AEWC Ltd

Animal Ecology & Wildlife Consultants

Biodiversity Net Gain Assessment

Land to the East of Tilletts Lane

Warnham
Horsham
West Sussex

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23-246
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Summary

- AEWC Ltd were commissioned by Batcheller Monkhouse on behalf of their client to undertake a Biodiversity Net Gain Assessment at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex at central grid reference TQ 15533 34010 to help inform the proposed development of the site.

- The estimated baseline and post-development biodiversity value of the habitats on the site is calculated using the Defra Statutory Biodiversity Metric Calculation Tool.

- The development consists of the construction of 59 residential units with associated private gardens, landscaping, and infrastructure. This will involve the removal of all existing cropland and small areas of bramble scrub, bare ground, modified grassland, and ruderal/ephemeral, as well as two short sections of native hedgerow with trees (all trees retained) and the entire non-native and ornamental hedgerow.

- Ecological enhancements built into the development design include the enhancement of existing modified grassland to other neutral grassland through the addition of wildflower seed and appropriate management, creation of new modified grassland and other neutral grassland areas, enhancement of retained bramble scrub to mixed scrub through the addition of native shrub whips, creation of an orchard in the east of the site, planting of new species-rich hedgerows, and planting of 71 new trees in public areas.

- In terms of the BNG metric, this is sufficient to offset the loss of the baseline habitats on the site and provide overall gain. Trading rules have been satisfied.

- **The headline results indicate that there is an estimated net gain of 28.83% for habitat units**.

- **The hedge-line results show an estimated increase of 1.41 hedgerow units which corresponds to a 14.15% net gain**.

- **A Habitat Management and Monitoring Plan (HMMP) will need to be produced for the proposed habitat enhancement and creation. This will set out exactly how the proposed habitats will be created through planting and ongoing management. Regular monitoring will be required to ensure the habitats maintained at the quality that has been proposed. The HMMP will need to secure the land management for a period of at least 30 years.**

1. Introduction

1.1 AEWC Ltd were commissioned by Batcheller Monkhouse on behalf of their client to undertake a Biodiversity Net Gain Assessment at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex to help inform the proposed development of the site.

1.2 The purpose of this report is to give an estimate of the BNG units that may be achieved under the current development proposals, where a BNG of +10% is not achieved suggestions for additional ecological enhancement are provided.

2. Background

2.1 Previous ecology surveys have been conducted by AEWC Ltd, these are as follows:

- Preliminary Ecological Appraisal: April 2024
- Reptile Survey: May – July 2024
- Hazel Dormouse Survey: May – September 2024
- Bat Activity Survey: May – October 2024
- Great Crested Newt eDNA Survey: April 2024 & April 2025

2.2 The proposed development site is located at Land to the east of Tilletts Lane, Warnham, Horsham, West Sussex at central grid reference TQ 15533 34010. The site is situated in the village of Warnham, northwest of Horsham and west of the A24. The surrounding landscape includes a diverse mix of habitats, such as ancient and semi-natural woodlands, traditional meadows, grasslands, native hedgerows, and arable and pastoral agricultural lands. Wetlands, ponds, and water bodies, particularly within Warnham Local Nature Reserve, are also present. To the south is residential development. See Figure 1.

2.3 The proposed development site is approximately 4.37 hectares and predominantly comprises two fields, the western of which is arable with the eastern field being grassland, and pedestrian access routes to these from Caryll Place and Knob Hill. There are several hedgerows and trees across the site. Habitats include developed land; sealed surface, bare ground, non-cereal crops, modified grassland, bramble scrub, ruderal/ephemeral, native hedgerow with trees, native hedgerow, non-native and ornamental hedgerow, and small and medium-sized individual trees. See Figures 2 and 4, and Photos 1 – 4.

FIGURE 1: SHOWING THE SITE LOCATION

FIGURE 2: AERIAL VIEW OF THE SITE SHOWING THE BOUNDARY

Photo 1: Non-cereal crops with modified grassland in the field margins.

Photo 2: Field of modified grassland.

Photo 3: Bramble scrub in the field margins.

Photo 4: Native hedgerow with trees.

2.4 The proposed development consists of the construction of 59 residential units with associated private gardens, landscaping, and infrastructure. This will involve the removal of all existing cropland and small areas of bramble scrub, bare ground, modified grassland, and ruderal/ephemeral. Two short sections of native hedgerow with trees will be removed to facilitate the new access road through the site, however all trees within the hedgerows will be retained. The non-native and ornamental hedgerow in the east of the site will be removed.

2.5 Habitat creation and enhancement include the enhancement of existing modified grassland to other neutral grassland, creation of new modified grassland and other neutral grassland areas, enhancement of retained bramble scrub to mixed scrub through the addition of native shrub whips, creation of an orchard in the east of the site, planting of new species-rich hedgerows, and planting of 71 new trees in public areas, with further trees proposed in gardens. See Figure 3.

FIGURE 3: PROPOSED WORKS S

3. Method and Constraints

3.1 The estimated baseline and post-development biodiversity value of the habitats on the site is calculated using the Defra Statutory Biodiversity Metric Calculation Tool. Habitat condition was assessed using the Statutory Biodiversity Metric – Technical Annex 1 Condition Assessment Sheets.

3.2 The following assumptions have been made and therefore associated constraints should be considered when looking at BNG unit values obtained:

- The potential for protected and notable species is not covered within the scope of this report;
- Baseline habitats on-site are taken from those identified within the survey undertaken in April 2024;
- Post-development habitats have been inferred from those given within the Proposed Site Layout as shown in Figure 3;
- All areas and lengths are approximate;
- Areas in hectares and lengths in km are both given to four decimal places, therefore rounding errors and occasional adjustments to values, to ensure consistency of total areas in baseline and post-development habitat size, are unavoidable;
- Habitat quality has been estimated in some instances (i.e. for post-development habitats);
- Tree areas are calculated using the tree helper tool within the metric; and
- The area of planted trees in the communal space was estimated using small trees in the tree helper tool. Trees proposed for private gardens have not been included in the calculation, in line with guidance.

3.3 Given the above constraints the values for BNG obtained should be considered to be an **estimate** only.

3.4 Calculations may need to be adjusted in future should the plans, BNG metric or requirements be revised.

4. Habitat Data

4.1 The baseline and post-development habitats used for this assessment are illustrated in Figures 4 and 5 respectively.

FIGURE 4: BASELINE ON-SITE HABITATS

FIGURE 5: POST-DEVELOPMENT ON-SITE HABITATS

5. Results

5.1 The headline results using the above habitats and calculations are given below (refer to the metric for full details).

Table 1: Headline estimated BNG values

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	3.30
	Hedgerow units	1.41
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	28.83%
	Hedgerow units	14.15%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

6. Conclusions & Recommendations

6.1 The development includes the removal of all existing cropland and small areas of bramble scrub, bare ground, modified grassland, and ruderal/ephemeral, as well as two short sections of native hedgerow with trees (all trees retained) and the entire non-native and ornamental hedgerow. Much of these areas will be replaced with developed land; sealed surface, vegetated gardens, and sustainable urban drainage systems. Boundary habitats are mostly to be retained and enhanced.

6.2 Ecological enhancements built into the development design include the enhancement of existing modified grassland to other neutral grassland through the addition of wildflower seed and appropriate management, creation of new modified grassland and other neutral grassland areas, enhancement of retained bramble scrub to mixed scrub through the addition of native shrub whips, creation of an orchard in the east of the site, planting of new species-rich hedgerows, and planting of 71 new trees in public areas.

6.3 In terms of the BNG metric, this is sufficient to offset the loss of the baseline habitats on the site and provide overall gain. Trading rules have been satisfied.

6.4 **The headline results indicate that there is an estimated net gain of 28.83% for habitat units**.

6.5 **The hedge-line results show an estimated increase of 1.41 hedgerow units which corresponds to a 14.15% net gain**.

6.6 **A Habitat Management and Monitoring Plan (HMMP) will need to be produced for the proposed habitat enhancement and creation where significant gains are proposed. This will set out exactly how the proposed habitats will be created through planting and ongoing management. Regular monitoring will be required to ensure the habitats are maintained at the quality that has been**

proposed. The HMMP will need to secure the land management for a period of at least 30 years.

7. Wildlife Enhancements

Bats and Birds

7.1 To enhance the site for bats and birds known to be present within the local area it is recommended that at least 50 bat boxes and 50 bird boxes be installed within the site. Boxes could be installed on existing retained trees within the site or integrated into the new development. It is understood that swift boxes for the new houses have already been incorporated into the design.

7.2 Ideally bat boxes would be woodcrete or similar hard-wearing material (rather than the less durable wooden boxes) and should be installed at least 3m above the ground (where safe installation is possible), sheltered from strong winds and exposed to the sun for part of the day (usually south or south-west facing).

7.3 Example tree-mounted bat boxes are shown below: Schwegler 1FF bat box (below left, suitable for pipistrelle bats *Pipistrellus sp*.), and a Schwegler 2F bat box (below right, suitable for long-eared bats *Plecotus sp.*), or similar bat boxes.

7.4 Example integrated bat boxes are shown below: Integrate Eco Bat Box (below left), Habibat Bat box - Plain for rendering (below centre) and a Schwegler 1WI Summer and Winter bat box (below right) or similar bat boxes.

7.5 Tree-hung bird boxes should comprise a mix of traditional '32mm round-holed' (below left: which are suitable for tits, sparrows, redstarts and nuthatches) and open-fronted boxes (below right: these are suitable for pied wagtails, robins and wrens) and also ideally be woodcrete or similar hard wearing material (rather than the less durable traditional wooden boxes). Boxes should be installed with an aluminium nail or screw to prevent tree damage between 2m and 4m above ground for round-holed and low down, below 2m, well hidden in vegetation for open-fronted boxes and (unless shaded by buildings or trees) be facing north or east.

7.6 Integrated bird boxes should comprise of swift bricks which are suitable for a range of species (below left), these should be installed at a minimum of 4m above the ground, north or east facing and with open flight access, or sparrow terraces (below centre) which should be installed in line with vegetation such as trees or hedge lines to allow the birds the use of jumping off points and be installed a minimum of 3m above the ground on a north or east elevation. Where suitable overhanging eaves are present house martin cups (below right) may also be suitable.

Reptiles and Amphibians

7.7 **To enhance the site for reptiles and amphibians, at least three 'hibernacula' should be created in sunny corners of the site.** These will use materials such as logs, inert hardcore, bricks or building rubble to form the body of each hibernaculum, ensuring that materials likely to decompose are not placed beneath bricks or rubble to avoid collapse. Woodchips or soil may be incorporated to fill some of the larger cavities within the structure.

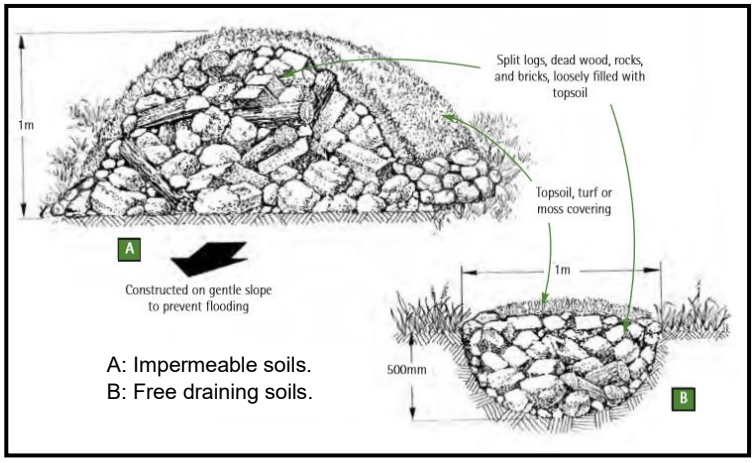
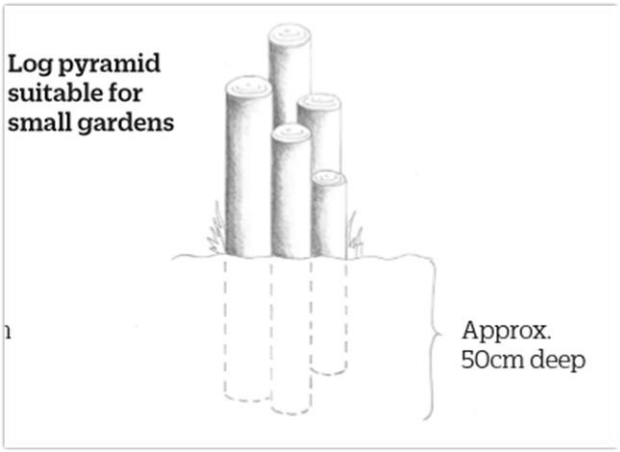


Diagram from Great Crested Newt Conservation Handbook

Stag Beetles

7.8 **At least two log stacks should be created in a discrete corner of the site to provide dead wood habitat features for stag beetle and other species.**

7.9 A suitable log pile comprises a variety of lengths of hard wood at least 5cm in diameter, this should be sighted in partial shade and the wood partially buried to prevent it drying out. See below diagram and picture below from the PTES 'how to build a loggery' factsheet - (*https://ptes.org/get-involved/wildlife-action/help-stag-beetles/*)



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