

# 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](mailto: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:



embodied carbon



building costs



homeowner income



energy costs



housing availability



maintenance

### 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

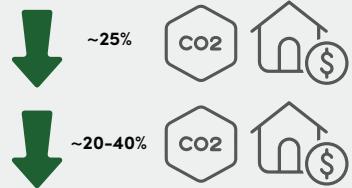


# Building Material Consideration

## 7 Reduce Concrete Use



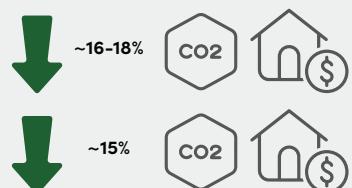
- Reduce wall thickness from 8" to 6"
- Reduce slab thickness from 5" to 3-4"
- Reconsider in-floor heating
- Eliminate basements, use pier/screw pile foundations



## 8 Improve Concrete Mix



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



## 9 Consider Alternative Insulation Materials

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

## 10 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.