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Biodiversity Impact Calculation

2 Conisboro Way, Caversham

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Report Summary

1. The Ecology Co-operation was commissioned by Mr and Mrs Odlin to undertake a retrospective Biodiversity Impact Calculation of a proposal to redevelop a small site. The Small Sites Metric was used to quantify net change in biodiversity.

2. The proposed development scheme at this site will result in the loss of:

- developed land/sealed surface – 95.75m²
- vegetated garden – 910.6m²
- ruderal/ephemeral – 45.30m².

3. Post intervention the following habitats will be retained:

- line of trees – 122m.

4. Post intervention the following habitats will be created:

- artificial unvegetated, unsealed surface – 202.5m²
- developed land; sealed surface – 391.53m²
- vegetated garden – 457.62m².

5. The Biodiversity Impact Calculation has demonstrated that the proposed scheme results in a likely net gain of -0.4489 habitat units (-83.56%) and -0.1520 linear units (-31.15%).

6. The current scheme maximises on-site enhancements and biodiversity value within the limitations of the garden habitat according to Statutory biodiversity net gain and qualifies for the Self Build Exemption set out in the Environment Act 2021. Additional enhancements that cannot be quantified by the Metric such as bat boxes, bird boxes and log piles will also be incorporated into the design, leading to further benefits for biodiversity on site.

7. The client has to commit to offsite compensation via purchasing credits to offset the loss and achieve a neutral gain in line with the aforementioned Self Build Exemption.



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1 INTRODUCTION

1.1 Purpose of the Report

There is a movement in planning policy and legislation towards a requirement for all new developments to demonstrate 'net gains' in biodiversity following the release of an updated National Planning Policy Framework¹ by the Department of Housing, Communities and Local Government. A mandatory value of 10% net gain for all developments has now also been outlined within the Environment Act 2021².

This document includes a baseline 'Biodiversity Impact Calculation' (BIC) for the proposed development at 2 Conisboro Way. This report will be used in relation to a proposal for the construction of a residential dwelling with associated hard and soft landscaping. The results of the BIC are deemed accurate for the most recent layout plan (see **Error! Reference source not found.**figure 1.).

The calculation utilises the Small Sites Metric and assigns 'habitat/hedgerow units' to the pre-existing habitats contained within a proposed development site and those that are predicted to be lost, restored and/or created once the development has been constructed. This allows an objective comparison to be made between the existing biodiversity value of a given site and the predicted biodiversity value post development, with the net change in biodiversity value subsequently quantified.

The purpose of this document is to present the findings of the BIC based on the most up-to date existing habitat survey information and the most current outline plans for the proposed residential development of the site. Biodiversity Impact Calculations provide an evidence base for discussions between the ecological consultant, developer and the local planning authority regarding on-site avoidance, on-site mitigation and off-site compensation requirements.

This report was commissioned and produced at the request of Mr and Mrs Odlin.

1.2 Background

The site measures 1051.65m² in area and is comprised of a vegetated garden, boundary tree lines, ruderal vegetation, a residential dwelling and a shed. The site was cleared prior to planning permission being granted and, therefore, this is a retrospective assessment; the site context has been established using data from the site visit carried out in June 2022, photographs and Google Earth imagery.

During the walkover survey, the habitats were classified in accordance with UKHAB³ for inputting into the Small Sites Metric Calculation Tool.

¹ HM Government (2021). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

² HM Government (2021). Environment Act 2021. Available online at: <https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted>

³ UKHab (2020) *The UK Habitat Classification – Habitat Definitions Version 1.1.*

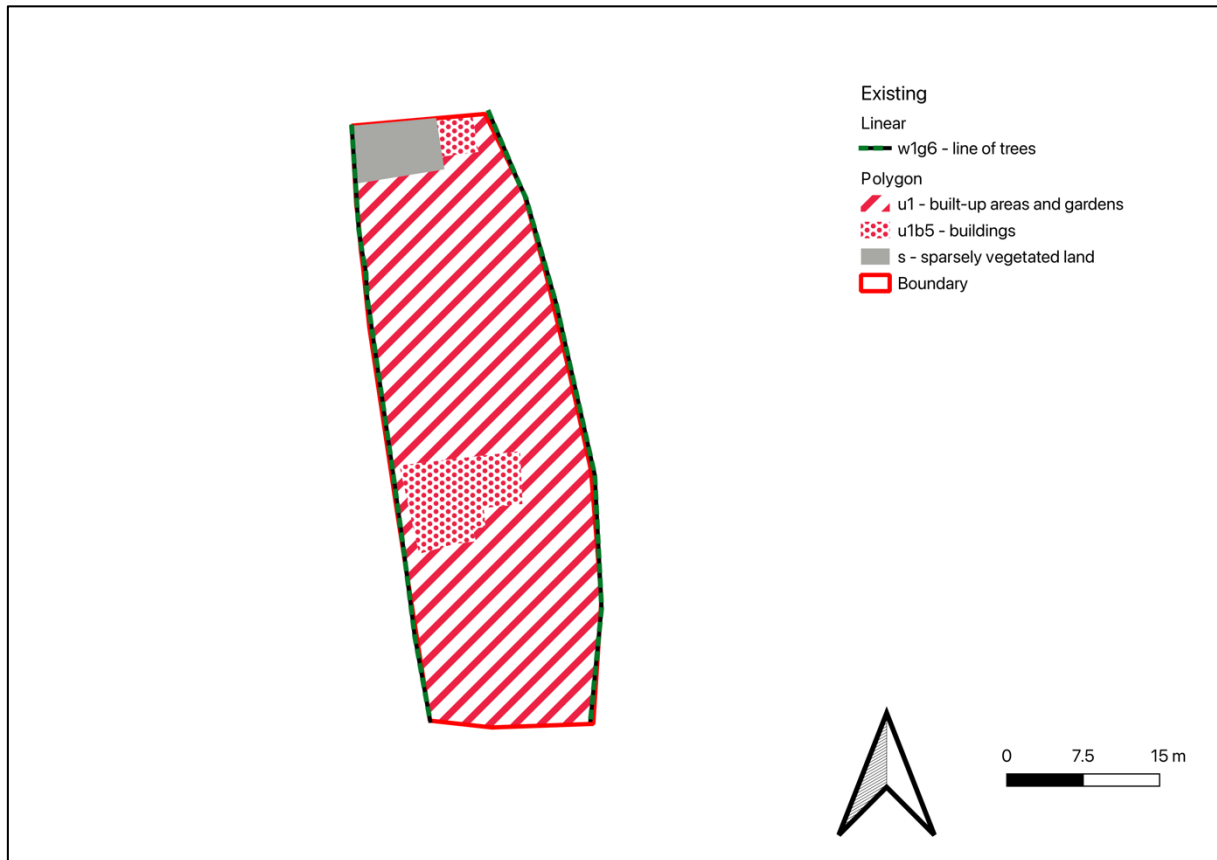


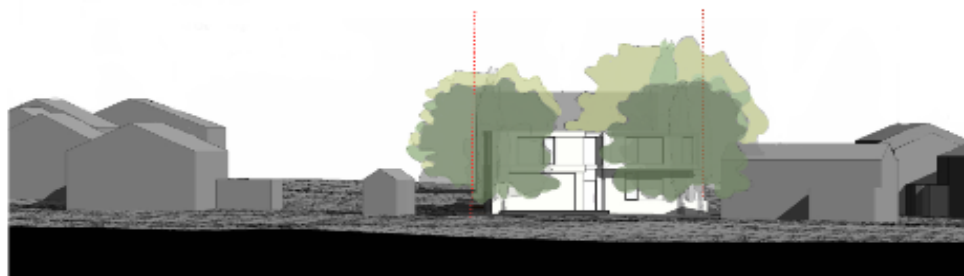
Figure 1. UKHAB map showing existing habitats within the site. Produced using QGIS software, version 3.32.0 – Lima.

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Set Boxes for Building and Trees suitable for bats as identified in Bat Survey.

Large and Small Containers or nesting and on during growth periods

Bird baths to front and rear



Baseline images reproduced from JDRM Archives.

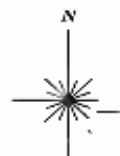


Figure 2. The proposed development plans for the 2 Conisboro Way, Caversham. Provided by JDRM Architects. Drawing No. 1.4, dated 17th October 2023.

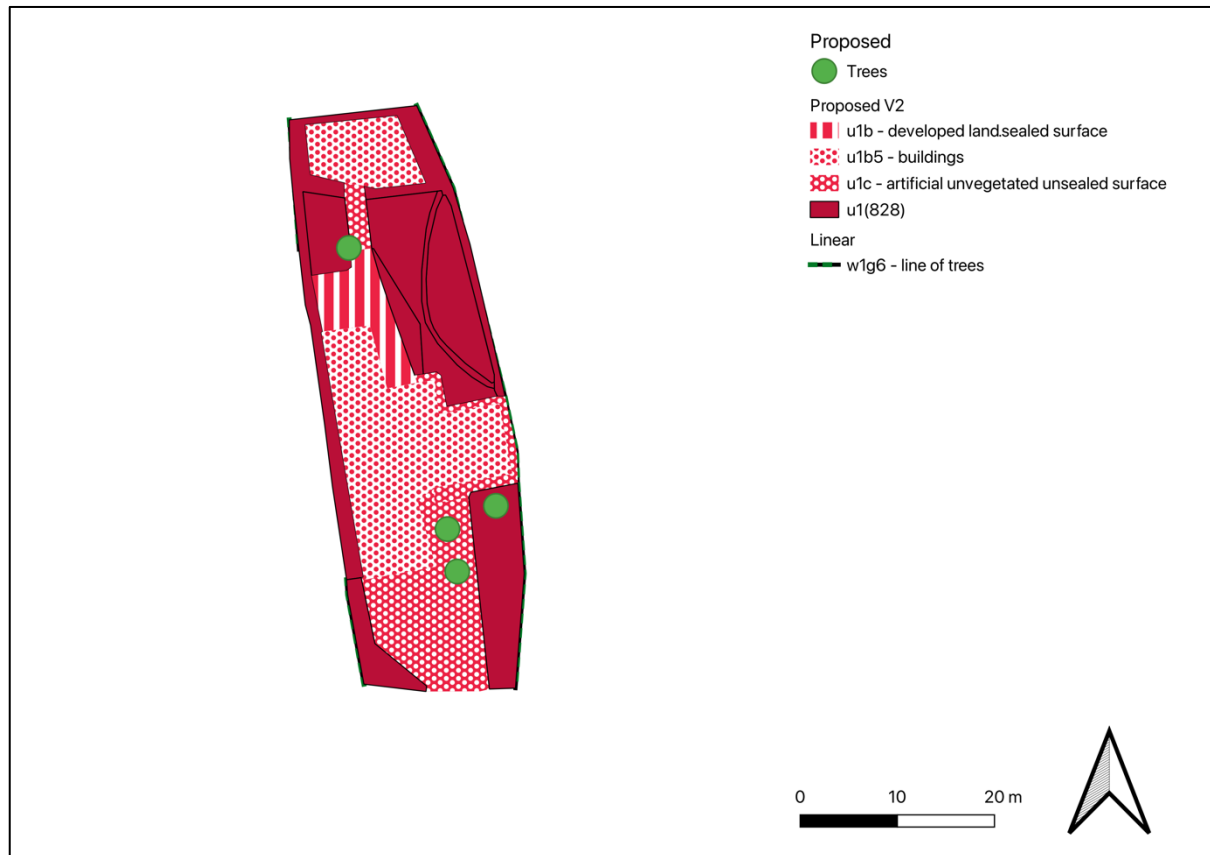


Figure 3. UKHAB map showing proposed habitats within the site. Produced using QGIS software, version 3.34.3 – Prizren.

1.3 Policy & Legislation

NPPF (2023)

The NPPF sets out the Government’s view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regards to the operation of the planning system.

Paragraph 180d, states that planning policies and decisions should contribute to and enhance the local environment by:

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

Paragraph 185b, states that to protect and enhance biodiversity and geodiversity, plans should;

- “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 186d, states that when determining planning applications, authorities should apply the following principle:
“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.

Environment Act (2021)



2 Conisboro Way – Biodiversity Impact Calculation

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

Local Policy

Table1. Reading Borough Council - Local Plan (November 2019)

Policy number/title	Policy Summary
CC9 – Securing Infrastructure	In determining appropriate provision or contribution, the highest priority will be given to the following: • [...] Open space, green infrastructure and other measures to improve or enhance biodiversity;
EN12 – Biodiversity and the Green Network	b) On all sites, development should not result in a net loss of biodiversity and geodiversity, and should provide a net gain for biodiversity wherever possible .
H11 – Development of Private Residential Gardens	Proposals for new residential development that includes land within the curtilage or the former curtilage of private residential gardens will be acceptable where: [...] 8) The development provides biodiversity net gain wherever possible, and would not have an adverse impact on biodiversity in terms of the fragmentation of blocks of gardens, which as a unit or in association with adjacent green space are deemed to make an important contribution to biodiversity and contribute to the green network; and
H13 – Provision for Gypsies and Travellers	Proposals should: [...] vii) Not result in the loss of biodiversity or important trees, and provide a net biodiversity gain where possible.

1.4 Methodology

This Biodiversity Impact Calculation uses the Small Sites Metric Calculation Tool published by Natural England⁴. This uses the Government Biodiversity Metric developed by DEFRA ('the DEFRA Biodiversity Metric') to calculate 'habitat units' and 'hedgerow units' by multiplying the area (m²) or lengths (m), 'distinctiveness' (habitat type), 'condition' (quality), and strategic significance (location in relation to the authority's local strategy) of each habitat parcel. Note that the baseline condition of habitats within this metric are 'fixed' and not calculated using condition assessments.

The calculation provides a negative value to the biodiversity units where habitat is being directly lost to development. Where habitats are enhanced or created on-site, the calculation gives a positive value but adds risk factors that account for uncertainty - difficulty in creating new habitats and time delays while they establish; habitats that are more difficult to restore or that will take a long time to reach a set target condition will score lower and therefore make a smaller positive contribution.

⁴ Natural England (2021) The Small Sites Metric. Available online at: <http://publications.naturalengland.org.uk/publication/6047259574927360>.



2 Conisboro Way – Biodiversity Impact Calculation

Where on-site gains are equal to or larger than the losses, the project is deemed to have neutral biodiversity impact or biodiversity 'net gain' respectively.

Where on-site gains do not outweigh on-site losses and a biodiversity 'net loss' is calculated, this becomes an 'offset requirement'. Offsets can be provided by further habitat creation or enhancement in-situ or through a third party to ensure no net loss will be achieved. Note that the Small Sites Metric cannot be used to calculate off-site habitat creation or enhancements. This will require use of the Biodiversity Metric 4.0 – Calculation Tool⁵. It follows that a biodiversity net gain can still be achieved by providing higher biodiversity gains through the offset than the net loss resulting from the development.

Note that the Biodiversity Metric does not allow for 'trading down'; one of the key principles in measuring biodiversity net losses or gains is that habitats of high ecological importance cannot be offset by the creation of larger areas of habitats with lower value. The Small Sites Metric Calculation Tool includes a 'trading down correction' that deducts the number of biodiversity units that are not accounted for through the creation of equivalent high distinctive habitats than that lost. For example, the loss of a small area of neutral grassland habitat (medium distinctiveness) will not be offset by a larger area of modified grassland (low distinctiveness) and will only be offset by an equivalent area of habitat of the same distinctiveness or higher.

1.5 Data Sources

This calculation uses the most up to date survey information. This is a retrospective assessment as the site was cleared prior to the biodiversity impact calculation being undertaken, therefore, photographs and ariel imagery have been used to map the habits as accurately as possible. The areas of each habitat category were measured using GIS mapping tools (QGIS). Condition assessments are built into the Small Sites Metric and therefore a separate assessment was not required.

To predict biodiversity units supported by the site after completion of the development, the aerial imagery was overlaid by the proposed scheme layout. This allowed direct losses of habitats to be measured where the built environment overlaps with pre-existing habitat, with gardens and amenity areas treated separately. The habitats that are 'created' after development are assumed to achieve the highest level of condition as appropriate; a separate landscape and enhancement plan should be produced to ensure this condition is achieved.

The Small Sites Metric uses a separate calculator spreadsheet for linear features. This works under the same principles as above but replaces areas of habitat with linear length of a feature. It should be noted that because linear features often have higher ecological importance, linear habitats are assigned higher distinctiveness and must be offset with other linear features. The biodiversity units generated for linear features are not equivalent or interchangeable with biodiversity calculations for areas of habitat.

⁵ Natural England (2021) The Biodiversity Metric 4.0. Available online at: <http://publications.naturalengland.org.uk/publication/6049804846366720>.



1.6 Results

1.6.1 Habitat Losses and Gains

The proposed development scheme at this site will result in the loss of:

- developed land/sealed surface – 95.75m²
- vegetated garden – 910.6m²
- ruderal/ephemeral – 45.30m²
- individual trees – 366m².
- Line of trees – 38m

Post intervention the following habitats will be retained:

- line of trees – 84m.

Post intervention the following habitats will be created:

- artificial unvegetated, unsealed surface – 202.5m²
- developed land; sealed surface – 391.53m²
- vegetated garden – 457.62m².
- Enhancements in the form of log piles, wildflower and scrub which do not fit into the metric are to be put in place within the development. This is to be specified in an enhancement strategy.

The overall results of the calculations are presented in Table 2 below. Please refer to the Small Sites Metric Calculation Tool supplied with this document (submitted separately) for full details of the calculation. The client has agreed to purchase credits to compensate for the net loss through off-site enhancement.

Table 2. Headline results of the Biodiversity Impact Calculation for the proposed development at 2 Conisboro Way.

Baseline Units	Habitat units	0.5372	
	Hedgerow units	0.4880	
	River units	Zero Units Baseline	
Post-development Units	Habitat units	0.0883	
	Hedgerow units	0.3360	
	River units	0.0000	
Total net unit change	Habitat units	-0.4489	▲
	Hedgerow units	-0.1520	▲
	River units	0.0000	✓
Total net % change	Habitat units	-83.56%	▲
	Hedgerow units	-31.15%	▲
	River units	% target not appropriate	



1.7 Conclusions

The Biodiversity Impact Calculation has demonstrated that proposed scheme results in a likely net loss of **-0.4489 habitat units (-83.56%)** and **-0.1520 linear units (-31.51%)**. However, due to the Self Build exemption clause within the Environment Act 2021, the development satisfies the requirements with no net loss.

The current scheme does meet not the 10% net gain in habitat units mandated by the Environment Act 2023. However, the client has agreed to commit to offsite compensation via purchasing credits to offset the net loss and achieve neutral gain in line with the Self Build Exemption of the Environment Act 2021.

Under the current guidance, habitats within residential gardens must be mapped and inputted into the metric under the broad habitat type 'urban' and the habitat type 'vegetated garden'. So, while there are habitat enhancements within the plan, these cannot be quantified by the metric. Additional enhancements such as bat boxes, bird boxes and log piles will also be incorporated into the design, further increasing the biodiversity value on site.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.