MCPP)	<0.01	< 0.1 ug/l	
2,3,6-TBA	<0.003	< 0.1 ug/l	
Isoproturon	<0.004	< 0.1 ug/l	
Diuron	<0.002	< 0.1 ug/l	
Meuron	<0.002	< 0.1 ug/l	
Bentazone	<0.004	< 0.1 ug/l	
Chlortaluron	<0.004	< 0.1 ug/l	
Bromacil	<0.004	< 0.1 ug/l	
Total Coliforms	0	< 0 /100ml	
E. Coli	0	2.1 /100ml	

received from Tony Smith, householder
of Winston House 41808 H. Cole

Percolation Testing

Test Date: 27/04/2024

Site Address: Winston House & Barn
Felthorpe Road
Attlebridge
NR9 5TF

Weather Conditions: Overcast, light rain until 9am, gusts 20mph.

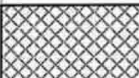
Drain invert level: 400mm

TP01

Grid Reference: TG 13714 17091

Time Excavated: 10.50

Dimensions: W300mm, L300mm, D700mm

Depth (m)	Water	Legend	Description
0.1			TOPSOIL: Brown, slightly gravelly, fine to coarse sand with occasional rootlets.
0.2			
0.3			
0.4			
0.5			
0.6		At 0.5m becoming gravelly and slightly clayey, with occasional subangular cobbles of flint.	
			End of TP at 0.7m

Wetting: 11.26

Observations: Circa 2 hours drained

TP01 - Time	Test	75% (mins)	25% (mins)	25-75% (seconds)	Vp (s/mm)
14:28	1	29	135	6360	42.4
16:53	2	36	154	7080	47.2
19:40	3	37	158	7260	48.4

Average Vp for TP01 = 46

TP02

Grid Reference: TG 13698 17094

Time Excavated: 11.30

Dimensions:

W300mm, L300mm, D700mm

Depth (m)	Water	Legend	Description
0.1			TOPSOIL: Brown, slightly gravelly, fine to coarse sand with occasional rootlets.
0.2			
0.3			Light brown, gravelly, fine to coarse SAND. Gravel is angular to subrounded.
0.4			At 0.4m becoming orange brown, with occasional subangular cobbles of flint.
0.5			
0.6			
			End of TP at 0.7m

Wetting: 11.54

Observations: Circa 2 hours drained

TP02 - Time	Test	75% (mins)	25% (mins)	25-75% (seconds)	Vp (s/mm)
14:21	1	25	123	5880	39.2
16:35	2	30	134	6240	41.6
19:20	3	34	140	6360	42.4

Average Vp for TP02 = 41.1

TP03

Grid Reference: TG 13706 17091

Time Excavated: 12.00

Dimensions:

W300mm, L300mm, D700mm

Depth (m)	Water	Legend	Description
0.1			TOPSOIL: Brown, slightly gravelly, fine to coarse sand with occasional rootlets.
0.2			
0.3			Light brown, gravelly, medium to coarse SAND. Gravel is angular to subrounded.
0.4			At 0.4m becoming orange brown, with occasional subangular cobbles of flint.
0.5			At 0.5m becoming light yellow brown.
0.6			End of TP at 0.7m

Wetting: 12.26

Observations: Circa 2 hours drained

TP03 - Time	Test	75% (mins)	25% (mins)	25-75% (seconds)	Vp (s/mm)
14:35	1	31	130	5940	39.6
16:55	2	35	145	6600	44
19:36	3	37	148	6660	44.4

Average Vp for TP03 = 42.7

Average Vp over all trial pits = 43.3

Tests completed by: Kellie Fisher BEng MSc MCIWEM C.WEM CEng