



BIODIVERSITY NET GAIN ASSESSMENT: FEASIBILITY STAGE

COLT COTTAGE

CAPEL, TONBRIDGE

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Reference	Ref: 1239_R03_BNG Feasibility Report
Report status	Information
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1st issue date	8th August 2023
Revised	
Revision issue	

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1. INTRODUCTION

- 1.1 This report details a Biodiversity Net Gain Feasibility Assessment undertaken in respect of proposed development at Colt Cottage, Postern Lane, Capel, Tonbridge, TN11 0QU (site centred TQ 60747 46261).

COMMISSION

- 1.2 Native Ecology was commissioned by Mr and Mrs Tennant in March 2023 to undertake a Biodiversity Net Gain Feasibility Assessment of the Site to include baseline calculations of the Site and change in biodiversity value.

APPLICATION SITE

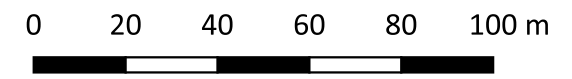
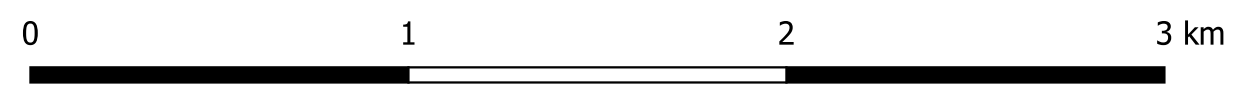
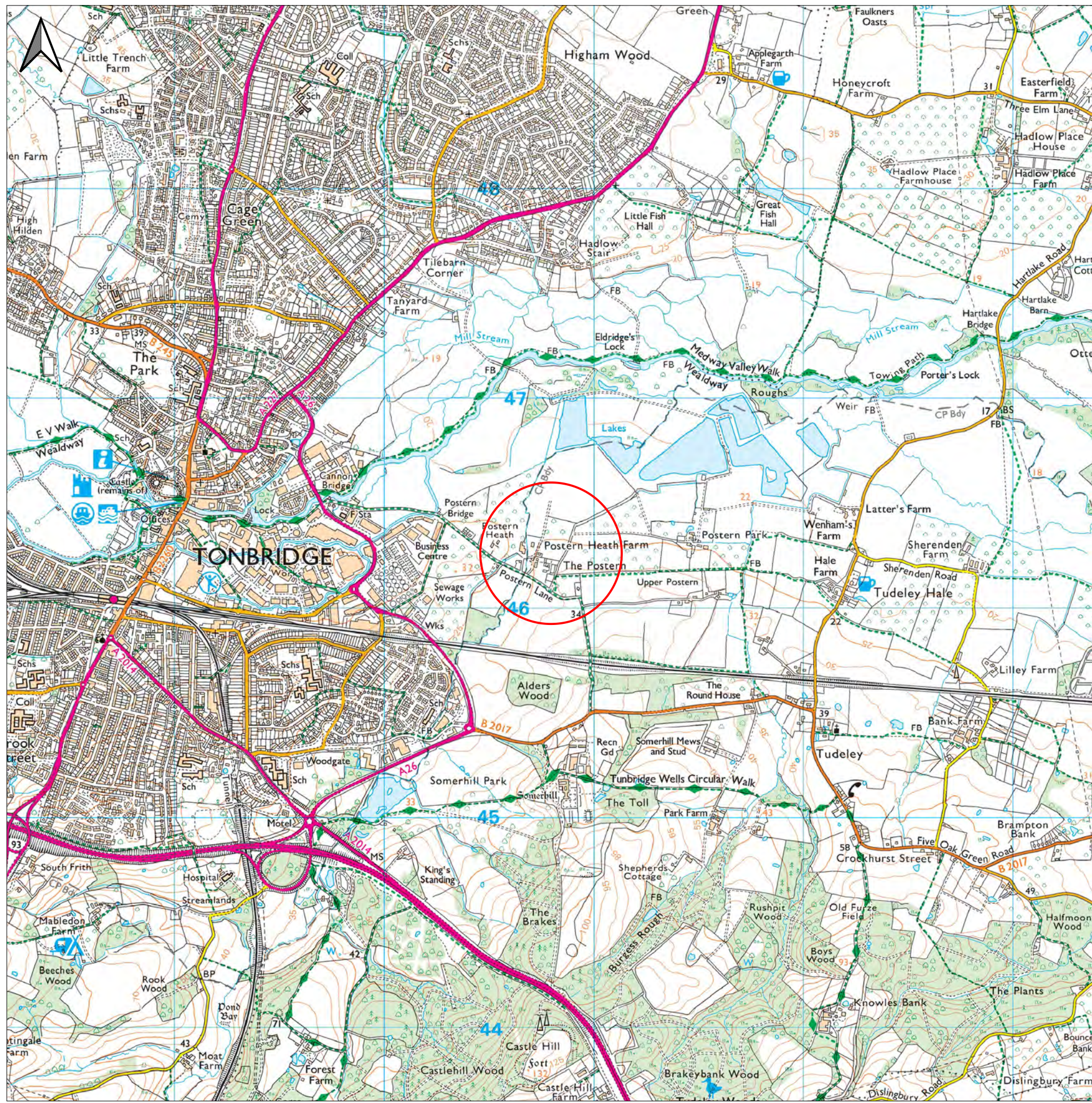
- 1.3 The application site, hereafter referred to as 'the Site', comprises a two-storey residential dwelling, garden and parking area. The Site extends to approximately 0.2ha.
- 1.4 A location plan is provided in Section 2 and a plan of the existing site is provided in Section 3.


PROPOSED WORKS

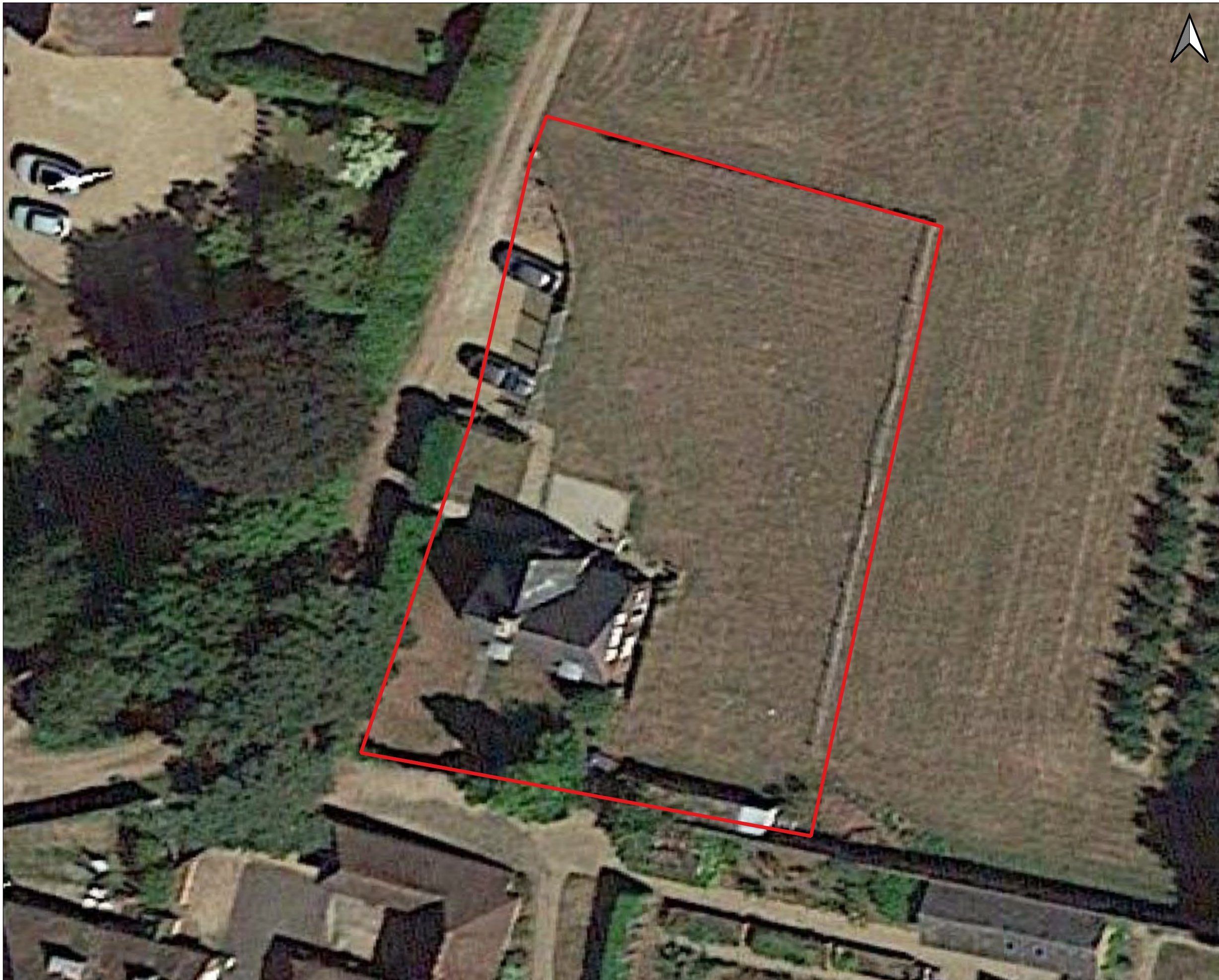
- 1.5 Proposals include the demolition of all existing buildings and construction of a replacement dwelling.
- 1.6 Section 4 provides a proposed landscape plan.

PURPOSE OF REPORT


- 1.7 The objectives of the report are to:
- Describe the baseline habitats present within the Site.
 - Measure and map the habitats present within the Site.
 - Provide the baseline biodiversity units.
 - Provide an estimate of the post-development units.
 - Provide a summary of the overall net gain assessment calculations.
 - Provide recommendations to achieve net gain based on appropriate good practice principles.




	
Site location plan	
Colt Cottage Postern Lane, Capel Tonbridge	
Drawing ref:	1239_DR01
Revision:	-
Date:	27/03/2023
Scale:	1:20,000 (Main canvas)
Paper size:	A3



Legend

 Site boundary



 PROMOTING BIODIVERSITY INTEGRATION	
Existing Site Plan	
Colt Cottage Postern Lane, Capel Tonbridge	
Drawing ref:	1239_DR06
Revision:	-
Date:	09/08/2023
Scale:	1:250
Paper size:	A3

4. PROPOSED LAYOUT PLAN

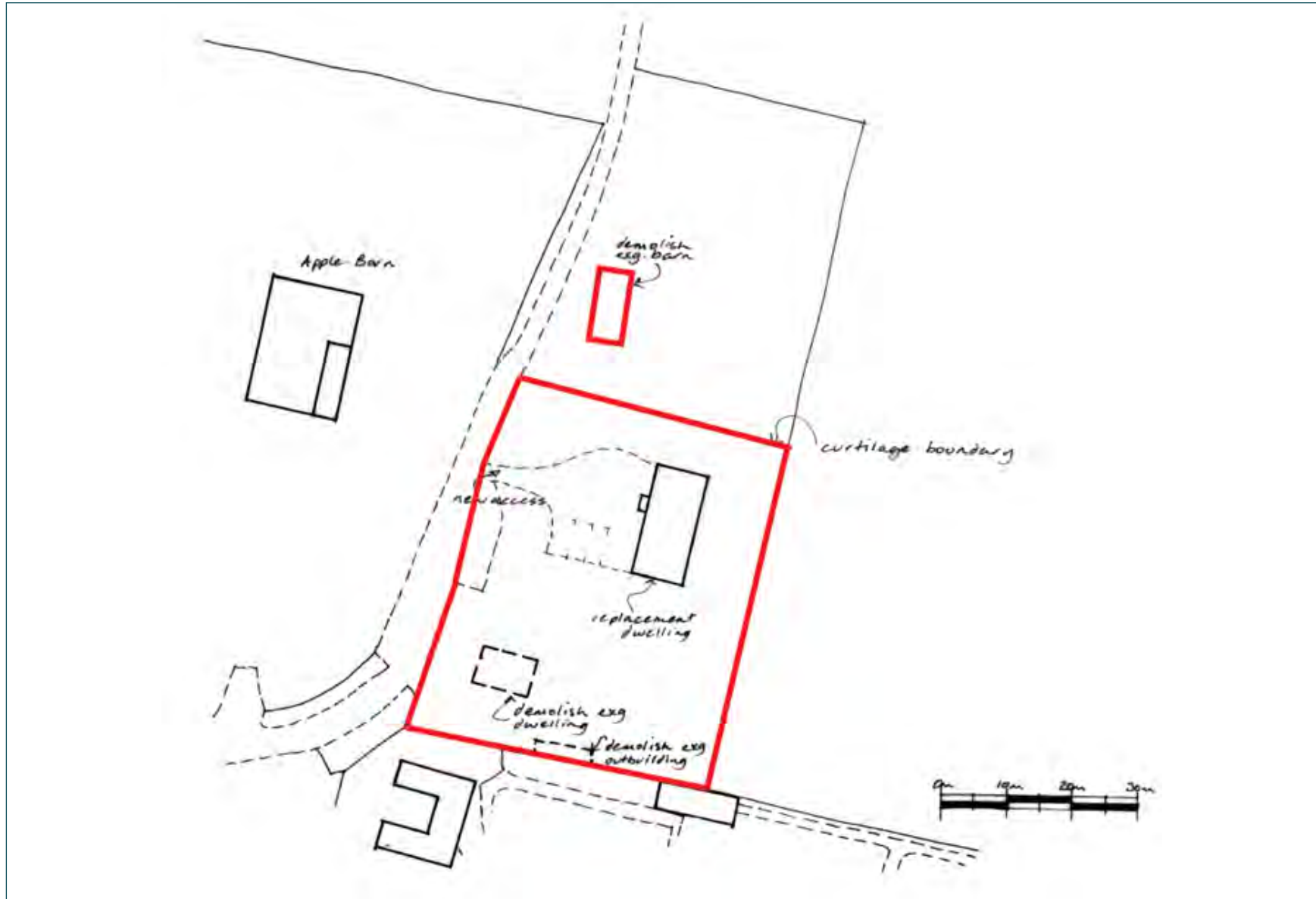


Figure 1. Proposed Layout Plan (Fowler Architecture and Planning, Recieved July 2023).

5. METHODOLOGY

HABITAT CONDITION ASSESSMENT

5.1 An Ecological Impact Assessment (Native Ecology, 2023, report reference 1239_R01) and Baseline Habitat Condition Assessment (Native Ecology, 2023a, report reference 1239_R02) are used to inform the baseline calculations within this report.

BIODIVERSITY METRIC 4.0

5.2 The Biodiversity Metric calculation tool provides a way to measure the biodiversity value of a site and subsequent losses and gains as a result of development proposals. It is used to inform and guide development plans and decisions on achieving biodiversity net gain within a project.

5.3 The metric uses habitat type as a proxy for the relative biodiversity value of a site. The on-site habitats are converted into measurable biodiversity units, which then provide the basis of the calculations.

Calculating the baseline biodiversity units

5.4 To calculate the change in biodiversity unit value of the Site resulting from the proposed development the baseline biodiversity value of the site was first calculated. The output of the Metric 4.0 tool gives the existing biodiversity unit value of the Site.

Habitat distinctiveness

5.5 Each habitat type (based on the UKHab classification) is pre-assigned a 'distinctiveness' score by the Metric.

Strategic significance

5.6 Each habitat parcel was assigned a level of strategic significance and given a score based on whether it is located within an area that is locally significant for that habitat type.

Calculating the post-construction biodiversity units

5.7 The calculation was then repeated for post-development. Appropriate figures, based on the current proposals, for habitat retention, creation and enhancement were input.

5.8 As the Metric measures predicted changes in biodiversity value, additional influences to account for risk are considered. Three risk factors are incorporated into the metric tool:

- Difficulty of creating or restoring a habitat
- Temporal risk
- Off-site risk
- The post-intervention biodiversity units were then deducted from the baseline calculation to give a net change in unit value for the Site.

ASSESSMENT DOCUMENTS

5.9 The biodiversity net gain assessment calculations are based on the following documents:

- Proposed Layout Plan (Fowler Architecture and Planning, Received July 2023)

6. BIODIVERSITY NET GAIN GOOD PRACTICE PRINCIPLES AND GUIDELINES

6.1 This assessment was undertaken in accordance with the following good practice guidelines:

- BS 8683 Process for designing and implementing biodiversity net gain
- CIRIA (2019). Biodiversity net gain. Good practice principles for development: A practical guide.
- CIEEM, CIRIA, IEMA (2016). Biodiversity net gain: Good practice principles for development.
- CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK.
- Natural England (2023). The Biodiversity Metric 4.0 - User Guide
- Natural England (2023a) Biodiversity Metric 4.0 - Technical Supplement

OVERARCHING PRINCIPLES

6.2 Ten principles are set out within guidance from CIEEM, CIRIA and IEMA for achieving biodiversity net gain. These principles (outlined below) have been used as a guide for this assessment and underpin the recommendations detailed in Section 9.

Principle 1: Apply the Mitigation Hierarchy

When using the biodiversity metric the principles and approach of the mitigation hierarchy must be employed. This includes avoiding impacts to ecological features where at all possible. If negative impacts cannot be avoided, mitigation and compensation measures should be undertaken to reduce the effects on ecological features.

Due to the method in which habitat creation and enhancement risks are accounted for within the metric, gains are more easily achieved where impacts to habitats are avoided.

Principle 2: Avoid losing biodiversity that cannot be offset elsewhere

Avoid impacts to irreplaceable habitats. A BNG Assessment cannot be carried out where these habitats are impacted as a result of proposals.

Principle 3: Be inclusive and equitable

Engage stakeholders early and achieve net gain in partnership where possible.

Principle 4: Address risks

Account for any risks and add contingency when calculating losses and gains.

Principle 5: Make a measurable Net Gain contribution

Contribute towards local nature conservation priorities.

Principle 6: Achieve the best outcomes for biodiversity

Use robust and credible evidence that is underpinned by local knowledge of biodiversity priorities when making decisions about appropriate habitats to enhance and create.

Principle 8: Create a Net Gain Legacy

Ensure that net gain creates long-term sustainable benefits by mitigating risk and planning for long-term resilient management.

Principle 9: Optimise sustainability

Consider wider environmental benefits for societal and economical sustainability.

Principle 10: Be transparent

Communicate the net gain process and assessment, including justifications for decision making, to all stakeholders.

THE BIODIVERSITY METRIC

- 6.3 Whilst the metric can aid decision making on the areas a specific habitat types to be enhanced or created, the overall assessment should consider the principles of biodiversity net gain holistically alongside calculation scores.

Principles of the Metric 4.0

- 6.4 The Biodiversity Metric calculation has been undertaken in accordance with the principles set out within The Biodiversity Metric 4.0 User Guide (Natural England, 2023) as follows:

Principle 1: The metric does not change the protection afforded to biodiversity

Principle 2: The metric should be used in accordance with established good practice guidance and professional codes.

Principle 3: The metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice

Principle 4: Biodiversity units are a proxy for biodiversity and should be treated as relative values.

Principle 5: The metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance.

Principle 6: Habitat interventions need to be realistic and deliverable within a relevant project timeframe.

Principle 7: Created and enhanced habitats should seek, where practical and reasonable, to be local to any impact and deliver strategically important outcomes for nature conservation.

Principle 8: The metric does not enforce a minimum habitat size ratio for compensation of losses. However, proposals should aim to:

- maintain habitat extent (supporting more, bigger, better and more joined up ecological networks)
- ensure that proposed or retained habitat parcels are of sufficient size for ecological function

Rules of the Metric 4.0

- 6.5 In addition to the set of guiding principles, the biodiversity units are calculated using a set of 5 'rules' as detailed by Natural England within The Biodiversity Metric 4.0 User Guide (Natural England, 2023) as follows:

Rule 1: Competency requirements must be complied with.

Rule 2: Biodiversity unit outputs are unique to this metric. The results of other metrics, including previous versions of this metric, are not comparable to those of this metric. The three types of biodiversity units generated by this metric (area, hedgerow and watercourse) cannot be summed, traded, or converted between modules.

Rule 3: The trading rules of this metric must be followed.

Rule 4: Losses and deterioration of irreplaceable or very high distinctiveness habitat cannot be accounted for through this metric

Rule 5: In exceptional ecological circumstances, deviation from this metric methodology may be permitted by the relevant consenting body or planning authority. Any deviation must be fully justified and evidenced.



Legend

-  Site boundary
-  Modified grassland
-  Vegetated garden
-  Developed land; sealed surface
-  Native Hedgerow

Note:

Habitats mapped based on UK Habitat Classification following Preliminary Ecological Appraisal site visit undertaken on 28/03/2023.

Numbers refer to area parcel references. 'H' numbers refer to hedgerow.

Habitat Condition

- * poor habitat condition
- ** moderate habitat condition
- *** good habitat condition
- n/a condition assessment not applicable

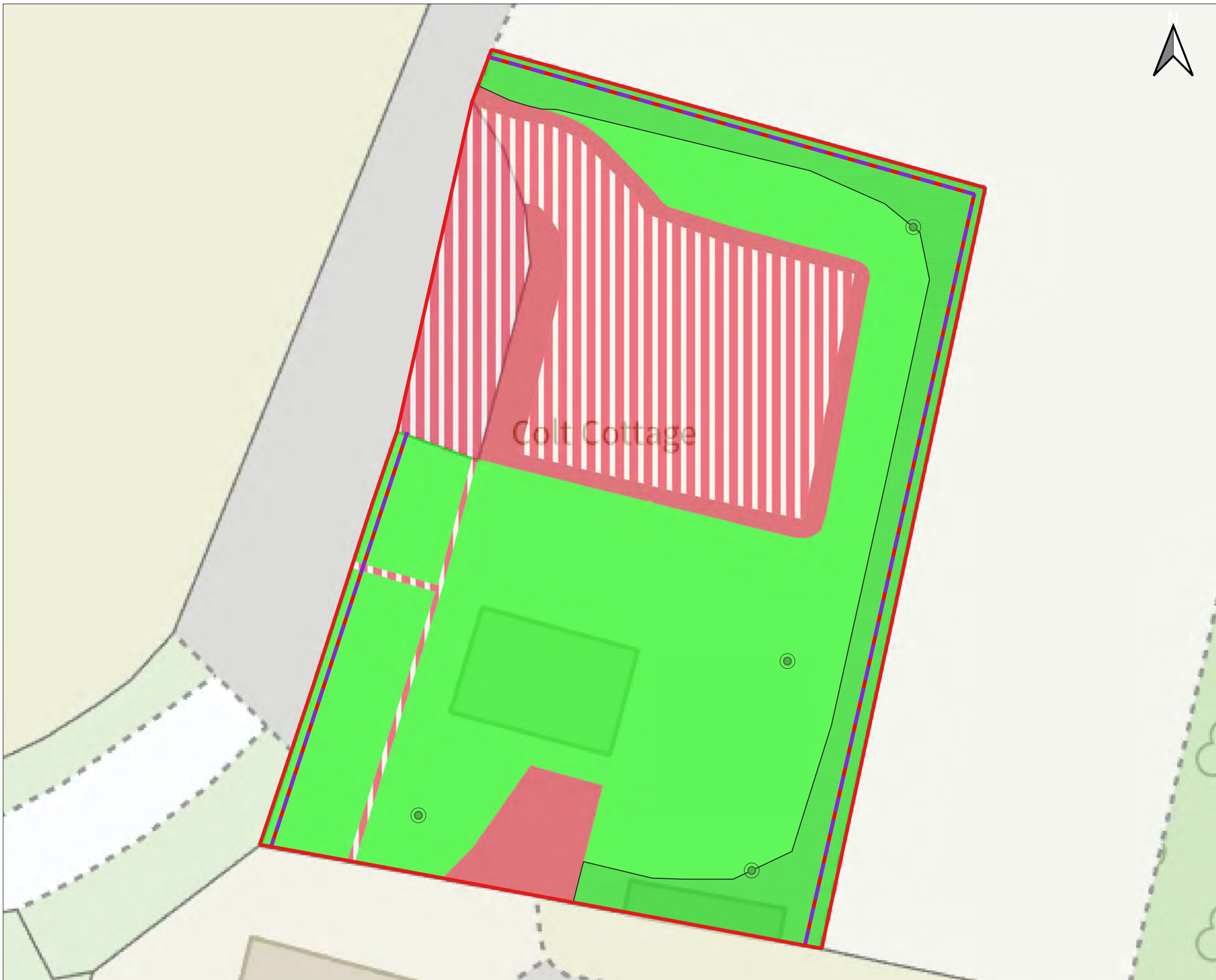


Biodiversity Net Gain Baseline Habitat Plan








Colt Cottage
Postern Lane, Tonbridge

Drawing ref:	1239_DR04
Revision:	-
Date:	31/07/2023
Scale:	1:200
Paper size:	A3





Legend

-  Site boundary
-  Modified grassland
-  Developed land; sealed surface
-  Vegetated garden
-  Good condition
-  Native hedgerow
-  Medium tree



Biodiversity Net Gain Post Development Habitat Plan

Colt Cottage
Capel, Tonbridge

Drawing ref:	1239_DR05
Revision:	-
Date:	31/07/2023
Scale:	1:200
Paper size:	A3



9. RESULTS

ASSUMPTIONS

9.1 No landscape information was provided. Therefore the following habitat measures were included within the calculation as an example of how biodiversity net gain can be achieved:

- The existing hedgerow (H1) is retained and protected within the Site.
- Existing areas of introduced shrubs (classified as vegetated garden) are retained.
- Ornamental planting is included around the building and parking area (classified as vegetated garden).
- The majority of the garden is a modified grassland lawn. The main part of this is mown and maintained in moderate condition. A strip around the outside of the lawn is seeded with a flowering lawn mix and allowed to develop a longer sward to obtain good condition.
- A new species rich native hedgerow is planted and maintained to a good condition.
- 4no. medium urban trees are planted and maintained at a moderate condition.

9.2 Habitat creation will be managed appropriately and replaced as necessary.

BIODIVERSITY METRIC 4.0 CALCULATIONS

9.3 Full results of the baseline and post-development biodiversity unit calculations are provided with the accompanying Biodiversity Metric 4.0 Auditing and Accounting for Biodiversity Calculation Tool (Native Ecology, 2023b), which supports this assessment.

HEADLINE RESULTS

9.4 The biodiversity net gain feasibility assessment shows that development proposals have the potential to result in a **39.60% gain** in the biodiversity value of the area habitats within the Site.

9.5 The biodiversity net gain feasibility assessment shows that development proposals have the potential to result in a **329.88% gain** in the biodiversity value of the hedgerow habitats within the Site.

9.6 No river habitats are present within the Site.

9.7 Table 2, overleaf, shows the overall results of the feasibility assessment. The full results can be viewed in the Biodiversity Metric 4.0 Auditing and Accounting for Biodiversity Calculation Tool.

Table 1. Overall change in biodiversity units

	BASELINE UNITS	POST DEVELOPMENT UNITS	NET CHANGE
Habitat units	0.41	0.56	39.60%
Hedgerow units	0.10	0.60	329.88%

TRADING SUMMARY RESULTS

- 9.8 To achieve biodiversity net gain, loss of habitats of medium- very high distinctiveness must be offset according to the following habitat trading rules:
- Loss of medium distinctiveness habitats must be offset with habitat creation of the same broad habitat type (e.g. grassland, woodland etc.) or a habitat of higher distinctiveness.
 - Loss of high distinctiveness habitat must be offset with like for like habitat creation.
 - Loss of very high distinctiveness habitat is likely to require bespoke compensation.
- 9.9 The trading summary results show that all habitat trading requirements are met by the proposed habitat measures.

10. RECOMMENDATIONS

Table 2. Key recommendations resulting from the feasibility assessment

	RECOMMENDATIONS
Principle 1: Apply mitigation hierarchy	<p>Avoidance and minimisation <i>Impacts to medium-very high distinctiveness habitats should be avoided or reduced as far as possible as part of proposals.</i></p> <p>No high or very high distinctiveness habitats are present within the Site. One medium distinctiveness habitats are present within the Site: native hedgerow. It is recommended that this is retained within the Site.</p> <p>Compensation <i>Where impacts cannot be avoided, compensation will be required to achieve net gain. This compensation should include habitats of the same or higher distinctiveness.</i></p> <p>The trading summary rules show that the proposed habitat measures meet the habitat trading rules with no further compensation required.</p>
Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere	There are no irreplaceable habitats within the Site.
Principle 3: Be inclusive and equitable	<p>It is recommended that liaison with project stakeholders is undertaken to achieve net gain in partnership.</p> <p>The project team should be included in liaison regarding how and where habitats are created and enhanced within the Site. Project reports and drawings, including Landscape Plans and Strategies, should be fully integrated with the BNG approach and goals.</p>
Principle 4: Address risks	<p>Temporal risks Creation of habitats in advance of construction works can reduce the risks and compensate for time between any biodiversity losses, however this is unlikely to be viable for this project.</p> <p>Spatial risks Spatial risks should be reduced by maximising biodiversity units generated within the Site boundary and minimising the reliance on off-site units.</p> <p>Habitat failure Created habitats should be monitored to reduce the risk of failure. All planting and green roof should be replaced in the case of failure.</p>
Principle 5: Make a measurable net gain contribution	With the proposed habitat measures, calculations predict a 39.60% gain in biodiversity units and a 329.88% gain in hedgerow units which exceeds the 10% net gain target. No further measures are required.

	RECOMMENDATIONS
<p>Principle 6: Achieve the best outcomes for biodiversity</p>	<p>Landscape outcomes</p> <p>Created habitats should take into consideration the priorities of the Kent Biodiversity Strategy (2020-2045) (Kent Nature Partnership, 2020), Natural England Habitat Network areas and habitat opportunities identified within the Kent Landscape Information Service tool. The following habitats have been identified as high priority in the locality and are suitable for creation within the Site:</p> <p><i>Grassland</i></p> <p>According to the Kent Landscape Information Service Habitat Opportunity tool, a medium habitat opportunity for creation of neutral grassland has been identified within the Site. The creation of good condition flowering lawn has been recommended. However, a wildflower meadow could be created within the Site and would further improve the biodiversity potential of the Site.</p> <p><i>Pond</i></p> <p>Ponds are identified as a priority within the Kent Biodiversity Strategy. A pond could be included within the Site to further improve the biodiversity potential of the Site.</p> <p><i>Hedgerow</i></p> <p>Hedgerow is identified as a priority within the Kent Biodiversity Strategy. Therefore the creation of a native species-rich boundary hedgerow has been recommended.</p> <p>Local outcomes</p> <p>Retained, created and enhanced habitats should be considered as part of the opportunities and constraints detailed within the Preliminary Ecological Appraisal (Native Ecology, 2023) and associated mitigation and enhancement requirements.</p> <p>During the PEA the following species were identified as present/potentially present within the Site: roosting bats, foraging and commuting bats, badger, hedgehog, great crested newt, reptiles and nesting birds. The following habitat measures should be considered to provide opportunities for these species:</p> <p><i>Hedgerows or mixed scrub</i></p> <p>The inclusion of hedgerows or mixed scrub would provide commuting corridors for a variety of wildlife including badger and foraging bats. This habitat will also provide nesting opportunities for birds and sheltering and foraging opportunities for hedgehog.</p>

	RECOMMENDATIONS
Principle 6: Achieve the best outcomes for biodiversity (Continued)	<p><i>Grassland</i> The creation of long sward grassland within the Site would provide habitat opportunities for reptiles, as well as providing forage for pollinating invertebrates.</p> <p><i>Pond</i> Ponds provide opportunities for a wide variety of wildlife. Provision of a pond within the scheme could provide breeding habitat for great crested newts.</p> <p><i>Nectar rich planting plan</i> The garden areas could include a mixture of nectar rich species to provide foraging opportunities for invertebrates. The inclusion of species which flower at night would attract nocturnal invertebrates, providing forage for bats.</p> <p><i>Urban trees</i> The planting of urban trees within or near to the Site would provide new opportunities for nesting and foraging birds, foraging badgers and improve connectivity for commuting bats.</p>
Principle 7: Be additional	No mitigation and compensation will be required for protected species within the Site. All habitat creation/enhancement can therefore contribute towards achieving Net Gain.
Principle 8: Create a net gain legacy	<p>A Landscape and Ecological Management Plan (LEMP) should be produced to detail the ecological enhancements, together with habitat management prescriptions, to be included as part of development proposals, together with appropriate monitoring.</p> <p>Created and enhanced habitats should be safeguarded, managed and monitored as appropriate for at least 30 years.</p>
Principle 9: Optimise sustainability	<p><i>Optimise the wider environmental benefits for a sustainable society and economy. This will require liaison with project stakeholders.</i></p> <p>Measures can include:</p> <ul style="list-style-type: none"> • Use of locally sourced materials and plants to reduce carbon footprint. • Use of sustainable and plastic free materials. • Maximise 'green' area to increase carbon storage potential. For example, consider the use of grass-crete in place of concrete. • Planting of trees and hedgerow to increase carbon storage potential and reduce heat island effect.

	RECOMMENDATIONS
Principle 10: Be transparent	The Biodiversity Net Gain assessment should be detailed throughout the process, resulting in a final Net Gain Plan report. This should show the decision making processes and full justification for any habitat enhancement and creation measures. Any losses in certain habitat types should also be fully justified.

Summary

- 10.1 The biodiversity net gain feasibility assessment shows that, with the proposed habitat measures, development proposals have the potential to result in a **39.60% gain** in the biodiversity value of the area habitats and a **329.88% gain** in the biodiversity value of the hedgerow habitats within the Site.
- 10.2 As alternative to the measures suggested within the calculation, the creation of other neutral grassland or a pond could be considered to improve biodiversity within the Site. These measures would provide benefits for biodiversity on both a landscape and local scale. The inclusion of mixed scrub would also provide benefits for wildlife.
- 10.3 A Landscape and Ecological Management Plan (LEMP) should be produced to detail the ecological enhancements and habitat management prescriptions to be included as part of development proposals, together with appropriate monitoring.
- 10.4 Measures to increase the sustainability of development should also be considered, as recommended in Table 6 (Principle 9).
- 10.5 On completion of a landscape strategy, the Biodiversity Net Gain Feasibility Assessment should be updated to a Design Stage Report.
- 10.6 A summary of the definition of habitats that have been proposed within the Site is provided in Appendix 2, with recommendations to maximise the achieved condition.

11. REFERENCES

- CIEEM (2019). Biodiversity net gain. Good practice principles for development. A practical guide.
- CIEEM (2021). Biodiversity Net Gain Report & Audit Templates. Version 1.
- Defra (2023). The Biodiversity Metric 4.0 auditing and accounting for biodiversity. Calculation tool. March 2023.
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- Native Ecology (2023a). 1239_R02_Baseline Habitat Condition Assessment.
- Native Ecology (2023b) 1239_A2_Biodiversity Metric 4.0 Auditing and Accounting for Biodiversity Calc tool.
- Natural England (2023). The Biodiversity Metric 4.0 auditing and accounting for biodiversity. Technical Annexe 2. March 2023.
- Natural England (2023b). The Biodiversity Metric 4.0 auditing and accounting for biodiversity. User Guide. March 2023.

12. APPENDIX 1: HABITAT DEFINITIONS

Table 4. Habitat creation definitions and recommendations

Habitat Type	Definition	Recommendations
Medium urban tree	The diameter of the tree at breast height (DBH) will reach 30-90cm in 30 years after planting.	Planting of semi-mature trees can ensure that the DBH size is reached in 30 years. To maximise the condition and biodiversity benefit of the planted trees it is recommended that native species are chosen for planting.
Modified grassland	Grassland containing fewer than 9 species, per m2 with a high percentage of perennial ryegrass, Timothy grass and clover.	To maximise condition and biodiversity value it is recommended that the grassland is seeded with a flowering lawn mix, allowed to develop a medium sward and managed to remove any ingress of scrub or bracken.
Native species-rich hedgerow	A hedgerow containing 5+ native woody shrub or tree species. The hedgerow must consist of 80% or greater native species.	To maximise the condition and biodiversity value it is recommended that only native species are planted. The inclusion of fruiting and flowering species can provide additional foraging opportunities for wildlife. The native species-rich hedgerows should be under-seeded with a suitable seed mix, such as Emorsgate EH1 hedgerow mixture.