Climate Resilient Retrofits

“Too hot to handle”

RPN Quarterly Meetings - September 11 & Dec 22, 2025

Community Energy Association

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How to use this resource

This resource has been co-created by everyone in attendance at the meeting on September 11, 2025. It's complimentary to the meeting summary that can be found at https://www.communityenergy.ca/rspn/ and includes downloadable graphics, links to additional resources, and more.

This resource can be shared with people outside the network.

You will also find useful resources and links, identified by these icons:

Downloadable resource for presentations & reports

External resource link

Exercise or take-away activity

Climate Resilient Retrofits – September 11, 2025

Meeting Objectives:

- To provide updates and share knowledge on climate resilient retrofits.

Highlights:

- The National Research Council presented on their Resilient Residential Retrofits (R^3) program, which includes a framework for identifying and evaluating complementary retrofit measures for multi-hazard scenarios.
- At the local level, communities are actioning on resilience and resilience messaging is impactful. The RDKB discussed their HomeSmart program which is a retrofit concierge program that also integrates climate resilience considerations. Maple Ridge provided an overview of the community's recently adopted (and first ever) climate action plan, named Resilient Future 2050 plan, which emphasizes climate resilience.
- Alterations to Existing Buildings Code requirements will likely be introduced into BC Building Code in Spring 2026. The Province is not currently looking to go beyond the national code requirements to incorporate broader resilience measures.
- Ecotrust Canada highlighted their work to advance policy solutions, like "right to cool" approaches, to improve thermal safety and comfort in existing rental housing.

Complete summary can be found at https://www.communityenergy.ca/rspn

Climate Resilient Retrofits – December 11, 2025

Meeting Objectives:

- To provide updates and share knowledge on climate resilient retrofits for Part 3 buildings

Highlights:

- Energy savings is the main driver for retrofits for commercial buildings, whereas cooling is a bigger driver for MURBs, especially rental buildings. Non-energy benefits need to be emphasized, decarbonization is not enough to drive action.
- Buildings need a holistic approach to renewal plans that integrate energy, structural upgrades, resilience, health, and safety. Not everything will be a deep retrofit, and there are different pathways depending on the goals for the building.
- Retrofits need to be reframed as a health and safety priority.
- While redevelopment can play a role in reducing heat vulnerability, retrofits will still be needed.
- Local governments play an important role in improving climate resilience and equity for their community by:
- Supporting and promoting programs to increase uptake of retrofits – see marketing material for BC Retrofit Accelerator here: BCRA Promotional Kit
- Co-designing programs with equity-seeking communities
- Enacting policies that prohibit access to cooling

Complete summary can be found at https://www.communityenergy.ca/rpn/

What are climate resilient retrofits?

Climate resilient retrofits are upgrades to a home that improve the home's ability to keep its occupants safe and comfortable in a changing climate.

Energy retrofitting is a great opportunity for **low carbon resilience**, as they often share key objectives and co-benefits, such as improving energy efficiency and reducing carbon emissions, and can address **multi-hazards**.

In the absence of low carbon resilience considerations, the risk for unintended consequences, such as **maladaptation**, can increase.

Low carbon resilience

Low carbon resilience considers both mitigation and adaptation strategies to simultaneously reduce emissions and vulnerability.

The concept of low carbon resilience is increasingly serving as a key guiding principle for both new builds and renovations to make sure new and existing buildings are addressing both mitigation and adaptation considerations as efficiently and cost-effectively as possible.

Multi-hazard

Multi-hazard refers to multiple climate risks occurring simultaneously. For example, wildfire smoke and extreme heat are often concurrent risks.

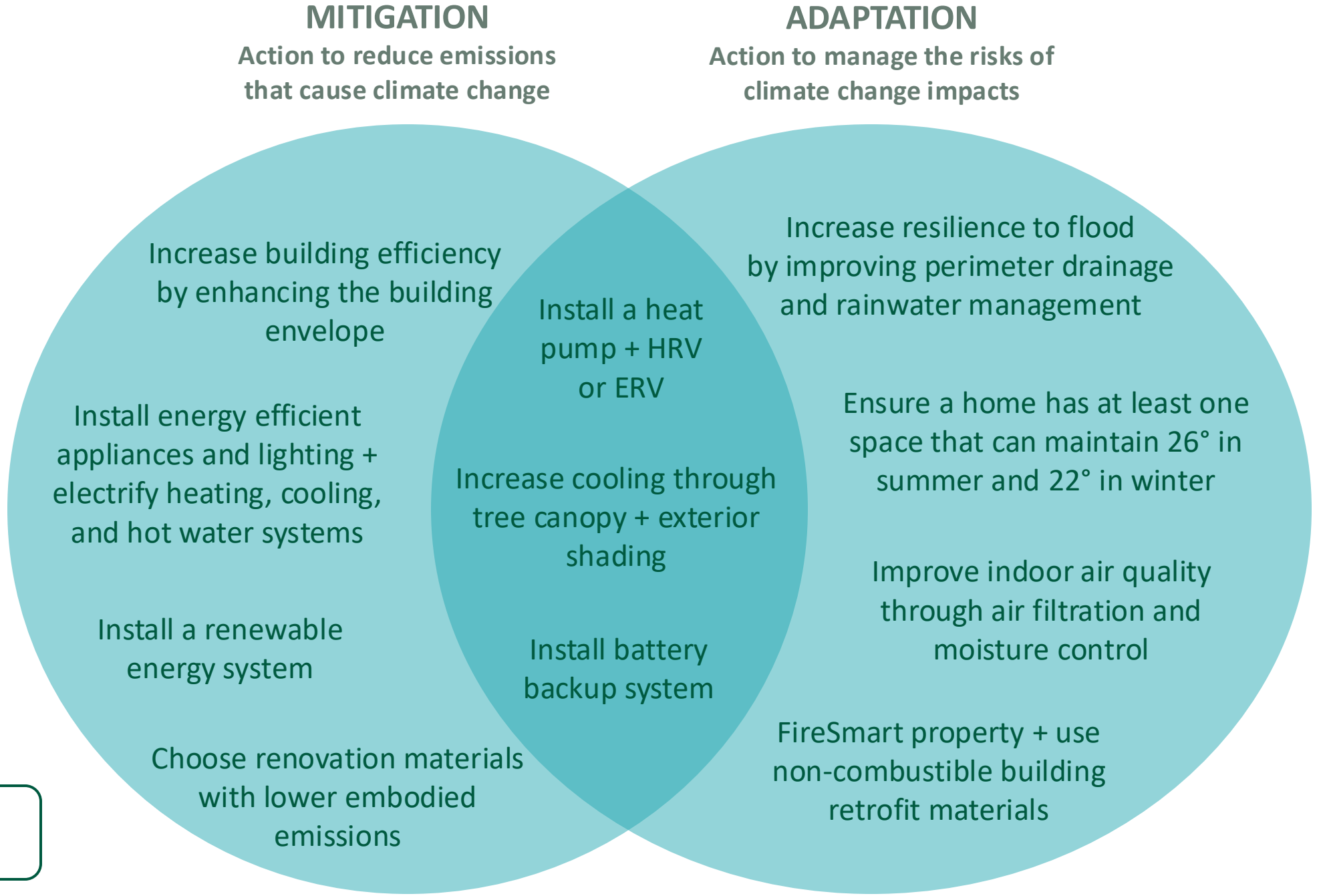
Maladaptation

Maladaptation are actions that may lead to increased risk of adverse climate-related outcomes and increased vulnerability to climate change. For example, while adding inefficient air conditioning to adapt to more extreme heat events as a result of climate change can help occupants stay cool, AC units do not reduce emissions and may lead to increased energy demand.

Low carbon resilience

Retrofitting for low carbon resilience, such as increasing the insulation and air tightness of buildings and adding a heat pump can reduce energy use, greenhouse gas emissions, and energy costs, while also helping protect against extreme cold and heat and improve indoor air quality during wildfire smoke.

Download graphic



Equitable low carbon resilience

“Climate change exacerbates existing inequities, and an equity lens is essential to adaptation planning for extreme heat events.”

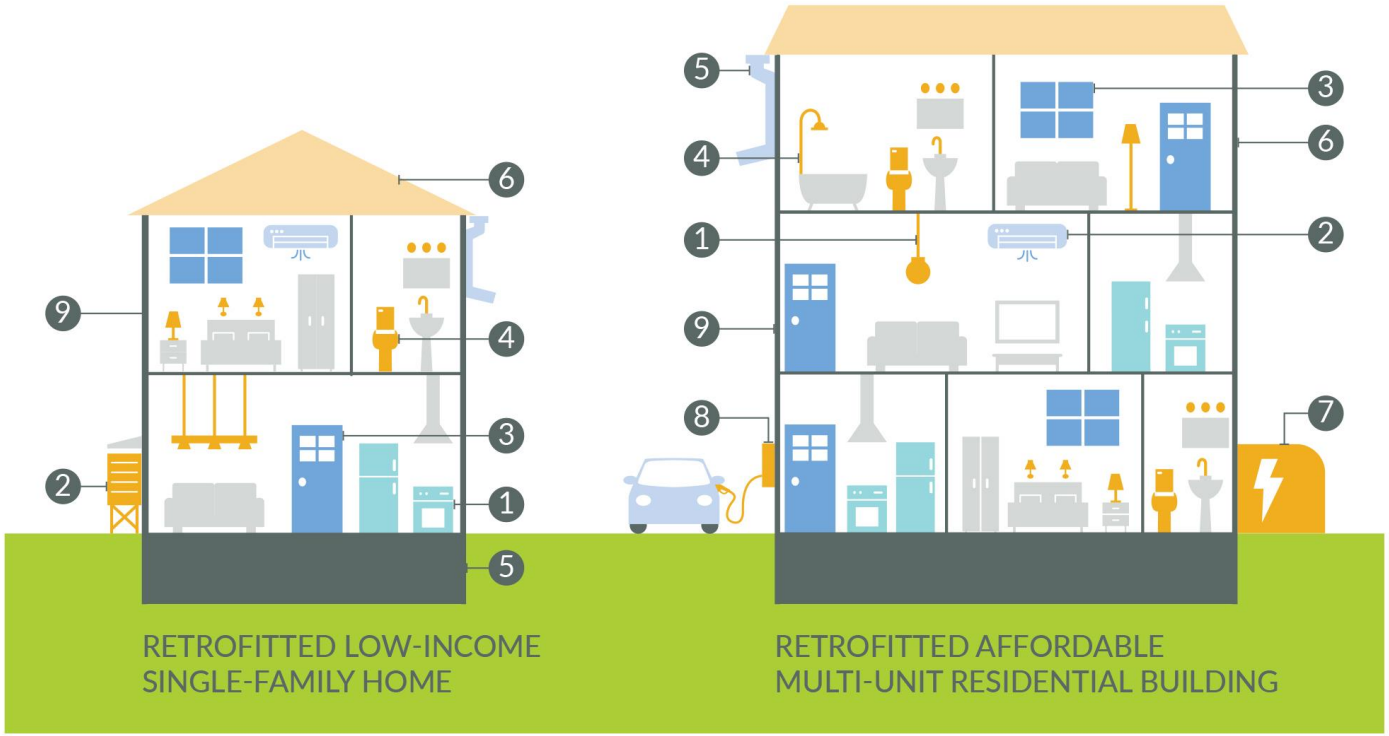
Heat Alert Response Planning Toolkit (source: Interior Health)

“…climate change poses a critical challenge to our efforts to tackle poverty in B.C. Climate-related emergencies disproportionately affect people living in poverty, and as the effects of climate change continue to accelerate, more and more people might enter poverty because of disruption, displacement and increased costs associated that come with climate change.”

2024 Poverty Reduction Strategy (source: Province of BC)

Download graphic

FIGURE 3. DEEP RETROFITS CAN IMPROVE AFFORDABILITY, ENERGY EFFICIENCY AND RESILIENCE TO CLIMATE RISKS



1. Energy-efficient and smart lighting and appliances
2. Energy-efficient and smart heating and cooling
3. Energy-efficient windows, doors and insulation
4. Water-efficient plumbing and fixtures
5. Flood-resilient foundations, windows and eavestrough
6. Fire-resilient roof and exterior
7. Resilient battery backup generator (ready to connect to grid)
8. Vehicle charging (ready to connect to grid)
9. Cost-efficient and low-carbon materials and construction

Source: IRPP based on information from Efficiency Canada, the Intact Centre on Climate Adaptation and the Canadian Climate Institute.

What we heard – climate hazards and support needed

What we heard – opportunities

- **Energy retrofit programs are seen as a gateway to resilience.** Resilience is a higher public priority than climate action alone, and the co-benefits of energy retrofits can be leveraged for resilience. **Greater awareness and more effective marketing of retrofit and resilience programs** can further educate residents on the benefits of energy retrofits and resilience to stay safe, healthy, and comfortable, and increase participation in programs and uptake of climate resilient retrofits.

- **Consistent, proactive messaging** would help educate residents on the importance of climate action and resilience and how the two are linked, and the actions they can take that simultaneously address climate action and improve resilience. Example messaging may include: *"an energy efficient home is a resilient home – a heat pump keeps you safe during extreme heat events while reducing your home's carbon footprint"*

- **Stronger links between climate action and resilience is needed.** Actions that support climate mitigation often support adaptation as well. Policies and programs needs to be aligned to ensure climate action objectives and resilience goals are complementary and do not unintentionally hinder outcomes. For example, in ensuring homes can maintain a safe temperature during extreme heat events, policies and programs should encourage energy efficient heat pumps for cooling over air conditioning units.

- **Extreme heat is a key concern for communities.** Many communities are prioritizing cooling strategies, including cooling centres and misting stations, FireSmart, and retrofit programs to keep residents safe.

Education and communication as key

Framing retrofits around resiliency may be more compelling than focusing on emissions reduction.

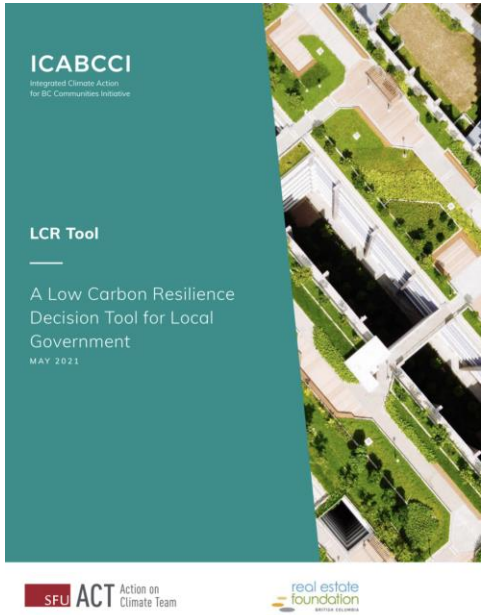
The RDKB HomeSmart program is a home retrofit concierge program that educates homeowners and integrates resiliency considerations into the retrofit process, assessing hazard risks and outlining resilience benefits to align the retrofit strategy to address energy efficiency, wildfire, and extreme weather events.

RDKB HomeSmart Guide (source: RDKB)

Institutional leadership is needed

The award-winning Resilient Future 2050 plan is the City of Maple Ridge's first-ever adopted climate action plan. The plan incorporates a low carbon resilience approach and focuses on actions directly within the municipality's sphere of control and influence, including identifying and prioritizing extreme heat management initiatives, especially for high-risk neighbourhoods and vulnerable groups; applying multi-hazard mapping to guide land use, infrastructure upgrades, and emergency planning; and incorporating a climate-ready, low-carbon resilience lens into City decision-making.

Read the **Resilient Future 2050** plan



Simon Fraser University's Integrated Climate Action for BC Communities Initiative (ICABCCI) developed a handbook for low carbon resilience planning, which outlines an integrated climate action planning process that advances climate action co-benefits. This handbook includes a decision-making tool to support local governments in making more systemic responses to climate change and sustainable community development.

See the **Low Carbon Resilience Decision Tool for Local Governments**

Thermal safety is a priority

While communities in BC are vulnerable to myriad climate risks, including wildfires and smoke, diminished air quality, drought, extreme rainfall, sea level rise and flooding, extreme heat is a key concern and priority.

There is keen interest in better understanding how to advance thermal safety requirements for existing buildings, including advocating for legislative change, often referred to as “right to cool”.

Ecotrust Canada is a charity focused on energy and housing issues in rural, remote and Indigenous communities. Their work incorporates an equity and justice lens, and aims to integrate climate mitigation and adaptation, increasing household and community resilience.

In particular, Ecotrust advocates for policies to address heat safety and thermal comfort in existing rental housing, including "Right to cool" approaches to allow renters to install cooling/ventilation upgrades, and published a Thermal Safety policy backgrounder exploring local government tools to support thermal safety in existing buildings.

Read Ecotrust's Thermal Safety Policy backgrounder here

Metro Vancouver, City of North Vancouver, City of Vancouver, and Vancouver Coastal Health collaborated on a project to identify policy options and actions to help safeguard the thermal safety of occupants in multi-unit residential buildings in the Lower Mainland. The report outlines 31 actions, 8 of which are identified as priority actions that local governments can explore in the short term.

See Policy Toolkit for Local Governments in BC's Lower Mainland

Low Carbon-Climate Resilient Multi-Family Retrofits

Overview and Guidance for Owners and Industry

- A framework specifically for low-carbon, climate-resilient retrofits in multi-family residential buildings
- Emphasizes that every MURB needs a long-term retrofit plan that considers both decarbonization and climate resilience
- Links adaptation planning to capital renewal cycles, building condition, risk, and technical feasibility
- Recommends an integrated package of resilience measures, including solar control, insulation, air sealing, ventilation, and heat pumps
- Highlights the importance of improving summer comfort, indoor air quality, and overall building performance
- Frames resilient MURB retrofits as delivering multiple benefits: lower emissions, better comfort, reduced climate risk, and stronger long-term performance

The **Low Carbon-Climate Resilient Multi-Family Retrofits** report frames retrofit planning around both carbon reduction and climate resilience and emphasizes long-term building planning rather than one-off measures.

Read the Low Carbon-Climate Resilient Multi-Family Retrofits report here

Recent City of Victoria research on equity, overheating, and climate risk in MURBs

- Focused on how retrofits in existing MURBs can respond to overheating, equity, and climate risk
- Framed adaptation as a housing issue, with retrofits improving heat safety, health, accessibility, and housing stability
- Showed that overheating risk in low-rise MURBs is expected to increase significantly under future climate conditions
- Found that passive measures alone are unlikely to be enough in many buildings as temperatures rise
- Pointed to the likely need for heat pumps, cooling strategies, and stronger indoor environmental performance
- Raised the broader resilience question of how cities address heat risk through both retrofitting existing MURBs and redevelopment

The **City of Victoria retrofit research projects** explore how retrofits in existing multi-unit residential buildings can address overheating, equity, and climate risk, while improving resident safety and long-term resilience.

View the City of Victoria Retrofit Research Projects presentation here

Additional Resources

Climate Data

- ClimateData.ca: https://climatedata.ca – has great learning modules too
- Buildings Module Overview — ClimateData.ca
- ClimateAtlas.ca: https://climateatlas.ca
- Pacific Climate Impacts Consortium (PCIC) – many tools and data portals available
- Design Value Explorer | Pacific Climate Impacts Consortium – for engineers and building/infrastructure professionals
- Plan2Adapt | Pacific Climate Impacts Consortium – More user friendly for local and regional planning
- PCIC Climate Explorer | Pacific Climate Impacts Consortium -

Building Design & Policy Guides

- BC Housing Climate-Ready Housing Design Guide: https://www.bchousing.org/publications/Climate-Ready-Housing-Design-User-Guide.pdf
- Thermal Safety in Existing Multi-Unit Residential Buildings: metrovancouver.org/services/air-quality-climate-action/Documents/thermal-safety-in-existing-multi-unit-residential-buildings.pdf
- Canadian Standards Association (CSA) Standards for more resilient buildings and infrastructure - CSA Group
- Coastal flood risk assessment guidelines for building and infrastructure design: supporting flood resilience on Canada's coasts
- Climate-Resilient Buildings and Core Public Infrastructure: an assessment of the impact of climate change on climatic design data in Canada

Resource Hubs

- ClimateInsight.ca: https://climateinsight.ca
- ReTooling for Climate Change: Retooling for Climate Change | Climate Change in BC
- Map of Adaptation Case Studies - Map — Canada in a Changing Climate (can filter for building sector)
- ICLR – The Institute for Catastrophic Loss Reduction (ICLR)

Homeowner Resources

- FireSmart BC: https://firesmartbc.ca
- Climate-Ready Infographics – Intact Centre on Climate Adaptation
- Homeowner Resources – ICLR

Risk Assessment Frameworks

- PIEVC Protocol: https://pievc.ca
- All One Sky - Climate Resilience Express: AOS_CRE_Planning+Guide_Final-highres.pdf
- ICLEI - Changing Climate, Changing Communities: Guide and Workbook for Municipal Climate Adaptation | ICLEI Canada
- BC Climate Risk Assessment Framework (2019) - https://www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/climate-risk-assessment-framework.pdf

Interested in learning more climate resilient retrofits and implementing policies for thermal safety?

Contact peernetworks@communityenergy.ca