

# Whole life carbon assessment for the built environment, 2nd edition

## Basis for conclusions, September 2023

### Executive summary

As part of our ongoing commitment to championing sustainable practice, RICS has embarked on a project to update the seminal professional standard, Whole life carbon assessment for the built Environment (WLCA PS).

First published in 2017, the WLCA PS mandates a whole life approach to quantifying carbon emissions (embodied and operational) across all project types, and provides a clear, consistent and accurate methodology for their measurement and reporting. It emphasises the importance of considering and managing carbon emissions from construction materials, design, construction processes, operational use, and eventual decommissioning or demolition to support sustainability goals.

Authored by world-leading decarbonisation experts and supported by a global expert working group, the new edition has been revised extensively to reflect advances in professional practice, and updates to legislation and regulatory requirements. It also includes a significantly expanded scope to include all built asset types, including infrastructure.

This basis of conclusion document aims to provide a summary of the project's approach and provide insights into the consultation responses received and the decision-making process.

## Background

The second edition of this professional standard covers a broader scope than the first. The most substantial changes are as follows.

- 1.** The RICS standard is the principal established methodology for whole life carbon assessments (WLCA) in the UK and is also adopted in numerous other countries. This second edition is written to allow its continued application in the UK but has also been reworked to facilitate easier application in other countries. This is achieved by providing a methodical framework to be adapted within the country in which the project resides. This is complemented with a hierarchy of applicable data with which to use in the WLCA.
- 2.** It aligns with the International Cost Management Standard (ICMS 3) and the Built Environment Carbon Database (BECD) (currently only available in the UK), to enable a consistent output of cost and carbon reporting and to facilitate benchmarking. It also incorporates other professional guidance around embodied carbon measurement, for example from other professional bodies including Chartered Institution of Building Services Engineers (CIBSE), Institution of Structural Engineers (IStructE) and the Centre for Window and Cladding Technology (CWCT).
- 3.** This important update sets a standard approach for assessing whole life carbon across the entire project life cycle, particularly for benchmarking and early-stage advice, which is key in decision making and in helping to manage the associated costs. The scope has been extended and now applies to all built assets including buildings and infrastructure, enabling whole life carbon assessments to be undertaken across all use sectors and types of real estate. It is suitable for the assessment of both new and existing assets as well as those undergoing refurbishment, retrofit and fit-out projects.
- 4.** It incorporates latest industry-agreed definitions for carbon terminology providing clarity to approaching and standardising the methodology for assessing risk in terms of carbon assessment reporting.
- 5.** This edition includes enhanced detail of carbon data sources and conversion factors, explains the differences between manufacturer specific data, sector average data and generic data while providing additional guidance on grid decarbonisation, carbon sequestration and timber use. Guidance on retrofit and alignment with the circular economy will enable professionals to work to the most up to date standards and incorporate wider industry expertise.

## Development process

- 6.** The standard was authored by a team of leading subject specialists each responsible for specific sections.
- 7.** It was supported by an expert working group comprised of academics, practitioners and consultants selected for their specialist knowledge and diverse range of experience.
- 8.** The amount of authorship time and input required to fully achieve the objectives of the standard was significant, meaning the agreed authorship fee is substantially above the normal level RICS would incur. We therefore approached a number of potential industry sponsors, from both the public and private sectors. Ultimately, we received financial support for the standard from the Department for Transport (DfT) and Zero Waste Scotland (ZWS), with both bodies fully supportive of RICS producing the standard to align with their own organisational objectives.
- 9.** Initial consultation was held on the first edition to get feedback to inform the development of the new one. Responses received included greater indication of carbon data sources and default data, fuller explanation of in-use carbon and a need for more illustrative content.
- 10.** The draft was shared with the expert working group throughout its development for comment, as well as a closed group of trusted key stakeholders, including UK Green Building Council (UKGBC), Infrastructure and Projects Authority (IPA), IStructE and other members of the Net Zero Carbon Building Standard (NZCBS).

## Consultation

### Process

- 11.** A period of public consultation took place from 7th March to 18th April 2023.
- 12.** Prior to the consultation, briefing sessions were held for RICS colleagues to provide an overview of the process and to encourage maximum engagement with stakeholders globally.
- 13.** The consultation process was facilitated through the use of iConsult, our interactive platform, where participants were encouraged to provide feedback on the draft document itself and respond to a questionnaire.
- 14.** Virtual roundtable meetings with consultees from various global regions were also held during the consultation period to give us the opportunity to meet with potential end users and gain a deeper understanding of feedback received.

15. The consultation was supported by a comprehensive, far-reaching communications strategy, which included a dedicated webpage, a social media campaign and collaboration with industry partners to promote the consultation in their own newsletters. We also promoted the consultation at industry events and conferences, such as Futurebuild and MIPIM.
16. You can read the consultation summary document [here](#).

### Consultation statistics

17. We received 1,140 comments on the draft from 148 registered participants. We received 83 questionnaire responses and 7 official letters of response.
18. We hosted 10 virtual round tables with a total of 104 participants. These included dedicated sessions for Europe, USA and Canada and India.
19. Among the participants were representatives from AECOM, Alliance for Sustainable Building Products, Arcadis, Arup, BRE, BSI, Bureau of Indian Standards, CRREM, Currie & Brown, DLUHC, Faithful+Gould, Gleeds, Green Building Council of Australia, ICMS Standards Setting Committee, JLL, Laing O'Rourke, LETI, Mott McDonald, NABERS, Skanska, Tata Steel, Turner & Townsend, World Green Building Council.
20. RICS members made up around 20% of the registered participants on iConsult.
21. Around 77% of registered participants were based in the UK. We also received responses from members in Europe, Americas, Australasia, Greater China and Southeast Asia.
22. Around 33% of respondents were from large organisations (with >1000 employees). Around 18% of responses were from SMEs and sole practitioners.

### Summary of responses and resolutions

#### Key themes

23. Responses received ranged from highly technical, for example the mandated use of predictive energy modelling, to more general comments relating to implementation and clarity. The broad themes are highlighted below, together with RICS' responses.

#### Global applicability of the standard

24. We have received responses from people saying they don't agree that this is a global standard, or that the standard does not reflect current practice in some countries.

## **RICS response**

**25.** Due to the differing global interpretations on a number of key WLCA components, including grid decarbonisation, end-of-life scenarios and product data, we recognise that it is not possible to produce a standard that accurately reflects the position in every country or region. However, the standard provides a methodology that can be implemented globally to ultimately provide consistency in WLCA reporting. This is explained in section 1.5 of the standard.

## **Clarity, usability and accessibility**

**26.** We received some comments that the document was too long and therefore difficult to navigate. Several respondents also commented on the structure and layout of the document, including the draft diagrams.

**27.** Some respondents expressed concern that the standard is too technical and detailed and needs to be made more accessible for people within the wider industry and not just sustainability specialists.

**28.** Some respondents felt that the approach set out in the standard seems to be more suited to larger new-build construction and could alienate smaller firms.

## **RICS response**

**29.** The document has undergone substantial editing and content restructuring to improve readability and navigation. We have also worked with in-house experts to ensure the best user experience and accessibility in the way we present the content on our website.

**30.** Where possible we have moved content to the appendices to keep the main body of the document as concise as possible, but it is important to recognise the extent of additional information that has been added since the previous edition.

**31.** Where technical issues are discussed within the document, e.g. sequestration or grid decarbonisation, these have now been further explained and/or clarified to ensure readers can understand the requirements being placed upon them.

**32.** To ensure the document is appropriate for readers from all parts of the industry, slight adjustments have been made to ensure the methodology and access to appropriate free data sources are highlighted.

### **Alignment with technical/industry standards**

**33.** We received a number of responses that highlighted inconsistencies between the draft professional standard and other prominent standards, including EN 17958, EN 15804, ICMS 3 and ISO 21931.

### **RICS response**

- 34.** RICS is grateful to respondents for taking the time to review the document in such detail and have revised these sections accordingly in collaboration with industry where possible.
- 35.** We held a workshop with the ICMS Standards Setting Committee and added the EN15978/ICMS 3 alignment chart, review of normalisation units, project attributes for reporting plus an optional reporting template. Some terminology that is used in ICMS 3 is included in the glossary of the final document to ensure minimal confusion to an international audience.
- 36.** Discussions were held with ICMS 3 and NRM working groups about the building element categories, as the breakdown departing from the current NRM and the reference numbering. It was agreed that the proposed breakdown improved on current ones by aligning as closely as possible to design disciplines that would be generating the data for specific elements. It has been maintained with some refinement to MEP and FF&E categories to simplify, add clarity and enable comparison of embodied carbon of renewables at design stage.
- 37.** A number of comments were received regarding the structural element breakdowns but, following discussion with the original consultee IStructE, we agreed to make no changes.

### **Requests for additional technical guidance**

**38.** Comments were received requesting additional guidance and clarity in topics such as biogenic carbon, grid decarbonisation and carbon sequestration.

### **RICS response**

**39.** Greater detail and clarity have been provided to provide further information on these topics and others, including specific new appendices. Additional guidance on a standardised approach to creating elemental build-ups and guidance on how to split emissions between landlords and commercial property occupiers to enable each party to better understand their obligations to reduce carbon impacts has been given.

### **Implications for software tools**

**40.** We received responses from software providers and users of software tools who commented that RICS need to work closely with the likes of OneClick LCA to ensure the software can complete calculations in line with the updated methodology.

**41.** Some respondents said they would like RICS to offer third party verification.

#### **RICS response**

**42.** Software tool providers were actively engaged throughout the drafting process to ensure they were aware of the intended changes within the updated standard. It would then be their responsibility to make the required modifications to their software to ensure it remains compliant with the RICS WLCA PS.

**43.** While third party verification was considered, ultimately RICS does not have the resource to do this effectively. Furthermore, the obligation remains with the software providers themselves to provide the industry with products needed.

### **SAP 10**

**44.** We recognised that the removal of the availability to use SAP 10 for operational energy use and carbon output might be contentious and we specifically asked respondents based in the UK to describe the impact this would have via the questionnaire.

**45.** Insights gained from the consultation and roundtables told us that SAP 10 is not an accurate measure for operational energy and that its removal would be welcome.

**46.** Other respondents were concerned that this could create a barrier for completing WLCAs and detract from the end-goal of driving the reduction of embodied carbon.

#### **RICS response**

**47.** Following further consultation with key stakeholders including representatives from the Department for Levelling Up, Housing and Communities (DLUHC) we agreed to provide a solution within the standard whereby the use of SAP 10 could remain, but only for projects below a certain size. Additionally, the wording of the standard was amended to recognise that subsequent versions of SAP, such as the planned SAP 11 could potentially be used for WLCA across all projects and discussions with the DLUHC SAP 11 team continue around its contents and methodology.

## Further assistance and support in implementation

**48.** We asked participants via the questionnaire and roundtables what products and support they would find helpful. Suggestions received included worked examples for the reporting templates and free training/CPD.

## RICS response

**49.** Training products are currently being scoped and will be available in 2024. We will consider providing worked examples as part of this.

## Conclusion

**50.** RICS is grateful for the invaluable contributions of our members, stakeholders and subject matter experts who took the time to review the draft document and we are delighted with the level of engagement the draft standard received at consultation.

**51.** Due to the volume of feedback received, it has not been possible to summarise every comment in this document, but we wish to emphasise that each individual comment was fully considered with responses documented by our dedicated authorship team.

**52.** We recognise and understand the desire for a comprehensive international standard and although this is not possible for the reasons described above, we will be working with our members and stakeholders in the world regions to support the implementation of the standard as far as possible.

**53.** We strongly believe that this RICS professional standard will play a vital role in helping industry understand carbon impacts as it strives towards the shared goal of decarbonising the built environment. We pledge that we will continue to collaborate with governments, policy makers and our valued members operating in this space to work towards achieving net zero goals.