

Embodied carbon and material decisions

Compare credible options early and keep the evidence current as the project develops.

Version 1.4 | Issue and review: 9 September 2026 | 5-minute read

Status: RICS professional standard; planning and client requirements depend on the project.

Audience: Developers, designers, contractors and product suppliers making material decisions.

Executive summary

Embodied carbon is the greenhouse gas impact of materials and construction across a project's life, from manufacture to end of life. It forms part of whole-life carbon alongside operational impacts. Developers, designers and contractors should check the planning requirements, client brief and assessment method before comparing options. Early estimates help challenge quantities and design choices; later assessments should use specified and installed evidence. A focused materials review can identify choices and gaps, but its agreed scope is narrower than a full whole-life carbon assessment. ^{[1][2]}

Start here. Confirm the required assessment method, then test retention, reuse and quantity reduction before choosing substitute materials.

In plain terms. A project's carbon account has stages called modules: A covers work before use, B covers use, and C covers end of life. Module D reports potential effects beyond that boundary separately. Embodied carbon concerns materials and construction; operational energy and water are separate. ^{[1][2]}

Where the emissions sit

Modules	Plain-English meaning
A0-A5	Upfront: pre-construction, products and construction. Under RICS, A0 is normally zero for buildings but can matter for infrastructure. ^[1]
B1-B5	Product effects in use, maintenance, repair, replacement and refurbishment. ^{[1][2]}
B6-B7	Operational energy and water, separate from embodied carbon. ^{[1][2]}
C1-C4	Deconstruction, transport, processing and disposal. ^{[1][2]}
D, separately	Potential benefits and loads beyond the boundary; not a guaranteed future saving. ^{[1][2]}

Check the applicable method

The Royal Institution of Chartered Surveyors (RICS) whole-life carbon assessment standard, second edition, Version 3, is effective from 1 July 2024. RICS members undertaking assessments must follow its requirements and identify departures. ^[1]

London Plan policy SI 2(F) requires assessments for referable development. Use the Greater London Authority (GLA) guidance and template, including its specific departures from the RICS method; do not assume the latest RICS edition alone satisfies a London submission. ^[2]

The UK Net Zero Carbon Buildings Standard is voluntary. Version 1 appeared in March 2026 and verification opened in July. ^[3]

Biogenic carbon is carbon absorbed by plants and stored in materials such as timber. RICS reports this stored carbon separately from upfront carbon. Module D also stays separate. ^[1]

Recommended actions

A practical way to start, with suggested owners and timing:

- 1. Define the assessment.** Record the project, method, modules, units and study period (the years assessed). Confirm the planning or contractual purpose. *Client and assessor, before commissioning.*
- 2. Challenge demand and quantities.** Record retention, reuse and quantity-reduction options before considering material substitutions. *Design lead, before fixing the solution.*
- 3. Build the evidence register.** Link quantities to Environmental Product Declarations (EPDs), source dates, coverage and assumptions; flag generic estimates. *Commercial and procurement teams, at specification.*
- 4. Check equivalent performance.** Record quantity conversions, service lives, losses, scenarios and exclusions. A declared unit is an amount of product; a functional unit also describes the service it provides. ^[4] *Assessor and design lead, before selection.*
- 5. Update the assessment and check changes.** Replace assumptions with specified or installed evidence. Explain changes from the previous assessment and approve the final comparison. *Project manager, each gateway and completion.*

Example in practice

Illustrative example: two wall options must provide the same fire, thermal and structural performance over the agreed study period. A lower product-stage figure can be outweighed by extra quantity, replacement or operational impacts. Record these assumptions before making a choice. ^[4]

Common mistakes and what to do instead

- Starting with substitutions: test retention and quantity reduction first.
- Matching units only: also check function, service life, modules and scenarios.
- Deducting Module D from the lifecycle total: report it separately and explain uncertainty.

How Reinventives can help

Our embodied carbon review can produce a materials-evidence register and an options summary for an agreed part of a project. We organise quantities, check data coverage and highlight assumptions and gaps. Full asset assessments, engineering decisions, EPD production and independent verification require the appropriate specialist scope and appointment.

Book a construction reporting conversation: reinventives.co.uk/construction/book

Related briefing notes: [BN003 PAS 2080](#) | [BN006 EPDs](#)

Sources and review dates

[1] RICS, Whole life carbon assessment, second edition, Version 3, 2024; standard and official guidance.

[2] GLA, Whole Life-Cycle Carbon Assessments guidance, March 2022; sections 1-2 and Box 1.

[3] UK Net Zero Carbon Buildings Standard, Version 1 and verification information, 2026.

[4] BRE, PN514 to EN 15804+A2, revision 3.1, 30 November 2023; section 5.3.

Correct as of and sources accessed 9 September 2026 | Next review 9 December 2026

Review on RICS, GLA or Buildings Standard changes, and before a new planning submission or assessment brief.

This briefing is general information, not legal, procurement, engineering or assurance advice. Check requirements for the specific organisation, project and contract.