



BIODIVERSITY NET GAIN ASSESSMENT

SITE LOCATION

The Old Rectory,
Rectory Lane,
Nuneaton
CV13 0LS

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NOTE:

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1. Introduction

Scope & Purpose

- 1.1.1. Seed Arboriculture Ltd were commissioned by Witherslack Group to undertake a Biodiversity Net Gain (BNG) Assessment at The Old Rectory, Rectory Lane, Nuneaton CV13 0LS. This report has been prepared to support a planning application at the site.
- 1.1.2. The author of this report is Katie Bird MEnvSci, ACIEEM, Principal Ecologist. Katie is highly experienced managing schemes and has produced many ecological reports to inform planning permission. She holds a Class 2 Natural England Bat Licence and a Class 1 Natural England Great Crested Newt Licence

Site Location

- 1.1.3. Please refer to figure 1.1 for the site location. The site is located within a residential area of Market Bosworth with agricultural fields on the southern aspect of the site boundary



Figure 1 - Site Location Plan

Objectives

- 1.1.4. The report has been produced to document the methods, results and conclusions of a BNG Assessment undertaken based on the proposed development for the site to fulfil the following:
 - Ensure that the mitigation hierarchy has been applied;
 - Identify the baseline habitats present and provide a condition assessment;
 - Identify the post development habitats on site, assess the possible target condition and provide an indication of the likely importance of those habitats;
 - Calculate the overall change in biodiversity score from pre- post development.

- Provide design recommendations to maximise potential net gain achievable.
- Provide an indication of likely outcomes and indicative cost as required.

Planning Context

- 1.1.5. Paragraph 174(d) of the revised National Planning Policy Framework (2021) states that “Planning policies, and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity...”
- 1.1.6. The Government 25-year Environment Plan states that government will “embed environmental net gain principle for development.

2. Methodology

Existing Habitat (Baseline)

- 2.1.1. An Ecological Walkover was completed on the 16th March 2023 by Katie Bird, Principal Ecologist. The habitats were determined using the UKHab classifications (The UK Habitat Classification Working Group, May 2018) using the UK Habitat Classification V1 guidance tool. Please refer to the Preliminary Ecological Appraisal, which details the habitat’s species list and management.

Planning Layout (Post-development)

- 2.1.2. The Proposed Site Plan (23.009(9-.C) provided an indicative redline and development site boundary and detailed the habitats to be created on site. The Proposed Site Layout was developed in combination with this Biodiversity Net Gain Calculation in order to provide habitats of high value where possible.

The Biodiversity Metric 4.0

- 2.1.3. The BNG calculation was undertaken utilising The Biodiversity Metric 4.0 from DEFRA (full calculation available in Appendix), the site’s Habitat map and the most detailed Site Plans. The calculation was performed by a technically competent and experienced ecologist as detailed in British Standard BS8683 – Suitably qualified person –definition in BS8683:2020. The Small Metric could not be used due to the development comprising more than 9 residential units.
- 2.1.4. The Biodiversity Metric 4.0 uses habitat features as a proxy measure for capturing the value and importance of nature. The metric takes into account the size, ecological condition, location and proximity to nearby ‘connecting’ features. The metric enables assessments to be made of the present and forecast future biodiversity value of a site.

Habitat Scoring

- 2.1.5. The Biodiversity Metric 4.0 supplies reference documents and user guides in which to accurately evaluate and assess the different habitats on site. The methodology for the baseline and post development calculations are demonstrated in the following sections.

Baseline Units

- 2.1.6. To assess the quality of a habitat and therefore calculate the units scored the Biodiversity Metric 3.1 utilises three scoring factors as detailed below.

Condition

- 2.1.7. The condition of a habitat is assessed utilising the Condition Sheets provided for each habitat type. These list positive indicators for each habitat and indicate how many of these indicators need to be present to meet certain thresholds of condition. These condition sheets can be found in the Biodiversity Metric 3.1 habitat condition assessment sheets with instructions tool Technical (Natural England Joint Publication, 2021).

Distinctiveness

- 2.1.8. The distinctiveness of each habitat (area and linear) is automatically assigned by the tool, based upon national records of the occurrence and rarity of each habitat (Biodiversity Metric 3.1).

Strategic Significance

- 2.1.9. The idea of strategic significance works at a landscape scale. It gives additional unit value to habitats that are in preferred locations for biodiversity and other environmental objectives. Strategic significance utilises published local plans and objectives to identify local priorities for targeting biodiversity and nature improvement, such as Nature Recovery Areas, local biodiversity plans, National Character Area objectives and green infrastructure strategies. The site has been within “Not in local strategy”.

Post Development Units

- 2.1.10. Additional factors are implemented when assessing post development habitats.

- Difficulty of Creation/Enhancement
- Temporal Risk “Time to target condition”
- Spatial Risk (when offsite mitigation is necessary)

Limitation of Assessment

- 2.1.11. Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.
- 2.1.12. Habitat areas (pre-development) have been measured using online mapping, and therefore will not be completely accurate.

3. Survey Results

Habitat Descriptions

Urban trees

- 3.1.1. One mature Scot's pine was located within the centre of the modified grassland on site, covering a total area of 0.0764ha using the Urban Tree Calculator. The tree was assessed as 'good condition' after meeting the following criteria as found within the Habitat Condition Assessment Sheets:
- The tree is a native species (or more than 70% within the block are native species).
 - The tree is mature.
 - The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
 - There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height.
 - More than 20% of the tree canopy area is oversailing vegetation beneath.

Modified Grassland

- 3.1.2. Much of the site comprised modified grassland totalling an area of 0.2745ha.
- 3.1.3. The grassland has been assessed as being in 'poor condition' after meeting 4 of the 7 (but failing criterion 1), criteria as found within the Habitat Condition Assessment Sheets:
- Some scattered scrub (including bramble) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of shrubs with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
 - Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
 - Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
 - Cover of bracken less than 20%.

Developed Land; Sealed Surface

- 3.1.4. One building was located within the site and was surrounded by associated hardstanding. The buildings and hardstanding total an area of 0.1515ha. The metric pre-sets the condition assessment for this habitat as "N/A- Other".

Other Neutral Grassland (Tall Ruderal)

- 3.1.5. A small area totalling 0.0175ha of tall ruderal was present to the south of the site. The habitat is defined as Other Neutral Grassland within the metric has been assessed as being in 'poor condition' after having met 2 of 6 and met the following criteria:
- Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.

- There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.

Urban – Introduced Shrub

- 3.1.6. One building was located within the site and was surrounded by associated hardstanding. The buildings and hardstanding total an area of 0.103ha. The metric pre-sets the condition assessment for this habitat as “N/A- Other”.

Woodland and Forest – Other woodland; broadleaved

- 3.1.7. A small area totalling 0.615ha of other broadleaved woodland was present to the south west of the site. It has been assessed as being in ‘poor condition’ as it scored 22 of 39, as detailed in **Table 1**.

Table 1 – Other Woodland; Broadleaved Condition Assessment

Indicator	Criteria	Score
Age distribution of trees	Two age classes present	2
Wild, domestic and feral herbivore damage	Evidence of significant browsing pressure is present in 40% or less of whole woodland	2
Invasive plant species	Rhododendron or laurel present, or other invasive species > 10% cover	1
Number of native tree species	Three to four native tree or shrub species found across woodland parcel	2
Cover of native tree and shrub species	50-80% of canopy trees and 50-80% of understory shrubs are native	2
Open space within woodland	21- 40% of woodland has areas of temporary open space	2
Woodland regeneration	One or two classes only present in woodland	2
Tree health	11% to 25% mortality and/or crown dieback or low risk pest or disease present	2
Vegetation and ground flora	No recognisable NVC community	1
Woodland vertical structure	Two storeys across all survey plots	2
Veteran trees	No veteran trees present in woodland	1
Amount of deadwood	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	1

Woodland disturbance	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	2
Total Score		22

Urban – Vacant or derelict land

3.1.8. A small area totalling 0.022ha of vacant land was present to the east of the site. It has been assessed as being in 'poor condition' after having met 1 of 3 and met the following criteria:

- Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area.

Native Hedge

3.1.9. Two holly hedgerows were located within the site, with a total length of 0.05km. The native hedgerows have been assessed as being in 'poor condition' after met the following criteria:

- Width - >1.5 m average along length
- Gap – hedge base - Gap between ground and base of canopy <0.5 m for >90% of length (unless 'line of trees')
- Gap - hedge canopy continuity - Gaps make up <10% of total length and No canopy gaps >5 m
- Current damage - >90% of the hedgerow or undisturbed ground is free of damage caused by human activities

Lines of Trees (Ecologically Valuable)

3.1.10. Much of the site's borders were lined with treelines, including the northern, western and aspect aspects. The treelines total a length of 0.21km. The treelines were of similar composition and condition across the site.

3.1.11. The line of trees has been assessed as being in 'moderate condition' after having met 3 of 5 and met the following criteria:

- More than 70% of trees are native species.
- Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.
- Includes one or more mature tree.

Strategic Significance

3.1.12. The site is assessed as Location ecologically desirable but not in local strategy due its location and being connected to agricultural and parkland habitat.

Summary

3.1.13. Table 2 summarises the baseline habitats, condition assessment and area size.

Table 2 - Habitat Type and Total Area (pre- development)

Habitat Type	Condition Assessment	Area (ha)
Urban – Developed Land; Sealed Surface	N/A	0.1515
Urban – Introduced Shrub	N/A	0.103
Other Woodland; Broadleaved	Poor	0.0615
Grassland – Modified grassland	Poor	0.2575
Grassland – Other Neutral Grassland	Poor	0.0175
Urban – Vacant or Derelict Land	Poor	0.022
Habitat Type	Condition Assessment	Length (km)
Line of Trees (Ecologically Valuable)	Moderate	0.21
Native Hedgerow	Poor	0.05
Habitat Type	Condition Assessment	Number
Urban Tree	Good	1 large

Retained/Enhanced Habitats

3.1.14. The following habitats and associated areas will be retained:

- All existing developed land; sealed surface (0.1515ha),
- A total area of 0.096ha of introduced shrub will be retained.
- The large Scot's pine will be retained, covering a total area of 0.0765ha of urban tree.

3.1.15. A partial area of broadleaved woodland will require removal to facilitate the installation of the MUGA. The remaining aspects of the woodland (0.0465ha) should be enhanced from 'poor' to 'moderate' condition through the following management practices:

- Selective thinning of the canopy to allow areas of open space.
- Management of shrub layer to ensure the understorey is not dominated by species such as common nettle (*Urtica dioica*) and bramble (*Rubus fruticosus*).
- Planting seedlings for coppice regrowth and to ensure all three age classes are present within woodland areas.
- Retain standing deadwood to provide valuable habitat.

- No nutrient enrichment to take place within the woodland areas.
 - 10 – 20% of woodland will have areas of temporary open space.
 - No invasive species to be present in woodland.
 - Five or more native tree or shrub species found across woodland parcel.
- 3.1.16. A partial area of modified grassland will require removal to facilitate the installation of; the geocell carparking, new proposed teaching block, playground area and path, and new paving across site. The remaining aspects of the grassland (0.1799ha) should be enhanced from 'poor' to 'moderate' condition through the following management practices:
- Seeding of existing grassland with Species Rich Seed mixture which require low maintenance.
 - Cutting of grassland to provide varied sward height (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed. Varied sward height to be completed outside school periods (i.e. left to grow during term breaks).
 - Re-seeding where bare ground is identified to ensure cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
 - Control cover of bracken and scrub to ensure cover is less than 20% and cover of scrub (including bramble) less than 5%.
 - Controlled absence of invasive non-native species and undesirable species make up less than 5% of ground cover.
- 3.1.17. All existing other neutral grassland is to be retained and should be enhanced (0.0175ha) should be enhanced from 'poor' to 'moderate' condition through the following management practices:
- Seeding of existing grassland with Species Rich Seed mixture (such as EM3) which require low maintenance. The grassland is to have 9 or more species per m².
 - Cutting of grassland to provide varied sward height (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
 - Re-seeding where bare ground is identified to ensure cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens.
 - Control cover of bracken and scrub to ensure cover is less than 20% and cover of scrub (including bramble) less than 5%.
 - Controlled absence of invasive non-native species and undesirable species make up less than 5% of ground cover.

Lost Habitats

- 3.1.18. All remaining habitats are to be lost.

Pre- Development Habitat Baseline

- 3.1.19. Please refer to Table 3 summarising the Habitat Baseline for the calculation, demonstrating habitats to be retained, enhance and/or lost.

Table 3 - Habitat Baseline

	Onsite Baseline	Retained	Enhanced	Lost
Habitat (Area) Units	2.2	1.22	0.68	0.3
Hedgerow (Linear Units)	1.03	0.92	-	0.11

4. Habitat Creation

Urban – Developed Land; Sealed Surface

- 4.1.1. A total area of 0.0566ha of buildings, play areas and footpaths is to be created within the site. The Targeted Condition is pre-set as “N/A – Other”.

Urban – Artificial Unvegetated, unsealed surface

- 4.1.2. A total area of 0.065ha of geocell car parking is to be created within the site. The Targeted Condition is pre-set as “N/A – Other”.

Scattered Tree - Urban Tree

- 4.1.3. A total of 4 trees are to be planted and assessed as small. The trees will target a “Moderate” Habitat Condition by seeking to meet the following condition assessments:
- More than 70% of trees are native species.
 - There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
 - Trees are immediately adjacent to other vegetation, and tree canopies are oversailing vegetation beneath.

Hedgerow - Native Hedgerow

- 4.1.4. A total length of 0.06m of “Native Hedgerow” is to be created. It is set to target a “Moderate” condition. This will be achieved through the following management practices by targeting the following four conditions:
- >90% of the hedgerow or undisturbed ground is free of non-native and neophyte species.
 - Gaps to make up <10% of total length
 - Gap between ground and base of canopy <0.5 m for >90% of length
 - Plant species indicative of nutrient enrichment dominate <20% cover
 - Height to be >1.5m average along length
 - >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.

5. Summary

- 5.1.1. This report and DEFRA 4.0 Metric submitted have demonstrated that the proposed habitat creation and enhancements will achieve a net gain of biodiversity of habitat units of 10.4% and a net gain of hedgerow units 10.73%. The trading rules have been satisfied.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.23
	Hedgerow units	0.11
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	10.40%
	Hedgerow units	10.73%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	2.20	2.42	0.00	Unit requirement met or surpassed ✓
Hedgerow units	10.00%	1.03	1.14	0.00	Unit requirement met or surpassed ✓
Watercourse units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓

Figure 2 – Headline Results

- 5.1.2. It is recommended that a production of a Biodiversity Enhancement Management Plan (BEMP) is conditioned as part of the planning application. The BEMP will need to set out the actions required to achieve and maintain the biodiversity value of the site for a period of 30 years. All habitats whose value is contributing to the overall biodiversity value of the site must be detailed in the BEMP.
- 5.1.3. The BEMP objectives would need to include:
- a plan of the areas of habitat to be maintained, enhanced and/or created;
 - a schedule of actions to create or enhance and maintain each habitat at the required
 - quality for a period of 30 years;
 - a schedule of ecological monitoring for the 30 year period identifying when key indicators
 - of habitat maturity should be achieved; and
 - schedule of actions to be undertaken in case signs of failing are identified.