

# BUILDING A GREENER LIVING LEGACY

## OUR APPROACH TO URBAN GREENING AND BIODIVERSITY NET GAIN



### 1. INTRODUCTION

Telford Homes focuses on designing and constructing high quality build to rent developments across the London and beyond. We are committed to sustainable housebuilding and placemaking. Our homes are specifically designed to be places our residents can live in, stay in and enjoy for years to come.

We are also conscious of the twin challenges of climate change and biodiversity loss and that development done poorly can exacerbate these problems.

But done well our developments can include climate-adaptive landscapes and semi-natural habitat that supports people's health and well-being and provides space for wildlife, as well as much-needed, high-quality homes. Each development has an influence on, and contributes to, the place within which it sits, with changes to the public realm being one of the most fundamental. We aim to design and build developments that are more resilient and incorporate greener public realm that connects beyond our site boundaries.

This document sets out how we can use the concepts and techniques of 'urban greening' and on-site 'biodiversity net gain' to Build a Greener Living Legacy without a need for offset, a Telford Homes requirement. It will be complemented by a separate technical design guide highlighting some specific urban greening and biodiversity ideas and interventions that we can begin to implement.

### 2. CONTEXT

Our focus on sustainable building and living is embodied in our Building a Living Legacy strategy that informs Telford Homes' approach to creating thriving places that enable people to live sustainable lifestyles.

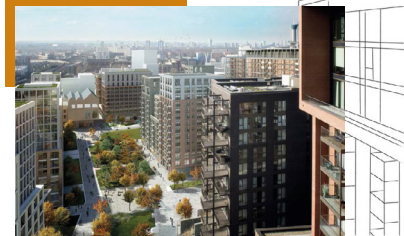
Our Building a Living Legacy strategy is supported by a Toolkit which has been developed to inspire project teams to think about how they can create more successful places by providing them with information on a range of design features and the reasons for implementing them. It promotes cross-disciplinary dialogue and design to make sure we make the most of the physical and social infrastructure that already exists in the neighbourhoods in which we are working.

The Toolkit describes ten key principles that underpin our approach. Three of these principles (Natural resources, Connections, and Healthy Places) have particular relevance to the content of this document. See Box 1.

This document expands upon these principles and provides ideas that show how a considered and collaborative multi-disciplinary approach to design and management can deliver our commitment to achieve biodiversity net positive developments; developments that create space for wildlife and landscapes that work for people.



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## Box 1 – BLL Principles relevant to this design guide

**Natural resources:** Capturing the benefits of the natural resources of the site and surroundings

Developments should use natural resources such as green space, waterways and the path of the sun to support residents' health and wellbeing and enable sustainable lifestyles. At the same time adverse effects associated with poor air quality, wind and the risk of overheating need to be mitigated through design. Teams need to understand the impacts of a site's natural environment and use it to their advantage.

**Connections:** Knitting new developments into their physical surroundings

The way developments fit into their surroundings influence how they are perceived by residents and visitors. While creating a character that is distinct within its surroundings, the development should complement the existing urban form and encourage people to visit public spaces through permeable boundaries.

*N.b. This BLL principle also includes digital connections which are not addressed in this guide.*

**Healthy Places:** Designing healthy neighbourhoods that support resident wellbeing

Neighbourhoods and homes should support resident's health and wellbeing. Amenities and spaces should facilitate physical activity and enable healthy lifestyles. A variety of spaces should be created in homes and across the development to create opportunities for relaxation, mediation and quiet repose. Steps should be taken to mitigate risks associated with poor air quality and noise pollution.

## 3. POLICY FRAMEWORK

### Why is this necessary?

We want to be a leader in sustainable development because it the right thing to do for our residents and for our business. Sustainable development attracts both customers and investors. But there is also an increasingly strong legal and policy framework which is shaping our approach and new standards being introduced to which we must adhere.

The [National Planning Policy Framework 2021](#) sets out the Government's planning policies for England and how these should be applied. It states that development should avoid adverse impacts on sites of biodiversity value, incorporate green infrastructure, and achieve biodiversity net gain.

The [Environment Act 2021](#) sets clear statutory targets for the protection and recovery of the environment in four priority areas: air quality, biodiversity, water and waste. It includes a provision for all new development to achieve a ten per cent biodiversity net gain. This mandatory requirement will take effect from Autumn 2023 following an amendment to the Town and Country Planning Act 1990.

The [London Plan 2021](#) sets the city's planning framework with new policies relating to the environmental performance of new development with a focus of energy, air quality, climate resilience and the greening of the built environment. Of particular relevance is Policy G5 Urban Greening which sets targets for the incorporation of features such as green roofs.



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Collectively this legislative and policy framework establishes a new agenda for development that will require functional, ecologically coherent landscapes to be a design consideration from the outset of the design process, and an uplift in biodiversity to be an outcome of development.

Key points from these policy documents are included in Appendix 1.

We are also a member of NextGeneration, an independent annual sustainability benchmark assesses and ranks the performance of the UK's 25 largest housebuilders. The current iteration of the sustainability criteria against our performance is measured includes objectives relating to biodiversity net gain – see Box 2.

## Box 2 – BLL Principles relevant to this design guide

### NextGeneration Sustainability Benchmark

Developed in collaboration with the industry for over 15 years, it enables homebuilders, Government, registered providers, investors, employees and the public to understand the sustainability of homebuilders' operations and the new homes they build.

NextGeneration 2022-25, the current iteration of the framework, will include objectives relating to a Net Gain Target and a Net Gain Achievement.

The Net Gain Target score will be awarded if biodiversity net gain is achieved on-site without the use of offsets, unless it can be demonstrated that greater biodiversity value can be created through a centralised approach.

The Net Gain Achievement score will be determined by the proportion of developments completed each year where the company achieved a biodiversity net gain of 20% and has a Biodiversity Gain Plan in place to ensure biodiversity is maintained for the next 30 years.

## 4. DEFINITIONS AND METRICS

### What is biodiversity net gain and urban greening and how is it measured?

New terminology and metrics have been developed to precisely describe the outcomes required from the new legal and planning policy framework. It is important to use the terminology clearly and understand the scope of the two main metrics.

#### Green infrastructure

Green infrastructure - sometimes referred to as blue/green infrastructure - is the network of parks rivers, water spaces and green spaces, plus the green elements of the built environment such as street trees and green roofs, which provide a wide range of benefits and services. Green infrastructure helps mitigate the impacts of climate change,

reduces air and water pollution, makes space for recreation and play, and provides habitat for wildlife.

#### Biodiversity Net Gain

[Biodiversity Net Gain \(BNG\)](#) aims to deliver measurable improvements for biodiversity by creating or enhancing habitats in association with development. It is a reflection of the fact that development can often be the cause of biodiversity loss, but also a potential catalyst for ecological enhancement, especially in urban areas.

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Natural England, the Government agency for nature conservation and landscape) have developed a Biodiversity Metric whereby the change in biodiversity as a result of development can be measured – see Box 2. The use of this metric will be a requirement when the mandatory biodiversity net gain comes into effect. Development will have to deliver a ten per cent net gain either on the development site or, where this is not possible, at an off-site location managed by a biodiversity offsetting provider.

## Box 3 – Determining Biodiversity Net Gain

### Biodiversity Net Gain

The approved Biodiversity Metric calculates the 'habitat units' (HUs) on the site before development, and the HUs retained or created after development. The change is simply the sum of 'the HUs after development minus the HUs before development'. The change in the number of HUs is expressed both in terms of the absolute change and the percentage change. If the percentage change is below 10% biodiversity offsetting will be required.

HUs are a proxy for determining ecological and biodiversity value. This doesn't always represent the full ecological value of a site in terms of ecosystem services provided such as flood management for example, so BNG is not a proxy for overall environmental improvement.

HUs also don't take account of species per se. Species should be considered throughout the process - especially protected species such as bats, reptiles and breeding birds, which are subject to separate legal requirements.

### Urban Greening

[Urban greening](#) concerns the integration of vegetation and green features such as street trees, green roofs, green walls, and rain gardens into the fabric of the built environment to provide benefits such as cooling, flood management, improving air quality and promoting healthy living).

An [Urban Greening policy](#) was introduced into the London Plan because parts of the city that are already densely developed lack some of the benefits of being in close proximity to existing parks and green spaces. It is also a recognition of the need for all developments to contribute to adapting neighbourhoods to the impacts of climate change. The Greater London Authority has published guidance on the Urban Greening Factor which explains the process of determining the UGF score. See Box 3 for a summary.

Unlike Biodiversity Net Gain there is no requirement for offsetting if the recommended score is not achieved. However, the reasons for non-compliance will need to be explained and accepted by the planning authority.



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## Box 3 – Calculating the Urban Greening Factor

### Urban Greening Factor

The Urban Greening Factor is a tool to evaluate the quality and quantity of urban greening.

Different types of 'greening' (e.g. natural habitat, green roofs, naturalistic sustainable drainage, etc.) are assigned a different factor depending on ecological or environmental function the greening provides. For example, semi-natural vegetation is given a factor of 1, a biodiverse green roof a factor of 0.8, and amenity grassland factor of 0.4). The tool sums the areas of greening by its factor, and divides this by the total area of the site to give an urban greening score.

## 5. DELIVERING BIODIVERSITY NET GAIN AND URBAN GREENING

### Principles and design cues

The biodiversity net gain and urban greening metrics are calculators which are designed to inform decisions. The targets or scores required by legislation and policy are not outcomes in and of themselves. Good design solutions should not be forgone in order to simply meet the metric.

#### Principles

The following principles are important considerations when determining the design and delivery of biodiversity net gain and urban greening.

- Think about urban greening and biodiversity requirements at the earliest opportunity. They should not be regarded as simply as a constraint; they can be an opportunity to achieve our wider BLL commitments.
- A consideration of biodiversity net gain and urban greening should influence all stages of the development process from pre-planning, to masterplanning and detailed design, and through to how new homes and neighbourhoods are managed, marketed and promoted.
- Even at site acquisition, biodiversity net gain, in particular, should be flagged. Sites with an existing high biodiversity value, by virtue of containing priority habitats, will present significant challenges if these habitats are lost or degraded as a result of development.
- For most development sites it is the design process where biodiversity and urban greening needs addressed through a cross-disciplinary collaborative and iterative process. Box 4 illustrates where this needs to be factored into the RIBA Plan of Work stages.
- Achieving the biodiversity net gain and urban greening standards does not obviate the need for addressing other nature conservation requirements such as the protection and conservation of protected species (such as bats), although well-considered urban greening and biodiversity net gain can often dovetail with protected species requirements.
- Encourage residents and community groups to be actively involved in the management of the landscape through meanwhile use of spaces or through training and support to provide appropriate skills and knowledge.
- Ensure the property management contractor and their landscape contractors are encouraged to engage and support local residents and community groups.





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Box 4 – RIBA stages and ecological design considerations

RIBA STAGES	TELFORD HOMES DESIGN AND DEVELOPMENT TEAM BIODIVERSITY AND URBAN GREENING CONSIDERATIONS
<b>0. Strategic Definition</b>  Project scope and feasibility Produce vision	Identify the biodiversity and urban greening requirements of local planning policy, and any biodiversity or wider ecological constraints or opportunities within 500m – 1km.
<b>1. Preparation and Brief</b>  Appraisal of spatial requirements Identify desired outcomes	Commission a preliminary ecological and green infrastructure appraisal to identify any constraints on site (such as protected species or priority habitats), and potential opportunities (such as the location of the site within a wider ecological or green infrastructure network).
<b>2. Concept Design</b>  Architectural concept Strategic engineering needs Outline plan	Commission an Ecology Strategy alongside and integrated with the Landscape Strategy. The Landscape and Ecology Strategy should include: <ul style="list-style-type: none"> <li>• Pre-construction BNG calculation.</li> <li>• Initial UGF calculations.</li> <li>• Alignment of BNG and UGF requirements.</li> <li>• Specific proposals relating to protected species, if required.</li> </ul>
<b>3. Spatial Co-ordination</b>  Masterplan, including spatial arrangements, character areas and materials palette	Ensure Masterplan is informed by Landscape and Ecology Strategy.  Masterplan documentation to include: <ul style="list-style-type: none"> <li>• Final BNG calculation</li> <li>• Final UGF calculation</li> </ul>
<b>4. Technical Design</b>  Detailed technical specification	Ensure ecological consultant reviews and advises on detailed design of landscape and buildings, especially regarding BNG calculations (see Note below), protected species issues, and siting of such as nest-boxes and other building-integrated features.  Ensure ecological consultant is fully involved in preparation of Construction Environment Management Plans (CEMPs) and Landscape and Ecology Management Plans (LEMPs), as required.  <i>Note – both BNG and UGF calculations may need to be revised if further detailed design results in material changes to design parameters.</i>
<b>5. Manufacture and Construction</b>  Logistics; inspection; maintenance manual	Appoint ecological consultants to support landscape architects to oversee implementation of ecological features and landscapes; and an Ecological Clerk of Works role to provide oversight on protected species issues (if necessary).
<b>6. Handover</b>  Review and evaluation	Use expertise of ecological consultants to support marketing team in promoting and explaining ecological landscapes and features on site.  Undertake review and evaluation of BNG and ecological outcomes as required to inform future schemes.

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## Design cues

Development design is informed by a wide range of constraints and requirements. Some are mutually reinforcing but some are in tension. Minimising the impacts of constraints imposed by nature conservation requirements and/or optimising the range of benefits provided by urban greening can be achieved by considering these design cues during the development design process. This is a task for the design team as a whole not just the ecologist and landscape architect.

- Understand the spatial context of the development site in relation to existing natural resources such as protected sites and green corridors. As well as designing a scheme to avoid adverse impacts on these sites and features, their proximity could present opportunities for development to enhance them or connect to them.
- Do everything possible to avoid adverse impacts on existing biodiversity or green infrastructure on site, especially mature or semi-mature trees. Where impact is unavoidable minimise the scale of impact. Then consider if there are opportunities to enhance any existing features within or adjacent to the site.
- Explore the potential for urban greening and ecological enhancement to be implemented throughout the development at every level and on every surface, not just through terrestrial landscaping. In urban environments features such as green roofs can be especially valuable.
- Aim to implement sustainable drainage solutions (SuDS) that use naturalistic features such as rain gardens or bioswales.
- Create layers and mosaics of planting and small wetland features where possible. In an urban context, structural complexity, and the provision of semi-natural wetlands (even small ones) are often the best ways to ensure ecological improvement.
- Use locally native species of flowering plants, shrubs and trees where new landscapes are adjacent to or connecting with existing semi-natural habitats. But don't be averse to use non-native species in more formal spaces or where growing conditions are unsuitable for native species. But do select non-native species which are wildlife friendly, especially for pollinators.
- Take into account that tall buildings and high-density development can create additional shade, rain shadows and wind-tunnelling that might create challenging conditions for certain types of landscape, habitat and wildlife. These conditions might provide scope for innovative solutions too.
- Make the most of blank facades which can provide a canvas for green walls or climbing plants.
- In addition to creating wildlife habitat through planting and urban greening constructed features such as nest-boxes for birds, roosting-sites for bats and structures for bees and other invertebrates can be included in most developments.
- Consider long-term management requirements and the likelihood that landscapes in urban developments will be subject to high levels of use and the increasing impacts of climate change. Select plants that are tolerant of shade or drought and create landscapes and habitats that will thrive in low nutrient soils in order to reduce the need for irrigation, enrichment and intensive management.

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These design cues are supported by an increasing amount of supplementary information and guidance that should be used to inform the work of the design team. Listed below are some of the most useful resources which are of particular relevance for our work in London and around London.

## Supplementary policy information

- Greater London Authority [Green Infrastructure Focus Map](#)
- Greater London Authority's [All London Green Grid](#), [All London Green Grid Area Frameworks](#) and [London's Natural Signatures](#)
- Greater London Authority [Urban Greening and Biodiversity Net Gain: A Design Guide](#)
- Greater London Authority's [Healthy Streets for London](#)
- London Wildlife Trust's [Site of Importance for Nature Conservation](#)

## Topic specific design guidance

- Greater London Authority [Living Roofs and Walls: from policy to practice](#)
- Greater London Authority's [Using Green Infrastructure to Protect People from Air Pollution](#)
- Trees and Design Action Group [Trees in Hard Landscapes](#)
- Trees and Design Action Group [Tree Species Selection for Green Infrastructure](#)
- Forest Research [Urban Tree Manual](#)
- London Tree Officer's Association [Surface materials around trees in hard landscapes](#)
- Tree and Design Action Group [First Steps in Urban Air Quality](#)
- Tree and Design Action Group [First Steps in Urban Heat](#)
- Urban Design London [Designing Rain Gardens: A Practical Guide](#)
- London Wildlife Trust [A Buzz Up Top: Encouraging the conservation of invertebrates on living roofs and walls](#)
- Bat Conservation Trust [Landscape and Urban Design for Bats and Biodiversity](#)





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## 6. PUTTING IT INTO PRACTICE

We are at the beginning of our journey to properly integrate urban greening and biodiversity net gain into our development projects. But we have already begun to test our approach with some of our more recent developments, such as The Pavilions and New Garden Quarter. They provide prototypes which we aim to improve in the future.

### The Pavilions, Islington

The Pavilions is a development of 156 new homes, of which 38% (60 homes) are affordable with the remainder for private rent. The site had formerly been occupied by a warehouse which had been demolished during construction works for the HS1 railway line to allow the site to be used for storage and access works during the railway construction. On completion of the railway works the site comprised a large concrete pad with a species-poor secondary woodland along the embankment which had been designated as a Site of Importance for Nature Conservation (SINC).

In addition to the new homes, we designed the scheme to augment and benefit from the proximity of the existing SINC by increasing the SINC area by 2000 m<sup>2</sup>, planting additional trees, shrubs and a small wildflower meadow and creating 1600m<sup>2</sup> of green roofs.





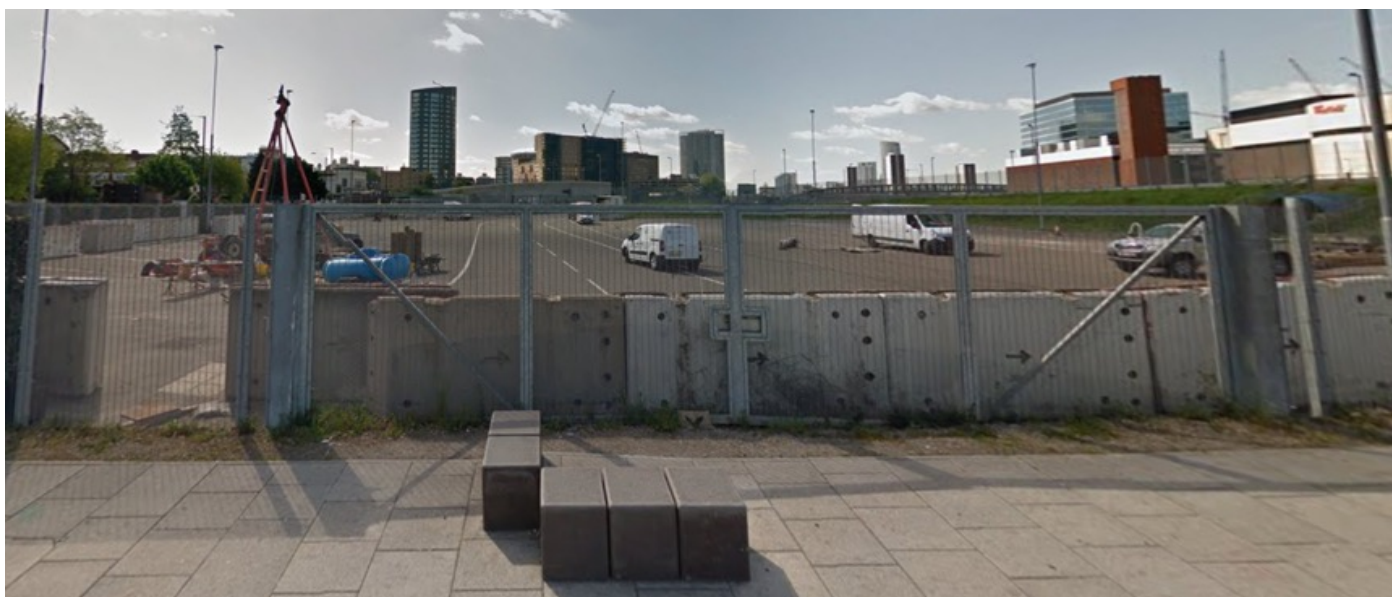
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## New Garden Quarter, Stratford

Our New Garden Quarter development was constructed on a former car park with extremely low ecological value in East Village, Stratford to the east of the Queen Elizabeth Olympic Park.

As part of the creation of a new London neighbourhood as part of the legacy of the London Olympics we created a new 2 acre public park in the centre of the development that helps establish the grid of green spaces across the residential parts of the Olympic Quarter. To reflect the wetlands in the Olympic Park, we also included a sustainable drainage system including green roofs and a pond that brings wetland wildlife such as dragonflies into the heart of this new piece of green public realm.



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## APPENDIX 1

### National and regional policy framework - Key Text

#### The Environment Act

Section 98 and schedule 14 - establishes a legal obligation for all new development to achieve a minimum ten per cent biodiversity net gain. The overview in Schedule 14 states that:

- "(1) The biodiversity gain objective is met in relation to development for which planning permission is granted if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the onsite habitat by at least the relevant percentage.
- (2) The biodiversity value attributable to the development is the total of—
- a) the post-development biodiversity value of the onsite habitat,
  - b) the biodiversity value, in relation to the development, of any registered offsite biodiversity gain allocated to the development, and
  - c) the biodiversity value of any biodiversity credits purchased for the development.
- (3) The relevant percentage is 10%."

#### The National Planning Policy Framework

Paragraph 20 (d) states that the development process should make sufficient provision for:

*"conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation".*

Paragraph 174 (d) promotes the:

*"provision of net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures".*

#### The London Plan Policy

G1 (D) states that:

*"Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network".*

Policy G6 encourages development proposals to:

*"manage impacts on biodiversity and aim to secure net biodiversity gain".*

Policy G5 states that developments should:

*"include urban greening as a fundamental element of site and building design, by incorporating measures such as high-quality landscaping, green roofs, green walls and nature-based sustainable drainage."*

The policy recommends a target score of 0.4 for residential developments and 0.3 for commercial developments and provides associated Urban Greening Factor guidance to inform and calculate the scoring.

