

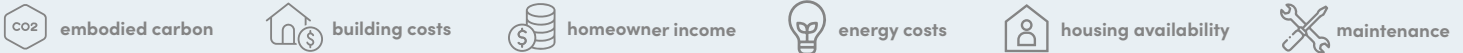
Energy Advisors

FREE BEAM ESTIMATOR TRAINING

- Boost your skills with this embodied carbon accounting tool
- Courtesy of the City of Nelson's [Low Carbon Homes Pilot](#)
- Contact Alex Leffelaar (aleffelaar@nelson.ca)

10 Affordable Ways to Reduce Embodied Carbon in Homes

In recent years, demand for **energy advisors** has grown significantly, driven by energy modelling requirements in building regulation and rebate programs. As awareness and regulation of embodied carbon emissions increases, we anticipate a similar demand to emerge for embodied carbon expertise. **As an energy advisor, your skillset and knowledge lend themselves well to this opportunity!** Here are some ways to begin integrating embodied carbon reductions and considerations into your work and projects:



Build Less for More

1 Build Smaller Buildings



- Challenge building designers/homeowners to be creative in achieving more efficient uses of smaller floor areas



2 Increase Occupant Capacity



- Add a second unit to single-family homes or choose multi-unit buildings
- New BC zoning = more housing



Build Smarter

3 Advocate for an Integrated Design Process (IDP)



- Bring various building professionals together early in the design phase
- Encourage collaboration to help with innovative design



4 Design for Durability



- Design buildings that last longer, have potential for various future uses, consider end-of-life material recycling & reuse possibilities



5 Optimize Windows



- Optimize size and location of windows (which account for ~11% of a home's embodied emissions and ~30% of heating/cooling demand)



6 Improve Efficiency & MEP System Sizes



- Improve the building envelope, increase insulation, select appropriate building orientation and form
- MEPs can contribute 15-50% of embodied emissions. Right-size them for a more comfortable and efficient home



Building Material Consideration

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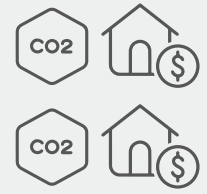
Reduce Concrete Use



- Reduce wall thickness from 8" to 6"
- Reduce slab thickness from 5" to 3-4"
- Reconsider in-floor heating
- Eliminate basements, use pier/screw pile foundations



~25%



~20-40%



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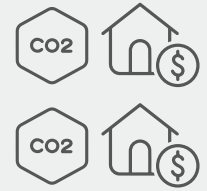
Improve Concrete Mix



- Ask for a lower carbon concrete mix
- Reduce compressive strength of concrete mix to those specified by building code/or engineering



~16-18%



~15%



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Consider Alternative Insulation Materials

	Material	R-Value x in ²	Resistance <small>fire moisture pests</small>	Cost	Emissions based on 100 m ²				
					-1000	0	1000	2000	3000 kg/CO ₂
Batts	Mineral Wool	4		< \$6	608				
	Fibreglass	3.6		< \$2	154				
Spray / Blow-In	Spray Foam	4.6		< \$6	open cell 380, closed cell 3013				
	Fibreglass	2.6		< \$4	229				
	Cellulose	3.6		< \$4	dense packed -564, loose fill -445				
Rigid Board	XPS	5		< \$3	715				
	EPS	4		< \$2	288				
	Mineral Wool	3.6		< \$6	473				

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Measure Embodied Carbon & Compare Material Options

- Use a Life Cycle Assessment (LCA) like the **BEAM Estimator Tool**
- Free, easy to use, designed for Canada
- Compare material options for flooring, siding, and other building systems
- Check out **Nelson's Materials Guide**, and the **CLF's Materials Guide** to compare the impacts of different materials like flooring, siding, and insulation.