



TUNLEY
ENVIRONMENTAL

BIODIVERSITY NET GAIN ASSESSMENT REPORT

TRUSTED SUSTAINABILITY SCIENTISTS

BIODIVERSITY NET GAIN EXEMPTION STATEMENT

FOR

**Shorne Mead, Pear Tree Lane,
Shorne, Gravesend, Kent, DA12 3JT**

**in collaboration with
Mark Carter Associates**

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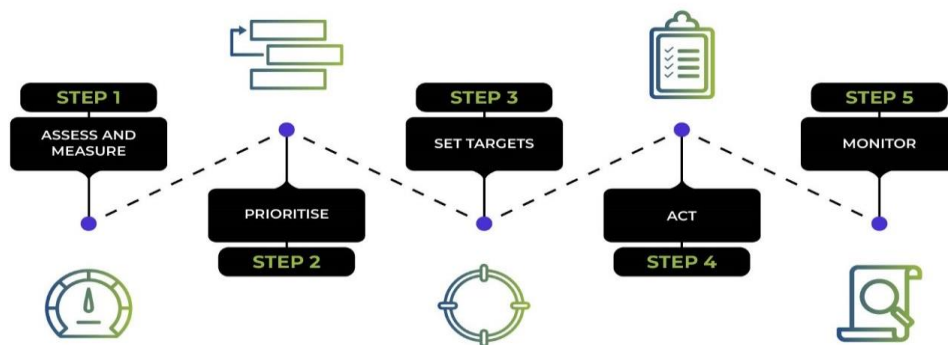
Nomenclature

Nomenclature	Description
Baseline Assessment	Before a development project begins, a baseline assessment is conducted to determine the existing biodiversity of the project site. This assessment establishes the current state of habitats, species, and ecosystem functions.
Biodiversity	The variety of life within a defined area for example, globally or in a specific habitat which can be described by a variety of metrics including species abundance or the living plant index and which we are dependent on to provide us with food, clean water and many more essentials.
Biodiversity Loss	The reduction in the variety and abundance of species in a particular ecosystem or across the entire planet. It can result from factors such as habitat destruction, pollution, climate change, and invasive species.
Biodiversity Net Gain	A concept that aims to ensure that development projects have a positive impact on biodiversity by enhancing or creating habitats.
Biodiversity Net Gain (BNG) Assessment	The quantification of the overall positive impact on biodiversity resulting from a specific activity or project. While biodiversity gain refers to the increase in the numbers, genetic variability, and species variety in a given area, BNG goes a step further by assessing whether the difference between biodiversity losses and gains leads to a net positive impact.
Biodiversity Units	A measure to describe the level of biodiversity present on a given site.
DEFRA Statutory (Official) Biodiversity Metric	Is a tool developed by the UK Government that provides a standardised approach to quantifying changes in biodiversity resulting from development activities. It assigns values to different habitats and species based on their ecological importance, and it allows for the calculation of a numerical score that reflects the overall biodiversity impact of a development.
Habitat	The specific environment or type of ecosystem in which a particular species of organism lives. Habitats can range from forests and wetlands to grasslands and urban areas.
Habitat Condition	The state or quality of a habitat, taking into consideration factors such as biodiversity, ecological processes, and overall health. Habitat condition assessment is essential in determining the effectiveness of conservation or restoration efforts.
Habitat Distinctiveness	The unique characteristics and features that differentiate one habitat from another. Distinctiveness is often assessed based on the diversity of species, ecological functions, and physical attributes of a habitat.
Habitat Strategic Significance	The local importance of a habitat determined by assessing both its geographic location and the specific type of habitat it represents. This evaluation helps in understanding the unique value and contribution of the habitat in its surrounding ecosystem.
Local Planning Authority (LPA)	The local government body that is empowered by law to exercise urban planning functions for a particular area/council. They are the government body whom approve and validate planning permissions and Biodiversity Net Gain compliance
On-Site	Refers to activities, impacts, or features that occur within the boundaries of a specific development or project site. In the context of Biodiversity Net Gain, on-site measures may include habitat creation, enhancement, or protection within the project area.
Off-Site	Relates to actions or effects that occur outside the boundaries of the development or project site. Off-site measures in Biodiversity Net Gain may involve compensatory actions, such as creating or enhancing habitats in a different location to offset any biodiversity loss caused by the development.
Small Site	A small residential site is a development which is less than 1 hectare with less than 9 dwellings, or where the number of dwellings is unknown an area of less than 0.5 hectares. A small commercial site is a development which has created floor space of less than 1,000 m ² or with a total site area of less than 1 hectare.

Nomenclature	Description
Major Development	A major development is any development, either residential or non-residential, which falls out of the requirements of a small site. This means more than 9 dwellings or greater than 0.5 hectares for residential developments or greater than 1,000 m ² floor space, or over a hectare for non-residential developments.

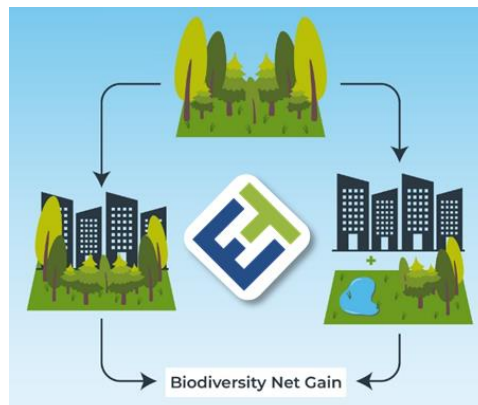
Methodology and Quantification Standards

This Biodiversity Net Gain (BNG) report has been completed using methodology consistent with the Science Based Targets for Nature (SBTN), Nature Positive Initiatives, and DEFRA Regulations.



Science-Based Targets for Nature Steps which Tunley Environmental's Biodiversity Net Gain (BNG) services aligns with to achieve reduced impact on Nature.

Biodiversity was quantified using the DEFRA (Department for Environment, Food & Rural Affairs) statutory (official) biodiversity metric as a tool to assess and measure biodiversity in the context of development projects. This metric is specifically designed to assist in quantification of the impact that development activities have on biodiversity and determine whether Biodiversity Net Gain (BNG) is achieved. Where BNG refers to the idea that the biodiversity value of a site should be enhanced due to development, ensuring a "net gain" in ecological terms. Tunley have completed all calculations within small site metric along with any required documents such as habitat condition. These additional documents will be submitted alongside this form in the excel format for LPA approval.



Tunley Environmental's conceptualisation of Biodiversity Net Gain.

Where applicable, the equivalent small site biodiversity metric was utilised for developments under the requirements for the statutory (official) biodiversity metric. The BNG assessment was further completed using methodology consistent with the international standard BS 8683:2021 (Process for designing and implementing BNG). Information on data sources and assumptions made to support this analysis are provided in Appendix A.

Executive Summary

Biodiversity is the foundation of the global economy. The World Economic Forum (WEF) estimates that over 50% of the world's GDP, equivalent to 33 trillion pounds, significantly depends on nature and the services it provides. However, biodiversity is amid a severe global crisis. Human-induced changes in land and sea use, overexploitation, invasive species, pollution, and climate change are the primary drivers of rapid biodiversity decline. Human activity threatens approximately a million species with extinction, some within decades, and species are disappearing at a rate of tens to hundreds of times faster than the natural pace.

Biodiversity net gain is a concept implemented into the *Town and Country Planning Act 1990* that aims to ensure that development projects in the UK, specifically England, have a positive impact on biodiversity by enhancing or creating habitats either on-site or off-site.

The site at Shorne Mead, Pear Tree Lane, Shorne, Gravesend, Kent, DA12 3JT is a residential site with 4 areas of deciduous woodland, 2 areas of traditional orchards and Great Crabbles Wood SSSI (Sites of Special Scientific Interest) within 500 m of the development boundary ([See Magic map results](#)). The owner of the land proposes to replace the current house on site with a customised replacement dwelling. The site has a total area of 2,260 m² and therefore as stated in the Town and Country Planning Act, this site is classified as a small site.

Tunley Environmental have conducted an independent review of this proposed project and suggest that the project should be exempted from the 10% BNG requirement. This is because the project consists of one dwelling and on a site of less than 0.5 hectares. In addition, it falls under the “self-build and custom build applications” exemption category as per the legal definition of “custom and self-build housing” in Section 1 of the Self-build and Custom Housebuilding Act 2015 (please see below).

In this Act, “self-build and custom housebuilding” means the building or completion by—

- (a) individuals,
 - (b) associations of individuals, or
 - (c) persons working with or for individuals or associations of individuals,
- of houses to be occupied as homes by those individuals.

Introduction

Biodiversity is the foundation of the global economy. The World Economic Forum (WEF) estimates that over 50% of the world's GDP, equivalent to 33 trillion pounds, significantly depends on nature and the services it provides. However, biodiversity is amid a severe global crisis. Human-induced changes in land and sea use, overexploitation, invasive species, pollution, and climate change are the primary drivers of rapid biodiversity decline. Human activity threatens approximately a million species with extinction, some within decades, and species are disappearing at a rate of tens to hundreds of times faster than the natural pace. Between 1970 and 2016, populations of mammals, birds, amphibians, reptiles, and fish have, on average, decreased by 68%. Human activity has dramatically altered 75% of the land surface, significantly impacted 66% of the ocean, and led to the loss of 85% of wetlands.

Recognising the severity of this crisis, the integration of Biodiversity Net Gain (BNG) and ecosystem restoration emerges as a crucial strategy for mitigating the adverse effects of human activities on biodiversity. BNG aims to ensure that development projects not only avoid causing harm to ecosystems but actively contribute to a net positive impact on biodiversity. By implementing measures such as habitat creation, restoration, and protection, BNG seeks to counterbalance the negative ecological footprint of development.

The particular site in question, which is residential dwelling, is situated in Shorne, Gravesend, Kent, DA12 3JT. Mark Carter Associates are consulting on this matter and have been asked to provide a biodiversity net gain assessment alongside the application.

According to the UK government a major development is defined as a residential development where the number of dwellings is greater than 9 or the area is greater than a hectare, or if an unknown number of dwellings, the site area is more than 0.5 hectares. For a commercial development a small site is where floor space created is less than 1,000 square metres or the total site area is less than 1 hectare.

Tunley Environmental has conducted a review of this project's proposal plan and suggest that the site is exempted from the 10% BNG requirement, under the "self-build and custom build applications" exemption category.

Below shows the aerial image of the site at Shorne Mead on Pear Tree Lane in 2020 (Figure 1).

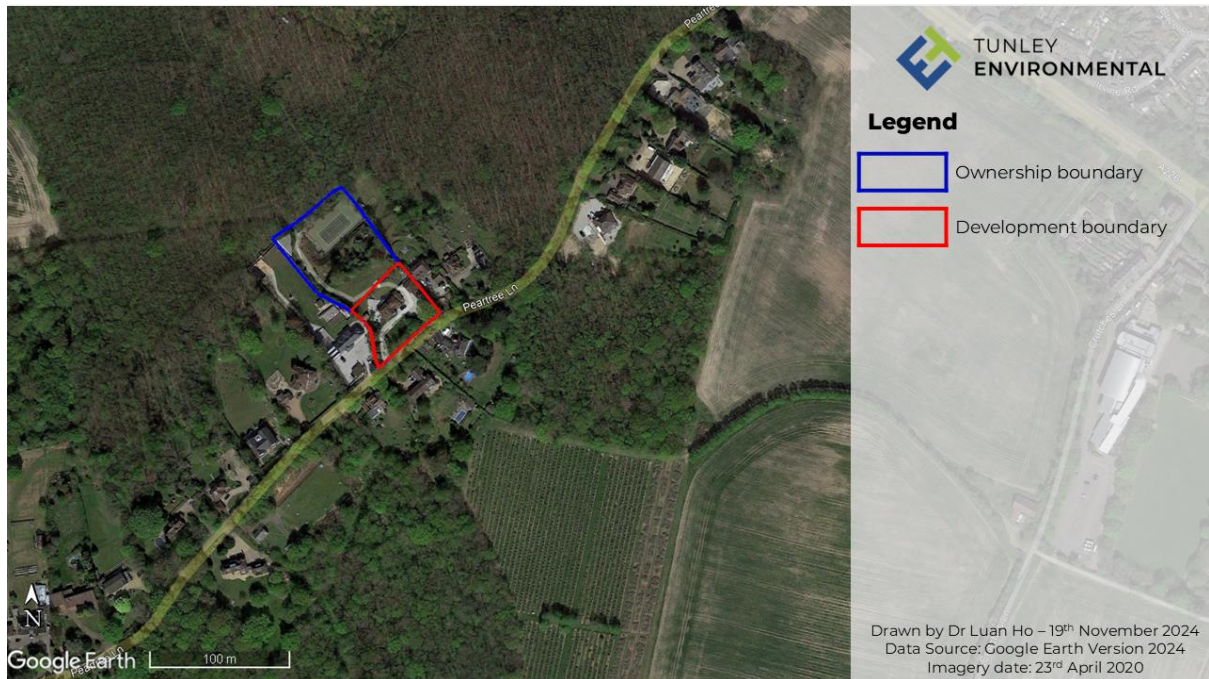


Figure 1. Aerial image of the site at Shorne Mead on Pear Tree Lane (2020).

Post-development

The plan below (Figure 2) shows the proposed site landscape developed and designed by Mark Carter Associates.



Figure 2. Proposed plan for the site.

The exemption is satisfied, because:

- The proposal consists of one customised dwelling.
- The site has an area of less than 0.5 hectares (development boundary).

- The owners commissioned Mark Carter Associates to design the house to suit their family needs. The owners have full control over the design process.
- The owners own a company in the civil engineering industry and the same company will conduct most of the groundwork required for the project. The owners will commission third party contractor(s) to undertake the construction of the dwelling and will also have full control and oversee the construction process.

Conclusion

The BNG review by Tunley Environmental have confirmed the site at Shorne Mead, Pear Tree Lane, Shorne, Gravesend, Kent, DA12 3JT will not be required to reach the national standard of 10% BNG. This is because the project is exempted under the “self-build and custom build applications” exemption category.

Appendix

Data Sources

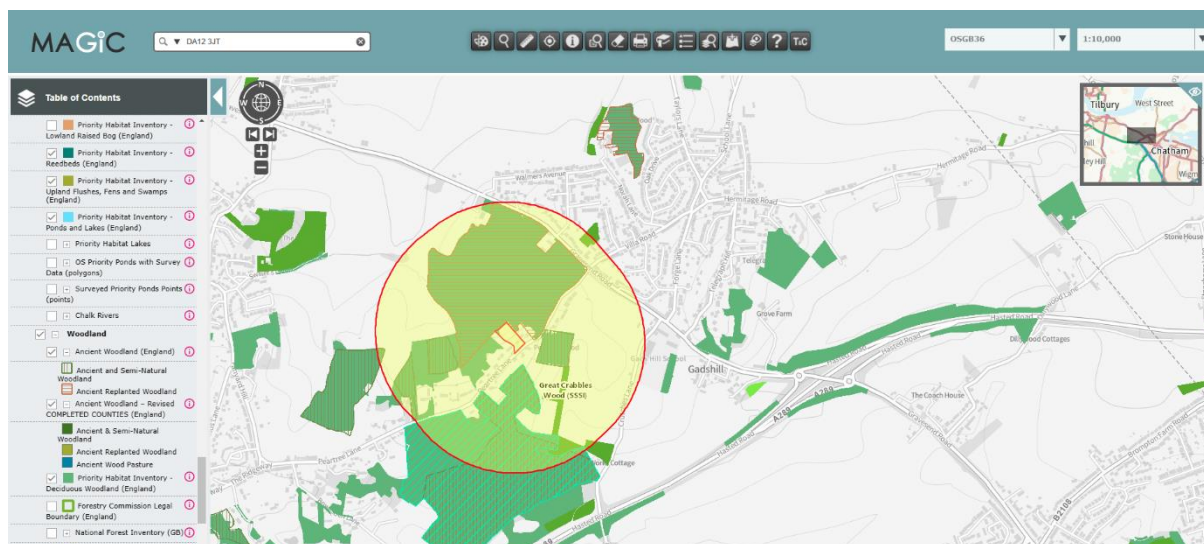
All data results were analysed through the small site metric from DEFRA. The excel version of the metric will also be submitted alongside this report for further evidence and LPA approval and for compliance with BNG regulations.

Habitat Classification and Justification

We conducted a thorough assessment of all habitat types utilising the guidelines outlined in "The UK Habitat Classification Version 2" (UKHab). UKHab serves as a comprehensive, hierarchical system that integrates seamlessly with existing classifications in the UK and Europe. It's architecture, inclusive of primary habitats and secondary codes, enhances the accuracy and consistency of habitat assessments by allowing for the direct attachment of additional features such as habitat mosaics and management strategies. This approach not only facilitates the integration of legacy datasets but also enables efficient sharing of habitat data at regional, national, and international levels. BNG Compliance adheres to these classifications, ensuring consistency and compliance with ecological standards. It's essential that a trained and certified ecologist completes the assessment. For more information, please visit: [UKHab](https://ukhab.org/).

Magic Map Results

The site is with 4 areas of deciduous woodland, 2 areas of traditional orchards and Great Crabbles Wood SSSI (Sites of Special Scientific Interest) within 500 m of the development boundary



Competency

Dr Luan Ho, MEnvSc, BEng is a Full Member of The Institution of Environmental Sciences. This title is gained through his in-depth experience and knowledge in environmental sciences. Luan is a senior scientist at Tunley Environmental, having completed over 30 hours of training through in-house procedures and attending UKHab training, making him competent to conduct BNG assessments, provided the habitats are signed off by an in-house ecologist.

Tara Garraty, BSc, MSc, PhD (Pending), is a certified ecologist (holding three higher education degrees in conservation and ecology) with over 15 years of experience in sustainability and conservation. She has led ecological surveys in the UK and Tropics, gaining hands-on experience in diverse ecosystems. Tara has completed professional training with Natural England, CIEEM, and UKHab, focusing on Biodiversity Net Gain (BNG) regulations and UK habitat identification. She remains committed to ongoing training to stay current with BNG standards. At Tunley, she created and facilitated “Navigating Biodiversity Net Gain regulations” CPD sessions, showcasing her leadership and expertise in ecology and BNG regulations.

Approval

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