



Biodiversity Net Gain Report

Willow Marina, Berkshire

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1. Introduction

1.1 Report Rationale

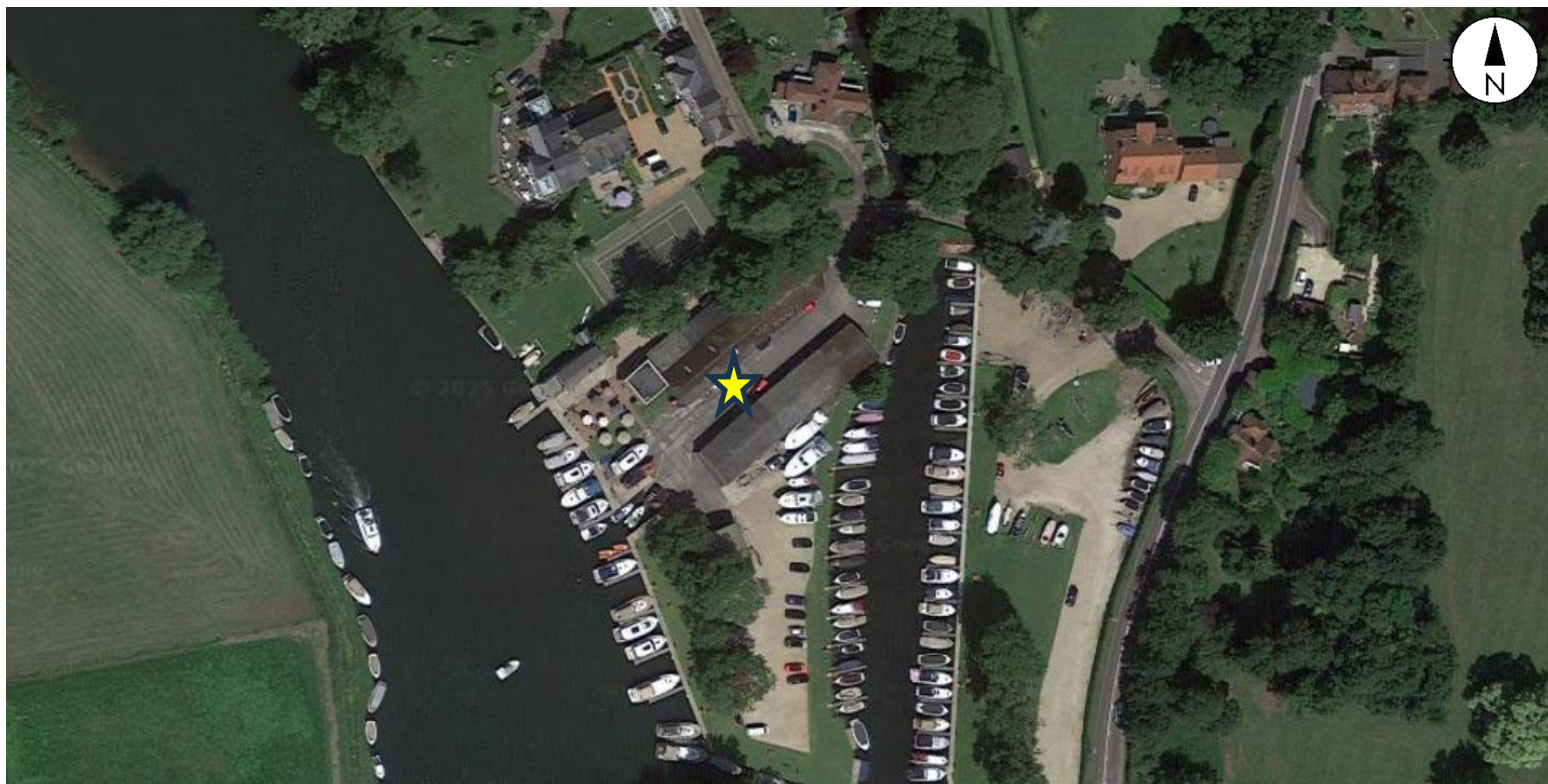
This report has been prepared at the request of Val Wyatt Marine Ltd. It relates to the installation of new pontoons at Willow Marina, Willow Lane, Wargrave, Berkshire, RG10 8LH (OS Grid Reference: SU 78504 79319). For this report, a biodiversity impact assessment calculation has been made. This document should be read in conjunction with the completed Excel spreadsheet. BNG does apply to this report since over 25m² of habitat is impacted by the proposed works. The report was written by Mr. John Roberts, BSc (Hons), Ecologist.

1.2 Site Description

The site is the Willow Marina situated between the river Thames and the Hennerton backwater. The site is located in the village of Wargrave in Berkshire. The site itself is mainly hard standing concrete and buildings with a few areas of well-maintained grass and tree lines.

The local landscape is a rural area surrounded by arable farmland, tree lines and two villages. These are the village of lower Shiplake approximately 0.5km West, and the village of Wargrave which is also approximately 0.5km away. This is all within the rural outskirts of Reading.

Figure 1: An aerial map showing the location of the land proposed for re-development (Yellow star) in relation to some of the local landscape.



1.3 Proposals

A small area on the East bank will be excavated. The new bank will be supported by sheet piling and 3 fixed pontoons will be built.

1.4 **Scope of Report**

This report aims to:

- Establish the total number of baseline and lost habitat, hedgerow, and river units at the site of the proposed scheme.
- Establish the total number habitat, hedgerow, and river units that are to be created, retained and/or enhanced under landscape and ecological mitigation proposals at the proposed works site.
- Determine whether the proposed scheme will result in a net loss, no net loss, or a net gain for biodiversity.
- Make further recommendations to gain the required 10% minimum net gain for biodiversity.

1.5 **Biodiversity Net Gain Relevant Policies**

The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. These are:

- UK Biodiversity Action Plan (UKBAP)
- The Natural Environment and Rural Communities (NERC) Act 2006
- The UK Post-2010 Biodiversity Framework (2011-2020)
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services
- The National Planning Policy Framework (NPPF) 2021
- Environmental Act 2021
- Local policy

A full explanation of these policies can be found within **Appendix D**.

2. Methodology

Personnel

Field surveys have been undertaken by licensed ecologist/s, members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and members of Eco 360 staff.

The Biodiversity Net Gain Assessment has been carried out in line with CIEEM Guidelines on Good practice principles for development (2016), CIEEM A Practical Guide (2019) and BS 8683:2021 - Process for designing and implementing biodiversity net gain.

Survey of Baseline Habitats and Condition

Habitat typing and condition assessments are undertaken during a Preliminary Ecological Appraisals (PEA) or similar studies. The baseline also considers historic records for the site and local area via a desktop study (satellite imagery, previous ecological reports), as well as additional surveys to assess the presence/absence of species in certain situations. Conditions of habitats and hedgerows are assessed using the scoring systems provided in Technical Annex 1 of the Biodiversity Metric 4.0 Condition Assessment Sheet.

River assessments are carried out through a MoRPH5 Pro survey and River type survey. At least one MoRPH5 is undertaken per reach on site that will be directly or indirectly impacted with a further MoRPH5 undertaken upstream to record a more “natural setting” if required. This data is then processed via Cartographer to give the condition of the rivers on site.

Calculations of Baseline Habitats

Using Geographic Information Software (GIS), baseline habitats are measured in hectares (ha) using vector layer polygons. These measurements are then input into the DEFRA Statutory Biodiversity Metric Calculation Tool. Habitat condition and connectivity are then input into the calculator. The area of habitat retained is then entered into the calculation to give a final sum of baseline units and lost unit.

Each habitat has a base score of 1, this is then multiplied by the size of the habitat (ha). The habitat is then multiplied by its distinctiveness:

- Very low – 0
- Low – 2
- Medium – 4
- High – 6

The next multiplier is based on the condition of the habitat:

- N/A-other/agricultural – 0
- Poor – 1
- Fairly poor – 1.5
- Moderate – 2
- Fairly good – 2.5
- Good – 3

Calculations of Post-development Habitats

The calculation is informed by planning design, landscape plans, and proposed ecological mitigation. Plans are georeferenced into GIS and are similarly measured in hectares (ha) using vector layer polygons. These measurements are then converted into input into the DEFRA Statutory Biodiversity Metric Calculation Tool. A target condition will be assigned to each new habitat following the same scores as above. The calculator will generate a proposed time to hit this target condition and difficulty score.

3. **Baseline Calculation and Proposal Impact**

3.1 **Baseline Habitats**

The table below outlines the existing site status based on the most recent field survey.

Habitats

Habitat Type	Area (ha)	Distinctiveness	Distinctiveness Score	Condition	Condition Score	Total Habitat Units	Baseline Units Retained	Baseline Units Enhanced	Area Habitat Lost	Units Lost
Modified Grassland	0.2061	Low	2	Moderate	2	0.82	0.80	0.00	0.01	0.02
Developed Land; Sealed Surface	0.3906	V.Low	0	N/A	0	0.00	0.00	0.00	0.00	0.00
Small individual rural trees	0.0244	Medium	4	Moderate	2	0.20	0.20	0.00	0.00	0.00

3.2 Proposed Habitats

Habitat Type	Area (ha)	Distinctiveness	Distinctiveness Score	Condition	Condition Score	Habitat Units delivered
Developed Land; Sealed Surface	0.0012	V.Low	0	N/A	0	0.00
Watercourse Footprint	0.0045	V.Low	0	N/A	0	0.00

Proposed watercourse habitat

Watercourse type	Length (Km)	Distinctiveness	Distinctiveness Score	Condition	Condition Score	Watercourse units delivered
Other rivers and streams	0.019452	Low	2	Moderate	2	0.82

3.3 Total Net Unit Change

The development proposals currently do not meet the recommended 10% net gain in biodiversity units. In order to meet the requirements of both national and local planning policy, the development is required to provide a 10% biodiversity net gain.

1. The total baseline habitat units on site equal 1.02.
2. The habitat units on site after the proposed works are 1.00. Therefore, the proposed works result in a net unit change of **-0.02 habitat units** (-2.24%).
3. **To reach the 10% Biodiversity Net Gain requirements, another 0.12 habitat units must be created. There is inadequate space to create this on site, so offsite habitat creation is recommended.**
4. Please note, to meet habitat trading rules, 0.02 of these future offsite habitat units must be of medium distinctiveness or higher. This is because the lost modified grassland from the proposed works must be replaced with habitats of equal or greater distinctiveness. This can be done by including a minimum of 2 small individual trees during your offsite habitat creation.
5. There are zero hedgerow/linear habitat units on site, no further action is required regarding this.
6. Water course units increased from 0 to 0.06 due to the excavation of the riverbank, no further action is required regarding this.

4. Recommendations

4.1 Off-site enhancements

The following enhancements are a recommended way to meet the 10% Biodiversity Net Gain requirements and habitat trading rules. Since there is not adequate space on site to provide this, offsite enhancements will be required instead.

It is recommended that Eleven trees are planted. These are to consist of:

Eleven small sized trees: Apple (*Malus x domestica*), cherry plum (*Prunus cerasifera*), pear (*Pyrus communis*), plum (*Prunus domestica*), and walnut (*Juglans regia*).

These trees are to be planted accordance with BS 3936, BS8545 and The National Plant Specification – 'Rootballed Trees'.

By implementing these measures, the development can achieve the habitat units required to meet the 10% biodiversity net gain.

If these measures are included, the development will result in a total net unit change of 0.12 units, which correlates to a +11.20% net change in habitat biodiversity. Additionally, this will satisfy the habitat trading rules.

How to plant these eleven trees offsite

Firstly, you must find an offsite location which is owned or leased with consent for BNG use for at least the next 30 years. This should be offsite, but also as nearby as possible.

This can easily be found through Google or Facebook marketplace with companies and landowners charging for offsite BNG. Common options include: the Environment Bank, The Land Trust, various Local nature recovery networks and various Wildlife Trusts.

Secondly, the eleven recommended trees of the species mentioned above should be planted at that location. They must be appropriately managed for 30 years by the landowners, planted with appropriate spacings, and in a suitable habitat. The landowners will already be aware of this and should plant the trees in planted accordance with BS 3936, BS8545 and The National Plant Specification – 'Rootballed Trees'.

Finally, the units must be registered with Natural England and legally secured. Your offsite BNG provider can give details of this process and will likely deal with the appropriate planting and registering of the trees.

5. References

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6. Appendices

Appendix A: Baseline habitat map

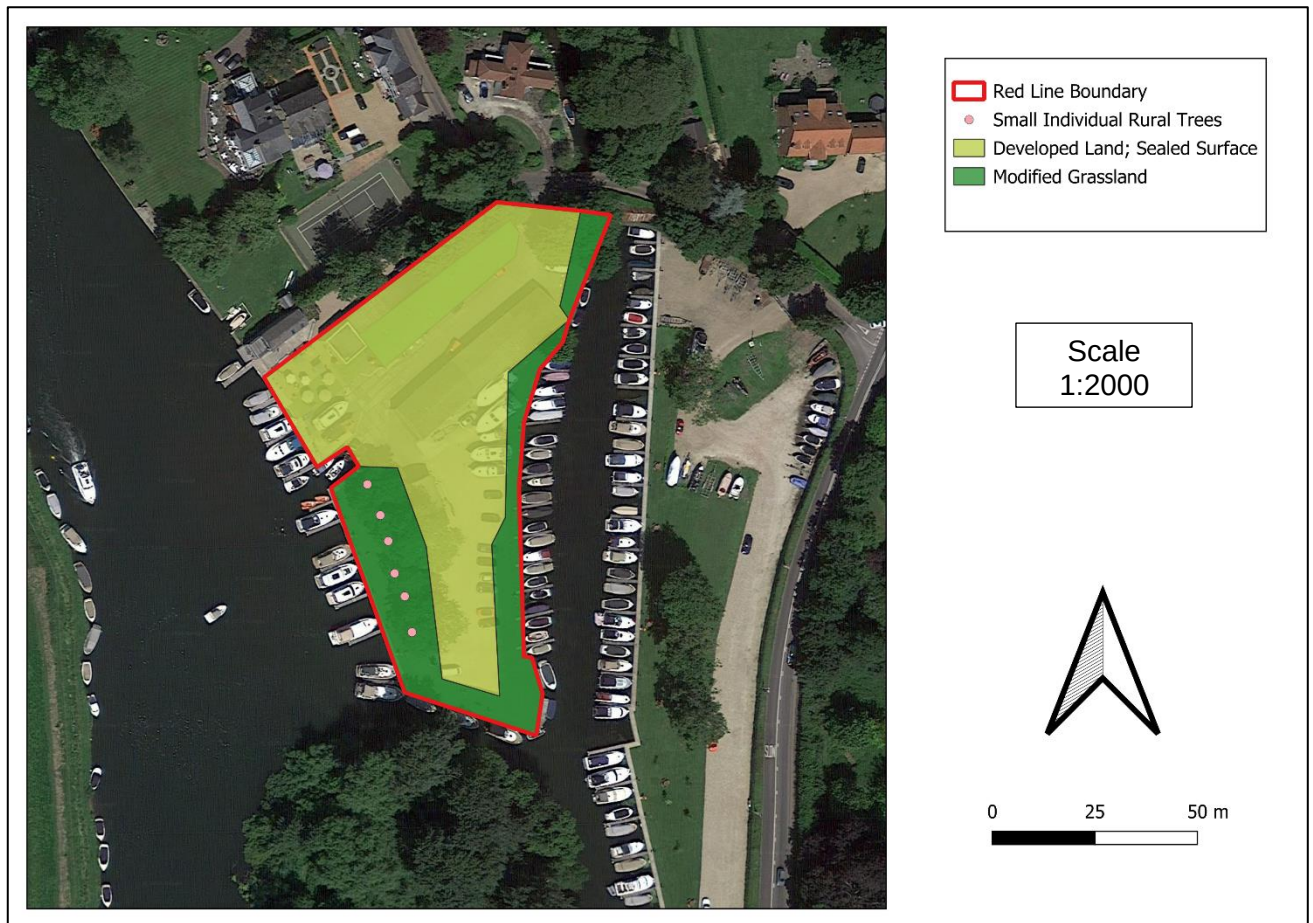
Appendix B: Proposed Site Plan

Appendix C: Proposed habitat map

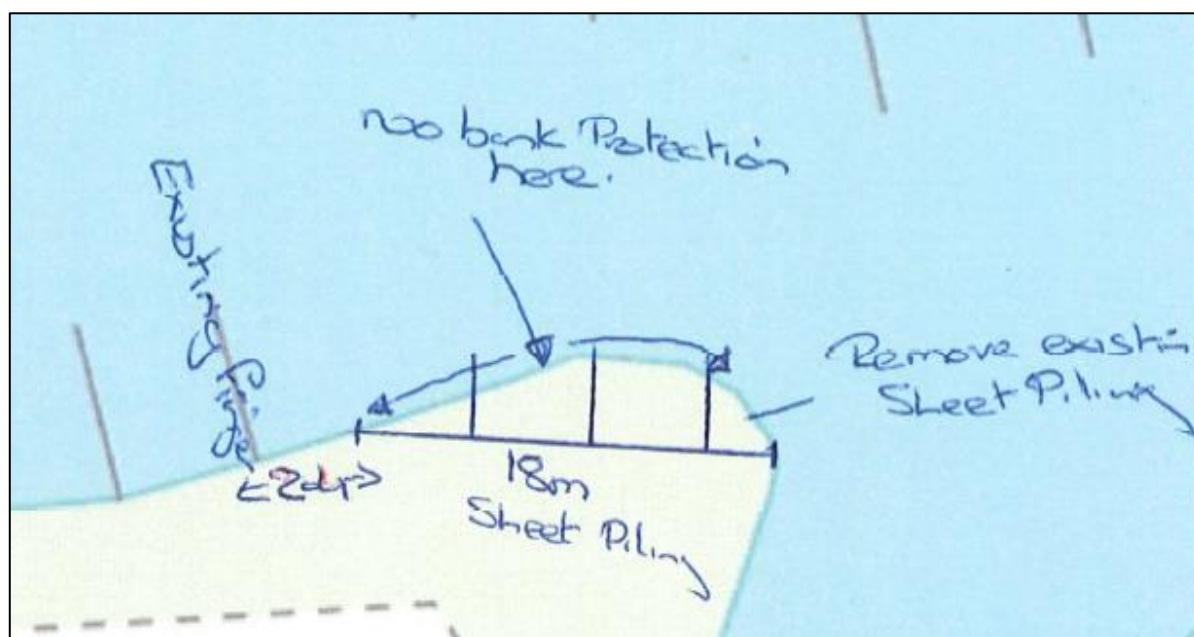
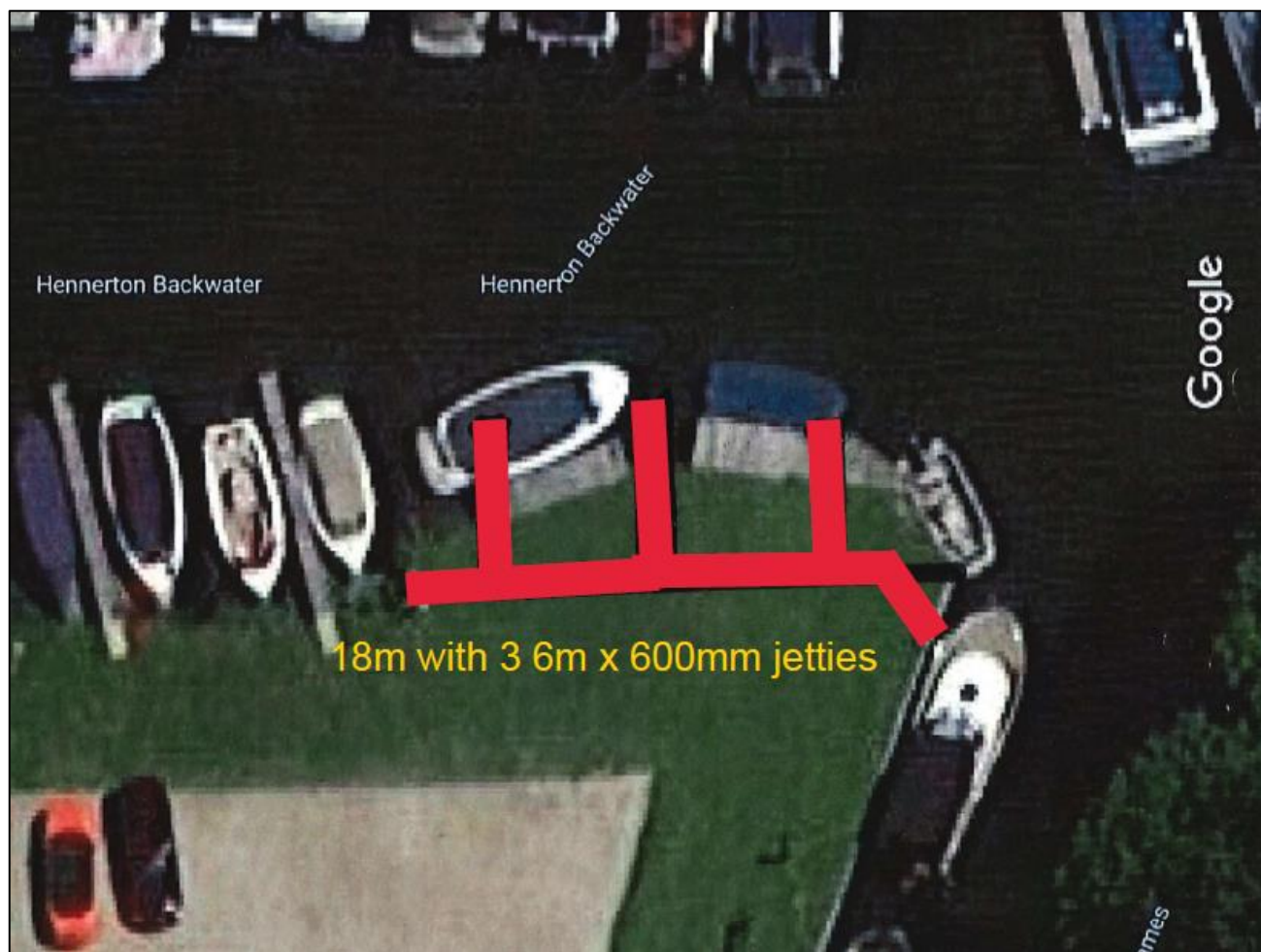
Appendix D: Biodiversity Net Gain

Relevant Policies

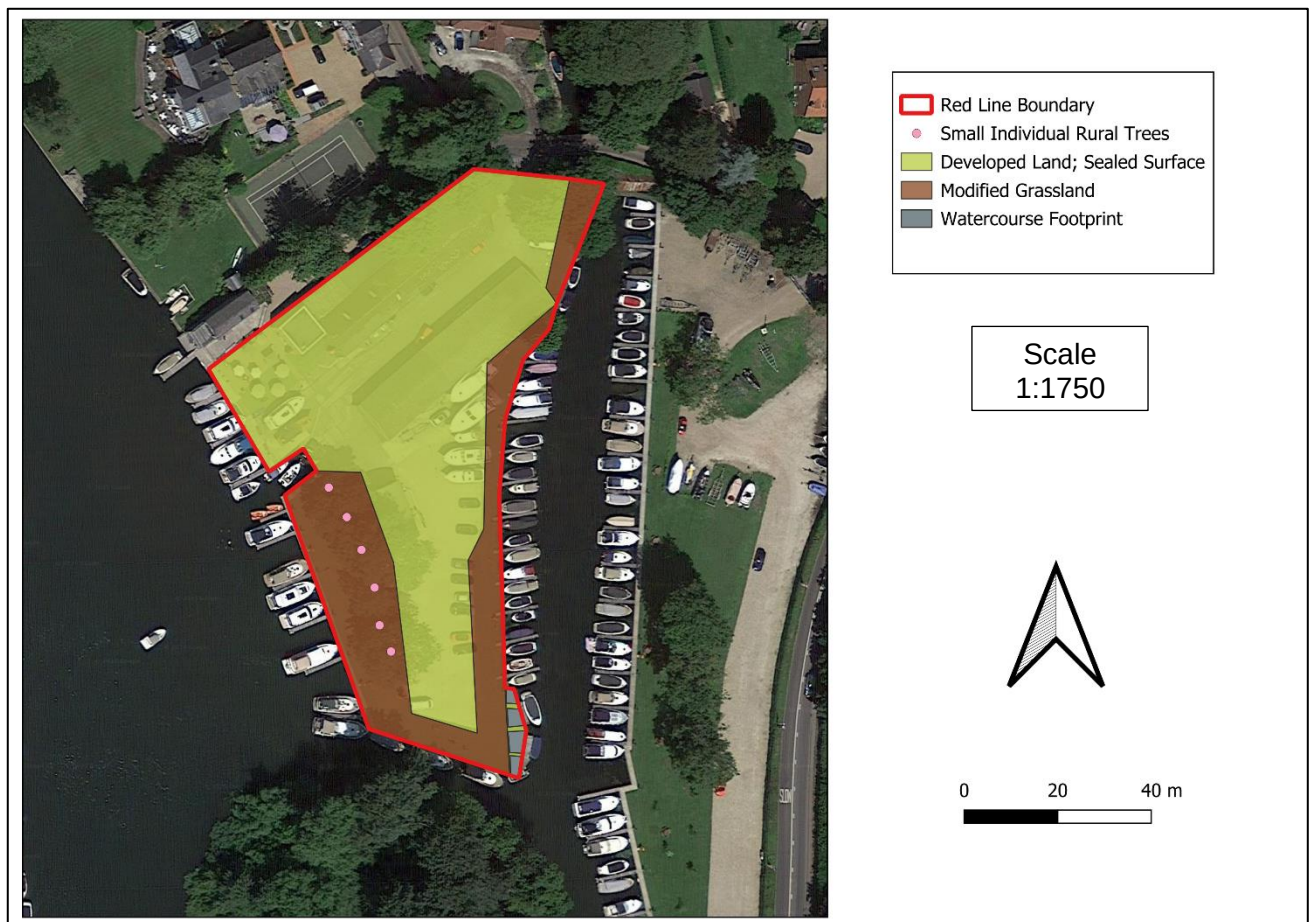
Appendix A: Baseline habitat map



Appendix B: Proposed Site Plans



Appendix C: Proposed Habitat Map



Appendix D: Biodiversity Net Gain Relevant Policies

Environmental Act 2021

Part 6 on nature and biodiversity covers all areas of biodiversity net gain across two core sections. This Act mandates that all planning meets a minimum of a 10% gain in biodiversity calculated using the appropriate Metric and that the newly created habitats are secured for at least 30 years.

National Planning Policy Framework (NPPF)

While currently not a legal obligation, biodiversity and environmental net gains are mentioned in the revised National Planning Policy Framework (NPPF) within the following paragraphs (please refer to the NPPF for the full quotations):

Achieving sustainable development

Paragraph 8 Section C. “an environmental objective – **to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.**”

Preparing and reviewing plans

Paragraph 32. “Local plans and spatial development strategies should be informed throughout their preparation by a sustainability appraisal that meets the relevant legal requirements. This **should demonstrate how the plan** has addressed relevant economic, social and **environmental objectives (including opportunities for net gains)**. Significant **adverse impacts on these objectives should be avoided** and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where significant adverse impacts are unavoidable, suitable mitigation measures should be proposed (or, where this is not possible, compensatory measures should be considered).”

Identifying land for homes

Paragraph 73 section C. “consider the opportunities presented by existing or planned investment in infrastructure, the area’s economic potential and the scope for **net environmental gains**”

Transport infrastructure:

Paragraph 104. “Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

d) the environmental impacts of traffic and transport infrastructure can be identified assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for **net environmental gains**.

Planning decisions:

Paragraph 119 “Planning decisions and planning policy should a) encourage multiple benefits from both urban and rural land ... and taking opportunities to **achieve net environmental gains - such as developments that would enable new habitat creation.**”

Conserving and enhancing the natural environment

Paragraph 174 Section D. “**minimising impacts on and providing net gains for biodiversity**, including by establishing coherent ecological networks that are more resilient to current and future pressures”

Habitats and biodiversity

Paragraph 179. “To protect and enhance biodiversity and geodiversity, plans should:

a) Identify, map and **safeguard components of local wildlife-rich habitats** and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, **enhancement, restoration or creation**;

and b) promote **the conservation, restoration and enhancement of priority habitats**, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing **measurable net gains for biodiversity**.”

Paragraph 180. “When determining planning applications, local planning authorities should apply the following principles:

a) if **significant harm to biodiversity** resulting from a development **cannot be avoided** (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then **planning permission should be refused**;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the **loss or deterioration of irreplaceable habitats** (such as ancient woodland and ancient or veteran trees) **should be refused**, unless there are wholly exceptional reasons and a suitable compensation strategy exists;

and d) development **whose primary objective is to conserve or enhance biodiversity should be supported**; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can **secure measurable net gains for biodiversity** or enhance public access to nature where this is appropriate.”

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The survey results purport the current status of the site and its potential for protected species utilisation at the time of surveying. It should not be viewed as a complete list of the possible flora and fauna species that could be using the site at different times of the year.

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No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.