

# Building Officials

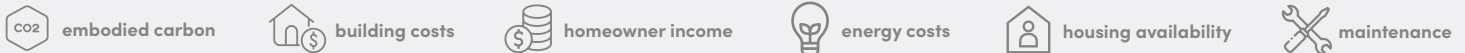
## FREE BEAM ESTIMATOR TRAINING

- Tell building professionals to email Alex Leffelaar ([aleffelaar@nelson.ca](mailto: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:



### 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




## 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 in<sup>2</sup>

Resistance

Cost

Emissions based on 100 m<sup>2</sup>

fire | moisture | pests

-1000

0

1000

2000

3000 kg/CO<sub>2</sub>

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