



UK Net Zero Carbon Buildings Standard

Pilot Version - Overview

September 2024



The Pilot Version has landed!

Welcome to the Pilot Version of the UK Net Zero Carbon Buildings Standard (the Standard). We are delighted to be sharing it with you as the culmination of a huge amount of work, dedication, and technical ingenuity from across the UK built environment industry.

Since the Standard's inception in early 2022, this initiative has united our industry behind the vision of creating a net zero carbon standard that the built environment could rally behind. The Standard's aim is to create clarity, provide technical rigour, and drive the decarbonisation our planet needs.

The Standard is science led. It is based on enabling the UK built environment to stay true to its share of the national carbon and energy budgets, which align with limiting global average temperature increases to 1.5.C.

It covers all of the UK's major building sectors, providing a clear set of requirements for buildings to be classified as Net Zero Carbon Aligned, along with information on how to evidence and report this.

It is both “Top-Down” and “Bottom-Up”. The Standard's limits have been created by balancing apportioned national carbon and energy budgets with real, measured data on what is achievable, and expert insights on decarbonisation potential across the building stock.

It's an in-use Standard, meaning that buildings can only claim to be Net Zero Carbon Aligned once they've been occupied and in use for at least a year, with measured in-use building performance data.

The creation of the Standard Pilot Version wouldn't have been possible without incredible efforts from our Founding Organisations, support team, and volunteers. Their collaboration, dedication and technical brilliance has been hugely appreciated.

Katie
Clemence-Jackson
**Chair, Technical
Steering Group**



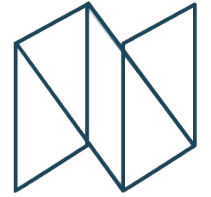
1. Introduction

The origin, aims and principles of the Standard



UK Net Zero Carbon
Buildings Standard

What is the Standard?



In May 2022 a cross-industry group, representing stakeholders across the built environment, joined together to develop a Standard to define the requirements for buildings in the UK to be Net Zero Carbon (NZC).

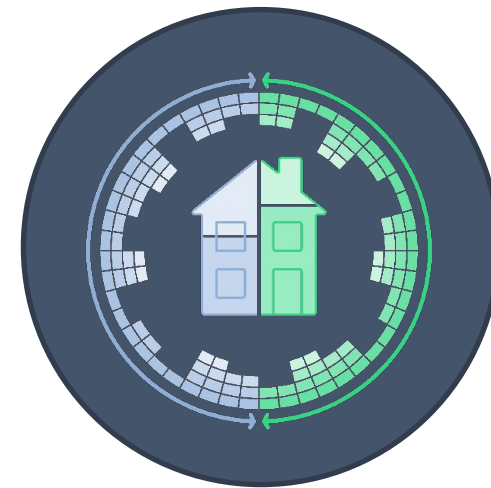
The UK Net Zero Carbon Buildings Standard, or “The Standard”, has been created to enable our industry to robustly determine whether our built assets are Net Zero Carbon, and in line with the UK’s climate targets.



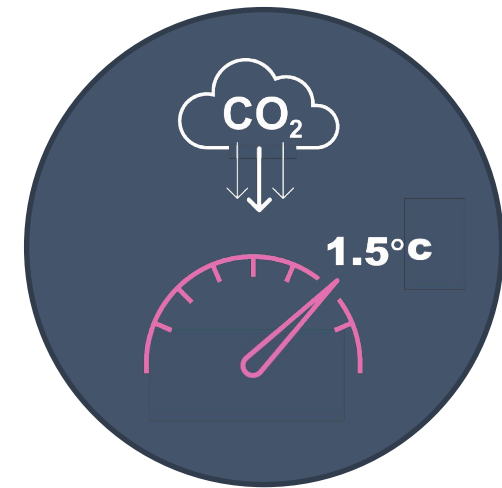
Rule book



Sectoral



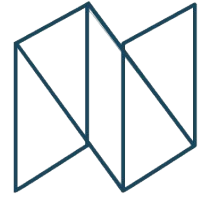
Carbon & Energy



Science-led

More detail on the origin, principles and background of the Standard can be found in our previously issued [April Quarterly Update](#).

Principles of the Standard



Overall Principles

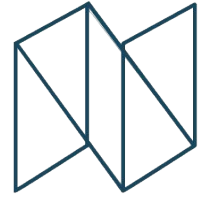
- Clear, consistent definitions and trajectories for Net Zero Carbon Aligned buildings
- Collaboratively created by, and for, the built environment industry, and not owned by any one organisation or Institute
- Driving market transformation through industry engagement, uptake and support
- Ensuring that the Standard is easy to understand and use, with ambitious but achievable requirements
- Aligning asset-level requirements with the system-level changes needed for a NZC UK
- A Standard that is politically neutral

Technical Principles

- Informed by climate science (science-based)
- Including both operational and embodied carbon
- Prioritising energy efficiency and eliminating the performance gap by using measured performance data
- Prioritising the reuse of existing buildings and assets
- Adopting a whole life carbon approach
- Enhancing renewable energy generation
- Encouraging demand management, so that buildings can support electrification and grid decarbonisation

More detailed explanations of these principles can be found in our previously issued [April Quarterly Update](#).

Application of the Standard



The Standard is applicable to both existing and new buildings in the sectors listed →

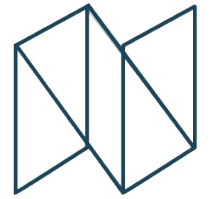
Together, these sectors make up the majority of the UK's building stock.

Within each of these sectors we worked with expert Sector groups to collate the most robust performance data available in order to set our limits.

The Standard will not apply to infrastructure projects.

Homes	Sport and Leisure	Hotels
Offices	Retail	Commercial Residential
Schools	Culture and Entertainment	Storage and Distribution
Healthcare	Science and Technology	Datacentres
	Higher Education	

The Approach to Net Zero Carbon Limits



Two key principles for the Standard are that it should be ambitious but achievable, and also that it should be science-led.

To reconcile these aims, two workstreams were established to develop the Net Zero Carbon (NZC) limits.

The **bottom-up workstream** used benchmarking, case studies and modelling to create Performance Levels*.

The **top-down workstream** established the relevant national carbon and energy 'budgets' to define what the industry needs to achieve to play its part in a NZC UK.

The outputs from these workstreams have been combined to create NZC limits and targets for the Standard.

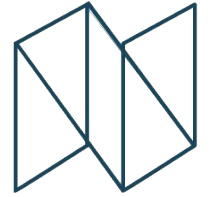


**Performance levels: These levels provide the technical evidence on what can be achieved by the individual sectors, based on benchmarking, case studies and modelling. They are not limits or targets, but have been used to inform the NZC limits and targets.*

2. What is the Pilot Version?



The Standard's Sections



Standard sections

Introductory - Sections 1-3

Scope, normative references, and terminology

General Principles - Section 4

Sets out the overarching requirements of the Standard

Assessment, Submissions and Limits - Section 5

Technical requirements for each aspect of the Standard

Verification & Communication - Sections 6-7

An overview of the principles for these sections, which will be published in Version 1

Annexes

Limits & Targets - Annex A

The requirements of the Standard

Submission Proforma - Annex B

A spreadsheet for submitting evidence of conformity with the Standard for verification.

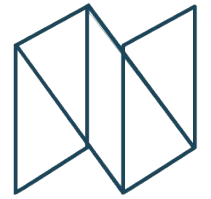
Principles of Equivalence - Annex C

How existing schemes can demonstrate equivalence with the Standard's requirements

Roles & Responsibilities - Annex D

The likely roles and responsibilities required for implementing the Standard

The Standard's Requirements



Limits are set for:



Upfront Carbon



Operational Energy



Fossil Fuel Free



District Heating and Cooling Networks

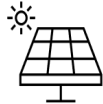


Refrigerants



Heating Delivered

Targets are set for:



On-site Renewable Electricity Generation

There is an optional reporting requirement for:



Offsetting

There are reporting requirements for:



Life Cycle Embodied Carbon



Operational Water Use

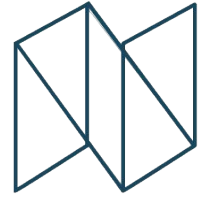


Electricity Demand



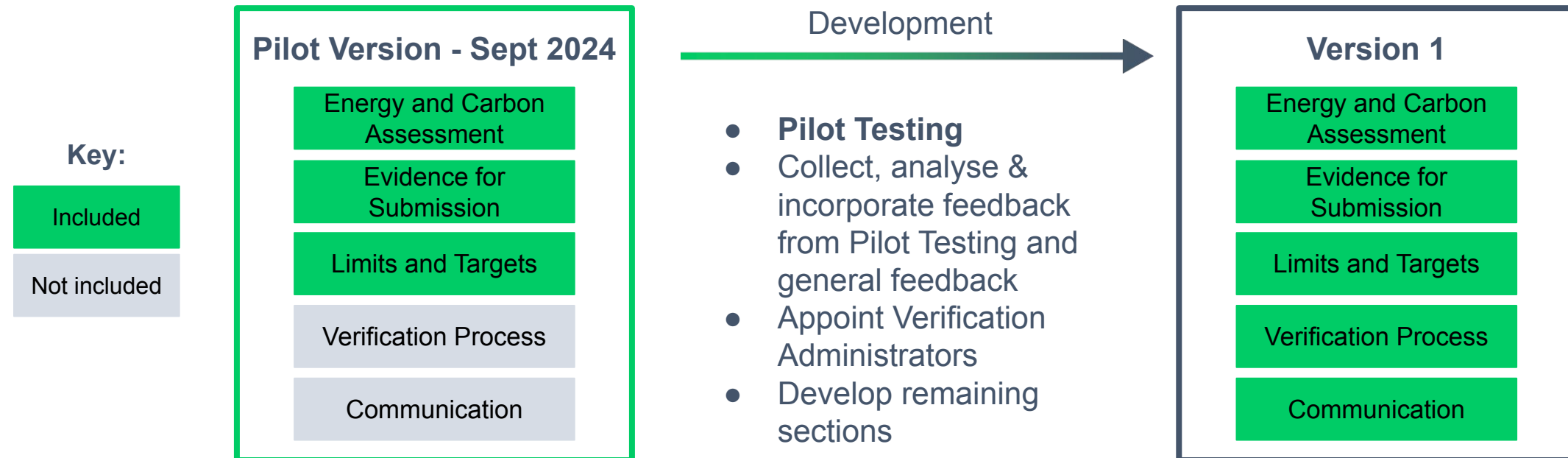
Heating and Cooling delivered to the building

What is the Pilot Version?

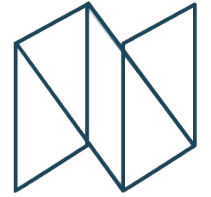


The Pilot Version of the Standard provides the technical specification, which can be adopted onto projects and into project briefs. **It's ready for the industry to start using it!** We will soon be launching Pilot Testing to gather industry feedback on the process of adopting the Standard on projects.

The Pilot Version does not include details on how to verify that a project conforms to the Standard, although it does include an overview. We are currently preparing a tender to select Verification Administrators for the Standard, who will be involved in preparing the relevant sections. Adopting the Standard now will prepare projects and assets for verification, once this becomes available.



What is the Pilot Testing?



The Pilot Testing scheme is expected to start in early 2025. We will soon be seeking applications for buildings to be used as pilot projects. This will involve a selection process to ensure we can test a range of buildings from different sectors; at different stages of design, construction and occupation; and in both new build and retrofit.

A feedback survey has been provided on our website for any comments you may have in the meantime, available [here](#).

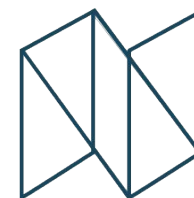
What will the Pilot Testing lead to?

The feedback from the Pilot Testing will be incorporated into the publication of Version 1 of the Standard, expected late next year. Version 1 will also include the details of how to verify against the Standard. Once it is launched, buildings will be able to be verified as meeting Standard.

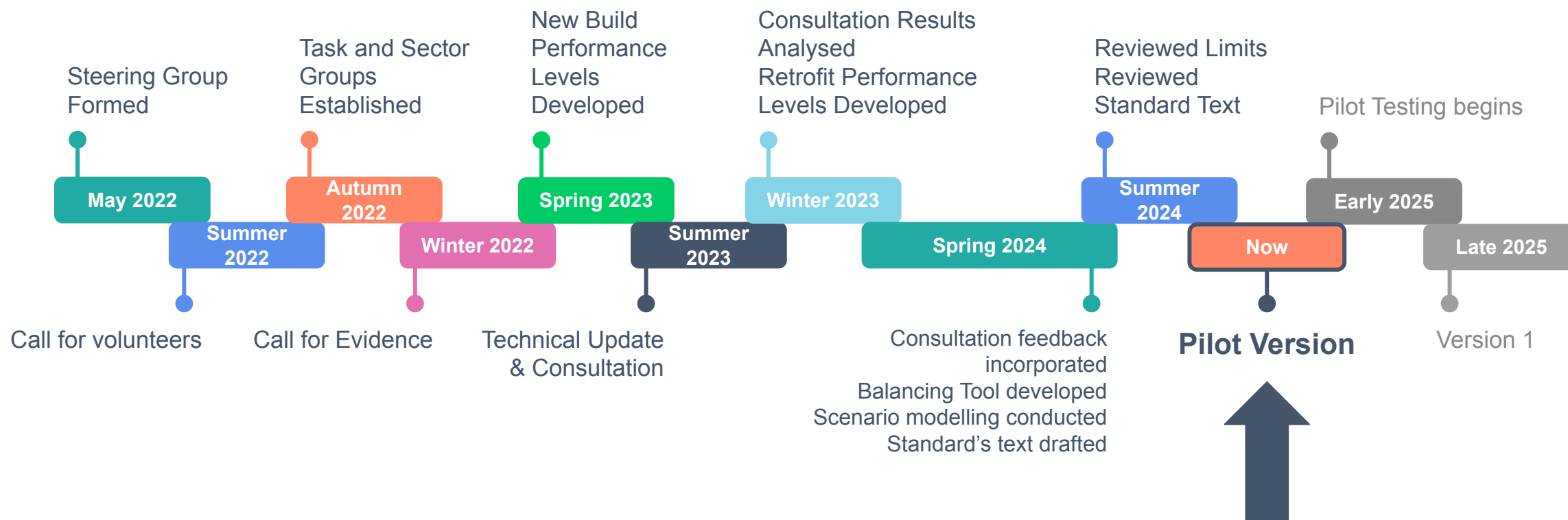
To get involved:

- Read the Standard and share it in your networks
- Adopt it on your buildings / projects, and collate information in the Reporting Proforma
- Register your interest in being involved with the Pilot Testing [here](#)
- Sign up your building for the Pilot Testing when it is launched

Make sure you're signed up to our [mailing list](#) to be informed when Pilot Applications open!



Process of Creating the Standard



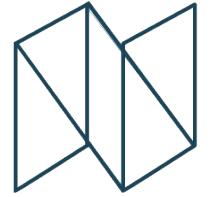
The launch of this Pilot Version signifies the culmination of over two years of technical development and collaboration across the built environment, from our founding organisations, expert volunteers, and wider industry stakeholders who have provided data and feedback throughout. We are delighted to share it with you.

3. Development



UK Net Zero Carbon
Buildings Standard

Next: The Standard's Technical Context



Now that we have shared the **Pilot Version**, we will be following up with technical background information on how the **Standard** was produced.

Our **Pilot Launch Webinar** on 31st October, will provide an engaging way to learn more about the Standard. Sign up [here](#).

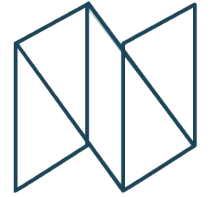
During October we will be issuing an **Information Pack**, which will explain:

- The “top-down / bottom up” balancing we carried out, and how we used this to set limits
- The key messages we took away from this exercise

Catch our **Pilot Launch webinar** on October 31st!

Watch out for our **information pack** - Coming in October!

Areas of Further Development



This Pilot Version of the Standard provides the necessary information for the industry to adopt and target it, with the Verification process to follow. Along the way we have identified areas for further development:

Coming in Version 1

Verification

The methodology for a third party verifier to verify the building has met the limits, targets and requirements set by the Standard.

Communication

For verified projects, guidelines on how it should be communicated that a building has met the Standard, including mandatory disclosure requirements

Delineation

The methodology for the Standard to differentiate between areas or between responsibilities (e.g. for base build or for tenanted offices to assess their performance separately);

Future Limits

To be added once sufficient data is collected

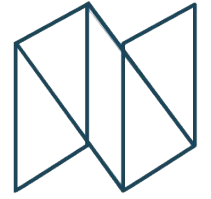
- Life Cycle Embodied Carbon
- Space Heating Delivered (additional building types)
- Electricity Demand Management
- EUI limits (additional space types)

Supporting Documents

Our next stage of work

- Schedule of Equivalent Schemes
- Detailed guidance on how the Standard was developed, and strategies to meet it

Up Next: Pilot Testing, and Verification

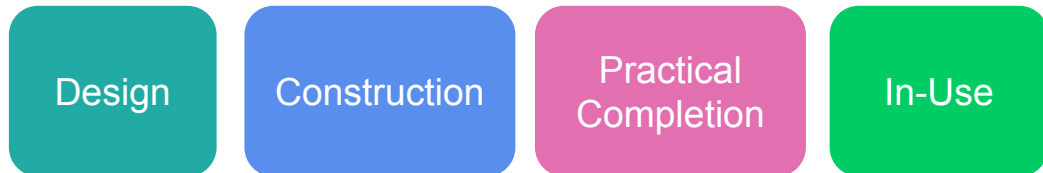


Pilot Testing the Standard

The Pilot Testing Programme will launch in early 2025. You can register your interest [here](#).

The purpose of this testing is to help us understand the experience of applying the Standard to buildings / projects across a full range of sectors and building classifications.

Testing projects at each stage, across our sectors:



Due to the need to gather varied industry feedback, we will be selective of Pilot projects to enable us to gather a broad range of views and project types.

Development of Verification

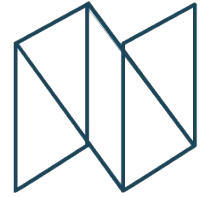
Verification of the Standard will need to be managed by organisations that will be known as Verification Administrators (VAs). It's important that we make sure these VAs have the right experience and know-how to run the Standard's verification.

We will soon be launching an open tender for organisations to apply to become VAs.

The VAs' input is necessary to finalise the Verification and Communication sections of the Standard.

Version 1 is planned for late 2025.

Up Next: Delineated Approach to Buildings



The Standard Pilot Version has been developed to apply to whole buildings, to determine whether they are Net Zero Carbon aligned.

Through consultation and engagement we have understood that for some sectors there will be value in the ability for the Standard to differentiate between areas or between responsibilities (e.g. for base build or for tenanted offices to assess their performance separately);

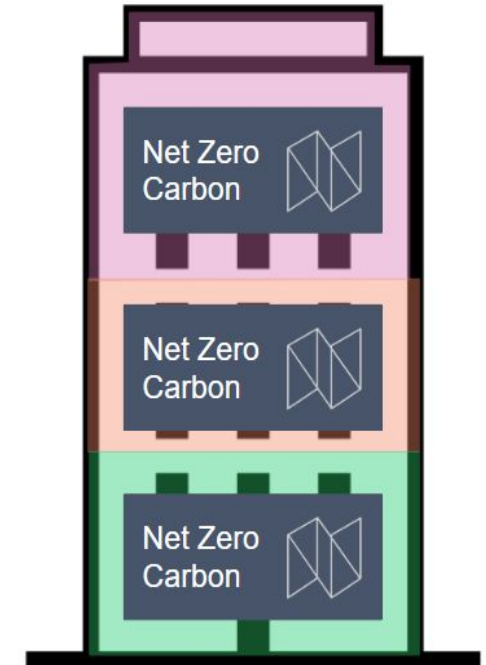
For this reason, we are developing a way to apply the Standard's methodology following a delineated approach. We are engaging with experts from the relevant sectors to develop this approach, ready for inclusion in Version 1 of the Standard.

Pilot Version



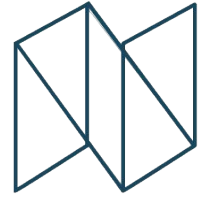
Whole Building approach

Version 1



Delineated approach

Up Next: As Data Becomes Available



Setting New Limits

The Standard's limits have been created using measured industry data. We have only set limits where sufficient data is available to indicate that these are ambitious, but achievable.

Beyond our current limits, there are further metrics we are currently asking to be reported, for which we ultimately intend to set limits:

- **Life Cycle Embodied Carbon**
- **Space Heating Delivered (additional building types)**
- **Electricity Demand Management**
- **EUI limits (additional space types)**

Once we have enough data, we will use it to set limits in these areas to further enhance the robustness of the Standard. Measuring and reporting data as outlined in the Standard Pilot Version, using the Submission Proforma, prepares projects to be able to submit data for lodgement and verification.

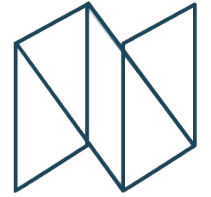
Updates to Carbon & energy budgets

The Standard's limits are based on currently-available information on energy and carbon budgets. Over time, as more carbon is emitted and industry changes occur, new carbon budgets will be published.

The amount of carbon that has been emitted between now and when these budgets are published may result in changes to the remaining budget for the UK Built Environment.

The Standard will be updated periodically to bring the limits in line with the UK's real-time carbon emissions and remaining budgets.

Equivalence with the Standard



Many existing industry schemes are driving towards the same goals as the Standard.

One of our overarching goals is to create alignment across these industry schemes, such that achieving one can help buildings to achieve another.

To this end we are allowing built environment schemes/standards to demonstrate **equivalence** with the Standard.

How this should be done is set out in Annex C: Principles of Equivalence.

A scheme's equivalence might only apply for a specific requirement (e.g. operational energy), for a particular sector or sub sector, or building classification (e.g. new build). This will be worked out on a case-by-case basis.

We will be engaging with schemes and standards over the coming months to determine whether equivalence can be achieved, and this will be recorded in Annex C.

We have already started working with schemes that could offer equivalence, such as NABERS UK, and we look forward to working with other schemes/standards on this.

Interested? Contact equivalence@nzcbuildings.co.uk



Indicative process for schemes/standards to demonstrate equivalence

4. Acknowledgements



Thank you

This Pilot Version of the UK Net Zero Carbon Buildings Standard could not have been delivered without the immense contributions made by everyone within the built environment who has been involved - it truly is a Standard for the industry, created by the industry.

The Professional Institutions and other Founding Members kicked off the process two and half years ago and their contribution to the Governance Board and the Technical Steering Group, alongside all of our colleagues, has been unwavering.

Countless individuals and companies have given their time and resources to the Task and Sector Groups, and our Sponsors have allowed us to provide Project Management and Administration support to their pro-bono contributions.

And finally, those of you who have given us feedback through the many ways that we have engaged with the industry, shown on the next slide and detailed on our website [Home | UK Net Zero Carbon Buildings Standard \(nzcbuildings.co.uk\)](https://www.nzcbuildings.co.uk) have made invaluable contributions to the development of a Standard which we can all rely on as having truly robust philosophical and technical integrity.

I would like to extend my personal thanks and gratitude to all of you.

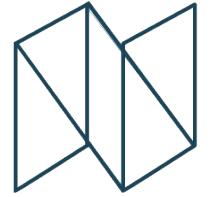


David Partridge
Chair, Governance Board



UK Net Zero Carbon
Buildings Standard

The People behind the Standard



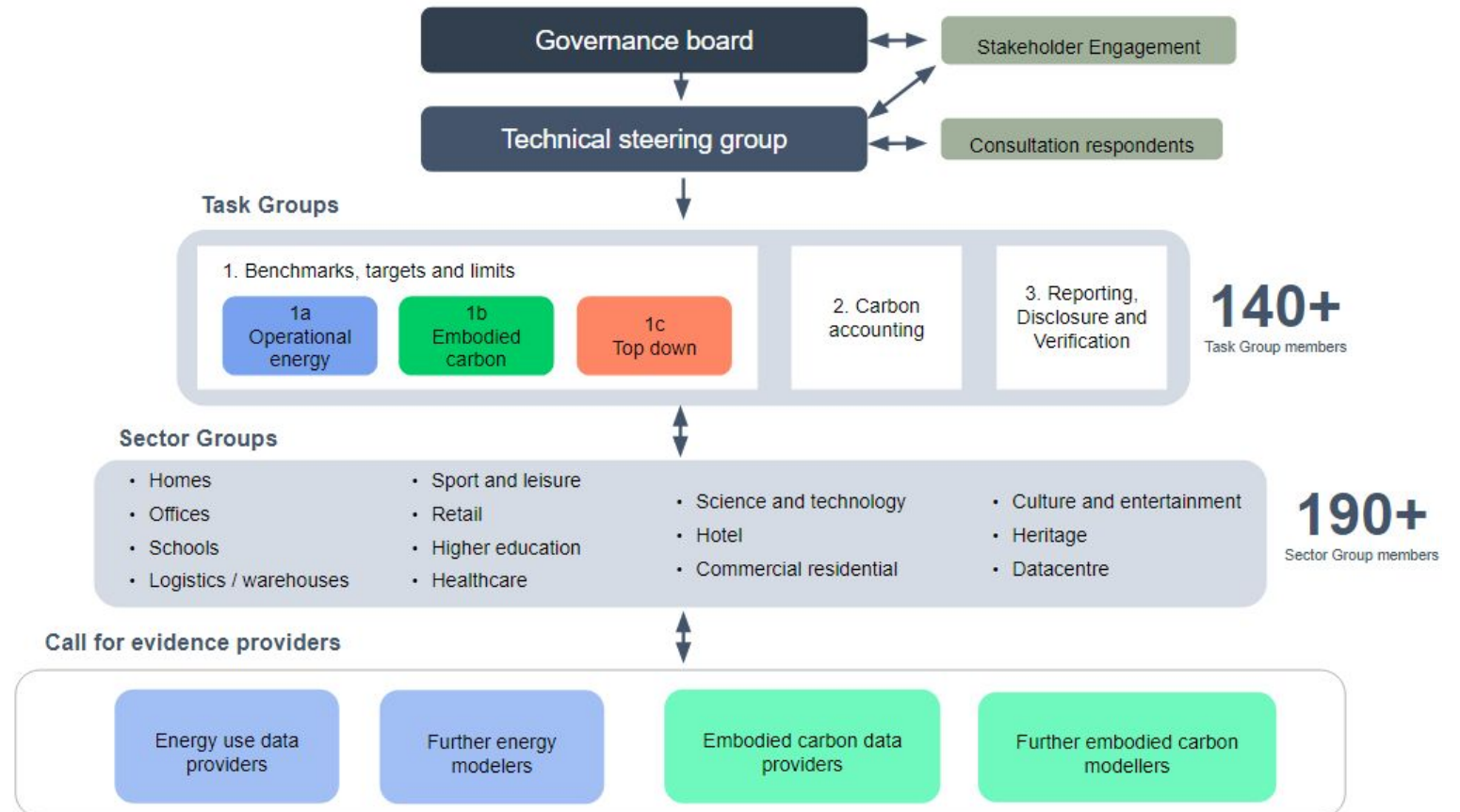
The Standard's project team has been made up of more than 350 voluntary experts from all parts of the built environment industry.

The **Governance Board** has overseen the development of the Standard, led on stakeholder engagement, and secured resources for the Standard.

The **Technical Steering Group** (TSG) has overseen the specification, design and development of the Standard. The TSG has been supported by a series of Task Groups and Sector Groups:

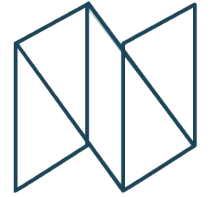
The **Task Groups** developed the technical basis for the Standard alongside the TSG, and drafted parts of the Standard.

The **Sector Groups** provided expertise on the decarbonisation of their sectors, and supported the development of performance levels.



There is more information on roles and responsibilities of these groups in our [April Quarterly Update](#).

Core Team



Governance Board

Related Argent - David Partridge (**Chair**)

Founding Members

BBP - Sarah Ratcliffe

BRE - Jonathan Rickard

CIBSE - Anastasia Mylona

IStructE - Patrick Hayes

LETI - Chris Twinn

RIBA - Judit Kimpian

RICS - Charlotte Neal & Amit Patel

UKGBC - Smith Mordak

Observer members

ICE - Lewis Barlow

PIA - Bill Hughes

RIAS - Angel Morales-Aguilar & Chris Stewart

Technical Steering Group

• Katie Clemence-Jackson (Chair) - **QODA**

Consulting

• Jane Anderson - **WLCN**

• Will Arnold - **IStructE**

• Clara Bagenal George - **LETI (Etude)**

• Adam Baranowski - **BBP**

• Julie Godefroy - **CIBSE**

• Jess Hrivnak - **RIBA**

• Christine Pout - **BRE**

• Fabrizio Varriale - **RICS**

• Sam Wallis - **Envision**

• Tom Wigg - **UKGBC**

Supported by

• Rosie Bard – **Orms**

• Zoe Black - **RIAS**

• Matt Broad - **ARUP**

• Issy Budd - **Wasps Studios**

• Ellie Burkill - **XCO2**

• Faidon Christodolou

• Daniel Doran - **Lifecycle Sustainability**

• Ciara Durkin - **Laing O'Rourke**

• Mina Hasman, Julia Skeete

& James Woodall – **SOM**

• Gilbert Lennox-King - **Construction Carbon**

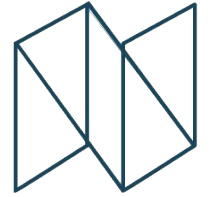
• Jack Poulton - **SimpsonHaugh Architects**

• Karen Shi - **Cundall**

• Zoe Watson - **Zoe Watson Consulting**

• Lynn Urbanik - **Passivhaus Trust / LETI**

To all of our Contributors - Thank You



140+
Task Group members

For a full list of all the Task and Sector Group Members, please head to the website:
<https://www.nzcbuildings.co.uk/contributors>

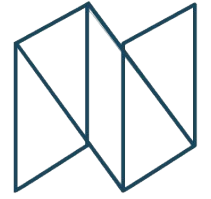
190+
Sector Group members

800
Projects embodied carbon data

3200
Projects metered operational energy (large datasets)

200+
Projects metered operational energy (individual projects)

Stakeholder Engagement Overview



Call for Evidence

3

Months

4000

Projects

One-one Consultations

18

Months

1000

Organisations

Technical Consultation

3

Months

524

People

Workshops

6

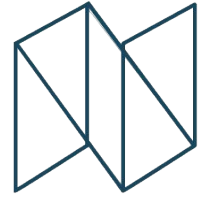
Months

226

People

Thank you to all those who participated!

More thanks for wider support



The UK NZCBS team would like to thank the organisations that sponsored industry engagement events, administrative support and provided in-kind assistance.

Diamond Sponsors:

Landsec
British Land
mace
Related Argent
Skidmore, Owings & Merrill

Gold Level Sponsors:

Construction LCA
Mitsubishi Electric

Silver Level Sponsors:

BAM Nuttall
Bennetts Architects
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Envison
GPE (formerly Great Portland Estates)
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Legal Sponsors:

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Reminder: ways to be involved

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