

HABITAT WORKS

Far Lane, Hepworth

Biodiversity Net Gain Assessment

13th September 2024

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Executive Summary

Habitat Works Limited (Habitat Works) was commissioned in August 2024 by Paul Matthews Architectural to undertake a Biodiversity Net Gain Assessment (BNGA) for approximately 5641 m² area of the land off Far Lane, Hepworth, Holmfirth, Kirklees, West Yorkshire (central Ordnance Survey National Grid Reference (OS NGR) SE 16119 06227), hereafter referred to as 'the Site'.

This BNGA has been carried out to determine the potential change in biodiversity value of the Site based upon the proposed development and associated post development habitats, using the Department for Environment, Food & Rural Affairs (DEFRA) 'Small Sites Metric (Statutory Biodiversity Metric): User Guide' (SSM) (February, 2024).

The Site boundary is detailed within the Paul Matthews Architectural drawing '*Proposed Block Plan*' (Dwg No. 24/1044/03, dated 07/2024). The proposals are for the removal of all equine buildings, structures and stables alongside and the erection of a detached dwelling.

The total area of the Site has been calculated at 5641 m² and baseline area-based habitats recorded for the Site comprise '*Grassland – Modified grassland*', '*Urban – Developed land; sealed surface*', '*Urban – Artificial unvegetated, unsealed surface*' and '*Heathland and shrub – Hawthorn scrub*'.

It is anticipated that the current proposals will see the complete loss of '*Grassland – Modified Grassland*' and temporary loss of '*Urban – Developed land; sealed surface*.' Post-development area-based habitat creation has been predicted to include '*Urban – Developed land; sealed surface*' and '*Urban – artificial unvegetated unsealed surface*'.

The current proposals result in a biodiversity value of 0.0040 HU representing a net change of -0.1244 HU to a -96.88% loss of HU failing to meet the 10% net gain requirement.

Without significant changes to the Site layout, it is not possible that an on-site net gain in HU can be achieved.

Recommendations for the Site include the inclusion of a minimum of 750 m² of '*Urban – Vegetated garden*', all of which is on the Site and within the application redline boundary. The addition of this vegetated garden creates +0.0204 HU on the Site bringing the total up from 0.1284 HU to 0.1488 HU, an increase of +0.0204 HU which translates to a 15.85% total net change. These recommendations allow the 10% net gain requirement to be fulfilled.

Given this significant increase in HU, and only the partial loss of '*Urban – Artificial unvegetated unsealed surface*', it is considered that this is a significant increase in the biodiversity across the Site and will provide significantly more ecological value on the Site post-development compared to pre-development.

1. Introduction

1.1 Background

- 1.1.1 Habitat Works Limited (Habitat Works) was commissioned in August 2024 by Paul Matthews Architectural to undertake a Biodiversity Net Gain Assessment (BNGA) for approximately 5641 m² area of the land off Far Lane, Hepworth, Holmfirth, Kirklees, West Yorkshire (central Ordnance Survey National Grid Reference (OS NGR) SE 16119 06227), hereafter referred to as 'the Site' and as displayed in Figure 1.
- 1.1.2 This BNGA has been carried out to determine the potential change in biodiversity value of the Site based upon the proposed development and associated post development habitats, using the Department for Environment, Food & Rural Affairs (DEFRA) 'Small Sites Metric (Statutory Biodiversity Metric): User Guide' (SSM) (February, 2024).
- 1.1.3 The Site boundary is detailed within the Paul Matthews Architectural drawing '*Proposed Block Plan*' (Dwg No. 24/1044/03, dated 07/2024). The proposals are for the removal of all equine buildings, structures and stables alongside and the erection of a detached dwelling.
- 1.1.4 This report details the results of the BNGA using biodiversity metric calculations which have been completed based upon the Habitat Works site walkover undertaken in August 2024, and calculations of the post-development habitats taken from the '*Proposed Block Plan*'. The methodologies employed and all survey findings are described along with an evaluation and assessment of the biodiversity value of the Site. Any recommendations regarding ensuring Biodiversity Net Gain (BNG) are also detailed as required.

2. Methodology

2.1 Background

2.1.1 This BNGA uses the industry recognised best practice methodology within the (DEFRA) ‘*Small Sites Metric (Statutory Biodiversity Metric): User Guide*’ (SSM) (February, 2024).

2.1.2 The Small Sites Metric (SSM) or Statutory Biodiversity Metric (SBM) uses habitat features as a measure for their importance and value to nature. The following information on each habitat are required for the metric input:

- Habitat type;
- Irreplaceable habitat;
- Area/length;
- Habitat distinctiveness (automatically calculated);
- Habitat condition; and,
- Strategic significance.

2.2 Biodiversity Metric Inputs

Habitat Type

Baseline

2.2.1 The Site was surveyed on 19th August 2024 by Senior Ecologist Joe Travis BSc (Hons) MSc ACIEEM and Graduate Ecologist Ellie Collier BSc (Hons).

2.2.2 The Site visit included an ecological walkover survey using the UK Habitat Classification (UKHab) system (Butcher *et al.*, 2020). The habitats present on the Site were identified and classified according to the UKHab system which closely aligns with the SSM. The baseline habitats are displayed in Figure 1.

2.2.3 The SBM uses a classification system based mainly on the UKHab with inputs from other systems including the Water Framework Directive (WFD) Lakes Typology (UKTAG, 2003); the European Nature Information System (EUNIS) habitat type hierarchical view (EEA, 2109; and Natura 2000 Annex I habitats (JNCC, 2019) in addition to further habitats specific to the SSM.

Post-Development

2.2.4 Proposals for the Site have been assessed and habitats present post-development have been based upon the ‘*Proposed Block Plan*’ and using best knowledge of the likely habitats to be created/retained/lost.

2.2.5 The post-development habitats were classified according to the habitat classification system used by the SSM.

Habitat Area/Length

- 2.2.6 The Site was surveyed on the 19th of August 2024 by Senior Ecologist Joe Travis BSc (Hons) MSc ACIEEM and Graduate Ecologist Ellie Collier BSc (Hons).
- 2.2.7 The area/length of each baseline and post-development habitat type was mapped using QGIS 3.34.5 'Prizren' Geographical Information System (GIS). Area habitats are recorded in metres squared (m²) and linear habitats are recorded in metres (m) as per the SSM calculator.

Habitat Condition

- 2.2.8 The condition of a habitat is the measure of the biological 'working order' of a habitat judged against the perceived ecological optimum for that particular habitat. The condition assessments were undertaken using the '*Statutory Biodiversity Metric – Technical Annexe 1: Condition Assessment Sheets and Methodology*' spreadsheet (February, 2024). In the SSM, habitat condition is not necessary for baseline habitats, and is only required for post-development habitats.

Post-Development

- 2.2.9 The condition that post-development habitats have been assigned is based upon reasonable and the likely habitat condition in line with the condition assessment criteria. The condition of each habitat was assessed and either calculated as 'Good', 'Moderate' or 'Poor', where appropriate. Within the SSM, some habitats are not suitable for condition assessment, and as such are automatically calculated as either '*Condition Assessment N/A*' or '*N/A – Other*'.
- 2.2.10 If a habitat type varied in condition within the Site, these habitats were mapped and recorded separately to allow this distinction.

Habitat Strategic Significance

- 2.2.11 The SSM accounts for whether the habitats is situated within an area locally identified as significant for nature conservation.
- 2.2.12 Data on the areas and habitats locally identified as significant for nature conservation were obtained from the following sources:
- Multi-Agency Geographical Information for the Countryside (MAGIC) website for mapped statutory designated sites (<https://magic.defra.gov.uk/MagicMap.aspx>); and,
 - Habitats listed within the Kirklees Biodiversity Action Plan (2007).

3. Biodiversity Metric Calculations

3.1 Background

- 3.1.1 Biodiversity metric calculations provide a numerical score for the value of existing habitats on the Site and their likely value post-development in Habitat Units (HU), Hedgerow Units (HeU) and Watercourse Units (WU) (where present and applicable), to quantitatively assess the impact of the proposed development.
- 3.1.2 Using the SSM, habitat values are calculated via the criteria described within Sections 2.1 and 2.2. This results in individual scores for each habitat, and subsequently baselines for HU, HeU and WU (where present and appropriate).
- 3.1.3 The post-development value can also be calculated for habitats where factors including time to target condition and difficulty of creation/enhancement are also taken into consideration. The values for area habitats and linear habitats are calculated separately. This provides an overall picture of the biodiversity net gain or loss as a result of a development. To achieve BNG, all three of HU, HeU and WU are treated individually, and individual gains cannot be combined to form an overall gain for the Site.

3.2 Trading Rules

- 3.2.1 The SSM considers distinctiveness as described earlier and using this data, SSM applies trading rules that require that any habitat loss is replaced on a ‘like for like’ or ‘like for better’ basis. The trading rules are detailed below in Table 1.

Table 1 – Trading Rules within the SSM

Distinctiveness Group	Trading Rules
Very High	Bespoke compensation likely to be required
High	Same habitat required
Medium	Same broad habitat or a higher distinctiveness habitat required
Low	Same distinctiveness or better habitat requires
Very Low	Compensation not required

3.3 Assumptions and Limitations

- 3.3.1 For strategic significance, all habitats on the Site (both baseline and post-development) have been considered ‘Area/compensation not in local strategy/no local strategy’ as they do not qualify as priority habitats and are not identified on any strategic plans.
- 3.3.2 The quantification of biodiversity is one of several factors to be considered when assessing the impact of the proposed development on biodiversity. Note that this BNGA does not cover potential impacts of the proposed development on protected species and designated sites.

3.3.3 The information contained within this report is considered valid for a period of 24 months from the date of the survey visit (CIEEM, 2019). If the development has not commenced by August 2026, it is recommended that the Site is fully re-surveyed to determine if there have been any significant changes to baseline habitats within that timeframe.

4. Findings and Evaluation

4.1 Baseline Habitats

- 4.1.1 Baseline area-based habitats recorded for the Site comprise ‘Urban – Artificial unvegetated, unsealed surface’, ‘Grassland – Modified grassland’, ‘Urban – Developed land; sealed surface’ and ‘Heathland and shrub – Hawthorn scrub’ (see Figure 1).
- 4.1.2 The total area of the Site has been calculated at 5641 m². The habitat type, distinctiveness, condition, area and HU of the area-based habitats are provided within Table 2. Baseline area-based habitats have a biodiversity value of 0.1244 HU.

Table 2 – Site Baseline Area-based Habitats and Habitat Units

Habitat Type	Distinctiveness	Condition	Area (m ²)	Habitat Units (HU)
Urban – Artificial unvegetated, unsealed surface	V. Low	N/A	5208	0.00
Grassland – Modified grassland	Low	Moderate	311	0.1244
Urban – Developed land; sealed surface	V. Low	N/A	117	0.00
Heathland and Shrub – Hawthorn scrub	Medium	Moderate	5	0.0040
Total Habitat Units (HU)				0.1284*

*Individual habitat HU are rounded to two decimal places, however the calculator outputs the Site’s total HU to four decimal places.

4.2 Post-development Habitats

- 4.2.1 The following calculations present a version of the completed feasibility biodiversity metric calculations based upon the post-development proposals as show in the ‘Proposed Block Plan’. A summary of the calculations is provided in Appendix 2.
- 4.2.2 It is anticipated that the proposals will see the complete loss of ‘Grassland – Modified grassland’ and ‘Urban – Developed land; sealed surface’ as well as the partial loss of ‘Urban – Artificial unvegetated, unsealed surface’ and the retainment of ‘Heathland and shrub – Hawthorn scrub’ habitats currently present on the Site.
- 4.2.3 Post-development area-based habitat creation has been predicted to include ‘Urban – Developed land; sealed surface’ and ‘Urban – Artificial unvegetated, unsealed surface’
- 4.2.4 The predicted area-based habitat type, distinctiveness, condition, area and HU of the area-based habitats are provided within Table 3. The post-development area-based habitats estimated a biodiversity value of 0.0040 HU and are displayed within Figure 2.

Table 3 – Post-development Area-based Habitats Condition and Habitat Units

Habitat Type	Condition	Area (m ²)	Habitat Units (HU)
Lost			
Grassland – Modified grassland	Poor	311	0.1244
Urban – Developed land; sealed surface	N/A - Other	117	0.0000
Urban – Artificial unvegetated, unsealed surface	N/A - Other	938	0.0000
Created			
Urban – Developed land; sealed surface	N/A - Other	587	0.0000
Urban – Artificial unvegetated, unsealed surface	N/A - Other	29	0.0000
Total Change in Habitat Units (HU)			-0.1244

4.3 Net Change in Biodiversity

4.3.1 Considering the reasonable assumptions and estimates made within this report as soft landscape drawings were not available at the time writing the construction of the proposed development is predicted to result in a net unit change of -0.1244 HU which is a net percentage change of -96.88% as detailed in Table 4.

Table 4 – Summary of Biodiversity Net Gain Calculations

Habitat Type	Baseline Units	Post-development Units	Change in Units	% Change in Units
Habitat Units (HU)	0.1284	0.0040	-0.1244	-96.88%

4.3.2 For the Site to achieve a greater than 10% net gain in HU, a total of 0.1372 HU would have to be proposed post development. This leaves a deficit of 0.0088 HU, as detailed in Table 5.

Table 5 – Summary of Biodiversity Units required Post-development

Habitat Type	Target	Baseline Units	Units Required	Unit Deficit as per Current Proposals
Habitat Units (HU)	10.00%	0.1284	0.1372	0.0088

4.4 Recommended Changes to Post-development Habitats

- 4.4.1 Alterations are required to achieve the 10% net gain in HU on the Site. The following calculations present a version of the completed feasibility biodiversity metric calculations based upon suggested alterations to the post-development proposals as show in the *'Proposed Block Plan'*, as a possible way to achieve the 10% net gain on the Site. A summary of these calculations is provided in Appendix 3.
- 4.4.2 The recommended alterations post-development comprises the creation of a minimum of 750 m² of *'Urban – Vegetated garden'* in place of *'Urban – Artificial unvegetated, unsealed surface'*. This will increase the HU present on the Site post-development. All other habitat changes will remain the same.
- 4.4.3 The recommended area-based habitat type, distinctiveness, condition, area and HU of the area-based habitats are provided within Table 7. The post-development area-based habitats estimated a biodiversity value of 0.1448 HU and indicative locations are displayed within Figure 3.

Table 7 – Recommended Post-development Area-based Habitats Condition and Habitat Units

Habitat Type	Condition	Area (m ²)	Habitat Units (HU)
Lost			
<i>Grassland – Modified grassland</i>	Moderate	311	-0.1244
<i>Urban – Developed land; sealed surface</i>	N/A - Other	117	0.0000
<i>Urban – Artificial unvegetated, unsealed surface</i>	N/A - Other	938	0.0000
Retained			
<i>Heathland and shrub – Hawthorn scrub</i>	Moderate	5	0.0040
Created			
<i>Urban – Developed land; sealed surface</i>	N/A - Other	587	0.0000
<i>Urban – Vegetated garden</i>	N/A – Condition assessment	750	0.1448
Total Change in Habitat Units (HU)			+0.0204

4.5 Net Change in Biodiversity of Recommendations

- 4.5.1 Considering the reasonable assumptions and estimates made within this report of recommended changes to the proposed development, it is predicted that the proposed development will result in a net unit change of +0.0204 HU which is a net percentage change of +15.85% as detailed in Table 9.

Table 9 – Summary of Biodiversity Net Gain Calculations

Habitat Type	Baseline Units	Post-development Units	Change in Units	% Change in Units
Habitat Units (HU)	0.1284	0.1488	+0.0204	+15.85%

5. Discussion and Recommendations

5.1 *Summary of Biodiversity Net Gain Delivery*

- 5.1.1 The current proposals result in a biodiversity value of 0.0040 HU representing a net change of -0.1244 HU failing to meet the 10% net gain requirement.
- 5.1.2 Recommended alterations to the proposals result in a biodiversity value of 0.1488 HU representing a net change of +0.0204 HU equating to a +15.85% gain of HU exceeding the 10% net gain requirement

5.2 *Discussion*

- 5.2.1 Given the current proposals, it is considered that a 10% net gain in HU on Site would be achievable through small changes to the proposed layout, as per this report's recommendations.
- 5.2.2 Changes to the proposed layout comprising the creation of a minimum of 750 m² of 'Urban – Vegetated garden', would be sufficient to achieve the necessary gains in biodiversity on the Site post-development.

5.3 *Habitat Management and Monitoring*

- 5.3.1 Ordinarily, the production of a Biodiversity Enhancement Management Plan (BEMP) is recommended to ensure that the Site habitats deliver the habitat scores listed within the final design stage BNGA. However, given that the proposed vegetated garden does not require condition assessment, a BEMP is not considered necessary in this instance.

5.4 *BNG Good Practice Principles*

- 5.4.1 Appendix 1 details the BNG Good Practice Principles (CIEEM, CIRIA & IEMA, 2016) which should be adhered to when undertaking BNGAs in association with proposed developments. The actions within Appendix 1 should be considered throughout the design stage of a development at this Site.

6. References

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- HMSO (2024). 'The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024'. Available: https://www.legislation.gov.uk/uksi/2024/48/pdfs/uksi_20240048_en.pdf
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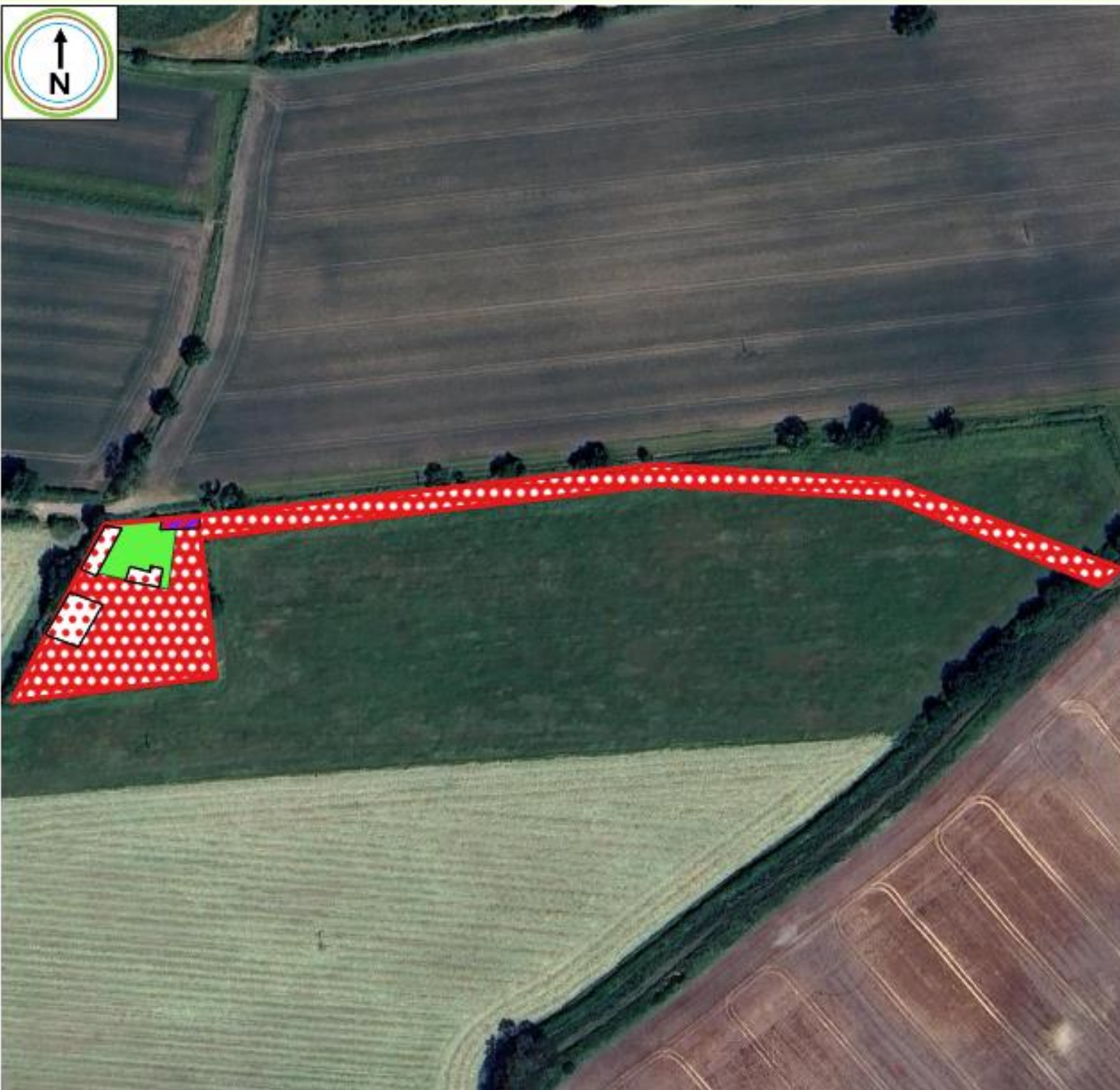
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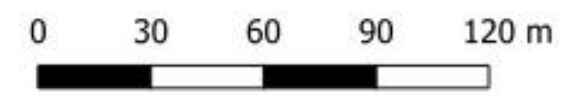
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Figure 1. Baseline Habitats Map



Legend

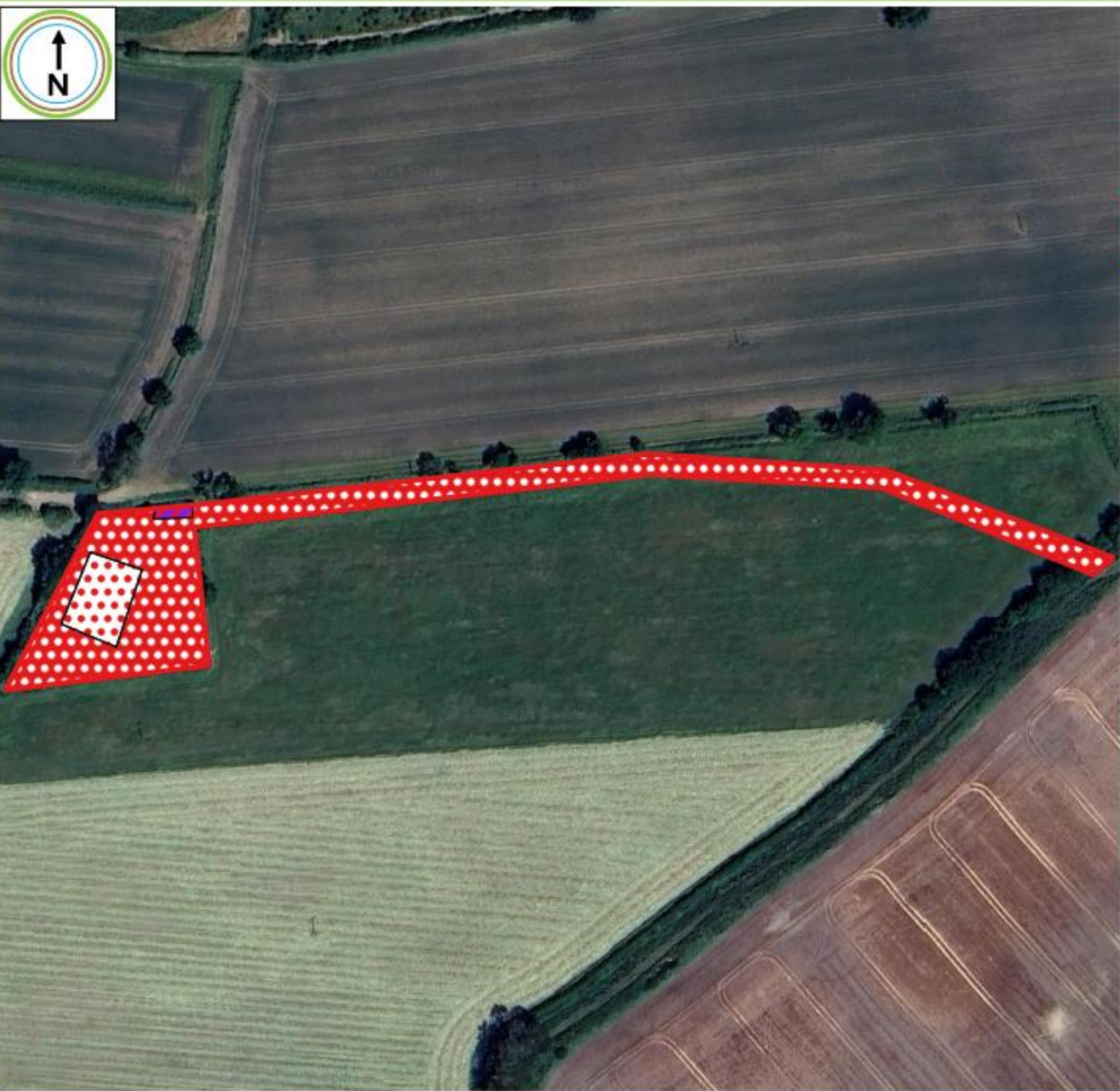
-  Site boundary
-  Urban - Artificial unvegetated unsealed surface
-  Urban - Developed land; sealed surface
-  Heathland & shrub - Dense scrub
-  Grassland - Modified grassland



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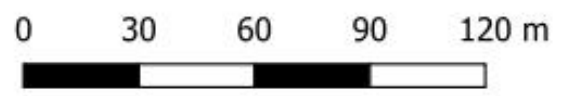
Figure 1
Baseline Habitats Map

Figure 2. Post-development Habitats Map



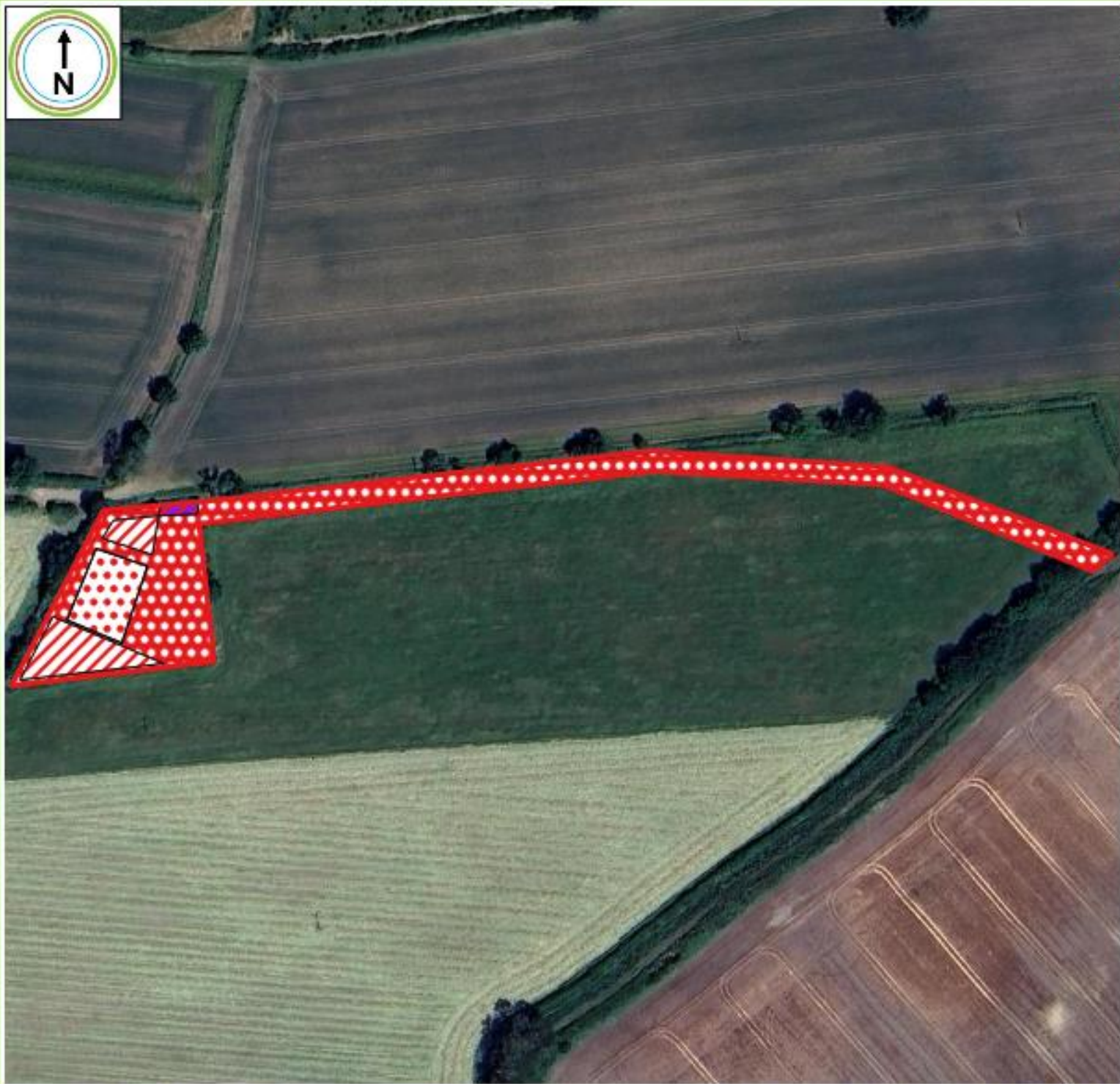
Legend

-  Site boundary
-  Urban - Artificial unvegetated unsealed surface
-  Urban - Developed land; sealed surface
-  Heathland & shrub - Dense scrub



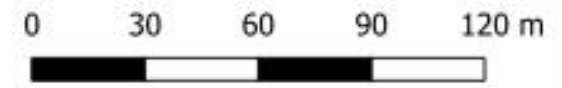
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 Figure 2
 Post Development Habitats Map

Figure 3. Recommended Post-development Habitats Map



Legend

-  Site boundary
-  Urban - Artificial unvegetated unsealed surface
-  Urban - Developed land; sealed surface
-  Urban - Vegetated garden
-  Heathland & shrub - Dense scrub



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Figure 3
Recommended Post Development Habitats Map

Appendix 1. BNG Good Practice Principles

The BNG Good practice principles for development are based upon issued joint guidance from the Chartered Institute for Ecology and Environmental Management (CIEEM), the Construction Industry Research and Information Association (CIRIA) and the Institute for Environmental Management and Assessment (IEMA) (CIEEM, CIRIA & IEMA, 2019).

The Good practice principles for development outlines 10 principles which should be followed to ensure that BNG is undertaken in the most beneficial and appropriate manner possible. These principles are outlined in the table below.

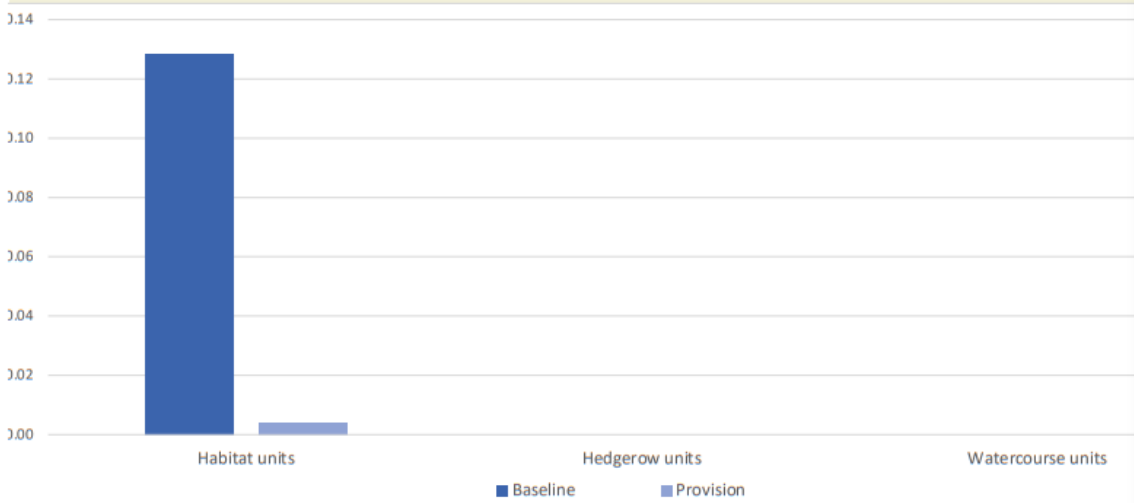
Principle	Description
Principle 1. Apply the Mitigation Hierarchy	Do everything possible to first avoid and then minimise impacts on biodiversity. Only as a last resort, and in agreement with external decision-makers where possible, compensate for losses that cannot be avoided. If compensating for losses within the development footprint is not possible or does not generate the most benefits for nature conservation, then offset biodiversity losses by gains elsewhere.
Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere	Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset to achieve No Net Loss or Net Gain.
Principle 3. Be inclusive and equitable	Engage stakeholders early, and involve them in designing, implementing, monitoring and evaluating the approach to Net Gain. Achieve Net Gain in partnership with stakeholders where possible, and share the benefits fairly among stakeholders.
Principle 4. Address risks	Mitigate difficulty, uncertainty and other risks to achieving Net Gain. Apply well-accepted ways to add contingency when calculating biodiversity losses and gains in order to account for any remaining risks, as well as to compensate for the time between the losses occurring and the gains being fully realised.
Principle 5. Make a measurable Net Gain contribution	Achieve a measurable, overall gain ¹ for biodiversity and the services ecosystems provide while directly contributing to wards nature conservation priorities. <small>¹ – Net Gain has been described as a measurable target for development projects where impacts on biodiversity are outweighed by a clear mitigation hierarchy approach to first avoid then minimise impacts, including through restoration and / or compensation. Adhering to these Net Gain principles (i.e. pursuing all principles together) will help in under-pinning good practice for achieving and sustaining Net Gain.</small>
Principle 6. Achieve the best outcomes for biodiversity	Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge to make clearly-justified choices when: <ul style="list-style-type: none"> • Delivering compensation that is ecologically equivalent in type, amount and condition, and that accounts for the location and timing of biodiversity losses • Compensating for losses of one type of biodiversity by providing a different type that delivers greater benefits for nature conservation

	<ul style="list-style-type: none"> • Achieving Net Gain locally to the development while also contributing towards nature conservation priorities at local, regional and national levels • Enhancing existing or creating new habitat • Enhancing ecological connectivity by creating more, bigger, better and joined areas for biodiversity
Principle 7. Be additional	Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).
Principle 8. Create a Net Gain legacy	<p>Ensure Net Gain generates long-term benefits by:</p> <ul style="list-style-type: none"> • Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity² • Planning for adaptive management and securing dedicated funding for long-term management • Designing Net gain for biodiversity to be resilient to external factors, especially climate change • Mitigating risks for other land uses • Avoiding displacing harmful activities from one location to another • Supporting local-level management of Net Gain activities <p><small>² – Biodiversity compensation should be planned for a sustained Net Gain over the longest possible timeframe. For development in the UK, the expectation is that compensating sites will be secured for at least the lifetime of the development (e.g. often 25-30 years) with the objective of Net Gain management continuing in the future.</small></p>
Principle 9. Optimise sustainability	Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
Principle 10. Be Transparent	Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

Appendix 2. Biodiversity Metric Calculations Summary (Post-development)

Site Name		Far Lane, Hepworth
Sheet Name		Headline Results
Headline Results		
Headline		BNG Targets Not Met ▲
Trading Rules		Trading Rules Not Satisfied ▲
Next steps		Scheme alterations or offsite units required
Baseline Units	Habitat units	0.1284
	Hedgerow units	Zero Units Baseline
	Watercourse units	Zero Units Baseline
Post-development Units	Habitat units	0.0040
	Hedgerow units	0.0000
	Watercourse units	0.0000
Total net unit change	Habitat units	-0.1244
	Hedgerow units	0.0000
	Watercourse units	0.0000
Total net % change	Habitat units	-96.88%
	Hedgerow units	% target not appropriate
	Watercourse units	% target not appropriate
Habitats units required to meet target		0.1372
Hedgerow units required to meet target		0.0000
Watercourse units required to meet target		0.0000

Chart 1 - Unit change by habitat group



Appendix 3. Biodiversity Metric Calculations Summary (with recommendations)

Site Name		Far Lane, Hepworth
Sheet Name		Headline Results
Headline Results		
Headline		BNG Targets Met ✓
Trading Rules		Trading Rules Satisfied ✓
Next steps		Check for input errors/rule breaks present in the metric ⚠
Baseline Units	Habitat units	0.1284
	Hedgerow units	Zero Units Baseline
	Watercourse units	Zero Units Baseline
Post-development Units	Habitat units	0.1488
	Hedgerow units	0.0000
	Watercourse units	0.0000
Total net unit change	Habitat units	0.0204
	Hedgerow units	0.0000
	Watercourse units	0.0000
Total net % change	Habitat units	15.85%
	Hedgerow units	% target not appropriate
	Watercourse units	% target not appropriate
Habitats units required to meet target		0.0000
Hedgerow units required to meet target		0.0000
Watercourse units required to meet target		0.0000

Chart 1 - Unit change by habitat group

