

OAK TREE FARM

LUDGERSHALL, WILTSHIRE

TECHNICAL NOTE 1: NITRATE NEUTRALITY

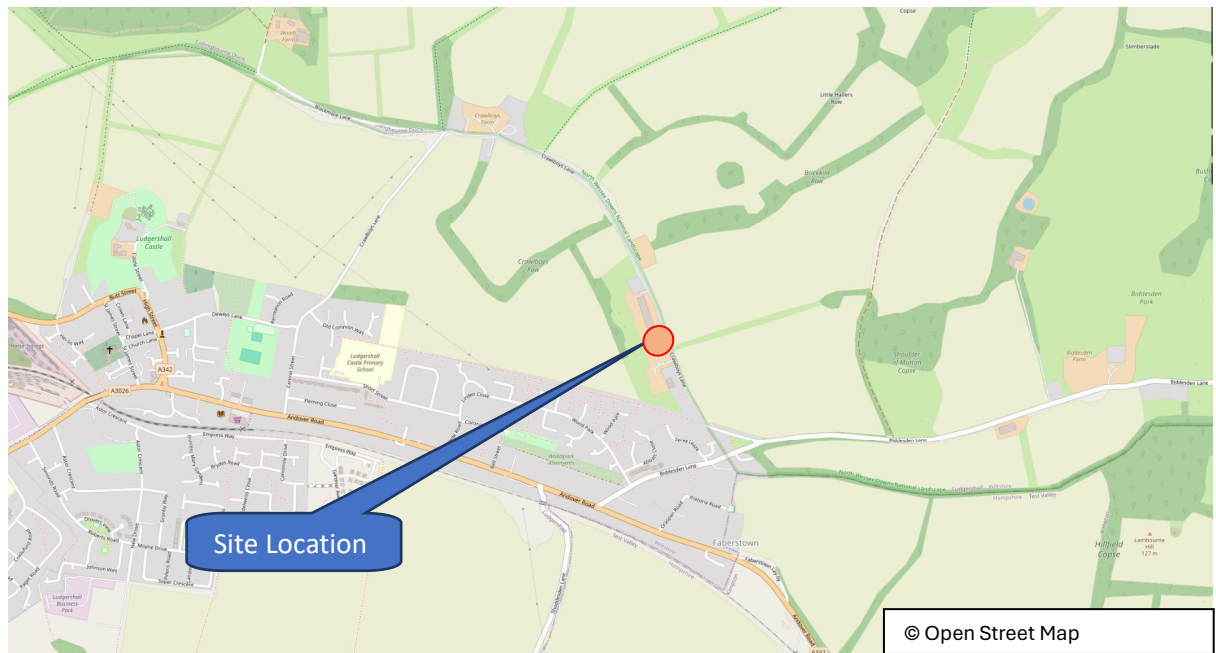
1 Introduction

- 1.1 Condon Drew Associates Ltd. (CDA) have been appointed by Master Land and Planning, on Behalf of Mr. H. Scruse (the Client), to carry out an investigation into the existing and proposed nitrogen discharge from a proposed residential development at Oak Tree Farm in Ludgershall, Wiltshire.
- 1.2 A planning application was submitted to Wiltshire Council (WC) in 2020 for the Demolition of a poultry shed and agricultural store and erection of 5 no. dwellings with access and parking, and the erection of new agricultural store. Approval with conditions was granted in 2021.
- 1.3 A Section 73 has since been submitted, which seeks to regularise design changes to the barn only; the residential portion of the proposals has remained unchanged. Since the original application in 2020, Nutrient Neutrality has been introduced as part of the planning process, and as such, must be considered as part of the Section 73 Application.
- 1.4 While the application site was a poultry farm, it is currently used for lowland grazing.
- 1.5 This Technical Note and calculations have been produced to allow the LPA to carry out a Nutrient Neutrality Assessment and for the planning application.

2 Site Description

- 2.1 The application site measures 0.51 hectares and is located to the west of Crawlboys Lane in the village of Ludgershall. Access is taken directly from Crawlboys Lane. The Site location is shown in **Figure 2.1** overleaf. The Location Plan with the red line boundary and Site Plan with the proposed development are included in **Appendix A**. The location plan also highlights the neighbouring land, also owned by the client.

Figure 2.1: Site Location Plan



3 Nutrient Neutrality Guidance

- 3.1 Nutrient Neutrality Guidance highlights the high levels of nitrogen and phosphorus within the water environment and their effects on eutrophication.
- 3.2 In the Upper and Middle Test catchment, the main aim of the guidance is to ascertain whether there will be a Total Nitrogen (TN) surplus or deficit as a result of the development. If a deficit, no mitigation is required, while mitigation in some form will be required if there is a nitrogen surplus.
- 3.3 The existing site comprises gravel, concrete and grass. The site is used for agricultural purposes and is classified as Lowland Grazing within the Natural England (NE) spreadsheet utilising the Ricardo methodology.
- 3.4 It is proposed that each proposed dwelling will have a Package Treatment Plant (PTP) that treats its wastewater effluent prior to discharging either to the ground. The *BIO EASY FLOW* by HABA has been selected for this project as a biological treatment system. The PTP is on British Water's 'List of Certified Small Wastewater Treatment Systems Up to 50PT' list and has an effluent TN concentration of 5.6 mg/l. If a different PTP is requested, calculations must be redone.
- 3.5 Calculations have been undertaken in line with the NE spreadsheet with the Ricardo methodology, with the site assessed initially for the proposed dwellings only. **Table 3.1** overleaf, shows the Total Nitrogen produced from each of the proposed five dwellings. The Total Nitrogen shown in **Table 3.1** includes a 20% buffer applied to Stage 4 of the calculator. Calculations in full are included in **Appendix B**.

Plot	Average Occupancy	Area (Ha)	Proposed TN (including 20% buffer)
1	2.4	0.15	0.94 Kg/TN/year
2	2.4	0.09	0.75 Kg/TN/year
3	2.4	0.10	0.78 Kg/TN/year
4	2.4	0.09	0.75 Kg/TN/year
5	2.4	0.08	0.72 Kg/TN/year
TOTAL	12 Persons	0.51	3.94 Kg/TN/year

Table 3.1 – Summary of Stage 4 of Total Nitrogen Calculations of Proposed Dwellings

3.6 Results of all four stages in the calculation process are included in full in **Appendix B**, but are outlined in **Table 3.2** below:

Stage	Description	Outcome
1	Calculate Wastewater Total Nitrogen load from Proposed Development	1.90 Kg/TN/year
2	Calculate Nitrogen load from Current Use	5.99 Kg/TN/year
3	Adjust Nitrogen Load to Account for Future Land Use	7.37 Kg/TN/year
4	Calculate Net Change in Total Nitrogen load that would result from the development, including a 20% buffer	3.94 Kg/TN/year

Table 3.2 – Summary of four stages of Total Nitrogen Calculations with No Mitigation

3.7 There have been some assumptions made in the calculations which are outlined below. Some of these are taken from the guidance itself, others have been based on other documentation where required.

- One of the inputs required is the effluent rate of the receiving Package Treatment Plant (PTP) for Total Nitrogen (TN). The *BIO EASY FLOW* PTP by HABA has an effluent TN rate of 5.6 mg/l (the results certificate is included in **Appendix C**) which has been used for these calculations.
- The total site has an area of 0.51Ha.
- The proposed development comprises five residential dwellings on a greenfield site.
- The existing site has been taken as lowland grazing (greenfield).

- The proposed site has been taken as residential urban, with no SANG/POS included.
- 3.8 As can be seen from **Table 3.1**, **Table 3.2** and the full calculations in **Appendix B**, there is a Nitrogen surplus of 3.94 kg/TN/year as a result of the development. This means that mitigation is required in order to achieve nitrate neutrality.

4 Mitigation

- 4.1 Natural England encourage small scale developments to consider opportunities for providing local small-scale mitigation measures that deliver multiple benefits. As a result of this, it is proposed that mitigation occur at an existing dwelling, owned by the current land owner, north of the site.
- 4.2 It is proposed that mitigation is offered in the form of replacing an existing, old septic tank with a PTP to treat wastewater from the existing dwelling prior to discharging via the existing means.
- 4.3 Wastewater from the existing house currently drains to a septic tank. The 'Septic Tank Default' treatment option has been used in the NE calculator. The land has been classified as residential urban land for both the existing and proposed conditions in the NE calculator.
- 4.4 Based on the results in **Table 3.1**, a total of 3.94 kg/TN/year requires mitigation. A second set of calculations have been undertaken to determine the TN reduction provided when replacing the septic tank at the existing dwelling with a *BIO EASY FLOW* PTP by HABA. Since the size and land use of the existing dwelling is to remain the same, they are not included in the TN summary. The results from the NE calculator are summarised in **Table 4.1** below, and are included in full as **Appendix D**.

Description	Outcome
Total Nitrogen load that would result from the development, including a 20% buffer	3.94 Kg/TN/year
Total Nitrogen Load created by existing dwelling with default septic tank	10.13 Kg/TN/year
Total Nitrogen Load created by existing dwelling with <i>BIO EASY FLOW</i> PTP, including a 20% buffer	0.46 Kg/TN/year
Net difference of Total Nitrogen Load between residential dwelling with default septic tank vs <i>BIO EASY FLOW</i> PTP	9.67 Kg/TN/year

Table 4.1 – Summary of Total Nitrogen Mitigation Replacing a Septic Tank with a PTP

- 4.5 As can be seen from the calculations in **Table 4.1**, the amount of TN removed from the existing dwelling is greater than the amount created by the proposed development. This installation of a PTP to the existing dwelling will therefore achieve a deficit, meeting the requirements of Nitrate neutrality. This means that there is no requirement for any further mitigation as a result of the development.

5 Foul Drainage Strategy

- 5.1 As there are no public foul sewers in the vicinity of the site, discharging to ground via a drainage field is proposed following treatment via a Package Treatment Plant at each dwelling.
- 5.2 The PTPs and drainage fields have been indicatively sized based on ground investigations, however it is proposed that further investigations are carried out at detailed design stage to determine percolation rates at the proposed location.
- 5.3 At the detailed design stage, the design of these can be refined, however an indicative location and size of the PTPs and drainage fields are shown in drawing 1947-SK501 in **Appendix E**. This drawing also includes the mitigation proposed at the existing dwelling.

6 Maintenance

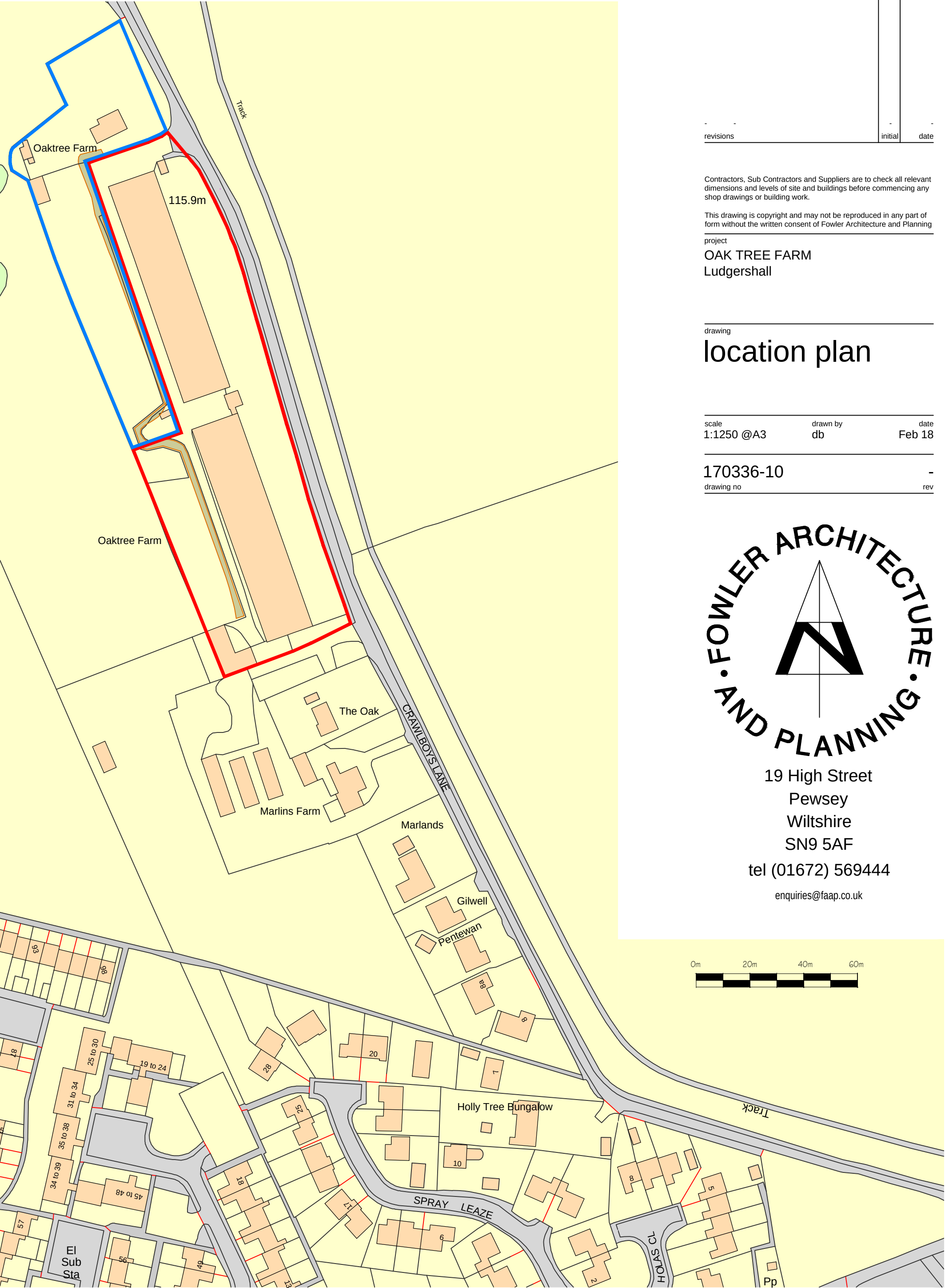
- 6.1 It is proposed that regular maintenance of the PTPs is carried out to ensure that the systems remain fit for purpose.
- 6.2 Building Regulations (Part H 2010 – BS EN 12566) state that regular emptying and maintenance of small sewage treatment plants must be undertaken by the homeowner at least once per year, or as per the manufacturer's guidelines. As each dwelling is proposed to have its own PTP, it is suggested that these are privately maintained.
- 6.3 Maintenance for PTPs will be in line with manufacture's guidance.

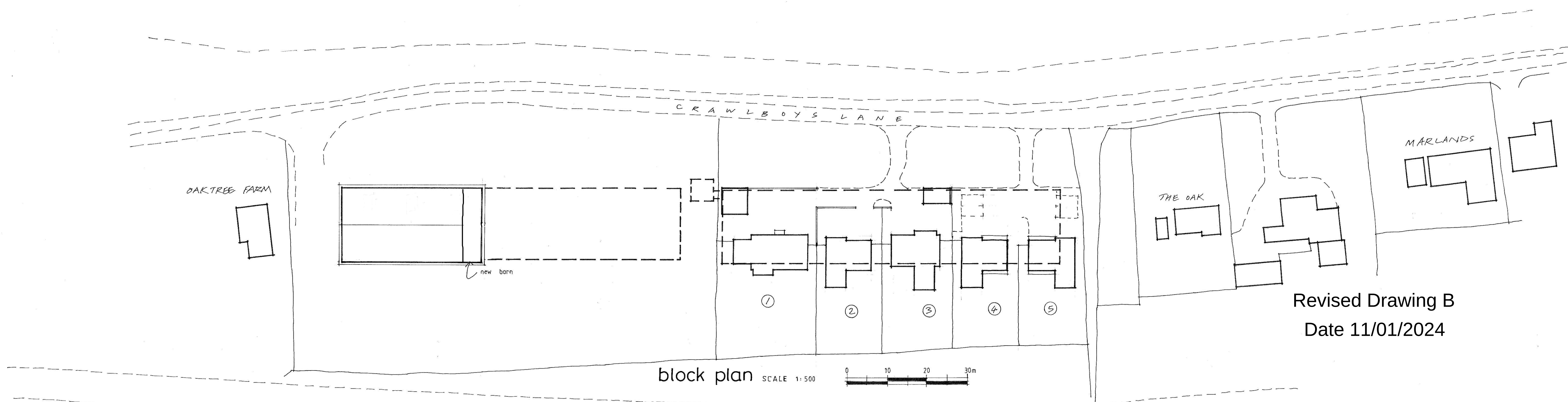
7 Summary

- 7.1 This Technical Note has calculated the Total Nitrogen loss from the site pre- and post-development.
- 7.2 Nitrogen neutrality is achieved as a result of the development, providing a PTP installed at the existing dwelling is undertaken.

Appendix A

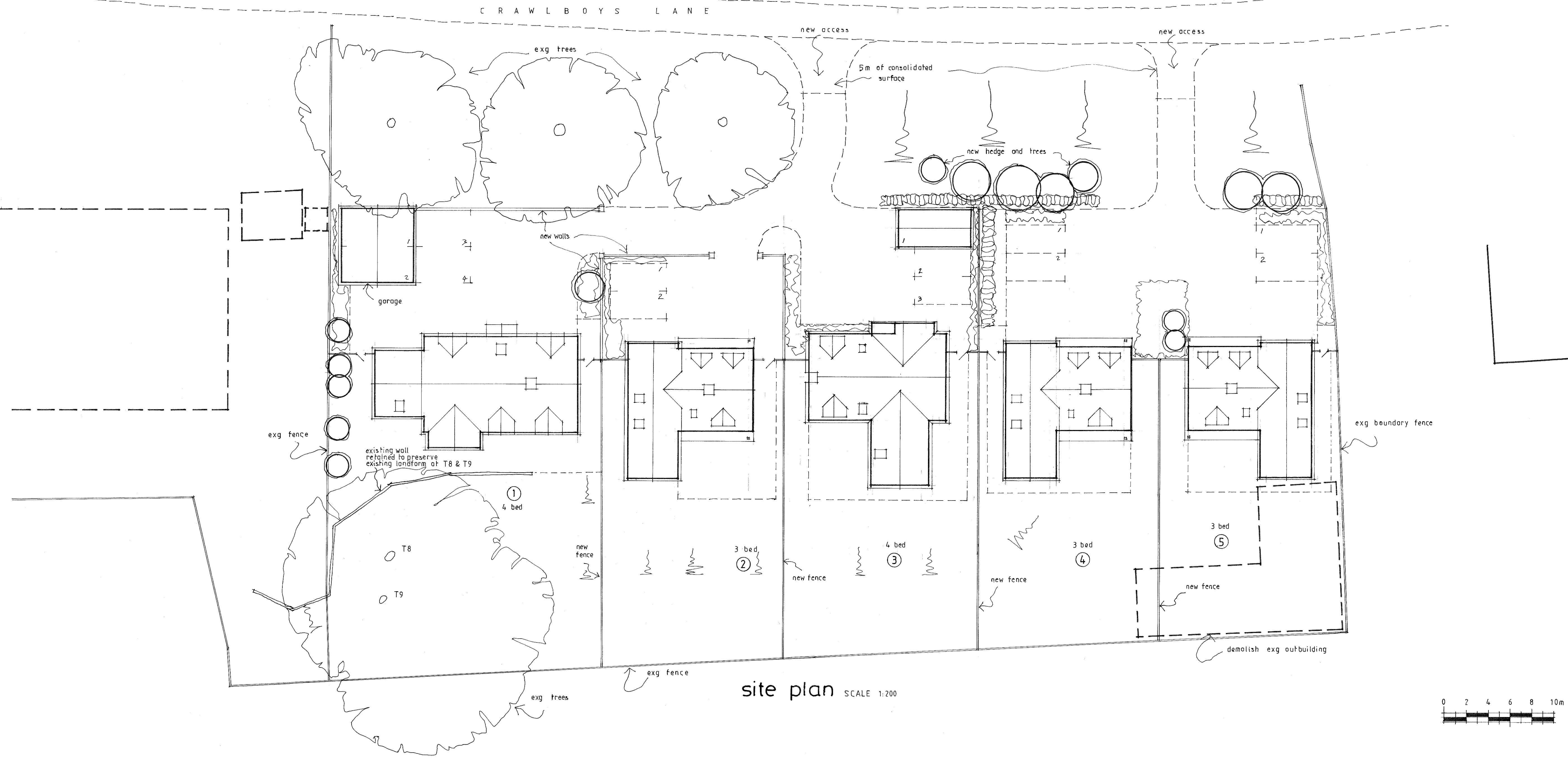
Location Plan and Site Plan





Revised Drawing B

Date 11/01/2024



- A ① GRAPIENTS TO REAR GARDENS AMENDED TO SUIT LANDSCAPE PROPOSALS.
 ② NEW BARN FOOTPRINT REVISED.

revisions int date

Contractors, Sub Contractors and Suppliers are to check all relevant dimensions and levels of site and buildings before commencing any shop drawings or building work.

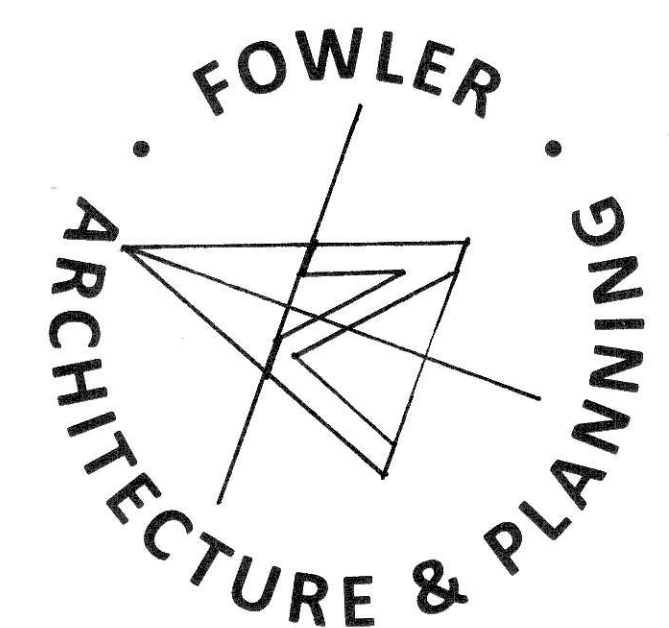
This drawing is copyright and may not be reproduced in any part or form without the written consent of Fowler Architecture & Planning.

project
 OAK TREE FARM
 LUDGERSHALL

drawing
 site plan

scale 1:200 @ A1 date OCT '19

170336-16 A
 drawing no rev



19 High Street
 Pewsey
 Wiltshire
 SN9 5AF

01672 569444
 enquiries@faap.co.uk

Appendix B

Development Calculation Sheets

PLOT 1

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/01/2025	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	1	
Include deductible acceptable loading?	No	
Wastewater treatment works:	Package Treatment Plant user defined	
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6
Not applicable	Not applicable	
Not applicable	Not applicable	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Wastewater nutrient loading		
Additional population (people):	2.40	
Wastewater by development (litres/day):	288.00	
Annual wastewater TN load (kg TN/yr):	0.38	
Not applicable		
Not applicable	Not applicable	
Not applicable		
Not applicable	Not applicable	

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Lowland	0.15	1.76	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.15	1.76	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.15	2.17
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.15	2.17

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.41
TN budget:	0.79
TN budget + 20% buffer:	0.94
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.94
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

PLOT 2

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/01/2025	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	1	
Include deductible acceptable loading?	No	
Wastewater treatment works:	Package Treatment Plant user defined	
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6
Not applicable	Not applicable	
Not applicable	Not applicable	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Wastewater nutrient loading		
Additional population (people):	2.40	
Wastewater by development (litres/day):	288.00	
Annual wastewater TN load (kg TN/yr):	0.38	
Not applicable		
Not applicable	Not applicable	
Not applicable		
Not applicable	Not applicable	

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Lowland	0.09	1.06	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.09	1.06	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.09	1.30
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.09	1.30

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.24
TN budget:	0.62
TN budget + 20% buffer:	0.75
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.75
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

PLOT 3

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/01/2025	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	1	
Include deductible acceptable loading?	No	
Wastewater treatment works:	Package Treatment Plant user defined	
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6
Not applicable	Not applicable	
Not applicable	Not applicable	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Wastewater nutrient loading		
Additional population (people):	2.40	
Wastewater by development (litres/day):	288.00	
Annual wastewater TN load (kg TN/yr):	0.38	
Not applicable		
Not applicable	Not applicable	
Not applicable		
Not applicable	Not applicable	

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Lowland	0.10	1.17	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.10	1.17	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.10	1.44
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.10	1.44

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.27
TN budget:	0.65
TN budget + 20% buffer:	0.78
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.78
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

PLOT 4

Water infrastructure information			
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required	
Date of first occupancy (dd/mm/yyyy):	01/01/2025		
Average occupancy rate (people/dwelling or people/unit):	2.40		
Water usage (litres/person/day):	120		
Development proposal (dwellings/units):	1		
Include deductible acceptable loading?	No		
Wastewater treatment works:	Package Treatment Plant user defined		
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6	
Not applicable	Not applicable		
Not applicable	Not applicable		
Final calculation of nutrient load from wastewater			
Description of values generated		Values generated	
Wastewater nutrient loading			
Additional population (people):	2.40		
Wastewater by development (litres/day):	288.00		
Annual wastewater TN load (kg TN/yr):	0.38		
Not applicable			
Not applicable	Not applicable		
Not applicable			
Not applicable	Not applicable		

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Lowland	0.09	1.06	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.09	1.06	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.09	1.30
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.09	1.30

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.24
TN budget:	0.62
TN budget + 20% buffer:	0.75
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.75
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

PLOT 5

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/01/2025	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	1	
Include deductible acceptable loading?	No	
Wastewater treatment works:	Package Treatment Plant user defined	
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6
Not applicable	Not applicable	
Not applicable	Not applicable	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Wastewater nutrient loading		
Additional population (people):	2.40	
Wastewater by development (litres/day):	288.00	
Annual wastewater TN load (kg TN/yr):	0.38	
Not applicable		
Not applicable	Not applicable	
Not applicable		
Not applicable	Not applicable	

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Lowland	0.08	0.94	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.08	0.94	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.08	1.16
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.08	1.16

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.22
TN budget:	0.60
TN budget + 20% buffer:	0.72
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.72
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

Appendix C

PTP Certificate

CERTIFIED TRANSLATION FROM POLISH

[The description of the document and translator's notes are in square brackets. The document presented for translation consists of 1 page. A copy is attached to the translation and constitutes an integral part hereto.]

[Logo:] TÜV-/-

SÜD-/-

Czech -/-

REPORT ON THE ASSESSMENT OF PRODUCT PROPERTIES-/-

REF No 1017 — CPR — 11.381.333-/-

This report is issued according to the Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC and according to the Commission Delegated Regulation (EU) No 568/2014 for the following construction product:-/-

Household waste water treatment plant up to 50 RLM-/-

Series of types: BIO EASY FLOW (rotomoulding): 1RLM, 2RLM, 3RLM, 4RLM, 5RLM, 6RLM, 7RLM, 8RLM, 9RLM, 10RLM, 12RLM-/-

BIO EASY FLOW (spiro pipes): 15RLM, 20RLM, 25RLM, 30RLM, 35RLM, 40RLM, 45RLM, 50RLM-/-

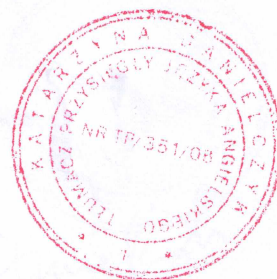
BIO EASY FLOW (concrete): 4RLM, 5RLM, 6RLM, 7RLM, 8RLM, 9RLM, 10RLM, 12RLM, 15RLM, 20RLM, 25RLM, 30RLM, 35RLM, 40RLM, 45RLM, 50RLM-/-

HABA RL Sp. z o.o. Sp. Komandytowa-/-

ul. Zdrojwa 51, 62-065 Grodzisk Wielkopolski, Poland-/-

Business Registry No. 368989081-/-

Place of manufacture: as above stated-/-



TÜV SÜD Czech s.r.o. on the basis of examinations, calculations, tabulated values and documentation within system 3, according to Annex V. 1.4 CPR, has assessed the selected product performance properties described in Annex ZA regarding-/-

EN 12566-3:2005 + A2:2013 standard-/-

The report consists of 4 pages, including the title page.-/-

Basic characteristics	Performance properties			Harmonised technical documentation
Waste water treatment efficiency at daily organic load BZT ₅ = 0.22 kg/d	BZT ₅ CHZT _{CR} Z N _{general} P _{general}	99.0% 97.4% 94.6% 84.1% 94.5%	3.3 mgO ₂ /l 21.2 mgO ₂ /l 12.8 mg/l 5.6 mg/l 0.8 mg/l	EN 12566-3:2005+A2:2013
Tightness (water test)	Positive result			EN 12566-3:2005+A2:2013
Compressive strength (calculations)	BIO EASY FLOW (rotomoulding): Backfill 1.0 - 1.5 m; WET 0.50 - 085 m according to the type BIO EASY FLOW (spiro pipes): Backfill 1.6; WET 1.0 m BIO EASY FLOW (concrete): Backfill 0.0 m; WET 1.3 - 2.2 m according to the type			EN 12566-3:2005+A2:2013
Durability (PE) Durability (concrete)	Positive result (test methods: EN ISO 1133-1:2011; EN ISO 1183-1:2012, EN ISO 527-2:2012+Ap1:2013 PN-EN 1917:2004/AC:2009			EN 12566-3:2005+A2:2013

In Prague, 03 August 2018-/-

[A stamp with the following inscription:] TÜV SÜD Czech s.r.o. NOTIFIED BODY 1017, TÜV SÜD-/-

[Signature]-/-

for the Notified Body No 1017-/-

Pavla Nerandžičová, Head of the Certification Department-/-

TÜV SÜD Czech s.r.o. • Novodvorská 994 • 142 21 Prague 4 • Czech Republic • certification@tuv-sud.cz -/-

Reg. no. 184 / 2019 /
 As sworn translator in English I do hereby certify that the foregoing is a true and accurate translation of the document presented to me.

2

Kraków (Krakow), 07 October 2019



PROTOKÓŁ

Z OCENY WŁAŚCIWOŚCI WYROBU



Czech

numer ewidencyjny 1017 – CPR – 11.381.333

Zgodnie z rozporządzeniem Parlamentu Europejskiego i Rady (UE) nr 305/2011 z 9 marca 2011, które określa zharmonizowane warunki wprowadzania wyrobów budowlanych na rynek, i które unieważnia dyrektywę Rady 89/106/EEC, oraz zgodnie z rozporządzeniem Komisji nr. 568/2014 (UE) wydaje się niniejszy protokół dla wyrobu budowlanego:

Mała oczyszczalnia ścieków do 50 RLM

Typoszereg: BIO EASY FLOW (rotomoulding): 1RLM, 2RLM, 3RLM, 4RLM, 5RLM, 6RLM, 7RLM, 8RLM, 9RLM, 10RLM, 12RLM

BIO EASY FLOW (rury spiro): 15RLM, 20RLM, 25RLM, 30RLM, 35RLM, 40RLM, 45RLM, 50RLM

BIO EASY FLOW (beton): 4RLM, 5RLM, 6RLM, 7RLM, 8RLM, 9RLM, 10RLM, 12RLM, 15RLM, 20RLM, 25RLM, 30RLM, 35RLM, 40RLM, 45RLM, 50RLM

HABA RL Sp. z o.o. Sp. Komandytowa

Ul. Zdrojowa 51, 62-065 Grodzisk Wielkopolski, Polska
REGON: 368989081

Miejsce produkcji: patrz wyżej

TÜV SÜD Czech s.r.o. ocenił na podstawie badań, obliczeń, wartości tabelarycznych i dokumentacji w ramach systemu 3, zgodnie z załącznikiem V. 1.4 CPR, wybrane właściwości użytkowe wyrobu opisane w załączniku ZA normy

EN 12566-3:2005 + A2:2013

Liczba stron Protokołu, łącznie ze stroną tytułową: 4

Zasadnicze charakterystyki	Właściwości użytkowe			Zharmonizowana specyfikacja techniczna
Skuteczność oczyszczania przy organicznym obciążeniu dobowym BZT ₅ = 0,22 kg/d	BZT ₅	99,0 %	3,3 mgO ₂ /l	EN 12566-3:2005+A2:2013
	CHZT _{CR}	97,4 %	21,2 mgO ₂ /l	
	Z	94,6 %	12,8 mg/l	
	N _{ogólny}	84,1 %	5,6 mg/l	
	P _{ogólny}	94,5 %	0,8 mg/l	
Szczelność (próba wodą)	Wynik pozytywny			EN 12566-3:2005+A2:2013
Wytrzymałość na ściskanie (obliczenia)	BIO EASY FLOW (rotomoulding): Backfill 1,0- 1,5 m; WET 0,50-085 m wg typu			EN 12566-3:2005+A2:2013
	BIO EASY FLOW (rury spiro): Backfill 1,6 m; WET 1,0 m			
	BIO EASY FLOW (beton) Backfill 0,0 m, WET 1,3-2,2 m wg typu			
Trwałość (PE)	Wynik pozytywny (metody badań EN ISO 1133-1:2011, EN ISO 1183-1:2012, EN ISO 527-2:2012+Ap1:2013			EN 12566-3:2005+A2:2013
Trwałość (beton)	PN-EN 1917:2004/AC:2009)			

W Pradze, dnia 03.08.2018



za Jednostkę notyfikowaną 1017
Pavla Nerandžicová
Kierownik wydziału certyfikacji

Appendix D

Mitigation Calculation Sheets

Existing House – Septic Tank

Water infrastructure information	
Description of required information	Data entry column - user inputs required
Date of first occupancy (dd/mm/yyyy):	01/01/2025
Average occupancy rate (people/dwelling or people/unit):	2.40
Water usage (litres/person/day):	120
Development proposal (dwellings/units):	1
Include deductible acceptable loading?	No
Wastewater treatment works:	Septic Tank default
Current wastewater treatment works N permit (mg TN/litre):	96.30
Not applicable	Not applicable
Not applicable	Not applicable
Final calculation of nutrient load from wastewater	
Description of values generated	Values generated
Wastewater nutrient loading	
Additional population (people):	2.40
Wastewater by development (litres/day):	288.00
Annual wastewater TN load (kg TN/yr):	10.13
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Residential urban land	0.15	2.17	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.15	2.17	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.15	2.17
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.15	2.17

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	10.13
Net land use TN change (kg TN/year):	0.00
TN budget:	10.13
TN budget + 20% buffer:	12.16
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	12.16
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

Existing House - PTP

Water infrastructure information			
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required	
Date of first occupancy (dd/mm/yyyy):	01/01/2025		
Average occupancy rate (people/dwelling or people/unit):	2.40		
Water usage (litres/person/day):	120		
Development proposal (dwellings/units):	1		
Include deductible acceptable loading?	No		
Wastewater treatment works:	Package Treatment Plant user defined		
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	5.6	
Not applicable	Not applicable		
Not applicable	Not applicable		
Final calculation of nutrient load from wastewater			
Description of values generated	Values generated		
Wastewater nutrient loading			
Additional population (people):	2.40		
Wastewater by development (litres/day):	288.00		
Annual wastewater TN load (kg TN/yr):	0.38		
Not applicable			
Not applicable	Not applicable		
Not applicable			
Not applicable	Not applicable		

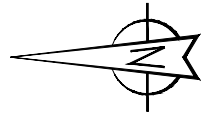
Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Upper and Middle Test		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	750.1 - 800		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Residential urban land	0.15	2.17	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	0.15	2.17	

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.15	2.17
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	0.15	2.17

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	0.38
Net land use TN change (kg TN/year):	0.00
TN budget:	0.38
TN budget + 20% buffer:	0.46
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.46
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable

Appendix E

Foul Drainage Strategy



REV	DETAILS	DRAWN	CHECKED	DATE

NOTES:

1. Do not scale from this drawing.
2. This drawing is for illustrative purposes only and not for construction.
3. This drawing is to be read and printed in colour.
4. All dimensions are shown in metres, unless specified otherwise.

PROJECT:

OAK TREE FARM, LUDGERSHALL

DRAWING TITLE:

PROPOSED FOUL WATER
DRAINAGE STRATEGY

CLIENT:

MR. H. SCRUSE



DRAWN:

JMD

CHECKED:

MRM

DATE:

03.06.2024

SCALES:

1:1000

SHEET SIZE:

A3

DRAWING NUMBER:

1947-SK501

REVISION:

-