



NPF4 Planning Guidance Climate Change Mitigation (Decarbonisation)

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Carbon and the Planning Process



Plan B / FoE Vs UK Government

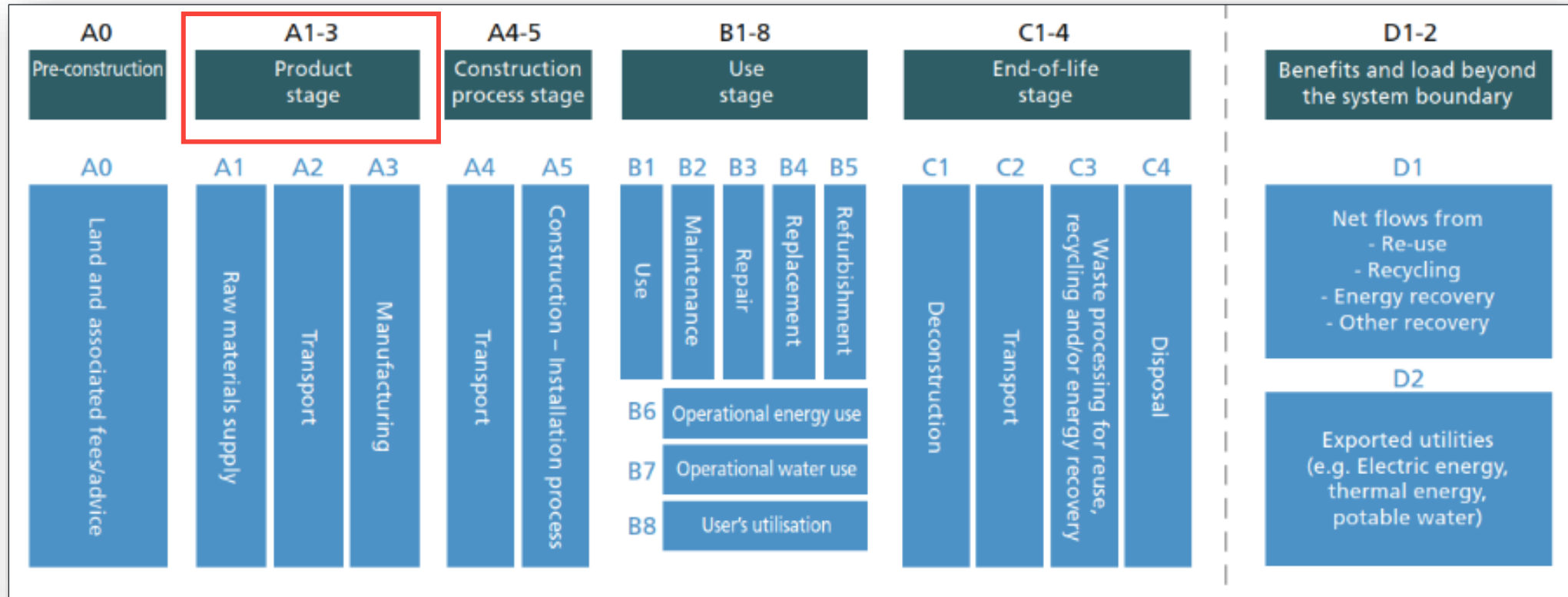


Finch Vs Surrey County Council

Theme: Whole Life Carbon emissions must be considered

Whole Life Carbon

Example coming up later...



From BS EN 17472:2022 - Sustainability of construction works. Sustainability assessment of civil engineering works. Calculation methods

Whole life carbon emissions impact is the **overall change in carbon emissions over time**

National Planning Framework 4

A long-term plan looking to 2045 that will guide spatial development, set out national planning policies, designate national development and highlight regional spatial priorities

Policy 2a) “Development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible”

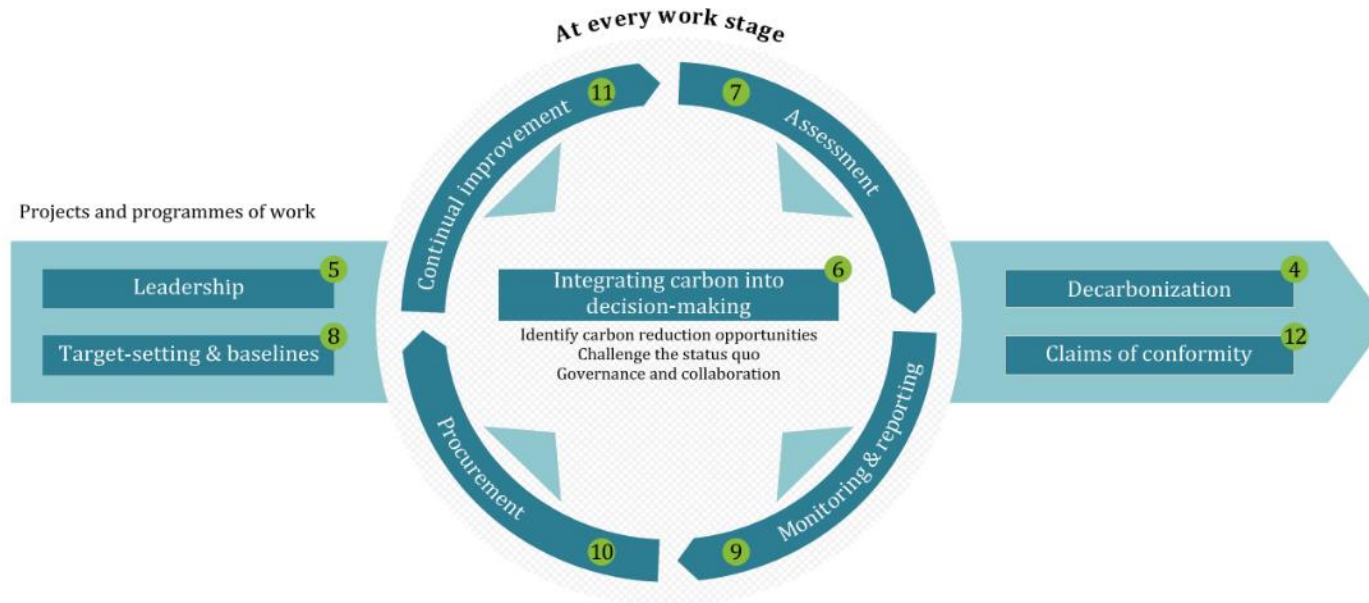
Lifecycle greenhouse gas emissions = Whole Life Carbon

NPF4 seeks to ensure that Whole Life Carbon is considered through the planning process



PAS 2080:2023

Carbon Management in Buildings and Infrastructure



PAS 2080 promotes reduced carbon, increased value delivery, more collaborative ways of working, and a culture of challenging convention and traditional practice for decarbonisation



National Planning Framework 4

Research for Climate Change Guidance – July 2024

Whole Life Carbon Assessment

- Importance of assessing whole life carbon emissions at the earliest stages of planning to align with net zero policy

Existing Standards, Regulations and Thresholds

- Significance of standards like EIA, Net Zero Public Sector Building Standard, and Scottish City Region and Growth Deals

Emerging Approaches and Standards

- Such as 'Part Z', Net Zero Carbon Building Standard, and Climate Emergency Response Group's Net Zero Test

International Approaches

- Insights from other jurisdictions like Sweden, Ireland, New Zealand, and Greater London Authority on embedding carbon in planning processes

Stakeholder Engagement

- Feedback from stakeholders highlighting the need for clear guidance, consistent methodologies, and adequate resourcing



Research to Inform National Planning Framework 4: Planning and Climate Change Guidance

Report Issue 3

Report commissioned by the Scottish Government

July 2024

 Scottish Government
Riaghaltas na h-Alba

National Planning Framework 4

Climate Mitigation (Carbon) Guidance – June 2025

Whole-life carbon assessment

- Considers embodied, operational, and end-of-life emissions to give a full picture of carbon impact

Aligned with PAS 2080

- Follows an industry-recognised framework for reducing carbon, embedding carbon management in decisions across projects

Proportionate application

- Scales the depth of assessment to the project's size and complexity, balancing effort with value

Continuous improvement

- Applies carbon insights to influence design, procurement, and delivery, driving better outcomes over time

Robust evidence base

- Uses a wide range of reliable data sources for transparent, consistent, and verifiable reporting



NPF4 Planning Guidance

Policy 2 - Climate Mitigation and Adaptation

June 2025

 Scottish Government
Riaghaltas na h-Alba

National Planning Framework 4

Carbon Factor Data Sources

Carbon Management in Buildings and Infrastructure (PAS 2080)

Industry framework for managing whole-life carbon

<https://knowledge.bsigroup.com/products/carbon-management-in-buildings-and-infrastructure>

Built Environment Carbon Database (BECD)

Extensive carbon factor database for carbon benchmarking

<https://www.becd.co.uk/>

Inventory of Carbon & Energy (ICE) V4

Embodied carbon database for construction materials

<https://circularecology.com/>

Royal Institution of Chartered Surveyors (RICS) Whole Life Carbon Assessment

Global standard for whole-life carbon measurement

https://www.rics.org/content/dam/ricsglobal/documents/standards/Whole_life_carbon_assessment_PS_Sept23.pdf

Department for Energy Security & Net Zero (DESNZ) GHG Conversion Factors

Annual coefficients for calculating operational energy emissions

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025>



NPF4 Planning Guidance

Policy 2 - Climate Mitigation and Adaptation

June 2025

Simplified Embodied Carbon (A1-3) Calculation Procedure

Step 1 – Identify Key Materials

- List main construction materials (e.g. concrete, steel, timber, asphalt)
- Use early design quantities, estimates, or a bill of quantities if available

Step 2 – Select Carbon Factors

- Use a recognised database such as the ICE database or BECD
- Ensure factors are expressed in kgCO₂e per unit (e.g. per kg, per m³, per tonne)

Step 3 – Apply Factors to Quantities

- Create a spreadsheet (or use a tool)
- Multiply each material quantity by its carbon factor to calculate embodied carbon

Step 4 – Incorporate Transport

- Combine the totals across all materials & incorporate transport carbon (A4)
- Add other forms of carbon, e.g. construction (A5) and operational (B Series)

Follow RICS Carbon Assessment Methodology if possible & apply normal quality control procedures

Simplified Embodied Carbon (A1-3) Calculation Procedure (Example)

Material	Quantity	Carbon Factor (tCO ₂ e/t)	Embodied Carbon (tCO ₂ e)	Assumptions
Concrete	500 m ³	0.0871	104.5	Concrete type General - C8/10 (Gen 1), Density 2.4 t/m ³ , factor from ICE Database V4
Steel	100 tonnes	1.72	172.0	Steel bar and rod reinforcement based on world average steel factor (ICE V4)
Asphalt	50 tonnes	0.0553	2.8	General asphalt, 5.5% binder content (ICE V4)

Total Embodied Carbon (A1-3) = 279.3 tCO₂e