

Design Stage Embodied CO₂ Calculations with AECB PHribbon

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WHOLE LIFE CARBON ASSESSMENT INFORMATION

PROJECT LIFE CYCLE INFORMATION

SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

[A1 – A3]			[A4 – A5]		[B1 – B7]					[C1 – C4]			
PRODUCT stage			CONSTRUCTION PROCESS stage		USE stage					END OF LIFE stage			
[A1]	[A2]	[A3]	[A4]	[A5]	[B1]	[B2]	[B3]	[B4]	[B5]	[C1]	[C2]	[C3]	[C4]
Raw material extraction & supply	Transport to manufacturing plant	Manufacturing & fabrication	Transport to project site	Construction & installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction Demolition	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal
					[B6] Operational energy use								
					[B7] Operational water use								

[D]
Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

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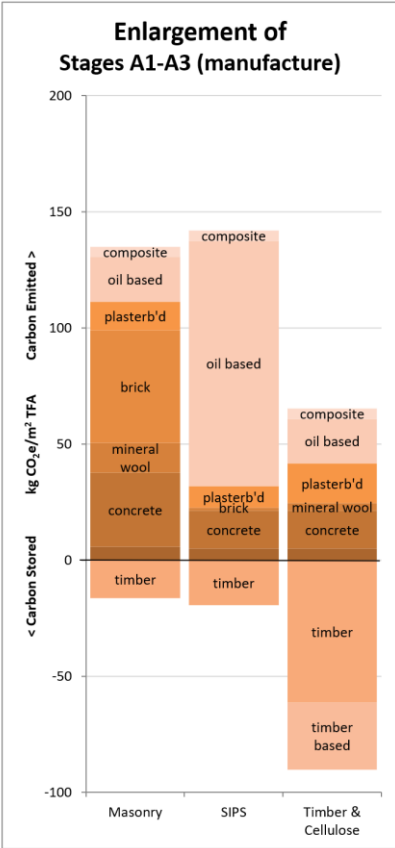
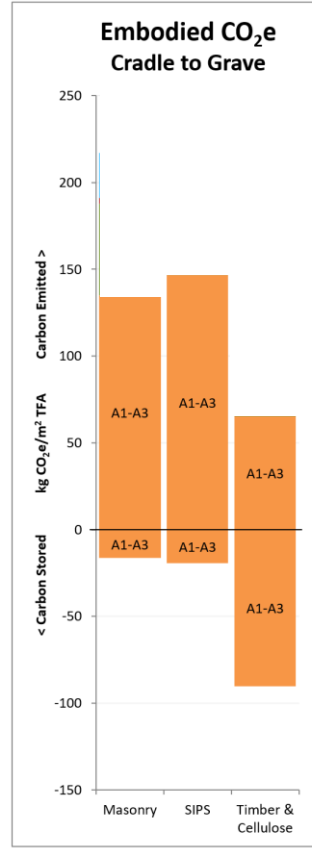
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Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

← cradle to gate →

A1-A3

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← cradle to gate → **A1-A3**



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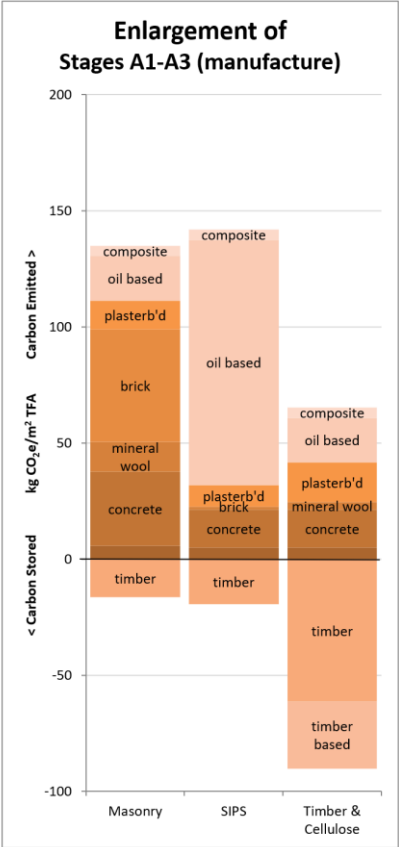
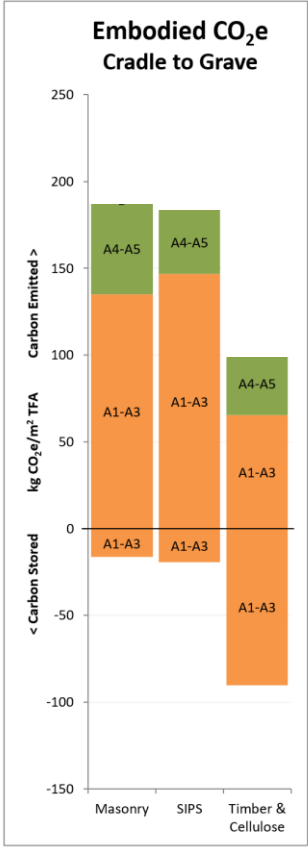
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SUPPLEMENTARY INFORMATION BEYOND THE PROJECT LIFE CYCLE

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Benefits and loads beyond the system boundary
Reuse Recovery Recycling potential

← cradle to practical completion (handover) →



WHOLE LIFE CARBON ASSESSMENT INFORMATION

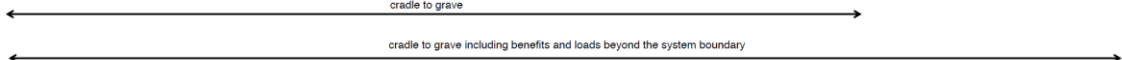
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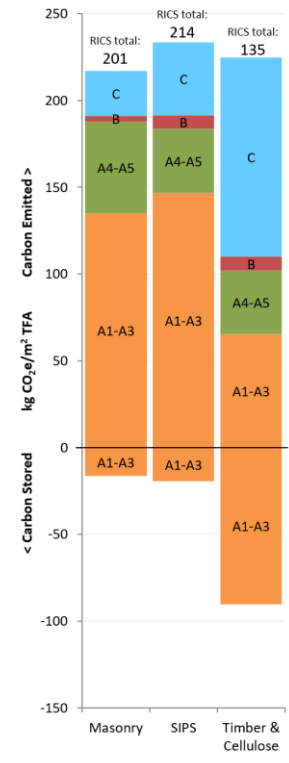
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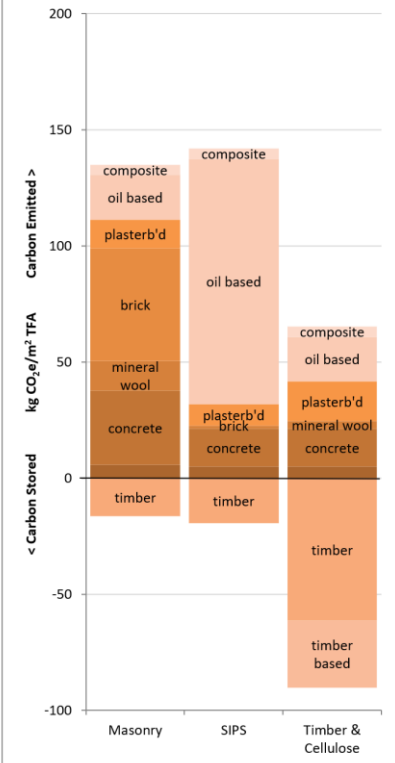
PHribbon full LCA



Embodied CO₂e Cradle to Grave



Enlargement of Stages A1-A3 (manufacture)



Software

Options for this Construction Type ✕

03ud-Intermed floor

1. section and material lookup

section 1 88%	section 2 13%	section 3 0%
plasterboard, skim, vapour barrier OSB		
Mineral wool	Ibeam	Ibeam
Mineral wool	Mineral wool	Ibeam
Mineral wool	Ibeam	Ibeam
OSB		

2. multi select thickness

mm
10
11
70
260
70
18

OR enter a thickness mm

3. refine the material lookup

Search

carpet, wool (flooring)

mineral wool, fibre quilt λ 0.040

mineral wool, fibre slab λ 0.037

mineral wool, fibre slab λ 0.032-0.033

mineral wool, fibre slab λ 0.030-0.031

mineral wool, Isover glass wool λ 0.032- λ 0.042W/mK (IntWall)

mineral wool, Isover lamella Mats with foil

mineral wool, Knauf λ 0.031- λ 0.033W/mK ECOSE slabs

mineral wool, Knauf λ 0.034- λ 0.035W/mK ECOSE slabs

mineral wool, Knauf λ 0.036- λ 0.039W/mK ECOSE slabs

mineral wool, Knauf λ 0.040- λ 0.046W/mK ECOSE loft roll

mineral wool, Knauf Supafil Cavity Wall λ 0.034W/mK

mineral wool, blown, Knauf Supafil Frame λ 0.040, Supafil Loft 0.045 W/mK

mineral wool, blown, Knauf Supafil37, supafil40, Jetstream and Supafil Party wall

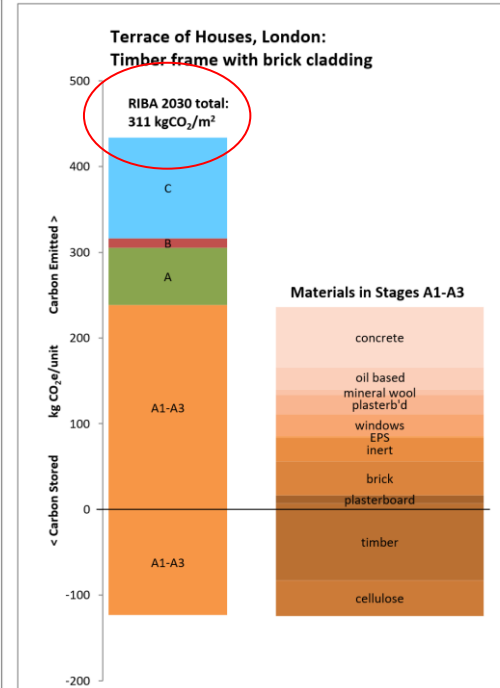
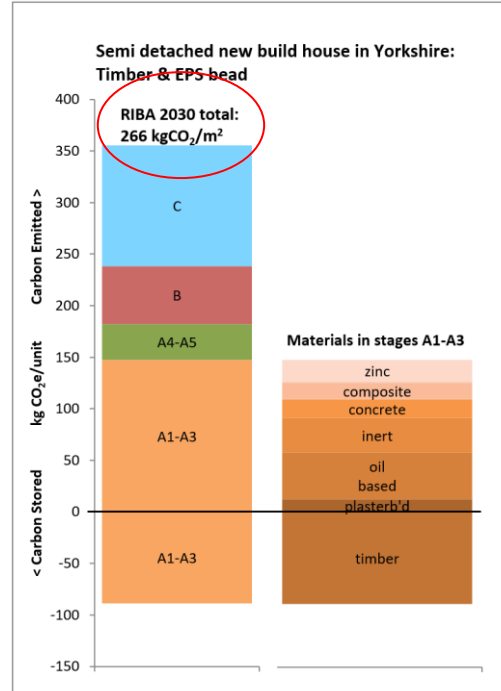
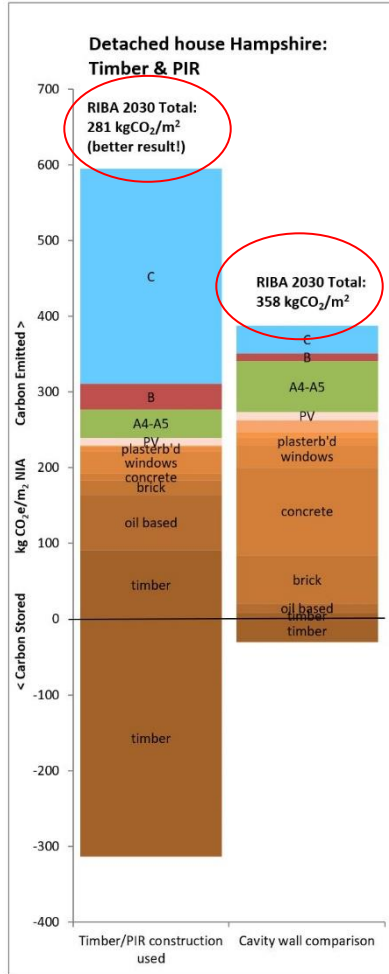
mineral wool, blown, Knauf Supafil Timber Frame λ 0.034W/mK

UK Ireland All

NOTE: Please do not change the NAME of assemblies on your PHPP U-value tab after running this dialog

- Automatic matching of materials that you can adjust
- remembers associations you make

PHribbon Embodied CO₂ Examples



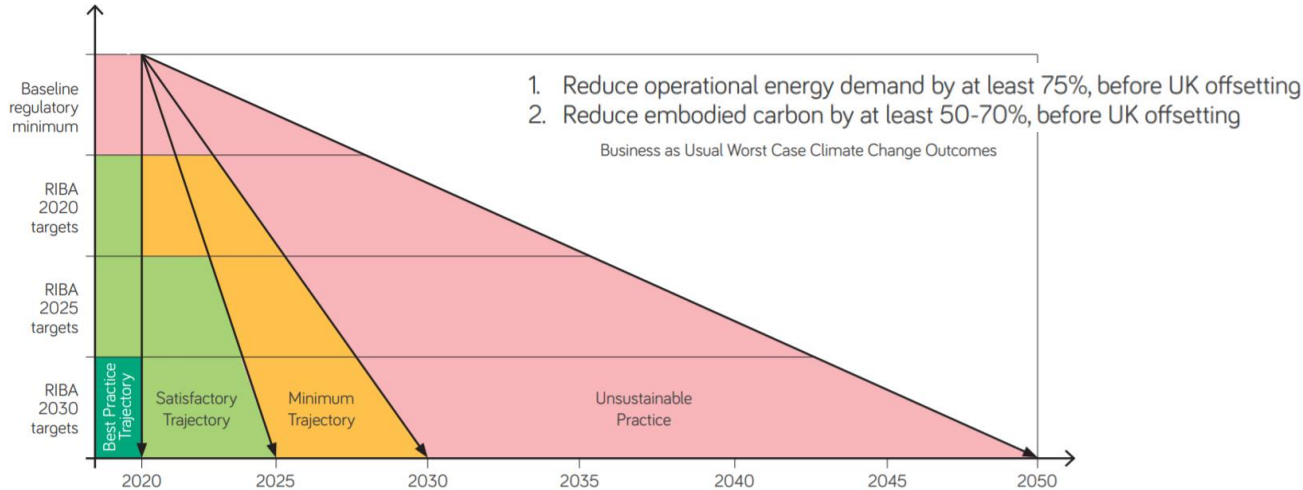
- 3 new build, completed buildings
- Not the height of the bar that is important, it's the overall result
- Design stage calculations in PHPP
- Whole Life, Cradle to Grave

Guidance for Architects

RIBA 2030 Challenge

RIBA 2030 Climate Challenge target metrics for domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Embodied Carbon kgCO ₂ e/m ² 	1000 kgCO ₂ e/m ² (M4i benchmark)	< 600 kgCO ₂ e/m ²	< 450 kgCO ₂ e/m ²	< 300 kgCO ₂ e/m ²	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)



RIBA = Royal Institute
of British Architects

Further Information

Features

Usability

- guides you through the process
- suggested matching of materials with choices
- uses timber fractions
- Easi-joists and JJI I-beams entries
- back button

- add materials not in the PHPP: intermediate walls floors, roof finishes etc.
- add to same calculation later
- EPD library, show EPDs from UK, Europe or all

Includes

- Stages A-C (and D if info available) not just stages A1-A3
- transport and construction
- stored carbon
- accuracy indicator

Presentation

- comparison graph
- adds together figures for same material
- choice of output units

www.phribbon.co.uk/embodyed-co2/

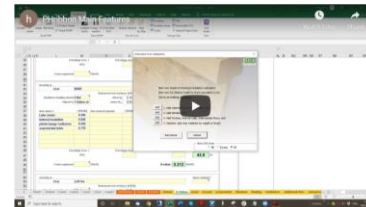
Videos, screenshots and explanation

Features > Embodied CO₂



Introduction to main features

This excludes items that have been updated in the latest version, see also the next video as well.



What's new in 2.28/2.29?

