

Wickham Hall Solar
(Uttlesford)

Biodiversity Net Gain Assessment

February 2024

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Plans:

Plan 5940/BNG1	Pre-development Habitats
Plan 5940/BNG2	Post-development Habitats

1 Introduction

1.1 Background and Proposals

1.1.1 Aspect Ecology is advising Endurance Energy Limited in respect of ecological issues relating to land at Wickham Hall, Uttlesford, which is proposed for a new solar development.

1.1.2 To inform the planning application, Aspect Ecology has undertaken a Biodiversity Net Gain (BNG) assessment to determine the level of biodiversity net gain that could be achieved under the scheme. This work is based on the Statutory Biodiversity Metric tool developed by Natural England and DEFRA and informed by biodiversity net gain guidance developed by DEFRA, CIRIA, CIEEM and IEMA. This report sets out the results of the assessment.

1.2 Biodiversity Net Gain

Environment Act

1.2.1 The Environment Act establishes a comprehensive legal framework for environmental improvement within the UK, forming one of the key measures to deliver the vision set out under the 25 Year Environment Plan.

1.2.2 The Environment Act is intended to establish the structure for long-term environmental governance and accountability and includes key measures to drive improvements for nature. In particular, it lays the foundation for a Nature Recovery Network, and introduces a mandatory requirement for biodiversity net gain in the planning system, to ensure that new developments enhance biodiversity and create new green spaces for local communities to enjoy. This requires developments to deliver a 10% improvement in biodiversity value, which applies to qualifying applications submitted after 12th February 2024.

Good Practice Principles for Development

1.2.3 CIRIA, CIEEM and IEMA have developed a set of principles on good practice to achieve Biodiversity Net Gain¹, accompanied by a practical guide². These principles provide a framework that helps improve the UK's biodiversity by contributing towards strategic priorities to conserve and enhance nature while progressing with sustainable development. They also provide a way for industry to show that projects follow good practice. Ten key principles are identified:

- 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.
- 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.

¹ CIEEM, CIRIA, IEMA (2016) *Biodiversity Net Gain: Good practice principles for development.*

² CIEEM, CIRIA, IEMA (2019) *Biodiversity Net Gain: Good practice principles for development. A practical guide.*

- 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.
- 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.
- 5) **Make a measurable Net Gain contribution.** Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
- 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:
 - 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
 - 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
- 7) **Be additional.** Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e. do not deliver something that would occur anyway).
- 8) **Create a Net Gain legacy.** Ensure Net Gain generates long-term benefits by:
 - Engaging stakeholders and jointly agreeing practical solutions that secure Net Gain in perpetuity
 - 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 from other land uses
 - Avoiding displacing harmful activities from one location to another
 - Supporting local-level management of Net Gain activities
- 9) **Optimise sustainability.** Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
- 10) **Be transparent.** Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

2 Methodology

2.1 Habitat Survey

2.1.1 The site was previously surveyed in June 2020 and again in June 2023 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present. The site was surveyed based on standard Phase 1 Habitat Survey methodology³, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. The site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

2.2 Survey Constraints and Limitations

2.2.1 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. The 2020 survey was carried out within the optimal season. The 2023 update survey was undertaken outside the optimal season, albeit the nature of the habitats within the site, combined with the previous survey findings, allowed for the broad habitat types to be identified and for an adequate assessment of the intrinsic ecological interest of the site to be made.

2.3 Biodiversity Net Gain Assessment

2.3.1 To quantify the level of biodiversity net gain that can be delivered under the proposed development, the change in biodiversity value resulting from the scheme has been calculated using the Statutory Biodiversity Metric calculation tool and associated User Guide⁴. This takes account of the size, distinctiveness and ecological condition of existing and proposed habitat areas to provide a proxy measure of the present and forecast biodiversity value of a site, and therefore determine the overall change in biodiversity value.

2.3.2 To establish the habitat baseline, broad habitat areas have been identified based on the survey work undertaken at the site, with habitat condition assigned based on the guidance set out in the User Guide and professional judgement. Multiple quadrats were sampled within the grassland areas, in order to assess the number of species present. No evidence of any unauthorised habitat degradation was recorded during the baseline survey work.

2.3.3 The post-development habitat creation and enhancement is based on Aspect Landscape Planning's Landscape Masterplan 'Drawing Number 7200/ASP3/LMP Rev. D', dated August 2022. A number of assumptions have been made in terms of the detailed landscaping and management proposals, based on comparative developments and what is realistic and feasible under the proposed land uses and landscape space types. Further details of assumptions made in populating the metric are provided in Chapter 4 below.

³ Joint Nature Conservation Committee (2010, as amended) 'Handbook for Phase 1 habitat survey: A technique for environmental audit.'

⁴ Department for Environment, Food & Rural Affairs (2024). 'The Statutory Biodiversity Metric: User Guide.'

3 Habitats and Ecological Features

3.1 Overview

3.1.1 The site is dominated by an arable field bound by hedgerows and a hardstanding trackway. The locations of these habitat types and features are illustrated on Plan 5940/BNG1 and described in detail below.

3.2 Cropland - Non-cereal crops

3.2.1 The field in arable production were sown with Legumes at the time of the survey. In accordance with the guidance no condition assessment is required for this habitat type.

3.3 Grassland - Modified Grassland

3.3.1 Narrow grassland field margins include Perennial Rye-grass *Lolium perenne*, Dandelion *Taraxacum officinale* agg., Ribwort Plantain *Plantago lanceolata*, Greater Plantain *Plantago major*, Yorkshire-fog *Holcus lanatus*, Curled Dock *Rumex crispus*, Yarrow *Achillea millefolium*, Spear Thistle *Cirsium vulgare*, Creeping Bent *Agrostis stolonifera*, Broad-leaved Dock *Rumex obtusifolius*, Groundsel *Senecio vulgaris*, Common Mouse-ear *Cerastium fontanum*, Common Ragwort *Jacobaea vulgaris*, Speedwell *Veronica* sp., Wild Teasel *Dipsacus fullonum* and Dove's-foot Crane's-bill *Geranium mole*.

3.3.2 The latest Phase 1 habitat survey was undertaken outside of the optimal survey season for grasslands and therefore, on a conservative basis, the grass field margins have been assessed as modified grassland of moderate condition.

3.4 Urban – Bare ground

3.4.1 The existing trackways and pathways in the west of the site are classified as bare ground and pass one of the three core condition assessment criteria for this habitat type. Accordingly, the bare ground is assessed as being in poor condition.

3.5 Urban - Developed land; sealed surface

3.5.1 The existing road in the south of the site comprises hardstanding. In accordance with the guidelines no condition assessment is required for this habitat type.

3.6 Native Hedgerow

3.6.1 Hedgerow **H3** at the eastern site boundary comprises native species and fails only two of the eight condition assessment criteria for the habitat type. Hedgerow **H3** is therefore assessed as being in good condition.

3.7 Species-rich Native Hedgerow – Associated with Bank or Ditch

3.7.1 Hedgerow **H1** at the western site boundary is species-rich and has an associated ditch. Hedgerow **H1** fails only two of the eight condition assessment criteria for the habitat type and is therefore assessed as being in good condition.

3.8 Species-rich Native Hedgerow With Trees – Associated with Bank or Ditch

- 3.8.1 Hedgerow **H2** at the northern site boundary is species-rich, contains standard trees and has an associated ditch. Hedgerow **H2** fails only two of the ten condition assessment criteria for the habitat type and is therefore assessed as being in good condition.

4 Post-development Habitats

4.1 Assumptions

4.1.1 When inputting the post-development habitat areas and condition to the Statutory Biodiversity Metric, the following assumptions have been made:

- Newly created habitat under the proposals will be managed appropriately to reach the assigned target condition (anticipated to be defined by a future management plan).
- Future management prescriptions at the site within areas of created 'other neutral' grassland within the site will be subject to a meadow management regime, in order to maintain the presence of the characteristics necessary to qualify as this habitat type.

4.2 Strategic Significance

4.2.1 Strategic significance in the metric is assigned to give extra value to habitats that are located in optimal locations, or are of a type that meet local objectives for biodiversity. No strategic significance has been applied to the habitats pre or post-development.

4.3 Habitat Type and Condition

4.3.1 A summary of post-development habitat creation is set out in Table 4.1 below. Post-development habitats are shown at Plan 5940/BNG2.

Table 4.1. Post-development Habitat Creation

Habitat	Target Condition	Condition Rationale
Urban – Developed land; sealed surface	N/A	This habitat is used for all new buildings and access roads. In accordance with the guidelines no assessment of condition is required for this habitat type.
Grassland – Other neutral grassland	Moderate	Newly created areas of wildflower grassland will be subject to ecologically sensitive management prescriptions in order to maximise their floristic diversity and value for wildlife. The Metric calculates this grassland will achieve moderate condition after five years.
Heathland and shrub – Mixed scrub	Moderate	New mixed scrub planting at the site will comprise a number of native shrub species, with a proportion being fruit and nut-bearing species for the benefit of wildlife. With appropriate management prescriptions, the Metric calculates this habitat will achieve moderate condition within five years.
Woodland – Other woodland; broadleaved	Moderate	Woodland planting within the south of the site will comprise native species of local provenance. The Metric calculates that the woodland will achieve moderate condition within 15 years.
Lakes – Ponds (Non-Priority Habitat)	Good	The new pond within the east of the site will be planted with a diverse variety of native aquatic and emergent species, which will benefit invertebrate and amphibian species. With appropriate

		management prescriptions, the Metric calculates this habitat will achieve good condition within five years.
Hedgerows - Native Species Rich Hedgerow	Good	Newly planted hedgerows will comprise native species and be subject to ecologically sensitive management prescriptions. The Metric calculates that the hedgerows will achieve good condition within 12 years.

5 Biodiversity Net Gain Assessment Results

5.1 Metric calculation

5.1.1 The results of the Metric are broken down in Table 5.1 below:

Table 5.1 Net gain results

	Change in Units	% Change
Habitats	+146.19	+219.46%
Hedgerows	+15.85	+96.57%

5.1.2 The trading summary indicates that the trading rules are satisfied.

5.2 Additional faunal benefits not captured by the Metric

5.2.1 Further biodiversity benefits will be provided by faunal enhancements, for example through the provision of new bat and bird boxes, hedgehog cut-outs and bee bricks (which can be secured via suitably worded planning conditions). Such faunal enhancements are not quantified under the Metric as this deals with habitats alone and does not address faunal benefits.

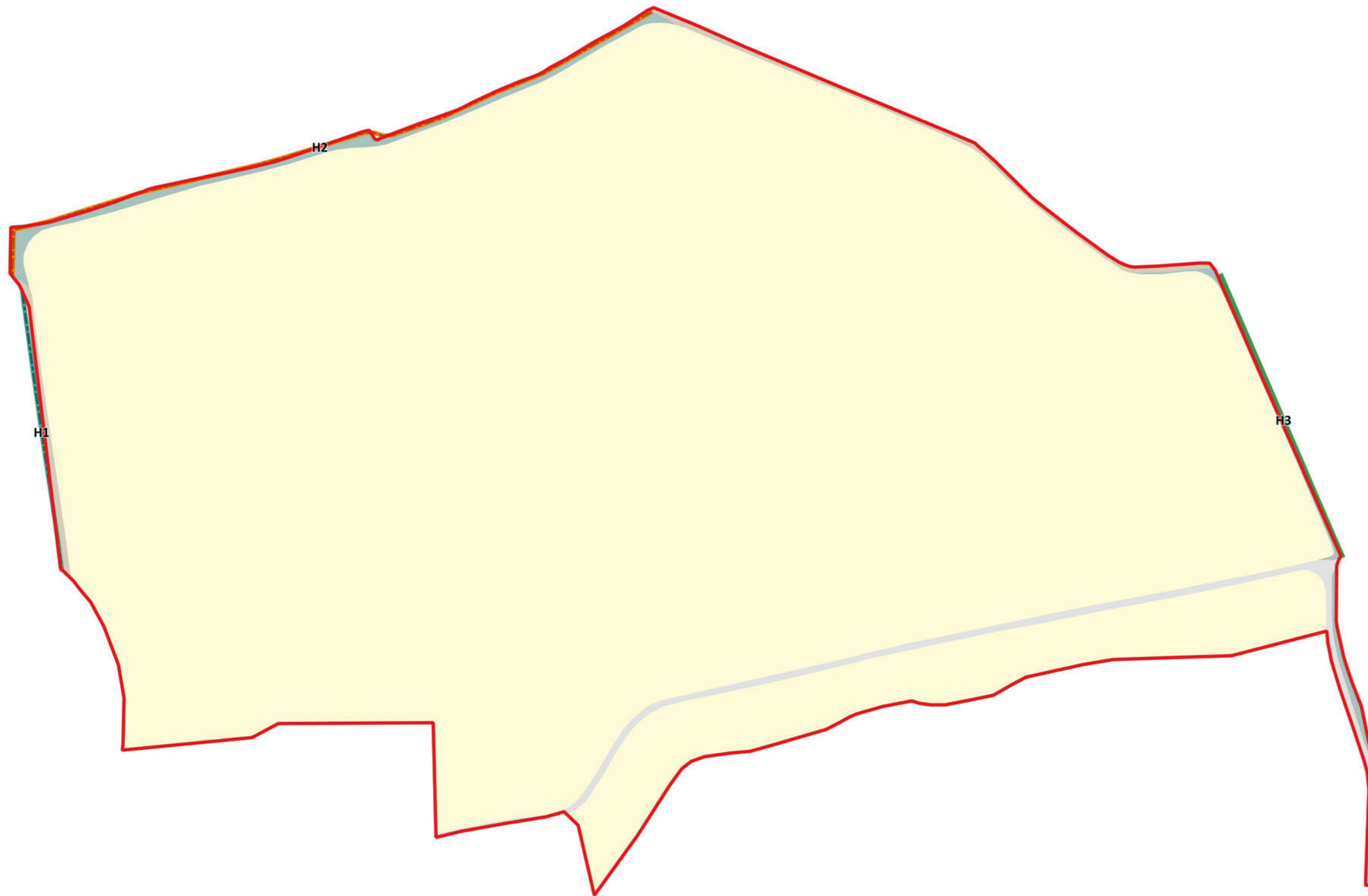
6 Summary and Conclusions









- 6.1 Aspect Ecology is advising Endurance Energy Wickham Hall Ltd in respect of ecological issues relating to the proposed Wickham Hall Solar Farm, Uttlesford, Essex.
- 6.2 To inform the application, Aspect Ecology has undertaken a BNG assessment to determine the level of biodiversity net gain that could be achieved under the scheme, based on the Statutory Biodiversity Metric calculation tool.
- 6.3 The metric demonstrates that a 219.46% net gain in habitat units and 96.57% net gain in hedgerow units is achieved under the proposals.

Plan 5940/BNG1:

Pre-development Habitat Measurements

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- Key:
-  Site Boundary
 -  Modified grassland (0.4125ha)
 -  Non-cereal crops (32.2700ha)
 -  Developed land; sealed surface: Hardstanding (0.3775ha)
 -  Vacant/derelict land/ bare ground (0.2125ha)
 -  Native Hedgerow (0.205km)
 -  Native Species Rich Hedgerow with trees - Associated with bank or ditch (0.49km)
 -  Native Species Rich Hedgerow - Associated with bank or ditch (0.19km)



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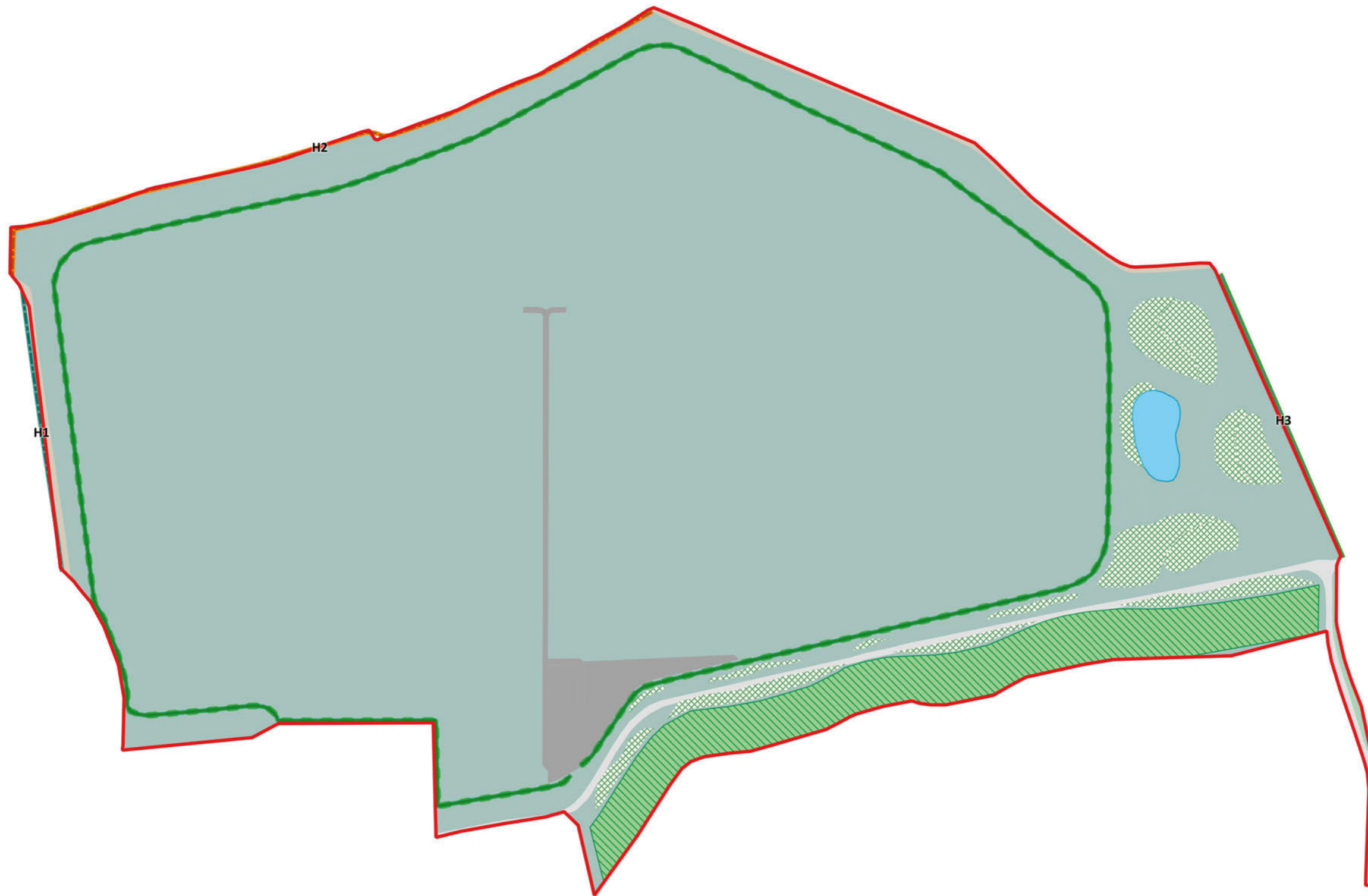
Wickham Hall Estate, Bishops Stortford	PROJECT
Pre-development Habitat Measurements	TITLE
5940/BNG1	DRAWING NO.
D/BG	REV
July 2023	DATE



Plan 5940/BNG2:

Post-development Habitat Measurements

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- Key:**
- Site Boundary
 - Proposed Other neutral grassland (29.1475ha)
 - Proposed Mixed scrub (1.1025ha)
 - Proposed Other woodland; broadleaved (1.7175ha)
 - Proposed Developed land; sealed surface: Hardstanding (0.5500ha)
 - Retained Developed land; sealed surface: Hardstanding (0.3300ha)
 - Retained Vacant/derelict land/ bare ground (0.2125ha)
 - Proposed Ponds (Non-Priority Habitat) (0.1600ha)
 - Retained Modified grassland (0.0525ha)
 - Proposed Native Species Rich Hedgerow (2.025km)
 - Retained Native Hedgerow with trees - Associated with bank or ditch (0.49km)
 - Retained Native Hedgerow (0.205km)
 - Retained Native Species Rich Hedgerow - Associated with bank or ditch (0.19km)



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<p>Wickham Hall Estate, Bishops Stortford</p> <p>Post-development Habitat Measurements</p>	<p>PROJECT</p> <p>TITLE</p> <p>DRAWING NO.</p> <p>REV</p> <p>DATE</p>
<p>5940/BNG2</p> <p>E/BG</p> <p>July 2023</p>	<p></p> <p></p> <p></p> <p></p> <p></p>



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