

The Green Construction Board



Biodiversity Roadmap

Biodiversity and Environmental Net Gain Group

February 2024



Construction
Leadership
Council

CONTEXT

Biodiversity underpins the ecosystem services that we need to survive and thrive. Unlike carbon, it cannot be easily or accurately measured. The construction industry not only impacts but depends directly and indirectly upon biodiversity and ecosystems although these interdependencies are often less tangible. This complexity has pulled focus from the crises; however, it is just that complexity that delivers the resilience against climate change, stability, productivity, and sustainability upon which we depend.

Improving nature's recovery will help us to adapt to future climate change and the more extreme weather which is expected. For the built environment, more space needs to be provided for adaptation. This includes the need to link more sites through green infrastructure and deliver more services via nature-based solutions to help nature's recovery.



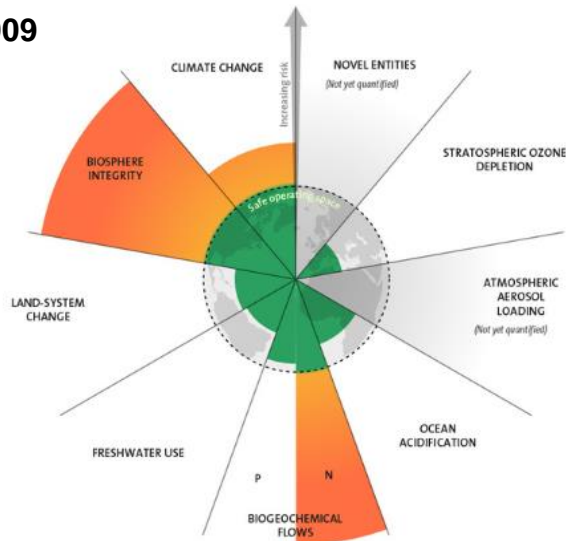
The UN Convention on Biological Diversity's Framework looks to achieve 'zero net loss of nature' from 2020, 'net positive' by 2030, and a full recovery of nature by 2050.



CONTEXT

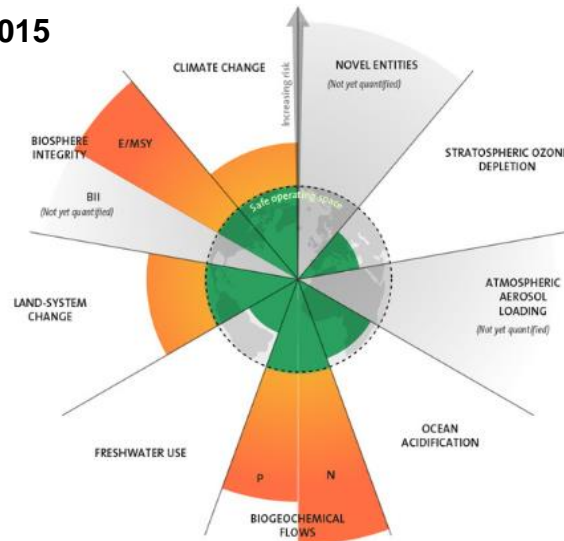
Our ecosystems are already at, or potentially beyond, the critical thresholds.

2009



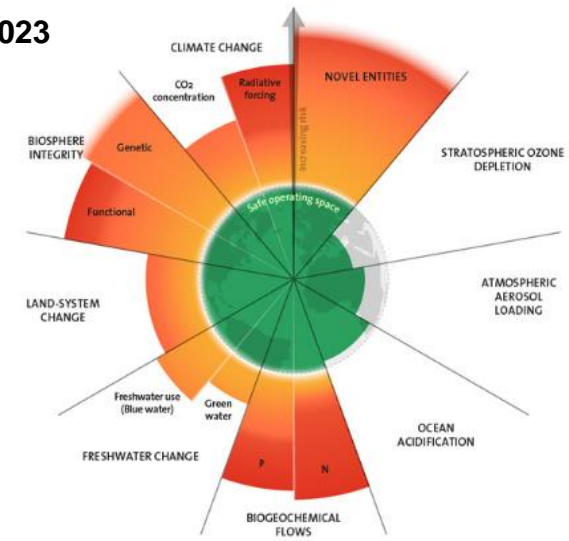
7 boundaries assessed,
3 crossed

2015



7 boundaries assessed,
4 crossed

2023



9 boundaries assessed,
6 crossed



CONTEXT



US \$ 44tn
Economic value generation moderately or highly dependent on nature¹



80% UN SDG
Targets threatened by declines in biodiversity leading to systemic risk²



US \$ 10tn
Expected annual business opportunity achieved by 2030 with nature positive actions³



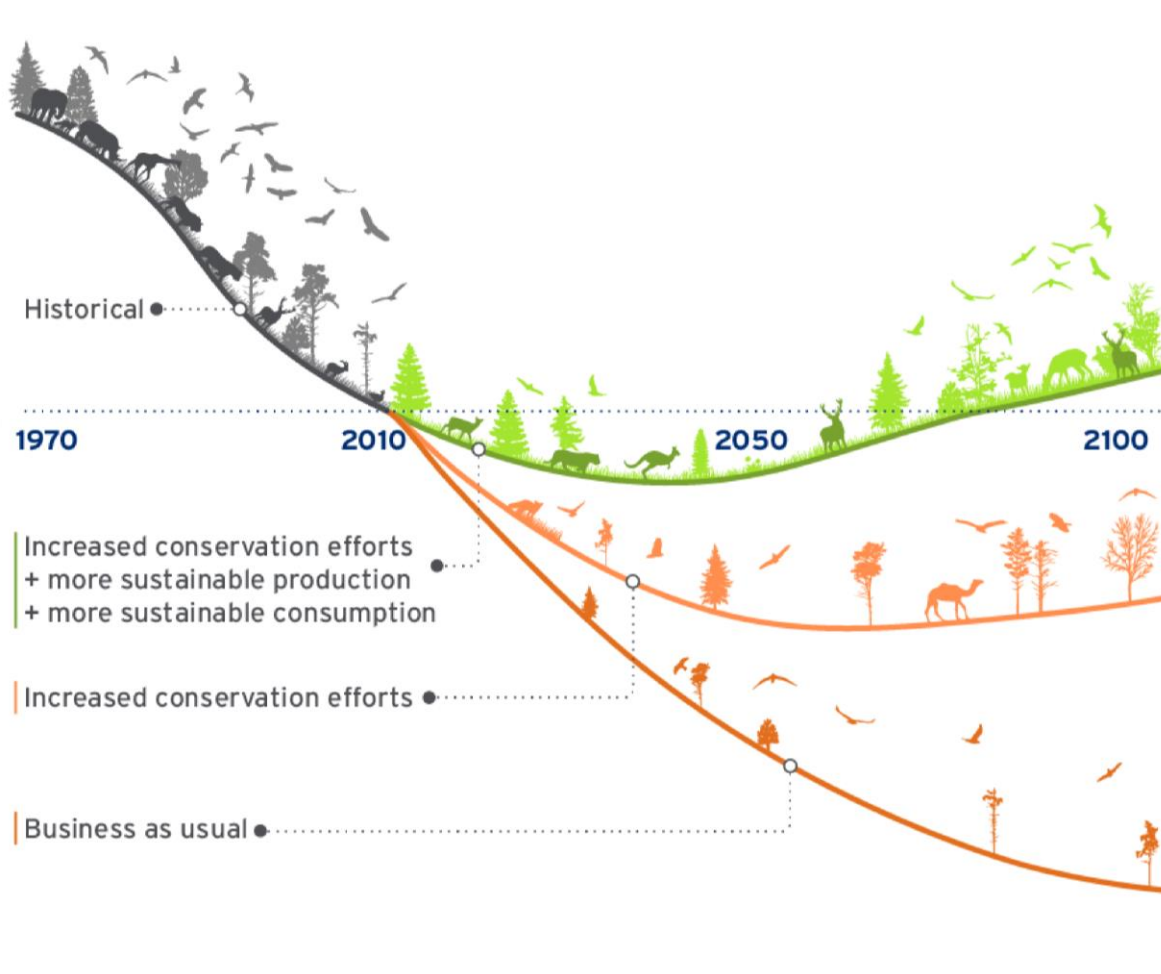
68%
Average decline in species population sizes since 1970⁴



37,400
Species threatened with extinction⁵



75% New Disease
Spillover from animals resulting in 2.5bn illnesses from zoonotic disease⁶



We need to maximise every opportunity to deliver biodiversity and environmental net gain to restore these systems so that we can all enjoy the quality of life in the future that we have today.



BACKGROUND

The Green Construction Board has identified biodiversity and environmental net gain using nature-based solutions and a sustainable supply chain as key areas of focus which need greater emphasis within the construction industry.

A working group (Biodiversity and Environmental Net Gain Working Group) was started in 2021 to focus on biodiversity and the environment and drive understanding in the industry.

The working group produce a thought piece on nature in the built environment which is available on the CLC website [here](#).

Over the last year the working group have been developing this roadmap to provide a direction of travel for the industry on how we can address the biodiversity crisis and move towards environmental net gain.

The focus for this work is mainly on improving nature in our built environment and the places that surround our towns and cities. We are dependent on the natural systems that support our health and wellbeing that surround our towns and cities, so this is taken into consideration. This work does not include nature recovery within farming or the wider countryside, but offsetting could provide solutions for nature's recovery in the wider countryside.



WHO IS THE DOCUMENT FOR?

AIMS

Biodiversity and nature is a complex area. There are different focuses such as ecosystem services, nature-based solutions, natural capital and the emerging term nature positive. This roadmap sets out the strategic priorities that the industry should prioritise with the ultimate aim to be ‘nature positive’ and align with the targets in the UN Convention on Biological Diversity’s Framework.

The roadmap provides context to the key issues and short, medium and long term goals. These goals can be applied to the industry as a whole, or to an individual organisation trying to understand what they can do to understand the value of biodiversity and nature within our built environment. It does not provide all the answers and solutions but is there to be a tool to increase knowledge and understanding in the industry and to drive action.

DELIVERY OF THE ROADMAP

This roadmap has been produced and will be owned by the Green Construction Boards Biodiversity and Environmental Net Gain Group (BENGG). As a voluntary group of professionals, they are not seeking to deliver this roadmap, instead the next stage of this work is to identify key stakeholders including government and industry to own and drive forward the key actions.

In the thought leadership document that accompanies this roadmap the key stakeholders are explained in more detail and their roles in helping to deliver more nature positive landscapes. Ultimately this roadmap needs collaboration between a range of stakeholders to deliver the ambitious but vital targets.



KEY THEMES OF THE ROADMAP

The roadmap has three themes which are the strategic priorities and are grouped around similar topics. Under each of the themes are the key areas of action. Under each of these key action areas we have set out the aim for the theme, targets and then the detail on how we are going to achieve the vision over the short (2 years), medium (5 years) and long term (8 years).



DRIVERS, FUNDING AND DELIVERY



Drivers and Policy



Funding and Delivery



MEASUREMENT, MANAGEMENT, MONITORING



Measurement



Management



Monitoring



UPSKILLING AND ENGAGEMENT



Skills and Knowledge



Engagement



The Green Construction Board



The Roadmap

Biodiversity and Environmental Net Gain Group



DRIVERS, FUNDING AND DELIVERY



Drivers and Policy targets:

- **BNG over 10% delivered on all development projects not just new developments by 2025**
- **Sites proposed for BNG align with Local Nature Recovery and other spatial strategies by 2025**
- **Uptake of Urban Greening Factor and 20% BNG Target by 2028**
- **Biodiversity loss is halted across the UK by 2030 and ENG in legislation with clear timelines by 2030**

THE AIM: Resource needs, quality of life and climate resilience are driving emerging policy and elements that may lead to new legislation. Changes should and will be swift, industry risks falling behind on compliance. There is an industry need to be aware of the direction of travel of legislation and policy and be involved in its creation and prepared for its implementation.

Short Term Action 2025

What: Mandatory BNG is Business As Usual (BAU) extended to infrastructure permitted development. Industry awareness of the potential for Nature-based Solutions (NbS) to deliver Environmental Targets and Environmental Net Gain (ENG).

How: Clear, concise and directional policy regarding improvements in biodiversity and the environment. Policy must be accompanied by clear action plans, which include spatial plans aligned locally and regionally.

Medium Term Action 2028

What: Urban Greening Factor is applied in all urban environments, BNG increases to 20% for new development, BNG extends to operational activities. Development of ENG policy and timeframes for delivering Environmental Targets is clear.

How: Template for Environmental Outcome Reports and guidance are available for delivering Environmental Targets. Clear consultation from government on the direction of travel and development of policy and new Environmental Targets.

Long Term Action 2030

What: National legislative requirements for halting biodiversity loss are achieved and Environmental Targets for delivering ENG are embedded into policy and practice.

How: Defra and Local Authorities work with Industry to ensure that policy is deliverable, through consultation and advice from practitioners.





DRIVERS, FUNDING AND DELIVERY



Funding and Delivery targets:

- **Have a clear and agreed (by government and industry) approach on benefit stacking, including additionality by 2025**
- **Standardised industry agreed figures for benefits and costs of NbS and sustainable supply chain by 2028**
- **Green Finance becomes accessible and BAU by 2030**

THE AIM: Funding for Nature-based solutions (NbS) should be attached to strategies and targets to demonstrate the benefits that are linked to national and local targets. We know that NbS can deliver multifunctional benefits, but demonstration and confidence is a key blocker to adoption. For implementation at scale, a delivery model which includes capital and operational funding and collaborative delivery is needed (multi-stakeholders working together such as ecologists, landscape architects, engineers etc).

Short term Action 2025

What: Promote Nature-based solutions (NbS), and a sustainable supply chain for BNG and ENG delivery for projects, plans and operations.

How: Signposting existing design and assessment guidance and how this aligns with strategic targets. Message the positive cost benefit ratios, co-delivery possibilities and funding models to maximise value of NbS and the benefits a sustainable supply chain bring. Clarify benefit stacking and additionality. Demonstrate successful implementation via case studies, webinars, knowledge shares.

Medium Term Action 2028

What: Environmental targets are set for projects, plans and operations and NbS becomes business as usual in design and delivery. There are clear funding streams driven by confidence in returns and route to market options.

How: National and local environmental targets set by government that align with Climate Action Plans, Local Nature Recovery Plans and other spatial strategies. Industry provides evidence on the Benefit Cost Ratios of NbS and sustainable supply chains, with real capital and operational costs surrounding benefits linked to design guidance and a list of NbS and sustainable funding opportunities.

Long term Action 2030

What: Green Finance becomes accessible with NbS driven resilience and sustainable supply chain becoming a funding requirement

How: Peer reviewed costs and benefits for NbS and sustainable supply chain are linked with an evidence base documenting confidence in benefits.





MEASUREMENT, MANAGEMENT, MONITORING



Measurements targets:

- **BNG metric used on all projects to baseline and measure improvements by 2025**
- **Metrics for indirect (supply chain) as well as direct land use change and ENG to be implemented by 2028**
- **Simple measuring tools developed for ENG and used across industry as BAU by 2030**

THE AIM: Biodiversity, NbS, including integrated building vegetation, sustainable supply chain and their benefits can be complicated. There should be key measurement tools and metrics that are easy to understand and used across industry. Confidence is needed in metrics to ensure that we are consistently measuring key environmental indicators. The metrics can sometimes be complex but they need to be clear and understood.

Short Term Action 2025

What: BNG metric is used on projects to deliver a standard approach to measuring.

How: Share case studies, best practice, knowledge of tools being used.

Medium Term Action 2028

What: Standardised metrics and tools for BNG on all project, plans and operations. NbS benefits and ENG delivery including indirect (supply chain, for example TNFD) as well as direct land use impacts (air, water, pollution, species, habitats, nutrient attenuated etc.)

How: Collate data and agree standardised metrics and tools for ENG measurement to enable system level interventions.

Long Term Action 2030

What: Metrics for ENG, NbS and sustainable supply chain are being implemented on projects as standard and there is growing use of the best tools to deliver Environmental Net Gain.

How: Development of tools, trials and demonstration projects to show the efficiencies of NbS and sustainable supply chain (inc. quanta of carbon sequestered, nutrients attenuated etc.)





MEASUREMENT, MANAGEMENT, MONITORING



Management targets:

- Sustainable management specifications adopted as standard by 2028
- LPAs and institutional landowners to have a sustainable environmental maintenance plan or sustainable maintenance within their nature recovery plans by 2030

THE AIM: There are huge gains to be made, or lost, during the management of green infrastructure. Green spaces have the potential to enhance biodiversity; increase carbon reduction and climate resilience; and improve physical and mental wellbeing. By managing our green estates more creatively, rather than the usual “amenity” short-mown grasslands, we can also create more healthy green jobs.

Short Term Action 2025

What: Promote positive land management via NbS and use of a sustainable supply chain (including resource management) at no or low additional cost.

How: Demonstrate how land management can deliver BNG and ENG at low cost and with wider stakeholder benefits via webinars and case studies.

Medium Term Action 2028

What: Promote and support agreements for users and beneficiaries to draft holistic sustainable management specifications to be finalised by 2028 with targets for BNG and ENG.

How: Promote and support agreements for users and beneficiaries to draft holistic sustainable management specifications to be finalised by 2028 with targets for BNG and ENG.

Long Term Action 2030

What: Management plans that deliver biodiversity and wider environmental benefits are implemented.

How: Government incentives and benefits are provided for land management that demonstrably and sustainably increase environmental value to be linked with biodiversity and environmental targets and access to finance. Demonstration of lower costs.





MEASUREMENT, MANAGEMENT, MONITORING



Monitoring targets:

- **Sites that are on the BNG register monitor the habitats by 2025**
- **Sites proposed for BNG monitor and demonstrate additional Environmental Targets by 2028**
- **Combine and centralise the current data into a government led national database of biodiversity land use and quality by 2030**

THE AIM: Baseline and monitoring is essential to confirm that biodiversity and environmental value is delivered and maintained. Ideally a simple metric within a single platform is delivered but also incorporating the efficiencies and financial aspects of NbS and positive land management.

Short Term Action 2025

What: Encourage BNG baselining and monitoring by scaling up assessment processes and using digital technology

How: Demonstrate the use of technology (remote sensing, automated GIS etc.) to deliver long term monitoring. Lobby government for national database funding, potentially offer cross industry financial support.

Medium Term Action 2028

What: Monitoring of sites for BNG is BAU and KPIs for Environmental Targets and ENG are being included.

How: Promote and support digital technology including remote sensing, develop the tools to include ENG KPIs. In addition to data submitted for BNG demonstration, submission of spatial project and plan related data will be compulsory for planning approval. All spatial data submitted via the planning portal hosted on the site in addition to other national datasets.

Long Term Action 2030

What: A national database hosting spatial and quantified data on biodiversity, natural capital and ecosystem services associated with land categories including opportunities.

How: A national database is co funded by government and private finance and hosted by single entity.





UPSKILLING AND ENGAGEMENT



Skills and Knowledge targets:

- **Increase awareness of BNG and ENG, across the sector by 2025**
- **Embed training into institutions and industry bodies and deliver industry wide modules by 2028**
- **Double the number of environmental professionals employed in industry by 2030**

THE AIM: Increase understanding of the importance of BNG and ENG to be delivered via NbS, sustainable supply chain and land management by working with NGOs within this space who expertise and experience. Knowledge sharing between sectors is essential so that the fundamentals become embedded into the industry. We need to encourage new people, from different demographics, into the workforce and provide them with the right skills to help deliver our environmental targets.

Short Term Action 2025

What: The existing workforce and stakeholders will understand the importance of biodiversity and how it can be incorporated into our built environment and ongoing management. Industry is confident in delivering BNG requirements with an awareness of ENG and Environmental Targets and works with NGOs to provide the knowledge and understanding.

How: Provide practical guidance and messaging on the opportunities and successes for delivering BNG and ENG via NbS, sustainable supply chain and land management. Signpost to the best existing guidance. Training of biodiversity becomes mainstream within institutions and industry bodies and is delivered by NGOs.

Medium Term Action 2028

What: Delivering mandatory training for built environment institutions, to increase the number of biodiversity and environmental specialists that understand Environmental Targets, business cases, feasibility and metrics. Improve the understanding of ENG. NGOs to play a key part in the delivery of biodiversity training and upskilling.

How: Training modules developed for practical application embedded into career progression across the sector. A playbook of NbS, the Environmental Targets they deliver, with CBRs and case studies. Align biodiversity to the RIBA stages of work.

Long Term Action 2030

What: Increased numbers of environmental professionals from a wider demographic, across the sector who can assess and deliver BNG, Environmental Targets, ENG benefits

How: Apprenticeships, outreach to Universities and Schools, cross sector webinars for early career professionals, building upon the existing training modules to be measured by industry and biodiversity skills surveys.





UPSKILLING AND ENGAGEMENT



Engagement targets:

- **Biodiversity and Environmental Net Gain is a central criteria of mainstream industry awards/ recognition schemes by 2025**
- **Every company has a biodiversity champion in their workforce and/or engagement with nature focussed groups by 2028**
- **Companies have engagement with/use of key, relevant voluntary certification schemes as standard e.g. Building with Nature, TNFD 2030**

THE AIM: to provide content that demonstrates the importance of nature in a clear and engaging way and supports Biodiversity and Environmental Net Gain delivery via NbS, sustainable supply chain and land management. Enable support from the ground up as well as top down. When the messaging on the importance of nature is clear and engaging it can be impactful.

Short term Action 2025

What: Stakeholders (industry, end users, designers, funders etc.) engage with the benefits of biodiversity and NbS so there is a wider understanding of their benefits including climate resilience, health, well-being and education etc.

How: Demonstrating the benefits and the ease of integrating biodiversity and NbS in a people centric way, using headline benefits, standardised terms with simple infographics..

Medium Term Action 2028

What: Industry voluntarily commits to initiatives and certifications to demonstrate their commitment to the environment and to share their knowledge.

How: Showcase industry initiatives and support biodiversity champions who will advocate and knowledge share to support delivery, encourage the industry to apply for awards and to share successes (for example the CIRIA Big Award) and provide case studies on the effectiveness of positive management.

Long term Action 2030

What: Industry and end users adopt the concept of ENG building on the work of BNG and have the relevant certification/accreditations to demonstrate their engagement and practice.

How: Provide, guidance, information and case studies of best practice for non-specialist industry within and end users.



Summary of Targets



DRIVERS, FUNDING AND DELIVERY



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UPSKILLING AND ENGAGEMENT



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Definitions and Terms

Additional

The payment results in the delivery of a service(s) that would not otherwise have been provided

BAU

Business as usual

Biodiversity

Biodiversity is defined by the UN Convention on Biological Diversity (CBD) as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of their functions (i.e. ecosystem function).

Biodiversity Net Gain

Biodiversity net gain (BNG) is an approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand. It is mandatory on all new developments in England.

Bundling

Packaging the biodiversity and environmental services produced by a nature-based project on a single area of land, and selling the package (typically as a single unit of trade or credit) to a single buyer.

Dependencies

Refers to irreplaceable ecosystem services that are critical to enabling, enhancing or influencing successful business performance.

Ecosystem

A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Ecosystem services

The flow of benefits people obtain from ecosystems, which includes timber, fibre, crop pollination, water regulation, climate regulation, recreation, and physical health.

Environmental Net Gain

Environmental net gain (ENG) is an approach to development that leaves both biodiversity and the environment in a measurably better state than prior to development – as measured by the biodiversity measures, alongside a broader range of measures of ecosystem services (e.g. recreation, flood protection) and environmental metrics (e.g. air quality).

GI

Green infrastructure or blue-green infrastructure is a network providing the “ingredients” for solving urban and climatic challenges by building with nature

GIS

A geographic information system (GIS) is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface.

Grey Infrastructure

Grey infrastructure refers to structures such as dams, seawalls, roads, pipes or water treatment plants

Metric

Quantitative measure of an indicator, including the units used.

Natural Capital

The stock of renewable and non-renewable natural resources on earth (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits or 'services' to people. These flows can be ecosystem services or goods and benefits, which provide value to business and wider society.

Nature-based Solutions

The stock of renewable and non-renewable natural resources on earth (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits or 'services' to people. These flows can be ecosystem services or goods and benefits, which provide value to business and wider society.



Definitions and Terms

Nature Positive

A high-level goal and concept describing a future state of nature (e.g., biodiversity, ecosystem services and natural capital) which is greater than the current state. Nature Positive is also global societal goal defined as 'Halt and Reverse Nature Loss by 2030 on a 2020 baseline, and achieve full recovery by 2050'

NGO

Non-governmental organization

Permitted Development

Statutory Undertakers, such as Gas, Electricity, Water Utilities, and Telecommunications providers have many PD rights and are currently exempt from the mandatory BNG

Stacking

Measuring and accrediting the different types of environmental services from a nature-based project on a single area of land, and selling the services to different buyers, or receiving multiple payments from a single buyer for each service delivered.

SuDS

Sustainable drainage systems are a collection of water management practices that aim to align modern drainage systems with natural water processes. SuDS efforts make urban drainage systems more compatible with components of the natural water cycle such as storm surge overflows, soil percolation, and bio-filtration.

TNFD

The Taskforce on Nature-related Financial Disclosures (TNFD) has developed a set of disclosure recommendations and guidance that encourage and enable business and finance to assess, report and act on their nature-related dependencies, impacts, risks and opportunities.












Urban Greening Factor

The Urban Greening Factor (UGF) is a planning tool to improve the provision of Green Infrastructure (GI) particularly in urban areas. It is voluntary and can be used to increase urban greening where the baseline is so low that BNG may not be meaningful.



Green Construction Board Working Group

Thank you to all the hard work of the working group for their time and dedication to getting this roadmap ready. With special thanks to **Martina Girvan** as **Lead Author of the Roadmap.**

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The earth is what
we all have in common.

Wendell Berry novelist, poet, essayist, environmental activist, and farmer

The Green Construction Board



THANK YOU