

# Combining nature recovery and community health: how to make the most of biodiversity net gain



# 1. Introduction

The purpose of this report is to highlight how developers, local authorities and consultants are supporting the recovery of nature in housing developments by managing the process of achieving biodiversity net gain (BNG). In it, we showcase some exemplar projects and provide insights and recommendations to industry and policy-makers.

The Land Use blog on Defra's website, the government department that's responsible for environmental protection, likens BNG to a baby elephant - 'big, complex and needs a herd to nurture it to adulthood'. Though increasingly, it's become one of a number of 'baby elephants in the room', with environmental policies being written and rewritten to cope with competing social, environmental and financial concerns. We hope this report can summarise some of the key aspects of BNG and showcase best practice for this new mandatory legislation, perhaps also playing its part in nurturing, with some good role models, this ambitious new plan into fruition.

## **Nature recovery and community health**

The UK is one of the most nature-depleted countries in the world; half of its natural biodiversity has been lost since the industrial revolution.<sup>1</sup> Yet animals and plants provide humans and all life on earth with everything necessary for survival - including fresh water, food, and medicines. The links between nature's recovery and healthy human communities come in many forms and they support many of the networks which sustain a thriving life. The long-term success of healthy homes and neighbourhoods therefore lies alongside protecting our natural world.

As we battle a nature crisis, there is also great potential for people to feel part of their community and to have a sense of co-living, through connecting with and maintaining

our natural world. Community engagement from the early stages of development allows also for effective management and cost reduction of the future maintenance of green spaces through allowing people to feel personally invested in the space, giving them a sense of control and responsibility.

## **Why biodiversity net gain?**

BNG's aim is to make sure habitats for wildlife are in a better state than they were before development; requiring a 10% gain in flora and fauna. Mandated by the Environment Act 2021, BNG requires that all planning permissions and developments, with some exemptions, granted in England will have to deliver at least 10% biodiversity net gain from January 2024. The plan is that BNG will also be required for small sites from April 2024 and implementation for Nationally Significant Infrastructure Projects remains planned for 2025. It can be measured using Defra and Natural England's biodiversity metric and must prove how habitats will be managed and secured for a minimum of 30 years. BNG sits within a wider agenda for nature and climate. It is crucial that, however we integrate green and blue infrastructure, we mitigate flood risk or support pollinators, and we must also make sure local communities are not left out of the process. Despite concerns about the recent delay in implementation of the policy, it has meant that secondary legislation, such as guidance on selling units into the off-site BNG market and confirmation on the initial list of irreplaceable habitats is now trickling through and a clearer real-world understanding is developing.

## Different UK perspectives

For Wales, Scotland and Northern Ireland, approaches are different. Wales steers away from a metric and relies more heavily on the planning system, with the aim of encouraging more ecological expertise and analysis within planning teams themselves. This is similar to Scotland, where the emphasis is on proactive measures at the pre-planning design stage. And again in Northern Ireland, where there is a statutory duty for local authorities with a focus too on providing an educational input for others about biodiversity. Time will tell if this further updated metric-focused approach in England will set a good example for others.

## The interviewees

This report consists of three interviews with industry leaders. Our first interview is with Group Head of Sustainability, Louise Clarke, and Landscape and Estate Manager, Paul Covele, of Berkeley Group. Berkeley Group has voluntarily engaged with BNG now for a number of years and has been instrumental in guiding early policy development. Our second is with Dr Gemma Jerome, Director of Building with Nature, which shapes and defines high quality green infrastructure projects through a standardised framework and accreditation system. Our third is with Paul Morris, a Director at Civic Engineers, an organisation with a commitment to nature-based solutions, consulting on some of the leading green infrastructure projects in the UK in recent years.

“*BNG’s aim is to make sure habitats for wildlife are in a better state than they were before development; requiring a 10% gain in flora and fauna.*”

“*Routes to creating good quality homes and neighbourhoods, lie alongside protecting nature and restoring biodiversity. These should never be seen as being mutually exclusive*”



## The Quality of Life Framework

Since creating the original Quality of Life Framework in 2020, we have developed our own understanding of what is needed at a local and national level to make health and wellbeing central to the way we create and care for our homes and neighbourhoods. Routes to creating good quality homes and neighbourhoods, lie alongside protecting nature and restoring biodiversity. These should never be seen as being mutually exclusive. They compliment each other. We know from the large body of evidence and biophilia studies that access to quality green and blue spaces is incredibly beneficial to people's overall wellbeing. That is why a connection to nature plays a key role in our Quality of Life Framework (see below).

As individuals a connection to nature can take many forms, such as caring for a window box. As a society, it is about principles of equal access, the right to a healthy home and restoring the critical balance between people and planet. Now is a time for action. Industry and policy is changing and BNG is a positive step in the right direction.



The diagram consists of a 2x3 grid of colored boxes. The top row contains three boxes: orange (left), teal (middle), and maroon (right). The bottom row contains three boxes: light teal (left), yellow (middle), and burnt orange (right). Each box has a title and a list of bullet points. In the top right corner of the maroon box, there is a logo for 'QUALITY OF LIFE' featuring a stylized house icon.

<b>A sense of control</b> <ul style="list-style-type: none"><li>● Influence</li><li>● Safety</li><li>● Affordability and permanence</li></ul>	<b>Connection to nature</b> <ul style="list-style-type: none"><li>● Green and blue spaces</li><li>● Biodiversity</li><li>● Sustainable homes and neighbourhoods</li></ul>	<b>A sense of wonder</b> <ul style="list-style-type: none"><li>● Distinctive design</li><li>● Culture</li><li>● Play and recreation</li></ul>
<b>Health equity</b> <ul style="list-style-type: none"><li>● Housing standards</li><li>● Air, noise and light</li><li>● Healthy food choices</li></ul>	<b>Getting around</b> <ul style="list-style-type: none"><li>● Walking and cycling</li><li>● Public transport</li><li>● Cars</li></ul>	<b>Local community</b> <ul style="list-style-type: none"><li>● A sense of belonging</li><li>● Local businesses and jobs</li><li>● Service</li></ul>



Image supplied by: Berkeley Group



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## 2. Interviews

# Kidbrooke Village - South East London

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Developer:  
**Berkeley Group**

### **Project overview:**

Located in South East London, Kidbrooke Village is being developed on the former 1970s Ferrier Estate, with more than 5,000 homes set amongst 86 acres of green space. It's become a well-known site and example of successful BNG strategies and green infrastructure implementation over the last decade. There has been a process of re-wilding at Kidbrooke, succeeding early plans based around traditional parkland. Berkeley has been working in partnership with London Wildlife Trust and landscape designers HTA Architects, to deliver a predicted BNG of more than 250% upon completion. Kidbrooke includes the redesign of the 8.1 ha Cator Park, which contains wetland habitats, swales, wildflower meadows, hundreds of new trees and wild play spaces, with more to come as the parkland matures. Berkeley has committed to achieving an environmental net gain on all its sites by 2030, holistically identifying four priority areas where it can mitigate environmental pressures: water, climate, pollution and ecology.



Image supplied by: Berkeley Group

## Interview with Louise Clarke - Group Head of Sustainability and Paul Covele - Landscape and Estate Manager (Sep 2023)

### 1. There are countless benefits to protecting and restoring nature and green spaces. In which ways does Berkeley value green spaces?

Berkeley really values green space as areas for our residents and the local communities to interact with each other, helping with their health and wellbeing and at the same time providing biodiversity for the local area. So really, nature and green spaces within our sites is about the benefits that they can bring to people, but also the beauty that they can bring to our development. And that just really helps to create a sense of place. It helps also to create a sense of distinctiveness within our sites, which adds to the quality that we're trying to deliver within our approach to place-making and it's fundamental to who Berkeley is. Green spaces are there for the community, to have those moments of informal interaction. That ability for green space to connect communities, to reduce social isolation and to facilitate those moments where people can just randomly meet, is so important.

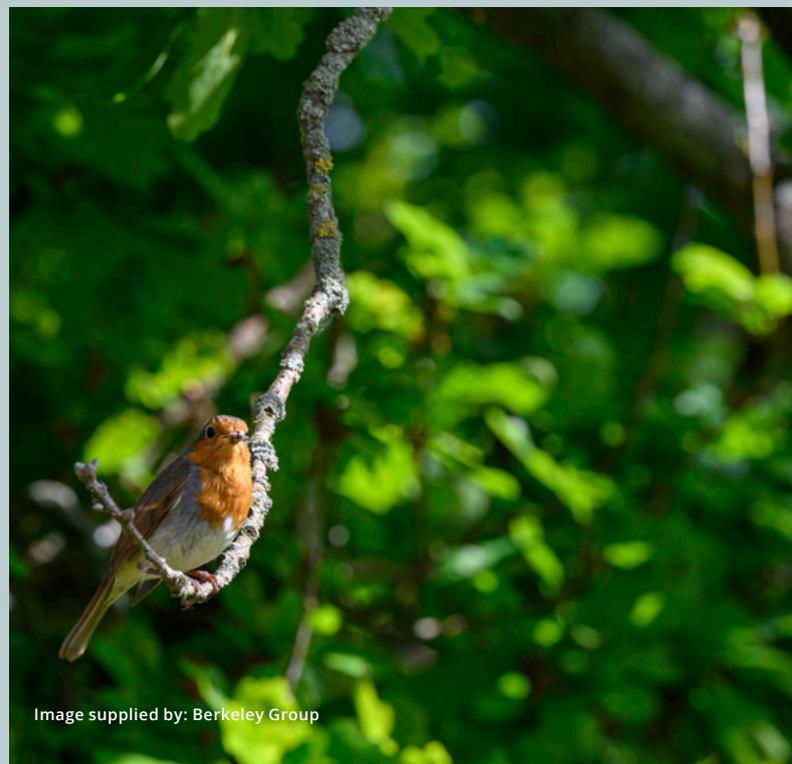
### 2. What are the main challenges behind achieving BNG?

One of the main challenges is just that each site is different, so it has to be a site-specific approach. It's really about understanding that site and what you can deliver. There's also the challenge that unless you're an experienced ecologist, it's difficult to know what that biodiversity baseline is going to be. So land teams don't necessarily understand that when they're looking at sites. They may see vegetation, which they think looks like it has no value because it doesn't look great, but actually it has a lot of biodiversity value.

At Berkeley, we haven't found it too hard to deliver biodiversity net gain on most of our sites, because we do take a landscape-led approach and we value the design of green spaces in our developments as we know the wider benefits. Another challenge we do come across, however, is around maintenance and people's expectations. Educating architects as well is important because there's a traditional approach of designing nice, clean, straight lines with closely mowed grass. But this doesn't really benefit biodiversity. So it's changing that mindset and people's expectations.

This also makes a difference when it comes to the maintenance side of things. We need to train the maintenance teams who look after our landscapes because they're very quick to use a power tool and make everything nicely squeaky clean and very boxed off. We also need to explain the benefits of wilder landscapes to local people so they understand why some parkland looks a bit less neat and tidy. We do this in lots of ways and on the whole local communities are very positive and supportive if you explain things thoroughly.

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In terms of the Natural England metric, we have used it from the beginning and do think it's useful, it should also include species as a requirement. Additionally, what could be looked at is more funding and training for local authorities. We all recognise that council resources have come under real pressure in recent years so taking on these additional responsibilities will be a challenging and some teams will need support to upskill and deliver effectively.

### **3. How is Berkeley overcoming those challenges?**

There was an element of having to explain to residents what we were trying to achieve at Kidbrooke. But once we explained, they really bought into it. So everyone's bought into that ethos now and as it's developing more, they can all see the benefits of it. So good communication is key, it's pretty vital and explaining what the benefits of certain designs and of biodiversity are on the site. There's often a notion that people want things instantly, but a good landscape is not something that can happen instantaneously.

We have done a lot of training across the business internally on BNG as a subject and we continue to make sure all of our land, planning and technical teams are aware of it. So we've upskilled our internal workforce quite a lot.

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*Long term maintenance is another big issue that takes time and commitment to get right. The traditional approach to looking after neat and tidy landscapes has to be challenged.*

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### **4. Are there any specific initiatives or parts of the green infrastructure at Kidbrooke Village that you think bring people together and connect communities particularly well?**

Kidbrooke's parks have become quite a hub for the local community. So you're not just seeing the residents, but you're seeing the wider community using the spaces as well - it's become quite a central point. It's not just for the residents, it's a public park. We've had a lot of interaction with London Wildlife Trust and we've taken a lot of advice from them. They check on how the landscape is developing and they have bug walks, bat watches and lots of things for children in the local community.

In terms of accessibility, even though the contours of the land are up and down, it's all step free access throughout the whole park, even from the residential blocks, where we've got bridges over the water features for example. It's free access all the way through. Paths are very open and wide. You've got seating in the shade, you've got seating in the sun. But sometimes you need to limit access. For example, not to put seating on the water's edge, so ground nesting birds can have the access which people never really used to see or appreciate.

Long term maintenance is another big issue that takes time and commitment to get right. The traditional approach to looking after neat and tidy landscapes has to be challenged. At Kidbrooke the London Wildlife Trust has been a big help and we now have a good routine in place which respects the different habitats and treats them appropriately. There are also volunteer groups like Friends of the Park and residents forums who take a close interest. Berkeley also employs a community engagement officer at Kidbrooke who bases lots of really positive activity around the natural landscapes so it's increasingly well understood.

It's great to see how much the park gets used now compared to its original design, when it was just a field of grass and until we put in a lot more wild meadows etc. The sheer volume of people actually using the green space now has increased hugely because it's got multiple uses. So people can sit there rather than feeling like they're sitting in the middle of a football pitch. It's a lot more approachable.



Image supplied by: Berkeley Group

**5. Berkeley predicts that Kidbrooke Village will eventually achieve a net biodiversity gain of over 200%. Do you have a minimum BNG requirement that you are seeking to achieve across your portfolio?**

We didn't set a percentage target when we first launched our BNG strategy as it's all dependent on your biodiversity value at the baseline. So some sites may be doing a lot to get that 10% gain, but then you might look at another site that's got 800% gain and they're doing a fraction of what that site that achieved 10% had to do. That's why we've not been very keen on a percentage gain because it's all dependent on what the site has to begin with - and so you can't tell if a 200% or 800% is better in terms of actual quality of biodiversity. It's very site specific and the type of species is very specific, contextual and dependent on the survey done before. But, it should be 10% as a minimum percentage as this is easier to understand as a biodiversity value for communications purposes across industry and it is an achievable amount as a bare minimum.

**6. Your relationship between different stakeholders at Kidbrooke was key to its success. What advice would you give to other developers, local authorities and green organisations so future projects can be similarly successful?**

The most important advice is to think long term about how these habitats will evolve and function. Our focus on native planting, for example, and not shoehorning certain plants in because they look

pretty, is because we want the right location and context. With the right infrastructure behind it, nature can flourish. This means our landscapes stand the test of time a lot longer and you're not having to repeat repair and replace all the time. This more natural approach can save you money in the long run. Our advice also would be to developers and local authorities is that early on during planning, focus on getting the right maintenance regimes. This means not coming every week and mowing the lawn. And it may be more expensive for a specialist to come, but they don't have to come as often. This approach just needs to be more acknowledged.

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# Queensland Court and Gardens - Glasgow

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Consultant:

**Building with Nature**

Owner:

**Southside Housing  
Association**

## **Project overview:**

Located in Cardonald, just south west of Glasgow, Queensland Court and Gardens is a green infrastructure retrofit scheme surrounded by two existing apartment blocks, offering a total of 228 homes. It's within the 10% most deprived areas of Scotland, according to the Scottish Index of Multiple Deprivation 2020, and is enclosed by a railway and dual carriageway to the north and east. The close working partnership between the owners and managers of the tower blocks, Southside Housing Association, and Glasgow City Council made for a very successful green retrofitting project by creating a new green infrastructure asset which utilises an underused open space. Importantly, Queensland Court and Gardens is an impressive example of combining nature based solutions to flood risks, with community-led design and engagement practices - a process which meaningfully aims to understand why and how the space is valued, and asks what good looks like with and for local people and residents.

## **Interview with Dr Gemma Jerome - Director, Building with Nature (Aug 2023)**

**1. There are countless benefits to protecting and restoring nature and green spaces. In which different ways does Building with Nature value green spaces?**

We see BNG as just one part of a wider function, like one colour of an artist's palette. We tend to talk less about value and more about how you can define and measure what you want a feature to do, so it can deliver certain benefits. We're very

focused on, yes, the intrinsic value of nature, but also on supporting a whole range of stakeholders, to more effectively and consistently understand the instrumental value of nature - moving away from a binary notion and to incorporate notions such as social value. An individual feature, like a tree, is not a fixed entity - you need the right conditions for its roots, to be able to support itself through healthy soil and irrigation, otherwise it won't reach its optimal growth and canopy size in order to then deliver those associated functions around carbon sequestration and around urban cooling, for example. So we talk about the right feature, or the right tree for the right place. And this all depends on quality; quality of design and delivery.

I would say that we exist as an approach that is all about underpinning quality through knowledge, skill and exchange - not just to understand the value of nature but to actually be able to effectively and consistently deliver it. So people sometimes kind of conceptualise it as we've got biodiversity net gain, we've got green infrastructure, we've got social value and wellbeing almost as pillars, but without getting too abstract and academic, I think it's really important to just say upfront that for me, green infrastructure is the umbrella and what that can deliver is, well, biodiversity net gains.

### **2. What are the main challenges in achieving BNG?**

One of the main challenges in achieving BNG - and I think there is an important point to be made here - is how it's actually being framed and conceptualised. It's seen as almost a separate pathway but in my mind, the function of the planning system has always been to deliver better places for people and wildlife - for all.

In that journey of planning, as a discipline, whilst we understand better than ever the role planning has on counteracting poor living conditions for humans, we have also, inadvertently, created poor living conditions for all other species through our industrial activity. So biodiversity gains are for me a vital output of the planning and development process and system - set up to mechanise the benefits of nature. And I think context is the key word for me and it's the key word for nature, because what we're talking about here is what good looks like and what good looks like for nature. So we ask our assessors to consider context almost above all else. You have to determine the quality, not just the biology of what habitats are there, but the quality of that habitat, making spaces as adaptive as possible.

It's fascinating to talk to an ecologist because you can't teach someone ecology in half a day. So in terms of another challenge - you need to ensure that the person assessing BNG has the professional experience, skills and knowledge to get the best outcome. It's about language and realising also it's about the bigger picture. A very practical challenge is that we have a deficit of ecologists who will be able to process and monitor this mandatory requirement. And over 30 years - who has liability? The developers are gone - does this mean the management companies? Who's going to enforce that? There's also the question around do we have enough land. And in terms of registering land for off-site BNG - are we going to have to start allocating land in the local plan process? It's very early days and there's a lot of unknowns.

### **3. How can Building with Nature help overcome those challenges?**

Building with Nature has defined high quality green infrastructure through a standards framework and accreditation system.

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What this means is that we're offering industry a standardised approach to understanding what the functions and benefits of green infrastructure are, as the main mechanism for delivering nature-based solutions - essentially a set of holistic design principles. Our quality standards relate to design, implementation, location, the management approach, maintenance and monitoring of interventions. A commitment to quality will secure both the functionality and benefits of these nature-based solutions and how they're equitable. We also offer free training and CPD to the sector, supporting plan and policy making, and we support local authorities in allocating land.

#### **4. How important was it for BNG to become a legal requirement? Is 10% enough and does it override the ambitions or authority of local plans?**

In my mind, the reason green and open spaces have evolved into this concept of green infrastructure is to elevate the importance put upon nature and nature-based solutions in the planning process, because it's impossible to argue against the critical nature of infrastructure for humans to go about their lives. So we talk about green infrastructure as being critical infrastructure. We see biodiversity gains as a deliverable or an output of the whole typology of green infrastructure's function and benefits.

The importance of that is that it actually unlocks the potential of the system, which otherwise is primarily set up to deliver economic value for

the investors that are driving that development process. But they've been talking about biodiversity net gain way before it became a kind of Natural England trademark concept. The big difference in terms of it now being a legislative mandatory requirement is that it essentially levels the playing field, so all developments have to deliver that. And that's important in a competitive kind of market, economic context.

It also brings forward clarity of ambition and says there's still room for competition. It's important to understand BNG as a mechanism that expedites the ambition of the planning system and the planning process to deliver functions of benefits to people. It essentially creates a backstop, you know, it raises the baseline. So instead of just relying on the market delivering it because it's the right thing to do, it says actually that isn't working, that wasn't working.

*“So we ask our assessors to consider context almost above all else.”*

We've seen a catastrophic collapse in biodiversity over the past 100 years and it's only going in one direction. So this legislation does the bare minimum, which is to say, every single project that comes through the planning system now has to demonstrate through measurable outputs over a period of time, not just at planning approval, but over a 30-year monitoring period.

It has to deliver unequivocally an evidence based set of data, that shows that biodiversity is being supported through the interventions that have been designed into a development project. I think in this particular liberal market economic model, or whatever you want to call it, it was vital for it to become a requirement. With this 10% minimum enhancement, I think the key point there in my mind is it still allows for a diversity of ambition on both sides.

### **5. In what ways can green infrastructure and maintenance function as a way of connecting communities in the long-term?**

I think the big finding throughout my career is that management and maintenance is best achieved through a partnership approach. Being involved and having a sense of ownership is critical to a sense of belonging and therefore can substantiate somebody's feeling of a place based connection and a people based connection. So we talk about communities of geography, communities of interest. People come together by having access to the same space, like 'this is our garden'. There's a lot of literature around community gardens and the benefits they bring because of that sense of belonging in communion.

Practically speaking, there are activities which work really well as an entry level, like responsibilities for community groups and environmental stewards.

And then there are activities which are perhaps more critical to a green infrastructure functioning well and remaining at the desired level of quality to, for example, deliver benefits for habitats or to mitigate flooding or drought. But there will always be exceptions in every model. I don't think as a general rule that voluntary-led environmental stewards and community groups should be given responsibility and therefore liability around the direct functioning of green infrastructure, in so far as it's critical infrastructure for a place to work.

“*So we talk about green infrastructure as being critical infrastructure. We see biodiversity gains as a deliverable or an output of the whole typology of green infrastructure's function and benefits.*”

We've got a project called Queensland Court and Gardens in Glasgow. It's a really nice project where Southside Housing Association owns the buildings and the land. They have been working in a really meaningful way over a long period with the residents and working with them to understand

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how the space is currently valued - asking what's working well, what's not working well? And do they have a sense of what good looks like? We've talked about how, until people have seen high quality, they might not aspire to it or ask for it because they don't know what's possible. It's that art of the possible, which is a really important part of a meaningful community engagement process.

So housing associations are often quite good examples of where they have skills in a meaningful co-designed participatory way with residents because they exist. What I mean is there's an existing community that you're bringing on a journey with you, unlike a greenfield site. With Queensland Court, you've got an existing community made up of individuals and families, so adults and children. You've got people of different ages looking for different things out of the green infrastructure. For Queensland, they wanted to design in as much accessible and inclusive green infrastructure provision as possible. And part of that was recognising where the community were at in terms of being able to feed into both the design process and the ongoing management of maintenance, but not saying, well, that's their limit, thinking people can't change, thinking people can't come on a journey - they can.

Sometimes that's about facilitating and inviting people in. What they did at Queensland is they had some additional funding through a project that Nature Scotland and Glasgow City Council were in charge of called 10,000 Rain Gardens. It was a Scottish project where they implemented some rain gardens before any of the big infrastructure works took place and which were planted during a community activity day.

*“It's that art of the possible, which is a really important part of a meaningful community engagement process.”*

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*I don't think as a general rule that voluntary-led environmental stewards and community groups should be given responsibility and therefore liability around the direct functioning of green infrastructure, in so far as it's critical infrastructure for a place to work.*

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### **6. What role can the local community play in the maintenance of local green spaces? And in what ways can developers and planners promote feelings of ownership and control whilst protecting the environment?**

Often it's the case that the stakeholders that will have the contract for the design are different from those who will then pick up the contract after construction, after completion. But there are mitigation measures that can be put in place. For example, once you have established the planting and the green infrastructure components that make up your new place, your new intervention, your new green space, it's about ensuring that the community engagement doesn't stop there.

Community engagement is actually the bridge between all the phases. So you plan for community engagement to extend beyond the point of completion and beyond the project being in use. Ideally, it's in perpetuity and the community engagement is picked up by a group of volunteers, maybe a friend group or equivalent by an existing anchor organisation, like a social enterprise - somebody who has a stake in that community and has trust in that community.

There are well-established mechanisms where the ongoing community engagement is secured or at least facilitated by more structured work led by a housing association, or at least funded by them, and maybe organised and maintained by the community themselves.

But it can vary quite a lot depending on the social capital of the community and whether they get support to do that, whether there are individuals who have the skills to establish and sustain.

The best practice and evidence is really strong on this: where people feel connected to where they live, there are higher levels of retention in terms of there's less churn so there's fewer people moving. But also it links back to the research around people having a sense of, "I feel safe here", "I feel like I belong here", "I feel like I'm important, like I'm valued because I contribute." And that can have a measurable impact on mental health, physical health.

The other body we haven't talked about is management companies. A lot of green infrastructure will actually be handed over to a management company. Even with the housing association, they're likely to have a preferred contractor and it's much more likely to be that than the council these days. So I think it, some of it comes down to the sophistication of the management company and their knowledge of how to have interpretation boards, for example. So people are clear that if a whole area is left at a certain time of year, why is that?

It shouldn't be that everyone is expected to get involved in stewardship and that somehow if they don't, they don't care. There's a whole catalogue of reasons why people don't want to get involved, but that is different to making sure everyone feels brought into why an area is the way it is. Partly, that's about information and making information freely available and being proactive in sharing information. So using as many channels as possible, having notice boards, having even seasonal or meanwhile interpretation boards, having leaflets or flyers or even in a new community, a home buyer pack might include information. There's all these layers of social complexity.

*“It's about unlocking a sense of control and the feeling of permission to get involved and put your hands in the soil and to go, actually, this is our land, this is the commons, this is our communal heritage.”*

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For example if you feel like you don't have much control over any aspect of your life and an artificial lawn helps with this, then that's really important for individuals. Having adaptive management to allow for change is the message there. It's about unlocking a sense of control and the feeling of permission to get involved and put your hands in the soil and to go, actually, this is our land, this is the commons, this is our communal heritage.

### **7. In what ways can projects improve access to nature for people of all ages?**

At Building with Nature, we talk a lot about accessible and inclusive green infrastructure. When we talk about accessibility, it's not just physical access, like how people get to and move around inside the green space and the natural landscape. But it could also be visual and auditory access. So for people who are not able to leave their premises, for example, somebody who is in a level of acute care and whether they can look out of their window and enjoy a green space. If you live in a flat, in a very dense environment, you might have the street tree that existed prior to that apartment, but a new building might not have that offer, you know, a natural context to that built form. It doesn't have the other benefits either, like cooling or a sense of seasonality that can be helped by nature.

Whether somebody can use and enjoy green space will also depend on their age, and their cultural and social background. I think play for all ages is important and having a very holistic understanding of the importance of play and it not just being formal play opportunities or sport provision, but it being about having a flexible environment that is playful, that allows people to be creative and move things around and to be, to be able to be inactive.

And I also talk about tranquillity, people of all ages want tranquillity. It's certainly true that noise pollution is impacting people's mental health. There's lots of evidence that shows access to bird song, for example, is beneficial. Also appropriate lighting for park exits and entrances, as well as temperature through grouped trees. I was speaking to a forum recently, who said, you know, just simple things like they couldn't get their wheelchair through certain gates. They were designed for wheelchairs that were being pushed and, and that's a different way and width if you are the one doing the pushing. You can't create these standardised built environment responses that are not experienced.



# Climate Innovation District - Leeds

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Developer:

**Citu**

Civil and structural  
engineers:

**Civic Engineers**

## **Project overview**

The Climate Innovation District (CID) is a new sustainable community next to the River Aire in central Leeds, built by local developers Citu, who are focused on climate resilience adaptation and low-carbon construction. Civic Engineers were the civil and structural engineers for the project from the very start, acting also as Travel Plan Coordinators and advisors on sustainable urban drainage systems and water management. The development turned a central brownfield site into a mixed-use neighbourhood of 516 low energy homes with integrated amenities and resilient green spaces. Houses and apartments all use solar panels and are made from timber frames made locally on site to reduce carbon emissions. The concept was based on a Scandinavian style of urban density, enabling a car-free environment and prioritising pedestrian and bicycle-friendly access. High-quality green space has increased social interaction and integration, providing spaces for physical activity and play, improving air quality and reducing urban heat island effects. Green infrastructure is embedded throughout the district plan, with rainwater and stormwater collection as part of an integrated urban drainage system. Green roofs have increased biodiversity levels and reduced flood risk and summer overheating.



Image supplied by: Kevin Barton @ Robert Bray Associates



Image supplied by: Berkeley Group



Image supplied by: Civic Engineers

## Interview with Paul Morris - Director, Civic Engineers (Nov 2023)

### 1. There's been some acknowledgment of the challenges around using the BNG metric and scoring method. What are your thoughts on this?

One of the challenges from a BNG perspective is that actually you can do lots of great work, but at the end perhaps score a lower rating once the works are complete. Say, if you take a redundant brownfield site where the plants have started to occupy just naturally, the original survey may score quite high because the habitat is very specific and concentrated. This type of urban mosaic landscape, which is naturally occurring and where specific species have colonised the brownfield site, is difficult to replicate on developed sites where you've changed the habitat, despite introducing all kinds of great features.

Though in terms of the percentage becoming law, it's actually been really beneficial for us as we've always advocated for this approach. We've always promoted bringing nature into the urban landscape, but it does present challenges for developers. It does mean that some sites become unviable for development, which might be the right answer. BNG is now a critical element of the appraisal process for a site and it is forcing the hand of developers to take it seriously. But if it's a really precious ecological example, there is a mechanism for offsetting, which obviously helps and it increases costs rather than making it impossible to develop a site. But I believe the way it's structured is that, from a financial perspective, it would always be more viable to deliver on site. And if you are offsetting, you have to demonstrate that there's a really good reason why you can't accommodate the gain on site.

The holistic benefits of bringing nature onto sites means that if you're spending money on your site through creating a better environment, you're really adding value to your development. We're looking at an approach where people can pool contributions and collectively pay for the introduction of sustainable urban drainage systems or street trees, or for a complete transformation of the landscape within the vicinity or within that neighbourhood. And in terms of adding value whilst offsetting, this is preferable than it just being a random choice.

### 2. Could you expand on the wider benefits of the exemplar design features at the Climate Innovation District in Leeds?

The developer did originally advocate for a zero car development, but after this got pushed back by the local authority they provided space for a number of cars but tucked them away within a basement. Now all space which would traditionally be for streets are linear green spaces. Every home has a small, semi-private space outside, but it's a drain garden and the downpipes drain into it to act as water brooks. And then the rest of the green space is shared and these linear green streets are shared. You've got access to the river there and they created a habitat for otters and other species along the river bank. And one of the interesting things is that actually, whilst there's a new community that's growing and that's using the open spaces, people also come from the wider area and use the streets and spaces. For example, there's some decking by the side of the river where a non-resident hosts yoga classes, and all features have become real assets for the community. So it's become a phenomenal development and a great place to live.

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*The holistic benefits of bringing nature onto sites means that if you're spending money on your site through creating a better environment, you're really adding value to your development.*

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Image supplied by: Civic Engineers

When you look at it in conjunction with creating attractive streets, there's also the increased value of encouraging people to spend time and money on the street and amenities. Also the benefits in terms of creating attractive corridors for walking and cycling means there's health benefits and this benefits the economy too. I think when you look at it all collectively, there's definite and obvious wins. I'm not sure if the metrics for BNG capture all these at the moment.

### **3. Good maintenance is a key to the success of green infrastructure, but it's a challenge both for local residents and the council - could you expand on this? And maybe highlight other challenges for the council?**

I will briefly touch on our sustainable urban drainage system retrofitting projects in Lambeth. One of the key elements of these projects has been the community engagement and co-design. After identifying the need from a surface water management perspective of delivering sustainable drainage to deal with a surface water management challenge in a particular street or a particular area of the neighbourhood, it's vital to engage with local people to understand their feelings around the flood risk issues, but also around how they use the space, how they move around the streets, where they would like to see the features and what they see as the challenges around the introduction of the features.

Removing car parking spaces or other elements within the street can be particularly contentious, but actually getting the community bought in at that early stage means that they can contribute to the design, understand the benefits, understand that this is a positive thing being introduced - something that can help them and mitigate the risk of flooding. We try to engage with local communities and local schools in the management and maintenance of the features. The whole process is massively beneficial from an educational perspective, the schools involved teach pupils about the nitty gritty of plants but also climate change and what we can do.

In terms of maintenance, companies get employed by the council to maintain these spaces, so often the local community itself doesn't really have to maintain them. The community element is more associated with the planting and management of the plants on a voluntary basis, and it is very educational. But there is a big challenge at the moment, not necessarily about how difficult it is to maintain, but more the perception - how to maintain it. A local highways team for example will say we want to avoid these features because of

the maintenance burden. What people often don't realise is that maintaining the planting is more straightforward than maintaining the grass verge, and the infrastructure is essentially the same as maintaining road gullies.

Ultimately, the responsibility for maintaining those features would sit with a dedicated maintenance company. But engagement, education and bringing the community on board with the projects is vital.

So the specifics of maintenance strategies and learning from exemplar schemes is important. We quite often take local authorities over to a scheme that's already been developed, talk to the council officers in that area about the challenges and how they've been overcome and how actually it's relatively straightforward to maintain and that it's created this beautiful street. So the more we do it, the more examples we've got and the more it becomes normal and there's that kind of ripple effect across the industry.

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*So the more we do it, the more examples we've got and the more it becomes normal and there's that kind of ripple effect across the industry.*  
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Another challenge is the way that projects are currently funded. Quite often, a local authority will have some money to allocate for surface water management, some money to allocate for active travel and money for repaving a section of the high street. But the timelines often don't align. So you're having to spend money on active travel infrastructure, whilst not necessarily considering the benefits that green infrastructure can bring to that section of street. There's missed opportunities on that front as well. But it's getting better. Certainly in Manchester, where I'm based, now the travel schemes are coming forward with a requirement or preference to include green infrastructure. And along with some of the work we're doing in Ireland, we've just produced guidance for nature based solutions as part of active travel projects. But it's always been a problem where projects aren't joining the dots and are siloed away.

### 3. Recommendations for best practice



The takeaways from these interviews can form lessons of best practice for those wanting to deliver development that is better for nature - whether that's to meet the requirements of the new biodiversity net-gain legislation or to go above and beyond. For more information on the benefits of nature on our health and wellbeing, consult the [Quality of Life Framework](#).

### 1. Embed green infrastructure from the very start

- It is vital to see green infrastructure as critical infrastructure. BNG has elevated the importance of nature and nature-based solutions in the planning process. Best practice illustrated through Berkeley and Kidbrooke shows that a landscape-led approach from the very start of planning and development not only results in a biodiversity net gain but wider benefits including the social sustainability of a neighbourhood.
- For developers this means, during project planning, focus on developing an internal strategy addressing BNG on new sites and at early terms of contract stage. Simultaneously, getting the right and appropriate maintenance regime in place at this early stage is also vital to make sure the cost-saving potential of nature-based solutions can be realised.
- Local authorities should also look at developing funding models to enable long-term planning for green infrastructure which is not piecemeal and allows for nature-based projects to succeed. A connected model where green strategies can be integrated within all infrastructure plans will secure the long-term success of and develop the necessary holistic sustainable design of public spaces.<sup>2</sup>
- A perception change is needed so green spaces are not seen as a liability but as an asset. The maintenance perception of nature-based solutions can seem daunting, but if done correctly, these

strategies and green spaces are less work in the long-term. Money can be saved in changing the maintenance regime to support a biodiverse and climate change resilient landscape.

### 2. Invest in experts

#### “You can't teach someone ecology in half a day”

- There's a knowledge and skills gap within local authorities, as well as in the private sector, which risks low quality implementation of quality holistic green infrastructure plans. Assessing BNG requires specific ecological knowledge, but it's also about seeing the bigger picture. A deficit of ecologists will mean the processing and monitoring of this mandatory requirement will be a challenge. Increased funding and training for all sectors is required. This short-term investment in ecologists within the planning system will result in long-term gains and higher quality spaces. With expertise should come the ability to quantifiably measure the value and benefit of nature-based solutions, which will add to the growing evidence base and data clearly proving the long-term viability of such projects.
- A study by the Association of Local Government Ecologists published in June 2022 revealed that across 192 local planning authorities (LPA), only 5% say their current ecological resource (including in-house and external sources) is adequate to scrutinise all applications that might affect biodiversity.<sup>3</sup> The government has provided just over £20m so far for LPAs but it's not clear how exactly this money has been invested and whether it's enough to cover true costs.<sup>4</sup>

### 3. Use community engagement as a bridge

- Engagement should be the bridge connecting all the phases of a development. Planning for community engagement to extend beyond the point of completion and beyond the project being in use, will result in a feedback loop that will protect the social and natural ecosystem of green spaces. The holistic knowledge needed to implement successful ecological projects, will need to involve a commitment to context and lived experience, and this is about sharing information and communication.

- There needs to be an engagement commitment between councils or whoever is managing the land and the private management companies, with different models to suit different communities, so local people don't feel alienated. The 30-year timeline for BNG will mean those who have liability for the site will most likely change. Councils, developers, management companies and the local community need to have a system in place that protects the long-term enforcement of certain duties towards these green spaces.
- Legislation is now forcing the hand of developers and LPAs to take BNG seriously and further understand its benefits. And this new legislation can seem daunting; another over-complicated policy. But it should be seen as enabling. As much as BNG is a metric, it is also all about encouraging people to get involved with nature in their neighbourhood. Whatever someone's route is into loving nature and loving their local environment, this must be a big win. If people feel proud and connected to their neighbourhood, they're more likely to take care of it. Part of changing how BNG is being framed and conceptualised comes down to education. BNG sits alongside other deliverables like clean air and good levels of mental health across communities, and is part of a wider agenda for nature and climate.

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*As much as BNG is a metric, it is also all about encouraging people to get involved with nature in their neighbourhood*  
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#### 4. Give power to the vegetable patch, the tree garden and the guerilla gardener

- Getting local residents and communities to get involved in green projects will be vital to their long-term success. There's so much opportunity for green micro spaces within our urban environment and there's already a network of spaces that cumulatively have a big impact in terms of the green infrastructure typology. But many people don't feel entitled to go out and change certain aspects of their neighbourhood. This feeling of disconnection goes beyond our green landscape to areas such as having an active democracy and the feeling that you have a say in what happens in your local area. The demand is there - people want to get involved.<sup>5</sup>
- Local landowners and councils have a responsibility to support and empower people, so they get a sense of ownership and control over these spaces. A lot of people don't feel that sense of entitlement or the need to get involved for all sorts of reasons. Understanding why this is the case will be vital to empowering the green networks. In the end it's about people loving their local environment and to enable this, local councils / landlords will need to review how they grant permissions for local schemes to remove unnecessary bureaucratic hurdles. This could be in changing tenancy agreements to encourage home planting, for example. However, guidance is important to mitigate the risk of unsuitable planting inhibiting biodiversity.
- Incredible Edible's Right to Grow campaign is an excellent example of an independent organisation advocating for the right to plant on public land and revive neglected spaces. Hull City Council has recently agreed to adopt a formalised Right To Grow policy which places more trust in communities and recognises the wider benefits of these movements, such as reducing social isolation. These same principles could be adopted to serve BNGs long-term vision.<sup>6</sup>

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<sup>2</sup> A report published earlier this year by the Welsh Government commissioned Arup to undertake a review for flood and water management - including SuDS maintenance. It recommended that a consistent national commuted sums approach to maintenance funding is needed and that alternative mechanisms such as a service charge approach or hybrid approach should be further investigated to cover whole life costs - <https://www.gov.wales/sustainable-drainage-systems-suds-schedule-3-post-implementation-review>

<sup>3</sup> Snell, L. and Oxford, M. (2021) Survey of LPAs Ability to Deliver Biodiversity Net Gain in England.

<sup>4</sup> DEFRA Consultation on Biodiversity Net Gain regulations and implementation - Consultation outcome, Government response and summary of responses. Feb 2023.

<sup>5</sup> *Children's People and Nature Survey* - 83% of children and young people in this survey agreed both that looking after the environment was important to them and that they wanted to do more to look after the environment.

<sup>6</sup> Hull: The city set to give people the 'right to grow' - BBC News - <https://www.bbc.co.uk/news/uk-england-humber-67139881>



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