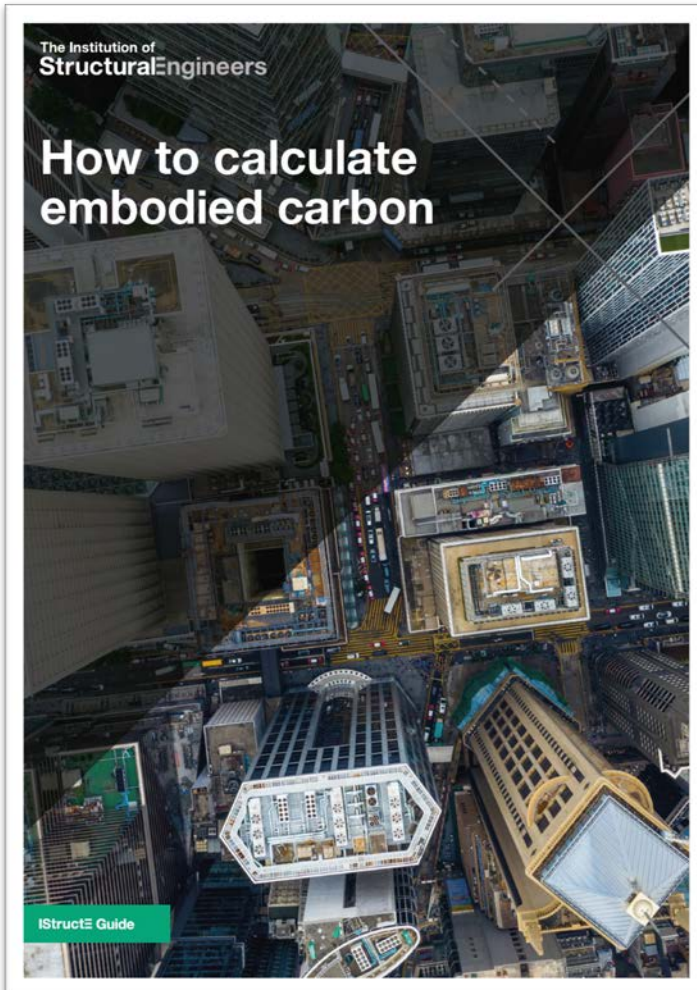


How to calculate embodied carbon

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Sustainable design in a climate emergency

How to calculate embodied carbon



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How to calculate embodied carbon

1. Context
2. Purpose, Principles, Impact
3. The Guide
4. How to calculate embodied carbon
5. Communication
6. Reporting
7. What's next?

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We will seek to:

— Raise awareness of the climate and biodiversity emergencies and the urgent need for action amongst our clients, collaborators and supply chains.

— Advocate for faster change in our industry towards regenerative design practices and a higher Governmental funding priority to support this.

— Establish climate and biodiversity mitigation principles as a key measure of our industry's success: demonstrated through awards, prizes and listings.

— Share knowledge and research to that end on an open source basis.

— Evaluate all new projects against the aspiration to contribute positively to mitigating climate breakdown, and encourage our clients to adopt this approach.

— Upgrade existing buildings for extended use as a more carbon efficient alternative to demolition and new build whenever there is a viable choice.

— Include life cycle costing, whole life carbon modelling and post occupancy evaluation as part of the basic scope of work, to reduce both embodied and operational resource use.

— Adopt more regenerative design principles in practice, with the aim of providing structural engineering design that achieves the standard of net zero carbon.

— Collaborate with clients, architects, engineers and contractors to further reduce construction waste.

— Accelerate the shift to low embodied carbon materials in all our work.

— Minimise wasteful use of resources in our structural engineering design, both in quantum and in detail.

We hope that every structural engineering practice operating in the UK will join us in making this commitment.

We will seek to:

- Share knowledge and research to that end on an open source basis
- Include life cycle costing, whole life carbon modelling and post-occupancy evaluation as part of the basic scope of work, to reduce both embodied and operational resource use.
- Accelerate the shift to low embodied carbon materials in all our work
- Minimise wasteful use of resources in our structural engineering design, both in quantum and in detail

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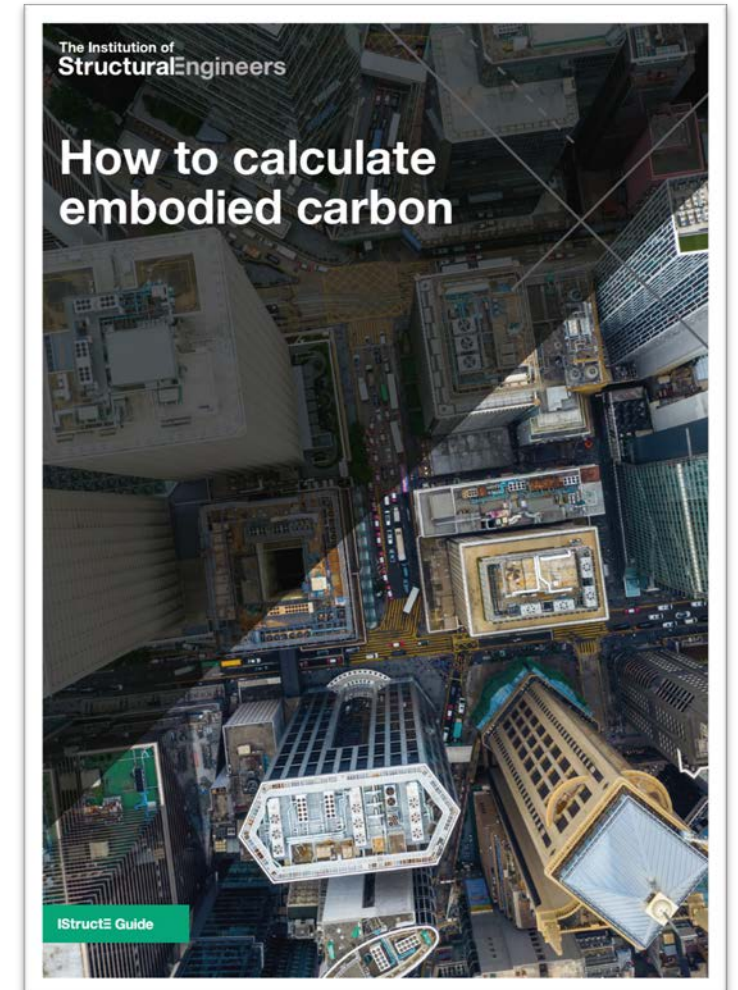
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CO₂ ≠ CO₂

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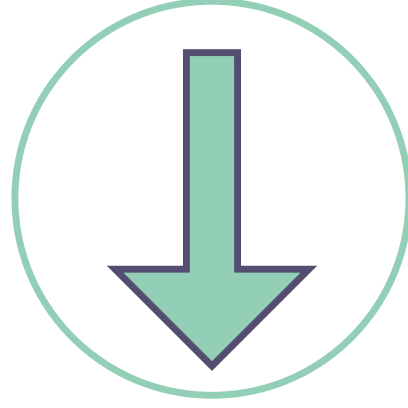
Purpose

- Provide a common calculation method
 - Enable meaningful design comparisons
 - Improve our understanding of embodied carbon
 - Support material demand reduction
 - Help us find new ways to reach net zero.



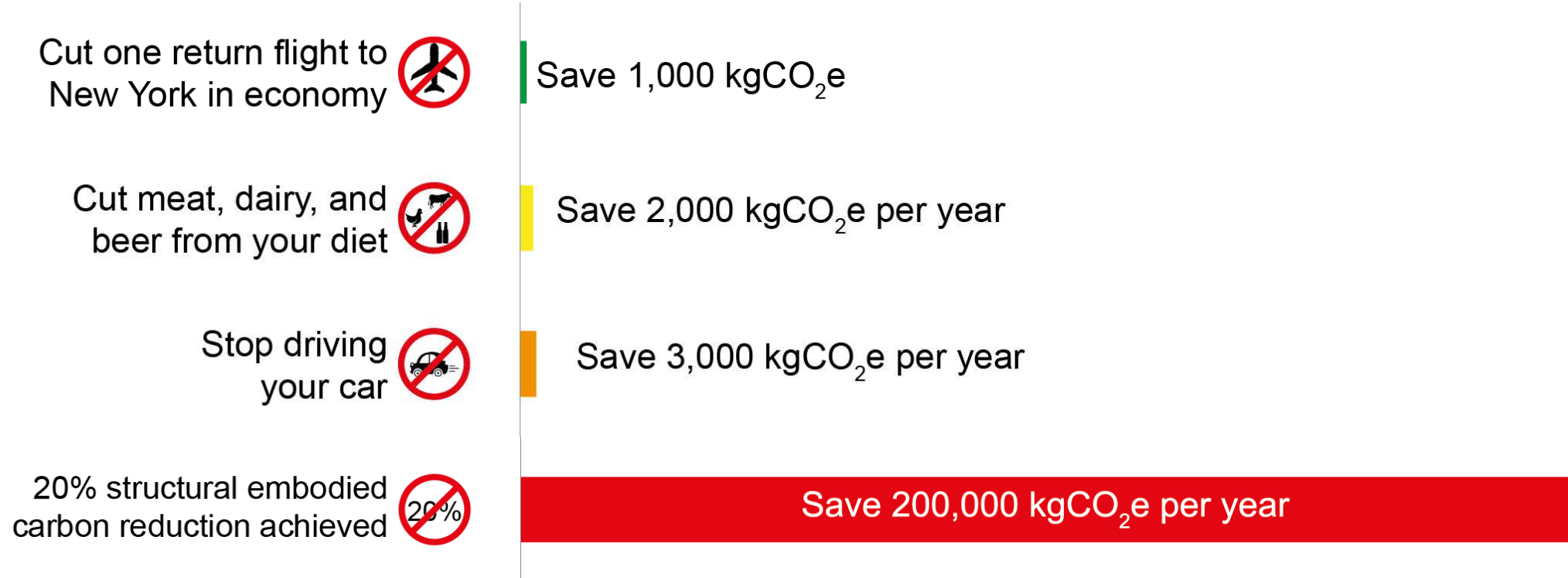
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Principles



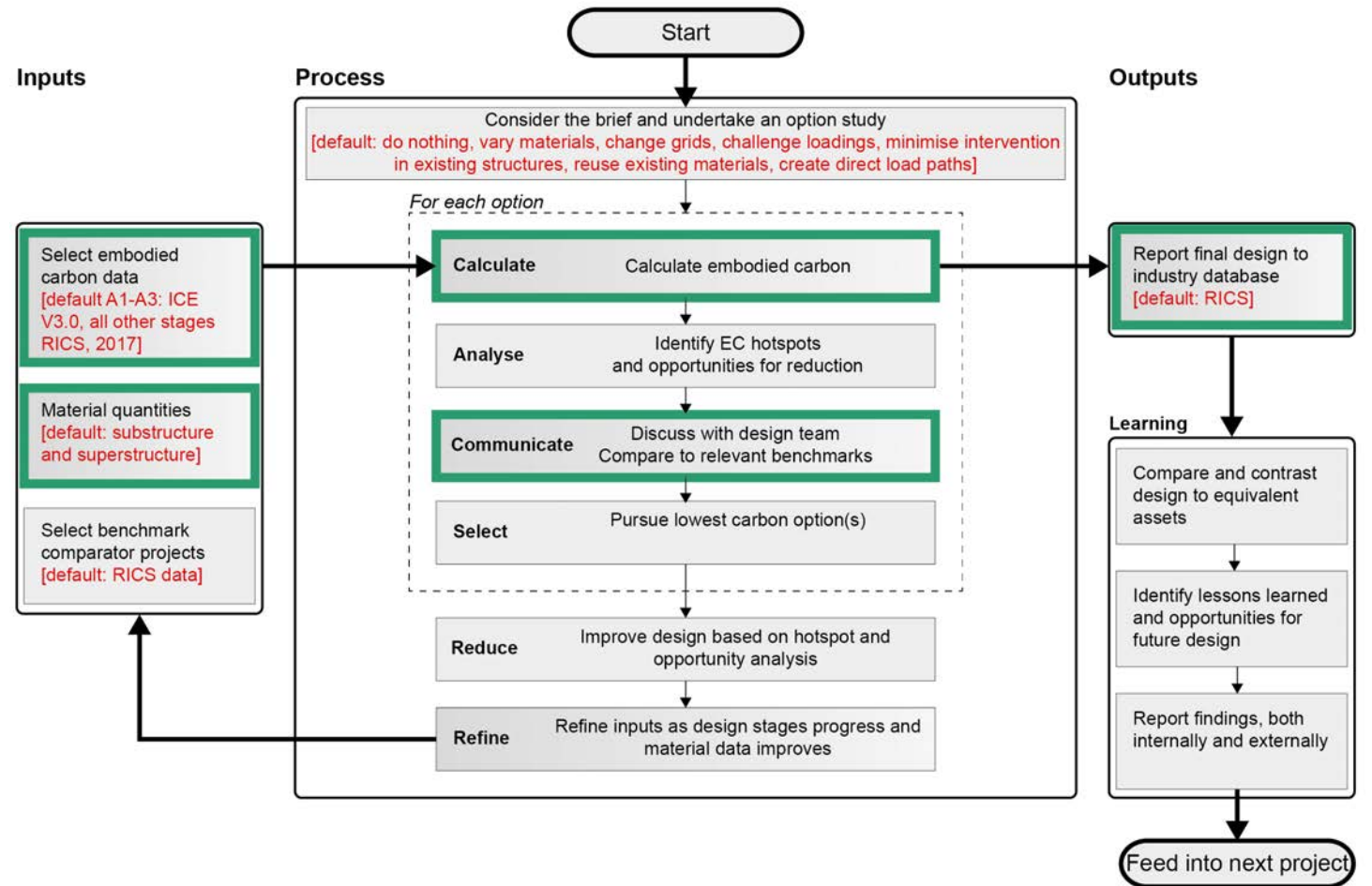
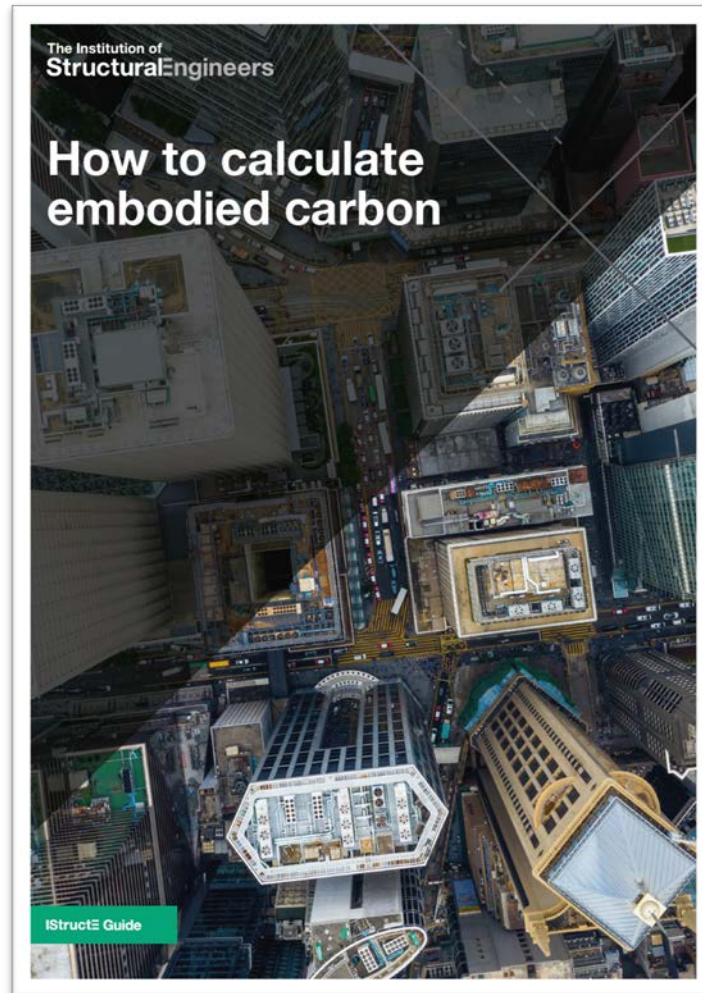
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Impact



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The Guide



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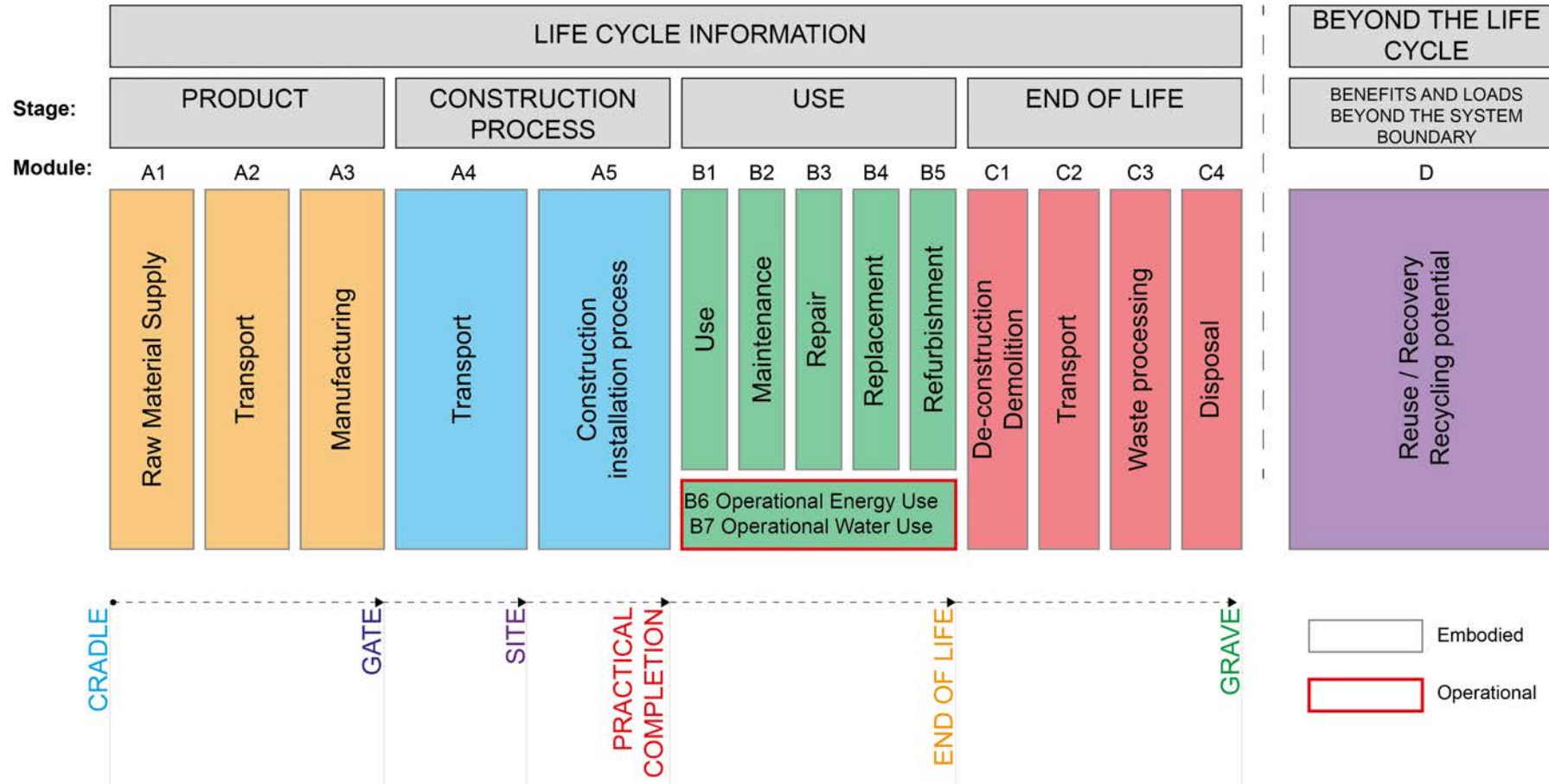
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- Guide follows the process diagram
 - Inputs
 - Process (calculation)
 - Outputs
- Easy to navigate

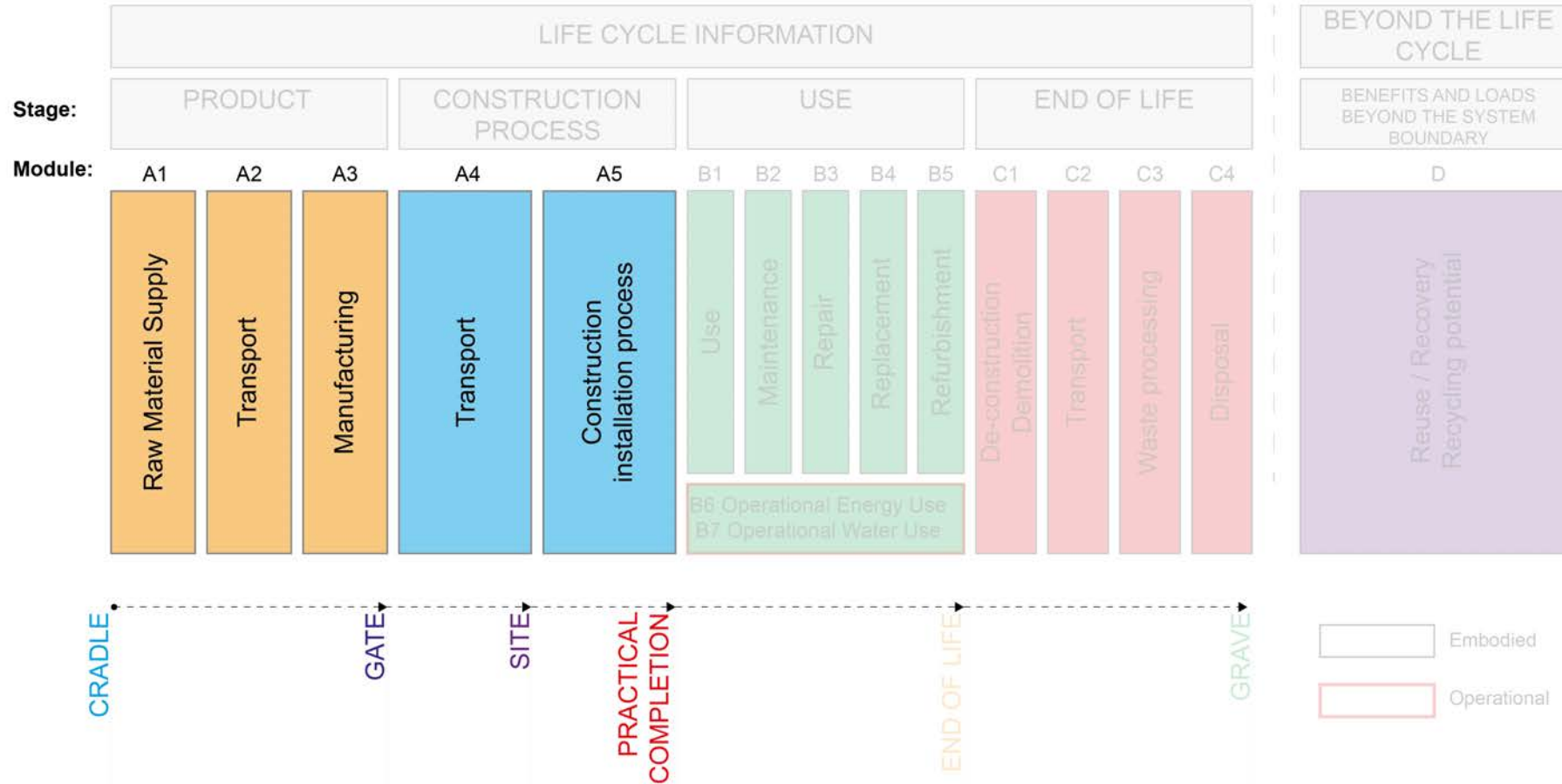
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The Guide: Scope



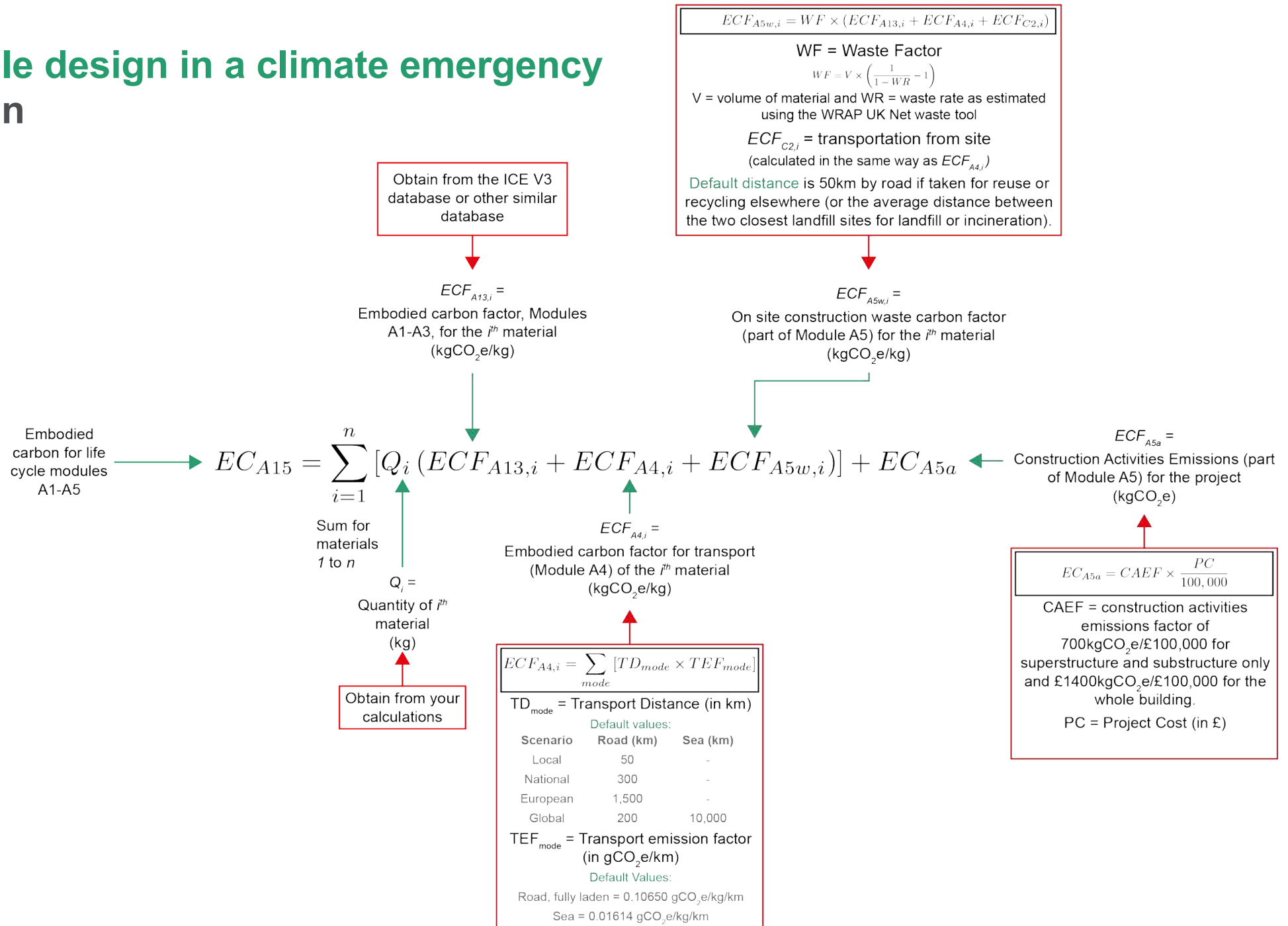
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The Guide: Minimum calculation



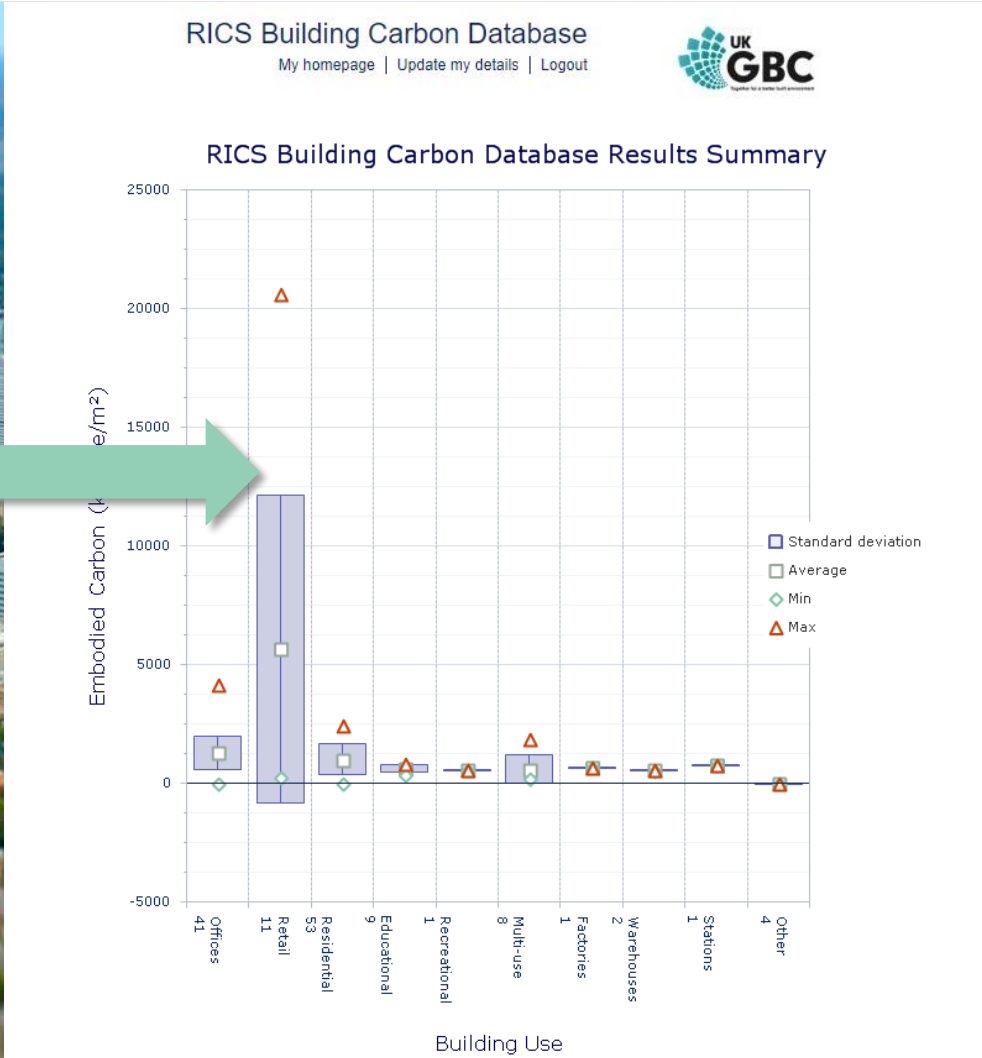
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Calculation



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Reporting



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What's next

- Evening Seminar **Wednesday 7th October 2020**
 - Orlando Gibbons (Arup) and John Orr
 - <https://www.istructe.org/events/hq/launch-calculate-carbon/>
- Download the guide and read it!
 - <https://carbon.tips/h2c>