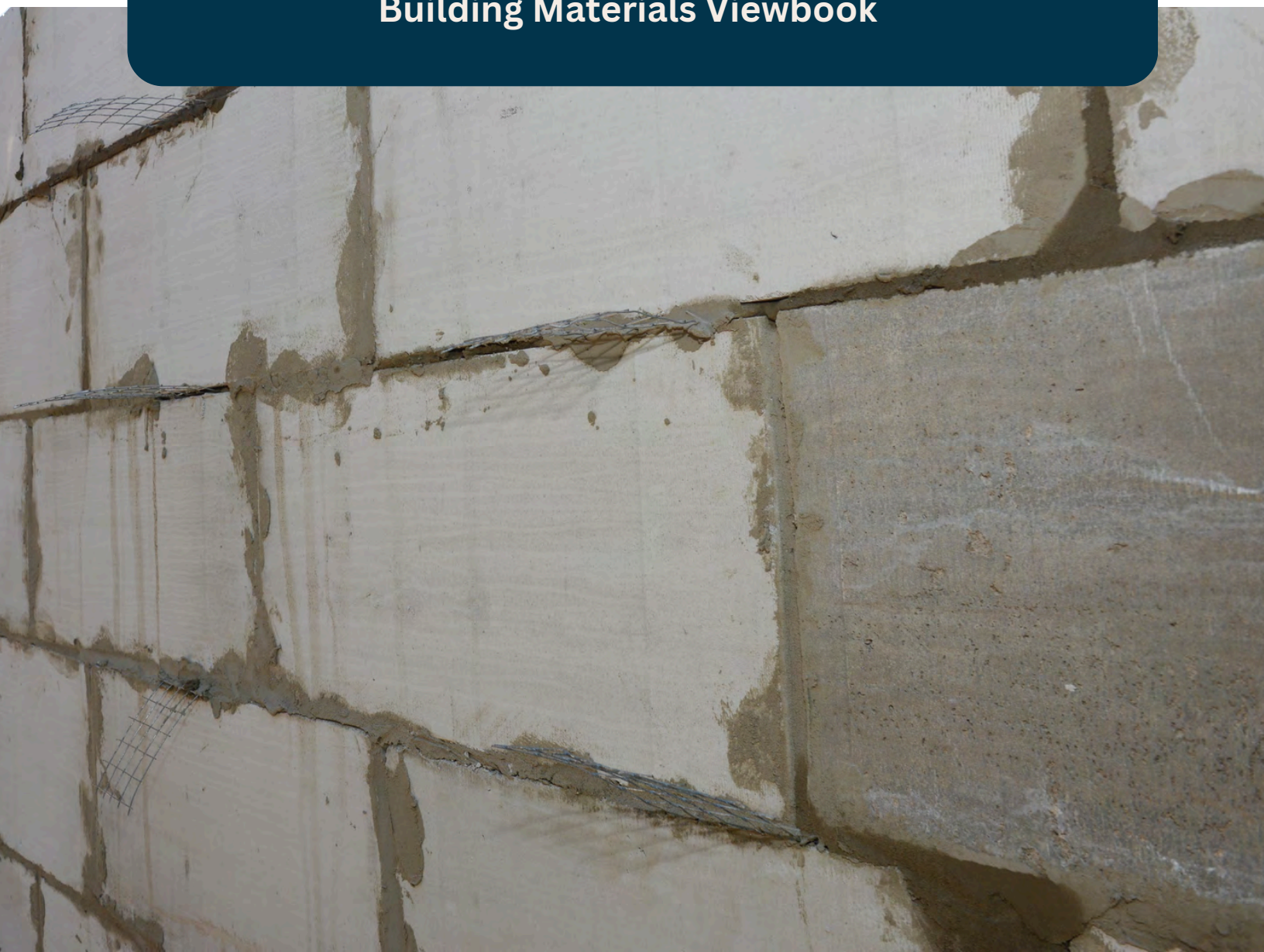
PART 4: CODIFYING CLIMATE RESILIENCE

Building Materials Viewbook



Codifying Climate Resilience

Behind the scenes, building codes and other regulations shape the resilience, strength, cost, and overall quality of construction. Inflexible, unclear, and outdated code requirements can pose a barrier, especially if they prevent communities from innovating or using climate-resilient building solutions. On the flip side, thoughtful and co-created building codes provide a framework for more environmentally and economically sustainable construction practices.

However, current building codes and standards do not consider future climate data and projections. **This section outlines the current barriers to codifying climate and disaster resilience in building codes, then proposes future steps to address these challenges.**

What are codes?
Building codes provide minimum standards for building design and construction.

National Building Code: The National Building Code is a model framework for adoption into provincial building codes.

BC Building Code: The BC Building Code is a provincial adoption of the national building code. It provides regulations to meet societal objectives as fire and structural protection, health, accessibility, and energy conservation (McBean et al., 2021). The Code is not comprehensive. Climate resiliency, disaster risk reduction, durability, culturally appropriate building design, and mental health are considered outside of the main objectives of the current BC Building Code.

Why codify climate resilience?

✅ upport **disaster risk reduction** through buildings that ess the risk and effects of damage.

✅ Encourage the construction of **more durable and sustainable housing**, which reduces costs in the long run

✅ Build on the work done to create climate resilience standards by ensuring they are part of **effective legislation and regulatory frameworks,** such as the National Research Council of Canada's guidance on wildland-urban interface design and flood-resilient construction.

Barriers to Codifying Climate Resilience

However, there are many barriers to more comprehensive consideration of climate resiliency in the building code.

There are **limited resources** to address competing priorities in the building code.

The 2015 code does not treat **durability** as a primary design goal – resistance to deterioration is addressed through individual material standards, not the building as a whole.

Measuring resilience and **defining** acceptable risks are both challenges.

Potential metrics of resilience include initial reliability, minimum annual reliability, average reliability over service life, reliability at the end of service life, minimum performance level through the structure's service life, etc.

Insurance policies generally do not cover the cost to replace buildings with new structures that meet new standards for resilience

Changes to the building code need to be accompanied by **training and resources** that ensure codes are consistently applied as-intended.

Code changes primarily apply to **new buildings, not existing ones.** Guidelines for altering existing buildings are currently being considered by the Canadian Commission on Building and Fire Codes.

Code changes are also only one part of the solution:

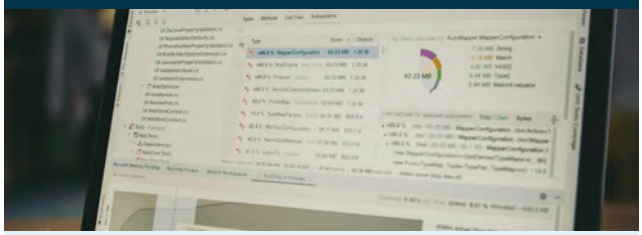
- Specific regional conditions still need to be addressed. The building code sets minimum requirements and does not account for regional variations.
- Land-use planning, climate data, and future projections also need to be considered. How communities are located, designed, and built matters.
- The building code and community planning currently work in silos. Both need to work together to build community resilience.

Principles and Steps to Address Barriers to Codifying Resiliency

1: Communication

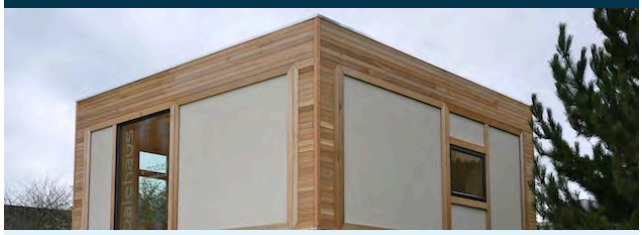
Engage with a wide group of stakeholders: municipal planners, insurers, financial institutions, public housing etc. Engage with Indigenous nations and their representatives.

2: Holistic Data



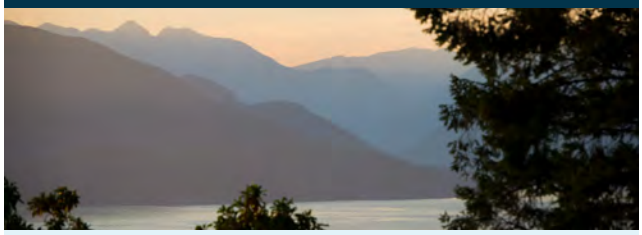
Incorporate insurance, finance, and climate models/data. Implement life cycle assessment at the design and procurement stages.

3: Provide Exemplars



Exemplar and demonstration buildings can illustrate what is possible.

4: Flexibility



Goals and requirements for climate resilience should be geographically and/or situationally dependent.

Lastly, it's important to remember that building codes are not the only tools: Other policy tools such as zoning or retrofit programs may be more efficient at driving regulatory change regionally.