Building Officials

FREE BEAM ESTIMATOR TRAINING
- Tell building professionals to email Alex Leffelaar (aleffelaar@nelson.ca)
- Courtesy of the City of Nelson's Low Carbon Homes Pilot

10 Affordable Ways to Help Builders & Homeowners Reduce Embodied Emissions

Building officials work on hundreds of building projects every year, checking in as many as 5 times on each new home as it is built. And, while it is not a building official's place to alter a building's design beyond the requirements of code, there is ample opportunity for building officials to advocate for low carbon, affordable, and healthy building solutions and maintain a healthy working dynamic with the building community. Here are a few places to start:

CO2 embodied carbon | building costs | homeowner income | energy costs | housing availability | maintenance

Build Less for More

1 Building Smaller Buildings

- Propose a friendly challenge for building designers/homeowners to brainstorm how to achieve more efficient uses of smaller floor areas

2 Increasing Occupant Capacity

- Suggest adding a second unit to single-family homes or choosing a multi-unit building design
- New BC zoning = more housing

Build Smarter

3 Advocating for an Integrated Design Process (IDP)

- Encourage building professionals to connect and collaborate early on in, and throughout, the building design phase to promote innovative building design

4 Designing for Durability

- Encourage design features that help building assemblies last longer, increase flexibility for potential future uses, and account for end-of-life material recycling and reuse

5 Improving 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

FORTIS BC™

City of NELSON

Building Material Consideration

6 Recommend 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%

7 Suggest an 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%

8 Consider Alternative Insulation Materials

Material		R-Value x in²	Resistance (fire | moisture | pests)	Cost	Emissions based on 100 m² (-1000 0 1000 2000 3000 kg/CO₂)
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 – -445 loose fill
Rigid Board	XPS	5	💧	< $3	715
	EPS	4	💧	< $2	288
	Mineral Wool	3.6	🔥 💧 🐛	< $6	473

9 Measuring Embodied Carbon, Comparing Material Options

- BEAM Estimator allows for free and easy material impact comparisons
- Homeowners/builders can use **Nelson's Materials Guide**, and the **CLF's Materials Guide** to compare the impacts of different materials like flooring, siding, and insulation.

Manage Waste & Material Reuse

10 Deconstruct, Reuse, and Recycle

- Reuse wood, brick, old fixtures
- Recycle metal, unusable wood, glass, asphalt shingles, paint, concrete, and drywall.

dump fees

landfill emissions

$ from selling salvaged materials