



# UK Net Zero Carbon Buildings Standard

Technical Update & Consultation

14 June 2023

**BBP** BETTER BUILDINGS PARTNERSHIP



The Institution of **StructuralEngineers**



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# Hello!

Through the determination and hard work of members of our task groups, sectors groups, and data providers we have been able to meet our next important milestone. On behalf of the team, I am delighted to report that we are now at the stage where we can provide you with a Technical Update & Consultation, which forms our second Quarterly Update.

This consultation document describes the technical fundamentals behind the Standard, sharing the metrics that buildings will be assessed against to demonstrate that they are aligned with what is required for the UK built environment to achieve Net Zero Carbon.

It then describes the work that has been undertaken to gain an understanding of the current operational energy and embodied carbon performance levels that will provide the context of technical feasibility for various sectors. This is the main focus of the consultation.

Finally, the consultation outlines the approach being taken to determine relevant budgets for carbon and energy, which inform the limits that will follow in later stages of work.

I also wanted to take the time to thank you for being involved in our consultation – and helping to shape the future definition of a Net Zero Carbon building.

This is an extremely important initiative that I am hugely passionate about. We have a lot of people giving up their time on this and I am grateful for all their hard work.

By completing our questionnaire, you can make a real difference to sustainability across the built environment, so I ask that you take the time to do so.

Thank you again for being a part of our consultation and I hope you find our Technical Update useful.



Clara Bagenal George  
Chair, Technical Steering Group



**UK Net Zero Carbon  
Buildings Standard**

# Purpose of this Technical Update & Consultation



## We want your views on:

- **The overall technical proposals for the Standard**
- **The achievability of the new build performance levels**
  - These levels will be used to inform the final NZC limits

## Aims

The team developing the Standard have spent the last 9 months developing its **technical basis**, and establishing **new build performance levels** for a wide range of sectors.

We are sharing this Technical Update & Consultation document to allow the wider industry to review the proposals and performance levels, and provide us with feedback.

The performance levels do not represent the energy and embodied carbon limits that buildings would have to meet. They provide the context of technical feasibility for the various sectors and provide a summary of the data received in the call for evidence.

## Who should respond?

We are interested in the views from across all built environment stakeholders, and interested we have broken the consultation into various themes.

# How to engage with the consultation

## Responding to the consultation

There are a series of talking points raised within this document which are posed as questions in our [online survey](#). Please submit your responses to these for our consultation.

**Given the technical nature of certain sections of the consultation document, it is expected that not all stakeholders will want to respond to all sections.**

We are expecting a high volume of responses to this consultation. Please ensure you use the online survey for your comments to ensure we are able to process and incorporate your feedback.

The team will also be conducting a webinar at **12pm on Monday 10 July 2023** to provide industry with answers to pertinent issues raised throughout the consultation. You can sign up [here](#).

## Consultation period

Please submit your views on the consultation between **Wednesday 14 June - Thursday 31 August 2023.**

## Data and performance levels

We are particularly interested to get your feedback on the performance levels which have been provided in answer to our Call for Evidence, for both operational energy and embodied carbon, and we encourage responses from those who have an understanding of technical achievability for these levels.

Please also note that we are collecting more embodied carbon data – please refer to **6. New Build Embodied Carbon Performance Levels** for more information.

**These levels provide technical evidence for what is currently being achieved by individual sectors within the built environment, based on benchmarking, case studies and modelling.**

**They are not intended to be limits or targets, but will be used to inform the NZC limits and targets in the next stage of our work.**

# 2. Technical Fundamentals

## Definitions



UK Net Zero Carbon  
Buildings Standard



# Fundamentals - Introduction

## Net zero carbon - what do we mean?

This section defines how the Standard will be applying for buildings to demonstrate that they are Net Zero Carbon in line with Climate Science to mitigate global average temperature increase within 1.5°C.

## Limits and other requirements

This section identifies the specific carbon sources that needs to be limited and outlines other requirements that need to be met in order to demonstrate that a building meets the Standard

## New build, retrofit and existing buildings

The standard will apply to new build, retrofit and existing buildings. Targets and limits will be treated differently depending on which category the building sits. A retrofit is defined as where more than 25% of the building envelope undergoes renovation, or a substantial replacement of building services occurs. For or intensive refurb projects where more than 50% of the existing slab area is demolished, the building will be classed as new build.

## Heritage

We have assembled a working group looking specifically at the challenge of applying a net zero Standard to historic buildings or those with heritage aspects. It is our intention that heritage buildings will form part of the Standard, but that they will need a parallel approach that takes routine account of conservation principles, as well as energy and carbon. This approach will be developed by the Heritage sector group.

We are exploring an approach that involves incorporating energy and carbon issues routinely into the scope of Conservation Management Plans used for buildings of special significance. The limits and targets developed within the Standard may need to be applied with some flexibility to heritage buildings, with a consideration of listed status and an 'Assessment of Significance'.

As this work is ongoing, this consultation does not explicitly focus on these buildings.

# Net Zero Carbon - What do we mean?

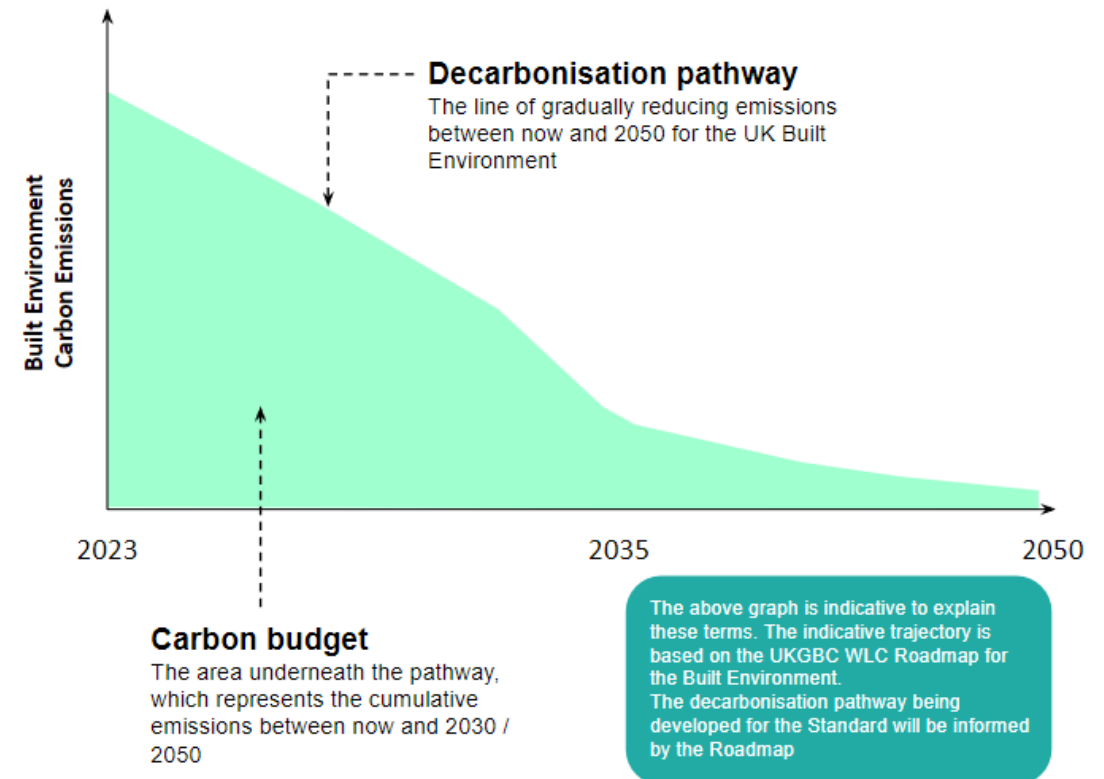


**Net zero carbon** means achieving a balance between the greenhouse gases emitted into and removed from the atmosphere. In order to mitigate the worth impacts of climate change on humanity and natural ecosystems, climate science has shown that we need to **limit global heating to 1.5°C** over pre-industrial levels. In order to stand a reasonable chance of doing so, we need to **achieve net zero carbon globally by 2050 and limit cumulative emissions between now and then to within the remaining 'carbon budget'**. To achieve net zero carbon, all sectors in all countries must reduce their emissions as far as possible, and any 'residual' emissions will need to be removed (refer next page).

Accordingly, for the Standard we propose to **limit emissions** including both embodied carbon emissions and the emissions associated with energy use. Limits will be based on what is necessary to enable the cumulative emissions from the UK built environment between now and 2050 to stay within its share of the UK's **carbon budget**. The method to determine this proportion is currently being developed. Energy use intensity limits will be set, and targets for other metrics associated with supporting the full decarbonisation of the UK energy system are being considered. The Standard will therefore be geographically bound to the UK.

A “**decarbonisation pathway**”, is being developed to show how the UK built environment's emissions could reduce, limiting them to within the remaining carbon budget. The shape of the decarbonisation pathway will be informed by what is anticipated to be possible and by when, based on data and modelling for each sector, and will ultimately be aligned to the budget identified.

The decarbonisation pathways will be delineated between operational carbon/energy and embodied carbon to show their separate trajectories.



# The role of offsetting



The Standard will include embodied carbon and operational energy limits that support the decarbonisation of the built environment in a manner consistent with not breaching the limit of 1.5°C.

In addition to achieving these limits, Net Zero Carbon at an asset level is typically taken to involve the balancing of emissions through some form of offsetting. This is often talked about as either removal offsets (taking carbon out of the atmosphere), or reduction/avoidance offsets (reducing someone else's emissions).

An important discussion during the development of the Standard has been around whether or not the Standard should mandate the offsetting of emissions. There are reasons for and against requiring this, which are summarised to the right.

We are exploring whether offsetting should be mandated, optional (as a separate route to compliance), or excluded from the Standard due to the reasons “against” given on the right. It is acknowledged that excluding offsetting from the Standard entirely would be a shift in focus away from asset-level net zero.

## The argument for including offsetting *“we must ‘net’ our emissions!”*

- **Resilience.** If assumptions behind the Standard’s limits and targets change at a later date, buildings that comply with the Standard will have still contributed to decarbonisation by offsetting their own emissions.
- **Language.** An asset is not “Net Zero” unless its emissions have been balanced with offsets, and therefore this would not be a Net Zero Carbon Building Standard without offsets. An alternative naming for the Standard may need considering if offsetting is not included.
- **Something is better than nothing.** Offsetting will always lead to greater decarbonisation progress when compared with not investing at all in carbon removals, reductions or avoidance. Mechanisms could be explored such as setting a carbon price and investing into a portfolio of measures to drive emissions reduction.
- **Convention.** Many developers are already offsetting their emissions to claim “net zero”, and some existing standards require this.

## The argument against including offsetting *“offsetting isn’t necessary at an asset level!”*

- **Systemic net zero.** Research by the CCC shows that Net Zero is a systemic issue, with no need for individual assets to ‘net’ their own emissions, provided these are aligned with a 1.5°C trajectory.
- **Removals availability.** The UN, IPCC and SBTi only specify removal offsets (and not reductions or renewables) in their definitions of Net Zero Carbon— but it is unlikely that there will be enough removal credits available to meet demand.
- **Integrity concerns.** Carbon offsets are market transactions where you are buying the right to claim carbon savings that were made in other industries. It is inherently difficult to demonstrate that offsetting claims are additional, permanent and robustly quantified with no double counting, and the market for doing this is still immature and poorly regulated.
- **Costs.** Offsetting introduces costs that don’t directly benefit building owners/users, and may dissuade people from wanting to meet the Standard. It could be argued that this money would be better spent on reducing the assets’ emissions.



# Survey Talking Points



## Complete the survey

Throughout the document, there will be a number of talking points (as below), which are questions in the consultation survey. Please provide responses to our talking points by completing the survey [here](#) or look out for the following icon to submit your thoughts.



## Talking Points - The Role of Offsetting

7. Which of the following approaches to offsetting do you think the Standard should take?

- A) **Offsetting mandatory:** The Standard should only recognise assets that have met carbon and energy limits, and then purchased offsets to 'net' these emissions
- B) **Offsetting optional:** The Standard should not mandate the purchasing of offsets, but should recognise when a project has purchased offsets to 'net' the asset's emissions
- C) **Offsetting not required:** The Standard should recognise assets that have met carbon and energy requirements without mandating the requirement to purchase offsets

## A Note on Energy Procurement

The way in which buildings procure energy can help accelerate the decarbonisation of the energy system. Whether the Standard considers a building's energy procurement strategy when accounting for emissions associated with operational energy consumption is currently being discussed.





# Whole Building Approach

We recognise that *building* is most commonly used to refer to a single structure, but in the case of multi-tenanted buildings there are also single 'demises' or 'hereditaments' within a structure. We recognise that in tenanted buildings, it will be necessary for owners and occupiers to collaborate in order to achieve a net zero carbon building.

We are proposing that the Standard **adopts a 'whole building' approach; to support emissions reductions across scope 1, 2 and 3; align with investor reporting tools/mechanisms; and drive owner-occupier engagement.**

We recognise there are good reasons for being able to delineate and assess different parts of a building:

- **Data:** enabling more granular data that owners/occupiers can use to drive improvements in performance.
- **Practicality:** enabling owners and occupiers to allocate the costs of achieving net zero appropriately.
- **Reporting:** the ability separate Scope 1,2 and 3 emissions for reporting purposes.
- **Accountability:** to ensure that clear accountability for emissions can be established and that owners/occupiers of buildings are neither unfairly rewarded or penalised for emissions that they do not control.

At this stage of the development of the Standard, delineating and creating a Standard for different parts of tenanted buildings across a range of different asset types introduces significant complexities. The Standard also needs to consider whether this complexity should be incorporated within the Standard, or left to the market to resolve.

**We propose that the the Standard will require addressing all energy uses and embodied carbon for the whole building. We welcome views on this approach.** We understand that separation based on accountability may be important for some sectors such as offices or retail, hence we are seeking views on this in this consultation and will take these views into consideration to inform the next stages of the Standard's development.

**Talking Points  
overleaf** 



# Whole Building Approach

## Talking points

Accountability for delivering a net zero carbon building is an important consideration when developing the Standard. Some sectors have indicated that they would like the Standard to consider separating out the building according to accountability, making it possible to verify different parts of the building as net zero carbon (e.g. owner-controlled or tenant spaces). We are seeking views on this through this consultation.

**8. Do you agree with the working assumption that the Standard will apply only to a whole building, with no separation of landlord and tenant activities and no ability to verify part of a building (e.g. base build only, or a single tenant demise)?**

**9. Alternatively, do you think the Standard should seek to explore owner/occupier accountability and building delineation?**

If so, please indicate for which sectors or types of buildings this will be particularly important.



If you think the Standard should seek to delineate owner/occupier accountability for the net zero status of a building

**10. Should occupier controlled areas and/or the owner controlled areas within a building be able to attain net zero status independently of each other?**

**11. Should individual demises ((i.e. covering base build and tenant activities within a single demise) be able to attain/retain net zero status even if other demises in that same building cannot?**

For the avoidance of doubt, “**attain**” applies to the first time a building seeks to become Net Zero Carbon (NZC) in line with the Standard, while “**retain**” applies to subsequent years once a building has already achieved NZC status and is submitting information to keep this status.

These questions have implications on a number of sectors. We are aware that these questions will have a particular impact on the proposed approach to performance levels for the Offices sector. For comments specifically related to the Offices sector and associated performance level proposals, see pages 95-100 and questions 53-56.