Biodiversity Net Gain Report

Mill farm, The Green, Cumbria

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1. Introduction

1.1 Report Rationale

This report has been prepared at the request of Mr. Mark Carroll (MVC Design Ltd). It relates to the proposed redevelopment works at Mill Farm, The Green, Millom, Cumbria, LA18 5HL (OS Grid Reference: SD 17861 84703). For this report, a biodiversity impact assessment calculation has been made. This document should be read in conjunction with the completed Excel spreadsheet. The report was written by Mr. Nathan O'Shea, BSc (Hons), Consultant Ecologist.

1.2 Site Description

The site is located behind Mill Farm and it consists of a neglected area of buildings and land with a variety of habitats on site. The local landscape is a hilly rural area containing plenty of grazing farmland with occasional woodland areas. The wider landscape shows that the site is between Duddon estuary and Black comb mountain situated in the Cumbrian lake district.

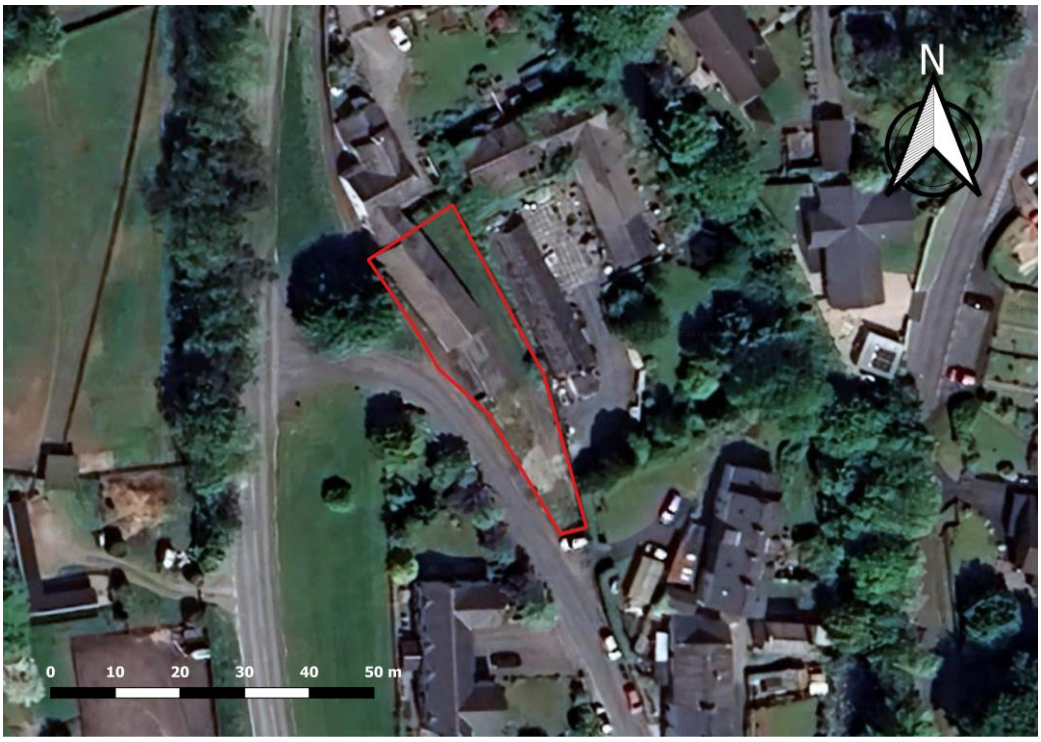

Figure 1: Site Boundary.

1.3 Proposals

The proposed development involves the conversion of the barns into two residential dwellings. This will involve the removal of some of the existing habitats on site to create a communal parking area. The proposed plans can be found in Appendix B.

1.4

Scope of Report

This report aims to:

- Establish the total number of baseline and lost habitat, hedgerow, and river units at the site of the proposed scheme.
- Establish the total number habitat, hedgerow, and river units that are to be created, retained and/or enhanced under landscape and ecological mitigation proposals at the proposed works site.
- Determine whether the proposed scheme will result in a net loss, no net loss, or a net gain for biodiversity.
- Make further recommendations to gain the required 10% minimum net gain for biodiversity.

1.5 Biodiversity Net Gain Relevant Policies

The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. These are:

- UK Biodiversity Action Plan (UKBAP)
- The Natural Environment and Rural Communities (NERC) Act 2006
- The UK Post-2010 Biodiversity Framework (2011-2020)
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services
- The National Planning Policy Framework (NPPF) 2021
- Environmental Act 2021
- Local policy

A full explanation of these policies can be found within **Appendix D.**

2. Methodology

Personnel

Field surveys have been undertaken by licensed ecologist/s, members of the Chartered Institute of Ecology & Environmental Management (CIEEM) and members of Eco 360 staff.

The Biodiversity Net Gain Assessment has been carried out in line with CIEEM Guidelines on Good practice principles for development (2016), CIEEM A Practical Guide (2019) and BS 8683:2021 - Process for designing and implementing biodiversity net gain.

Survey of Baseline Habitats and Condition

Habitat typing and condition assessments are undertaken during a Preliminary Ecological Appraisals (PEA) or similar studies. The baseline also considers historic records for the site and local area via a desktop study desktop study (satellite imagery, previous ecological reports), as well as additional surveys to assess the presence/absence of species in certain situations. Conditions of habitats and hedgerows are assessed using the scoring systems provided in Technical Annex 1 of the Biodiversity Metric 4.0 Condition Assessment Sheet.

River assessments are carried out through a MoRPH5 Pro survey and River type survey. At least one MoRPH5 is undertaken per reach on site that will be directly or indirectly impacted with a further MorPH5 undertaken upstream to record a more “natural setting” if required. This date is then processed via Cartographer to give the condition of the rivers on site.

Calculations of Baseline Habitats

Using Geographic Information Software (GIS), baseline habitats are measured in hectares (ha) using vector layer polygons. These measurements are then input into the DEFRA Statutory Biodiversity Metric Calculation Tool. Habitat condition and connectivity are then input into the calculator. The area of habitat retained is then entered into the calculation to give a final sum of baseline units and lost unit.

Each habitat has a base score of 1, this is then multiplied by the size of the habitat (ha). The habitat is then multiplied by its distinctiveness:

- Very low – 0
- Low – 2
- Medium – 4
- High – 6

The next multiplier is based on the condition of the habitat:

- N/A-other/agricultural – 0
- Poor – 1
- Fairly poor – 1.5
- Moderate – 2
- Fairly good – 2.5
- Good – 3

Calculations of Post-development Habitats

The calculation is informed by planning design, landscape plans, and proposed ecological mitigation. Plans are georeferenced into GIS and are similarly measured in hectares (ha) using vector layer polygons. These measurements are then converted into input into the DEFRA Statutory Biodiversity Metric Calculation Tool. A target condition will be assigned to each new habitat following the same scores as above. The calculator will generate a proposed time to hit this target condition and difficulty score.

3. Baseline Calculation and Proposal Impact

3.1 Baseline Habitats

Habitats

Habitat Type (Broad)	Area (m^2)	Distinctiveness	Distinctiveness Score	Condition	Condition Score	Total Habitat Units	Baseline Units Retained	Baseline Units Enhanced	Area Habitat Lost	Units Lost
Developed Land; Sealed Surface	375	V.Low	0	N/A-Other	0	0.00	0.00	0.00	0	0.00
Sparsely Vegetated Ruderal/ Ephemeral	200	Low	2	Poor	1	0.04	0.004	0.00	178	0.036

Linear Habitats

There are no baseline linear habitats.

3.2 Proposed Habitats

Habitat Type	Area (m^2)	Target Distinctiveness	Score	Target Condition	Score	Habitat Units Delivered
Developed land; sealed surface	50	V.Low	0	N/A - Other	0	0.0000
Vegetated garden	128.00	Low	2	Condition Assessment N/A	1	0.025

Linear Habitats

There are no proposed linear habitats.

3.3 Total Net Unit Change

The total net unit change, resulting from the loss of ruderal/ ephemeral habitat, equals –0.01 habitat units, which correlates to a loss of -27.24% in biodiversity value on site.

4. Recommendations

4.1 Total Net Unit Change

The development proposals currently do not meet the recommended 10% net gain in biodiversity units. The initial score, without enhancements, resulted in -0.01 loss in habitat units (-27.24%).

In order to meet the requirements of both national and local planning policy, the development is required to provide a 10% biodiversity net gain, this would require creation of 0.015 habitat units.

The limited size of the site offers limited opportunity for habitat creation in areas they can be secured (non-private residential land). However, there would be habitat left towards the South pocket of the site that can be utilised for habitat creation/enhancement to achieve BNG targets. This area is not in either private residencies ownership.

4.2. Habitat Creation

A minimum of two small trees be planted in the South area by the bin storage space, this would achieve 0.25 habitat units and lead to an increase in 34.97% biodiversity net gain. Urban; developed land beneath the ruderal vegetation would have to be removed to achieve this, therefore, this area would be assumed as modified grassland under the proposed target (as shown in **Fig.4.**).

These trees should be native species, for example English oak *(Quercus robur*), ash *(Fraxinus excelsior*), wych elm *(Ulmus glabra*), common pear *(Pyrus communis*) or apple *(Malus x domestica*) and should be planted into cleared, fresh topsoil at least 4m apart.

Any habitats created must be maintained to legally ensure the habitat created is secured for 30 years post-development.

5. References

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Kirby, P. (2013). Habitat Management for Invertebrates. Exeter: Pelagic Publishing.

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Treweek J., Butcher B., and Temple H. (2010) Biodiversity offsets: possible methods for measuring biodiversity losses and gains for use in the UK. CIEEM In Practice.

6. Appendices

Appendix A: Habitat maps

Appendix B: Site Plans

Appendix C: Biodiversity Net Gain Relevant Policies

Appendix A: Habitat maps

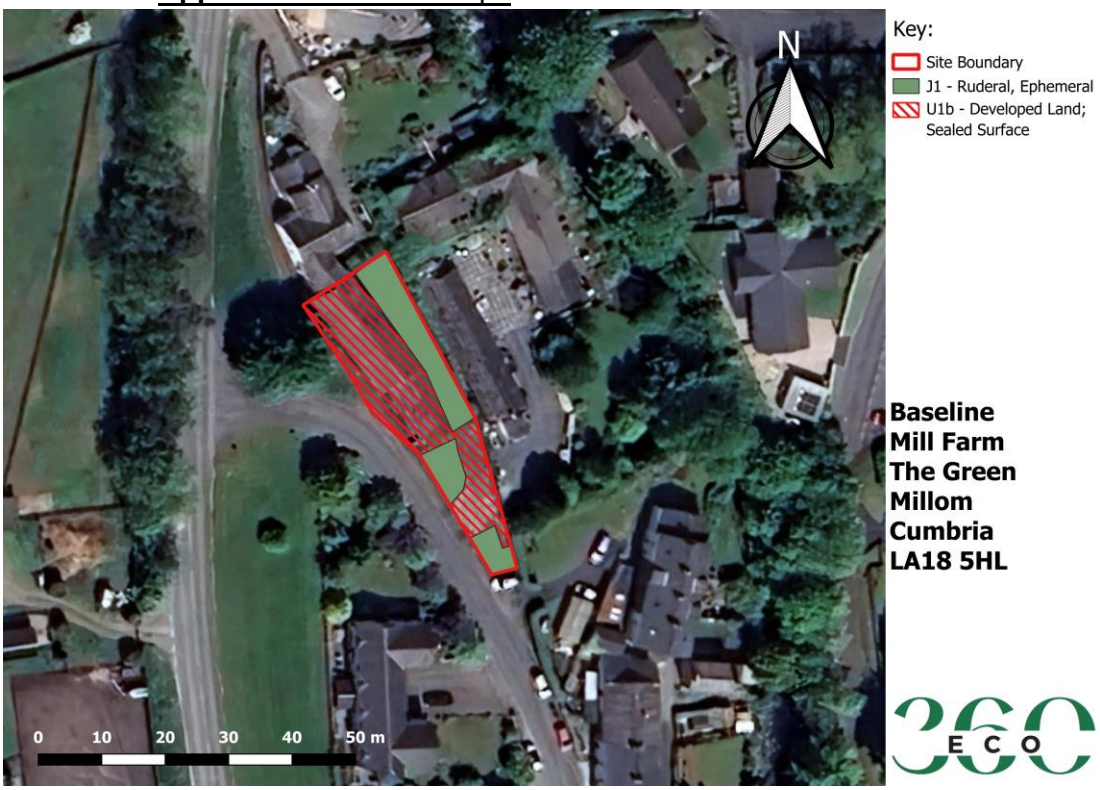

Fig.2. Baseline Habitat Map.

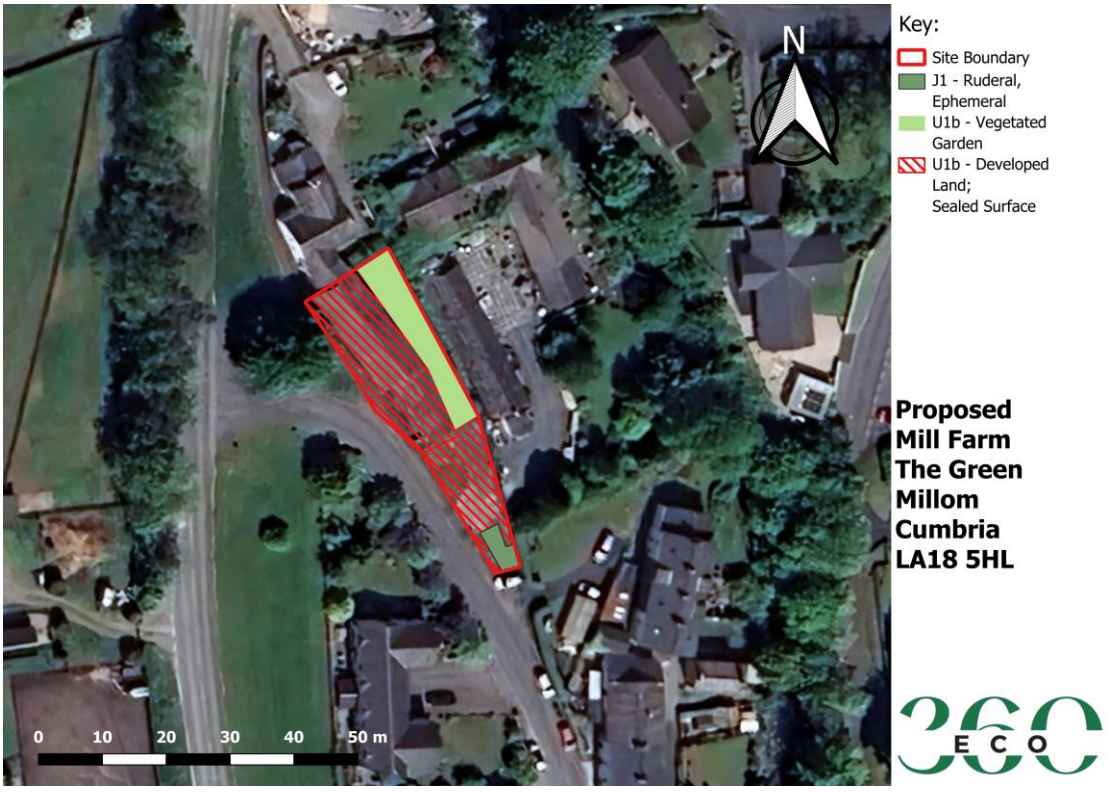

Fig.3. Proposed Habitat Map.

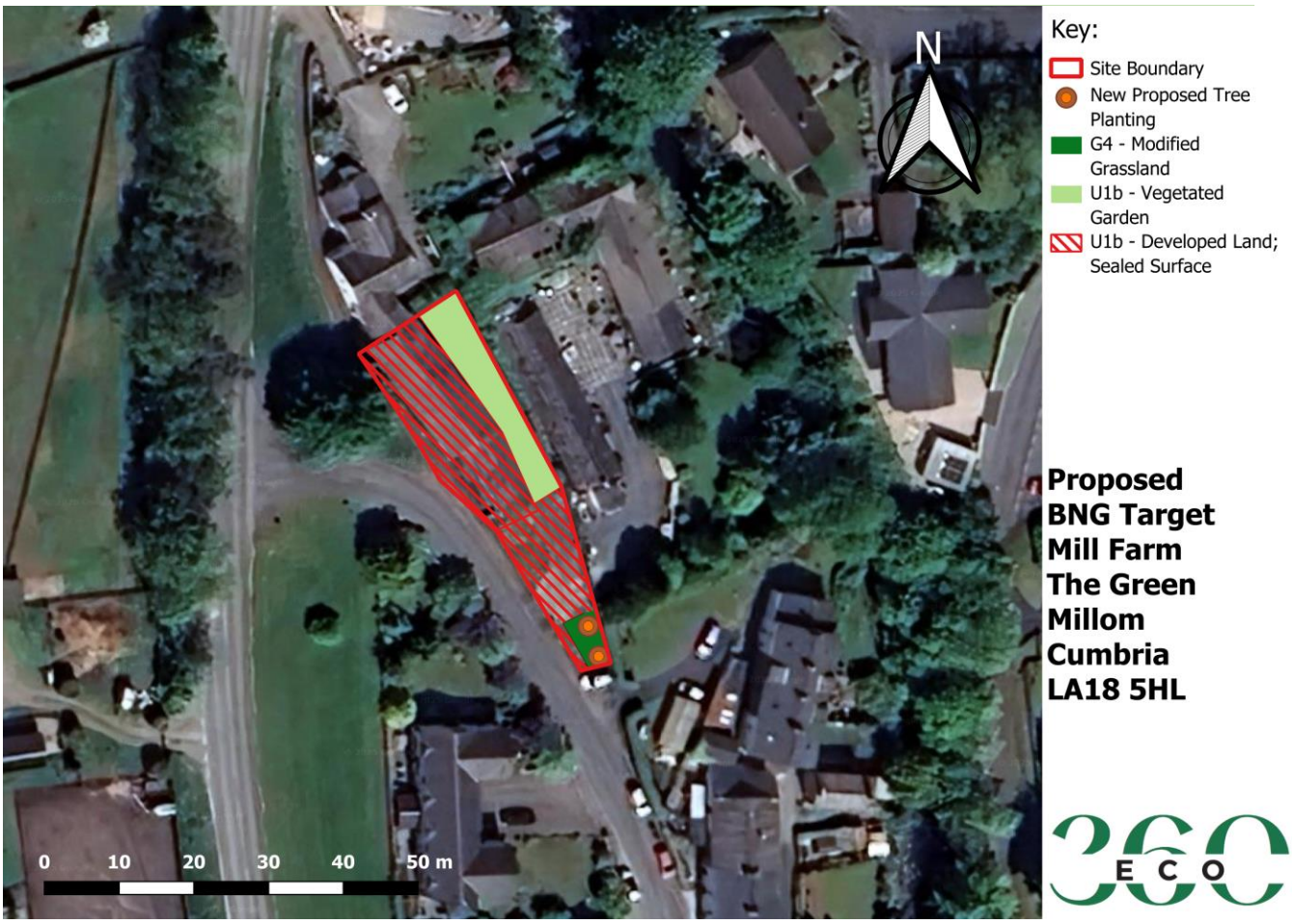

Fig.4. Proposed Habitat Map of Tree planting and enhancement to achieve BNG targets.

Appendix B: Site Plans

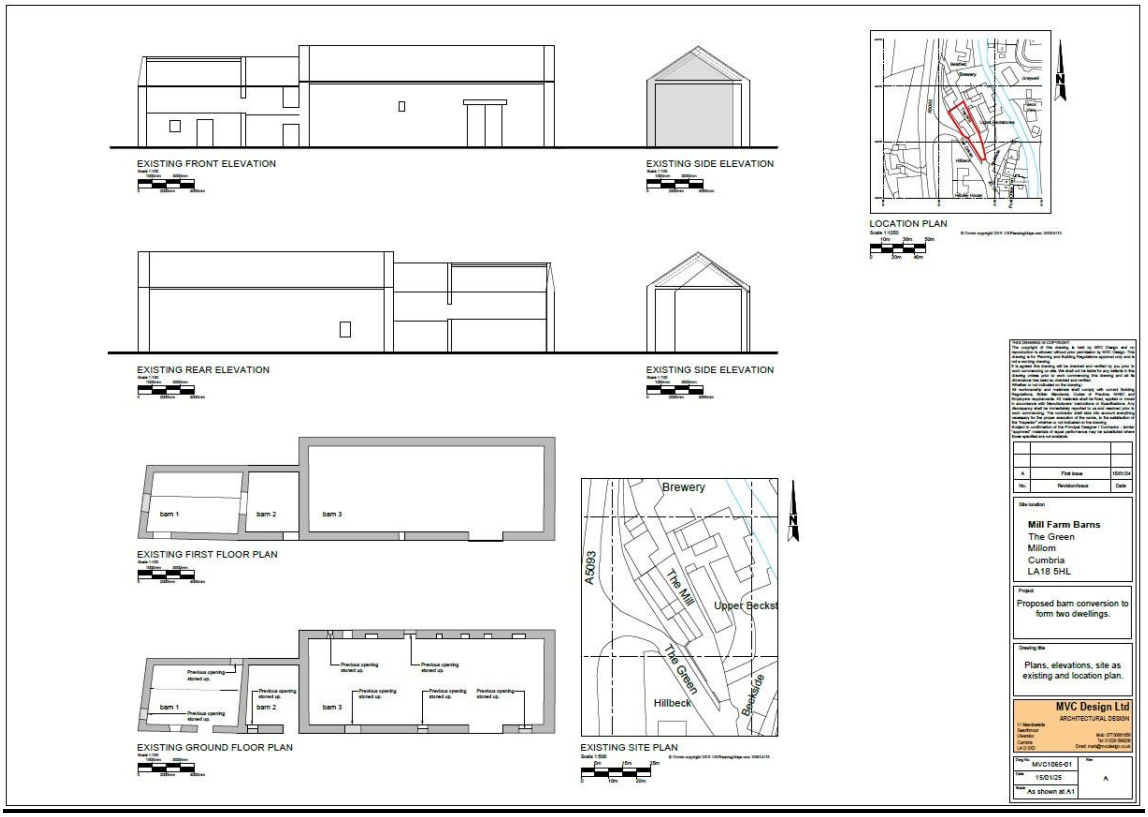

Fig.5. Baseline Site Plans.

Fig.6. Proposed Site Plans.

Appendix C: Biodiversity Net Gain Relevant Policies

Environmental Act 2021

Part 6 on nature and biodiversity covers all areas of biodiversity net gain across two core sections. This Act mandates that all planning meets a minimum of a 10% gain in biodiversity calculated using the appropriate Metric and that the newly created habitats are secured for at least 30 years.

National Planning Policy Framework (NPPF)

While currently not a legal obligation, biodiversity and environmental net gains are mentioned in the revised National Planning Policy Framework (NPPF) within the following paragraphs (please refer to the NPPF for the full quotations):

Achieving sustainable development

Paragraph 8 Section C. "*an environmental objective – **to protect and enhance our natural,** built and historic **environment**; including making effective use of land, **improving biodiversity**, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy*."

Preparing and reviewing plans

Paragraph 32. "*Local plans and spatial development strategies should be informed throughout their preparation by a sustainability appraisal that meets the relevant legal requirements. This **should demonstrate how the plan** has addressed relevant economic, social and **environmental objectives** (including **opportunities for net gains**). Significant **adverse impacts on these objectives should be avoided** and, wherever possible, alternative options which reduce or eliminate such impacts should be pursued. Where significant adverse impacts are unavoidable, suitable mitigation measures should be proposed (or, where this is not possible, compensatory measures should be considered)*."

Identifying land for homes

Paragraph 73 section C. "*consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for **net environmental gains***"

Transport infrastructure:

Paragraph 104. "*Transport issues should be considered from the earliest stages of plan- making and development proposals, so that:*
*d) the environmental impacts of traffic and transport infrastructure can be identified assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for **net environmental gains.***

Planning decisions:

Paragraph 119 "*Planning decisions and planning policy should a) encourage multiple benefits from both urban and rural land … and taking opportunities to **achieve net***

environmental gains - such as developments that would enable new habitat creation." Conserving and enhancing the natural environment

Paragraph 174 Section D. "***minimising impacts on and providing net gains for biodiversity****, including by establishing coherent ecological networks that are more resilient to current and future pressures*"

Habitats and biodiversity

Paragraph 179. "*To protect and enhance biodiversity and geodiversity, plans should:*

a) Identify, map and ***safeguard components of local wildlife-rich habitats*** *and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management,* ***enhancement, restoration or creation****;*

and b) promote ***the conservation, restoration and enhancement of priority habitats,*** *ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing* ***measurable net gains for biodiversity***."

Paragraph 180. "*When determining planning applications, local planning authorities should apply the following principles:*

a) if ***significant harm to biodiversity*** *resulting from a development* ***cannot be avoided*** *(through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then* ***planning permission should be refused;***

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the ***loss or deterioration of irreplaceable habitats*** *(such as ancient woodland and ancient or veteran trees)* ***should be refused,*** *unless there are wholly exceptional reasons and a suitable compensation strategy exists;*

and d) development ***whose primary objective is to conserve or enhance biodiversity should be supported;*** *while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can* ***secure measurable net gains for biodiversity*** *or enhance public access to nature where this is appropriate*."

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