

# Biodiversity and Urban Greening Factor



How habitat creation can help  
you meet Biodiversity Net Gain  
(BNG)

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# Introduction: Biodiversity and Urban Greening Factor: How Habitat Creation Can Help You Meet Biodiversity Net Gain (BNG)



For land managers, developers, and local planning authorities, sustainability is now a central part of the construction and landscaping process, due to the requirements of the new Biodiversity Net Gain (BNG) legislation.

Under the new guidelines, developers and planning authorities will need to register the land under development in an online register and demonstrate the ways in which they are contributing to a growth, or 'net gain' in biodiversity throughout their project.

The purpose of BNG is to prevent environmental damage arising from construction and landscaping projects, and to integrate biodiversity, carbon reduction, and the natural ecosystem regeneration into every stage of construction and development, from architectural design to planning consent, construction, and land management.

This guide from **GeoGrow Ltd** will introduce the principles of biodiversity net gain and how contractors can demonstrate compliance through using the Urban Greening Factor (UGF), hydroseeding, and other sustainable construction strategies.

# What is Biodiversity Net Gain (BNG)?

Biodiversity net gain (BNG) is a legal strategy to develop land in a way that contributes to the recovery of nature; a quantifiable way of making sure the habitat value of a site is improved upon before, during, and after development. BNG works by assessing the biodiversity 'value' of a site before any changes are made, then setting targets for how much the biodiversity should be improved by the time the project is completed. BNG initiatives may involve creating new habitats, restoring existing ones, or reintroducing species that were previously absent from the area.

The *International Union for Conservation of Nature* (IUCN) promotes a BNG approach based on the mitigation hierarchy which helps address residual impacts on biodiversity from construction and development. The approach also involves preparing for BNG through surveys and assessments to understand what species are currently present at the site and how they interact with each other. This information can then be used to create a BNG action plan that outlines how to achieve BNG goals.

Once the principles are applied, a completed BNG-compliant site will have a positive ecological impact and provide benefits such as increased pollination levels, improved water quality, enhanced carbon storage capacity, and more resilient ecosystems.



# What is Biodiversity Net Gain (BNG)?



## Who will Biodiversity Net Gain affect?

The operating principle of BNG is that every development needs to leave nature in a better state than the developers found it, incorporating the concept of **no net loss** – so all construction and redevelopment projects of any size are potentially affected.

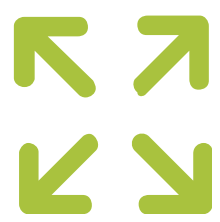
The UK government's BNG guidelines will lay down a framework for developers, planners, and land managers to achieve biodiversity net gain, and all developers and planning authorities will be expected to comply with the legal standard for biodiversity protection.

There will, for instance, be a requirement for planning authorities to ensure that development sites achieve a minimum of 10% biodiversity gain. This could include incorporating green roofs, rain gardens, green retaining walls, wooded areas, and wildlife meadows into new developments. It is essential that developers work collaboratively with ecologists in the coming years to identify suitable habitats to enhance to achieve BNG.

# What is Biodiversity Net Gain (BNG)?

## How is BNG measured?

BNG is based on four criteria that evaluate the impact and achievement of biodiversity conservation.



1. **Size:** This refers to the amount of land that is being developed. The aim of BNG is to ensure that after development, there is still the same amount of wildlife habitat as before, or even more.



2. **Condition:** The quality of the habitat is also important. It's not enough to simply leave the same amount of land untouched. The habitat must be of good quality because that's what will encourage diverse wildlife and plants to flourish.



3. **Distinctiveness:** This is all about how unique the habitat is. If the space is home to rare or endangered species, then it has high distinctiveness.



4. **Significance:** This refers to the value of the habitat to the local area. It could be an important green space providing a place for people to connect with nature, or a significant part of an ecosystem.

To measure whether BNG compliance has been achieved, a 'biodiversity metric' is used, calculating the value of the development site pre- and post-project in terms of the four measurement criteria. The metric aims to quantify the net *ecological value* of the development, so if the ecological value has increased, then Net Gain has been achieved.

# Why BNG Matters

Biodiversity net gain is a core component of the UK government's 25-Year Environment Improvement Plan (EIP) 2018 and is already a legal requirement for large developers. However, many small-scale developers and businesses are still unaware of the benefits of implementing BNG.

Let's look at the advantages of BNG for not only local plant and animal life, but also the economic, mental, and physical well-being of local communities.



## 1) Mental and physical health & wellbeing

Access to nature has proven benefits for human mental health and wellbeing. Spending time in green spaces has been shown to reduce stress levels, improve mood and cognitive function, and even lower mortality rates. Integrating nature into urban landscapes can, therefore, provide an opportunity for residents to connect with nature, even in areas where greenery is limited. By investing in biodiversity and net gain, developers can create a healthier, happier community, and an environment that enhances the value of their property assets.



## 2) More attractive urban areas

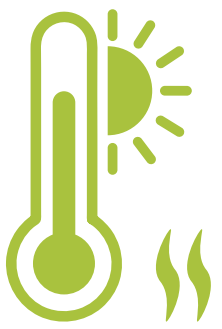
Biodiverse urban areas are more attractive and appealing, and they can create a greater sense of identity and community pride. By investing in net biodiversity gain, developers and local authorities can create pockets of nature within built up areas, which can be used for community activities such as nature-watching or environmental education. This approach can make existing built-up areas more desirable as a place to live, work, and play.

# Why BNG Matters



## 3) Promotes economic growth

The natural environment is a crucial component of the UK economy, providing raw materials, regulating water flow, and providing the air we breathe. Better access to natural spaces can also help develop new markets in the UK eco-tourism sector, as people increasingly seek out natural landscapes to visit and even to relocate to.



## 4) Climate change

By embracing biodiversity, developers and planners can contribute to mitigating the effects of climate change in their local area. Natural ecosystems such as wildflower meadows, wetlands, and grasslands are natural carbon sinks, absorbing carbon dioxide from the atmosphere and storing it in the soil. Development projects that prioritise biodiversity can support or create those ecosystems that aid the carbon cycle in urban areas, reducing local emissions and improving air quality.



# What is the Urban Greening Factor?

The Urban Greening Factor (UGF) is a tool or metric used to define the quality and quantity of green spaces in urban areas in the UK, enabling managers of property developments and construction projects to demonstrate how they are contributing to biodiversity net gain.

UGF measures the size, quality, and accessibility of green areas and assigns an overall score to each area. A high UGF score means that there are more and better-quality green spaces available for people and wildlife to enjoy, indicating a high BNG in new developments.

The Urban Greening Factor is a relatively new concept, first proposed in 2012. It was initially developed to help local authorities assess and improve the quality of green infrastructure (GI) in urban areas under their remit. Green urban spaces can help reduce inner city and suburban air pollution, mitigate the urban heat island effect, and provide new green motorways and habitats for wildlife.

However, over the past decade, the UGF methodology has been gaining traction outside the public sector among private building contractors and property developers, due to the increasing recognition of the importance of green spaces in improving the health and wellbeing of communities.



# What Is Hydroseeding?

Hydroseeding is a cost-effective and wide-ranging solution for establishing vegetation within retaining walls and other structures, as well as providing effective erosion control. For developers and land managers, moreover, hydroseeding is a reliable method of achieving BNG compliance in their construction projects.

Hydroseeding is the process of applying a ready-made mixture of water, seed, and other additives such as fertilisers, soil stabilisers, and wetting agents to the ground or seeding area through a high-pressure hose.

The mixture can be sprayed evenly and quickly over large areas, even on steep slopes, hard to access areas and challenging terrains – improving the results of habitat creation and reducing operational risk.

The hydroseeding mixture can be customised to include native wildflowers, grasses, or any other species required to improve biodiversity in the area. The process promotes uniform vegetation establishment across the site, which is essential for a good BNG score. Hydroseeding is also organic, biodegradable, and toxin-free, making it an eco-friendly and sustainable choice.



# What Is Hydroseeding?

The advantage of hydroseeding over traditional seeding methods is that it provides even seed distribution, protects seeds in adverse conditions, and ensures improved seed-to-soil binding, resulting in faster germination and established plant habitats.

## ***The hydroseeding process involves several steps:***

- Firstly, the site is prepared, and the soil is cleared of any debris and roughed up to create a good seedbed.
- Secondly, the chosen seed (e.g. wildflowers, grasses etc) is mixed with the specified proportion of water, mulch and/or fertiliser in a hydroseeding machine.
- Thirdly, the hydroseeding mixture is prepared and loaded into a large holding tank mounted on a hydroseeder truck and transported to the seeding area.
- Fourthly, the mixture is applied to the area using a high-pressure hose for consistent and even distribution.



After application, the seeds will usually germinate within a week, and the vegetation will fully develop within a few months. Minimal to no aftercare is required, making it a hassle-free solution for habitat building and maintenance.

# What Is Plug Planting?

## Plug planting and habitat creation

‘Plug planting’ high BNG species is another great way to establish vegetation and create plant and animal habitats when constructing retaining walls. This method of planting allows the (re)introduction of native plant species that are beneficial to the local environment, providing food and shelter for wildlife and a conducive environment for pollinators.

Plug planting is a method of growing plants in individual cells or trays in a greenhouse environment, which allows for minimal root disturbance when transplanting. Plug plants are usually young seedlings or cuttings that have been grown in these small units to a stage of growth in which they can thrive in an outdoor environment. Plug planting is often used to establish native plant species in a landscape, as it is both cheaper and easier than planting larger plants – as well as being faster, less risky, and more efficient than traditional seeding methods.



# About GeoGrow and Rootlok



GeoGrow Ltd is a sustainable construction and landscaping specialist, delivering environmentally friendly groundworks, hydroseeding services, and our innovative Rootlok Vegetated Retaining Wall System.

***Incorporating Greener Infrastructure into your projects can help create and increase wildlife habitats, improving local ecosystems to achieve BNG targets now and in the future.***

**Rootlok** is our proven, green alternative to concrete, gabion, and other stone-filled wall systems. The Rootlok system is adaptable to a wide range of construction and landscaping applications, providing a reinforced facing for walls and slopes, protecting surfaces from erosion, and offering an ideal medium to achieve a sustainable and green finish.

Rootlok is a *soft engineered system* that offers the same strength, robustness, and permanence as a hard engineered system, such as concrete revetments, but without the environmental impact and harm associated with many traditional wall systems.

Our retaining wall system offers clients a variety of methods to establish BNG-enabling vegetation within their structures, offering multiple opportunities to increase the biodiversity gain provided by the project. Alongside vegetation options, the flexible nature of the Rootlok system allows new animal habitats to be included within the structure, such as bat and bird boxes, hedgehog routeways, and aquatic habitats.

# About GeoGrow and Rootlok

- **Planting made easy** – Rootlok helps you incorporate the correct choice of plants and shrubs to add to the ecosystem and increase BNG. Increasing flower rich habitats will help conserve native British pollinators and a range of other wildlife, contributing towards your BNG targets.
- **Cost effective habitat creation** – BNG expectations are additional to guidelines surrounding existing habitat and species protection. Rootlok enables the fast and effective creation of new habitats within the system for birds, bats, invertebrates, and aquatic wildlife, without compromising on workable space within your development.



Our services aim to improve the sustainability profile of construction and landscaping, helping contractors and clients reduce their carbon footprint and achieve an attractive, progressive green solution that boosts structural stability and controls erosion in a sustainable way.

Based in Cannock, Staffordshire in the heart of the West Midlands, we work with customers throughout the UK, delivering solutions that are cost-effective, environmentally sustainable, and offer long-term value.

Our highly trained team specialise in construction and vegetation solutions using our proven Rootlok system and combine a wide range of skills from various industry sectors across the UK. All our on-site staff are trained to CSCS/CPCS/NPORS standards and are supervised by a management team with many years of geotechnical engineering experience.

# About GeoGrow and Rootlok

We are also proud to be **Constructionline Gold**, **CHAS** and **SMAS** certified.

## Customers we work for:

- Local Authorities
- Main building contractors
- Architects
- Engineering Consultants
- Landscape designers/architects
- Residential housing developers
- Commercial property developers
- Ecologists
- Public sector organisations
- Private clients



We are happy to undertake projects of all sizes and levels of complexity, be it large or small, so please feel free to call one of our knowledgeable team to discuss your project and find out how we can help you.

## Next steps

Thank you for downloading this guide. For more information about our environmentally friendly Rootlok system and how it can provide a sustainable alternative to traditional concrete solutions in a variety of construction and landscaping projects, please contact the GeoGrow team using the details below:

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Email: [info@geogrow.co.uk](mailto:info@geogrow.co.uk)