

Decarb Lunch Series

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BC Retrofit
ACCELERATOR
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Laying the Groundwork A New Deep Retrofit Service in BC

Thu Dec 12, 2024
12 - 1pm PST
Free Webinar
zebx.org



Land Acknowledgment

We honour Elders past,
present and future from all
nations and traditional
territories.

The land and waters
colonially named BC are
home to over 290,000
Indigenous people and more
than 200 distinct First
Nations. (Statistics Canada 2021)

Powered by **zeic** MORE SOLUTIONS, LESS CARBON.



B2E
Building to
Electrification



Carbon
Leadership
Forum
British
Columbia



ZERO EMISSIONS BUILDING EXCHANGE

BC Retrofit
ACCELERATOR



NearZero

BC Retrofit Accelerator supports a smooth transition of existing buildings to net-zero carbon emissions in alignment with Provincial and Local Government climate action targets.

Advisory Committees

Convene, coordinate, and align across key stakeholders.

Sustainable Finance

Reducing Financial Barriers to Deep Retrofits

Better Valuation of Non-Energy Benefits

Capacity Building

zebx



Research & Innovation



Research and Resource Development

The BC Retrofit Accelerator will kick-start climate and energy upgrades in hundreds of larger buildings across British Columbia

Support Programs Include:

Commercial Buildings



Decarb Accelerator

Non-Profit Housing



Member Supports

Market Rental



Rental Apartment Retrofit Accelerator (RARA)

Residential Strata



Strata Energy Advisors

The BCRA uses “zero-over-time” model aligning decarbonization upgrades with major renewal projects to minimize costs while improving comfort and climate resilience.

Deep Energy Retrofit

Zero Over Time

Achieves at least a 50% reduction in energy consumption AND a minimum 80% reduction in GHG emissions

- Multiple systems in a single project
- Consider interactive effects and optimize whole building performance

- Single system or bundle related projects / projects with interactive effects
- Align low-carbon retrofits with capital plan
- Plan with the end in mind – consider the order of retrofits or ensure future projects are enabled

A grayscale photograph showing two individuals shaking hands over a round wooden table. On the table, there is a glass of water and a white cup on a saucer. The person on the right is smiling and wearing a necklace. The person on the left is wearing a dark suit jacket. The background is slightly blurred, suggesting an indoor setting.

Agenda

- Introductions
- Overview of Deep Energy Retrofits
- Deep retrofit process
- Working with AHMA and BCNPHA
- Cultural Awareness
- Q & A

Introductions

- Atoine Archie, Manager of Capital Projects, AHMA
- Edward Beckett, Energy Manager, BCNPHA
- Sara Fralin, Manager of Engagement and Technical Services
- Shahed Shafazand, Energy Project Advisor, AHMA



Aboriginal Housing Management Association
Over 25 years of Indigenous housing expertise.



BCNPHA
BC Non-Profit Housing Association



What is a Deep Energy Retrofit?



- A holistic approach to upgrading buildings and optimizing energy and carbon performance.
- Typically save at least 50-70% in energy consumption
 - And reduce GHG emissions by 80-100%
- Deep Energy Retrofits involve:
 - Envelope improvements: windows, roof, insulation, cladding
 - Heating and ventilation and water heating upgrades
 - Renewable energy: Solar PV
 - Switching systems from fossil fuels to electricity





Benefits and Considerations



Holistic approach: Address capital renewal needs and opportunities for auxiliary benefits. Don't replace like-for-like, consider system interactions (building enclosure and mechanical systems).

Benefits

- Added cooling
- GHG emissions lowered
- Overall building comfort
- Capital renewal of major systems
- Health and Safety for tenants
- Cultural awareness
- Service level requirements

Considerations

- Prolonged planning/development period
- More complicated retrofit process
- Higher capital costs
- New system types/maintenance processes

Climate



Comfort



Cost

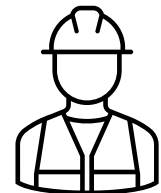
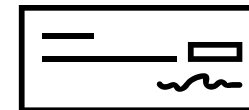
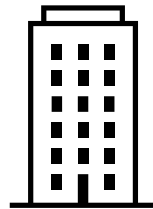
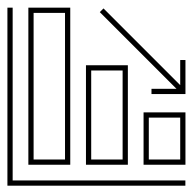


Time





Deep Energy Retrofit Process



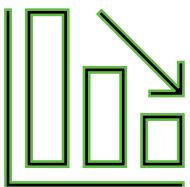


Deep Energy Retrofit Process



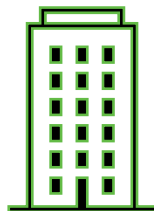
Gather and review building data

- **BCNPHA and AHMA**
- Benchmarking
- Energy study
 - Site visit
- BCA review
- Identify Society's resources and capacity



Select building, measures, and funding

- **BCNPHA and AHMA**
- Predevelopment funding secured
- Society engagement
- ID project capital funding
- AHMA portfolio review



Planning/Development

- **BCNPHA, AHMA and Development Consultant**
- L2/L3 Energy study
- Electrical load assessment
- System designs
- Business plan
- Permit applications
- Tenant outreach
- Much more!



Confirm funding and pre-construction

- **BCNPHA, AHMA, and Development Consultant/Project Manager**
- Capital funding agreements in place
- Schedule/staging plan



Implement project

- **Development Consultant/Project Manager**
- Tenant scheduling/relocation
- Construction work
- Commissioning
- Complete funding requirements





Deep Retrofit Accelerator Initiative (DRAI)



- AHMA, BCNPHA, and other organizations have partnered to accelerate deep energy retrofits in MURBS!
- Funding is provided by Natural Resources Canada
- **Objectives:**
 - Build capacity and address barriers to deep energy retrofits
 - Facilitate the development of deep energy retrofits
- **Benefits:**
 - Scale and bundling opportunities
 - Shared learnings across different sectors
- **Supports:**
 - Online and in-person learning events
 - One-on-one assistance with:
 - Selecting buildings and projects
 - Identifying and applying for funding and financing
 - Guidance throughout the process of developing and implementing projects

Reach us at: AHMA – Sara Fralin sfralin@ahma-bc.org BCNPHA: Edward Beckett Edward@bcnpha.ca

To'o

(To'o Housing Society)

Decarbonization and Solar



- Completed
 - ASHRAE Level 2 energy study
 - Electrical Load Assessment
- Planned
 - Energy Modelling Study
- Challenges:
 - Overheating
 - In-floor heating system at end of life
 - Min. disruptions
- Capital project scope:
 - Mini-split heat pump systems for suite heating & cooling
 - Domestic hot water heat pump system
 - Heat pump make-up air unit for corridor pressurization
 - Rooftop solar photovoltaic system
 - Heat Recovery Ventilation
- Sustainability:
 - 80% reduction in GHG
 - 60% energy consumption
- Funding opportunities: BC Housing's Capital Renewal Fund for non-profit, CMHC co-investment, Indigenous Leadership Fund, CGAH

Miranda Apartments

(Mamele'Awt Qweesome Housing Society)

Building Envelope Rehabilitation, Interior Upgrades & Elevator Addition



- ASHRAE Level 2 energy study
- Capital planning
- Capital project scope:
 - building envelope remediation
 - elevator addition
 - Plumbing
 - lighting
 - air conditioning
 - interior upgrades
- **Sustainability:** The project targets a minimum of 25% reduction in GHG and energy consumption.
 - This project is targeting 75% waste reduction.
- **Funding:** BC Housing CRF non-profit, CMHC co-investment
 - This project is considering rebates and incentives from utilities.
- For Indigenous, By Indigenous approach w/ Cultural awareness.

Cultural Awareness

The creation of environments, services, and systems that are designed to be inclusive and respectful of Indigenous cultures, traditions, and ways of knowing.

It involves ensuring that Indigenous individuals can access and engage with various resources, programs, buildings, and services that align with their cultural beliefs, practices, and values.



Cultural Awareness

- **Traditional Practices Space:** ceremonies, cultural activities, and reflecting the community's values and history.
- **Cultural Expression through Design:** reflect the community's history and tradition, integrating art and culture into the fabric of the design.
- **Geographically Informed Design:** informed by the geography of the community's location, incorporating organic form language and textures inspired by the surrounding natural environment.
- **Artistic Interpretation:** traditional cultural elements, such as murals, sculptures, language examples, and aquariums exhibiting traditional species, into the building's interior.



*Photos of M'akola's Bevan Place in Terrace and George Dowling in Port Alberni



BCNPHA

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