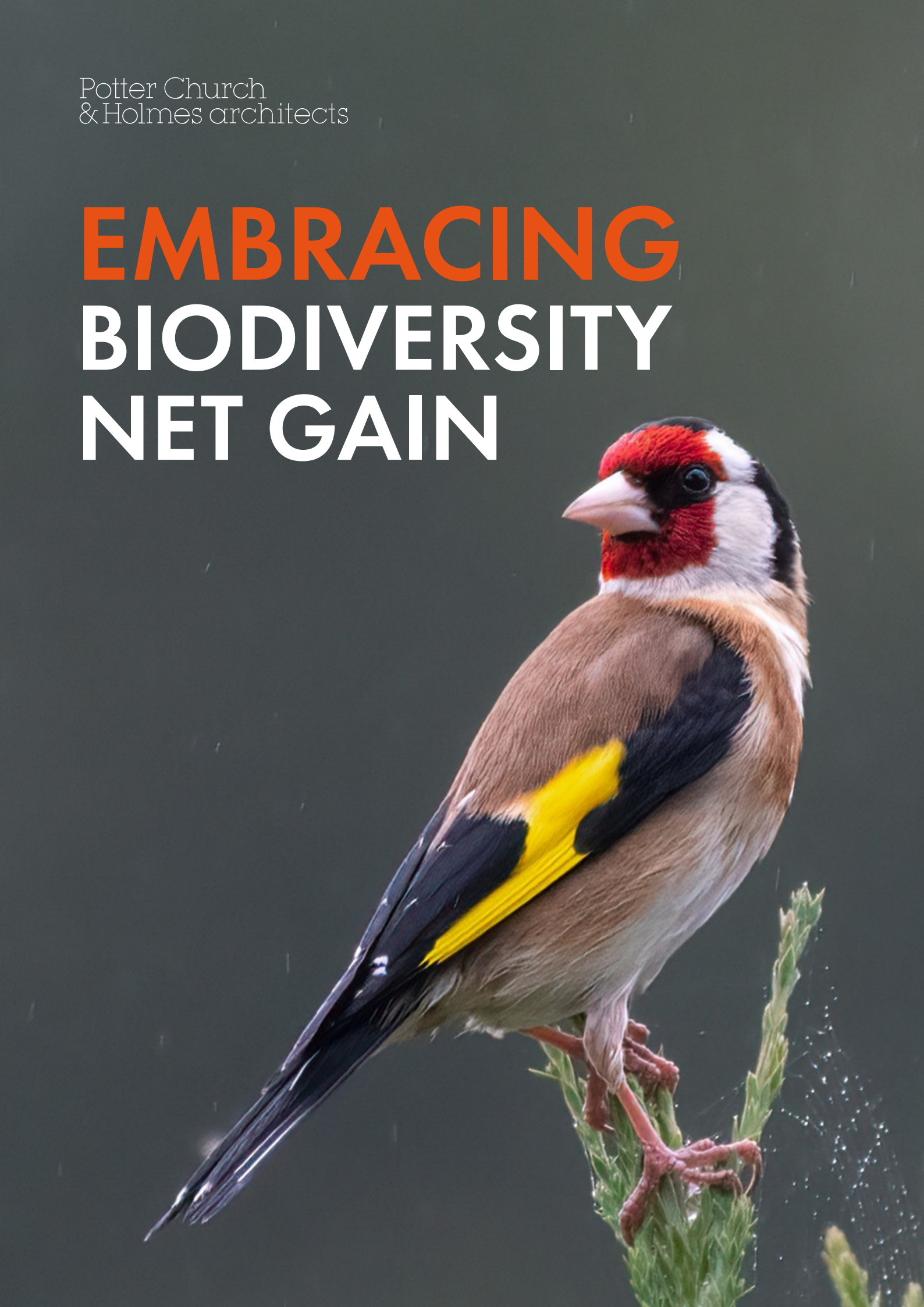
Potter Church
& Holmes architects

EMBRACING BIODIVERSITY NET GAIN



As of April 2024, small developments must also meet the new government target of a 10% biodiversity net gain (BNG).

But what does this actually mean and what are the best ways to achieve this?

HERE'S HOW THE GOVERNMENT DESCRIBES BNG:

"BNG is an approach to development. It makes sure that habitats for wildlife are left in a measurably better state than they were before the development. Developers must deliver a BNG of 10%. This means a development will result in more or better quality natural habitat than there was before development."

AN OPPORTUNITY NOT A BURDEN

The most important thing is to see this as an opportunity not a burden. This is an exciting and much needed shift in focus that will encourage the industry to think more creatively about how we develop sites across England, with our native wildlife very much at the centre of each design.

We should all be working hard to improve habitats for wildlife and collaborate to protect and nurture biodiversity and our native eco-systems. And when done well, it will benefit not only our country's natural habitats, but businesses and people alike.

As a firm, we have always focused on how we can introduce more greenery to our developments and create spaces that encourage greater biodiversity. We design and build a lot of car parks, so this may not be immediately what would spring to mind, but the benefits to the build itself have always been clear to us.

Incorporating considered planting and being mindful of the local wildlife makes business sense as well as being beneficial to the environment and biodiversity of the surrounding area.

Here are our top three reasons why planting makes good business sense, allowing you to make a meaningful contribution to biodiversity, while also making a sound investment.

PROTECTION FROM FLOODING

Intelligent planting and so called 'rain gardens' can dramatically reduce the chances of flooding. With the weather in the UK changing and heavy downpours now becoming more frequent, this has to be a consideration, especially when designing things like surface car parks. The damage flooding can cause can be extremely costly, which is why we have incorporated a number of rain gardens and in the case of our Bath Podium car park, large scale planters for rain water capture. This will future proof these buildings and reduce the chances of flooding, protecting the landowner from future costly repairs.

EFFECTIVE INSULATION

Planting – especially living walls and roofs – is excellent insulation for a building. There are already existing targets to hit where insulation is concerned and planting has always been considered a very effective option for achieving these targets.

IMPROVED AIR QUALITY AND EXPERIENCE

Air pollution in urban areas has been a hot topic for a long time now. With temperatures in built up areas set to rise as global warming continues to tighten its grip, air quality will be threatened. It already is thanks to more cars and delivery vans on our roads than ever before. Trees and sympathetic planting can make a huge difference to the quality of the air, it creates shade and will make for a much more enjoyable place to spend time. There is no doubt, that these will become increasingly important factors as temperatures rise and urban places become more densely populated. What's more, if you make the area a joy to be in – whether it is a shopping precinct or a car park, people will be more likely to flock there, making for a much better return on investment.

As result of these benefits, we have often incorporated these greener elements into our designs, even before the introduction of the BNG.

HOW THE BNG WORKS:

For the purposes of BNG, biodiversity value is measured in standardised biodiversity units – this is called Biodiversity Accounting metrics. A habitat will contain a number of biodiversity units, depending on things like its:

- size
- quality
- location
- type

MEASURING 40% BIODIVERSITY VALUE

When considering biodiversity value, the best thing to do is to first consult an ecologist or biodiversity consultant. They will:

- *measure the biodiversity value of your existing habitat*
- *advise on suitable habitat creation or enhancement for the land*

This process helps to assess the ecological impact of the proposed development and can tell you how to avoid unnecessary habitat reduction or what will be needed on-site to mitigate any unavoidable habitat reduction. As a last resort, it can translate into a direct monetary value where compensation (off-site) is needed.

THERE ARE THREE WAYS A DEVELOPER CAN ACHIEVE BNG

1. They can create biodiversity on-site, within the red line boundary of a development site.
2. If developers cannot achieve all of their BNG on-site, they can deliver through a mixture of on-site and off-site. Developers can either make off-site biodiversity gains on their own land outside the development site, or buy off-site biodiversity units on the market.
3. If developers cannot achieve on-site or off-site BNG, they must buy statutory biodiversity credits from the government. This should be a last resort. The government will use the revenue to invest in habitat creation in England.

Developers can combine all three options, but must follow the steps in order.

Our Top Seven RECOMMENDATIONS FOR A SUCCESSFUL APPROACH TO ACHIEVING BNG:

1 **FIRST AND FOREMOST scope out the site. You will need an ecologist or biodiversity consultant to carry out a survey so you get your biodiversity baseline to work from.**

2 Involve consultants early on. It can be much harder to implement effective changes when the project is already under way. The elements that need to be introduced need to be incorporated early on. Although these can be introduced retrospectively, you will have far greater success and be able to make a more meaningful impact, if the considerations are taken into account from the start. For example, if buildings are already in place, they could be in what would have been the best planting space or overshadow what would have been good growing areas, making it impossible for things to thrive. This would be a clear missed opportunity to more easily hit the BNG target and take full advantage from the wider benefits of planting.

3 Protect existing habitats. If there are any natural and biodiverse areas that you can leave as they are, do that. It makes much more sense to leave as much as possible untouched versus trying to recreate new eco-systems. It will be difficult to win back the value of an already established biodiverse area, so keep what you can in place. For example, established woodlands are going to rank much higher vs newly planted trees. If you remove established woodlands, you will have to replace it with far more than what you removed.

4 Consider Brownfield sites. It is much easier to achieve the 10% uplift in biodiversity on Brownfield sites, so work with these. An old paved or tarmacked surface car park with a couple of trees or a patch scrubland is not going to score as highly when it comes to biodiversity as an established woodland or an area around a body of water. Repurposing brownfield sites will therefore be far easier from a BNG perpsective.

5 Choose robust planting. The habitats introduced under BNG must be maintained for a minimum of 30 years, so it is worth focusing on robust planting and approaches that that will stand the test of time. Be mindful of what species you plant and how you plant them, making sure that they are likely to thrive and have the support they need in the designated area.

6 Cater for the needs of living creatures too. BNG is not just about greenery, it is about creating habitats for all kinds of native species – birds, bats, bugs, frogs, newts. This is where an ecologist can really add value, identifying which species could flourish and how best to support them, for example, by creating suitable safe areas for frogs and other amphibians to hibernate.

7 Link up to surrounding habitats and ecosystems. it is important to look at the area as a whole, beyond the boundaries of the site, to find ways to connect different habitats. This will have a much more effective and successful long term impact on the local ecosystems, that goes way beyond the confines of hitting specific government targets.

BNG CASE STUDY

But what does all this look like in the real world?

Here we take you through our plans for a recent feasibility study for redeveloping a Brownfield site into a much needed surface carpark.

Network Rail Holgate Depot site in York

We employed an ecologist to advise on the best approach, which included protecting existing habitats as well as introducing new ones that would connect to surrounding habitats, choosing robust native planting and providing safe spaces for native birds, bats, bugs and amphibians.

THE PROJECT:

In York, Network Rail employees need new private parking. Our design converts a flat, open brownfield site owned by Network Rail into a secure, safe and accessible surface parking facility for 202 cars and 44 sprinter vans with EV charging. As part of the development, we of course had to meet BNG levels of 10%.

ECOLOGIST'S FINDINGS:

We invited Brooks Ecological to come and assess the land to lay out the perimeters that we had to work with in terms of hitting the BNG levels. A Preliminary Ecological Appraisal report identified one particular boundary as having a higher biodiversity value in the local context which was to be 'ideally retained and enhanced where possible'. Irreplaceable habitats were not found on site, but the assessment broke down the habitat units with a score of 2.46 habitat units. This score meant these areas could not be replaced with habitats from a lower distinctiveness. Compensation needs to be like for like, or like for better. The hedgerow units however scored lower at 0.20 meaning the hedgerows could be replaced with any type of hedgerow.

The landscape proposal by LDA Design is outlined below.

THE DESIGN INTENT FOR LANDSCAPING:

To manage and maintain planted areas to achieve screening, biodiversity value and establish an ultimately low maintenance and robust landscape that can deal with occasional drought and water inundation. Following the recommendations of an ecologist, 10% Biodiversity Net Gain will be achieved by retaining and improving of the existing habitat and by creating new habitats that link to surrounding eco-systems and areas of natural planting.

THE PLANTING PALETTE:

This will include a mixture of native and non-native species selected to enhance biodiversity and encourage pollinators to thrive, as well as contributing to the existing landscape character of the surrounding area. The rain garden will be shaped to take overflow water from the car park in high rainfall events.

Within the car park and the proposed new planting habitats of the rain gardens and scrub, species have been selected to provide biodiversity value, robustness, seasonal interest and structure to the proposed landscape.

We will introduce bird and bat boxes that will be located and fixed to the existing trees and a hibernaculum. This will be a hole about 50cm deep and 1.5 metres across filled with logs, branches, bricks and rocks, leaving gaps in between. Three drainpipes inserted at ground level into the hole will allow access for amphibians and reptiles use throughout the winter to protect them from the cold. Once the pile is covered with soil (to about 50cm high) it will be sown with the seed mix, comprising slow growing fine grasses and native wildflowers.

We're also designing a bug hotel made up of a lattice of logs, bricks, concrete sleepers interfiled with branches, pine cones and broken masonry and a marine ply covered asphalt felt roof, approximately 1.2m high by 1.2m wide.

This project is still a work in process and we are still looking to add more new habitats. Our next steps will be to plant more trees, which will add biodiversity but also shelter cars from the hot summer sun.

Network Rail Holgate Depot site now

Network Rail Holgate Depot proposed

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