



Biodiversity Net Gain Assessment Report

Basford Hall, Leek, Staffordshire, ST13 7ER

Prepared for ctd Architects

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Methods used to prepare this report, including those carried out in the field followed The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

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EXECUTIVE SUMMARY

- Fauna Forest Ecology Limited was commissioned to undertake a Biodiversity Net Gain (BNG) Assessment to determine the impact on biodiversity for proposed development at Basford Hall, Leek, Staffordshire, ST13 5HE. The proposals are to develop the application site for residential use, with the construction of a natural pool, a new summer house and outdoor eating area. The site will be landscaped with lawned gardens, trees and planting beds.
- The application site has been left as waste ground and service yard following demolition of barns in 2013, leaving behind a large concrete base and areas of compacted stone. Relatively small patches of scrub and vegetation have regenerated naturally. A garage exists on site with an ornamental garden adjacent to it.
- A BNG calculation using the Statutory Biodiversity Metric Calculation Tool (July, 2024) was completed on 25th April 2025 to assess if the proposed development will result in a minimum 10% net gain.
- The results indicate the proposed development will lead to a 109.26% net gain in habitats.
- Trees, shrubs and turf will be used to landscape the new garden with many native trees being planted and a large natural swimming pool using plants for filtration created at the centre of the site.

CONTENTS

EXECUTIVE SUMMARY	3
1 INTRODUCTION.....	5
2 METHODOLOGY	7
3 BASELINE CONDITIONS	9
4 BNG GOOD PRACTICE PRINCIPLES FOR DEVELOPMENT	11
5 PROPOSED DESIGN	11
6 BNG METRIC	14
7 RECOMMENDATIONS.....	15
APPENDIX A: COMPLETED BIODIVERSITY NET GAIN METRIC SPREADSHEET	16

TABLES

Table 1: Summary of baseline habitats	9
Table 2: Summary of habitat management for proposed and post-development habitats	13
Table 3: Biodiversity metric headline results	14

FIGURES

Figure 1: Habitat baseline plan	10
Figure 2: Proposed habitats plan.....	12

1 INTRODUCTION

- 1.1 This report has been prepared by Fauna Forest Ecology Limited on behalf of ctd Architects, in relation to Basford Hall, Leek, Staffordshire, ST13 7ER (the site). It provides the results of a Biodiversity Net Gain (BNG) Assessment in support of a full planning application relating to construction of a natural pool, a summer house and outdoor eating area. The site will be landscaped with lawned gardens, trees and planting beds.
- 1.2 The application site is immediately surrounded by a number of residential properties to the southeast, grasslands to the north, east and south, and arable habitat to the southwest. Tree lines and hedgerow networks link the site to the wider landscape that comprises grasslands, arable, woodlands of various sizes and quality, open water bodies and water corridors, including the River Churnet and Caldon Canal corridor.
- 1.3 The proposals are to develop the application site for residential use, with the construction of a natural pool, a new summer house and outdoor eating area. The site will be landscaped with lawned gardens, trees and planting beds.
- 1.4 This BNG Assessment report largely follows the Chartered Institute of Ecology and Environmental Management (CIEEM) guidance¹. The BNG Assessment has been informed in part by a UKHabs assessment. The scope and objectives of this report are to:
 - calculate baseline ecological BNG unit score: this is undertaken by classifying the habitat types, their distinctiveness, condition, connectivity and strategic significance both before and post-development, following the Defra Statutory Biodiversity Metric (known as 'the metric').
 - ensure baseline habitat conditions are classified in a robust and consistent manner, and that classification is based on data available at the time of assessment.
 - clearly identify data collection methods and any limitations.
 - calculate baseline pre- and post-development habitat units and hedgerows units for the site based on current development proposals.
 - assess the feasibility of the proposals to achieve a net gain in biodiversity through the Metric.
 - Propose a BNG design with the aim of maximising BNG through habitat creation, enhancement and succession (where feasible).
 - aim to achieve BNG on-site wherever possible, with off-site measures considered as an alternative option if required.

¹ CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management. Winchester, UK.

Planning policy and legislation

- 1.5 BNG has been defined as ‘development that leaves biodiversity in a better state than before, and an approach where developers work with local governments, wildlife groups, landowners and other stakeholders in order to support their priorities for nature conservation’ (*BNG: Good Practice Principles for Development*)².
- 1.6 BNG became mandatory in England under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021) from February 2024 for large sites and April 2024 for small sites. All sites must achieve a minimum 10% net gain in biodiversity.
- 1.7 Using a biodiversity metric means a developer applies a standardised formula to calculate the value of the site before and after the development, in the form of biodiversity units. These vary dependent upon the habitats affected, their condition and their extent. Where necessary, the developer will then provide an offset to deliver an equivalent number of biodiversity units. Offsetting is only used to compensate for adverse impacts on the biodiversity present on the site that will be impacted, once appropriate avoidance and mitigation measures have been completed. This ensures the mitigation hierarchy as required by the National Planning Policy Framework (NPPF, 2023³) is followed.
- 1.8 The NPPF (2023) seeks to ensure the planning system contributes to and enhances the natural and local environment, protects and enhances biodiversity and geodiversity by:
*“180. 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;
185. 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.”*
- 1.9 Public authorities have a specific duty under the Natural Environment and Rural Communities Act 2006 (NERC Act) to consider biodiversity and are required by central government to deliver no net loss.
- 1.10 A BNG Assessment must be completed prior to works commencing to allow any planning officers the opportunity to consider the likely impacts the proposed development will have on the local biodiversity.

² CIEEM, CIRIA, IEMA (2016). Biodiversity Net Gain: Good Practice principles for development.

³ Department for Levelling Up, Housing and Communities (2023). *National Planning Policy Framework*. Available at: [National Planning Policy Framework](#) (Accessed: November 2024).

2 METHODOLOGY

Desk study

- 2.1 To assess the potential ecological impacts of the scheme, a search was undertaken using desktop resources including the Multi-Agency Geographic Information for the Countryside⁴ (MAGIC) resource. MAGIC was used to search for records of designated sites and ecologically important habitats within a 1km radius of the site. Google Earth⁵ was also used to study the nearby landscape.

Baseline habitat assessment

- 2.2 The UK Habitat Survey was completed on 10th April 2025 by Frances Horsford BSc (Hons) MSc. During the survey, broad habitat types (UK Hab Ltd, 2023⁶) were identified across the site, then entered into the metric which subsequently informed the calculation of baseline biodiversity units.

Statutory Biodiversity Metric

- 2.3 The Defra metric has been used for the calculations ('The Statutory Biodiversity Metric Calculation Tool - Macro enabled tool 23.07.2024'). Areas have been calculated from plans provided by the applicant (drawing reference: 1688-05) using QGIS to measure the areas (measured in ha).
- 2.4 Habitat condition was assigned following guidance from the 'Statutory biodiversity metric: User Guide' document (Natural England, 2024⁷) and 'Statutory Biodiversity Metric Condition Assessments' spreadsheet (Natural England, 2024⁸) which accompanies the Statutory Biodiversity Metric. Assessment criteria were followed for each broad habitat type, to determine the condition of each habitat for onsite and offsite land.
- 2.5 The strategic significance of habitats was also assessed for the pre and post-development habitats based on the location of the site, its proximity to existing areas of biodiversity interest, its inclusion within local plans such as Ecological Networks and the general setting in which it lies.
- 2.6 Once all habitat types, conditions and areas have been inputted for pre and post-development, the metric calculates changes in biodiversity units (including habitat units, hedgerow units and river units (where relevant) and the overall percentage of gain/loss achieved relating to the proposals. The metric calculations have been completed by Nathalie Cossa BSc (Hons).

⁴ Multi-Agency Geographical Information for the Countryside (MAGIC). Crown Copyright and database rights [2015]. Ordnance Survey 100022861. Available at: <http://www.magic.gov.uk/>

⁵ https://www.google.co.uk/intl/en_uk/earth/

⁶ UKHab Ltd (2023). *UK Habitat Classification Version 2.0* (at <https://www.ukhab.org>)

⁷ Natural England (2024). *The Statutory Biodiversity Metric - User Guide*.

⁸ Natural England (2024). *The Statutory Biodiversity Metric Condition Assessments, July 2024*

Limitations

- 2.7 The field survey was carried out during the suboptimal season when some plants may be difficult to identify, however the surveyor is an experienced botanist, giving confidence in the interpretation of the results. Additional surveys in later in the spring would not lead to a change in the characterisation of the site.

3 BASELINE CONDITIONS

Desk Study

- 3.1 Two statutory designated sites are present within a 1km radius of the site. They are Churnet Valley SSSI (approximately 890m east of the site) and Combes Valley SSSI (approximately 850m south of the site). Eight non-statutory designated sites are present within a 1km radius of the site as well as three ancient woodlands (see Preliminary Ecological Appraisal: Fauna Forest Ecology Limited, May 2025).

Strategic Significance

- 3.2 The Local Natural Recovery Strategy (LNRS) for the area has not yet been completed. Alternative documents have been examined, and it has been determined that the habitats present onsite are of low strategic significance.

Important Ecological Features

- 3.3 No important ecological features such as protected and/or priority habitats are located relatively near the site that may influence the deliverability of BNG.

Biodiversity Units

- 3.4 Baseline habitats recorded during the survey comprised artificial unvegetated, unsealed surface, developed land, sealed surface, vacant or derelict land, vegetated garden, and unvegetated garden.
- 3.5 The site is 0.32 ha in size, dominated by concrete and compacted hard standing material, and no watercourses or hedgerows are present within the boundaries. A summary of baseline habitats and their associated condition assessments is provided in Table 1.

Table 1: Summary of baseline habitats

Baseline habitat	Area (ha)	Condition	Description	Baseline units
Artificial unvegetated, unsealed surface	0.0519	N/A - Other	Two patches of willow scrub and other plant species	0.00
Developed land; sealed surface	0.2172	N/A - Other	Remains of concrete flooring	0.00
Vacant or derelict land	0.029	Moderate	Stoney areas remain from farmyard which has some regenerating vegetation	0.12

Vegetated garden	0.0197	Condition assessment N/A	Mixture of native and non-native plants and shrubs	0.04
Unvegetated garden	0.0015	N/A - Other	Parking area to the side of the building	0.00

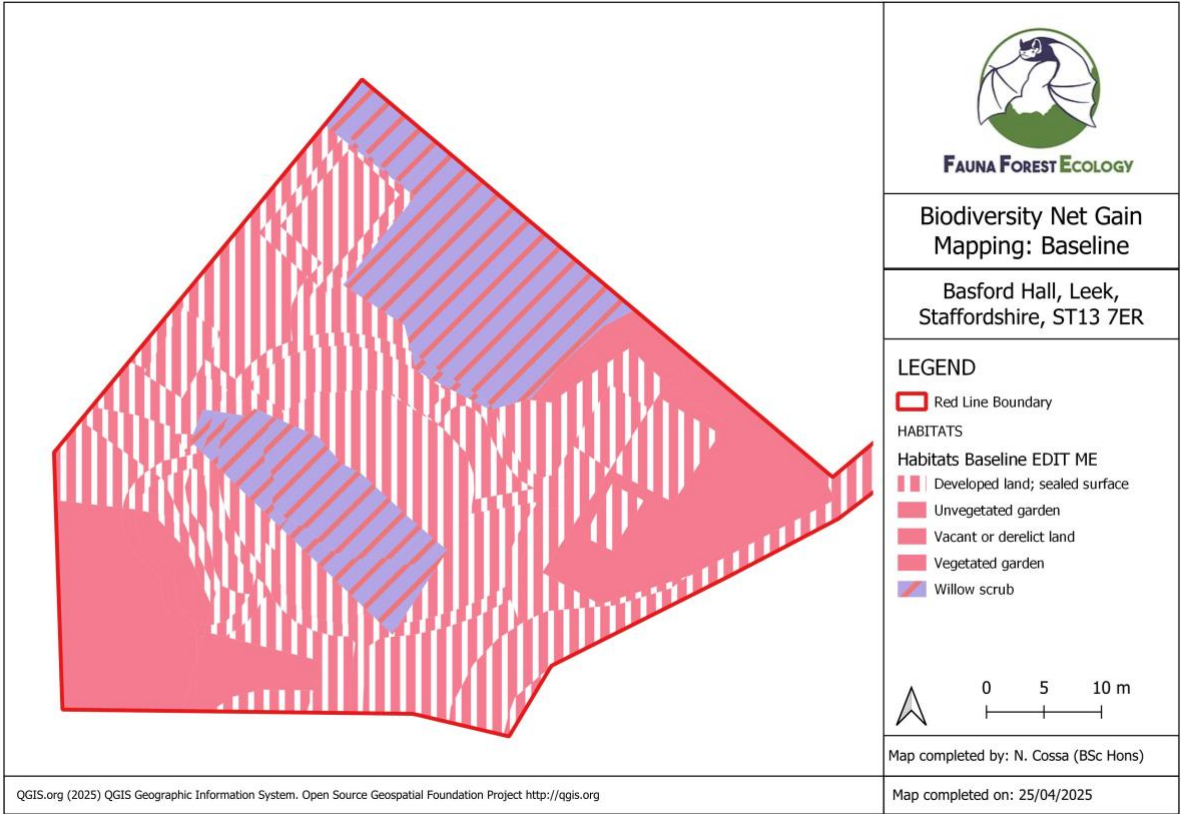


Figure 1: Habitat baseline plan

4 BNG GOOD PRACTICE PRINCIPLES FOR DEVELOPMENT

4.1 The good practice principles for biodiversity net gain are set out within Table 1.1 of Biodiversity Net Gain: Good Practice Principles for Development⁹. The principles include:

- apply the mitigation hierarchy (avoiding, then minimising and finally compensating for any impacts and losses).
- avoid losing biodiversity that cannot be offset elsewhere (e.g. irreplaceable habitats).
- be inclusive and equitable (engaging stakeholders early is key).
- address risk (mitigating for difficult and uncertain risks to achieve net gain).
- make a measurable net gain contribution (making sure that the calculation uses an appropriate metric) and be consistent and transparent with calculations.
- achieve the best outcomes for biodiversity (use robust credible evidence and local knowledge to inform decisions).
- be additional (exceed existing obligations).
- create a net gain legacy (involving stakeholders, securing funding for long-term management, allowing resilience in the net gain design, mitigating risks from other land users and supporting local-level management of net gain activities).
- optimise sustainability (prioritising BNG and optimising the wider environmental benefits).
- be transparent (communicate clearly and timely and share the learning with all stakeholders).

4.2 No irreplaceable habitats are being lost as part of this development. It is possible to meet the 10% net gain habitat requirement on this scheme as the proposals increase the number of suitable habitats for biodiversity. The habitat units required can be achieved onsite.

5 PROPOSED DESIGN

5.1 A natural pool will be created in the centre of the site which will be structured like a pond. The pool has been designed in a way that it requires no chemical filtration, using natural filtration properties of aquatic plants, bio filters and skimmer sieves. Existing waste ground/hardstanding will be replaced with lawned gardens, trees and planting beds. A 6 x 3m open-sided timber summer house will be sited near the northwest corner of the site. The original material store will be repurposed as a covered outdoor seating area, the existing concrete and steel structure will be painted, and climbing plants are to be added to

⁹ Baker, J., Hoskin, R. and Butterworth, T. (2019) *Biodiversity Net Gain. Good Practice Principles for Development – A Practical Guide*. [Online]. Available at: [Biodiversity net gain. Good practice principles for development. A practical guide](#)

soften the structure. Three open-sided 6x3m contemporary gazebos will be placed inside to provide cover, and the concrete floor will be replaced with paving and gravel edging. The existing garage will be converted to a pool house and changing area and no external alterations to the building will be made.

- 5.2 Proposed biodiversity enhancements included within the scheme include creation of lawned gardens, a wildflower meadow, flower beds and native tree planting. The trees have not been included in the metric because they cannot be used for the purpose of BNG as they will be sited within a garden setting.
- 5.3 Details regarding the implementation, preparation and aftercare of the site is included in documents supplied by cdt Architects.
- 5.4 Proposed habitats are shown in Figure 2 below and details of the habitats to be retained, enhanced and created are provided in Table 2, along with any proposed habitat management details.

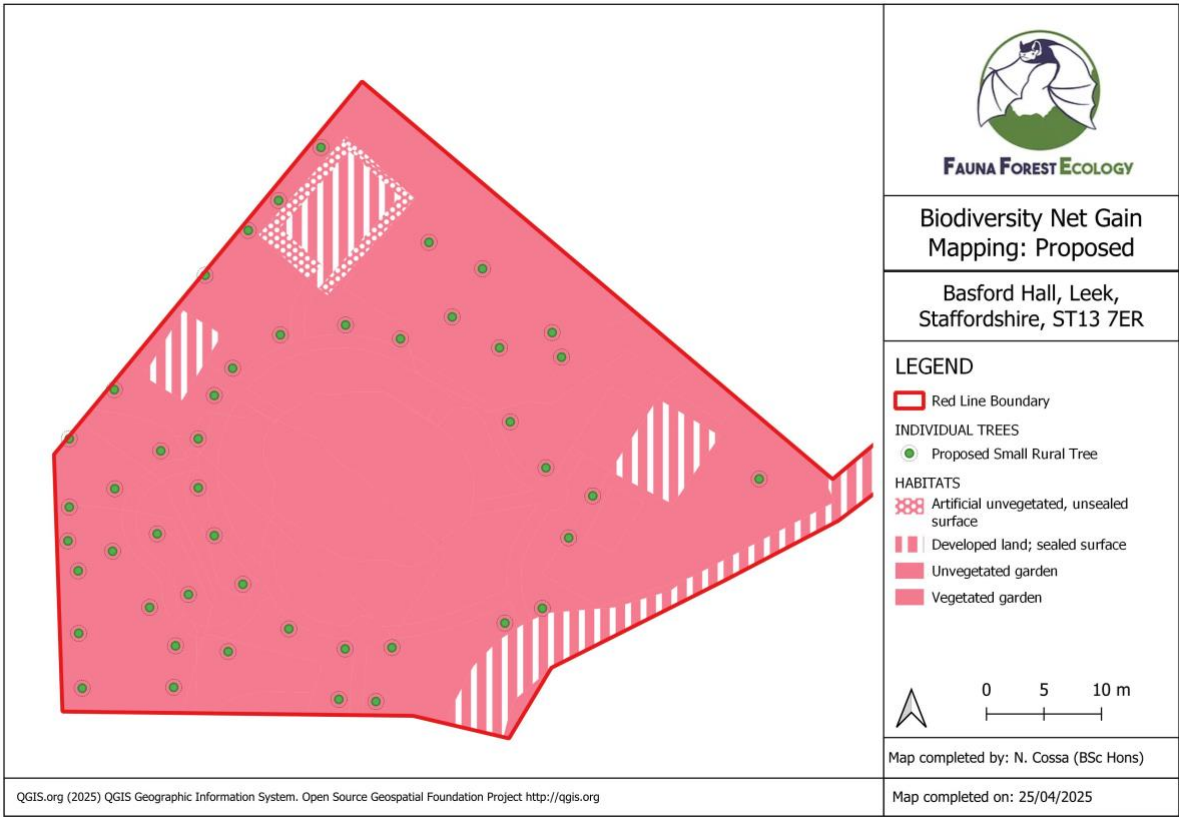


Figure 2: Proposed habitats plan

Table 2: Summary of habitat management for proposed and post-development habitats

Habitat	Retained/ Enhanced/ Created	Area (ha)	Target Condition	Units	Proposed Habitat Management
Developed land; sealed surface	Retained	0.123	N/A - Other	0.00	Not applicable
Vegetated garden	Retained	0.019	Condition assessment N/A	0.04	The existing garden by the building is to be retained
Artificial unvegetated, unsealed surface	Created	0.0036	N/A - Other	0.00	Areas of gravel are to be created around the open sided gazebo
Unvegetated garden	Created	0.0249	N/A - Other	0.00	Areas of paving and gravel paths are to be created
Vegetated garden	Created	0.1488	Condition assessment N/A	0.29	Areas of lawn, wildflower meadow and flower beds are to be created

6 BNG METRIC

6.1 The proposed retained, enhanced and created habitats detailed within this report have been entered in the Statutory Biodiversity Metric (July 2024). Table 3 provides a summary of the headline results, with the full metric details provided in Appendix A.

Table 3: Biodiversity metric headline results

Baseline Habitat Units	0.16
Post Development Habitat Units	0.33
Total Net Unit Change	0.17 (positive)
Total Net Percentage Changes	109.26% (positive)

6.2 The assessment has demonstrated that the proposals will lead to a net increase of 0.17 habitat units, resulting in an overall gain of 109.26%. Overall, the proposals achieve a 10% net gain.

Habitat trading

6.3 Habitat trading requirements have taken place.

Assumptions and justifications

6.4 It has been assumed the proposed plans will be followed.

7 RECOMMENDATIONS

Project implementation and construction plan

- 7.1 An implementation plan should be designed, to include plans (e.g. detailed landscape planting schedules), management proposals, a construction handover checklist, and a timetable for implementation. It should specify information in connection with those responsible for activities and it should be closely aligned with the BNG MMP (below).

Biodiversity Net Gain Management and Monitoring Plan (MMP)

- 7.2 The BNG MMP is a document that focuses on the delivery of the long-term management and monitoring of created and enhanced features. Details to be included should be details management and maintenance information for all habitats for years 1-5 with broader management aims for the lifetime of the BNG commitment (e.g. 30 years).

APPENDIX A: COMPLETED BIODIVERSITY NET GAIN METRIC SPREADSHEET

Scroll down for final results 					
On-site baseline	Habitat units	0.16			
	Hedgerow units	0.00			
	Watercourse units	0.00			
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.33			
	Hedgerow units	0.00			
	Watercourse units	0.00			
On-site net change (units & percentage)	Habitat units	0.17	109.26%		
	Hedgerow units	0.00	0.00%		
	Watercourse units	0.00	0.00%		
Off-site baseline	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Off-site net change (units & percentage)	Habitat units	0.00	0.00%		
	Hedgerow units	0.00	0.00%		
	Watercourse units	0.00	0.00%		
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.17			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Spatial risk multiplier (SRM) deductions	Habitat units	0.00			
	Hedgerow units	0.00			
	Watercourse units	0.00			
FINAL RESULTS					
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.17			
	Hedgerow units	0.00			
	Watercourse units	0.00			
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	109.26%			
	Hedgerow units	0.00%			
	Watercourse units	0.00%			
Trading rules satisfied?	Yes ✓				
Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	0.16	0.17	0.00	No additional area habitat units required to meet target ✓
Hedgerow units	10.00%	0.00	0.00	0.00	No additional hedgerow units required to meet target ✓
Watercourse units	10.00%	0.00	0.00	0.00	No additional watercourse units required to meet target ✓