BUILDING RETROFIT COMMUNICATION + ENGAGEMENT TOOLKIT

Prepared for:
University Neighbourhoods Association;
UBC Campus + Community Planning

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Executive Summary

Neighbourhoods are facing increased challenges as the effects of climate change intensify, including more frequent and severe heat waves. These extreme heat events are negatively impacting residents living in UBC's university neighbourhoods, as many units and buildings are not equipped with adequate cooling equipment. Therefore, cooling in neighbourhood homes has become essential for residents' current and future well-being.

The Neighbourhood Climate Action Plan (NCAP) has set a pathway towards sustainability and resiliency with targets to reduce greenhouse gas emissions from buildings and specific goals for climate-related communication with residents. It provides a framework for UBC's Campus and Community Planning (C+CP) and University Neighbourhood's Association (UNA) to continue delivering communication actions that support residents in extreme heat preparation and building retrofit implementation.

Created to support these goals, this toolkit provides an overview of cooling measures available to university neighbourhood residents. The toolkit is intended to be a resource for the UNA and C+CP as they increase communication with residents around cooling and building retrofits. It provides relevant and accessible information to be shared with strata councils, unit owners and renters, with the goal of supporting all residents in making decisions around cooling in their homes. The toolkit includes resources for owners, stratas and renters, best practices for communicating with the public and recommendations for future retrofit communication work.

The toolkit has been compiled using research on climate communication best practices, cooling options for different types of residents, building retrofit incentives and supports, jurisdictional allowances and retrofit installation processes. Research was conducted by scanning materials, summarizing them and compiling relevant information into a toolkit format using accessible language and visually-compelling designs.

Disclaimer

This report was produced as part of the UBC Sustainability Scholars Program, a partnership between the University of British Columbia and various local governments and organizations in support of providing graduate students with opportunities to do applied research on projects that advance sustainability and climate action across the region.

This project was conducted under the mentorship of University Neighbourhoods Association (UNA) staff and UBC Campus + Community Planning (C+CP) staff. The opinions and recommendations in this report and any errors are those of the author and do not necessarily reflect the views of the UNA, C+CP or the University of British Columbia.

Acknowledgements

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Glossary

Bylaw: A rule or regulation made by a local authority.

Building Retrofit: Changing mechanical equipment in a building to something that can provide cooling.

Climate Change: Long-term changes in temperatures and weather patterns. These shifts may be natural, but since the 1800s human activities have been the main driver of climate change. This is primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gases.

Dual Fuel Heating System: Combines electric heat pump and gas furnace into one hybrid system.

Electrification: The process of replacing technologies and systems that rely on fossil fuels with those powered by electricity.

Energy efficient: Using less energy to perform the same task or produce the same output.

Equity: A fairness or justice in the way people are treated.

Heat Pump: A device that transfers thermal energy from one location to another, effectively functioning as both a heater and a cooler.

Heat Wave: A prolonged period of unusually hot weather.

Low Carbon Cooling: Cooling technologies and practices that minimize or eliminate greenhouse gas emissions, primarily carbon dioxide (CO2), associated with cooling processes.

Retrofit: Adding a component or accessory to something that did not have it when it was built.

Stakeholder: Any individual, group, or organization that has an interest in or is affected by a particular project or issue.

Strata: In strata housing, owners own their individual strata lots and together own the common property and common assets as a strata corporation.

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1 INTRODUCTION

1.1 Context

Neighbourhoods are facing increased challenges as the effects of climate change intensify, including **more frequent and severe heat waves**. These extreme heat events are negatively impacting residents living in the university neighbourhoods, as many units and buildings are not equipped with adequate cooling equipment. With the frequency of annual heat waves projected to increase from 1 to 9 on the UBC Vancouver campus[1], cooling in neighbourhood homes has become essential for residents' well-being.

UBC's **Neighbourhood Climate Action Plan** has set a pathway towards a sustainable and resilient community with specific targets to reduce greenhouse gas emissions from buildings, which make up 56% of total emissions on campus. The NCAP is targeting that at least 50% of homes have active low-carbon cooling by 2030 and 100% of homes by 2050. Achieving these targets involves retrofitting existing buildings to add low-carbon cooling infrastructure such as heat pumps.

Context cont.

The NCAP also sets out a pathway for collaboration between Campus + Community Planning (C+CP) and the University Neighbourhoods Association (UNA) in delivering **goals around communications**. These goals include:

- Developing materials to support strata councils and building owners to complete building retrofits
- Developing communications materials to educate and prepare residents for extreme heat and other climate emergency events

The delivery of these goals requires coordination and collaboration between C+CP and the UNA to identify communication strategies, establish respective roles and assign action items. This toolkit sets a foundation that can inform future work around this collaborative delivery.

1.2 Toolkit Objectives

This toolkit aims to:

- Support residents living in the university neighbourhoods in their retrofit journey by providing information that is relevant and accessible to strata councils, unit owners and renters
- Encourage uptake of energy-efficient retrofits by providing targeted information and outlining next steps towards installation
- Compile research on best practices for communication and engagement
- Support collaboration between C+CP and UNA in delivering NCAP communication goals

The inclusion of public-facing materials is intended to provide actionable ways of presenting information to residents. Wording for the public-facing materials has been chosen to simplify dense information.

3 main objectives of this toolkit

Provide accessible information to residents about energy-efficient building retrofits

Support NCAP actions to provide communication resources and to install low-carbon cooling in UBC neighbourhood homes

Empower all residents in making choices to cool their home

3 main messages to share with residents

With extreme heat events becoming more common, cooling is essential to health and well-being

Cooling measures are available for everyone and there are many ways to get support throughout the process

Retrofits have benefits including ability to provide cooling, lowering a building's carbon footprint and providing energy savings

1.3 How to Use Toolkit

This toolkit is meant to be used for **sharing information** with residents living in the university neighbourhoods.

It contains six main sections:

1. Introduction
   - Provides context and overview of the toolkit

2. Why Retrofits?
   - Defines retrofitting and reasons for encouraging retrofit implementation

3. Engaging With Community
   - Outlines best practices for communication and common barriers to retrofitting

4. Collective Action - Roles of Stakeholders
   - Describes the operations of stakeholder groups in the community and how they relate to retrofitting

5. Retrofit Resources
   - Provides an overview of retrofit process and details on application and installation procedures

6. Future Work
   - Provides impact evaluation strategies and recommendations for future retrofit communications work

2 WHY RETROFITS?

3 key benefits of building retrofits

1 Provide Cooling

The increasing frequency and intensity of extreme heat events and overall rising temperatures caused by climate change are motivating more and more homeowners to proactively ensure they are equipped with household cooling measures. Building retrofits such as heat pumps are designed to keep residents cool during the summer months, while also providing heating during the winter.

2 Lower Carbon Footprint

Building retrofits can reduce fossil-fuel energy consumption, leading to lower greenhouse gas emissions and the achievement of sustainability targets. For example, a heat pump running on BC's renewable electricity grid eliminates carbon emissions from natural gas furnaces.

3 Provide Energy Savings

By reducing energy consumption and increasing energy performance, building retrofits can offer homeowners significant energy savings. The actual amount of energy savings vary by type of home, current heating system and other factors like insulation and utility rates.

2.2 UBC NCAP Targets

UBC's Neighbourhood Climate Action Plan sets out a pathway towards more sustainable buildings that are adaptable to future climate conditions. With climate projections predicting increased temperatures and increased extreme heat events, cooling in homes is needed to protect residents in changing conditions. Additionally, energy use in buildings is the source of 56% of greenhouse gas emissions in UBC's neighbourhoods. NCAP addresses both emissions reduction and increased cooling capacity in its approach towards more sustainable buildings.

Building retrofits can take on different forms. They often involve upgrading a building's energy-consuming systems or installing portable cooling devices. Both are intended to increase cooling capacity to keep residents comfortable in higher temperatures and lower carbon emissions from buildings. Both outcomes are critical for achieving the sustainability standards that are set out in NCAP.

56%

of total neighbourhood emissions are from buildings

50%

of homes will have active, low-carbon cooling by 2030

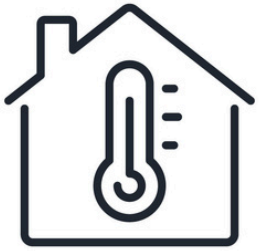
100%

of neighbourhood buildings achieve net-zero operational emissions by 2050

2.3 Extreme Heat

The increasing frequency and intensity of **extreme heat events** caused by climate change are motivating more homeowners to proactively ensure they are equipped with household cooling measures.

In BC, where heating is needed in the winter and cooling is needed in the summer, building retrofits like heat pumps offer an integrated solution.



While the types of retrofits that are appropriate for different homes will vary, they can provide much-needed cooling to residents in the university neighbourhoods.

2.4 Equity Considerations

While extreme heat events can be stressful and harmful for anyone, some people are at a **higher risk**. Some of these include:


Older adults, aged 60+


People with pre-existing health conditions


People with limited mobility


Infants and young children


It is important to keep in mind that support for cooling measures might look different between residents, as their needs and abilities vary.


Language barriers can pose an added challenge to accessing cooling resources and installing retrofits.

The City of Vancouver's website provides more information on vulnerable populations and resources for staying safe in extreme heat.

Cooling for Renters

According to the 2021 Census, renters make up 57% of the university neighbourhoods' population.[2] This means there is a significant part of the community's population that is unable to make retrofit decisions themselves, making them **more vulnerable to the effects of extreme heat**. Considering the increased importance of cooling in homes, this barrier to cooling presents an equity challenge within the neighbourhood.

Renters may consider portable AC units as an option for cooling their homes but this does not provide the other sustainability benefits or utilities savings that a heat pump would. The Residential Tenancy Act does not require that landlords allow AC units, however a ban on AC units is considered unenforceable if it really impacts the health of the tenant.

Communicating with renters about their cooling options and encouraging landlords to install heat pumps could help to address this equity gap.

3 ENGAGING WITH COMMUNITY

3.1 Best Practices

Words Matter
Depending on the desired outcome of the communication strategy, words can be carefully chosen to target the intended audience. Word choice might depend on the purpose for communication with neighbourhood residents.

Feelings Matter, Too
Since we're all humans with feelings that are often stronger than logic, personal perception around climate change and sustainability can be a powerful influencer of individual action. Using storytelling as a way to create meaning is a great way to reach people because it taps into their feelings.

Keep It Simple
People can often feel overwhelmed with the amount of information they encounter about climate change and sustainability initiatives. Depending on how something is written, information may be too dense in content and length for everyone to understand what is being said. It can also add to feelings of climate anxiety, making intentional word choice important.

Messaging for awareness:

- "learn more"
- "visit this website"

Messaging for feedback:
- "share your story"
- "help us spread the word"

Ask:

- What do people care about?
- How can this generate feelings of positive change?
- How can this highlight collective participation?

Tip:

Identify and define the intended audience beforehand to keep communication relevant and accessible to all

3.2 Examples

When communicating about retrofits, information that is **categorically and logically organized** into sections can make a lot of information seem less overwhelming.

On sites about heat pumps, key information is linearly organized and presented using simple language in short sentences. Web pages include information on where to get support and links to more resources if people want to engage with them.

West Vancouver's Jump on a New Heat Pump webpage includes videos of residents talking about their positive experiences with heat pumps, which can make getting a heat pump feel more accessible to other residents. Showcasing these videos can also motivate people into action by helping them feel like they are part of a collective effort, rather than navigating something on their own. The webpage can be found under the headers "Climate Change" > "What You Can Do", which also draws on actionable language to engage people.

The **City of Vancouver's** heat pump webpage displays key information about heat pump benefits, heat pump function and links to other guides on the topic using simple formatting. They also state which permit is required for heat pump installation and explain that they do not administer heat pump rebates but direct people with questions to CleanBC's Energy Coach online form.

3.3 Barriers to Retrofits

There are multiple reasons why building retrofit uptake might be limited among residents. Awareness of these barriers can help to ensure proactive and effective communication with community members.

UNA Governance
Residents living in the university neighbourhoods may find the UNA's role and jurisdictional positioning difficult to understand, as it differs from the City of Vancouver.

Information Overwhelm
With the amount of information existing around building retrofits, starting the installation process can feel overwhelming. Knowing where to start, what to look out for and the application process can help provide direction.

Lack of Awareness
Not all residents will have the same exposure to information around building retrofits. People may not be aware of the personal and sustainability benefits they offer.

Financial Investment
Building retrofits can present a significant cost that residents are either unable or unwilling to pay. Communicating incentives provides residents with all the information needed to make an informed decision.

Lack of Agency
For renters, the inability to make independent decisions presents an additional barrier. The reliance on landlord approval for any retrofit work limits uptake by this group.

4

COLLECTIVE ACTION - ROLES OF STAKEHOLDERS

4.1 Roles of Stakeholders

4.2 Who Does What?

4.3 Opportunities + Challenges

4.1 Roles of Stakeholders in Building Retrofits

Meeting UBC's NCAP goals around sustainable building retrofits requires **collaboration and coordination** among the different stakeholders that are involved with the UBC neighbourhoods.

This overview of the different groups is intended to provide context for the permitting process and provide clarity around which actions each group can take to support energy-efficient building retrofits.

Appendix A "Stakeholder Roles Table" provides a detailed overview

4.2 Who Does What?

FEDERAL GOVERNMENT	Provide rebates and loans for retrofit projects Create programs to promote energy-efficient buildings
PROVINCIAL GOVERNMENT	
UTILITY PROVIDERS	Provide incentives for retrofit work and cooling equipment Includes BC Hydro and FortisBC.
UBC CAMPUS + COMMUNITY PLANNING	Outlines vision and goals for sustainability on UBC campus, including energy-efficient buildings Oversees permitting process for building retrofits
UBC PROPERTIES TRUST	Builds and manages rental homes in the university neighbourhoods, and leads retrofits on rental buildings
UNIVERSITY NEIGHBOURHOODS ASSOCIATION	Non-profit organization that provides municipal-like services to university neighbourhood residents
NEIGHBOURHOOD RESIDENTS	Undertake strata operations and retrofits Make cooling decisions about homes

4.3 Opportunities + Challenges

The UNA and C+CP operate alongside others to help facilitate building retrofits in the UBC residential neighbourhoods.

Coordination of roles between the above stakeholders leads to areas of opportunities and challenges in advancing building retrofit work on campus.

Opportunities

1. Homeowners can make retrofit decisions for their home in compliance with bylaws and permits

2. Strata councils can benefit from retrofit programs made for multi-unit residential buildings

3. Wesbrook Properties and Village Gate Homes can collect feedback through their property managers regarding cooling in homes and can also decide to undertake retrofit projects within their buildings

4. UNA can be in direct contact with residents living in the neighbourhoods, enabling direct feedback opportunities

5. Renters can advocate for increased cooling measures to their landlord

Challenges

1

Rental properties are managed by separate organizations; may set different standards for cooling

2

Renters are not able to make retrofit decisions without landlord approval

3

Incentive programs often change and require monitoring to stay current

4

Strata councils can enforce building bylaws, which unit owners must comply with

5

RETROFIT RESOURCES
FOR OWNERS + STRATAS

5.1 Planning Stage

Preparation to undertake building retrofits can include:

- Researching types of retrofits
- Researching incentives and supports
- Choosing a contractor

Specific steps to prepare will depend on resident type and retrofit type.

Appendix D “FAQs About Cooling” determines retrofit options by resident type

Appendix E “FAQs About Heat Pumps” provides information about preparing for heat pump installation

Appendix H “Resource List” organizes resources by topic for more information

Incentives and Support Programs

The following incentive and support programs for energy-efficient building retrofits are active as of July 2025.

The status of these programs can change and should be updated regularly.

Tables include links to the websites and can be scanned for more information.

Appendix B and C provide website links to replace table QR codes

A) Support Programs

Support Program	What is it?	Who is it for?	Cost	Scan for more information
Landlord BC Rental Apartment Retrofit Accelerator Program	• Expert guidance from professional engineers for planning and installing retrofits • Help accessing incentives	• Market rental building owners • Buildings with natural gas or electric heating	Free	
ZEIC Strata Energy Advisor Program	• Expert advisor guides strata in planning energy upgrades • Identify opportunities and make long-term plan • Help finding incentives	• Strata councils	Free	
Building Benchmark BC	• Tool to assess a building's energy usage and compare to other buildings • Insights on how to increase building performance	• Property owners	Free	

Appendix B: Links to replace QR codes

Support Programs cont.

Canada Greener Homes Loan	• Interest-free loans for eligible retrofits (like heat pumps) • Mandatory pre-retrofit evaluation done by advisor	• Homeowners living in multi-unit residential buildings with 3 or less storeys • Townhomes	Free Maximum $40 000 loan	
BC Energy Coaching Services	• Centralized point of contact for residents • High-level guidance and referrals to specialists • Navigation assistance for rebates	• Homeowners • Renters • Strata councils • Multi-unit residential building residents	Free	

Appendix B: Links to replace QR codes

B) Incentives for Energy-Efficient Retrofits

Incentive Program	What is it?	Who is eligible?	Amount	Scan for more information
CleanBC Better Homes Energy Savings Program	• Rebates for heat pump installation • Savings based on income and upgrade	• Owners with utility bills under own name (not strata) • For renters with landlord consent form	Up to $ 24 500	
CleanBC Heat Pump Rebate for Homes Converting from Electric	• Rebates for heat pumps	• Homes currently heated primarily with electricity • Owners with utility bills under own name (not strata)	Up to $4000	

Appendix C: Links to replace QR codes

Incentives cont.

FortisBC Dual Fuel Heating System Rebate	• Rebates for dual fuel heating system (see glossary)	• Homes with a FortisBC residential gas account • Homes currently heated primarily with fossil fuel	$5000	
BC Hydro Multi-Unit Residential Building Retrofit Program	• Funding for building assessment • Funding for feasibility study • Rebates for upgrades	• Multi-unit residential buildings • Not for individual suites	• Up to $5000 for assessment • Up to $30 000 for feasibility study • Rebates for equipment upgrades	

Appendix C: Links to replace QR codes

5.2 Application Stage

The application stage will involve different steps depending on who is applying for which type of retrofit.

The following application steps are meant to provide an overview of the process.

A) For strata councils

B) For unit owners

C) For renters

A) For strata councils applying for whole-building retrofits

As a preliminary step, strata councils can learn about their building's energy performance and emissions through Building Benchmark BC. This program provides building energy usage information and comparisons, which provides a starting point for building retrofit work.

Strata councils have the opportunity to initiate energy-efficient retrofits for the whole building through the BC Hydro Multi-Unit Residential Building Retrofit Program. The program offers comprehensive project planning support and rebates for different retrofit measures. For example, it offers rebates on an electrical service upgrade to support low carbon electrification and rebates for central air source heat pump water heaters. Applications for this program are done online through BC Hydro's Conservation and Energy Management Hub. First, choose the offer you are interested in from the program site and then apply by creating an account.

Strata councils undertaking building retrofits must apply for a Building Permit with UBC Campus and Community Planning. More information, including a detailed reference guide, can be found on the UBC Campus and Community Planning website here, under the "Building Permit - Tenant Improvement in Strata Buildings" section.

B) For unit owners applying for heat pumps

Strata councils must approve any major retrofits that owners wish to undertake. Unit owners should contact their strata council to find out what documents are required by council for approval prior to any installation. A contractor can assist in preparing these documents. Owners are also required to submit a heat pump permit application to UBC Campus and Community Planning. The 1-Step Residential Heat Pump Permit Application Form for unit owners can be found here. It can only be used for projects that do not involve any other tenant improvements beyond heat pump installation. Following approval from UBC and the strata council, installation may begin.

Appendix E "FAQs About Heat Pumps" provides a detailed list of steps

C) For renters requesting air conditioning units

Renters looking to acquire air conditioning units must contact their landlord and get approval. Renters will either be reaching out to Wesbrook Properties, Village Gate Homes or private landlords, depending on where they live and who they rent from.

* **Appendix F** "Home Cooling Flowchart" provides details on air conditioning units

5.3 Installation Stage

There are things to keep in mind at the installation stage depending on retrofit type.

A) For strata councils

B) For unit owners

C) For renters

For strata councils undertaking whole-building retrofits

Strata councils should communicate with building residents to ensure minimal unexpected interruption from retrofit construction. Residents should not be displaced or negatively impacted when this can be avoided.

For unit owners installing heat pumps

Unit owners should ensure heat pumps are installed according to UBC Campus and Community Planning permitting requirements on page 2 of the 1-Step Residential Heat Pump Permit Application Form. They should also be aware of any strata bylaws associated with construction and notify their contractor of these. After installation, the contractor will provide a demonstration and hand over operating manuals, inspection reports and a warranty certificate.

For renters installing air conditioning units

For renters using portable air conditioning units, installation requires venting the hose through a window. This means sealing off any openings around the hose as it vents warm air out through the window, ensuring the room stays cool. Most portable air conditioners come with a window kit that makes venting the air conditioner simple. More information about properly venting a portable AC unit can be found here. Custom plexiglass window panels may be necessary in some cases and local vendors can be found via a Google search.

6 FUTURE WORK

6.1 Recommendations

6.2 Evaluating Impact

6.1 Recommendations

Future work will be focused on delivering relevant information to residents of all kinds across the university neighbourhoods through collaboration between C+CP and the UNA. This could take on many different forms, including written communication and community events. Communication could be targeted towards different types of residents, which may influence how information is shared.

For example, information for strata councils may be sent out by email while information for renters is shared on pamphlets at the community centre. For information to reach a wide range of residents, it should be presented in various ways.

Below are some mediums through which retrofit information can be communicated with residents.

Print

- Infographics
- Newsletter
- Social media posts
- Website forum

Events

- Webinar
- Ice cream truck social
- Heat pump demonstration

4 Key Recommendations

1. Provide a centralized and reliable place of information for all residents to access

Actions:

- Regularly update incentives and support programs list to ensure relevancy
- Organize information to provide both high-level overviews and detailed resource lists

2. Provide multiple access points to information

Actions:

- Integrate physical materials into community events
- Leverage existing connections in community to spread awareness

3. Equity for renters and other vulnerable residents

Actions:

- Specific and intentional communication with renters to increase awareness around cooling options
- Communication with strata councils and unit owners that emphasizes the importance of enabling home cooling
- Collect residents' experiences on challenges to installing cooling measures; invite feedback and share with relevant housing partners (ie. Wesbrook Properties)

4. Delivery of NCAP communication goals through C+CP and UNA partnership

Communicating relevant information to UBC neighbourhood residents requires coordination and collaboration.

Communications regulations that dictate how information is shared with residents may pose a barrier to timely, relevant communication around cooling and retrofits. The need for coordination between the organizations around who will share what information with which residents also poses a barrier to effective communication.

Actions:

- Evaluate communication channels to see what's working
- Evaluate decision process for what gets shared with residents
- Establish expectations for what can be shared by respective organizations

6.2 Evaluating Impact

Evaluating the impact of this toolkit on energy-efficient building retrofit implementation will involve taking measure across the university neighbourhood's diverse population. In order to assess impact, the UNA should identify the stakeholders that will be affected by the change in communications.

Impact could be evaluated both by collecting feedback on community perception around cooling measures and energy-efficient building retrofits, and by quantifying the increase in building retrofit projects. Impact may happen across different levels in the community at different times.

The "Evaluating Impact" table on the following page outlines four possible levels of impact of increased communication around low carbon building retrofits and examples of assessment measures.

Evaluating Impact Table

Level of Impact	Criteria	Examples
1. High impact on whole community	• High impact across all groups in UNA community • High degree of interest across all groups in community • Strong possibility of conflicting perspectives	• Significant increase in 1-step heat pump permit applications • Significant increase in inquiries about cooling directed to the UNA • Strata bylaws change to allow for heat pump installation • Strata councils decide to undertake whole-building retrofit measures • Many renters properly install portable AC units
2. High impact on select community group	• High impact on a specific group in the UNA community • Strong possibility of conflicting perspectives at the neighbourhood level	• Increase in unit-level heat pump installation in buildings that already have strata council approval • Increase in renters advocating for heat pump installation to their landlords
3. Modest impact on whole community	• Modest impact across all groups in UNA community • Sufficient degree of interest across community to warrant continued engagement • Moderate possibility of conflicting perspectives	• Some increase in inquiries about cooling directed to the UNA • Some increase in 1-step heat pump permit applications • Interest in programming events like heat pump demonstration
4. Modest impact on select community group	• Modest impact on a specific group in the UNA community • Small change to one facet of building retrofitting • Modest risk of conflict at a smaller level	• Positive responses to outreach strategies from one particular group • Inquiries to the UNA about retrofit processes from one particular group

7

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8 APPENDICES

Appendix A: Stakeholder Roles Table

Appendix B: Links to Incentive Sites

Appendix C: Links to Support Program Sites

Appendix D: FAQs About Cooling

Appendix E: FAQs About Heat Pumps

Appendix F: Home Cooling Flowchart

Appendix G: Heat Pumps in UNA Flowchart

Appendix H: Resources List

Appendix A:

Stakeholder Roles Table

Who?	What do they do?	Strengths	Limitations
Federal, provincial and regional governments	-Provide rebates and loans for retrofit projects -Create programs to promote energy-efficient buildings	-Provide high-level policies and guidance	-Not involved in individual projects or everyday decision-making at the university neighbourhood level
UBC Campus + Community Planning	-Develops the policies and plans for how land is used -Oversees permitting process	-Integrates multiple interests and ideas into a long-term vision for campus	-UBC Board of Governors makes final decisions
University Neighbourhoods Association (UNA)	-Communicates directly with stratas and renters -Runs neighbourhood programming and community initiatives -Regulates public concerns like noise	-Bridges campus planning operations with residents' experiences -Gives a voice to resident concerns and answers questions	-Cannot override campus planning jurisdiction -Cannot act on behalf of stratas or renters
UBC Properties Trust	-Builds and manages rental homes in the university neighbourhoods	-Can make decision to provide cooling in its buildings	-Decisions made by its Board of Directors

Appendix A cont.

Who?	What do they do?	Strengths	Limitations
Wesbrook Properties (and Village Gate Homes)	-Manages market rental properties in the university neighbourhoods -Village Gate manages faculty and staff properties	-Can collect feedback from residents through property managers	-Limited in decision-making scope as subsidiaries of UBC Properties Trust
Strata councils	-Manage common property and assets -Manage collective decision-making for residents' well-being	-Can directly influence residents' living conditions -Can enforce their own bylaws and rules -Allow properties to make tailored decisions based on residents' needs -Can access retrofit incentives and support programs	-Must comply with UBC Campus and Community Planning permitting processes
Owners	-Own their property and reside in the university neighbourhoods	-Have a say in their living experience via strata councils -Can provide feedback based on personal experience -Can access retrofit incentives and support programs	-Must comply with strata bylaws, UNA rules and bylaws, UBC C+CP permits
Renters	-Rent their property and reside in the university neighbourhoods	-Can provide feedback based on personal experience -Can advocate for their rights under Residential Tenancy Act	-Cannot make property retrofit decisions without landlord approval

Appendix B:

Links to support program websites

Landlord BC Rental Apartment Retrofit Accelerator Program

ZEIC Strata Energy Advisor Program

Canada Greener Homes Loan

BC Energy Coaching Services

Building Benchmark BC

Appendix C:

Links to incentive websites

CleanBC Better Homes Energy Savings Program

CleanBC Heat Pump Rebate for Homes Converting From Electric

FortisBC Dual Fuel Heating System Rebate

BC Hydro Multi-Unit Residential Building Retrofit Program

Appendix D:

FAQs About Cooling

I am a _____. What can I do to cool my home?

Strata council member:

A) Unit-Level Heat Pump Installation

1. Strata councils should engage consultants that will perform electrical, mechanical and building envelope studies to determine a building's suitability for heat pump installation. Consultants will identify risks, provide technical solutions and make recommendations for either building-level or unit-level installation.
2. Strata councils will need to publish expectations for unit owners wanting to install heat pumps in their units, including documents required for review. This is to ensure that strata councils receive the necessary information to review and approve heat pump installation requests.
3. Strata councils will provide unit owners with an approval letter so owners can proceed to the building permit approval stage.
4. Strata councils manage approval requests as they come through from unit owners.

A detailed checklist for strata councils managing heat pump installations can be found here.

B) Building-Level Retrofits

1. Strata councils are encouraged to take advantage of BC Hydro's Multi-Unit Residential Building Retrofit program, which offers a free opportunity assessment, feasibility study and rebates equipment upgrades for strata councils.

Appendix D cont.

Unit Owner:

A) Unit-Level Heat Pump Installation

1. Engage a qualified mechanical contractor to review site conditions and determine the location of the heat pump system. The contractor will provide you with a detailed scope of the work and a quote.
2. The contractor will then prepare documents required by your strata council to get approval for a heat pump installation.
3. Submit documents required to your strata council and property manager for approval.
4. Submit a heat pump permit application to UBC Campus and Community Planning. The application and required documents can be found here.
5. After approval from UBC and the strata council, notify your contractor of any strata bylaws associated with construction.
6. Upon installation, the contractor will provide you with a demonstration and hand over operating manuals, inspection reports and a warranty certificate.

Appendix D cont.

Renter:

A) Portable Air Conditioning Unit

If you are renting from Wesbrook Properties or Village Gate Homes, portable AC units are permitted but window-mounted units are not.
If you are a current client of certain regional health authority programs, you may be eligible for a free portable air conditioner. You can find out more about the offer here.
The province's Residential Tenancy Act does not require that landlords allow AC units. However, a ban on AC units is considered unreasonable if it impacts the health of the tenant. Learn more about your rights and responsibilities here.

B) Advocate for Heat Pump Installation

Heat pumps are a very effective and energy-efficient way to cool homes. If you are impacted by extreme heat in your home and not renting from Wesbrook Properties or Village Gate Homes, you can advocate for your landlord to consider heat pump installation. They will need to complete a 1-step application form and receive strata approval. There are many incentives and support programs to help with the process, which can be found on pages 28-31 of this document.

Appendix E:

FAQs About Heat Pumps

How do heat pumps work?
Heat pumps work to cool and heat your home by using electricity to move heat from one place to another. In the summer, it transfers heat from inside your home to the outdoors. In the winter, it extracts heat from the outside air and transfers it indoors. To learn more about how heat pumps work, you can watch this short video by BC Hydro explaining the process.

What are the benefits?

1. Heat pumps are **climate friendly and energy-efficient**. Not only are they an environmentally friendly alternative to natural gas and oil heating systems, heat pumps can also help reduce your home's heating emissions by up to 97% (according to BC Hydro).
2. Heat pumps provide **year-round comfort** by combining heating and cooling functions into one unit, keeping you cool in the summer and warm in the winter.
3. Heat pumps **improve indoor air quality** by providing air flow, dehumidifying and offering filtration settings.

Which heat pump is best for me?
All heat pumps have outdoor and indoor components that work together to heat and cool your home. The way air is distributed throughout your home depends on the type of heat pump. There are different types of heat pumps available, depending on the size, location and current heating system in your home. A contractor can help you determine which type of heat pump is best for your home. More information about the four most common types of heat pumps installed in BC can be found here. A short video explaining your heat pump options can be watched here.

Appendix E cont.

What do I need to consider before installing a heat pump?
Before installing a heat pump you should consider your current home heating system, costs, scope and timeline. You should also spend some time selecting the right contractor for the job (more on this below). Doing some research to learn about the basics of energy efficiency and heat pumps can help you make a successful plan for your heat pump journey.

- Current heating system: Assessing your current heating system and considering what you want out of a heat pump can help you make informed decisions about the right retrofit for your home.
- Costs: Establishing a budget and reviewing incentive options will keep you on track to meet your home energy-efficiency goals.
- Scope and timeline: Considering your expectations around project scale and completion can help you decide next steps to take towards retrofitting your home.

Where can I find a contractor that is right for the job? What should I know before hiring them?
Finding the right contractor is a key part of a successful home retrofit project. When choosing a contractor, it's important to hire them for their training and quality of work rather than only on price. Before hiring a contractor, clearly establish the scope, budget and timeline of your project. Then, contact a few different contractors with your expectations to obtain quotes and ensure you find someone who can meet your time frame and deliver quality services. For more tips on finding a contractor and interviewing them, visit CleanBC's guide here. You can search for registered contractors in your area here.

Appendix E cont.

How loud is a heat pump?
All heat pumps come with some level of noise created by the fan and compressors. Each heat pump system has a different sound level rating. Most outdoor units have a sound rating around 60 decibels, which is equivalent to moderate rainfall. Indoor units have sound level ratings between 18-30 decibels, which is comparable to whispering. Contractors can find the best location during installation to reduce noise. More information on sound level ratings and how to reduce noise can be found here.

How much money can I save through upgrades?
The amount of money you can save by switching to energy-efficient systems like heat pumps depends on where you live, how your home is currently heated and other factors like insulation and gas rates. According to the province, you could save up to 80% on energy costs by switching to a heat pump. There are heat pump cost calculators available online to help you estimate savings, including one from BC Hydro here and one from the Canadian Climate Institute here.

What incentives are available?
Depending on where you live, you could be eligible for incentives that make planning and installing a heat pump easier. Generally, there are incentives available to homeowners looking to install a heat pump in their unit and incentives for strata councils looking to undergo a full building retrofit. A table outlining incentives can be found here.

Appendix E cont.

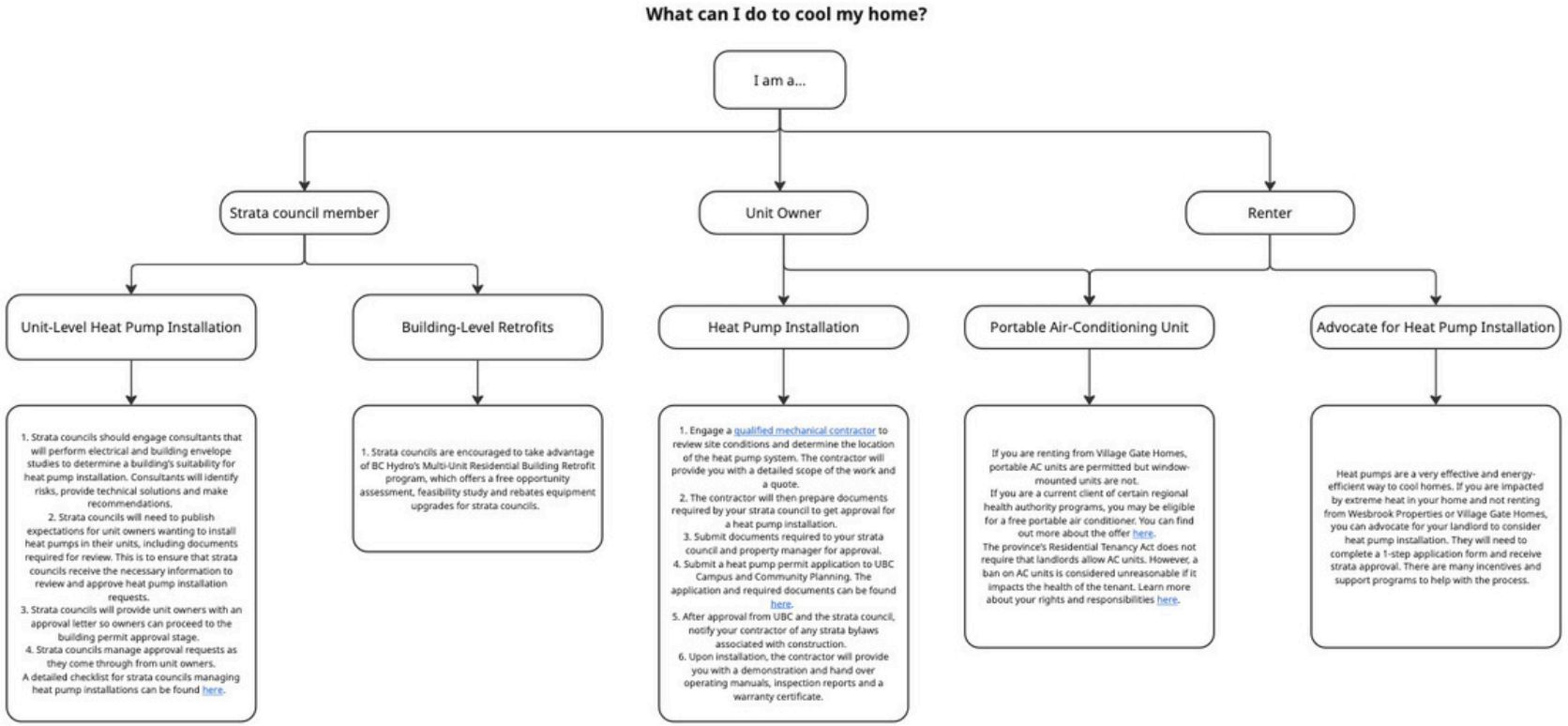
Are there installation requirements for my strata building?
Stratas will have their own bylaws and rules for regulating the installation of heat pumps in units. They may have expectations for unit owners wanting to install heat pumps in their units, including documents required for review. They will then issue an approval letter so you can proceed to the building permit stage. Your strata council will be able to inform you of installation requirements for your building.

I don't know where to start - where can I get support?
Choosing which retrofit is best for your home and planning a heat pump installation can feel overwhelming. There are free advisory programs for both unit owners and strata councils that can guide you through the process. These are a great place to start your retrofit journey! A table of support programs can be found here.

My first language is not English - where can I get support in my language?
Empower Me offers multilingual education and support services to ensure everyone can make informed decisions around energy-efficiency in their home. If you have a question about energy choices like retrofits in your home, you can access personalized support in over ten languages by contacting Empower Me through their online form here.

Appendix F:

Home Cooling Flowchart



Appendix G:

Heat Pumps in UNA Flowchart

Since the interactive diagram is too large to be shown in a page format, a summary of topical headings is provided below.

Flowchart includes:

- **What are heat pumps?**
- **Why are the beneficial?**
- **Who is involved?**
- **How do they get installed?**

Appendix H:

Resource List

Communication and Engagement Examples:

City of Richmond
City of Vancouver
West Vancouver
Jump on a Heat Pump

Heat Pumps:

BC Hydro Heat Pumps Explained Video
BetterHomesBC Heat Pumps
BC Hydro Heat Pump Summary
Insider Tips for Homeowners

Multi-Unit Residential Buildings:

Thermal Safety in Existing Multi-Unit Residential Buildings
Fresco MURB Retrofits Summary Guide

Tenants and Cooling:

Advancing Tenants' Rights to Retrofits
Provincial AC Rules