

THAMESFIELD RVG, HENLEY ON THAMES

Biodiversity Net Gain Assessment

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Thamesfield RVG
Final
November 2024

REPORT

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1 INTRODUCTION

1.1 Purpose and Scope of this Report

- 1.1.1 RPS was commissioned by Retirement Villages Group to produce a Biodiversity Net Gain (BNG) Assessment for the Phase 2 development works at Thamesfield Retirement Village, Wargrave Road, Henley on Thames RG9 2LX. The development proposals involve the redevelopment and extension of the main building on site.
- 1.1.2 A Phase 1 Habitat Survey which included a UK Habitat (UKHab) survey and Habitat Condition Assessment was undertaken by RPS on the 1st September 2022. An update Phase 1 survey was undertaken on the 20th of September 2024 to confirm the habitats and site and assess any changes. These surveys provided the ecological baseline necessary to undertake a BNG Assessment of the site.
- 1.1.3 This BNG assessment report aims to:
- Calculate and assess the baseline ecological status and condition of current habitats identified on site;
 - Calculate the biodiversity value of the site post-development; and
 - Provide a summary of the habitat enhancements and creation proposals designed to ensure net gain is achieved.
- 1.1.4 The recommendations included within this report are the professional opinion of an experienced ecologist and therefore the view of RPS.

1.2 Biodiversity Net Gain Definition and Methods

- 1.2.1 Biodiversity Net Gain is defined in Baker *et al* (2019) as:
- "Development that leaves biodiversity in a better state than before"*
- 1.2.2 The requirement for developments to seek to achieve BNG arises from the National Planning Policy Framework (NPPF, 2023), which states in Para. 180 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."*
- 1.2.3 An accepted method of assessing BNG is through the use of biodiversity calculators to assess the biodiversity value of habitats pre- and post-development based on habitat type, distinctiveness and condition.
- 1.2.4 A biodiversity index is derived for the baseline and for the proposed development, and BNG is considered to be achieved where an increase in value is delivered (on or offsite), and where habitats of a higher value are not replaced exclusively with habitats of a lower value.
- 1.2.5 The methods of calculating BNG for this project followed the guidance produced by DEFRA for their Statutory Biodiversity Metric (DEFRA, 2024). The tool and associated documents were downloaded from: [Statutory biodiversity metric tools and guides - GOV.UK](https://www.gov.uk/guidance/statutory-biodiversity-metric-tools-and-guides)

Condition assessment

- 1.2.6 In conjunction with the UKHab Survey, a habitat condition assessment was undertaken for the habitats present within the project boundary. The appropriate 'condition sheet' was first selected via the Table TS1-1a in the technical supplement provided by Pank *et al.* (2023).
- 1.2.7 The condition sheet was then used to assess the individual habitats by comparing how they scored against pre-set condition assessment criteria. The criteria describe what components are needed for the habitat to be of good, moderate or poor value.
- 1.2.8 Each habitat was scored the following:
- 1 – Poor;

- 2 – Moderate; and
- 3 – Good.

- 1.2.9 The calculator allows these to be further divided and provides categories for fairly good and fairly poor. The ecologist undertaking the assessment used their professional judgement, considering the habitat condition assessment criteria, to decide when it was suitable to use these categories.
- 1.2.10 It should be noted that some habitats are given a fixed score and do not need assessing.

2 BASELINE DESCRIPTION

2.1.1 The Phase 1 Map is shown on Figure 2.1. Only habitats that were deemed to have an ecological value are discussed further.

2.2 UK Habitat Survey – Overview

2.2.1 A full list of the habitats identified on the site is provided below:

- *Other woodland; mixed;*
- Modified grassland;
- Introduced shrub;
- *Buildings;*
- *Hardstanding;*
- *Ornamental pond;*
- *Urban – Scattered trees;*
- *Non-native hedgerow.*

2.2.2 The habitats in italics were considered to be of no ecological value or were not going to be impacted by the development and therefore are not considered further in terms of the BNG assessment.

Modified grassland

2.2.3 Amenity grassland is present across the majority of the site. This is defined in the BNG metric as “Grassland – Modified Grassland”.

2.2.4 The grass is regularly managed to a very short sward. The grass is predominately perennial ryegrass *Lolium perenne* with frequent clover *Trifolium repens* and plantain *Plantago major*. Rare occurrences of yarrow *Achillea millefolium* and St. John’s wort *Hypericum perforatum* also occur.

2.2.5 The area of Poor condition modified grassland is 0.1932 ha which is equivalent to 0.39 habitat units. 0.1732 ha is being retained.

Table 2.1: Habitat Condition Assessments

Grassland habitats	6-8 vascular plant species per m ² (essential for Moderate/Good)	Varied sward height	<20% scrub	<5% damage	1-10% bare ground	<20% bracken	Absence of Invasives	Score	Condition
Amenity grassland	No	No	Yes	No	Yes	Yes	Yes	4	Poor

Introduced shrub

2.2.6 The buildings surrounds comprise of an ornamental garden and, as such, display a range of ornamental planting primarily in the form of imported shrubs. This habitat does not receive a condition assessment.

2.2.7 0.1020 ha of this habitat is present and equivalent to 0.20 habitat units. 0.072 ha is being retained.

2.2.8 A summary of the baseline habitat’s areas, habitat units, area retained, and habitat units lost is provided in the BNG metric submitted with this report.

Figure 2.1: Phase 1 Habitat Survey (pre-development habitat)



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- Legend**
- Site boundary
 - Survey area
 - Target note
 - Broadleaved scattered trees
 - A Intact hedge species-rich
 - Intact hedge species-poor
 - Defunct hedge species-poor
 - A Mixed Parkland/scattered trees
 - Standing water
 - A Amenty grassland
 - Introduced shrub/ornamental planting
 - Buildings
 - Other

Rev	Description	By	CB	Date

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Client Retirement Village Group

Project Thamesfield

Title Phase 1 Habitat Map

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Drawn By MP

Scale @ A3 1:750

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3 BIODIVERSITY ENHANCEMENT STRATEGY

3.1 Habitats

- 3.1.1 Habitats on the proposed development site are taken from the current Landscape Proposals (Turley 2023).

Developed land, sealed surface

- 3.1.2 An extension to an existing building, new car parking areas, roads and pathways are being developed within areas that are currently modified grassland and introduced shrub.
- 3.1.3 In total 0.0145 ha of 'Developed land, sealed surface' will be created post-development. This would deliver **0.00 habitat units**.

Artificial unvegetated, unsealed surface

- 3.1.4 Allotments are being provided on site. This habitat does not receive a condition assessment.
- 3.1.5 In total 0.008ha of 'Artificial unvegetated, unsealed surface' will be created post-development. This would deliver **0.00 habitat units**.

Introduced shrub

- 3.1.6 Areas of non- native shrub planting is being provided across the site. This habitat does not receive a condition assessment.
- 3.1.7 In total 0.024ha of 'Introduced shrub' will be created post-development. This would deliver **0.05 habitat units**.

Modified grassland

- 3.1.8 An small additional area of closely mown amenity grassland is being provided on site, similar to what is currently present on site.
- 3.1.9 In total 0.007ha of Poor 'Modified grassland' will be created post-development. This would deliver **0.01 habitat units**.

Other neutral grassland

- 3.1.10 An area of grassland will be seeded with Special General Purpose Meadow Mixture (EM1). This seed mix provides a good distinctiveness grassland, and it has been assumed that a "Moderate" condition will be achieved for the purposes of BNG assessment.
- 3.1.11 To achieve moderate condition, this habitat will achieve between 3-4 of the criteria listed in Table 3.1, of which Criterion 1 is essential.
- 3.1.12 The creation of 0.029 Moderate condition other neutral grassland delivers **0.19 habitat units**.

Table 3.1: Habitat condition criteria for other neutral grassland

Criterion no.	Criterion
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition (non-acid grassland types only).
2	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
4	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.
5	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 condition ¹ 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.
6	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).

Mixed shrub

- 3.1.13 Native shrub planting is being provided across the site, it has been assumed that a “Moderate” condition will be achieved for the purposes of BNG assessment.
- 3.1.14 To achieve moderate condition, this habitat will achieve between 3-4 of the criteria listed in Table 3.2, below.
- 3.1.15 The creation of 0.011 Moderate condition other mixed shrub delivers **0.07 habitat units**.

Table 3.2: Habitat condition criteria for mixed shrub

Criterion no.	Criterion
1	The scrub is a good representation of the habitat type it has been identified as, based on its UKHab description (where in its natural range). The appearance and composition of the vegetation closely matches the characteristics of the specific scrub type. At least 80% of scrub is native, and there are at least three native woody species, with no single species comprising more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).
2	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.
3	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) and species indicative of sub-optimal condition ⁵ make up less than 5% of ground cover.
4	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.

Individual trees

- 3.1.16 Six native and 24 non-native trees are being planted across the site within the redline boundary. An additional six non-native trees are being planted outside the site, but within neighbouring land owned by RVG.
- 3.1.17 These trees would be classed as “Individual trees – Urban trees”. It is assumed that the non-native trees would be managed to be of Poor condition which would require them to achieve 0- 2 and the native trees to be managed of Moderate condition which would require them to achieve 3-4 of the criteria shown in Table 3.3.
- 3.1.18 Six native trees of small size and moderate condition are equivalent to an area of 0.0244 ha. This would deliver **0.07 habitat units**.

- 3.1.19 24 non- native trees of small size and poor condition are equivalent to an area of 0.0977 ha. This would deliver **0.27 habitat units**.
- 3.1.20 Six additional non- native trees of small size and poor condition planted outside the redline boundary are equivalent to an area of 0.0244 ha. This would deliver **0.07 habitat units**.

Table 3.3: Habitat condition criteria for individual trees

Criterion no.	Criterion
1	The tree is a native species (or more than 70% within the block are native species).
2	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).
3	The tree is mature or veteran (or more than 50% within the block are mature or veteran).
4	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.
5	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark
6	More than 20% of the tree canopy area is oversailing vegetation beneath.

Hedgerows

- 3.1.21 A 0.038km native hedgerow is being provided on site. This hedgerow would be classed as 'Native hedgerow'. It is assumed that the hedgerow would be managed to be of Poor condition as it would fail both attributes in A and C and D2 shown in Table 3.4. This would deliver **0.07 habitat units**.
- 3.1.22 A 0.022km non-native hedgerow is being provided on site. This hedgerow would be classed as 'Non-native and ornamental hedgerow'. It is assumed that the hedgerow would be managed to be of Poor condition as it would fail both attributes in A and C and D2 shown in Table 3.4. This would deliver **0.02 habitat units**.

Table 3.4: Habitat condition criteria for hedgerows

Criterion no.	Criterion
A1 Height	>1.5 m average along length The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).
A2 Width	>1.5 m average along length The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).
B1 Gap- hedge base	Gap between ground and base of canopy <0.5 m for >90% of length This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).
B2 Gap- hedge base continuity	Gaps make up <10% of total length; and No canopy gaps >5 m This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).
C1 Undisturbed ground and	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).

Criterion no.	Criterion
perennial vegetation	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.
C2 Nutrient enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.
D1 Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA) and recently introduced species. Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website, as well as the BSBI website where the 'Online Atlas of the British and Irish Flora' contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website⁷.
D2 Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities. This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).

4 SUMMARY

- 4.1.1 The assessment above indicates that the development proposals will deliver a net gain of **12.22%** for habitats (including offsite) and **43.66%** for hedgerows.
- 4.1.2 The total habitat units post-development (including offsite) delivered by the proposals is **5.925** units which is **0.64** units more than the baseline of 5.27 units.
- 4.1.3 The total hedgerow units post-development delivered by the proposals is **0.18** units which is **0.05** units more than the baseline of 0.13 units.
- 4.1.4 A summary screenshot from the calculator tool is provided in Figure 4.1 below.

Figure 4.1: Statutory Metric Calculation Tool Headline Results

Headline Results		Return to results menu	
Scroll down for final results ▲			
On-site baseline	Habitat units	5.27	
	Hedgerow units	0.13	
	Watercourse units	0.00	
On-site post-intervention (including habitat retention, creation & enhancement)	Habitat units	5.85	
	Hedgerow units	0.18	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.58	10.92%
	Hedgerow units	0.05	43.66%
	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	0.07	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.07	N/A
	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	0.64	
	Hedgerow units	0.05	
	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	0.64	
	Hedgerow units	0.05	
	Watercourse units	0.00	
Total net % change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	12.22%	
	Hedgerow units	43.66%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

5 REFERENCES

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