



**Land West of North Lodge
Codford
Wiltshire
BA12 0NJ**

50.456772, -4.807156

Nutrient Neutrality Assessment and Mitigation Strategy

**S24-072/NNAMS
July 2025**

Revision 2

Prepared by :

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On behalf of :

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BA12 0EB**



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1.0 Introduction

Southwest Environmental Limited was commissioned by Gary Lewis, to produce a Nutrient Neutrality and Mitigation Strategy for the proposed development at Codford, Wiltshire.

This NNAMS has been prepared in accordance with:

- Natural England Nutrient Neutrality Methodology
- CIEEM Guidelines for Ecological Report Writing
- Building Regulations Part H requirements

This assessment demonstrates how the development will achieve nutrient neutrality and comply with Habitats Regulations requirements for the River Avon Special Area of Conservation (SAC).

2.0 The Site

The proposal seeks to erect two new dwellings within existing woodland and shrubland. The site comprises an area of land which slopes gently to the East. The planning boundary for the site resides within a larger wooded field enclosure.

Site Address	Land West of North Lodge Codford Wiltshire BA12 0NJ
Grid Reference	50.456772, -4.807156
Site Area	0.22 ha Approx.

2.1 Hydrological Context

The site lies within the River Avon SAC catchment, which was designated as a nutrient-sensitive catchment for phosphorus on 25 January 2024. Surface water from the site drains to streams which flow into the River Wylfe and subsequently into the River Avon SAC located 22.5km to the South East.

The River Avon SAC is currently in unfavourable condition due to elevated phosphorus levels, requiring all new development to demonstrate nutrient neutrality.



3.0 Background

Recent CJEU Dutch Nitrogen case law relating to impacts of nutrient laden water impacting on sensitive ecological sites, has highlighted a requirement to mitigate against effluent out flows from proposed developments.

The application site falls within the catchment flowing into the River Avon Special Area of Conservation (SAC), designated for its rare aquatic invertebrates. There is a major issue with nutrients entering watercourses which adversely changes environmental conditions for these species.

Any new housing, including single dwellings, will result in an increase in phosphates contained within water discharge. As the designated site is in 'unfavourable' condition any increase, including from single dwellings, is seen as significant, either alone or in combination with other developments.

Whilst this report is not a Habitats Regulation Assessment, it would be the principal piece of information used to guide the outcome of a Habitats Regulations Assessment. A Habitats Regulation Assessment would screen for affected sites of high importance, which might be influenced by the project.

In this instance we are dealing with cumulative impacts, as the individual impact from this project would be unmeasurable at the receptor location, which is approximately 750 metres downstream of the proposal at the River Wylfe a tributary of the River Avon.

The receptor has been identified as River Avon Special Area of Conservation (SAC), the substance of concern is Phosphate. A mitigative response to phosphates arising from the proposed development is suggested within this report.

Most aquatic systems are naturally low in biologically available P. So, when P availability increases, aquatic plants tend to grow rapidly and cause degradation of water quality (e.g. algal blooms).

3.1 Legal Framework

The assessment is undertaken in accordance with the Conservation of Habitats and Species Regulations 2017, following Natural England advice that competent authorities must ensure no adverse effects on the integrity of the River Wylfe and consequently the River Avon SAC site.



4.0 Scope

In order to complete a Habitats Regulations Assessment Natural England require a calculated response for mitigation i.e. information on how additional Phosphate from foul water is to be dealt with.

“Natural England advise that mitigation will need to be identified and secured by the applicant in order to complete the [NE’s] Habitats Regulations Assessment.”

This NNAMS covers:

- All foul water discharge from the proposed development
- Package treatment plant and drainage field design
- Phosphorus mitigation measures
- Long-term management and monitoring requirements

4.1 Methodology

The assessment follows Natural England's Nutrient Neutrality Generic Methodology and utilises:

- Latest Natural England phosphate budget calculator
- Building Regulations Part H drainage field design
- CIEEM good practice guidance

4.2 Technical Competence

Assessment undertaken by Christopher Canevali, BSc.

5.0 Impact Assessment

The potential impacts from the project are now reviewed based on the Source, Pathway, Receptor Model.



5.1 Source

There are numerous sources of phosphate that contribute to phosphorus found in domestic wastewater¹.

Table 5 Source apportionment of P in raw domestic waste water (Defra 2008)	
Source	Contribution
Faeces	23%
Urine	41%
Food waste	5%
Mains supply (phosphate added to reduce lead in drinking water)	5%
Toothpaste	1%
Dishwasher detergent	7%
Laundry detergent	18%

In February 2024 Natural England released their Phosphate Budget Calculator². The current version 03_01_06 has been used to calculate this project.

We have modelled the site as 2 dwellings and 8 persons. Calculations are shown in **Appendix 2**.

5.2 Pathway

The pathway from site to receptor is via lateral drain, to the onsite treatment system as described below. Effluent from the system then flows to the trench soakaway on site where it will soak-away via the drainage field, as indicated on plans in Appendix 1.

The groundwater will support seasonal flow to tributaries of, ultimately, the River Avon including the areas which are designated as a Special Area of Conservation.

5.2.1 Drainage System Overview

Package Treatment Plant - **BIO EASY FLOW** - Details can be seen in **Appendix 4**.

Drainage Field - Size is to be designed adhering to Building Regulations Part H, the location and proposed design can be seen in **Appendix 1**. Percolation Tests are included within **Appendix 5**.

¹ https://www.sepa.org.uk/media/163158/crew_septic_tanks.pdf

² <https://www.gov.uk/government/publications/river-avon-sac-nutrient-neutrality-calculator>



5.3 Receptor

The receptor of principal concern is the River Avon SAC. Within this area various locations are of national and international significance for wildlife under the Habitat Regulations 2017.

Natural England have recently started to advise regarding the high levels of phosphates in watercourses across the UK.

In light of a court Judgement (known as Dutch N), Natural England have advised District and County Councils that, in light of the unfavourable condition of UK Rivers and Special Areas of Conservation, before determining a planning application that may give rise to additional phosphates within the catchment, competent authorities should undertake a Habitats Regulations Assessment (HRA).

6.0 Mitigation

In order for the development to demonstrate neutrality, accounting for the increase in on site population. If the development can be shown to produce no more than existing loading, then it will be phosphate neutral. The table below shows key budgets before and after mitigation:

Description	Kg/P/annum
Stage 1	0.17
Stage 2	0.22
Stage 3	0.22
Stage 4	0.30
Stage 5 (Site Budget Following Mitigation)	0.00 (Neutrality Achieved) from Credits

The values in the above table are selected from the Phosphate Budget Calculator which is included in **Appendix 2**.

6.1 Package Treatment Plant

The package treatment plant is primarily to remove suspended solids, and to provide primary treatment. We have included treatment efficacy for the package treatment plant as **0.8mg/L**, as the phosphate removal was calculated to come from the certification in **Appendix 4**. The following models will be used:

- BIO EASY FLOW (No Chemical Dosing)

The PTP will require regular desludging. It is recommended a maintenance contract is put in place. The PTP should be fitted with an overfill audible & visual signal. PTP details for the above plant are included in **Appendix 5**.



A repurposed shallow cesspool tank, with both chambers filled with media will be used. The tank must be filled with media above anticipated fluid level to ensure through flow. For example:

- Clearwater 4,800 Litre Shallow Dig Septic Tank

For further information on monitoring and disposal of used filter media please see **Appendix 4**.

6.2 Mitigation

Mitigation will be provided via purchase of credits. Credits required are 0.3 kg/P/annum.

7.0 Private Drainage Justification

There is a preference in terms of drainage planning to connect to mains drainage as opposed to providing private drainage on site. However, by promoting connections to sewers planning authorities are knowingly causing environmental degradation.

Many of the sewerage undertakers such as Southwest Water or Wessex Water are management Sewage Treatment Assets that are decades past their serviceable life span. Not only in terms of the technology they employ, but their capacity, which was designed for 1970's population levels. There are now 17,000,000 million more people living in the UK. More importantly impermeable surfaces drained to foul sewer have increased dramatically.

The majority of Sewage Treatment Works in the UK operate Combined Sewer Overflows (CSO). This was originally designed to divert very heavy flows around the treatment system, in the case of very heavy rainfall.

Increases in rainfall intensity owing to climate change, and increases in paved areas, coupled with little or no expansion in capacity at Sewage Treatment Works leads to the frequent, and in some case near constant discharge (250 days a year) of raw untreated sewage into Rivers and Seas. This not only side steps discharge consent limits for phosphates but results in raw sewage with its associated BOD, COD, Coliform Load, entering Rivers and Sea. In addition to this we are now learning about the impact of plastics contained in sewage on Fluvial and Marine ecosystems.

A great many plastics contain Phthalates³ which are a softening agent commonly used in many flexible plastics. They are an endocrine disruptor and are causing fertility problems in a wide range of Marine and Fluvial organisms. Phthalates are environmentally persistent chemicals much like DDT and PCBs. They concentrate up the food chain causing sterility⁴ and deformity in higher predators, including humans.

During operation of a Combined Sewer Overflow, all Marco plastics contained in sewage are released to Rivers and Sea: Dental Floss, Condoms, Cotton Buds, Plastic Wrappings, Wet Wipes, Sanitary Towels, Tampons and Tampon Applicators. All end up in the river tangled

³ <https://papp.charity/plastic-pollution-facts/phthalates-a-growing-problem/>

⁴ <https://www.reuters.com/article/us-genital-idUSTRE7230RO20110304>



around low branches or washed up on beaches. Where they degrade into trillions of micro and nano plastic particles.

By using an on-site treatment system, the sewage producer becomes responsible for its proper operation and maintenance. We fully expect them to meet their obligation more fully than the average Sewerage Undertaker in the UK. The proposed system only handles foul water and will not overflow during heavy rainfall.

The correct way in which to dispose of the sludge, collected from the treatment plant, filter vessel and reed bed aggregate (in decreasing order of sludge concentration) is an important point. We would recommend that the tinkered waste is disposed of at a dewatering plant, where all sludge is recovered, and disposed to landfill.

We would therefore recommend that the enforcers involved in the determination support this application for installation of a private drainage system.

8.0 Conclusions

The proposal as described above would result in a Phosphate Neutral Development. It will result in no **increase** in Phosphate Loading of the River Avon SAC Catchment and therefore the River Avon SAC site.

The proposed development will achieve phosphorus neutrality through:

- Phosphate Credit purchase
- High-efficiency package treatment plant with 94.5% P removal.

The assessment demonstrates compliance with Habitats Regulations requirements and guidance for the River Avon SAC.



9.0 Limitations

For the avoidance of doubt, the parties hereby expressly agree that the Consultant takes no liability for and gives no warranty against actual flood, sewage, nutrient or water damage of The Client's property, or natural environment in relation to the performance of the service.

This report gives estimates of likely flows and occupancy number, but does not accept liability associated for the use of these figures in the construction of sewers or drains. Options appraisals are given as examples only. Responsibility for design / services and resulting levels of performance rests with the client and or developer.

This report is produced for the sole use of the Client, and no responsibility of any kind, whether for negligence or otherwise, can be accepted for any Third Party who may rely upon it.

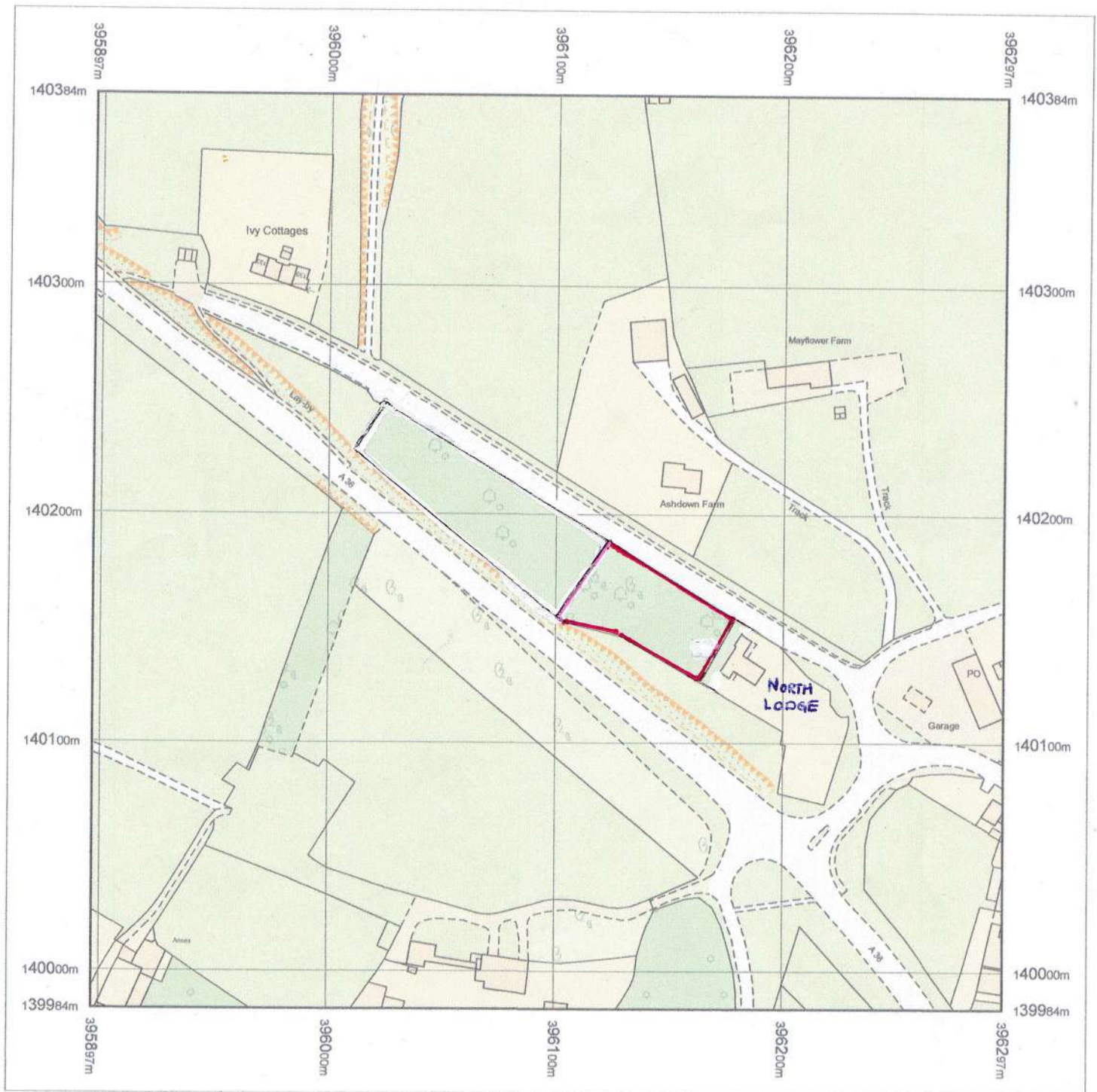
The conclusions and recommendations given in this report are based on our understanding of the future plans for the site.

The scope of this report was discussed and agreed with the Client. No responsibility is accepted for conditions not encountered, which are outside of the agreed scope of work.



APPENDIX 1

Conceptual Plans



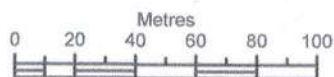
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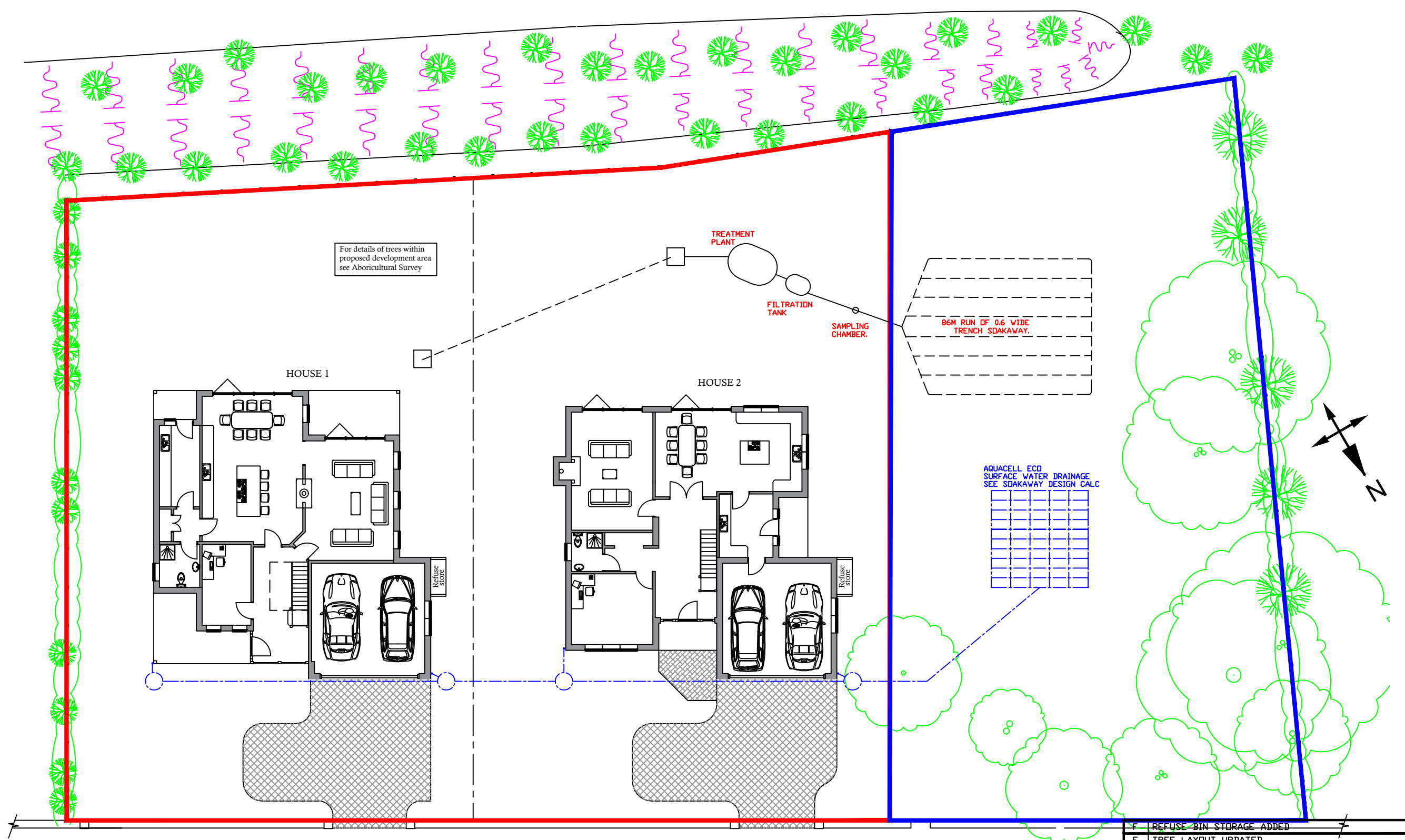
The representation of features as lines is no evidence of a property boundary.



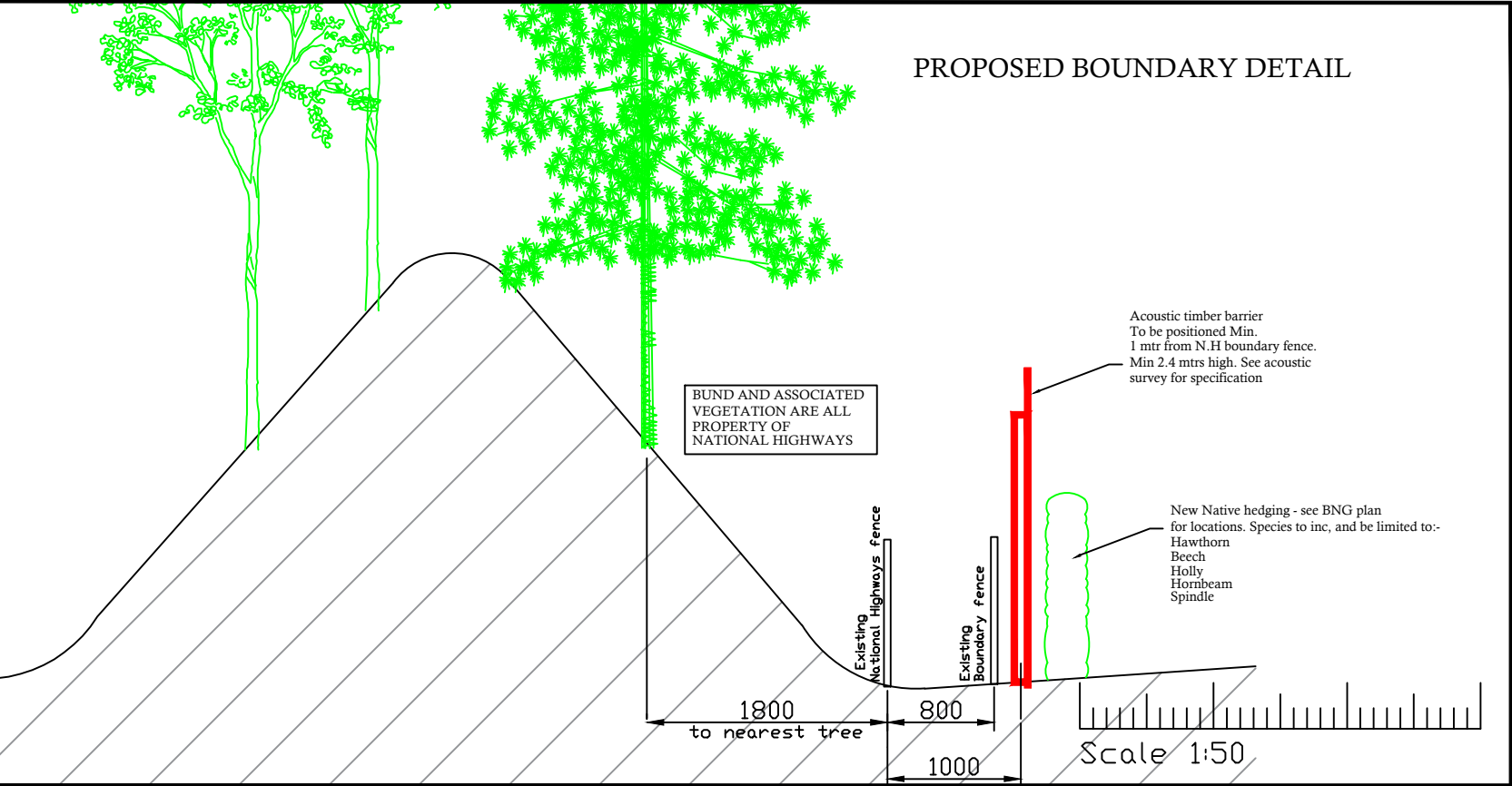
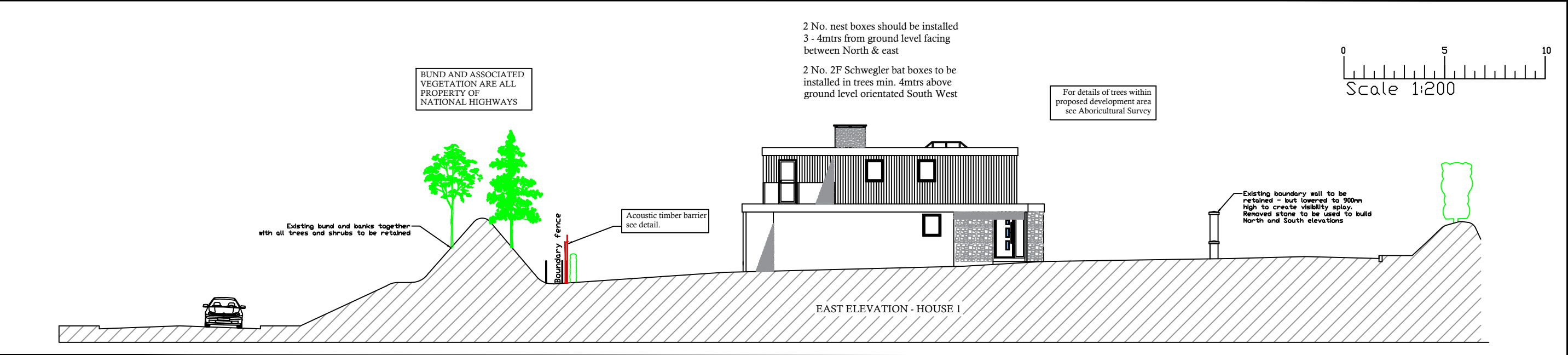
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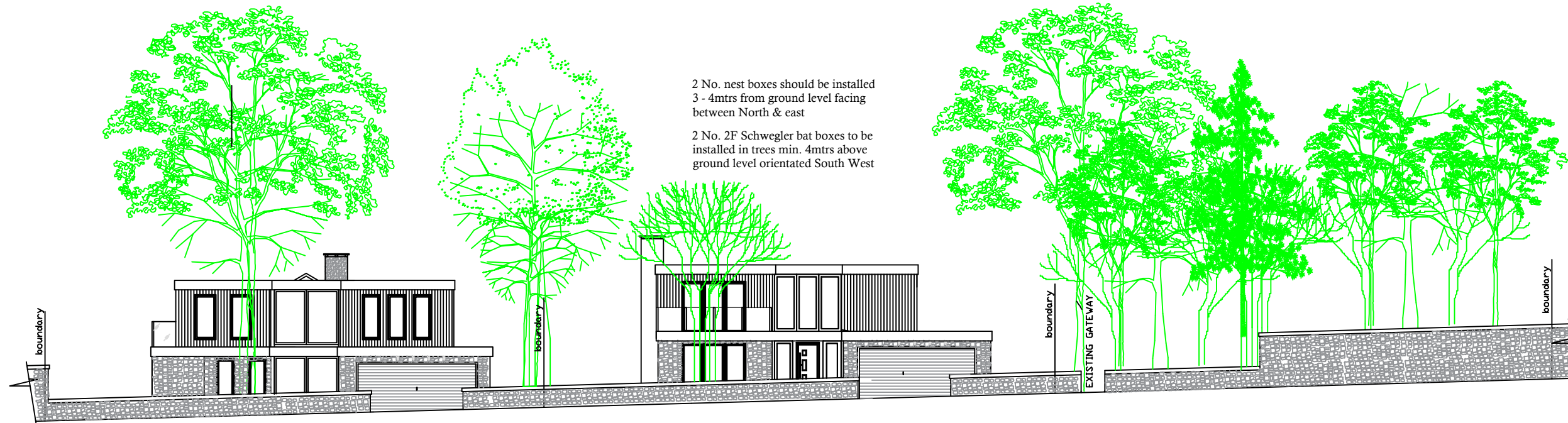
Further information can be found on the OS Sitemap Information leaflet or the Ordnance Survey web site:
www.ordnancesurvey.co.uk



REV	DESCRIPTION	BY	DATE
F	REFUSE BIN STORAGE ADDED	GBL	25-06-23
E	TREE LAYOUT UPDATED	GBL	12-02-23
D	SURFACE WATER SOAKAWAY ADDED	GBL	22-11-24
C	BOUNDARIES CLARIFIED	GBL	13-08-24
B	DRAINAGE FIELD AMENDED	GBL	18-06-24
A	DRAINAGE FIELD AMENDED	GBL	18-09-23
Mr G. Lewis & Mrs L. Payne			
© UNAUTHORISED COPYING OR USE IS NOT PERMITTED			
TITLE: Proposed New Dwellings at Land West of North Lodge, Codford, Wiltshire BA12 0NS FOR: - Mr G Lewis & Mrs L Payne			
DRAWN:	GBL	DATE:	12-01-2023
DRG No:	SITE PLAN	SCALE:	As Shown@A3
REV:	- F		



C	PROPOSED BOUNDARY CLARIFIED	GBL	28-04-23
B	TREES POSITIONS UPDATED	GBL	12-02-23
A	NOTES REF VEGETATION AMENDED	GBL	28-11-24
REV	DESCRIPTION	BY	DATE
Mr G. Lewis & Mrs L. Payne			
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TITLE: Proposed New Dwellings at Land West of North Lodge, Codford, Wiltshire BA12 0NS FOR:- Mr G Lewis & Mrs L Payne			
DRAWN:	GBL	DATE:	12-01-2023
SCALE:	As Shown@A3	REV:	- C
DRG No:	SITE ELEVATIONS - EAST & WEST		



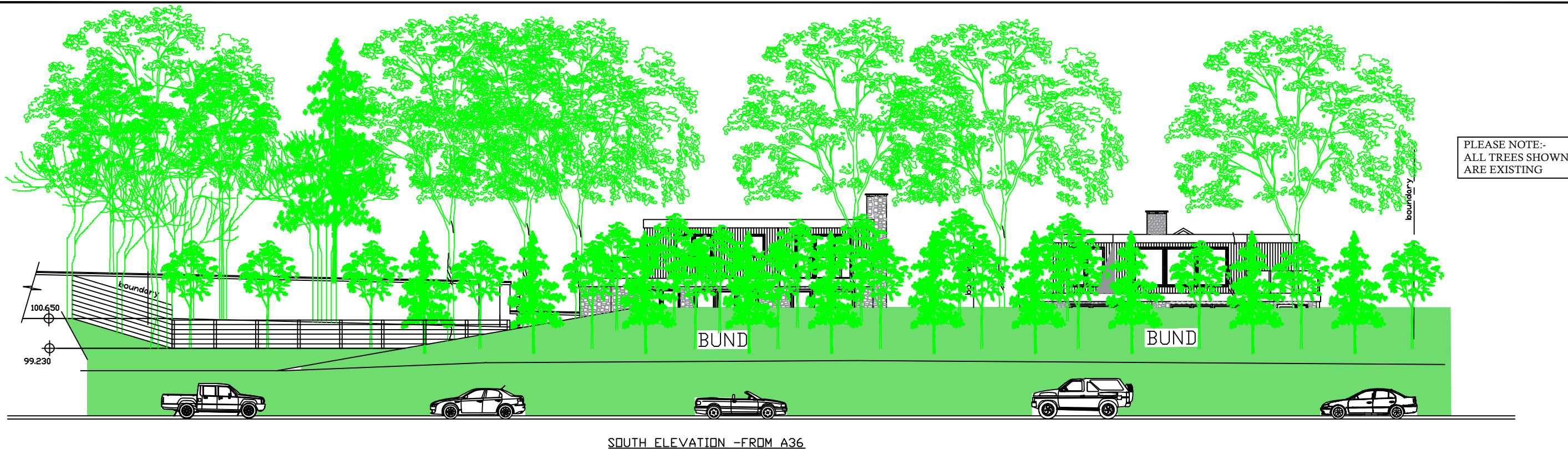
NORTH ELEVATION - STREET VIEW



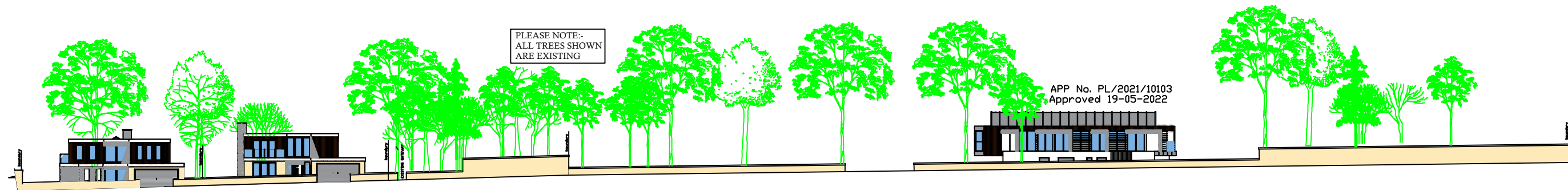
SOUTH ELEVATION - INSIDE BOUNDARY

0 5 10
Scale 1:200

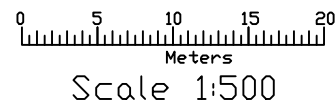
REV	DESCRIPTION	BY	DATE
Mr G. Lewis & Mrs L. Payne			
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TITLE: Proposed New Dwellings at Land West of North Lodge, Codford, Wiltshire BA12 ONS FOR: - Mr G Lewis & Mrs L Payne			
DRAWN: GBL	DATE: 12-01-2023	SCALE: As Shown@A3	
DRG No: SITE ELEVATIONS NORTH & SOUTH		REV: -	



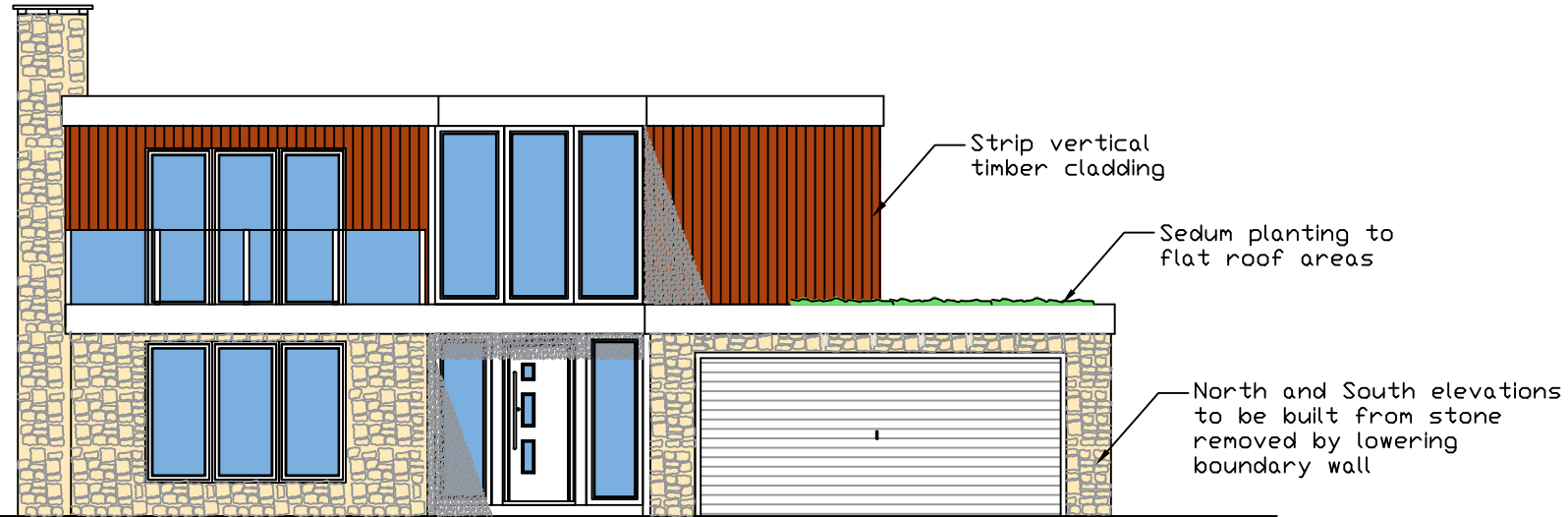
SOUTH ELEVATION -FROM A36



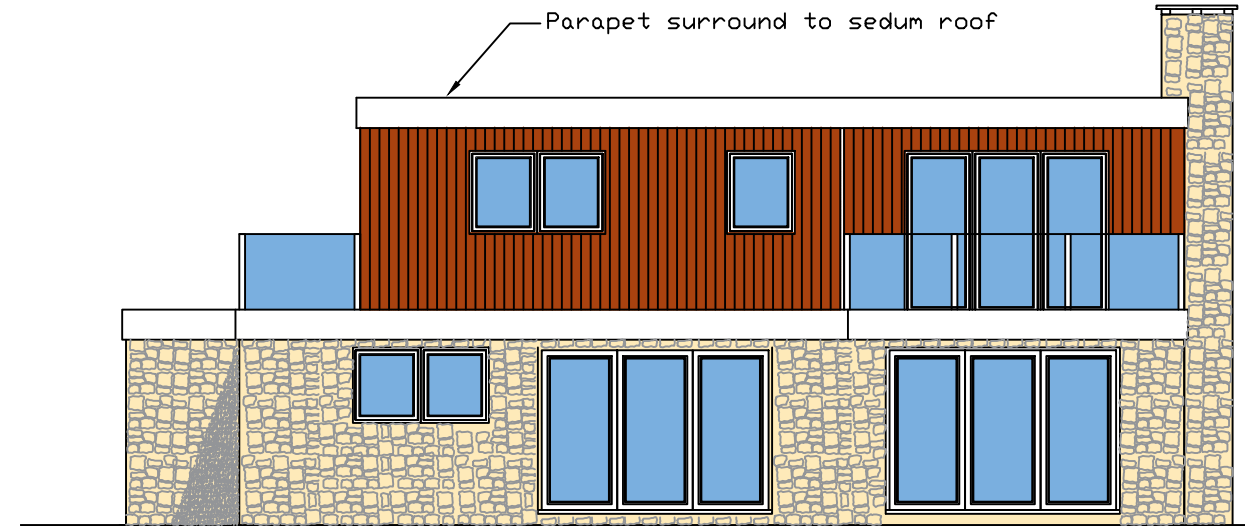
NORTH ELEVATION - STREET VIEW (INCLUDING PL/2021/10103)



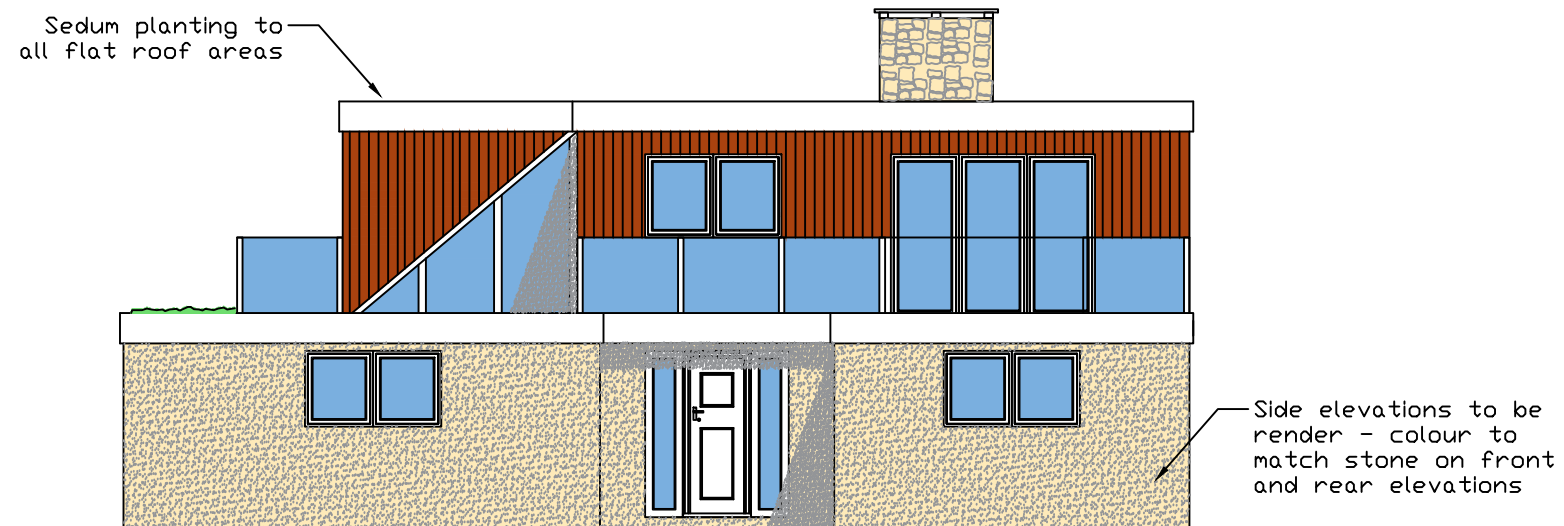
REV	DESCRIPTION	BY	DATE
Mr G. Lewis & Mrs L. Payne			
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TITLE: Proposed New Dwellings at Land West of North Lodge, Codford, Wiltshire BA12 ONS FOR:- Mr G Lewis & Mrs L Payne			
DRAWN: GBL	DATE: 12-01-2023	SCALE: As Shown@A3	REV: -
DRG No: ELEVATIONS - FROM A36 & NORTH ROAD			



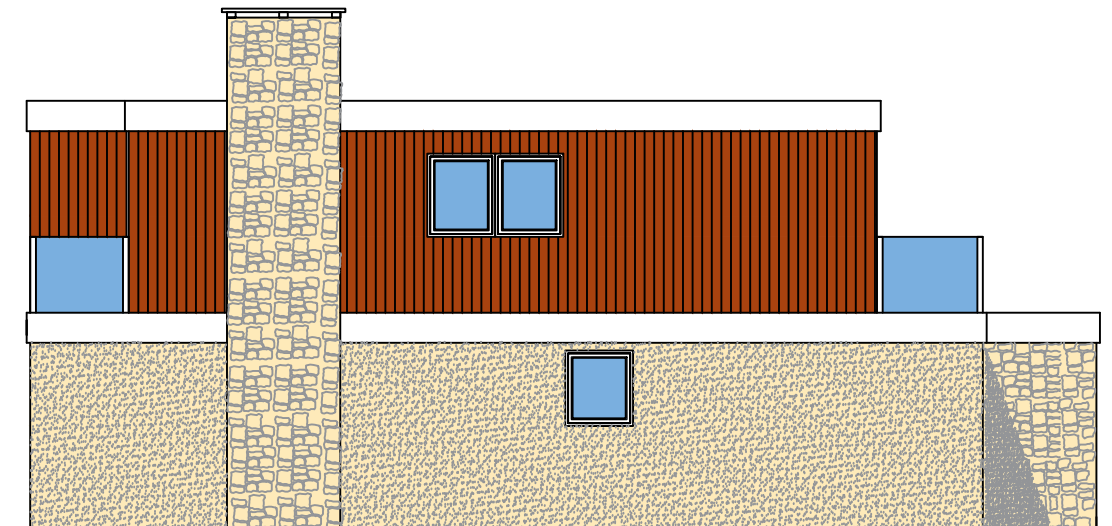
NORTH ELEVATION



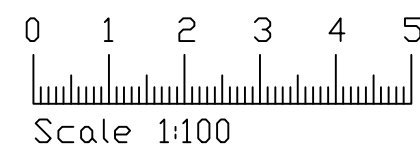
SOUTH ELEVATION



WEST ELEVATION

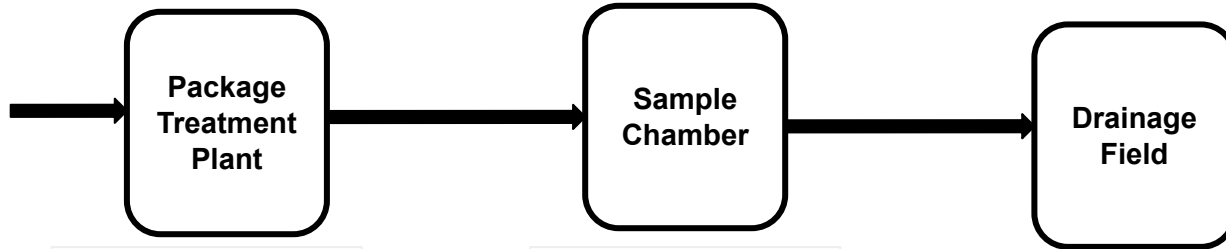


EAST ELEVATION



REV	DESCRIPTION	BY	DATE
Mr G. Lewis & Mrs L. Payne			
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TITLE: Proposed New Dwellings at Land West of North Lodge, Codford, Wiltshire BA12 ONS FOR: - Mr G Lewis & Mrs L Payne			
DRAWN: GBL	DATE: 12-01-2023	SCALE: As Shown@A3	
DRG No: ELEVATIONS - HOUSE 2	REV: -		

Gravity flow using pipe gradient >>>>



Packaging Treatment Sizing to be determined at building control stage. Treatment Plant must provide biological treatment.

For bi-annual sampling. When Trigger Level is reached filter media should be replaced.

Treated water discharged to soakaway.



APPENDIX 2

Phosphate Budget Calculator

Nutrients from wastewater

This sheet contains 2 tables. The tables are separated by a heading, which describes the following table.

Note: You will need to fill in cells B5 to B9 in the first table 'Water infrastructure information'. Cells B10 is automatically calculated and will state '0.00' unless the user inputs have been entered. Cells A11 to A12 and B11 to B12 are automatically generated and will state 'Not applicable' depending on the inputs to cells B5 and B9. You may need to fill in cell C10 depending on the information you entered in cell B9. Cells C5 to C9 and cells C11 to C12 are intentionally blank cells.

You do not need to fill in any cells in the second table 'Final calculation of nutrient load from wastewater'. Cells B16 to B18 are automatically calculated and will state '0.00' unless the user inputs have been entered to the first table 'Water infrastructure information'. Cells A19 to A22, cells B20 and B22 are automatically generated and will state 'Not applicable' depending on the user inputs to the first table 'Water infrastructure information'. Cell B15, cell B19 and cell B21 are intentionally blank cells.

How to fill in the table 'Water infrastructure information'

Cell B5: Enter the date of first occupancy.

Cell B6: Enter the average occupancy rate of the development. The default rate is 2.4, this should not be edited without sufficient evidence.

Cell B7: Enter the water usage. This value should be kept at 120 unless other efficiency measures are used.

Cell B8: Enter the total number of dwellings or units that will be within the development site as of the project completion date.

Cell B9: Choose the receiving wastewater treatment works (WwTW) from the dropdown list.

If you select 'Package Treatment Plant user defined' or 'Septic Tank user defined', you must enter their certified value of total phosphorus (TP) in cell C10. Otherwise the default values will be used in the calculation of the nutrient load associated with wastewater.

Nutrient permits may be changing for the WwTW you select, from 01/01/2025, or 01/04/2030. If the date of first occupancy is in-between changing permit dates, multiple permit limits may be automatically generated in cells B10 to B12. If applicable, up to 3 values for the nutrient loading associated with wastewater will be presented in cell B18, B20 or B22.

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):	01/10/2026	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	2	
Wastewater treatment works:	Package Treatment Plant user defined	
Current wastewater treatment works P permit (mg TP/litre):	Enter value in cell C10	0.8
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):	4.80	
Wastewater by development (litres/day):	576.00	
Annual wastewater TP load (kg TP/yr):	0.17	
Not applicable		
Not applicable	Not applicable	
Not applicable		
Not applicable	Not applicable	

Nutrients from future land use

This sheet contains one table.

Note: You will need to fill in cells A5 to A21 and B5 to B21. Cells B22 and C5 to C22 are automatically generated calculations and will state '0.00' unless the user inputs have been entered. Row 22 is a Total Row. The Total Row states 'Totals:' in cell A22 and automatically calculates the total sum of cells B5 to B21 in cell B22 and C5 to C21 in cell C22.

How to fill in the table 'Future land uses'

Cells A5-A21: Choose the future (post-development) land use type(s) of landcover present on the new site from the dropdown list
Cells B5-B21: Enter the area in hectares of each land use type.

The nutrient load from future land uses is shown in cells C5 to C21 for total phosphorus (TP).

The total nutrient load from future land uses is shown in cell C22 for TP.

Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual phosphorus export (kg TP/yr)
Residential urban land	0.05	0.08
Woodland	0.08	0.00
Greenspace	0.09	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
		0.00
Totals:	0.22	0.08

Final nutrient budgets

This worksheet contains one table. This table is automatically populated using the outputs from the previous worksheets.

Note: You do not need to fill in any cells in the table.
Cells B5 to B8 and cells B10 are automatically calculated and will state '0.00' unless the user inputs have been entered to all of the required worksheets.
Cells A11 to A14, cell B12 and cell B14 are automatically generated and will state 'Not applicable' depending on the user inputs to the worksheet 'Nutrients_from_wastewater'.
Cell B9, B11 and B13 are intentionally blank.

This table presents calculations that underpin the final annual nutrient budget for the development site. Up to 3 values for the nutrient budget may be presented in cells B10, B12 and B24 for total phosphorus (TP).

Total nutrient budget calculations

Description of values generated	Values generated
Wastewater TP load (kg TP/year):	0.17
Net land use TP change (kg TP/year):	0.08
TP budget:	0.25
TP budget + 20% buffer:	0.30
Annual nutrient budget	
The total annual phosphorus load to mitigate is (kg TP/yr):	0.30
Not applicable	
Not applicable	Not applicable
Not applicable	
Not applicable	Not applicable



APPENDIX 3

Monitoring & Waste Disposal



Monitoring Requirements

The phosphate removal in the proposed system is achieved using the PTP. The manufacturer does not give a life span for this product. Therefore as a conservative measure we would propose annual monitoring for Phosphate which starts in the 3rd year after installation. The sampling should take place at the final discharge point (outfall to river or pond, or sampling chamber if soak-away). The sample should then be sent to a UKAS accredited laboratory and tested for total Phosphate. We have derived a trigger level, whereby if Phosphate rises above the calculated figure below then the filter media will need to be replaced.

Trigger Level is 0.08 mg/l

Disposal of Used Filter Media

The used filter media will need to be disposed of after it has been removed from the system, this can be achieved using a vacuum tanker. The disposal of the filter media to land as a fertiliser is thought a suitable route, although this will need to be undertaken as part of a balanced nutrient management plan under RB209, or disposed of to landfill.

Maintenance

PTP - The PTP will require desludging at a maximum of annual intervals. If the high level alarm is activated then a desludge will need to be actioned in the short term. The PTP will also require an annual inspection, by a suitable contractor to check for fouling of moving parts, and efficacy of pumps and valves.

Filter Media - The filter media will require replacement when monitoring results reveal it is no longer effective. The annual inspection of the PTP should include a comparison of outflow from the PTP and the filter media tank. The flow rates should be similar, indicating that the filter media is still supporting adequate flow.



APPENDIX 4

PTP Details

Biological treatment plants BIO EASY FLOW WIRO

Series



2,5m³
(1-5RLM)



3,75m³
(2-8RLM)

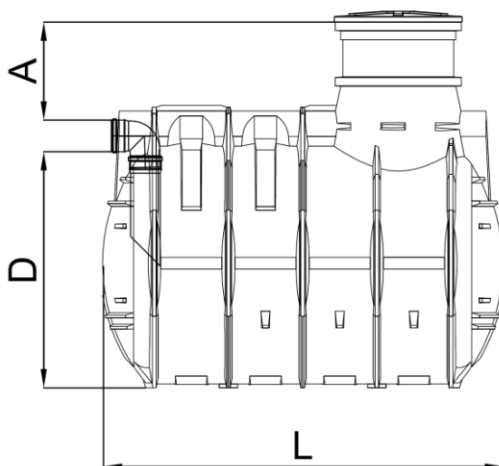
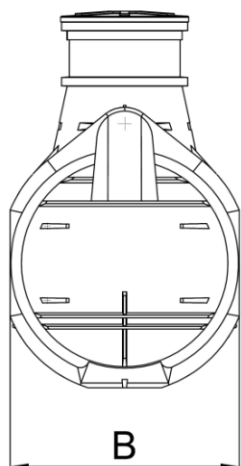


5,25m³
(3-12RLM)



6,0m³
(4-16RLM)

Basic parameters



Index	Model	Number of users PE	Capacity [m ³]	Nominal flow [m ³ /day]	Length (L) [mm]	Width (B) [mm]	Inlet height (D) [mm]	Inlet depth (A) [mm]	Inlet/outlet diameter [mm]
O/00129	BIO EASY FLOW 1-5 WIRO	1-5 PE	2,5	0,75	2150	1240	1270	520	160/50
O/00199	BIO EASY FLOW 2-8 WIRO	2-8 PE	3,75	1,2	2450	1600	1300	530	160/50
O/00187	BIO EASY FLOW 3-12WIRO	3-12 PE	5,25	1,8	2500	1825	1550	540	160/50
O/00188	BIO EASY FLOW 4-16 WIRO	4-16 PE	6,0	2,4	2840	1790	1560	560	160/50



Czech

PROTOCOL

ON THE ASSESSMENT OF PERFORMANCE OF THE PRODUCT

Registration No. 1017 – CPR – 11.381.333

In compliance with 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 in compliance with Commission Delegated Regulation (EU) No 568/2014, this protocol is issued for the construction product:

Domestic wastewater treatment plant up to 50 equivalent inhabitants

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

BIO EASY FLOW (pipes spiro): 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. Zdrojowa 51, 62-065 Grodzisk Wielkopolski, Poland

Company registration No.: 368989081

Place of production: see above

On the basis of testing, calculations, tabulated values and documentation within system 3 according to Annex V 1.4 CPR, TÜV SÜD Czech s.r.o. assessed the relevant characteristics of the product described in Annex ZA of the standard

EN 12566-3:2005 + A2:2013

The number of pages of this Protocol inclusive the title-page: 4

Essential characteristics	Performance			Harmonised technical specification
Treatment efficiency at tested organic daily load BOD ₅ = 0,22 kg/day	BOD ₅ COD SS N _{TOTAL} P _{TOTAL}	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
Watertightness (water test)	pass			EN 12566-3:2005+A2:2013
Load bearing capacity (calculation)	BIO EASY FLOW (rotomoulding): Backfill 1,0-1,5 m; WET 0,50-0,85 m acc. to type BIO EASY FLOW (pipes spiro): Backfill 1,6 m; WET 1,0 m BIO EASY FLOW (concrete) Backfill 0,0 m, WET 1,3-2,2 m acc. to type			EN 12566-3:2005+A2:2013
Durability (PE)	Pass (test methods: EN ISO 1133-1:2011, EN ISO 1183-1:2012, EN ISO 527-2:2012+Ap1:2013			EN 12566-3:2005+A2:2013
Durability (concrete)	PN-EN 1917:2004/AC:2009)			

Prague, date 03.08.2018



on behalf of Notified Body 1017
Pavla Nerandžičová
Head of Certification Department



APPENDIX 5

Percolation Results

Foul Water Disposal

The proposed treatment plant is a Haba EasyFlow sewage treatment tank, suitable for 2 No. 4 bedroom properties. In accordance with the Environment Agency binding rules, the development has a daily flow rate of 1.8m³. The calculation is below.

Daily discharge calculator for domestic properties		V1.0 June 2015
Use this calculator to work out how much effluent your septic tank or small sewage treatment plant will discharge a day when it's being used to treat the sewage from one or more houses or flats.		
Number of properties	2	← Enter the number of properties which are connected to the plant
Number of bedrooms	8	← Enter the total number of bedrooms for all of the properties and press return
Cubic metres a day	1.8	← This is how much treated sewage your plant will discharge a day
Eg if you have 2 houses sharing a septic tank, one with 3 bedrooms and the other with 4, enter 2 for the number of properties, 7 for the number of bedrooms, and this will give you a result of 1.65 cubic metres a day.		

The Haba EasyFlow PTP is suitable for 12 people. – In Accordance with “British Water Code of Practice, Flows and Loads 4” the size of the treatment system serving 2 No 4-bedroom houses gives a “P” value of 12.

A percolation test has been carried out on the site, in accordance with BRE365. The results gave a Vp of 17.2. – see “results and Drainage Field Calculation form” (below).

From this the drainage field calculation has been applied.

$12 \text{ (people)} \times 17.2 \text{ (Vp)} \times 0.25 = A \text{ (drainage field)}$

$12 \times 17.2 \times 0.25 = 51.6$ – Assuming a drainage trench 600mm wide then this gives a 86 linear metre drainage trench.

Percolation Tests - Results and Drainage Field Calculation Form

I, (name) GARY LEWIS on behalf of (applicant)
 have carried out percolation tests in accordance with the guidance provided
 with this form on (date) 27/07/2023 in respect of premises at:
LAND SOUTH WEST OF ASHDOWN FARM, NEW ROAD,
CORRIP, WILTS

The overall depth of the trial holes dug were: (state in metres/millimetres)

Trial Hole 1	Trial Hole 2
800 mm	800 mm

I confirm that the water table did not rise to within 1 metre of the invert of the proposed land irrigation scheme.

The weather conditions on the day were OVERCAST, WITH SUNNY SPELLS

The results of the percolation tests were:

Trial Hole 1				Trial Hole 2			
	Time in seconds		Vp		Time in seconds		Vp
Test 1	2340	+150	15.6	Test 1	2640	+150	17.6
Test 2	2460	+150	16.4	Test 2	2520	+150	16.8
Test 3	2700	+150	18.0	Test 3	2820	+150	18.8
Trial Hole 1 - Average Vp				Trial Hole 2 - Average Vp			
Average Vp of Trial Holes 1 & 2				17.2			

Use this averaged Vp figure in the following formula $P \times Vp \times 0.25 = A_d$

where

P = no of people served by the tank

A_d = floor area of the drainage field in square metres)

$$P \times Vp \times 0.25 = A_d$$

$$12 \times 17.2 \times 0.25 = 51.6 \text{ m}^2 \text{ of drainage field.}$$

Assuming a 600mm wide drainage trench then $51.6 \text{ m}^2 \div 0.6 = 86$ linear metres.

I am aware that I require a Consent to Discharge from the Environment Agency and this is attached / or has been requested (delete as appropriate).

Signed:

Address:

Date: 03/08/2023

Telephone No: