



# 205 HYTHE SITE TOUR

November 26th, 2025

[carbon-wise.ca](http://carbon-wise.ca)

# About Us

## Who We Are

At Carbon Wise, we help builders, architects, and municipalities cut carbon, not corners... and not budgets.

Our team brings expertise in life cycle assessment (LCA), energy modelling, and policy advising, all grounded in hands-on experience with high-performance projects.



Carbon  
Wise

**200+ PROJECTS**

## What we do

We support every step from early design to final handoff.

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# Greenhouse Gas Emissions

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## Operational emissions VS. Embodied Emissions

Most emissions in a building are hidden.

- Operational emissions come from energy use over time.
- Embodied emissions come from materials, construction, and maintenance.



Both matter when you plan a low-carbon project.

# Emissions from this project

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Estimated Material Emissions

= 109kgCO<sub>2</sub>e/m<sup>2</sup>

Almost half the Vancouver  
benchmark of 200kgCO<sub>2</sub>e



Yearly operational emissions  
from the electricity it  
consumes.

A minimum code all-electric  
home would emit 502 kgCO<sub>2</sub>e.  
This is a 40% reduction!



Total operational emissions  
after 60 years

182 years = the years of  
operational emissions to equal  
upfront embodied emissions

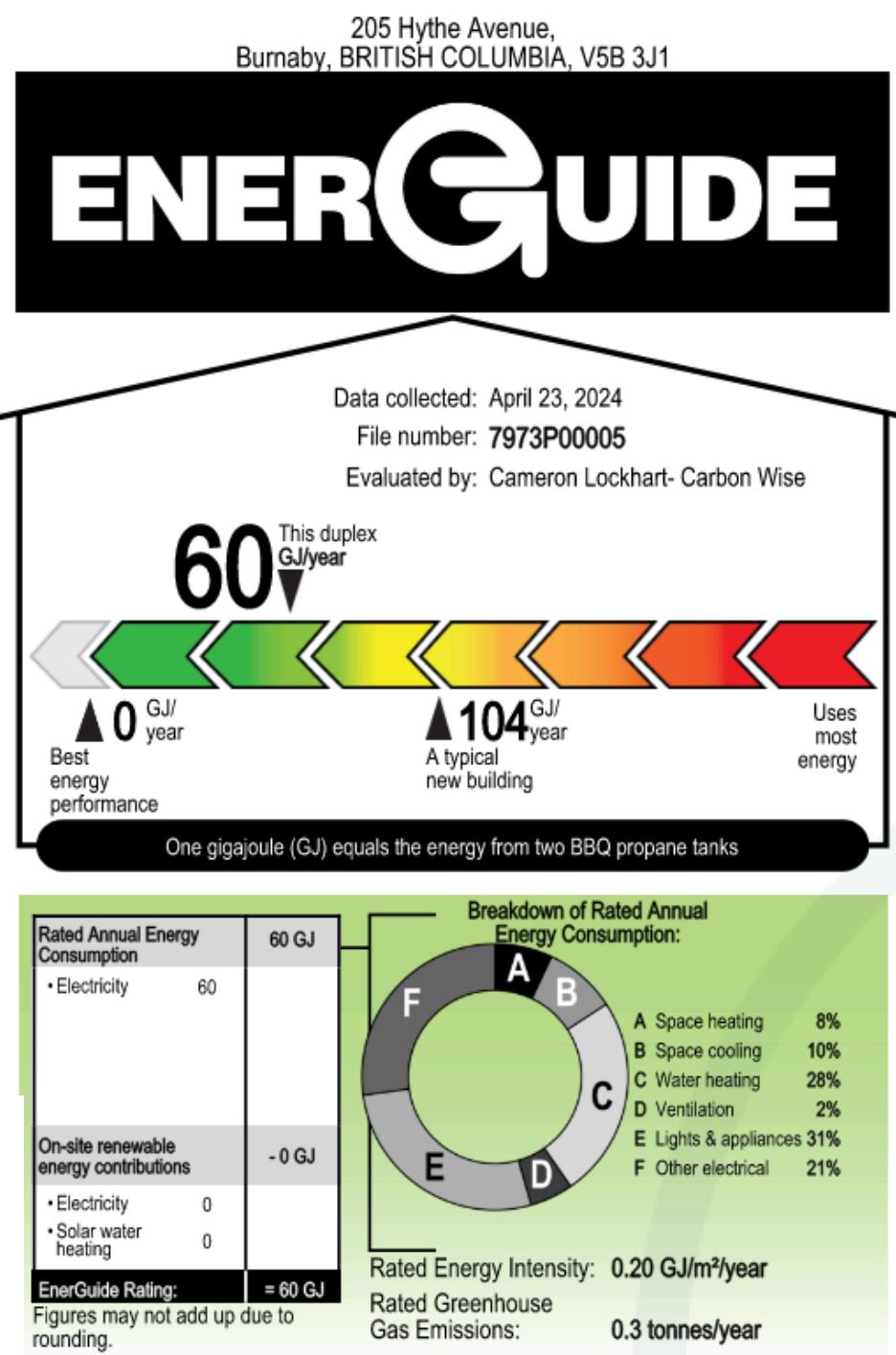


#### F: 9.36.6. ENERGY STEP CODE COMPLIANCE

Proposed House Metrics	Unit	Proposed Step Requirement	Proposed Calculations	Proposed House Result	Proposed House Pass or Fail
Step Code Level	Step 3, 4 or 5	5			
Mechanical Energy Use Intensity (MEUI)	kWh/(m <sup>2</sup> ·year)	30 (max)	60 GJ	27	Pass
% Improvement	%	70 (min)		59.8	
Thermal Energy Demand (TEDI)	kWh/(m <sup>2</sup> ·year)	19 (max)		16.00	Pass
% Heat Loss Reduction	%	40 (min)		42	
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	1 (max)		1.00	
Normalized Leakage Area	10 Pa (cm <sup>2</sup> /m <sup>2</sup> )	0.48 (max)		0.57	
Normalized Leakage Rate	l/s/m <sup>2</sup>	0.35 (max)		0.42	
Step Code Requirements Met:		Yes			

#### F: Zero Carbon Step code Compliance

Proposed House Metrics	Unit	Proposed Level Requirement	Proposed Calculations	Proposed House Result	Proposed House Pass or Fail
Carbon Step Code Level	EL-1 to 4	EL 4 - Zero Carbon			
Total GHG	kg CO <sub>2</sub> e/year	530 (max)		184	Pass
CO <sub>2</sub> e Per floor area with Max	Per Floor area	kg CO <sub>2</sub> e/m <sup>2</sup> /year	1.5 (max)	0.6	
	Max GHG	kg CO <sub>2</sub> e	1000 (max)	184.0	
Prescriptive	Heating	Zero Carb	3	Zero Carb	
	Hot Water	Zero Carb	3	Zero Carb	
	All building systems, equipment and appliances	Zero Carb	3	Zero Carb	
		Target Reached		Yes	



MATERIAL CARBON EMISSIONS BY SECTION		
Footings & Slabs	5,938 kg CO <sub>2</sub> e	
Foundation Walls	6,045 kg CO <sub>2</sub> e	
Structural Elements	0 kg CO <sub>2</sub> e	
Exterior Walls	2,083 kg CO <sub>2</sub> e	
Party Walls	329 kg CO <sub>2</sub> e	
Cladding	1,971 kg CO <sub>2</sub> e	
Windows	6,662 kg CO <sub>2</sub> e	
Interior Walls	3,413 kg CO <sub>2</sub> e	
Floors	2,082 kg CO <sub>2</sub> e	
Ceilings	984 kg CO <sub>2</sub> e	
Roof	4,026 kg CO <sub>2</sub> e	
Garage	0 kg CO <sub>2</sub> e	
<b>NET TOTAL</b>	<b>33,532 kg CO<sub>2</sub>e</b>	0 MCE (kg CO <sub>2</sub> e) 10,000

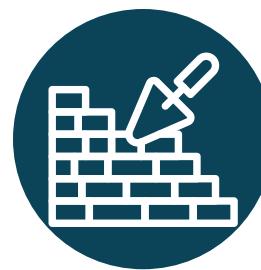
BEAM RESULTS			
PROJECT EMISSIONS (MCE)			
NET EMISSIONS kg CO <sub>2</sub> e	GROSS EMISSIONS kg CO <sub>2</sub> e	STORAGE SHORT CYCLE kg CO <sub>2</sub>	STORAGE LONG CYCLE kg CO <sub>2</sub>
<b>33,532</b>	35,396	1,864	0
PROJECT EMISSIONS INTENSITY (MCI)			
Metric kg CO <sub>2</sub> e/m <sup>2</sup>	Imperial lb CO <sub>2</sub> e/ft <sup>2</sup>	Storing Low Avg High	
MCI Conditioned Floor Area <b>109</b>	<b>22</b>		
MCI Total Floor Area 109	22		
MCI Per Bedroom 6,706	14,785		

HIGHEST EMITTING MATERIALS		
SECTION	kg CO <sub>2</sub> e	MATERIAL
Windows	6,662	Window - triple pane / Vinyl frame / Bfca St
Interior Walls	3,153	Drywall 1/2" [BEAM Avg   US & CA]
Foundation Walls	3,015	Concrete - 25 MPa, 40% SCM, GUL / Concrete
Foundation Walls	2,694	EPS FOAM ICF R-23, 2 Sheets of 2.75" @ R4-i
Footings & Slabs	2,363	Concrete - 25 MPa, 15% SCM, GU / Concrete
Roof	1,823	Metal Panels - Steel / Canadian Sheet Steel
Cladding	1,336	Fiber Cement siding [BEAM Avg]
Footings & Slabs	1,238	Concrete - 25 MPa, 15% SCM, GU / Concrete
Footings & Slabs	1,234	Concrete - 25 MPa, 15% SCM, GU / Concrete
Floors	1,100	Wood I joist / TJI 230/360 / 14" Depth / AWI

HIGHEST CARBON-STORING MATERIALS		
SECTION	kg CO <sub>2</sub> e	MATERIAL
Exterior Walls	-982	Cellulose / dense pack / CIMA / R 3.7-inch /

Lifetime Emissions Estimated at 44,515 kgCO2e

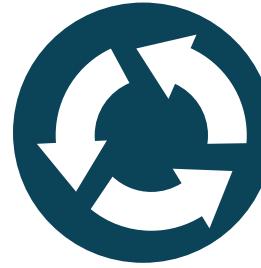
# GHG Breakdown



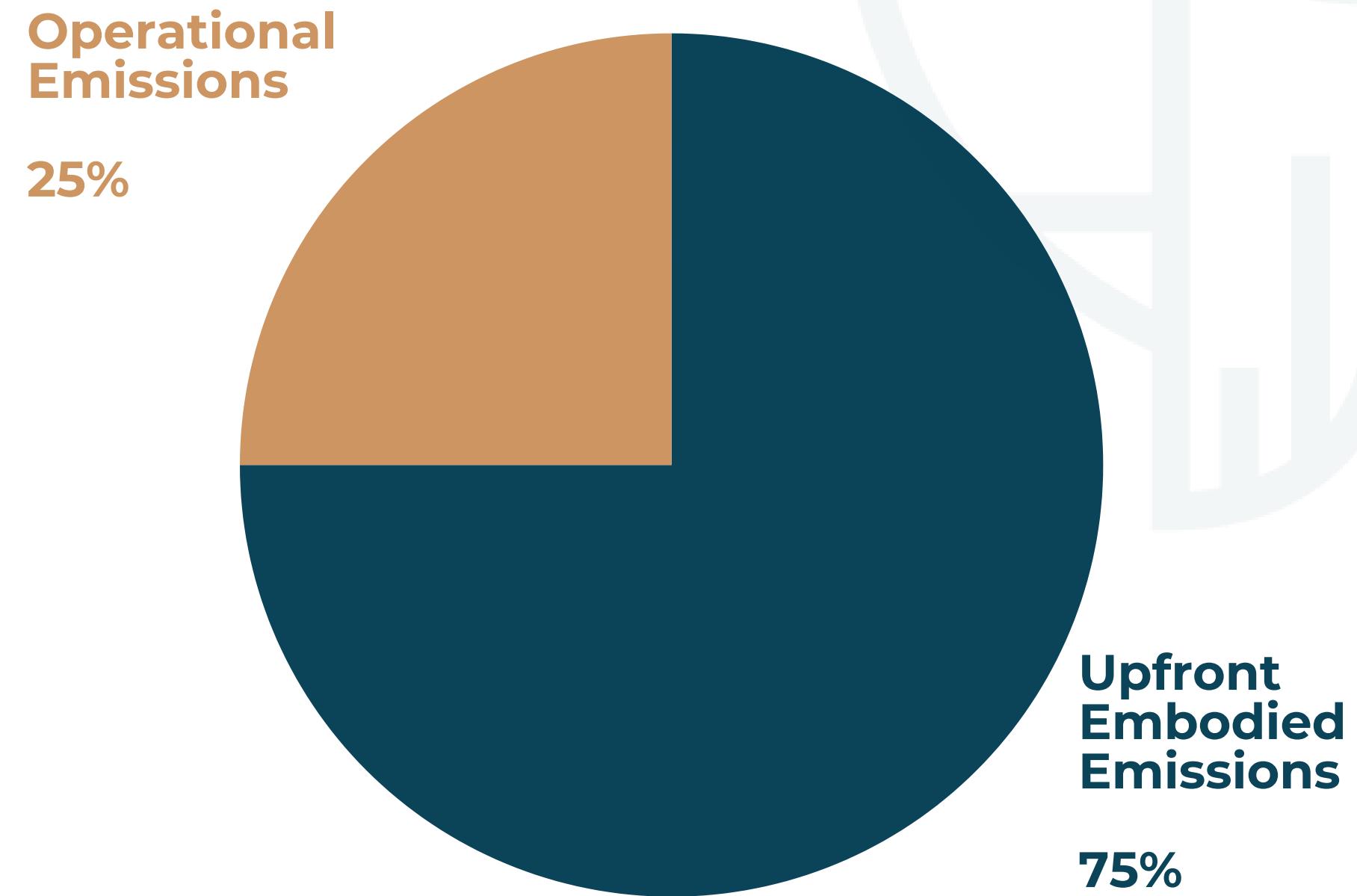
Upfront Embodied Emissions represent ~**75% of the emissions over 60 years** (not including repair and maintenance or end-of-life)



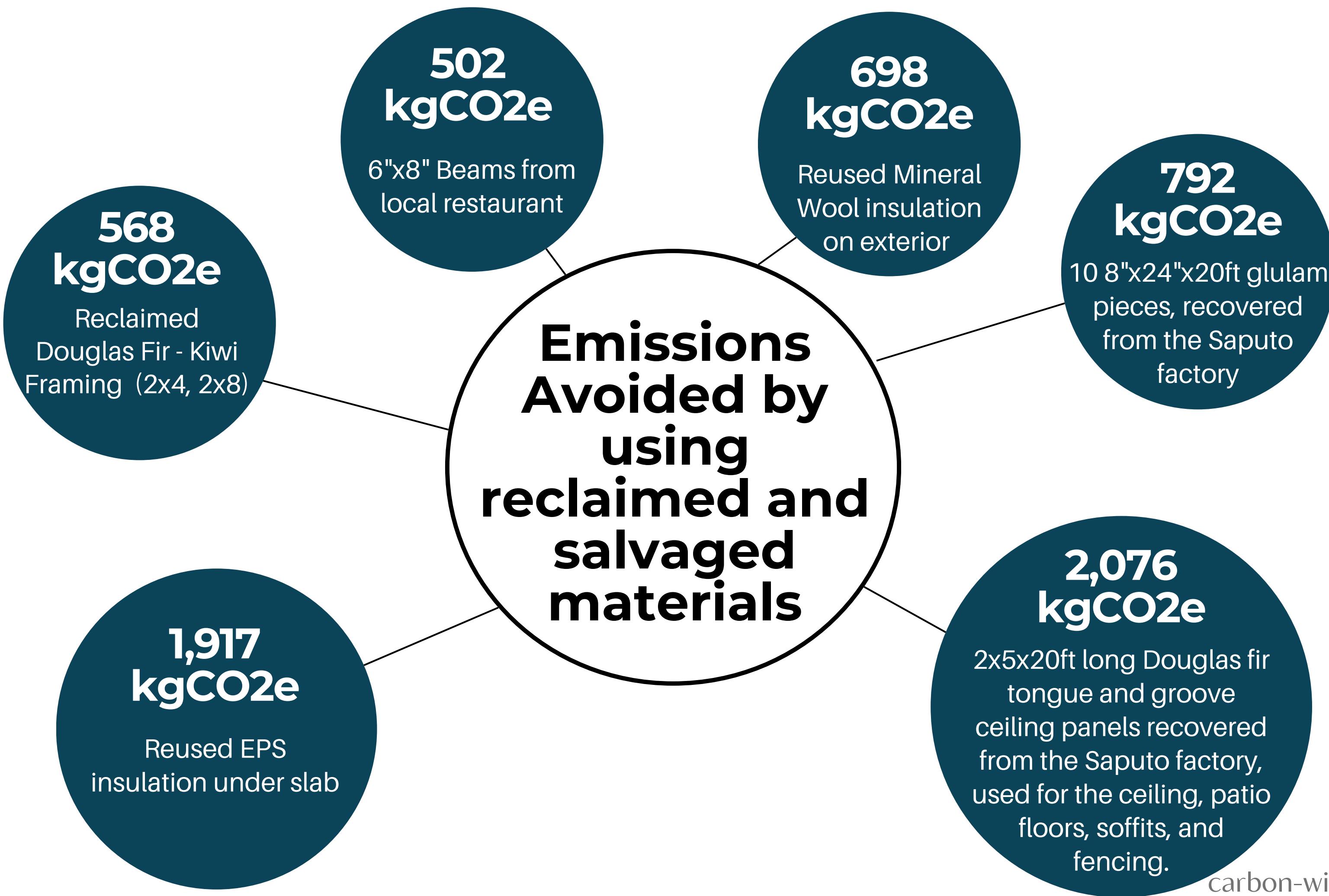
Operational Emissions represent ~**25% of the emissions over 60 years**.



The reuse of materials provided significant Embodied Emissions savings.



# Emissions Avoided by using reclaimed and salvaged materials



← Left

business as usual

Right →

strategies to  
avoid emissions





**A1 - A3 Product stage**  
 A1 Raw material extraction  
 A2 Transport to manufacturing site  
 A3 Manufacturing

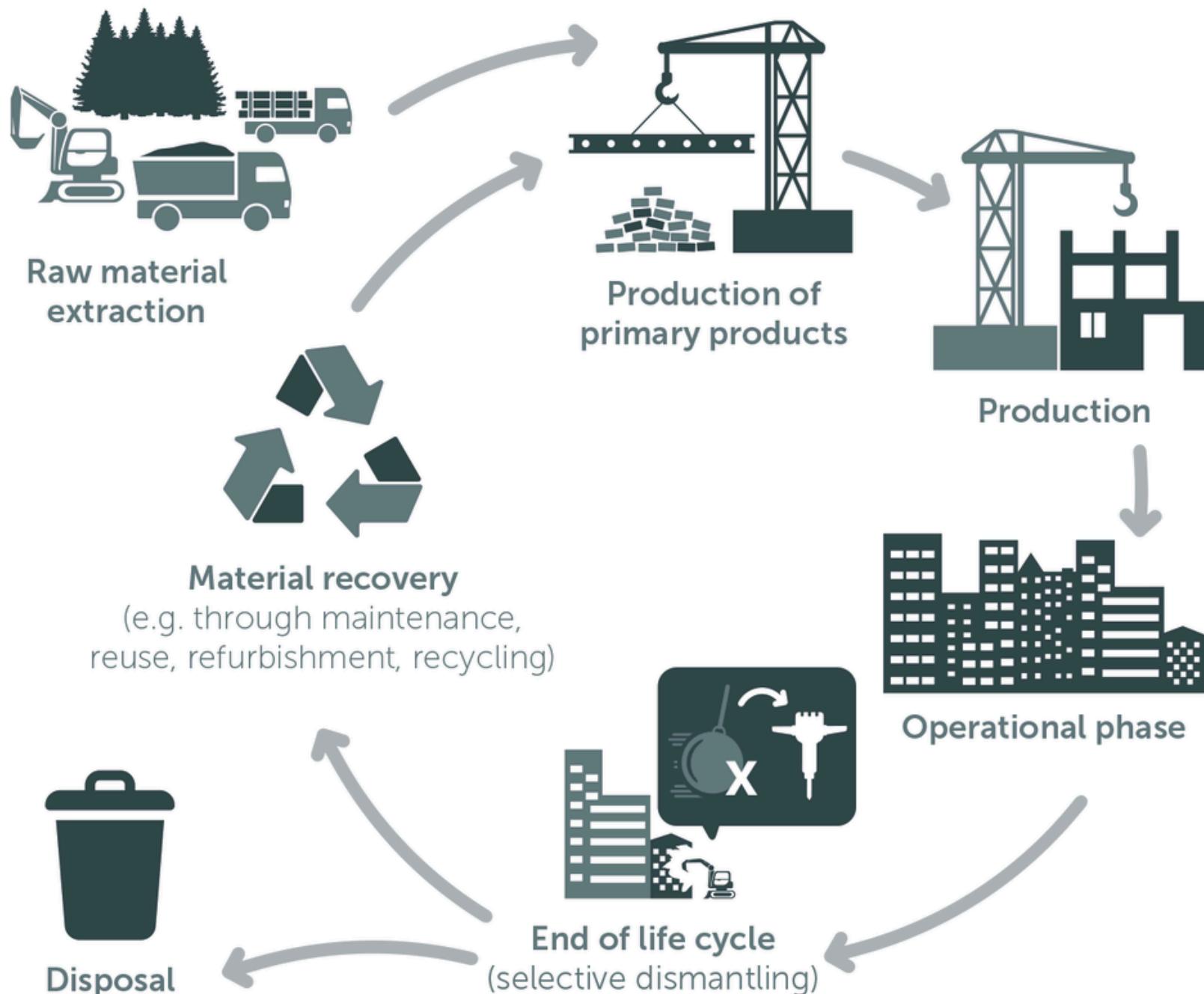
**A4 - A5 Construction stage**  
 A4 Transport to construction site  
 A5 Installation / Assembly

**B1 - B5 Use stage**  
 B1 Use  
 B2 Maintenance  
 B3 Repair  
 B4 Replacement  
 B5 Refurbishment  
 B6 Operational energy use  
 B7 Operational water use

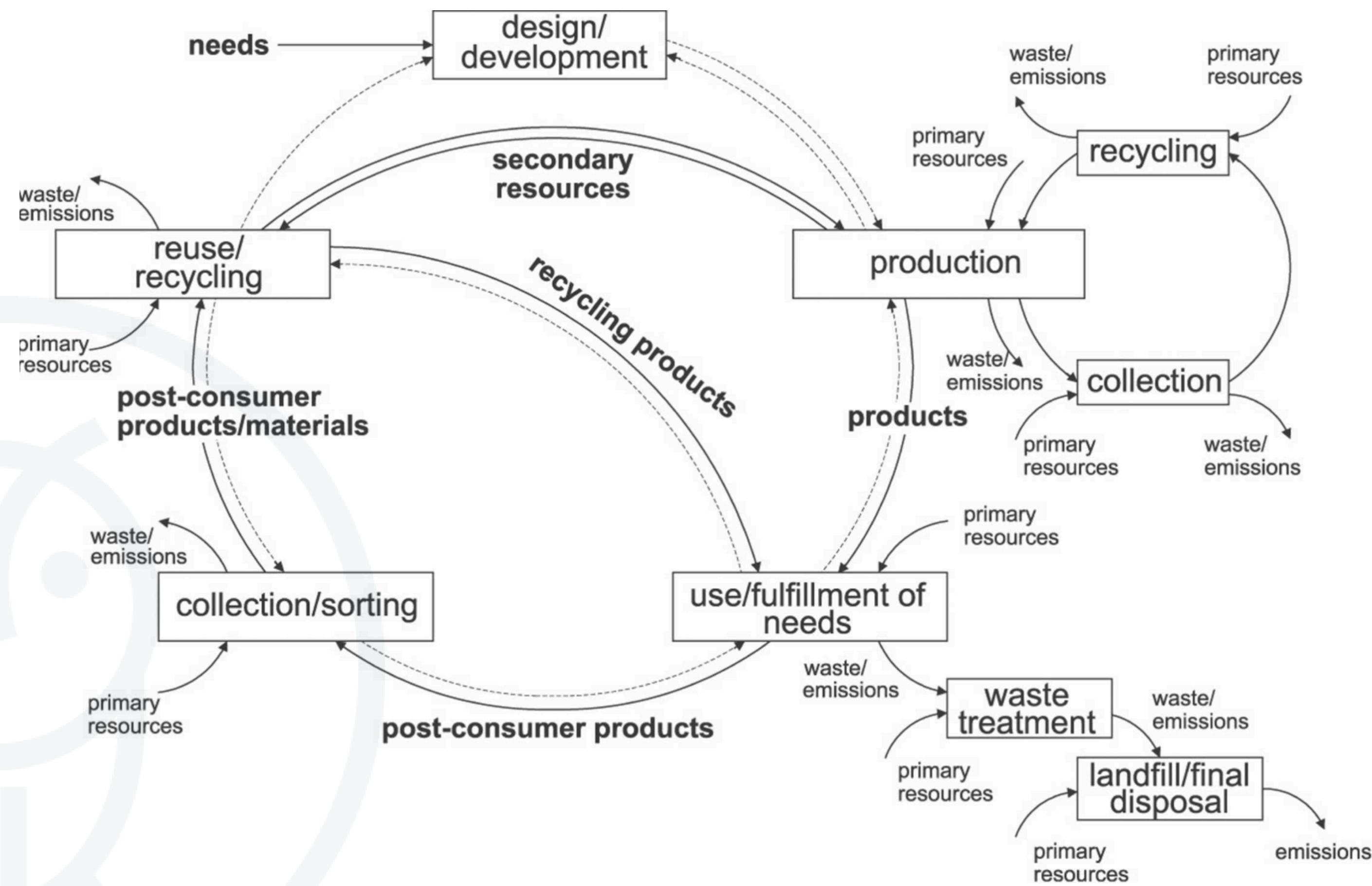
**C1 - C4 End of life stage**  
 C1 Deconstruction & demolition  
 C2 Transport  
 C3 Waste processing  
 C4 Disposal

**D - Benefits and loads beyond system boundary**  
 Reuse, recovery and/or recycling potentials, expressed as net impacts and benefits

VS



OR



# Get Connected With Us

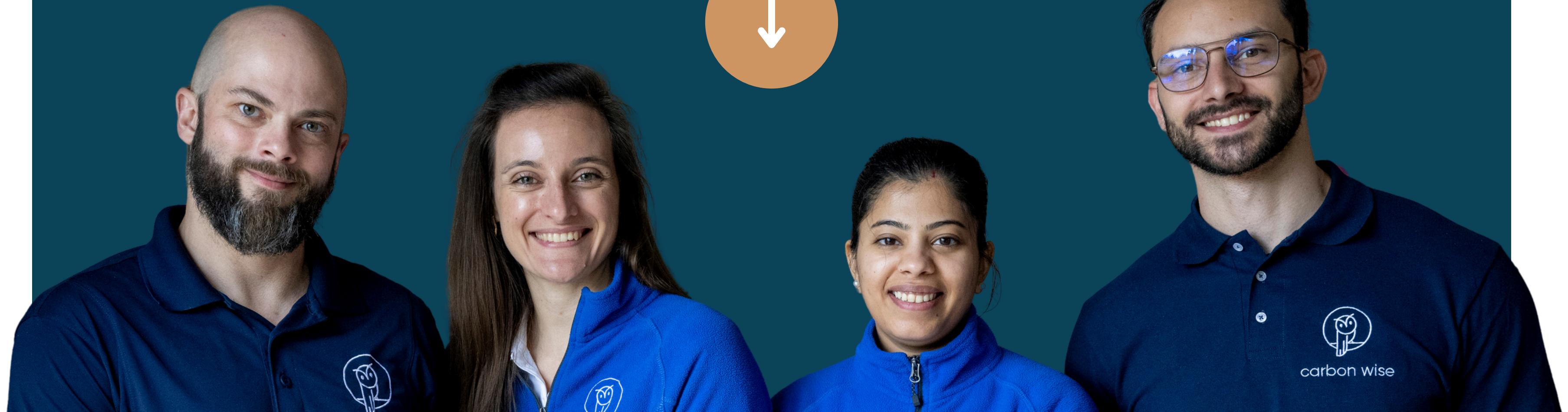
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