One Planet Living®
Goals and guidance for new-build communities in the UK

Bioregional

Foreword

Sue Riddlestone OBE
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Bioregional and co-founder
of One Planet Living

One Planet Living offers something unique for real estate developers, asset owners, industry professionals, local authorities and communities alike.

A way – that easily fits with all the other processes we need to follow – to co-design and operate our communities to make it easy for residents and workers to live a sustainable life, within planetary boundaries, fostering a regeneration of the natural world in each locality.

Looking at it through this lens, complexity drops away, in a fun and engaging process that brings out the best from key internal and external stakeholders to co-create a shared vision and plan. You will be able to carry this thinking and approach with you. Many people have said to me that they never go back!

You will be able to play your part in addressing the climate and ecological emergency in a holistic way, delivering social value and commercial benefits too. We have found that One Planet Living communities have a special feel that people love, which leads to faster sales of new builds, fewer voids and longer tenancies in rental properties; and improved levels of happiness and wellbeing in any community.

Give it a try, and we at Bioregional will support you to do your best.

Sue Riddlestone.

What's new about this updated guidance

We provide a suite of guides for using One Planet Living in different contexts, including for new and existing communities, schools, large companies and SMEs.

We created this new guide in response to requests by developers for more detail on 'what good looks like' and on the requirements for achieving One Planet Living Leadership recognition in the UK context. We hope we have achieved this.

We invite all users to speak to us if you have any feedback or suggestions to improve this guide. It is important that the One Planet Living process works for you.

A collaborative effort

We are grateful to all the organisations whose practical experiences over the years have helped to inform and shape the development of the One Planet Living framework and process. We are also indebted to the experts in sustainable placemaking who generously shared their time, insights, and expertise in reviewing this guide.

External review panel
- Clarion Housing Group
- Etude
- Feilden Clegg Bradley Studios
- Greencore Homes
- Hatch Urban Solutions
- One Planet Bruton
- Space Syntax
- The Alliance of Sustainable Building Products
- Good Homes Alliance
- The Town and Country Planning Association

Contents

Introduction

About One Planet Living

One Planet Living (OPL) is a concept and a sustainability framework that helps real estate developers and their partners create holistic, people-centred plans for their communities.

Launched in 2004 by Bioregional and WWF, One Planet Living was developed from strategies and approaches used at the award-winning BedZED eco-village in the UK. It is based on the concept of ecological footprinting and enabling residents and workers to live happy, healthy lives within the Earth's natural limits, while leaving space for nature to thrive.

Today, One Planet Living is used in real estate development worldwide, with 1.4 million people living and working in One Planet Living communities across Europe, North America, Africa and Australia.

The ten One Planet Living principles:

- **Health and happiness**
- **Equity and local economy**
- **Culture and community**
- **Travel and transport**
- **Land and nature**
- **Local and sustainable food**
- **Sustainable water**
- **Materials and products**
- **Zero waste**
- **Zero carbon energy**

Who is this guide for?

This guide provides practical advice for using the One Planet Living framework to create sustainable, residential-led developments in the UK. It is intended for landowners, developers, architects and engineers, as well as public bodies and community organisations.

Why use One Planet Living?

Easy to understand, use and communicate
One Planet Living is an easy-to-understand goal for your community: to make it easy for residents and workers to live a sustainable life, based on ten simple principles.

Engaging and results-driven
Its simplicity and people-centred approach enables stakeholders and decision makers – from residents and local authorities through to design teams – to engage positively in sustainability. By demystifying complex sustainability concepts, it creates a shared, accessible language that supports collaboration. It is best used in a co-creation process.

For new builds, One Planet Living can be integrated into each of the usual RIBA Plan of Work stages, including community consultation, to bring out the best of everyone's differing perspectives to shape a place-specific, enduring, shared sustainability vision and action plan.

Holistic and science-based
Grounded in scientific principles and the concept of planetary boundaries, One Planet Living addresses all aspects of sustainable living in an integrated, comprehensive way.

Complements and works seamlessly with other frameworks
The holistic nature of One Planet Living means it sits well at a high level, with other topic-based frameworks and certifications nesting underneath it, highlighting gaps and enabling these systems to work more effectively together.

Leadership recognition and use of the One Planet Living Leadership badge
Projects can be submitted for review to achieve Leadership recognition, granting the use of the One Planet Living Leadership badge in marketing.

Join a network of leaders in One Planet Living with training, resources and knowledge sharing with other leaders in the field.

About Bioregional

Bioregional is an award-winning sustainability consultancy and registered charity. We started out in 1994, with our own pathfinder projects, including BedZED eco-village, completed in 2002.

Today we partner with businesses, local authorities and real estate developers to help more organisations deliver practical solutions for sustainable living. By sharing success stories from One Planet Living projects, we inspire industry and government to adopt more sustainable practices.

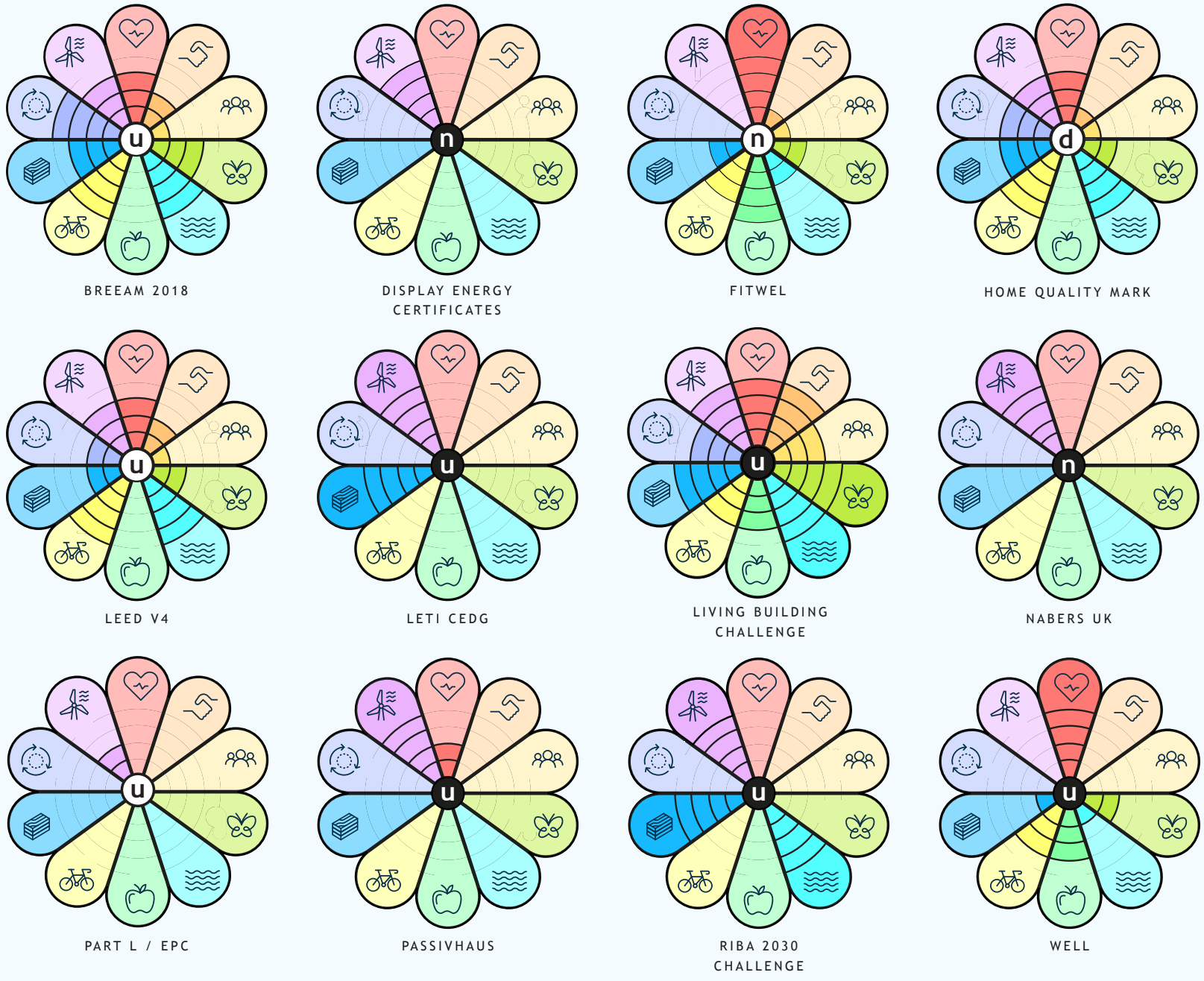
One Planet Living – the gold standard for sustainable placemaking

Architects Feilden Clegg Bradley Studios (FCBS) first used the One Planet Living framework for the award-winning One Brighton development.

Since 2021, FCBS has monitored the strengths of the main building rating systems against the ten One Planet Living principles.

The powerful visual comparison shows how One Planet Living goes beyond the scope of certifications like BREEAM, LEED, or Passivhaus, addressing gaps in social value, cultural wellbeing, and community resilience. Yet, it also complements these frameworks, working alongside them to provide a balanced and impactful approach.

This flexibility allows One Planet Living to be applied across different scales, from individual buildings to neighbourhoods and city-wide strategies, making it an incredibly versatile tool. By providing a holistic, people-focused, and versatile lens for sustainable placemaking, it empowers stakeholders to create truly regenerative projects that benefit both people and the planet.



d domestic
n non domestic
u universal
○ requires perfomance verification

Weightings have been derived from the number of points available per One Planet Living principle, taking a qualitative approach.

Where multiple levels of accreditation are available, this has not been included, only the overall applicability to each principle.

Using the One Planet Living framework

You can use One Planet Living at any of three levels. Choose which level is right for you:

Level 1

Internal use to support your own framework

Use One Planet Living resources and case studies to inform the vision for your development and help shape your specific sustainability goals.

Level 2

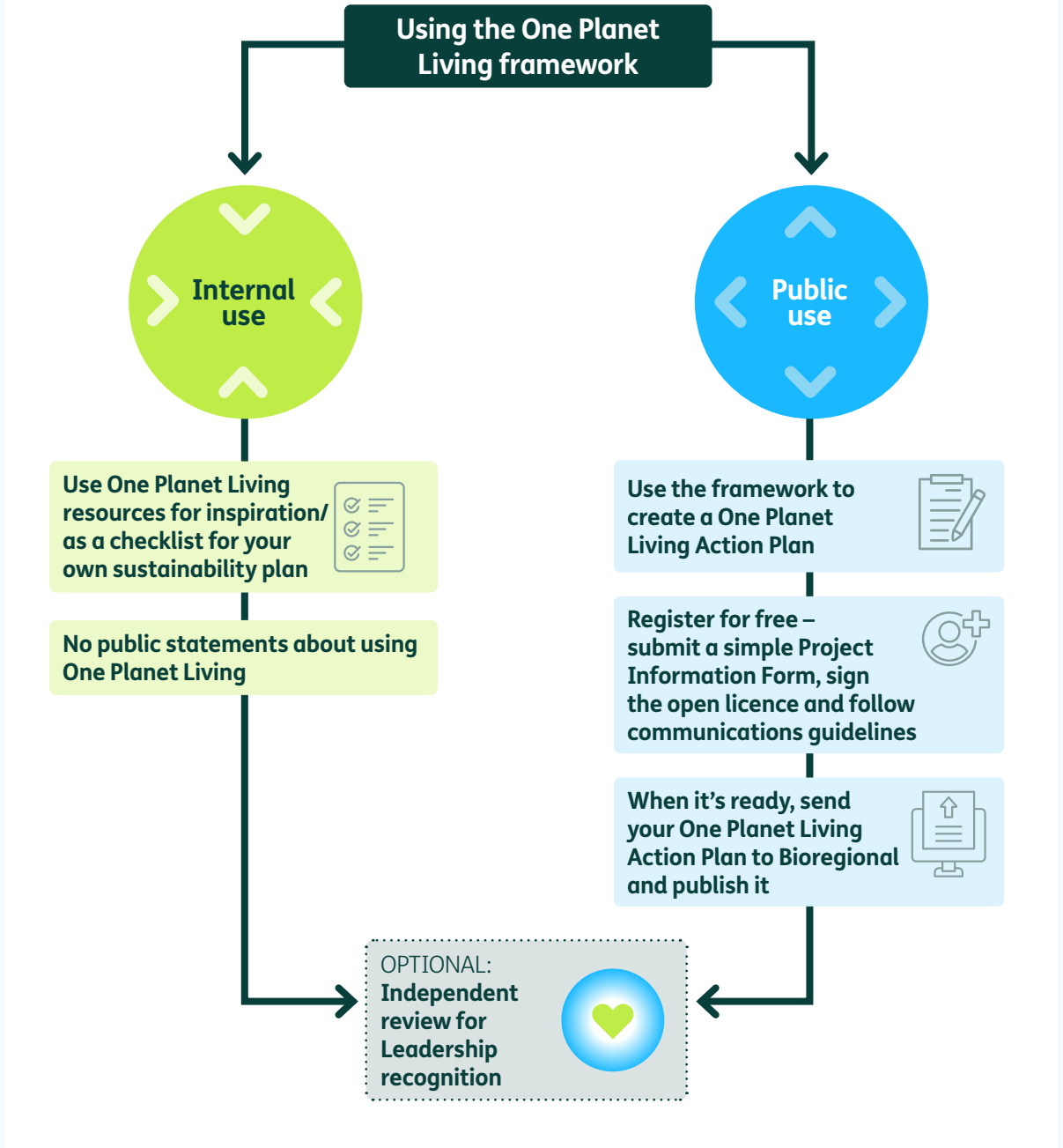
Use One Planet Living publicly

Develop a sustainability strategy and detailed actions around the goal of enabling workers and residents to achieve One Planet Living based on the ten principles and share what you are doing to inspire others.

Level 3

Seek Leadership recognition

Submit your sustainability plan for independent review – your plan does not need to use the One Planet Living framework but will be assessed against it. Exemplary projects are recognised as Leaders in One Planet Living.



Structure of the guide

Section 1:
Use One Planet Living resources internally to inform your own framework

Section 2:
Use One Planet Living publicly

How to fully employ the One Planet Living process.

Section 3:
Leadership recognition

What One Planet Living Leadership recognition means and how to apply.

Section 4:
The ten One Planet Living principles

Each principle includes:

- **The case for action:** Why the principle matters and its relevance to real estate.
- **Goals:** High-level objectives aligned with the principle.
- **Topics to address**: Key areas to consider for sustainability.
- **What good looks like:** A vision for delivering sustainability goals.
- **Technical guidance and leadership standards:** Resources and best practice guidance, based on our expectations for One Planet Living Leadership recognition in the UK context.
- **Indicators:** Practical metrics for tracking progress.
- **Stories and images:** Examples of qualitative information you could collect to help communicate about your plan.

Further guidance and support

For more practical advice, refer to the One Planet Living manual, which includes tips on needs analysis, stakeholder engagement, and contextual planning. You can also explore published One Planet Living Action Plans for inspiration.

For additional support, Bioregional offers consultancy services covering pre-planning, carbon assessments, and post-occupancy evaluations.

Contact us at **places@bioregional.com**

Section 1:
Use One Planet Living resources internally to support your own framework

Use One Planet Living resources internally to support your own framework

The following resources can help shape the sustainability vision for your development, or evaluate the robustness of existing strategies, even if you're not formally adopting the One Planet Living approach:

- The One Planet Living Action Plans of Leaders in One Planet Living, which you can explore for inspiration.
- One Planet Living manual, which includes how to:
  - conduct a **context analysis** to identify local and global trends, challenges and opportunities that will impact your development, such as climate change, economic shifts, or demographic changes
  - perform a **needs analysis** using the One Planet Living framework to identify location-specific requirements and opportunities
  - run a **visioning workshop** to set sustainability goals that align with stakeholder needs and planetary limits
- This Guide (Section 4): Use the goals, actions, and indicators provided for each One Planet Living principle to ensure your plan covers all key sustainability areas.

Requirements for using One Planet Living internally

There are no requirements or fees, but we do not permit any public claims to be using the One Planet Living framework.

Need support?

Bioregional offers training and consultancy services to help you develop your sustainability vision or detailed action plan, even if you don't formally use the One Planet Living framework.

Contact **places@bioregional.com**

Section 2: Use One Planet Living publicly

This section covers how to create a sustainability strategy and plan for your new community using One Planet Living and then share what you are doing to inspire others.

Use One Planet Living publicly

One Planet Living is a holistic and flexible approach to deliver results and positive outcomes, rather than a certification system. It complements and is aligned with other standards, such as BREEAM, LEED, Green Star, Living Building Challenge, and Well Building, among others. Using One Planet Living will enable you to uncover gaps between these frameworks, bring a sustainable living approach to your designs, and create an accessible shared language and vision.

Introducing the One Planet Living Action Plan

At the core of the One Planet Living framework is the **One Planet Living Action Plan**: a sustainability strategy structured around One Planet Living's ten principles, integrating goals, actions, targets and indicators to cover a broad range of sustainability topics. It references key project documents, such as biodiversity, energy and community development strategies, to provide a cohesive framework to achieve sustainability goals.

It's important that a One Planet Living Action Plan is co-created with stakeholders to address project-specific challenges and opportunities. As a dynamic, evolving document, it can adapt to new insights and changing conditions.

Key goals and desired outcomes can be evaluated and reported on. For new builds, **post-occupancy evaluation is important** in uncovering whether plans are realised, so that lessons can be learned and adjustments made, either for this or future communities.

Requirements for using the One Planet Living framework publicly

We encourage companies to publicise your use of One Planet Living and to use it, for example, in planning applications, community consultations or marketing.

To support this, we provide access to the trademarked One Planet Living logo and wording and all the One Planet Living imagery. To use the framework publicly, you must register your project with Bioregional. Registration, and use of the framework, is free.

Steps to register:

1. **Register your use of One Planet Living** by signing the One Planet Living open licence and submitting a simple Project Information Form.
2. **Follow the communications guidelines provided with the licence.**
3. **Publish your One Planet Living Action Plan when it's ready.**

   You must:

   - share your action plan publicly in a format of your choice (eg a PDF on your website)
   - send a copy to Bioregional at **opl@bioregional.com**

Publishing your One Planet Living Action Plan

Your action plan can be a high-level summary of your detailed plan, but should include:

- sustainability goals or intended outcomes of the project
- indicators to track progress against these goals
- strategies to achieve the goals
- actions relevant to your project's current stage
- targets that reflect the project's level of ambition, where applicable

Publishing your plan helps build a global One Planet Living community, encouraging learning and collaboration.

Updating and reporting on your One Planet Living Action Plan:

- Update your published action plan as the project evolves (eg setting targets, progressing through development phases).
- Share periodic progress reports to demonstrate how you are delivering against your plan.

Important note: Bioregional may revoke permission to use the One Planet Living framework publicly if a project causes significant environmental harm or violates the framework's principles.

Need support? For questions about registration email **opl@bioregional.com**

Process for creating an One Planet Living Action Plan

The table outlines our recommended process for creating a One Planet Living Action Plan aligned with your project's RIBA Stages. While you can adapt the process to suit the complexity of your project, key considerations include:

- **masterplanned projects:** Larger developments can create an overarching strategy covering shared infrastructure, public spaces, and phasing
- **development parcels:** Strategies and targets for individual parcels can be tailored as they progress through the RIBA Stages

Ideally, the One Planet Living Action Plan is a living document that evolves throughout the project's lifecycle, ensuring relevance and impact at each stage.

To effectively embed sustainability into a project from the outset, the One Planet Living framework offers a clear process aligned with the RIBA Plan of Work. The following table outlines the key steps for creating an One Planet Living Action Plan, tailored to the scale, complexity and stage of your development. Whether you're working on a large masterplanned site or individual development parcels, the process ensures that the One Planet Living principles are integrated seamlessly at every stage, enabling a dynamic, evolving approach to achieve sustainable and regenerative outcomes.

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
0 **Strategic Definition**	Establish the groundwork for sustainability by integrating the One Planet Living principles early in project planning. Introduce One Planet Living to decision makers and team as a 'foundational' tool to address sustainability. Clarify how the goal of enabling sustainable living and the ten principles can shape the project. **Context analysis:** Identify local and global trends, challenges and opportunities that will impact your development, such as climate change, economic shifts or demographic changes. **Needs analysis:** Use the One Planet Living framework to structure and understand the key needs, locally and regionally, that will drive specific requirements and opportunities, unique to the location. **One Planet Living vision:** Develop a One Planet Living-inspired outline vision, identifying opportunities for regenerative design and sustainable community outcomes.	• Organisational commitment and outline shared vision • Context analysis • Needs analysis • Benchmarking analysis

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
1 **Preparation and Brief**	Establish a deeper shared vision and measurable sustainability outcomes for the project. **Visioning workshop:** Host a collaborative workshop with stakeholders to co-create a project vision based on the One Planet Living principles. Engage the client and team in prioritising key themes. **Draft sustainability outcomes:** Use the workshop's output to define sustainability goals. **Incorporate One Planet Living into the brief:** Embed sustainability outcomes into the project brief, ensuring they are specific, actionable, and aligned with One Planet Living.	• Visioning workshop • One Planet Living vision • Draft outcomes, addressing issues from the needs analysis and addressing all ten One Planet Living principles
2 **Concept Design**	Develop and test high-level strategies to achieve One Planet Living goals. **Iterative design workshops:** Refine the project's sustainability outcomes through workshops, engaging clients, the design team and stakeholders to ensure alignment with the One Planet Living vision and framework. **High-level strategies:** Identify strategies for each principle (eg passive solar design for zero carbon energy, green roofs for biodiversity). **Integrate indicators:** Agree on tracking metrics such as embodied carbon intensity, renewable energy share and water efficiency. Embed these metrics into initial concept designs. **Early design feedback:** Conduct internal and external reviews, ensuring designs are aligned with One Planet Living goals and the budget.	• Outcomes discussed, workshopped, consulted on, refined and bought into by project team and stakeholders • High-level strategies for delivering the outcomes are workshopped and agreed • Indicators for tracking progress in delivering the outcomes are identified and agreed

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
3 **Spatial Coordination**	Develop and coordinate detailed designs that meet sustainability objectives and support One Planet Living outcomes. **Detailed sustainability coordination:** Collaborative working between architects, engineers and consultants to ensure that the spatial and system designs align with One Planet Living principles. For example: optimise layouts for daylighting and natural ventilation (Zero carbon energy, Health and happiness principles) and plan green infrastructure to enhance biodiversity and manage stormwater (Land and nature, Sustainable water principles). **Action and target setting:** Set clear design-stage targets based on One Planet Living benchmarks, such as material reuse rates, water demand reduction, or renewable energy capacity. These should be specific, measurable, and integrated into design deliverables. **Sustainability reviews:** Conduct scheduled sustainability reviews of designs, using indicators to assess alignment with project goals. **Planning submission alignment:** Ensure the planning application highlights the project's alignment with One Planet Living goals, particularly regarding local community benefits. The sustainability statement could use the One Planet Living framework as its structure. If used in this way, the statement needs to be submitted to Bioregional as part of the registration process.	• Design stage actions and targets agreed

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
4 **Technical Design**	Finalise technical details and specifications that operationalise One Planet Living principles, embedding them in designs. **Sustainability in detailed design:** Translate high-level strategies into actionable technical details, such as: • specifying renewable energy systems (eg solar photovoltaic (PV) or heat pumps) • defining material selections for low embodied carbon or circular economy alignment • designing efficient building systems for water recycling or waste management **Finalise indicators and targets:** Confirm and document all technical sustainability indicators for tracking during construction and occupancy (eg airtightness targets, and water reuse capacity). Ensure these indicators are reflected in tender documents. **One Planet Living Action Plan submission:** Finalise and submit the scheme's **One Planet Living Action Plan** to Bioregional. The plan should detail the strategies, targets, and monitoring mechanisms for the construction and post-occupancy phases. For ease, the action plan can use the development sustainability statement. **Risk and opportunity assessment:** Identify any risks to achieving One Planet Living targets (eg supply chain issues for sustainable materials) and develop mitigation strategies. **Design compliance checks:** Verify compliance with relevant standards, including certifications (eg BREEAM, Passivhaus) that support One Planet Living goals.	• Construction stage actions and targets agreed • Occupation stage actions drafted and targets agreed • Tracking of design stage indicators • One Planet Living action plan submitted and published

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
5 **Construction**	Implement sustainability targets on-site, ensuring alignment with One Planet Living commitments through active monitoring and collaboration. **Pre-construction workshop:** Host a workshop with contractors and key stakeholders to communicate One Planet Living principles, agreed actions, and performance indicators. Reinforce the importance of achieving sustainability targets. **Active monitoring of indicators:** Track construction-phase sustainability indicators such as: • % of construction waste diverted from landfill (Zero waste). • Renewable energy used on-site during construction (Zero carbon energy). • Materials sourced locally or certified as sustainable (Sustainable materials). **Sustainability audits:** Conduct periodic audits of on-site practices, such as material use, waste management and energy efficiency. Provide feedback to contractors and adjust practices as needed to stay on track. **Collaborative problem-solving:** Work closely with the construction team to address challenges in meeting One Planet Living targets, such as sourcing alternative sustainable materials or revising construction methods to reduce environmental impact. **Celebration of milestones:** Highlight One Planet Living achievements during construction to motivate and maintain momentum toward sustainability goals.	• Tracking of construction stage indicators

RIBA Stage	Incorporating One Planet Living into the development and design process	One Planet Living outputs
6 **Handover**	Transition the completed project to operational use with clear sustainability guidelines. This could include: **Post-completion workshops:** Engage residents or end-users with workshops introducing One Planet Living principles, such as zero-waste living or energy-saving practices. **Finalising occupation stage actions:** Tailor and implement the occupation phase of the action plan, focusing on management and sustainability governance. **Snagging with sustainability in mind:** Prioritise sustainability considerations (eg resolving energy inefficiencies) during snagging and defect rectification.	• Occupation stage actions are finalised and made real, in consultation with incoming residents and the emerging community governance group, eg residents' association
7 **In Use**	Evaluate, refine, and celebrate the project's sustainability performance. **Post-occupancy evaluation (POE):** Conduct detailed evaluations against One Planet Living indicators (eg operational energy use, water consumption, user satisfaction). **Long-term monitoring:** Set up periodic reviews to ensure continued performance improvement and alignment with One Planet Living principles. **Knowledge sharing:** Share lessons learned through case studies and reports to inform future projects.	• Plan for long-term monitoring • Tracking of occupation stage indicators • Case studies

Need support?

Bioregional offers training and consultancy services to help you develop your One Planet Living vision and Action Plan.

Contact **places@bioregional.com**

Section 3:
One Planet Living Leadership recognition

In this section

One Planet Living Leadership recognition

What is One Planet Living Leadership?

Achieving recognition as a **One Planet Living Leader** means your project is an exemplar in sustainable development. This status highlights your commitment to creating transformative solutions that address global and local sustainability challenges. With hundreds of projects using One Planet Living worldwide, only the most innovative and impactful are awarded this distinction.

What constitutes best practice in creating new residential-led communities is always highly context and location-dependent. In Section 4, we offer examples of what best practice in the UK might entail in relation to each of the ten One Planet Living principles. Adopting these best practice approaches across most or all of the principles should provide a strong indication of Leadership. However, we find it's best not to be prescriptive as every location has its own opportunities and challenges. Judgement calls about what constitutes leadership will always be necessary.

Our guiding focus is to answer the question: **'Does this project show true sustainability leadership for its specific context?'**

What does a Leadership review involve?

- **A collaborative, tailored process:**
  - This is **not a standard certification** like LEED or BREEAM. It's a bespoke evaluation that offers credibility through expert validation, practical feedback, and strengthened sustainability outcomes.
- **A holistic leadership review:**
  - Involves working closely with an experienced reviewer who acts as both an evaluator and a supportive advisor.
  - Considers the entire sustainability action plan, looking at ambition, practicality, and potential for systemic impact.

Leadership review outcomes

- **Reviewed:** Feedback is provided, but leadership standards are not met.
- **Leader:** Action plan aligns with best practice across most One Planet Living principles; net-zero carbon commitment; and leadership within the local context.
- **Global Leader:** Action plan aligns with best practice across all ten One Planet Living principles, and, in some areas, showcases groundbreaking innovation of global significance.

One Planet Living® | Reviewed

One Planet Living® | Leader 2025

One Planet Living® | Global Leader 2025

What are the benefits of Leadership recognition?

Becoming a One Planet Living Leader brings tangible benefits, including:

- **Competitive advantage through independent validation:** Gain worldwide recognition from leading sustainability experts, showcasing your commitment to sustainability, meeting the expectations of consumers, clients, and regulators.
- **Brand visibility:** Use One Planet Living branding to enhance your reputation and market presence.
- **Improved investor confidence:** Demonstrate resilience and forward-thinking leadership, attracting investors seeking sustainable opportunities.
- **Enhanced transparency and stakeholder engagement:** Publish your plan and review to build trust, demonstrating your sustainability commitment to employees, suppliers, local authorities, and other key stakeholders.
- **Climate leadership:** Position your organisation as a leader in tackling the climate crisis, aligning with global frameworks such as the Paris Agreement and UN Sustainable Development Goals.
- **Community impact:** Build stronger relationships with local communities by demonstrating how your projects support their social, environmental, and economic wellbeing.
- **Innovation acceleration:** Inspire and scale cutting-edge sustainable solutions, driving innovation across your organisation and sector.
- **Expert feedback:** Refine your sustainability plan with actionable advice to ensure maximum impact.
- **Talent attraction and retention:** Attract and retain purpose-driven employees motivated by your leadership in tackling global challenges.
- **Global network access:** Join a community of innovators shaping the future of sustainable development.

How is Leadership assessed?

The review process evaluates your project's sustainability strategy or One Planet Living Action Plan against four key criteria:

1.

Scope:

- Does the action plan address most topics under all ten One Planet Living principles?
- Does it include strategies for environmental, social and economic challenges?
- Is it comprehensive across design, construction and occupancy phases?

2.

Ambition:

- Do the vision and outcomes align with One Planet Living goals?
- Do they go beyond standard practices in the local context?
- Are outcomes bold, realistic, and capable of driving systemic change?

3.

Implementation:

- Are actions well-defined, measurable and achievable?
- Are indicators appropriate for tracking real-world progress?
- Does the project team have the capacity, partnerships and senior commitment to deliver?

4.

Transformation:

- Does the project inspire wider change by setting new sustainability standards?
- Is there a willingness to share insights and learning to foster industry-wide innovation?

Maintaining Leadership recognition – progress reviews

Progress reporting
Project teams submit a progress report to Bioregional in any format, detailing which elements of the action plan have been delivered, are on track, amended or at risk.

Leadership date stamp
A One Planet Living Leader logo with an updated date stamp is awarded after each successful progress review.

Recommended review schedule
Progress reviews should align with the project's own milestones:

- **Smaller projects:** One or two post-occupation reviews
- **Larger single-parcel developments:** A construction-phase review and one or two post-occupation reviews
- **Masterplanned projects:** Reviews at key milestones (eg parcel completions) or scheduled annual/biannual reviews to align with reporting cycles

Applying for Leadership recognition

Who can apply?
Any development, regardless of size, location or sustainability framework used.

When to apply?
Submit your action plan anytime, but ideally during the design phase.

We recommend early discussions with us to help ensure your project goals align with One Planet Living Leadership criteria from the outset.

What to submit?
A sustainability or One Planet Living Action Plan and supporting documents (eg transport strategies, Site Waste-Management Plans).

Any sustainability plans not using the One Planet Living framework will need to be mapped against the One Planet Living principles. You can do this yourself, or Bioregional can do it for you.

What does it cost?
Fees vary based on project complexity and size.
Contact us for detailed pricing:
opl@bioregional.com

One Planet Living Leadership recognition process

Initial discussion

Does the project seem to show true sustainability leadership for its specific context? If yes, proceed.

Submit action plan

Non-One Planet Living action plans are mapped to the framework.

Leadership review

- Document review
- Interviews

Recognition recommendation

Possible outcomes:

- 'Reviewed'
- 'Leader'
- 'Global Leader'

Public announcement of Leadership

Action plan and leadership review published by Bioregional.

Communications support.

Submit progress report

Progress review

- Document review
- Interviews

Updated Leadership endorsement

Progress report and review published by Bioregional.

Communications support.

Feedback and suggestions for improvement

Annual, biennial or at key milestones

Next steps

Contact Bioregional at **opl@bioregional.com** to start your leadership review journey and position your development as a leader in sustainability.

Section 4:
Goals and guidance for the ten One Planet Living principles

In this section

Health and happiness

Encouraging active, social, meaningful lives to promote good health and wellbeing.

One Planet Living goals

- To increase or support high levels of physical, social, mental and emotional health
- To increase or support high levels of happiness and wellbeing

The case for action

Where we live has a major influence on our opportunities for social connection, access to clean air and nature, healthy and affordable food as well as opportunities for exercise. All of these, together with the comfort and safety of our homes, can have a profound impact on our health and happiness.

With the UK's high obesity rates a major public health challenge, so too are rising mental health issues associated with urbanisation: people living in dense cities have 40% higher rates of depression and 20% greater anxiety than other populations.

Developers can help address these challenges by designing communities that positively influence lifestyle choices, with multiple co-benefits. For example, making it easier for people to walk or cycle to work could help tackle air pollution and congestion, obesity and heart disease as well as boost mental health.

Topics to address under this principle

- Access to green space and outdoor space
- Thermal comfort
- Daylighting
- Noise
- Indoor air quality and ventilation
- Outdoor air quality
- Building performance and post-occupancy evaluation
- Climate change adaptation

What does good look like?

One Planet Living communities are designed to encourage neighbourliness and social interaction. They make it easy for all residents to keep healthy and active at all ages. They are places where residents feel part of a safe, inclusive, friendly and supportive community. Residents have a daily opportunity to enjoy beauty, through connecting with nature as well as delightful neighbourhood design.

Buildings are designed for comfort in daylighting, temperature and ventilation. Buildings are designed to achieve healthy indoor air quality, with good ventilation and measures to protect people from pre-existing poor air quality outdoors. They are built with healthy materials, for example avoiding volatile organic compounds (VOCs).

Public spaces are designed to be safe, neighbourly and free of cars, where people can meet, children can play and where greenery and nature are encouraged. Convenient, safe and direct pedestrian and cycle routes run through the site, which has plenty of community and civic space. Space for physical activity is abundant and easily accessible.

Sites and buildings make effective use of design features such as external/ street lighting. They maximise 'natural surveillance' and 'active frontages' to help residents feel safe and deter criminal activity.

Community facilities and activities are selected to offer multiple benefits to physical and emotional health. For example, growing food can increase contentment as well as supporting healthy diets. Happiness is supported by providing opportunities for activities such as sport or spiritual practice and mindfulness.

One Planet Living communities are designed with strategies in place to manage future climate risks, both through robust design and community resilience measures. For example, when extreme weather events happen, residents can find refuge in safe places, and the community recovers quickly.

Top tip

Consider creating a One Planet Living Action Plan that includes at least one activity under each of the other principles that will positively contribute to health and happiness. Are there any actions elsewhere in your plan that might decrease health and happiness, and if so, how can you reduce or eliminate the negative impact?

Technical guidance and best practice

A number of cross-cutting UK standards relating to health and wellbeing provide excellent indicators of good practice and we recommend them as technical resources. Use your One Planet Living Action Plan to explain if you are using any guidance or metrics from these standards, and if you are seeking certification from any of them on your project:

- BRE's Home Quality Mark
- The Nationally Described Space Standard
- The WELL Building Standard
- TCPA's Healthy Homes Principles
- The Quality of Life Framework

Access to natural greenspace and private outdoor space

It's important that One Planet Living communities have a good mix of accessible natural greenspace, communal and private outdoor space.

For play provision, please see the 'Community facilities' section under the 'Culture and community' principle.

Best practice would involve assessing projects against Natural England's Green Infrastructure Standard, with either the One Planet Living Action Plan or the supporting documents presenting existing green infrastructure provision. You would explain how the project will respond to the standards. For example, it may be necessary to provide additional natural greenspace or to facilitate improved access to nearby greenspaces, as appropriate to the project.

Most importantly, the project will ideally deliver or facilitate access to at least two hectares of greenspace, no more than 300m from homes.

For private outdoor space the Green Infrastructure Standard has a minimum requirement of 5m^2 for apartments; more for larger homes. If the Standard is difficult to achieve, best practice would involve creating additional communal outdoor space and/or private outdoor space.

Thermal comfort

Strategies to prevent overheating can include:

- maximising dual aspect layouts
- opening windows to quiet areas
- low-G glazing
- external shading
- MVHR with bypass facility
- green roofs and trees

We recommend using the Good Homes Alliance (GHA) Overheating Checklist as an early-stage tool during RIBA Stages 1-2. The action plan should respond appropriately, using the GHA guidance.

Best practice would involve:

Schemes of <10 homes:

- Compliance with Part O of the Building Regulations
- Homes should be modelled and pass CIBSE TM59 analysis (or an equivalent standard) with DSY1 (Design Summer Year) weather data for 2020, high emissions, 50% percentile scenario
- Windows should also be designed as side-hung, inward-opening to enable future adaptation for the installation and operation of external retractable shading devices. This allows for enhanced resilience against future climate change impacts

Schemes of >10 homes – in addition to the measures above:

- Use DSY2 and DSY3 weather data for 2020 for additional resilience, particularly where natural ventilation may be limited by factors like acoustics, air quality, or security

To ensure future-proofing, homes should also be stress-tested against DSY1 weather data for the 2050s, high emissions, 50% percentile scenario. This test could include a comparative analysis of the baseline design and a scenario with external retractable shading installed. This will inform pre-planned mitigation measures for climate resilience.

Recognising regional temperature variations (eg between London and Swindon, which may differ by 4–5°C), the requirements allow for location-specific adjustments. This flexibility ensures that standards are realistic while still ensuring high resilience.

Future updates to CIBSE TM59 guidance and corresponding weather data files should be adopted as they become available, including the anticipated November 2023 updates.

Daylighting

Best practice projects would demonstrate that they have addressed performance across four key areas:

- Daylighting provision – controlling the volume and diffusion of daylight across a space.
- View out – assessing the quality of the view out of windows and rooflights.
- Sunlight – looking at the duration of sun exposure and addressing overheating concerns.
- Glare – ensuring glare is limited to improve visual comfort.

Projects can make use of the BRE daylight guide BR209 and the European Daylighting Standard BS EN 17037.

Internal night-time noise levels in bedrooms

Homes should be laid out and equipped to manage noise sources, especially considering road noise. Most homes should meet the best practice guidance in Table 4 of BS8233 (internal noise environment).

Indoor air quality and ventilation
Best practice projects would be able to demonstrate that they have done most of the following:

- Maximised natural airflow by designing the building to encourage cross-ventilation and have followed the guidance provided in the latest CIBSE Guide A.
- Maximised the use of passive design features such as openable windows that enhance natural ventilation and enable purge ventilation without relying on mechanical systems.
- For projects with air tightness targets below $3m^3/m^2h$ air permeability, considered the use of MVHR systems to ensure continuous fresh air exchange while minimising energy loss.
- Met the minimum ventilation requirements for all living spaces, including bedrooms, living rooms, bathrooms, WCs and kitchens as set out by the UK Building Regulations (Approved Document F).
- Provided dedicated ventilation for moisture-generating areas like bathrooms and kitchens and ensured a constant level of background ventilation via extract ventilation or whole-house ventilation systems and subsequent requirements.
- Provided details of commissioning and guidance on how regular maintenance should be undertaken on ventilation systems to optimise performance and prevent issues, such as filter changes for MVHR units.

Best practice would also involve selecting low VOC, low formaldehyde interior finishes. RIBA Climate Challenge 2030 sets targets of <0.3 mg/m^3 VOCs, and <0.1 mg/m^3 for formaldehyde.

Project teams can explore how indoor living plants can improve air quality and wellbeing as well as connection to nature.

Projects using HQM guidance and accreditation can target all 12 credits under Section 4.1 Indoor Pollutants.

Projects in locations where air quality is challenging could also consider using Air Rated to test, monitor and rate their indoor air quality after occupation. For properties on roads with poor air quality, using MVHR can be helpful for ventilation instead of opening windows.

Outdoor air quality
Strategies for ensuring safe air quality can include creating low-car neighbourhoods, enabling electric vehicles and developing a combustion-free energy strategy.

For best practice, projects in an Air Quality Management Area (AQMA) would have an outdoor air quality assessment. Your action plan would respond to this and demonstrate how safe indoor air quality levels will be achieved.

Building performance evaluation
To meet Net Zero Carbon Buildings Standard (NZCBS) targets, project teams should explore adopting a Soft Landings approach that begins with setting clear performance targets at the project brief stage and continues through design, construction, handover, and post-occupancy. This approach should be properly funded to ensure robust Building Performance Evaluation (BPE) and Post-Occupancy Evaluation (POE), minimising risks and helping projects achieve NZCBS performance requirements.

Project teams should establish NZCBS performance targets early, including limits for operational energy, carbon, and indoor environmental quality. Soft Landings ensures these targets are tracked and reviewed throughout the project lifecycle, with in-use verification during the first year of occupancy to confirm that operational values align with the NZCBS standards. This continuous monitoring supports timely adjustments if performance deviates from expectations.

Building Performance Evaluation (BPE) and Post-Occupancy Evaluation (POE)
- BPE encompasses broad assessments of energy use, thermal comfort and air quality in the building to ensure occupant satisfaction and alignment with NZCBS goals.
- POE focuses on gathering occupant feedback on comfort and satisfaction in the first year of occupation. In residential settings, BPE should use smart metering, PV export data and occupant feedback from a representative set of homes. Where in-use results don't meet NZCBS targets, additional BPE and POE should be used to pinpoint areas for improvement.

For best practice:

- Projects would carry out BPE for thermal comfort and air quality in a representative sample of homes within the first year of occupancy, ensuring that occupant needs are met and that NZCBS standards are supported.
- For Registered Social Landlords (RSLs), leasehold and build-to-rent projects, continued resident surveys would be encouraged to track satisfaction, health and happiness over time. Combining these with Tenant Satisfaction Measure (TSM) surveys can help streamline this process. The goal is to demonstrate increasing or consistently high levels of reported wellbeing among residents[1].

Reference
1 Social interaction and sense of community are also important contributors to wellbeing. These are addressed under the third One Planet Living principle, Culture & community

Climate change adaptation
Climate change is already causing a range of events that need to be designed for. The greatest risks are extreme temperature events including both heatwaves and cold snaps, extreme storm events, flooding events and droughts.

These events can:

- threaten people's health, wellbeing and safety
- damage buildings, infrastructure and services
- have implications for the availability of energy and other resources
- severely impact green infrastructure and biodiversity

It's important that new communities are designed and planned with all these mounting risks in mind.

Risks of overheating are addressed above, while flood risks are addressed under the 'Sustainable water' principle. Risks to green infrastructure and biodiversity are addressed under the 'Land and nature' principle.

Recommended cross-cutting resources for addressing future climate risks include:

- UK Green Building Council (UKGBC) Climate Change Adaptation
- UKGBC Design for future climate

Indicators

Resident surveys or interviews can be used to enquire about different aspects of residents' health and happiness. Suggested indicators are:

Headline indicators
- Average satisfaction levels of residents
- Average life satisfaction levels of residents (See ONS questions on wellbeing)
- % of residents satisfied with their health

Other indicators for which targets should be set include:

- Levels of outdoor air pollution on site
- Indoor air quality
- Levels of overheating – time spent over a comfortable temperature threshold

Additional indicators, depending on capacity for detailed survey questions and extent of resident engagement:
- % of physically active residents or employees
- Average extent to which people feel the things in their life are worthwhile
- % of residents who are satisfied with the following in their building:
  a) summer indoor air temperature
  b) winter indoor air temperature
  c) ventilation and air quality
  d) noise
  e) natural daylight
  f) artificial daylight

Stories and images

Do residents report having lost weight and become healthier, given up smoking or set up a new club or activities in the community facilities? Do you have pictures of people enjoying themselves at a great community event or street party? Are there stories or images of things that are not going so well but which you can improve on?

Case study

Greencore Homes – building health and happiness through sustainable living

Greencore Homes is a pioneer in creating homes that enhance wellbeing through sustainable design and healthy living environments. Greencore builds with natural materials such as hemp and lime, which offer high indoor air quality by minimising toxins and pollutants often found in conventional building materials.

Homes are designed to maximise natural light, ventilation and thermal comfort, providing residents with spaces that support both physical health and emotional wellbeing. Greencore developments also incorporate green spaces and nature trails that encourage outdoor activity and community interaction, fostering a sense of connection and happiness among residents.

Equity and local economy

Creating safe, equitable places to live and work which support local prosperity and international fair trade.

One Planet Living goals

- To promote diversity and equality of opportunity across all abilities, gender, race, age and sexual orientation
- To create a vibrant and resilient economy where a significant proportion of money is spent locally
- To promote international trade that is conducted fairly and without exploitation

The case for action

Equity should start at home, but with house prices in the UK now equivalent to more than nine years of average earnings, they represent a major contribution to the UK's significant wealth inequality. With some 3.16 million households in England also living in fuel poverty amid rising energy prices, those with disabilities also face major barriers in obtaining comfortable, accessible housing.

Exploitation and inequitable pay and conditions in construction supply chains is also widespread: globally, the construction sector accounts for one in four of those working in forced labour. In the UK the Modern Slavery Act requires companies to tackle slavery and human trafficking in their supply chains.

By creating affordable, accessible, energy-efficient homes and places that prioritise local, responsible supply chains and cater to diverse needs, developers can help stimulate sustainable, equitable and thriving regional economies.

Topics to address under this principle

- Addressing local need, providing social value
- Affordable homes and mixed tenure
- Digital connectivity
- Accessibility and inclusiveness
- Real living wage
- Non-residential uses
- Job opportunities, training and apprenticeships
- Supporting local businesses and local supply chains
- Sparking new local economic activity

What does good look like?

One Planet Living communities celebrate diversity. They are inclusive, accessible and adaptable to people of all ages, races, genders, abilities and sexual orientation. They recognise the needs of local people, including elderly people, young people, people with disabilities, single people and families.

One Planet Living communities provide equitable accessibility for all. This includes physical access throughout the masterplan to all amenities and services for people with disabilities. It also includes digital accessibility, ensuring that effective telecoms infrastructure is in place for building users.

The needs of low-income groups are considered, whether through providing affordable housing or employment opportunities in the green economy.

Consideration is given to reducing or avoiding very high levels of income and wealth inequalities, for example by providing affordable housing where required. A balanced economy is promoted with a range of income groups supported.

Employment created is as accessible as possible to a wide cross-section of local people including disadvantaged groups. Where commercial or office space is available onsite, consideration is given to offering space for community groups, social enterprises, not-for-profits and local start-ups, for example by providing co-working space or hot-desking facilities.

One Planet Living communities contribute to the local economy by considering local suppliers and contractors during construction and operations, and supporting them to offer apprenticeships, training and work experience. The design process itself also benefits local suppliers and provides local employment and education opportunities.

International trade is promoted where this does not involve exploiting people or the environment, for example by selecting certified Fairtrade or responsibly sourced products and working with suppliers that demonstrate efforts to improve the social and environmental impacts of their supply chains.

Technical guidance and best practice

Addressing local need, providing social value
Best practice would involve projects carrying out a Needs analysis to map out:

- the demographics and services in the surrounding area
- any gaps or shortfalls in provision
- any relevant local socio-economic indicators that highlight the existence of disadvantaged or equity-seeking groups

Project teams should engage early with key stakeholders to identify priorities and concerns.

In response to the Needs analysis, project teams should explore opportunities to contribute towards greater equity and to enhance the local economy. This might be through:

- creating jobs, training and apprenticeships
- prioritising local sourcing, local suppliers and contractors
- providing affordable/flexible workspaces
- providing an appropriate mix of affordable homes

Project teams should refine these opportunities with stakeholder input.

You could also consider offering a creative programme of events and engagement to help address a particular equity issue, or to support targeted local economic wellbeing.

To demonstrate best practice, projects would explain in their action plan (or supporting documents) what specific equity-seeking group(s) the project aims to support and the measures they plan to deliver. The action plan should also explain how the project is supporting the local economy.

Projects would also provide at least two case studies that show how they are addressing equity or local economy issues highlighted in the Needs analysis. Examples of 'Equity and local economy' case studies are provided below.

Projects can appoint a social value consultant to evaluate the social value they intend to create. Several tools can be used for this:

- Social return on investment
- Local multiplier effect tool (LM3)
- Social value portal and the TOMs system
- HACT Social Value Bank

Projects should consider setting a quantified social value target that reflects the scheme size and explaining why this is ambitious and appropriate.

Affordable homes and mixed tenure
For best practice, projects should either meet or exceed local authority requirements on the provision of local affordable homes. A strong justification must be provided if these requirements are not likely to be met for any reason.

Responding to the project Needs analysis, housing needs survey and any other desk-based research, we encourage projects to provide a range of tenures. These might include social rent, affordable rent, shared ownership and discount market sale. Projects should demonstrate that the local need has been met, with a range of homes including family size and key worker homes.

For best practice, housing designs should be tenure-blind. Best practice would also involve creating secure lifetime tenancies for social rent.

Pioneering practice might involve testing whether the rents and house prices are genuinely affordable, as multiples of median local earnings. It might also involve exploring community-led housing, partnering with community groups, and perhaps establishing a community land trust to ensure permanent affordability and ongoing good management.

Digital connectivity
One Planet Living communities should have excellent digital connectivity, including superfast broadband, or to be superfast-ready where this is not currently provided. Some leading projects choose to aim for certification from Wiredscore.com. In some cases, the Needs analysis may identify opportunities to improve digital inclusion through community interventions such as digital skills training.

Accessibility and inclusion
All public areas should be fully accessible, designed using the principles of universal design, promoting accessibility and inclusion for all. Dwelling designs should be accessible and adaptable to the appropriate local authority requirements. Project teams should explain how they have met this requirement in the action plan or in supporting documents.

Real Living Wage
The action plan should explain how a real living wage, as promoted by the Living Wage Foundation, will be required in construction procurement contracts, among incoming tenant businesses, and for ongoing operations contracts.

Non-residential uses
The action plan should explain how the One Planet Living ethos and targets will be required for incoming tenant businesses and organisations.

Projects can offer the curation of pop-up spaces, sometimes known as 'meanwhile spaces', for local and sustainable makers, designers, and entrepreneurs. These can be appropriate to local needs, working with local organisations.

Indicators

Many indicators can be used to measure Equity and local economy. They should be selected on a project-specific basis. They must demonstrate delivery of the outcomes in your action plan, which in turn must respond to the Needs analysis. Here are a few suggestions:

Design stage
- % of affordable housing
- % homes meeting Building Regulations Part M4(2) wheelchair adaptable
- % commercial floorspace reserved for micro/small businesses or other priority occupiers

Construction stage
- Apprenticeships and training opportunities
- % of procurement from local supply chain during construction
- % of contractors onsite paying a living wage, or status as a living wage employer compared to a local benchmark
- % local construction workers (definition of local to be project-specific)

Occupation stage
- Direct economic value generated and distributed during construction phase
- Project spend with social enterprise and community interest companies
- % of social return on investment (% of construction value)
- % of products and services sourced locally (eg within a 10 km or 50 km radius – again, definition of local to be project-specific)
- % of displaced existing residents in affordable housing who are allocated similar affordable housing within a 1 km radius
- Number of a) temporary and b) permanent full-time jobs created as a direct result of project
- % of Fairtrade-certified products used, consumed or sold annually
- % of employers on site paying a living wage, or status as a living wage employer compared to a local benchmark
- Income and/or wealth range for top to bottom for residents
- % of employees that are local (eg within a 10 km radius)
- % of commercial or office space available to not-for-profits, social enterprises and start-ups on a flexible or reduced-rent basis
- Number of new businesses created or attracted to the locality
- % of independently owned businesses onsite

Top tip

Use your purchasing power to engage supply chains, as these represent a huge opportunity to promote sustainability. Consider encouraging your suppliers to adopt the ten One Planet Living principles and to start creating their own One Planet Living Action Plan. This will enable you to create your own 'One Planet Living economy' or 'One Planet Living ecosystem' to help improve your own performance.

Stories and images

Are there any personal stories to share about new jobs or training opportunities that have been created for local people? Have any new businesses or social enterprises started – is there an image of an opening ceremony? Are more people shopping locally or purchasing Fairtrade goods? Is there an image of a great new local product? Do you have a story about a previously disadvantaged person who has taken an opportunity provided and benefited themselves and the community?

Case study

North West Bicester - keeping money in the local economy

North West Bicester (NW Bicester), the UK's first eco-town and a One Planet Living community, has demonstrated strong engagement with 'Equity and local economy'. In April 2012 a Business Portal was launched on the NW Bicester website, giving businesses within a 50-mile radius the opportunity to register an interest to become involved in first-phase delivery. Lead developer A2Dominion prioritised local companies that were able to provide a 'green' service in the procurement process, with 79% of work packages let to local companies.

Image: Paul Blakemore

Case study

Socius goes back to school to help students learn more about real estate

Socius actively engages students of all ages in the real estate industry through a range of educational initiatives. These have included participating in school careers fairs and delivering regeneration workshops to sixth form geography students, right through to engaging with university masters' students, offering insights into large-scale project delivery.

Socius has hosted creative workshops at its Soapworks office in Bristol, where students designed their ideal spaces, while other workshops involved using virtual reality technology to explore real estate models. Through these efforts Socius fosters interest in the real estate sector and emphasises the industry's role in creating positive social impact.

Image: Courtesy of Human Nature

Case study

The Phoenix – providing affordability and inclusion in Lewes

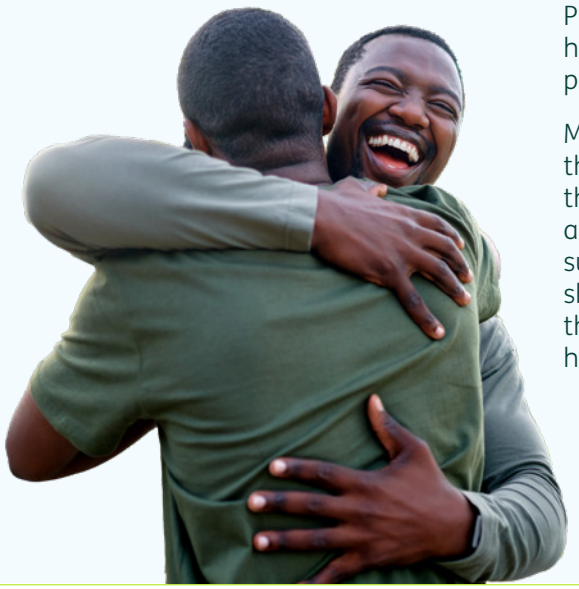
The Phoenix is the highly sustainable redevelopment of a 7.9-hectare brownfield site within the South Downs National Park. To help meet the housing and equity needs of Lewes residents, much of the housing will be one and two-bedroom homes, particularly aimed at young people, young families, and older people who are looking to downsize. Up to 210 affordable homes, or 30% of the total number, will be designated as either First Homes or for affordable rent.

Culture and community

Nurturing local identity and heritage, empowering communities and promoting a culture of sustainable living.

One Planet Living goals

- To foster a sense of place and belonging
- To encourage active citizenship
- To enhance local culture, heritage and sense of place
- To nurture a deep culture of sustainability



The case for action

Loneliness affects 7% of people in the UK, who report that they feel lonely most or all the time. The problem is worsened by rapid urbanisation and the decline of civic spaces.

Creating new communities where people feel a sense of belonging and pride can help foster a greater sense of belonging, reduce crime rates and nurture the growth of local environmental initiatives.

There are compelling economic reasons to integrate an area's cultural assets into community design. Properties near cultural heritage sites have been known to attract a premium of as much as 20%.

Moreover, engaging communities in the design process will help ensure that developments meet local needs and aspirations, leading to more successful projects. Research also shows that residents' attachment to their communities correlates with higher economic growth.

Topics to address under this principle

- Addressing local needs
- Community engagement at design stage
- Retaining heritage features and acknowledging local vernacular
- Celebrating existing culture and heritage
- Community facilities
- Community governance
- Safety and security
- Community engagement during construction stage
- Community engagement during construction and occupation
- Resident surveys and monitoring

What does good look like?

One Planet Living communities are vibrant and active and enhance existing and surrounding communities.

Project teams involve local people at an early stage through consultation and co-creation of plans for the scheme. The design process proactively and inclusively researches and understands the local context, culture and needs. The resulting development responds to those needs, for example in housing, employment, education or training.

For redevelopment projects, relocation strategies prioritise the needs of existing residents and maintain existing communities.

Community-focused design balances private space with public access. One Planet Living communities provide welcoming outdoor and indoor public space for people to come together and socialise. This helps to reduce crime and the fear of crime and supports community cohesion and mental and emotional health. Spaces for the community to gather become focal points for neighbourly living. Models for collaborative living such as co-housing are considered and adapted to the local context.

To provide a sense of place, One Planet Living communities honour and celebrate the culture, history and identity of local existing communities, for example by using traditional construction materials, public art, vernacular design and native planting. In this way they integrate well and are welcomed by existing residents.

In operation, One Planet Living communities actively nurture a sense of community. The community-focused design and facilities enable community-focused events. Culture and diversity are celebrated through markets, exhibitions and activities.

The long-term stewardship of the community is planned from the outset. Clear governance and property management systems are established that enable active and meaningful community involvement and incorporate One Planet Living principles. The strength of the physical community is enhanced by creating a virtual community for the development, for example through social media groups or online networks.

A sharing economy (or 'collaborative consumption') is facilitated via car-sharing, car clubs, tool libraries or by promoting sharing apps.

A culture of sustainability is nurtured where people take responsibility and participate. One Planet Living communities often plan for training and education to support a culture of sustainability and build understanding of environmental challenges and opportunities. Accessible and interactive public-facing information communicates the sustainability credentials of the scheme and its ongoing performance.

Residents receive a carefully designed series of sustainability touchpoints from initial enquiries and sales, through to move-in inductions, walk throughs and post-occupancy follow up. Human resources are often provided to support residents to organise ongoing community-based sustainability initiatives.

Technical guidance and best practice

Addressing local needs
To demonstrate best practice, projects should:

- Carry out a local Needs analysis to identify and quantify the existing community's needs in terms of health, recreation and/or social provision. This should be combined with mapping community and cultural facilities and services in the surrounding area, to identify significant gaps or shortfalls in provision or relevant challenges or opportunities that the One Planet Living community could help to resolve.
- Partner with a locally focused community entity to deliver appropriate community benefit, responding to the Needs analysis.
- Provide at least two case studies that will address Culture and community opportunities signposted in the Needs analysis. They should represent what the project team considers as the most relevant and important opportunities. Examples of Culture and community case studies are provided below.

Community engagement during design stage
The design of new developments will consider opportunities to increase community cohesion and interaction. Existing communities are expected to have a voice throughout the consultation and design process.

Projects of over ten homes are expected to produce a statement of community involvement, explaining how the community will be proactively and inclusively involved in the preparation of the design and delivery stages. The statement should also set out the steps that will be taken to encourage this and to ensure a culturally and demographically representative level of participation.

Drawing on the project's Needs analysis, project teams should explain how quieter or 'less heard' voices have been identified from among those affected by the project, and how they plan to allow all stakeholders, particularly those with quieter voices, to meaningfully take part.

They should explain how the engagement process either has been or will be effective in delivering good outcomes for the local, affected community, as well as the new incoming one, both in the design and operation stages.

Key strategies for inclusive, transparent and ongoing engagement include:

- Begin engaging with the community as early as possible, ideally before the design process starts. This allows for community concerns and ideas to be integrated from the outset.
- Use a variety of methods to reach all segments of the community, including public meetings, workshops, surveys, online platforms, and targeted outreach to underrepresented groups.
- Clearly communicate project goals, timelines, and potential impacts. Make information accessible, using plain language and visual aids where possible.
- Explore using interactive design workshops where community members can actively participate in shaping proposals. This fosters a sense of ownership and ensures that the design reflects local needs and aspirations.
- Explore mechanisms for continuous feedback throughout the project, allowing the community to review and comment on evolving designs. Regularly update the community on how its input is being used.

Useful references:

- BREEAM has some guidance on community engagement under credit Man01 Stakeholder Consultation
- Online engagement platforms such as www.givemyview.com and www.commonplace.is provide tools for digital engagement, helping increase participation and diversity. These provide case studies of successful consultation. They use gamification to reach diverse and younger audiences, unlocking greater community insights.

Existing culture and heritage
Project teams should research the local cultural and heritage of the location and any existing heritage buildings or features. Where possible, heritage buildings, facades or features should be retained or re-incorporated into the new design. Designers can look for creative ways to celebrate and express cultural identity through the design.

Community facilities
One Planet Living communities have dedicated space for public use, appropriate to the scale of the project. The space should be flexible, adaptable and suitable for a diverse range of community uses to maximise potential utility. This should help to facilitate social cohesion, build trust within the community and build social capital.

Spaces that become temporarily available, awaiting their ultimate use, can sometimes be used in imaginative ways as part of a community development programme. These spaces, sometimes known as 'meanwhile spaces', can provide community space suitable for running reuse and repair activities.

These might include repair cafés or offering shared resources such as woodwork or electrical tools, perhaps through a tool library or a library of things. Other spaces might be more suitable for temporary exhibition spaces, artists-in-residence or community murals, or perhaps performance spaces, festivals, an urban beach or open-air cinema.

Children's play provision should exceed 10m^2/child. Project teams should design play and recreation into the landscape and public realm, and even into walls and structures themselves, so that the play offering is both maximised and integrated into a muti-purpose design. Useful resources are found at Play England and in the London Plan - Policy S4 on Play and informal recreation (p227).

Safety and security
We recommend that design teams use the core principles set out in the Secured by Design guidance for homes (2023) to ensure that buildings, streets and public spaces are designed for security and safety, with natural surveillance and active frontages eliminating possible crime spots.

However, sometimes Secure by Design principles can lead to features that have an adverse effect on other important considerations. For example, high fences between gardens can impede good casual neighbour-to-neighbour conversations, and excessive street lighting can deter wildlife such as bats. A balanced approach is needed.

The National Design Guide is a useful technical resource with some key principles on designing for safety.

Either the action plan or supporting documents such as the Design and Access Statement can explain the approach the scheme takes to security.

The site design should be legible to all ages, including children and people with dementia (level access, sightlines, wayfinding, place markers).

Construction stage
We expect project teams to require contractors to sign up to the Considerate Constructors Scheme (CCS) and achieve a rating of 'Excellent.' However, this may not always be financially viable for SMEs or projects with smaller budgets. While we encourage an 'Excellent' rating, a 'Good' or 'Very Good' rating is acceptable.

The focus should be on meeting key aspects of the scheme, such as community engagement, safety, and environmental impact.

Project teams should continue engaging with the community after planning approval, keeping them informed about the construction process and promptly addressing any emerging issues. This ongoing communication is particularly important in regeneration projects and in those where existing residents are affected by construction activity.

Key best practice approaches can include:

- Before construction begins, hold meetings with the community to outline the construction timeline, key activities, and potential impacts. Provide contact details for a dedicated community liaison person.
- Maintain consistent communication with the community through newsletters, social media, websites, and noticeboards. Provide regular updates on progress, upcoming work, road closures, diversions and any changes to the schedule.
- Ensure measures are taken to minimise noise, dust and vibration during construction. Communicate these efforts to the community.
- Ensure that construction sites are marked, with safety information and contact details prominently displayed.
- Aim to offer local employment opportunities, apprenticeships and training programme (the Equity and local economy principle).

Occupation stage governance and culture of sustainability
Projects should have a community engagement strategy covering sustainable lifestyle events, initiatives and campaigns. All incoming residents should receive an induction and a Home User Guide with information on how to operate their new home, sustainable activities and facilities in the area, and tips on how to make sustainable choices. Community spaces should be used to run events to promote sustainable lifestyles, products and services.

One Planet Living should be formally incorporated into the management of the estate and 'green leases' used to embed sustainability into the operation of commercial and community spaces. Estate governance should be designed to ensure retail and workspaces align with a shared set of sustainability values.

Useful resource: TCPA's long-term stewardship toolkit

Resident surveys
Projects should create annual or biennial resident surveys to understand how well the community is working, across all ten One Planet Living principles. Depending on the type of community, these surveys should be carried out for at least three years on disposed assets, five years for retained assets and on an ongoing basis for managed assets.

Indicators

Resident surveys or interviews can be used to enquire about many aspects of Culture and community during the occupation stage.

Headline indicators
- Average number of neighbours that residents know by name
- Number of community activities or events in the past 12 months
- Number of people participating in community activities or events in the past 12 months
- Survey questions to review how safe people feel onsite, and address spots where they feel and/or are at risk of crime
- % of existing heritage buildings or features on site retained or enhanced
- Number and diversity of local stakeholders engaged at key points throughout the design and development process, including participating in community engagement events

Optional indicators - depending on capacity for detailed survey questions and levels of resident engagement, this is a menu to choose from:
- % of residents who say that they borrow things and exchange favours with their neighbours
- % of residents agreeing that people from different backgrounds get on well in the local area
- % of residents familiar with, or inducted in, the One Planet Living principles
- % of residents who have participated in community decision-making in the past 12 months
- % of residents who have volunteered in the last 12 months
- % of residents who strongly feel they belong to their immediate neighbourhood
- % of residents who say they feel safe walking alone in their local area after dark
- % of residents who say they feel safe in their home and neighbourhood, including after dark

→

Top tip
Think about giving residents the opportunity to find their own balance between private and community life. Search for opportunities to reach out, learn from, influence and co-create solutions with surrounding communities.

Look for indicators on accessibility of amenities in the 'Travel and transport' section.

Stories and images

Have any community-led groups or activities started and what was the story behind them? Have there been any intergenerational activities or events where young people have been learning from older people, or vice versa? Could you run a mini competition to find the image that best conveys that the place is becoming special? Has anyone suddenly unearthed a creative talent that had previously remained hidden? Are there any examples of an emerging culture of sustainability?

Photo: David Butler, Courtesy of TOWN

Case study

Marmalade Lane – creating social cohesion through good design

Marmalade Lane is a co-housing development in Cambridge designed to create a strong, interconnected community. Marmalade Lane consists of 42 homes centred around shared spaces, including a large communal house, gardens and play areas. This layout encourages social interaction, mutual support and resource sharing, making it easy for residents to connect daily.

Community-led decision-making is embedded in the structure, with residents collectively managing the development and organising events like shared meals, workshops and cultural gatherings. This not only enhances social cohesion and wellbeing but also reinforces environmental stewardship, as residents share resources and take collective responsibility for sustainability initiatives.

Photo: Silvia Brazzoduro, Unsplash

Case study

Getting the workforce on board – One Planet Living inductions for construction workers

Both One Brighton in the UK and Zibi in Canada have created specific One Planet Living inductions for construction workers. These inductions introduce the project's environmental goals, such as reducing waste, conserving water and sourcing sustainable materials, ensuring that everyone onsite understands the vision and their role in achieving it.

Beyond technical guidelines, the inductions promote a culture of respect, wellbeing and community among the workforce, encouraging collaboration and a sense of pride in contributing to sustainable, people-centred developments.

Photo: Andy Hall

Case study

Culture and connection at BedZED

BedZED (Beddington Zero Energy Development) in south London fosters a strong sense of belonging and community life rooted in sustainability. With shared spaces like communal gardens, allotments and a community centre, BedZED encourages frequent social interaction and resource sharing among residents.

Homes are arranged along pedestrian-friendly pathways, creating a close-knit atmosphere where residents are reported to know an average of 20 of their neighbours, compared to just eight in typical UK neighbourhoods. Regular community events and sustainability workshops further empower residents to lead eco-conscious lives and make collective decisions.

Travel and transport

Reducing the need to travel, encouraging walking, cycling and low-carbon transport.

One Planet Living goals

- To reduce car dependence and the need for daily travel
- To make it easy and attractive for people to walk and cycle
- To promote public transport
- To promote car sharing (including car clubs) and low/zero-carbon vehicles including electric cars
- To raise awareness of the impacts of, and promote alternatives to, air travel

The case for action

Road transport in the UK accounts for 27% of greenhouse gas emissions, with single-occupancy car journeys the biggest contributor. As well as creating congestion it is polluting: air pollution results in up to 10,000 early deaths a year. Unsightly car parks taking up valuable land and aviation further inflate our carbon footprint.

To cut carbon emissions, improve air quality and public health we must reduce private car ownership, as well as encouraging a shift to public transport, uptake of electric vehicles, and walking and cycling for shorter journeys.

Developers are well placed to meet growing public demand for more sustainable ways of living and healthier forms of transport. They can create more attractive, safer new communities that make low-carbon transport the obvious choice.

Topics to address under this principle

- Site selection to reduce car dependence and the need to travel
- Provision of onsite facilities
- Design and safety of walking and cycling routes
- Provision for micro-mobility such as e-bikes
- Car parking provision
- Promoting public transport
- Promoting car sharing and low emission vehicles
- Promoting awareness of the impacts of air travel

For inclusive provision for people with mobility impairments, please see One Planet Living principle ‘Equity and local economy’.

What does good look like?

One Planet Living communities are located on sites well chosen for easy car-free access to amenities, with good public transport, walking and cycling infrastructure. For sites where these facilities are less readily available, project teams work extra hard to devise creative solutions to keep travel-related carbon footprints aligned with One Planet Living.

Design stage

A One Planet Living community is a place where people can walk and cycle easily and where it is more attractive to live without a car. The community is close to or has its own essential local amenities such as public transport, schools, health centres, business districts, shops and leisure facilities within a 15–20-minute walk.

Onsite facilities are designed to complement existing local facilities as appropriate and are likely to include home and community workspaces. Neighbourhoods are attractive and accessible, with walking, cycling and public transport prioritised as the most convenient modes of transport.

Communities have well-marked, segregated and safe cycle and pedestrian routes throughout. They are well connected to nearby urban areas through good public transport links and safe walking and cycling routes. Bicycle storage is easy and safe. Communities have ample secure bicycle storage space and maintenance facilities.

A suitable mix of facilities that meet all common needs is easily accessible by walking and cycling. Innovative business models such as 'meanwhile uses', shared building uses and visiting mobile services are explored to meet a wide range of resident needs upon occupation. All of them are within walking and cycling distance.

Occupation stage

The majority of residents travel by walking, cycling, or using public transport for the majority of their journeys, whether for work, leisure, or to get to nearby facilities. Communities have a car/e-bike club where residents can share vehicles rather than everyone needing to own them. For residents who own cars, the majority are electric vehicles and have adequate charging facilities.

Residents are happier and healthier because they take active transport options more often. Children can get to local schools safely by walking, cycling or using reliable public transport, even in the most rural locations. Information on local public transport is easily available. As part of the sustainable lifestyles engagement programme, information on the environmental impacts of flying and alternatives to doing so is easily accessible.

Technical guidance and best practice

Projects should develop a 'movement framework' as part of the transport assessment. This will maximise connectivity throughout the site and into the surrounding area, making the most of existing connections to encourage new movement and activity (see BREEAM Communities SE07/TM02). Early engagement with public transport service providers is key.

Private car parking provision should only be considered after active travel and public transport have been optimised. Providing unallocated parking spaces and flexibly designing parking spaces for other potential future uses are best practice.

For best practice, car parking provision would not exceed minimum local statutory requirements. Ideally it should be significantly lower. It is pioneering practice to negotiate the planning authority's agreement to reducing the minimum requirement for parking spaces, once green travel measures have been accounted for.

For larger schemes the project team should consider the feasibility of 'shared streets' or 'home zones', which restrict car use and prioritise pedestrians (see BREEAM Communities SE07).

There must be ample provision of 7-22kW EV charging infrastructure, in compliance with Part S Building Regulations. The remainder should be 'EV-ready', with the necessary electrical capacity for future chargers.

There are many excellent resources to guide good practice. We recommend that projects draw on all the following resources:

- The Local Transport Note (LTN) 1/20 is the definitive national standard for cycling infrastructure design
- The Manual for Streets helps to determine the most appropriate streetscape design
- Inclusive Mobility is a guide to best practice on inclusive access to pedestrian and transport infrastructure
- Royal Town Planning Institute (RTPI) guidance on implementing 20-minute neighbourhoods
- Living Streets recommendations on 20-minute neighbourhoods, which 'equates to less than 800m for most people, although distances should be even shorter to make the 20-minute neighbourhood fully inclusive'
- The Public Transport Accessibility Index Data 2022 for assessing project locations for the accessibility of a range of amenities by public transport
- For projects making use of accreditation frameworks such as HQM, BREEAM Communities or LEED, target the credits that relate to this subject area
- Project teams can make use of a free isochrone mapping tool to explore and communicate what amenities are accessible by different travel modes within say 10 or 20 minutes

For best practice, all common amenities must be easily accessible by walking, cycling or by public transport, within a reasonable travel time (amenities include a primary school, convenience store, doctor, dentist, pharmacy, pub, church, park and playground). All homes must be within a 15-minute walk of frequently running public transport. For urban schemes this should be at least every 20 minutes, and for rural schemes it's important to explore creative solutions such as a community buses.

Best practice would also involve project teams making use of Active Travel England's Planning Application Assessment Toolkit and completing the checklist assessment process. Or, if there is a similar set of guidelines more appropriate to your project you can use that instead, explaining why.

Top tip

Cars connect people over long distances, but they also disconnect us from our neighbours and reduce neighbourliness. One Planet Living communities offer both mobility and community interaction while reducing car ownership and use.

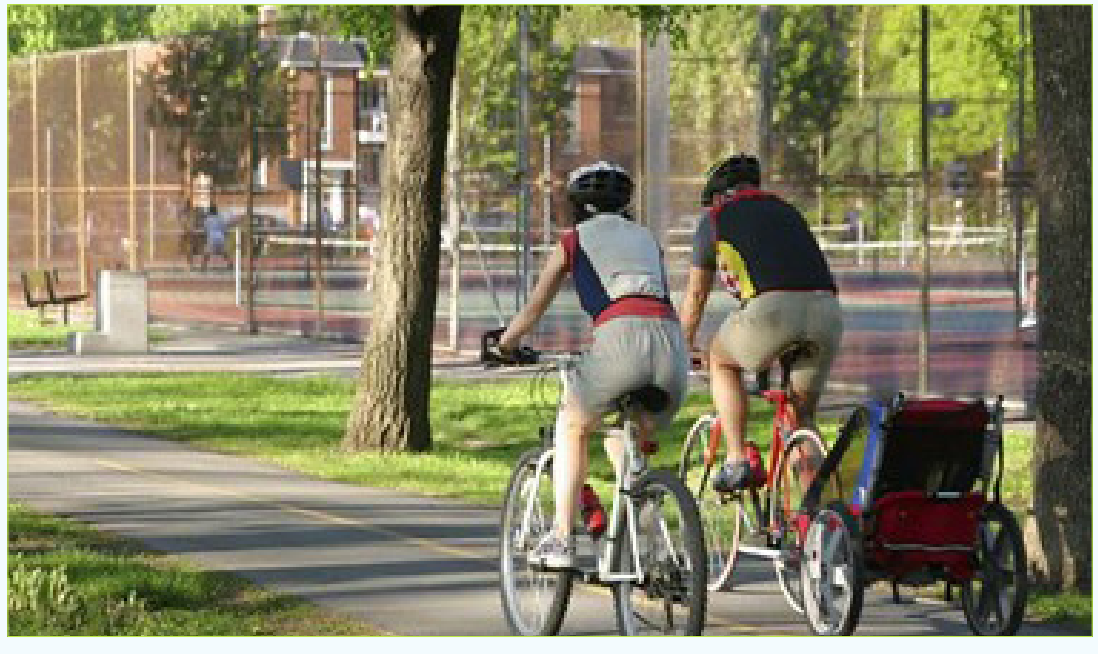
Indicators

Design stage

- % of dwellings within a 15-minute walk of public transport that runs at least every 20 minutes
- Ratio of secure bicycle storage spaces to occupants
- Number of parking spaces per dwelling

Occupation stage (assessed using periodic resident surveys, aiming to compare favourably with a suitable local baseline)

- Mode-share breakdown, ie % of journeys made by walking, cycling, public transport, electric and other vehicles
- Number of cars owned/leased per person or per household
- % of vehicles that are electric
- % of vehicles that are low/zero carbon (eg hybrid or hydrogen powered)
- Estimate of annual per capita transport CO_2 emissions (kg CO_2e/person/year)
- % of community members taking one or fewer international flights per year



Stories and images

What is the personal story behind someone who is walking or cycling more? Has anyone got rid of their car, and if so, how do they feel about it? Are there images of children playing or neighbours chatting in the car-free streets?

Courtesy of the County of Cornwall

Case study

Poundbury, Dorset – a visionary approach to reducing car use

Designed to be a mixed-use community, Poundbury integrates homes, shops, businesses and community facilities within close proximity, encouraging residents to walk or cycle for daily needs. Streets are designed to be pedestrian-friendly, with narrow roadways and shared spaces that calm traffic, creating a safer and more enjoyable environment for non-motorised travel. The development is also connected to nearby Dorchester through bus routes, further reducing the need for private car use.

Land and nature

Protecting and restoring land and marine systems for the benefit of people and wildlife.

One Planet Living goals

- To ensure a positive contribution to local biodiversity
- To maximise carbon sequestration in the soil and biomass
- To maximise the synergies between agriculture, forestry, biodiversity and carbon storage
- To enhance 'ecosystem services' such as providing clean water and clean air
- To engage people in recognising the value of nature, including its value to human health

The case for action

The rapid urbanisation that the UK has seen over the past half a century has been accompanied by an equally swift and alarming loss of biodiversity: some 58% of UK species have declined since 1970, and 15% are threatened with extinction. Many of these species, including soil carbon organisms and food crop pollinators, are vital for humanity's continued survival.

But developers can be at the vanguard of leading positive change, meeting demand for new communities in a way that regenerates habitats, creates new green spaces and helps soak up carbon dioxide. And with research showing that living near nature benefits wellbeing and that proximity to green spaces can increase property values, what benefits the natural world clearly also benefits business.

Topics to address under this principle

- Baseline ecology surveys
- Key species and habitats
- Invasive species
- Wildlife corridors and connectivity
- Landscaping for climate resilience and adaptation
- Integrating nature with public realm and buildings
- Ongoing landscape management
- Enhancing local 'ecosystem services' such as clean water and clean air
- Engaging people in understanding the value of nature

What does good look like?

One Planet Living communities protect and restore natural systems for the benefit of people, local wildlife and the biosphere (the living part of our planet).

One Planet Living communities are not built directly on protected or ecologically sensitive sites. Where possible they are built on previously developed land (brownfield sites) or degraded land such as former industrial sites. They do not cause the loss of the best and most versatile agricultural land.

Key species of plants and animals which are locally, nationally or internationally significant are identified and plans put in place to enable them to thrive. Onsite 'ecosystems services' – services which nature provides us – such as soil building, clean water, clean air, preventing flooding or overheating in cities (heat island effect), providing food and natural materials and cultural and recreational services are identified and maintained or enhanced.

When building on greenfield sites One Planet Living communities minimise damage to existing natural value. They are also designed to increase natural value after development, for example by providing a net benefit to wildlife, coastal ecosystems and freshwater management. Planting schemes benefit local wildlife and avoid invasive species. Overall, they help restore nature and create a biodiversity net gain onsite.

Private gardens in One Planet Living communities have a good depth of healthy, uncompacted soil, free from construction waste, allowing residents to grow abundant plants and vegetables.

Opportunities for education on the value of land and nature are integrated into operations, for example via activities such as talks, tree planting and making nest boxes for birds. One Planet Living communities also support biodiversity offsite by identifying nature reserves nearby and promoting them to residents, and contributing to their upkeep where possible.

Projects avoid products and materials that harm natural habitats. This includes any timber that is not certified as sustainable, or using any compost that contains peat.

Technical guidance and best practice

For best practice, projects should undertake an early assessment of the ecological features of the site and surrounding area, such as an ecology report and tree survey, to gain a detailed understanding of the existing ecological value of the proposed development site. This is important in assessing how to:

- avoid and minimise negative impacts
- identify invasive species to be eliminated
- identify which species it would be of most benefit to support and/or introduce

Projects should also demonstrate an improvement in biodiversity onsite. Projects should achieve 10% biodiversity net gain (BNG) using the Statutory Biodiversity Metric.

Onsite biodiversity improvement should always be prioritised, with the goal of achieving at least 10% BNG onsite.

We recognise that if sites have a high baseline ecological value, achieving 10% BNG onsite may not always be feasible due to site constraints. If this is the case, offsite measures can be considered, but only as a secondary option. Offsite compensation should only be used when onsite solutions are not viable – the focus should remain on enhancing the biodiversity value of the site itself.

In some projects the characteristics of the site might make it relatively easy to achieve the BNG target. In these cases projects should take the opportunity to exceed the 10% BNG target and demonstrate strong leadership in enhancing biodiversity.

For sites with minimal or no measurable existing biodiversity, the Urban Green Factor (UGF) can be used as an alternative. The target UGF scores are 0.3 for predominantly commercial developments and 0.4 for predominantly residential developments. Alternatively, projects should provide a minimum of 2 biodiversity habitat parcels per hectare.

This approach recognises that site characteristics and constraints play a significant role in determining what's achievable. Even if projects don't reach 10%, those that demonstrate substantial on-site biodiversity improvement might still be a great example of best practice.

An emerging best practice approach is Environmental Net Gain (ENG). The Department for Environment, Food & Rural Affairs (Defra) describes this as achieving biodiversity net gain first but also going further to achieve net increases in natural capital, delivering ecosystem services such as improved water quality, air quality, soil health and carbon sequestration.

ENG can be measured using the current version of Natural England's Environmental Benefits of Nature (EBN) Tool. This enables schemes to design BNG enhancements to achieve wider environmental benefits.

One Planet Living communities with >2ha of landscaping should aim for the carbon-storing capacity of land to be greater after development than before.

Recommended tools and resources – tell us if you have used any of them in your action plan:

- Natural England's Green Infrastructure Framework
- Building With Nature (BWN) – aim to achieve accreditation or have BWN principles written into the design brief
- Green infrastructure valuation tools (eg the open-source Mersey Forest GI-Val toolkit)
- Wildlife Trust: Homes for people and wildlife

Useful resource – The Green Infrastructure Resource Library

Projects must specify a planting mix for the site that maximises native species, eliminates any invasive species on site and is appropriate to the area's predicted climate (eg flood, drought, heat) or otherwise provide food or year-round shelter to wildlife. They should specify drought-tolerant species that require no mains water irrigation beyond their initial establishment.

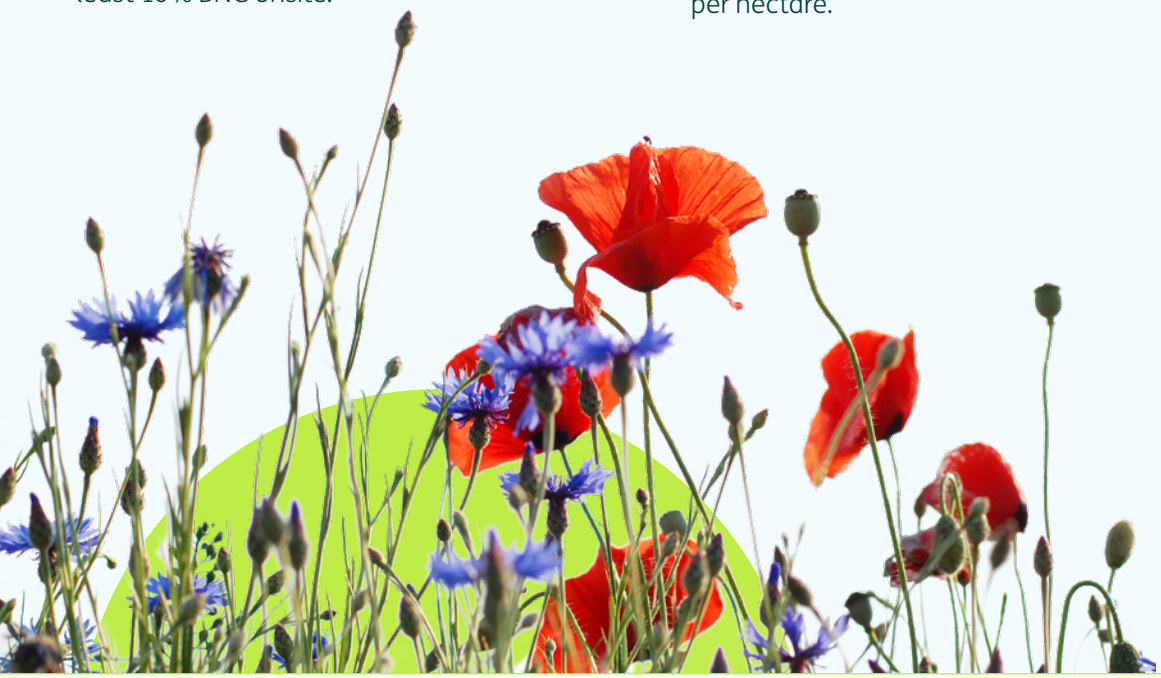
Project teams should engage with local ecology/conservation groups to:

- identify signature species or habitat types that the project can significantly benefit
- help manage greenspaces, educate residents and enhance the ecological connectivity of the site beyond the red line boundary

New boundary and buffer features on proposed sites should be designed to maximise value to biodiversity by forming green corridors to any existing and nearby external features. This is so that as well as providing food and shelter they enable wildlife to forage more widely and migrate to new habitats.

Project teams should explore opportunities to incorporate ecological features into building design such as integral swift bricks, bird nesting boxes, bat bricks, green roofs and biosolar roofs (solar PV combined with green roofs). Outdoor lighting should be designed to minimise impact on wildlife.

Greenspace and natural areas should be designed to be as multifunctional as possible, for example providing habitats for wildlife and enhancing the landscape setting, as well as providing flood risk reduction, urban heat island reduction, social and recreational space, wild food foraging, shade or bike storage.



Within public realm spaces, project teams should explore the opportunity to incorporate a variety of habitats such as small areas of wildflowers, semi-scrub grass verges, wet ditches that incorporate sustainable urban drainage systems (SuDS), log piles, bee planters and trees.

The project team should create a landscape and ecology management plan for future maintenance, to be reviewed every two years.

For private gardens, NHBC standards should be followed. These include providing at least 100mm of topsoil free from contamination and compaction.

Indicators

Headline indicators

- % of new construction built on previously developed land
- % of previously developed land returned to its natural habitat
- Improvement in biodiversity value using a biodiversity metric, eg Statutory Biodiversity Metric
- For sites with a baseline of no or low biodiversity, use the Urban Greening Factor or number of biodiversity habitat units per hectare

Optional indicators

- % of greenspace for functions such as water management, recreation, biodiversity, food growing, carbon storage or cooling
- Number of key species sighted in the local area (such as plant or bird species)
- Site-specific signature species: track the numbers, perhaps through citizen science
- % of total site area put into a protected habitat status as a result of development
- Measure of the capacity of land to absorb carbon ($kgCO_2$/ha), or other ecosystem service such as water management (m^3/ha)

Top tip

Further indicators on food growing are under 'Local and sustainable food' and a further indicator on flood risk management is under 'Sustainable water'.

Stories and images

Has anyone joined a local conservation group or started a conservation volunteering group onsite? Can residents and guests collect a photo library of wildlife seen onsite? Are people more aware of wider conservation issues and their impacts, eg have any residents/visitors switched to buying peat-free compost?

Case study

Mayfield Park, Manchester - revitalising urban nature

Mayfield is a 24-acre city-centre urban transformation next to Manchester's Piccadilly rail station. The vision: to take a part of the city largely closed off and derelict for 60 years and bring it back to life as a connected and vital city district that will bring £7.4bn of social and economic value to the region.

At the heart of Mayfield lies a 13-acre public park with one of Manchester's founding rivers, the Medlock, meandering through. Before development began much of the river was culverted over; today it flows through the park with its first phase now open.

Local and sustainable food

Promoting sustainable, humane farming and healthy diets which are high in local, seasonal, organic food and vegetable protein.

One Planet Living goals

- To make it easy and attractive for people to enjoy fresh, local, seasonal, healthy produce
- To promote diets high in vegetable protein
- To promote sustainable farming which supports biodiversity and improves soil health
- To promote humane farming
- To reduce or eliminate food waste

The case for action

The UK food system faces many challenges. One of the greatest is high levels of meat and dairy consumption, which accounts for nearly a quarter of the UK's carbon emissions and a similar proportion of our ecological footprint. Meat-heavy diets are also linked to poor health outcomes, eroding soil quality, and to the existential crisis faced by natural habitats.

Food waste is also a major contributor to methane emissions: UK households throw away approximately 6.6 million tonnes of food waste every year, the majority of which is edible. And yet with the cost-of-living crisis and rising inequality in the UK, access to fresh and healthy food is becoming increasingly difficult for those on low incomes.

The way new communities are developed, including the space and encouragement provided for growing food and disposing of food waste, can help address food security and sustainability, foster community cohesion, improve mental wellbeing, as well as differentiating properties in a competitive market.

Topics to address under this principle

- Food-growing opportunities on site
- Designing for storing and cooking with fresh food
- Sustainable catering options for construction site workers
- Engagement on sustainable food choices
- Access to sustainable food providers

What does good look like?

One Planet Living communities support a food culture that is healthy and sustains wildlife-friendly agriculture, conserving and building up soils to absorb carbon dioxide.

When designing a One Planet Living community, project teams consider space for farmers' markets, food growing, edible landscaping and community orchards. Engaging in horticulture promotes mental health, so even in dense urban areas mini allotments and window boxes are provided.

If there are retail spaces in the project, shops, restaurants and cafés are encouraged or required to offer local, sustainable, healthy food and vegetarian or low-meat options. They are even encouraged to create their own One Planet Living Action Plans. Where meat, poultry and fish are served, smaller quantities are encouraged, and they are high-quality, pasture-fed, humanely raised and sustainably produced or harvested.

One Planet Living communities celebrate a culture of healthy and sustainable eating through events, information and education. They also provide water refill stations.

Food can be a major source of both food and packaging waste. Retailers and residents are encouraged to think about ways to reduce food waste and food packaging, for example with a refill shop.

Top tip

Food can be a great way to support local prosperity. Local food mapping can help you identify and connect with local producers and organisations promoting sustainable food.

Technical guidance and best practice

Design stage

For best practice, projects would enable community food growing by including appropriate levels of food-growing space, including allotments, edible landscaping, green roofs, vertical farming space and community orchards. The question of how much is appropriate should be determined by the scheme size and respond to the Needs analysis.

The London Food Strategy is a helpful resource on how to promote access to healthy, affordable, good food, including for example guidance on locations for secure and successful allotments.

Consider engaging with the Sustainable Food Places initiative and aim to curate a wide range of food services and provision.

Projects should provide communal composting facilities for organic waste, so food scraps can be turned into nutrient-rich compost for use in gardens and landscaping. This reduces waste sent to landfills or incineration and supports a circular economy.

Construction stage

Where catering is offered for construction staff it should favour healthy, sustainable food choices. Vegetarian and vegan options should be offered as standard.

Occupation stage

Project teams should write a sustainable food strategy. This should cover food surplus and waste streams, partnerships with local charities for redistribution, the location and amount of onsite food-growing plots, and how food will be procured from local businesses.

For best practice, all incoming residents should receive a Home User Guide with information about sustainable food choices and the best local opportunities for buying, growing and eating out.

Ongoing resident engagement or community development programmes should include engagement and community activities around sustainable food choices. This could include community harvesting from fruit trees, food events with visiting sustainable food suppliers, and community meals. In areas where food poverty is an issue, particularly in school holidays, it could also include food activities that use up food that would otherwise go to waste.

Projects teams might choose to partner with organisations that aim to activate growing spaces. Examples of these are Incredible Edible and Grow Tottenham. They should also look to establish partnerships with local food banks or charities to redistribute surplus food from the community's retail outlets, cafés or community kitchens. This will help reduce food waste and support those in need.

Best practice would involve projects having a plan for ongoing engagement beyond the first year on sustainable lifestyles, including food choices. Wider post-occupancy surveys should include questions about sustainable food choices.

It would also involve planning periodic surveys to indicate sustained or improving levels of sustainable food choices among residents.

Indicators

Headline indicators

- Food growing space (m^2/person)
- Number of edible fruit-bearing trees and shrubs planted onsite

Optional indicators

- % of residents gardening at least once a month a) for food growing and (b) in general
- % of residents who regularly choose:
  a) vegetarian or vegan food
  b) sustainable fish
  c) local and/or seasonal and/or organic fruit and vegetables
  d) ethical meat, eggs and dairy
  e) Fairtrade products
- % of residents who are:
  a) mostly vegan
  b) mostly vegetarian
  c) meat eaters
- For meat eaters:
  - Average number of meals a week that include meat
  - % of residents who eat grass-fed meat from local sources
  - % of residents avoiding ultra-processed food when possible
  - Estimated amount of food waste per person (per resident per annum),
  - % of food waste being composted

For pioneering practice, communities could express their food-related impacts either as a carbon footprint ($kgCO_2e$/person/year) or ecological footprint (global hectares/person/year). In the past, this work has been carried out as part of university student research.

Stories and images

Has anyone reported that they have lost weight by switching to a healthier diet? Is anyone buying more organic or free-range food, and if so why? Do you have any great pictures of people enjoying themselves at a farmers' market?

Case study

Growing Together - One Brighton's commitment to sustainable, local food

The One Brighton development is a mixed-use residential project that integrates urban agriculture and food sustainability, giving residents access to fresh, locally grown produce. Rooftop mini-allotments, balcony planters and a communal garden with edible landscaping allow residents to grow their own fruit and vegetables, fostering a connection to their food and reducing food miles. One Brighton also supports local food systems by sourcing organic produce for community events and promoting seasonal eating.

During construction a One Planet Living canteen provided healthy, affordable meals to workers, partnering with local farmers to support the local economy. The healthier options went down well with the workforce – Greek Salad was a particular favourite in summer.

Sustainable water

Using water efficiently, protecting local water resources and reducing flooding and drought

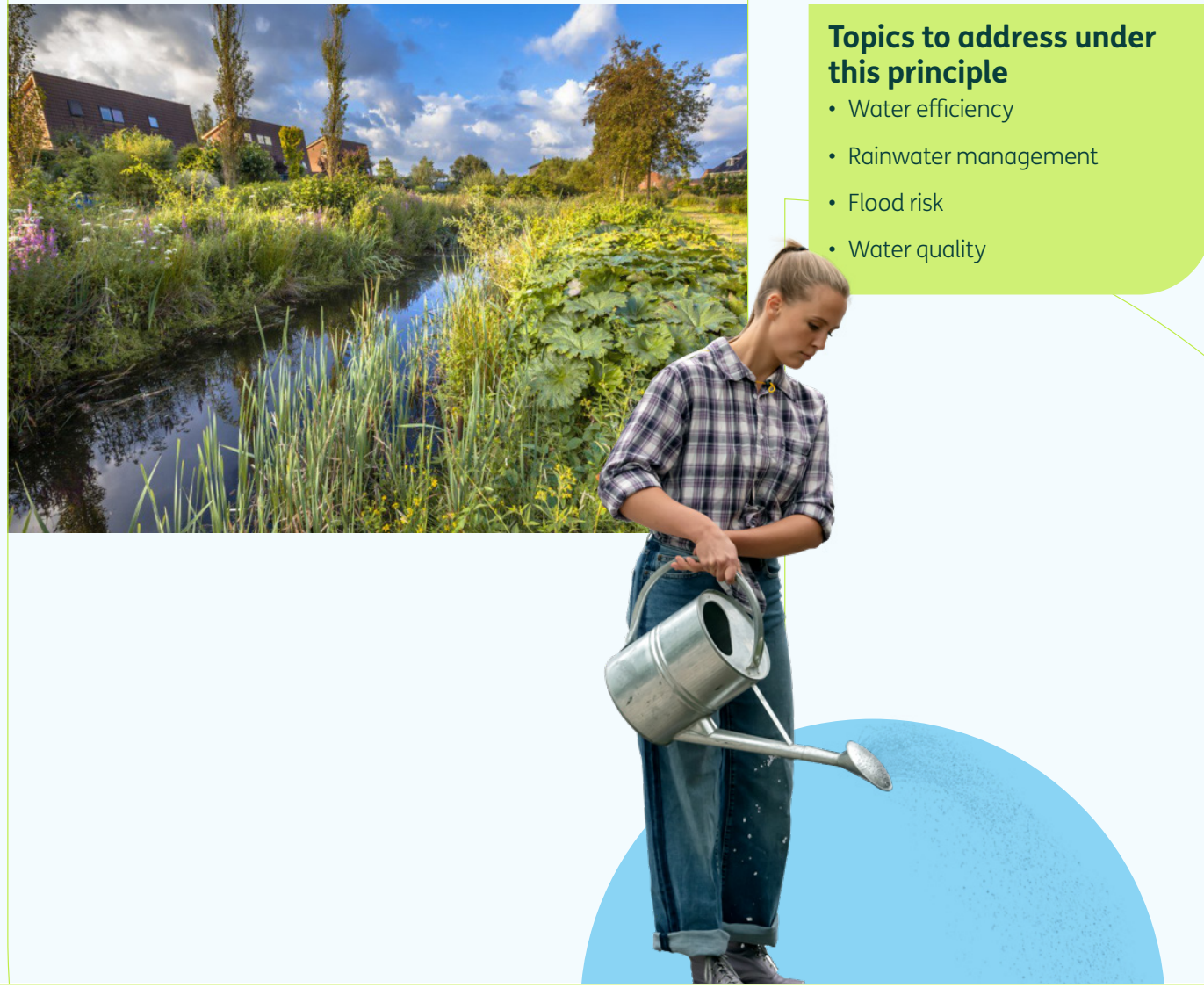
One Planet Living goals

- For everyone to have access to clean drinking water
- To use water efficiently
- To return water in a clean condition to the environment
- To contribute to sustainable water management and flood risk mitigation in the surrounding area

The case for action

The UK is heading for increasing water stress in the future: 2050 could see an estimated 16% shortfall in water supply. And with droughts set to become more severe and frequent during warmer months, winters are also likely to be 30% wetter by 2030, with heavier bursts of rainfall. This will increase the risk of flooding and the accompanying severe disruption to lives, livelihoods and local economies.

Sustainable and smart water management, tailored to local needs, isn't just good for the environment – it is key to the success and desirability of any new-build development. For example, installing water-saving measures helps improve water security as well as reducing associated heating costs and can also save households up to £95 a year. In flood-prone areas investing in flood defences builds resilience to climate change and yields a 5:1 return on investment.



Topics to address under this principle

- Water efficiency
- Rainwater management
- Flood risk
- Water quality

What does good look like?

One Planet Living communities use water efficiently. Fittings and appliances such as taps, toilets, showers and washing machines are water efficient. Rainwater is collected and used for irrigation and sometimes for toilet flushing.

One Planet Living communities are designed to keep people safe from the risk of flooding. Landscapes are designed to support water management in the wider area, whether by mitigating flooding (eg through SuDS or green roofs) or avoiding drought (eg through swales and retention ponds).

In water-stressed areas there may be a case for recycling greywater onsite, but only if there is a clear net environmental benefit, such as reducing water consumption in an area of water stress.

During construction, the water quality of site runoff is monitored and filtered to prevent any pollution of surrounding water courses. The construction site uses water-efficient practices.

Water consumption targets are based on UK best practice. Residents are supported to use water wisely through information, education, encouraging behaviour change and creating a culture of sustainable living. They are aware of their water consumption thanks to messaging on utility bills or feedback information from site-wide figures.

Technical guidance and best practice

During design and construction stages:

- Projects should use a variety of sustainable urban drainage (SuD) measures, including surface water attenuation, permeable paving and rain gardens. CIRIA provides good technical guidance called Susdrain
- All drainage systems, Sustainable Drainage Systems (SuDS) and flood defences must be designed to adapt to future climate change. This includes:
  - Considering the combined impacts of climate change, such as more intense rainfall, sea level rise and slower river flows. These changes can lead to more frequent and severe flooding than suggested in the traditional 1-in-100-year flood event model.
  - Increasing the design standards to reflect these changing flood risks. While the 1-in-100-year flood event may still be used as a baseline, designs should explore an uplift to account for the increased likelihood of extreme weather events and the effects of sea level rise and slower rivers. This will ensure that flood defences are resilient to future conditions, not just current ones.
  - Water supply pipes should be designed to enable easy access for maintenance.
  - Landscape designs and planting schedules should make use of drought-resistant species and maximise permeable surfaces to accommodate stormwater infiltration.
  - Projects should prioritise water quality management by implementing strategies to prevent contamination and ensure that local water resources and habitats are protected.

To demonstrate best practice:

- Homes must be designed to achieve best practice in water efficiency, with a target for potable water consumption of <105 litres/person/day, improving towards targets set out in the RIBA Climate Challenge. Future Homes Hub has a water efficiency roadmap with lower targets for water-scarce areas.
- Projects must commit to monitoring mains water consumption, feeding back results to residents, for at least three years.
- All homes must have smart water meters fitted, with pulse meters on the mains supply and sub-meters on the main plant/building areas.
- No homes should be built in Flood Zone 3. All homes should be free of any flood risk for 1-in-100-year flood events, plus a 40% uplift to allow for climate change.
- All homes should have drainage infrastructure to deal with a 1-in-100-year flood event plus a 40% uplift for climate change.
- Any water use for landscape or garden irrigation should be from rainwater or greywater harvesting and highly efficient, for example using drip pipes on an automated timer, rather than manual.
- Project teams should explore >15% permeable surface proportion of all public realm hard surfaces.
- Projects must demonstrate a commitment to monitoring water quality and preventing nutrient runoff. This can include monitoring water quality in surface water systems and stormwater runoff, setting water quality targets and using SuDs to reduce nutrient runoff.

Indicators

Design stage
Headline indicator
- Designed mains water consumption for residents (litres/person/day)

Optional
- Ratio of impermeable to permeable area that accommodates stormwater infiltration
- % of site area used for rainwater harvesting
- % of site conserved as wetland or aquatic habitat (eg ponds, streams)
- % of wastewater recycled onsite
- % of land planted with drought-resistant species

Construction stage
- Site mains water consumption (litres/day)
- An indicator of water quality for site runoff

Occupation stage
- Actual average mains water consumption for residents (litres/person/day)

Top tip
Water management is a very local issue, so examine local challenges and opportunities to understand how to get the best solutions and results.

Stories and images

Has anyone changed their planting and irrigation system, or installed their own rainwater harvesting equipment? Are residents engaged in maintaining and enhancing the site's water features, like retention ponds, and enjoying them?

Case study

Derwenthorpe - sustainable water management in action

Designed to minimise water use and manage runoff sustainably, the Derwenthorpe development in York incorporates features such as rainwater harvesting systems, which capture rain for irrigation, and permeable surfaces that reduce stormwater runoff and support groundwater recharge.

Homes are equipped with water-efficient fixtures and appliances, significantly lowering indoor water consumption. Additionally, sustainable drainage systems, including swales and retention ponds, are integrated throughout the community to reduce the risk of flooding while enhancing local biodiversity.

Materials and products

Using materials from sustainable sources and promoting products which help people reduce consumption.

One Planet Living goals

- To promote sustainable living by making it easy to share and reduce consumption of materials
- To carefully consider every material and product and select them for their positive social and environmental benefit or for reducing negative impacts
- To promote materials and products that are not toxic to humans or wildlife at any stage in their lifecycle, from raw material through to manufacturing, use and end-of-life

The case for action

The extraction of natural resources, material processing and product manufacturing accounts for 45% of global carbon emissions. Cement production alone accounts for 8% of global emissions and is one of the most significant sources of embodied carbon in buildings.

Tackling the climate and ecological emergency requires regenerating natural resources, using lower-carbon building materials, reusing materials and extending their useful life as far as possible, all to minimise resource use. Sourcing materials locally can bolster regional economies while de-risking developments from climate change-induced supply chain disruptions.

There are also many opportunities for developers to foster a sharing economy among residents, and to help encourage reducing, reusing and recycling products. This can cultivate a stronger sense of community.

Topics to address under this principle

- Retaining and reusing existing buildings
- Embodied carbon of construction
- Responsible sourcing of materials
- Reducing wasteful consumption
- Developing a sharing culture

What does good look like?

One Planet Living communities support a collaborative, sharing economy. They prioritise materials and products with a low environmental impact across their lifecycle and promote those with positive social and environmental impacts.

Materials and products are considered over their whole lifecycle. One Planet Living communities consider length of life, sustainability of harvesting or production, local and reclaimed content. They consider the pros and cons of composite materials with extensive manufacturing requirements. These may be hard to recycle compared to simpler natural materials.

Project teams consider designing One Planet Living communities for disassembly and end-of-life reuse. They also consider the future impacts of climate change and therefore changing design requirements, eg stronger fixings, to reduce the need for future repairs.

Design and construction stages
Embodied carbon is a key consideration in these stages. Project teams should consider every opportunity to lock up carbon by using sustainably harvested timber and other bio-based materials such as straw bales or hempcrete. The use of materials with high levels of recycled content is also considered, alongside any reclaimed materials identified as part of a pre-demolition audit.

High-impact or polluting materials such as PVC and high VOC paints are avoided. Materials can also be conserved by creatively designing-out conventional features such as suspended ceilings and by reducing road, parking and paved areas.

Modern methods of construction such as prefabrication and modular construction are also considered, to assess whether they achieve greater resource efficiency.

Occupation stage
In operation, strategies are put in place to help residents reduce consumption and consume responsibly. A culture of sharing and swapping is nurtured through community facilities and services such as tool and toy libraries, as well as via apps, online tools and social media.

All retailers and service providers with onsite premises are engaged in sustainability and encouraged or required to create their own sustainable procurement policies or One Planet Living Action Plans. Sustainability expectations may be formalised by using ‘green leases’. The Better Buildings Partnerships has created a toolkit for drafting green leases.

Technical guidance and best practice

Retaining and reusing existing buildings
For best practice, projects with pre-existing buildings onsite would carry out both a pre-redevelopment audit and a pre-demolition audit.

A pre-redevelopment audit is a tool for understanding whether existing buildings, structures and materials can be retained, refurbished, or incorporated into the new development. The audit should be carried out early on (at pre-application stage) and should inform the design.

A pre-demolition audit is a detailed inventory of the materials in the existing buildings that will need to be managed upon demolition. This maximises the reuse of demolition materials.

For further guidance see p24 of the GLA's London Plan Guidance on Circular Economy Statements

Embodied carbon
For best practice, UK projects should follow the RICS 2nd edition Whole life carbon assessment for the built environment, assessing both whole life and upfront embodied carbon.

Upfront embodied carbon must ideally meet the UKNZCBS limits set out in the pilot standard here. UKNZCBS limits change with time, depending on start-on-site construction dates.

Life cycle embodied carbon will ideally meet the LETI/RIBA aligned target of <625kgCO_2/m^2. This limit will reduce in future years. For further guidance on achieving these targets see the LETI embodied carbon primer.

For best practice, projects of <50 homes should either carry out the RICS assessment or provide a narrative on how embodied carbon has been minimised.

We recommend the following process:

- An embodied carbon consultant is appointed at feasibility stage.
- The consultant provides live optioneering of elemental options in the early design to ensure that the scheme stays on target.
- A full RICS whole life carbon assessment is completed by the end of RIBA Stage 2, covering modules A-D.
- Embodied carbon is tracked throughout the scheme lifecycle.
- Further reduction opportunities are identified throughout detailed design, procurement and construction.
- A carbon tracker runs parallel to any value engineering tracker.
- During construction, an updated model is produced every six months based on as-built information.
- An internal target is set to further reduce embodied carbon from a RIBA Stage 3 baseline. This can be included in the contractor's Employer's Requirements.
- Whole life carbon is calculated alongside upfront carbon to ensure that design decisions do not result in unintended increased carbon emissions from Modules B-C, in particular, refrigerant leakage during the operation of all electric buildings.

Sometimes having regional supply chains makes it challenging to achieve embodied carbon targets, for example if there is a regional shortage of suitable cement-substitute material. We are open to hearing about exceptions and can consider local circumstances.

Responsible sourcing
Best practice would involve projects developing a procurement policy that sets out how responsible sourcing of construction materials will be specified, procured and tracked. 100% of timber or wood products should be either reclaimed, reused or certified by the Forest Stewardship Council (FSC).

At least 50% of non-timber materials used in the project must come from suppliers with recognised environmental and ethical certification by the end of the construction phase. Accepted certification for materials include BES 6001, ISO 14001 (for manufacturing processes), or other similar material-specific standards.

Alternatively, where applicable the materials must meet the criteria in the relevant credits of assessment frameworks like BREEAM, HQM, or LEED, ensuring that the materials used align with recognised environmental and ethical standards.

Materials with independently verified Environmental Product Declarations (EPD) should be sourced wherever possible.

Design teams should specify reused and recycled content in construction materials wherever possible. They should also consider using advanced or alternative materials with lower embodied carbon such as low-carbon concrete or timber. A minimum of 20% of the building material elements should be recycled or reused content, as set out in the London Plan guidance mentioned above.

Information requirements for materials should be embedded in the contractor's specifications. Contractors should be assigned responsibility for tracking compliance onsite and should flag any issues to the project team.

Indicators

Design and construction stage

- Upfront and lifecycle embodied carbon ($kgCO_2e/m^2$)
- % of construction materials with approved responsible sourcing credentials
- % of construction materials supplied with EPDs
- % of timber or wood products reclaimed, reused or from a certified sustainable source
- % (by volume or weight) of road construction material locally reclaimed or constituted from recycled material

Occupation stage

- Project-specific milestones establishing community initiatives for sharing, selling, gifting or refurbishing used durable goods, such as share shops, freecycle sites or intranets and local charities (eg adverts listed, items donated)
- Indicators to measure the success of community initiatives
- Post-occupancy surveys can include questions around consumer choices, eg % of building occupants reporting purchasing sustainable products and supplies

Top tip

Use your purchasing power to transform your local economy. Create a sustainable procurement policy to drive demand for low-impact products and material.

Stories and images

Are there any community-sharing initiatives of tools, books or toys?
Are there any new local repair initiatives?
Has anyone become more aware of the impact of their resource consumption?
Has a reclaimed material been used creatively in construction?

Case study

Building sustainably with mass timber

Developers like Greencore Homes, ZEDPods and Waugh Thistleton Architects are incorporating mass timber products such as Cross Laminated Timber (CLT) and Glue Laminated Timber (Glulam) into their projects.

Greencore Homes uses CLT to build energy-efficient, low-carbon homes, while Waugh Thistleton's Dalston Works in London showcases mass timber as a primary material in one of the world's largest CLT residential buildings. ZEDPods, known for its sustainable, modular housing, also relies on mass timber to reduce both the embodied carbon of its structures and construction time.

These developers are embracing renewable, resource-efficient materials that not only lower carbon emissions but also promote a circular economy, making mass timber a key player in sustainable urban development.

Zero waste

Reducing consumption, re-using and recycling to achieve zero waste and zero pollution.

One Planet Living goals

- To reduce wasteful consumption
- To maximise upcycling, reuse and recycling
- To aim for zero waste to landfill

The case for action

A staggering 62% of the UK's waste derives from construction, demolition and excavation activities. This contributes to greenhouse gas emissions from landfill and incineration. It also unnecessarily adds to the harmful effects of raw material extraction and production processes, which come with a high carbon cost and often harm local environments and communities.

By adopting circular economy principles and implementing strategies such as precise material management, modular construction and designing for deconstruction, developers can bypass poor waste infrastructure and significantly reduce material waste. This can significantly reduce embodied carbon while boosting both financial and non-financial value.

A mission to achieve zero waste in operation is also likely to be welcomed by residents, given the UK's strong support for recycling and the growth of freecycling and sharing networks.

Topics to address under this principle

- Circular economy
- Waste prevention, reuse and recycling for:
  - demolition waste
  - construction waste
  - waste generated in occupation

What does good look like?

Waste should be considered a resource and can be part of a circular economy. A One Planet Living community is designed around the waste hierarchy, with the highest priority at the top of the triangle.

One Planet Living communities are designed, constructed and operated to reduce wasteful consumption and minimise waste.

Waste is reduced through careful design such as using modular forms or waste-reducing construction methods such as offsite manufacture. It is further reduced by designing for easy deconstruction at end-of-life.

If existing buildings onsite need to be demolished, audits are undertaken to identify what can be maintained, reused or recycled onsite.

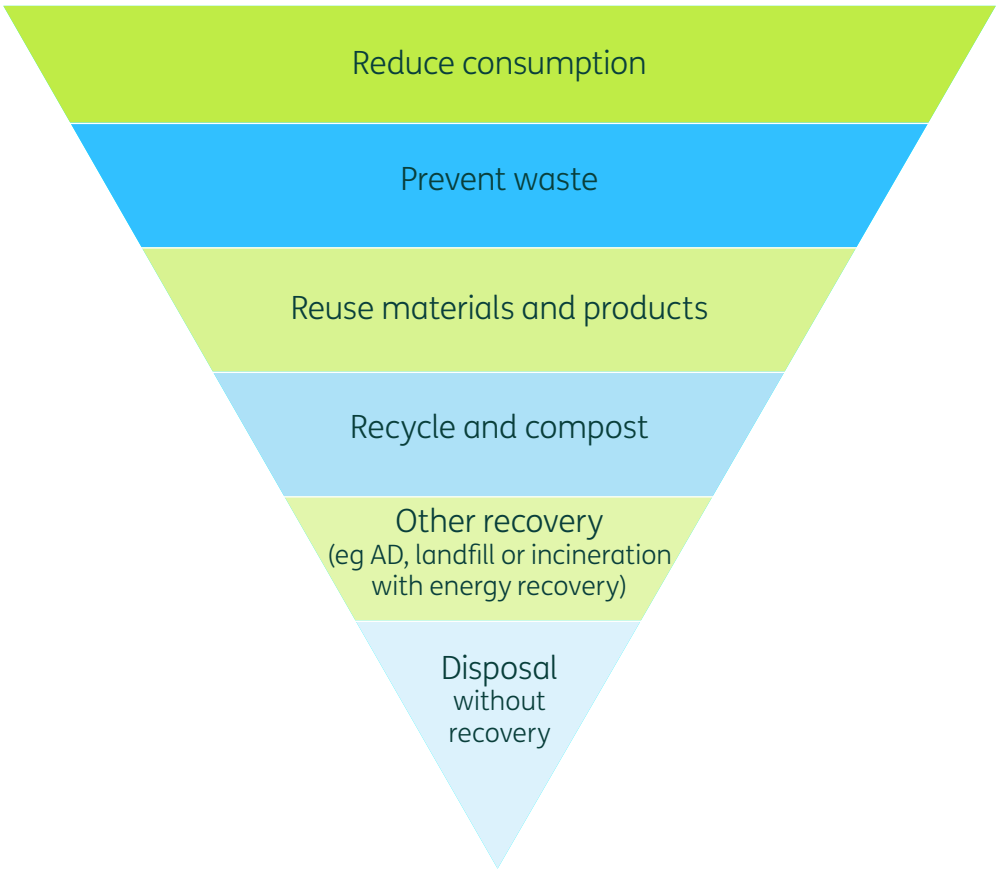
Construction processes result in zero non-hazardous waste to landfill; over-ordering of materials is avoided, and the project has an effective construction Site Waste Management Plan.

In operation, high levels of resource efficiency and responsible consumption are promoted.

One Planet Living communities foster a culture of sharing, upcycling and reuse, and enable closed-loop product recycling. No single-use water bottles are available from outlets across the site, and drinking water stations are provided in public areas.

Where an energy-from-waste plant is part of the waste solution, it does not result in reduced recycling rates and operates to the highest standards, avoiding air pollution. Where possible, heat is recovered, for example for industrial processes, horticulture or district heating.

The One Planet Living waste hierarchy



Technical guidance and best practice

*See 'Materials and products' for guidance on retaining and reusing pre-existing buildings.

Design stage
Best practice would involve creating a circular economy statement or similar. This should describe how materials used on the project will be retained in use at their highest value for as long as possible and then reused or recycled, leaving a minimum of residual waste. The London Plan is one possible source of guidance for producing this.

Project teams should consider how buildings and components can be designed to be easily disassembled, allowing for reusing and recycling materials at the end of their life. They should also consider using modular design principles and avoiding complex assemblies.

Infrastructure and space for multiple waste stream collections are an important design consideration. One Planet Living communities often go above and beyond municipal waste provision. Project teams should consider designing for an onsite composting area.

We expect One Planet Living communities to have a food waste collection service, usually provided by the local authority.

Recycling rates are often found to be lower in developments of flats rather than houses because of the inconvenience of carrying multiple segregated waste streams down to communal waste collection areas on the ground floor. Design teams should address this challenge by making waste segregation and collection as easy as possible.

Construction stage
Good practice requires the production of robust Site Waste Management Plan (SWMP). This should identify all construction waste streams and how these will be minimised and dealt with. The aim should be for zero non-hazardous construction waste to be sent to landfill. The SWMP can include details on:

- clear segregation of waste streams (eg wood, metal, concrete) to facilitate recycling and reuse
- recycling stations onsite for different types of waste materials or over-ordered materials
- working with suppliers so they offer take-back schemes for packaging and off-cuts

For best practice, project teams should target at least 80% non-hazardous construction waste diverted from landfill or incineration, and instead used for reuse, recycling or material recovery.

Occupation stage
It is good practice to create an Operational Waste Management Plan (OWMP) and to submit it as part of the planning application. This should demonstrate that the development can achieve the relevant waste targets outlined below. It should also outline:

- how and where (ie onsite vs offsite) operational waste will be managed in accordance with the waste hierarchy
- how the development will provide adequate, flexible and accessible storage space
- how the development will enable the separate collection of dry recyclables, food waste and other waste and ensure that segregated bins match with collection services
- how the development will facilitate reuse within the community, eg periodic community-wide freecycle events
- How the development will monitor operational waste performance

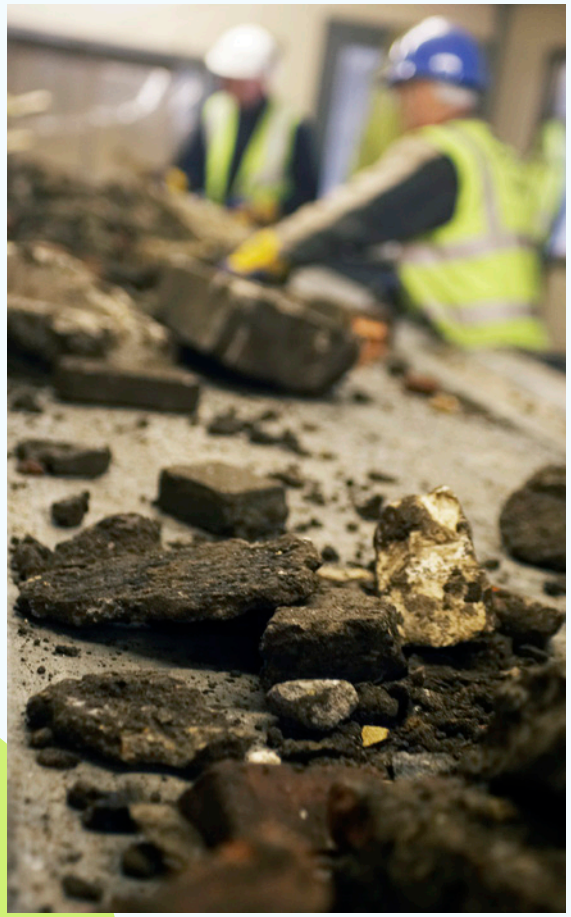
One Planet Living communities should provide comprehensive information to incoming residents to ensure that the waste segregation facilities are used effectively. The communications plan could be included within the OWMP.

Best practice would involve the following:

- Post-occupancy governance plans including resident engagement to inspire responsible consumption, waste reduction, reuse and recycling. Larger schemes can plan for community events to encourage further waste reduction.
- Periodic waste audits to track indicators listed below, feeding back and discussing the results with residents and seeking ways to improve waste efficiency in the community year on year.
- Setting a target of at least 70% recycling or composting rates. Targets for total waste per person (including recycling) should be 150kg/person/year, as compared with the UK average of 399kg/person/year.

Indicators

- Tonnes of material reused in construction, by category
- Total construction waste per 100m^2 of gross internal floor area (tonnes/100m^2)
- Total quantity and % of construction waste sent for reuse, recycling and composting
- Total quantity and % of construction waste sent for energy-from-waste recovery (tonnes)
- Average annual waste generated per person or per household, including recycling kg/person/year or kg/household/year)
- Average domestic recycling rate (%)



Top tip

Think about waste as a resource.

Stories and images

Are there any local composting initiatives? Are there any images of residents or guests having fun with craft activities using recycled materials?

Case study

The Arbour – innovative strategies for zero waste construction

The Arbour in Walthamstow Village is an award-winning, ten-home, carbon-negative planet-positive development, sequestering more carbon over its lifetime than it creates.

Designed by Boehm Lynas and GS8, this project pushed the boundaries of sustainable urban design by embracing a circular economy ethos. The development achieved a zero-waste construction process by salvaging materials from the former industrial site. This included recycling concrete for landscaping and foundations and repurposing steel plates for structural connections. Excavated earth was compacted into over 30,000 bricks used in the party walls, showing inventive reuse of on-site resources.

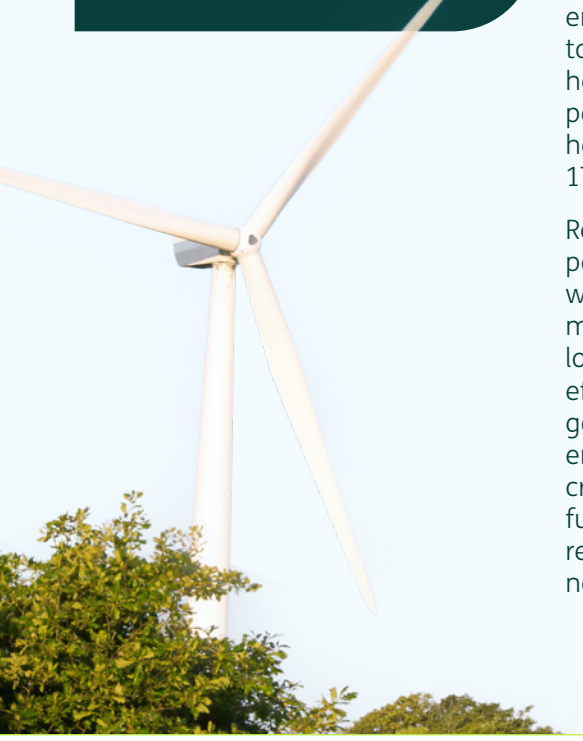
Site staff adhered to a zero-waste charter, and reusable lunch containers and bottles were provided to minimise waste during construction.

Zero carbon energy

Making buildings energy efficient and supplying all energy with renewables.

One Planet Living goals

- Buildings are highly energy efficient, meeting national best practice
- 100% of energy consumed is supplied by renewable energy generated onsite or offsite, supporting the transition to a smarter, more resilient clean electricity grid



The case for action

To limit global heating to 1.5°C, greenhouse gas emissions must decrease by 45% by 2030 from 2010 levels. But emissions continue to rise, and climate change is accelerating. On our current trajectory scientists predict that temperatures could increase by a catastrophic 3.2°C by the end of the century.

The use of fossil fuels for domestic energy has contributed significantly to the climate crisis. With the UK housing stock among the poorest performing in Europe, domestic heating alone is responsible for 17% of UK carbon emissions.

Research suggests that homes powered by renewable energy and with high energy-efficiency ratings are more comfortable for occupants, last longer, and are valued higher than less efficient dwellings. And with the UK government legally bound to reduce emissions by 68% by 2030, proactively creating zero-carbon homes will help future-proof them from the stricter regulatory landscape that will be needed to achieve this goal.

Topics to address under this principle

- Building fabric performance
- Energy-efficient heating, cooling and ventilation
- Greenhouse gas emissions from refrigerants
- Energy-efficient lighting and appliances
- Energy-efficient resident behaviour
- Renewable energy generation on site
- Procurement of renewable energy from offsite
- Reducing peak electrical demand
- Smart controls for occupants

What does good look like?

All buildings in a One Planet Living community are designed to be energy efficient, meeting best practice standards and preferably using passive methods. They score highly against recognised green building standards such as Passivhaus, LETI or UKNZCBS. The ten One Planet Living principles are used to apply the standards flexibly and holistically to find the best solution for each individual project.

Once they have been made energy efficient, all the buildings in a One Planet Living community run on renewable energy from a combination of onsite and offsite sources.

One Planet Living communities support a long-term strategy to create a locally resilient grid, de-carbonise the electricity grid and avoid transmission losses. So project teams first seek to generate renewable energy onsite, or near site, accounting for a range of factors including:

- payback periods
- competing uses (such as rooftop gardens competing with PV)
- local air pollution (such as emissions from biomass in urban areas)
- the opportunity to educate or reinforce a culture of sustainability (eg through clearly visible solar panels)

One Planet Living communities have no fossil fuels used onsite and no gas boilers or diesel generators, except as emergency back-up or as a short-term transitional strategy.

All energy generated offsite is renewable. Various means may be used to achieve this, such as a power purchase agreements, ownership or investment in renewable energy generation offsite. Power purchase agreements should be robust and ensure a 100% renewable energy guarantee, eg via a Renewable Energy Guarantee of Origin.

Energy supply companies are only selected if they supply 100% renewables, or a high percentage of renewables, as this supports an overall increase in renewable generation. UKGBC has guidance on renewable energy procurement, a summary of which is here.

Mechanisms such as a Community Energy Services Company (ESCo) or an energy cooperative may help enhance local ownership and support a resilient and prosperous local economy.

Energy management, monitoring and feedback systems are used to support residents and to encourage energy efficient behaviour. Residents are empowered to make energy efficient choices through a great handover process when they move in.

Technical guidance and best practice

Energy performance standards

For best practice, UK projects should ideally aim to align as closely as possible with the pilot UK Net Zero Carbon Buildings Standard. As such, projects should aim to meet the in-use performance standards in the table below:

Space heating and hot water solutions

For best practice, no fossil fuel use should be allowed on site except for emergency back-up or as part of a short-term interim transition strategy.

The average annual carbon content of the heat supplied (gCO_2/kWh) should be reported.

As a rule, providing direct electrical heating is not in keeping with best practice. Heat pumps should be used to multiply the power benefits. These can be air, water or ground-source heat pumps.

Where district heating is the proposed solution, it should ideally be low-temperature district heating, typically below 50°C. Local solutions such as heat pumps or other temperature-boosting technologies may be installed in each home to raise the domestic hot water temperature to 50°C or higher to comply with safety standards. This approach reduces distribution losses while ensuring efficient and safe heat delivery.

Biomass combustion should not be used in any location where there is an Air Quality Management Area within the same local authority area.

Pilot UK Net Zero Carbon Buildings Standard – performance standards

	Residential Projects designed after 2025
Total Energy Use Intensity (EUI) – Energy use measured at the meter	
Single family homes	<45 kWh/m²GIA/yr[2]
Flats	<40 kWh/m²GIA/yr[3]
Space heating demand	
Single family homes	<20 kWh/m²/yr
Flats	<15 kWh/m²/yr
Air permeability	<3m³/m²/hour

Refrigerants

Refrigerants used in building heating and cooling systems are powerful greenhouse gases that contribute significantly to global warming, despite being released in smaller quantities compared to carbon dioxide. They are therefore subject to increasingly stringent international and national regulations, with plans for a gradual phase-out and transition to low-impact refrigerants.

Project teams should specify low Global Warming Potential (GWP) or natural refrigerants. These include carbon dioxide, ammonia and hydrocarbons such as propane. These are among the safest options due to their low GWP and minimal ozone-depletion potential. However, refrigerant selection is often driven by the temperature differential (delta T), return temperatures and temperature stability of systems. So the GWP and carbon impact of refrigerants should be considered alongside performance and the safety and hazardous nature of refrigerants.

For best practice, projects should comply with the EU F-Gas Regulations.

Best practice also requires that systems are hermetically sealed or include leak detection systems, which are robust and tested.

Onsite renewable energy generation

Onsite renewable electricity should be maximised. For roof-mounted PV panels, projects should set site-specific targets, maximising kWh/m² of ground floor area.

Smart electricity usage and demand response

Projects should install smart meters that provide real-time energy consumption and generation data. This allows for accurate monitoring and better management of energy usage. Developments should ensure that smart meters can communicate with home energy management systems and the wider grid to enable demand response and energy optimisation.

Energy demand response and storage measures should be considered for viability. Any project that can demonstrate the ability to shift demand away from the grid at times when the grid carbon intensity is high is demonstrating pioneering practice.

References

2 Applies to projects commencing site construction up to and including 2026. After that, please see the UKNZCBS pilot for recommended targets

3 Applies to projects commencing site construction up to and including 2027. After that, please see the UKNZCBS pilot for recommended targets

Best practices include the following:

- Installing appliances that can be remotely controlled and programmed to run during periods of low demand, or when renewable energy is abundant.
- Integrating energy storage systems to store excess energy generated during low-demand periods or from renewable sources. This stored energy can then be used during peak times or periods of high demand.
- Using thermal storage systems (eg hot water tanks) to store energy in the form of heat, which can be used later for heating or hot water.
- Planning for the installation of EV charging infrastructure, including smart charging points that can be managed to align with grid demands and optimise charging times.
- Implementing load-management systems that control EV charging based on electricity pricing signals or grid demands.

Procurement of renewable electricity, carbon and energy offsetting
For best practice, low-density schemes would match the total predicted energy demand, both regulated and unregulated, with renewable energy generated onsite over the course of a year.

For higher density schemes, if onsite renewables are not sufficient to meet all energy needs over a year then the project team must explain this, and set out how residual emissions have been minimised and then dealt with.

UKGBC has guidance on renewable energy procurement, a summary of which is here. Some of the best and most impactful ways to deal with residual emissions can be:

- investing in additional renewable energy capacity offsite
- setting up a 15-year renewable energy power purchase agreement (PPA)
- purchasing REGO-certified electricity from UK sources and retiring the REGO certificates to avoid double counting
- establishing an insetting programme
- investing in local energy-efficiency project offsets

Green tariffs are not ideal as they are not robust enough and do not provide 'additional' renewables.

Investment in international offsetting schemes as a way of demonstrating net zero emissions from the development is not in keeping with best practice.

Post-occupancy evaluation
As recommended by LETI and in alignment with the UKNZCBS pilot, annual energy use and renewable energy generation onsite should be reported and independently verified in-use each year for the first five years. This can be done on an aggregated and anonymised basis.

Carbon balance
Projects should undertake an annual carbon balance calculation, taking into account the carbon intensity of imported energy, exported renewable energy and any residual insetting or offsetting measures.

Best practice would involve demonstrating a net zero carbon balance for the development.

Indicators

Design stage

- Designed space heating demand in kWh/m^2/year
- Designed Energy Use Intensity (EUI) in kWh/m^2/year
- Predicted renewable energy to be generated on site (kWh/year)
- Predicted greenhouse gas emissions from buildings in use (kgCO_2e/m^2/year)
- *Emerging best practice: per person demands for space heating and EUI, using designed occupancy levels (kWh/person/year)*

Occupation stage

- Annual in-use energy demands for space heating and EUI (kWh/m^2/year)
- Annual renewable energy generated on site (kWh/year)
- % of homes meeting designed energy demand targets
- Ratio or % of in-use energy demand vs design targets
- Site-wide carbon balance

Top tip

Aim for your zero carbon strategy to be driven by good sense rather than ideology.

Stories and images

Have people noticed lower energy bills? Is anyone showing pride that their community has net-zero emissions? Is there a greater awareness of energy use? Are there images of people visiting the site to learn more?

Courtesy of Mikhail Riches, photo by Tim Crocker

Case study

Goldsmith Street - pioneering zero-carbon energy in housing

Goldsmith Street in Norwich is one of the UK's largest Passivhaus-certified developments. This project of 105 affordable homes, designed for Norwich City Council, combines energy-efficient design with community-focused living.

Built with a prefabricated timber frame and recycled cellulose insulation, the homes achieve low carbon emissions both in construction and operation. Passive solar design ensures maximum energy efficiency, with buildings oriented due south, large windows to capture warmth, and brise-soleils to prevent overheating in summer.

The energy-efficient design minimises heating needs, creating comfortable homes with drastically reduced energy consumption and affordable energy bills for social tenants.

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Bioregional champions a better, more sustainable way to live. We work with partners to create places that enable people to live, work and do business within the natural limits of the planet. We call this One Planet Living.

Bioregional

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