

RETROFIT ADVISORY GROUP SUMMARY REPORT AND CALL TO ACTION

Technical Summary Report Prepared by the
Tower Renewal Partnership for CMHC, United
Way, Woodgreen, and the ILEO Working Group

May 05, 2023

Photo courtesy of Jesse Colin Jackson



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Document prepared by the

**Tower Renewal Partnership for CMHC, United Way,
Woodgreen, and the ILEO Working Group.**

Initiative Funded by CMHC

The Tower Renewal Partnership (TRP) is a not-for-profit initiative working to advance the preservation and modernization of legacy tower housing and its neighbourhoods through research, advocacy and demonstration. The TRP has worked with municipal, provincial and federal governments to establish the Tower Renewal approach as a key public policy priority, with preservation of this housing stock now central to the National Housing Strategy and Toronto's Tower Renewal Program, among others.

Learn more at www.towerrenewal.com



EXECUTIVE SUMMARY

The majority of affordable housing in urban centres in Canada is found in aging apartment towers constructed at least 36 years ago. Despite this legacy housing providing affordable supply, these buildings are disproportionate contributors to greenhouse gas emissions (GHG) and are reaching the end of the lifespan of their major building systems. These naturally occurring affordable units must be preserved to address the ongoing housing crisis and must be retrofitted to meet Canada's climate goals. The challenge preventing the deep retrofit of legacy residential towers is financial; the cost to provide a deep retrofit, including GHG emission reductions and addressing state-of-repair, is approximately \$200,000 per unit in the worst-performing buildings. To maintain affordability the cost cannot be borne by rent increases and the utility cost savings alone are not remotely sufficient. As such, new solutions must be sought if we are going to both preserve and retrofit Canada's legacy housing supply.

Under the Inclusive Local Economic Opportunity (ILEO) Initiative, CMHC and the United Way, with support from the Tower Renewal Partnership, convened an Advisory Group of leaders and experts from the development and real estate sectors, the financial sector, nonprofits, government organizations, academia, professionals, and tenant organizations. The Advisory Group worked together to identify and evaluate tools

and business models to preserve affordability after the retrofit process with a focus on piloting the recommended tool(s) in the geographic region of the Greater Golden Mile in Scarborough, an area at risk of losing its existing affordable housing stock..

The group focused on four key financial tools that could individually contribute to bridging the financial gap: direct grants, a retrofit tax credit, favourable retrofit remortgages, and housing stock transfers to not-for-profits. The deep dive into these financial tools included recommendations for various tool improvements, proposals for stacking tools, and approaches for integrating tenant experience and maintaining affordability.

Significant action is required to support sustained deep retrofit initiatives and meet Canada's climate change and affordability goals. There is alignment on policy and activity among federal programs, community and private partners to maintain affordability and retrofit these units; however, they are currently working separately and lack the capacity to meet the challenge in isolation. The tools proposed here are not novel in a global context — programs serving the EU broadly, and Germany in particular, have been successfully performing retrofits for decades and are a key part of their climate change action plans and maintaining affordable housing supply.

Canada has conducted a series of ground-breaking deep retrofit demonstrations of non-profit or social housing buildings across the country with leadership by individual housing providers and financed with targeted investments by federal, provincial, and territorial programs. These demonstrations show deep retrofits that maintain affordability are possible and achievable in Canada, however, significant action is required to support sustained deep retrofit measures, especially across all sectors. Expanding from the Advisory Group's recommendations to improve individual tools, this report highlights a core recommendation to build a Combined Retrofit Remortgage Tool and Grant Program to incentivize private owners to conduct deep retrofits of their buildings while maintaining affordability and reducing emissions.

Implementing the recommendations proposed in this report are necessary steps for immediate action toward the preservation and deep retrofit of legacy housing. To enable a broader ecosystem, the report concludes with a series of complementary recommendations related to retrofit standards, industry readiness, and cross-sector innovation. Together, these actions will increase uptake, reduce risk, and be self-sustaining, leading to the scaling required to meet housing affordability and decarbonization objectives.

RETROFIT ADVISORY GROUP

Purpose and Mandate

While there are successful examples of deep retrofits in the social housing sector, private multi-unit residential buildings (MURBs) have proven challenging for deep retrofits while maintaining affordability; the capital costs, financing programs requirements and housing security implications make for a tough business case.

The ILEO United Way team and CMHC convened the Retrofit Advisory Group to advise on the challenge statement: ***How might we motivate private building owners in the Greater Golden Mile to meet climate objectives by undergoing deep retrofits in a manner that maintains housing security for tenants?***

The group iterated, validated, and tested business models to address the challenge statement to encourage private building owners in the Greater Golden Mile to undertake deep retrofits (e.g. complete retrofit), and, simultaneously, ensure housing security for the existing tenants by minimizing disruption during the retrofit process and maintaining and preserving affordability once the retrofit is complete.

The Retrofit Advisory Group is composed of leaders and experts from the development and real estate sectors, financial sector, non-profits, government organizations, academia, professionals and tenant organizations.

Who attended

Co-Chairs:

- **Mwarigha**, VP Housing and Homelessness, Woodgreen Community Housing
- **Nik Schruder**, Advisor, Climate Change Office, CMHC

Advisory Group Members:

- **Aaron Berg**, Canadian Infrastructure Bank
- **Andy Broderick**, Managing Director, New Market Funds
- **Bryan Purcell**, VP Policy and Programs, TAF
- **Daryl Chong**, President & CEO, Greater Toronto Apartment Association
- **Giovanni De Benedictis**, National Manager, Key Accounts, Client Relationship Management, CMHC
- **Graeme Stewart**, Principal ERA Architects, Tower Renewal Partnership
- **James Burrow**, Director Sustainable Finance, BMO
- **Laura Hammond**, Tenant Engagement Representative, TCH resident
- **Laura Tozer**, Asst. Professor of Environmental Studies (leading the Just Transition Research project, University of Toronto)
- **Lauralyn Johnston**, A/Manager, Tower & Neighbourhood Revitalization, Housing Secretariat, City of Toronto
- **Matt Zipchen**, President, Efficiency Capital
- **Noah Slater**, City of Toronto Housing Secretariat

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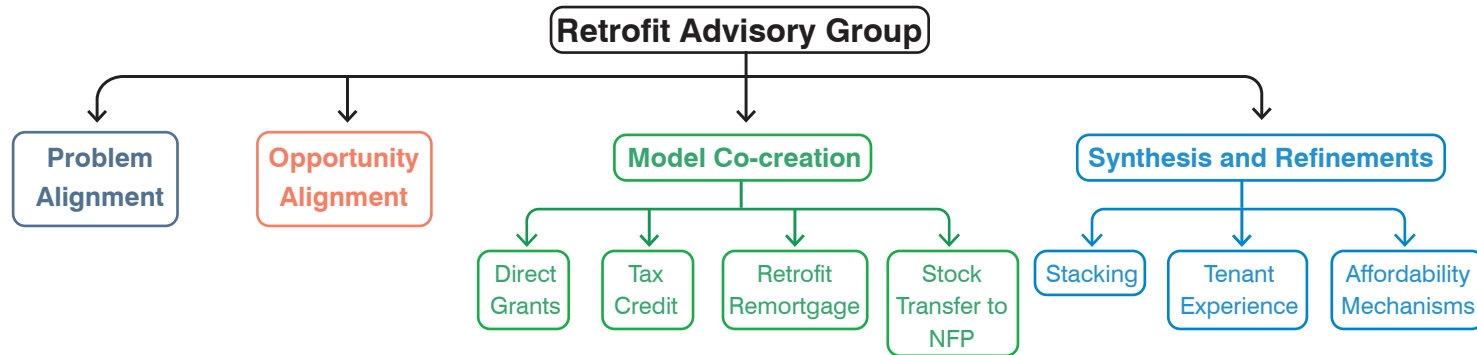
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RETROFIT ADVISORY GROUP

Process



The Retrofit Advisory Group convened regularly over 3 months to first align on the problem, identify and prioritize proposed opportunities, vet and iterate those opportunities through model co-creation and finally synthesize the models and identify refinements and constraints.

A full summary, including research notes and discussion points, is presented in an appendix which provides summaries of the opportunities that were investigated (Direct Grants, Tax Credits, Retrofit Remortgages and Stock Transfers to Not-for-profits), then summarizes the strategies for synthesis and refinements of these model tools (Stacking, Tenant Experience and Affordability Mechanisms.)

For additional information, please click links below

[WORKSHOPS FULL SESSION NOTES](#)

Highlighted Comments

Combine the granting and financing pipeline so financiers can help owners access grants and include these into the lending assessments

Tie funding to savings performance: the deeper the savings, the greater the funding

Enable a “one stop shop” that can support with various types of financing. This may be a **concierge service** who can provide clarity, forward guidance, and redirection to programs the owners are eligible for

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FRAMING THE CHALLENGE

Photo courtesy of Jesse Colin Jackson

RETROFIT ADVISORY GROUP SUMMARY

CONTEXT

The ILEO United Way team and CMHC have convened during the fall-winter 2023-2024 the Retrofit Advisory Groups to address the following challenge:

“How might we design concrete and practical solutions that motivate private building owners to meet future decarbonization regulations via deep retrofits in a manner that maintains housing security for tenants?”

Older apartments is home to millions of Canadians. Built in the apartment boom of the 1960s and 70s, and supported through policy, public finance and planning regimes, this ‘legacy’ housing was built with the aim of providing decent and more affordable homes for a expanding urban population and in doing so doing largely solved the post-war housing supply crunch, which is similar to the one in which we find ourselves today.

These legacy apartment towers represent a housing inheritance that has been the backbone of the rental housing system ever since and represents the vast majority of purpose built rental housing found in our cities today.

In some regions this housing is affordable, with legacy private apartment rental buildings providing rents below regional median or average levels. This is the case in the Greater Golden Mile, home of some of the Toronto region’s more affordable rental housing, much of it private.

For additional information, please click links below

[FULL CMHC PRIMER PRESENTATION FOR WORKSHOP](#)

IT IS AFFORDABLE.

IT IS AGING.

IT IS UNDER THREAT.

IT CAN BE TRANSFORMED.

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CONTEXT

Apartment Supply: Successful Historic Programs

During the post-war boom, Canada experienced a surge in high-rise rental housing construction, peaking in the 1960s and 1970s. During this period, multi-unit rental housing developments outpaced single-family home construction nationwide. This substantial supply, made possible through targeted housing delivery programs, remains the backbone of the rental housing system today.

Between 1946 and 1984, the Canadian Federal government used a series of programs to incentivize apartment construction by providing private sector support through tax relief, below-market financing, and grants. Four major rental housing programs were designed to accelerate supply:

- The Limited Dividend Program (LD) 1945 - 1975
- The Assisted Rental Program (ARP) 1975-1978
- The Multi Unit Residential Building Program (MURB) 1975 -1981
- The Canada Rental Supply Program (CRSP) 1982 - 1984

The first two programs contained affordability requirements, enabling private sector affordable housing development during a booming market. The latter two projects did not have such requirements; instead, they aimed to encourage apartment development of any type in a weaker economic environment. **Together, these programs supported the development of over half a million apartment units across Canada.** At the close of these programs in 1984, rental development nearly stopped.

Today, our goal is to use similar tools to enable investment to sustain and enhance this aging legacy housing stock while concurrently expanding supply.



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CONTEXT

The Growing Risk of Housing Loss

The most distressed legacy housing is at risk, with some buildings beginning to fail.

Two examples include 650 Parliament Street in Toronto and Mackenzie House in Hay River, Northwest Territories. Both of these buildings experienced electrical fires that led to full building evacuations for extended periods, resulting in local crises related to rehousing. In Toronto, over one thousand residents were displaced for over a year. In Hay River, the building has remained empty since its 2019 fire. **If this trend continues, the housing system will struggle to absorb the loss and adequately rehouse those displaced.**

Investment tools that both stabilize and enhance aging apartment housing are critical for ensuring the long-term housing security of Canadians.



CBC Article, *Few answers on Hay River highrise fire, 1 year later*, (Gabrielle Sky Landrie) 2020

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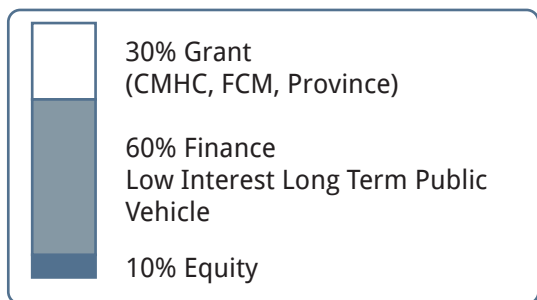
CASE STUDIES & MODEL DEVELOPMENT

Not for Profit Retrofit

Repositioned Affordable Asset

\$200,000/ UNIT

Finance Stack:



Corporate Reserve Fund

Loan Service

Energy Reduction
50% Utility Bills (8% Total Operating)
Maintenance Spending Reduction

20% Operational Savings



10% Rent Uplift

Introduction of
20% Market Units (100MMR)
80% 70MMR Deeply Affordable Units

Use of NOI (Net Operating Income - Year 1)

90% Debt Service
10% Reserve Fund

Not-for-profit retrofits have been achieved by expanding project debt capacity (through lowered operation costs and marginally increasing rents), the use of low-interest and long term Government backed finance products, and through access to direct public equity contributions (from CMHC, FCM, City and Provincial Partners). **This direct public investment has preserved thousands of housing units from going off-line and helped to kick-start Canada's low-carbon retrofit industry.**



Photo courtesy of ERA Architects

Retrofit investments in private housing presents a paradox: How can substantial capital be directed toward asset renewal without raising rents, in a manner attractive to asset managers, that accounts for project risks, and does not freeze capital otherwise invested elsewhere? Doing so will likely require significant public support. **Our project is to outline under which terms doing so would be attractive and effective.**

FOR PROFIT RETROFIT
Repositioned Private Asset

CONSIDERATIONS:

1. Taxes account for 15%-25% of operation expense.
2. Free NOI is reinvested with target ROI or taken as a dividend.
3. Debt taken on assets is used for investments inside or outside housing portfolio.
4. Rent increase at turnover primary source of revenue uplift

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CASE STUDIES & MODEL DEVELOPMENT

GAPS AND TOOLS: \$833/MONTH

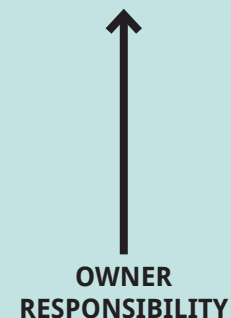
Assuming a capital cost of \$200,000 per unit as an upper limit for a comprehensive deep retrofit that includes deferred maintenance and capital repairs of a distressed asset, the cost per month, without borrowing interest, over twenty years would be \$833. Using a 4.5% debt product, the cost would be \$1,265 per month. If a project were financed by direct equity, and assuming a 5% annualized Return on Investment, the costs would be \$1,319 a month.

The core question of this project: Who pays for this monthly increase? What portion is from owner equity? What portion is financed through operations savings? What portion is through public support? And what portion comes from renters?

Further, what form should public support take? Is it a retrofit tax incentive? Direct Equity contribution? A rent supplement? Outlining the roles of private and public actors, and the key terms of support, initially as it relates to the GGM and later proposing potential broader solutions, is an output of this project.

CAPITAL SOURCE

PUBLIC GOALS



CARBON & RESILIENCE

Direct Grant
Retrofit Tax Credit
Carbon offset Tax Credit
Stock Transfer to NRP
Low Interest Finance
Remortgage Tool
Equity Investment
Income Supplement
Building Performance Regulations

STATE OF REPAIR

A variety of existing and potential tools should be explored - which are more effective for owners and public expenditure? What are we missing? How can these work together? This is our assignment.

\$833/UNIT/MONTH

**\$1,265/UNIT/
MONTH (@4.5%)**

**\$1,319/UNIT/
MONTH (5% ROI)**

In simple terms, our challenge is to determine how \$833/unit/month can be raised to cover retrofit costs, assuming a 20 year horizon. Which actor pays, how and when?

\$833/UNIT/MONTH



GAP (\$773/MONTH)

UTILITY SAVINGS 7% (\$60/MONTH)
FUNDING GAP

Using a baseline building for illustration, current debt capacity, potential utility savings and remaining gap are shown (top). Additional tools in filling the gap are tested for illustration purposes (bottom).

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OUR FOCUS

- Homes and buildings account for **18% of national GHG emissions** with existing buildings being more energy inefficient than new builds.
- Currently, **76% of Canada's rental units are more than 36 years old**. Aside from a small amount of social/affordable housing, much of this purpose-built rental housing is owned and managed by the private sector.
- **Older market rental housing is a valuable source of affordable housing**, but because this stock is aging it needs considerable retrofit. However, **due to their lower rents, many do not have the financial capacity to modernize** their housing for health, comfort, and climate.
- Should there be GHG regulations within the next 5-10 years, **the market is at risk of losing these affordable buildings if it is not financially viable for current owners to undergo deep retrofits** to meet the requirements or for them to pay the penalties for not complying with decarbonization regulations. In this case, affordability is at risk due to redevelopment or above guideline rent increases.
- **Renovating these buildings will also contribute to community health and resiliency**; as major climate events become more likely these improvements to building envelope and cooling systems will mitigate adverse health effects (including death) for vulnerable populations during heat waves.
- Beyond health impacts, the **energy savings from deep retrofits have the potential to increase operational savings of owners by about 10%** and for individual tenants by about \$60/month/unit

To note: the cost to deeply retrofit a unit is approximately \$200,000 while the cost of building new affordable unit is approximately \$550,000 /unit



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ACTIONS

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RETROFIT ADVISORY GROUP SUMMARY

INTRODUCTION

The ILEO Retrofit Advisory Group conducted a thorough examination of opportunities and actions related to addressing the capital gap that hinders deep retrofit projects while ensuring both housing affordability and optimizing the tenant experience during and beyond the retrofit implementation. This section will provide a detailed outline of specific actions that can be taken to capitalize on these opportunities. Furthermore, it will contextualize these actions within the broader retrofit ecosystem and make recommendations to support the full retrofit ecosystem.



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SUPPORTIVE POLICY CONTEXT

Alignment:

There is significant policy alignment among Federal Ministries, Community, and Private Partners in achieving the working group's objectives, which is to engage in housing retrofit at scale while preserving housing affordability. Canada's policies, including the National Housing Strategy and the Canada Green Building Strategy, are chief among these efforts. In addition, supporting organizations such as the Canadian Infrastructure Bank (CIB), the Federation of Canadian Municipalities (FCM), and private financial organizations, such as the big five banks and community impact foundations, are all working towards the common goals of affordable housing retrofit.

However, these independent initiatives are currently working in silos and lack the capacity to address the retrofit challenge in isolation. Therefore, it is important to link the capacity and objectives of these public, private, and community partners to address the capital gap that currently limits retrofit at scale.

The proposed actions below outline a specific mechanism by which retrofit can be undertaken, along with the potential role of partners in achieving outcomes and broader actions to support the full retrofit ecosystem.

PRESERVATION IS PART OF SUPPLY

The affordability and number of legacy housing units are eroding each year. The cost of new supply far exceeds refurbishment. Efforts to preserve our existing stock are critical in the expansion of housing supply to mitigate the housing crisis.

Partners

THERE ARE CURRENTLY SEVERAL ACTORS ENGAGED IN SUPPORTING RETROFITS. BUNDLING THESE ACTIONS CREATES OPPORTUNITIES FOR SCALING MEANINGFUL COMPLETE RETROFITS.



+ COMMERCIAL BANKS
FOUNDATIONS

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GLOBAL PRECEDENTS

The EU Case Study

Canada is not the first country to undertake the actions required to achieve retrofit objectives. In fact, the European Union and its member states have been leading the way in deep retrofit for several decades. These efforts have been further invigorated through the European Green Deal, part of the broader European COVID-19 recovery efforts known as the NextGenerationEU Recovery Plan. This plan includes a Renovation Wave, a key aspect of the European Green Deal. The German Energy-Efficient Refurbishment program, administered through their national KfW Bank, also serves as an important precedent for Canadian action. In summary, these initiatives provide critical precedents for Canada to follow in its own efforts toward achieving retrofit objectives.



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GLOBAL PRECEDENTS

European Green Deal Renovation Wave

The European Union (EU) recognizes that climate change and environmental degradation are existential threats to Europe and the world. To address these challenges, the EU has launched the [European Green Deal](#), which aims to transform the EU into a modern, resource-efficient, and competitive economy. The Green Deal has three key objectives: no net emissions of greenhouse gases by 2050, economic growth decoupled from resource use, and leaving no person or place behind.

[The Renovation Wave](#) is a critical aspect of the European Green Deal, intending to double annual energy renovation rates in the next ten years. The program seeks to enhance the quality of life for people living in and using buildings and create additional green jobs in the construction sector. The Renovation Wave focuses on three areas: tackling energy poverty and the worst-performing buildings, public buildings and social infrastructure, and decarbonizing heating and cooling.

The program will achieve its goals through four key actions:

- direct investments;
- leveraging private investments;
- research and innovation; and
- addressing market barriers and technical assistance.

The Renovation Wave is also supported by complementary

initiatives, including the [New European Bauhaus](#), the [BUILD UP](#) initiative, the [BUILD UP Skills](#) initiative, and the [4RinEU](#) project. Together, these programs support the broader skill, technology and design sectors critical in achieving retrofit at scale.

One-third of the €1.8 trillion investments from the [NextGenerationEU Recovery Plan](#) and the EU's seven-year budget will finance the European Green Deal, of which the Renovation Wave is a core pillar. Renovation Wave is implemented through direct EU and member state action.



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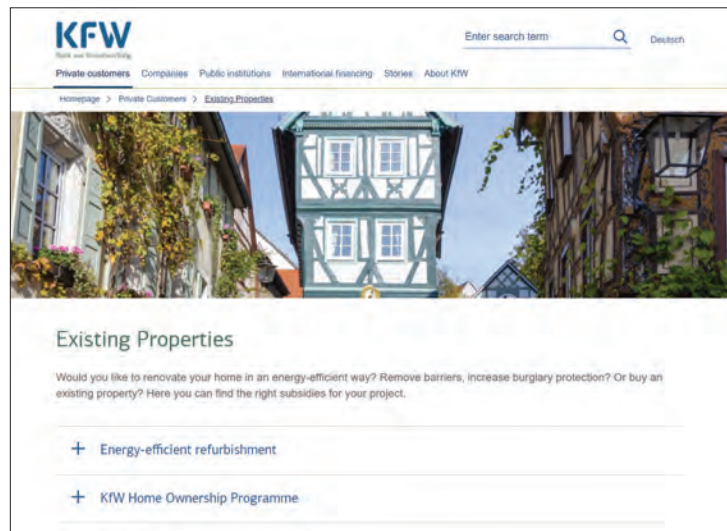
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GLOBAL PRECEDENTS

German Federal Action Toward Energy-efficient refurbishment

At the EU member state level, Germany has been a world leader in energy efficiency refurbishment for several decades. The German Energy-Efficient Refurbishment program, which is administered by KfW Bankengruppe, is aimed at promoting the energy-efficient renovation of buildings. KfW Bankengruppe is a German state-owned development bank that promotes economic and social progress both within Germany and in other countries. It is the largest national promotional bank in the world. It offers a wide range of financing options, including loans, guarantees, and equity financing, focusing on projects related to climate protection, environmental protection, infrastructure development, and social development.



The objectives of the German Energy-Efficient Refurbishment program are to reduce energy consumption in buildings, promote the use of renewable energy sources, and support the construction industry and related jobs. The program also aims to improve building occupants' comfort and quality of life while reducing greenhouse gas emissions. The funding for the program comes from various sources, including KfW's own funds, public funds from the German Federal Government and the states, and private capital.

The program offers two types of financing:

1. KfW loan: A low-interest loan for homeowners, landlords, and housing associations to finance energy-efficient building renovations. The loan can cover up to 100% of the renovation costs, with loan terms ranging from 4 to 30 years and interest rates starting below 1%;
2. KfW grant: A grant for homeowners who carry out energy-efficient building renovations. The grant can cover up to 20% of the renovation costs, with a maximum grant amount of €37,500. The grant is means-tested and available to low- and middle-income households.

To be eligible for financing under the program, buildings must meet specific energy efficiency standards and undergo an energy efficiency assessment. The program also provides technical support and guidance to building owners throughout the renovation process. The program is designed to reward high performance, enabling nearly 200 billion Euros in retrofit investment over the past decades. The stability and longevity of the program have enabled Germany to emerge as a world leader in knowledge, technology, and retrofit implementation.

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CANADIAN PRECEDENTS

Current Successes and Existing Programs

Current programs aligned with the National Housing Strategy, such as the Co-Investment Repair and Renewal Fund and FCM's Sustainable Affordable Housing Fund, have enabled deep retrofit projects across Canada. **These programs have advanced the industry through landmark projects like CityHousing Hamilton's Ken Soble Tower—North America's first Passive House retrofit of a high-rise apartment building—and portfolio-scale investments like the \$1 billion funding agreement with Toronto Community Housing, which enables the modernization of hundreds of existing buildings.** This progress has moved deep retrofit projects beyond the pilot stage and is building industry capacity to address the broader sector. A continued focus on not-for-profit and public housing will support the wider decarbonization effort while providing housing security for millions of Canadians.

Challenges with Existing Programs

Current programs have gaps that limit scalability and overall retrofit potential. On one end, the complexity of program requirements and administrative burdens restrict participation to only the most sophisticated non-profit and public entities. On the other end, options for private housing participation are highly limited. The FCM Sustainable Affordable Housing Fund explicitly excludes private housing, and the CMHC Repair and Renewal Program imposes affordability requirements that necessitate deep rent reductions without operating subsidies to offset revenue losses. Consequently, no private owners have engaged in the program.

However, the CMHC MLI Select Mortgage has seen widespread uptake. This tool offers preferential refinancing terms for projects that achieve social and environmental objectives in housing. It could serve as the foundation for a deep retrofit Loan + Grant program that addresses financing current gaps.

RETROFIT FINANCE AND AFFORDABILITY: HIGH-RISE RETROFIT IMPROVEMENT SUPPORT PROGRAM (HI-RIS)

The City of Toronto's High-rise Retrofit Improvement Support (Hi-RIS) program, part of the Tower Renewal Program, offers funding to private property owners for energy-efficient and water conservation building improvements. This financing is provided at below-commercial rates and is not considered debt for the property owner. Instead, it is financed through the City and repaid via a special property tax levy.

To participate in the program, property owners apply, complete an energy assessment, and enter into an agreement with the city. Once the improvements are finished, a special charge—covering the cost of the works, finance cost, and administration fee—is added to the property tax bill. The owner repays this charge over an agreed term of 5 to 20 years. The payment obligation is tied to the property, not the owner, and is secured by the city's priority lien status. As a program condition, property owners must agree not to apply for rent increases above the guideline set by the Residential Tenancies Act related to the funded improvements.

The maximum funding amount per property cannot exceed 10% of the property's Current Value Assessment (CVA), with a limit of \$2 million per building. While this tool has primarily enabled intermediate to light retrofits rather than deep ones, it has facilitated essential work on private sector apartment housing while maintaining affordability.

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RETROFIT ADVISORY GROUP

RECOMMENDATIONS

Canada has conducted a series of ground-breaking retrofit experiments coast to coast over the past decade, and it is now time to move beyond the demonstration stage and implement these measures at scale. These successes have been made possible through a combination of federal initiatives such as the National Housing Strategy, FCM, provincial and territorial programs, not-for-profit organizations, and foundations. Innovations by designers, trades, and manufacturers, and the leadership of individual housing providers who have taken the risk of embarking on ambitious housing renewal and decarbonization projects, have also contributed to these successes.

However, significant action is required to support sustained deep retrofit initiatives that also maintain affordability.

Critical to achieving large-scale deep retrofit is an effective, stable, and streamlined retrofit finance mechanism to address the capital gap that is the largest barrier to action today.

Germany's KfW Retrofit finance program has been a world leader, with a several decade-long track record demonstrating efficacy and impact. The Retrofit Advisory Group has identified the development of such a tool in the Canadian context as the key action to accelerate deep retrofit and one that will have an immediate and long-term impact.



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CORE RECOMMENDATION

Establish Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

The Retrofit Advisory Group considered tools to address a specific gap - enabling deep retrofit of privately-owned buildings while continuing to provide naturally occurring affordable housing. As the Greater Golden Mile is the focus of the ILEO initiative, it used it as a case study to ask:

“How might we design concrete and practical solutions that motivate private building owners in the Greater Golden Mile to meet future decarbonization regulations via deep retrofits in a manner that maintains housing security for tenants?”

This question explores transitioning from exclusively supporting non-profit to funding privately-owned buildings that must be retrofitted to meet Canada’s climate change commitments. The current state of retrofits in private buildings is either shallow retrofits that are funded by utility cost reductions and/or deeper retrofits that impact the affordability of units. The Advisory Group identified and evaluated tools that addressed the financial gap (between utility cost savings and the cost of a deep retrofit) to ensure continued affordability. Preserving these units as affordable is necessary to address the ongoing housing crisis. While preservation doesn’t negate the need for new housing supply, it is far more cost-effective to preserve and retrofit existing units than constructing new affordable homes to replace those lost to market pressure.

The primary challenge in achieving deep retrofit in Canada is the capital gap. The cost of a deep retrofit amortized monthly can range from \$500 to \$1,500 per unit over twenty years, depending on the required work, interest rates, amortization period, and expected rate of return. The higher range is anticipated in the worst-performing buildings.

AFFORDABILITY:

Canadians of modest incomes simply cannot afford to bear the cost of retrofit if they are passed on as rent increases. For low-income Canadians, these increases could represent 25% of total income or more. In Toronto, 49% of high rise renters (non-condo) are low income households (Toronto CMA, 2016 census.) Retrofits funded by rent increases are not tenable.

A RETROFIT FINANCE AND FUNDING FACILITY:

Government support can leverage private investment in achieving retrofit while maintaining housing affordability. This will enable a just transition in the building stock that secures healthy homes for lower-income Canadians while also decarbonizing and growing the economy.

Early successes in Canadian deep retrofit have been achieved through stacked financial tools supported by federal and provincial governments, targeting housing assets in the public or not-for-profit sectors. The core recommendation of the Advisory Group is to pilot a tool that directly addresses this capital gap through an aggregated loan and grant retrofit tool that, by targeting private assets, aims to attract and expand the impact of private capital while ensuring affordability is maintained.

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CORE RECOMMENDATION

Establish Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

An effective retrofit financial facility has the capacity to influence immediate impact and will pave the way for capacity-building and lead to future regulatory changes.

The primary considerations for our core recommendation, Retrofit Financial Tools, are:

- **Funding:** Tools must introduce a new pool of money tied to higher performance through deep retrofits.
- **Stackability:** Tools must be aligned with other programs to stack funding sources and be predictable and consistent.
- **Flexibility:** Tools must apply to various situations, ownership scenarios, and business models, and set the groundwork for the industry to self-sustain.
- **Affordability & Security:** Tools must enable social outcomes, including maintaining affordability and tenant security.

An effective, stable, and streamlined retrofit finance mechanism is critical to achieving large-scale deep retrofit to address the capital gap that is the largest barrier to action today. Germany's KfW Retrofit finance program has been a world leader, with a several decades track record demonstrating efficacy and impact.

The Retrofit Advisory Group has identified the development of such a tool in the Canadian context as the key action to accelerate deep retrofit, which will have an immediate and long-term impact.

A comprehensive combined retrofit remortgage tool and grant program that would offer better loan terms (interest and amortization) and grant amounts based on the level of energy and greenhouse gas reductions and depth of affordability. The more committed owners are to the outcomes, the better the incentives. For larger owners, affordability requirements could be viewed through a limited geographic area portfolio lens.

The financing organization and the granting organization (Foundation or Government Department) would work together to:

- **Enable all grant funding to be included in the underwriting of the project;**
- **Increase the total amount of funds available to owners to incentivize GHG reductions**
- **Reduce the administrative load to access available funding and undertake complex retrofit**
- **Require covenants to maintain existing affordability and housing security**
- **Attract broad participation.**
- **Incorporate funding for tenant engagement.**

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CORE RECOMMENDATION

Establish Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

Why these tools?

Each of these tools, on its own present strengths, enables retrofits. Taken together, they will close the capital gap, which is the primary barrier to retrofitting:

Retrofit Remortgage Tool Strengths

- Offer owners the opportunity to access some of the equity in their building at favourable rates, which is of particular benefit to owners who do not have other equity sources to fund a retrofit. Lowering the cost of financing reduces the burden on building NOI.
- Retrofits extend the life of the building and lower operational cost, which improves NOI and the value of the building, which can extend amortization periods, driving monthly savings that reduce reliance on rent uplift.
- This is a tool people are familiar with and is streamlined within standing refinancing cycles, which means additional loan applications (and administrative work) are not required.
- Ideal for assets at the point of remortgage, when owners are primed to make significant investments in a building.
- When the bank retains the senior secured position as the lender, the client benefits from lower rates due to the security of the building.

Photo courtesy of ERA Architects

Grant Strengths

- Simple for the funders to design and administer
- No requirement to hit profitability metrics
- Catalytic for additional debt financing
- Suitable across owner types
- Stacked with tax credits and favourable debt products
- Can have a sliding scale with larger grants given to those groups that have a larger capital gap to overcome



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CORE RECOMMENDATION

Establish Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

An opportunity for action

Implementing the core recommendation has the potential to:

- Test funding solutions for **maintaining the affordability** of existing stock;
- Test funding solutions for **deeply retrofitting MURBs** to meet GHG emission reduction targets and support climate resiliency;
- Test strategies to engage and focus on **improved tenant experiences** during and after retrofits
- Collect data and evidence to **enable the retrofit ecosystem**.

Building pilots to test the tool would involve stakeholders committed to affordable housing, GHG reductions, climate, resiliency, and equity coming together to harness their strengths to build this comprehensive tool. Although it would take concerted collaboration, the potential benefits of such a solution would transform our housing and climate landscape, including:

- **Preservation** of naturally occurring affordable rental housing while transitioning them for a net zero future at a lower cost (~\$200,000/unit) compared to building new (~\$550,000/unit)
- Energy savings with the potential to **increase operational savings** for owners by 10-15% and reduce monthly expenses for tenants by ~\$60/unit
- **Substantially reduced GHG emissions** and movement towards GHG emission reduction targets
- **Improved community health** and climate resilience in the face of increasing climate events. For example, improvements to the building envelope and systems

will mitigate adverse health effects (including death) for vulnerable populations during heat waves and other shelter-in-place incidents

- **Building trust** in the process and value of deep retrofits through data collection and dissemination will encourage and enable future retrofit projects and **innovations in the housing system**.

Important design considerations

To maximize effectiveness and sustainability, the tool must:

- Consider the role of additionality: for a retrofit to be considered additional to what would have occurred in the absence of the tool, the possibility to receive the preferred terms and additional funding must be strong influencers in the decision to undertake the deep retrofit and maintain affordability
- Have a significant impact on the owner's business case
- Reduce administrative burden, stack easily with other funding sources, and be predictable and consistent
- Apply to a variety of business models and set the groundwork for a successful and scalable retrofit economy
- Consider all aspects of tenant security

Pilots should be targeted for outcomes, testing specific technical, financial and resident-focused milestones. A funded retrofit pipeline will create a market for industry innovation, create market confidence for performance regulation, reduce perceptions of risk for owners, and create both bottom-up and top-down demand by showing what good looks like.

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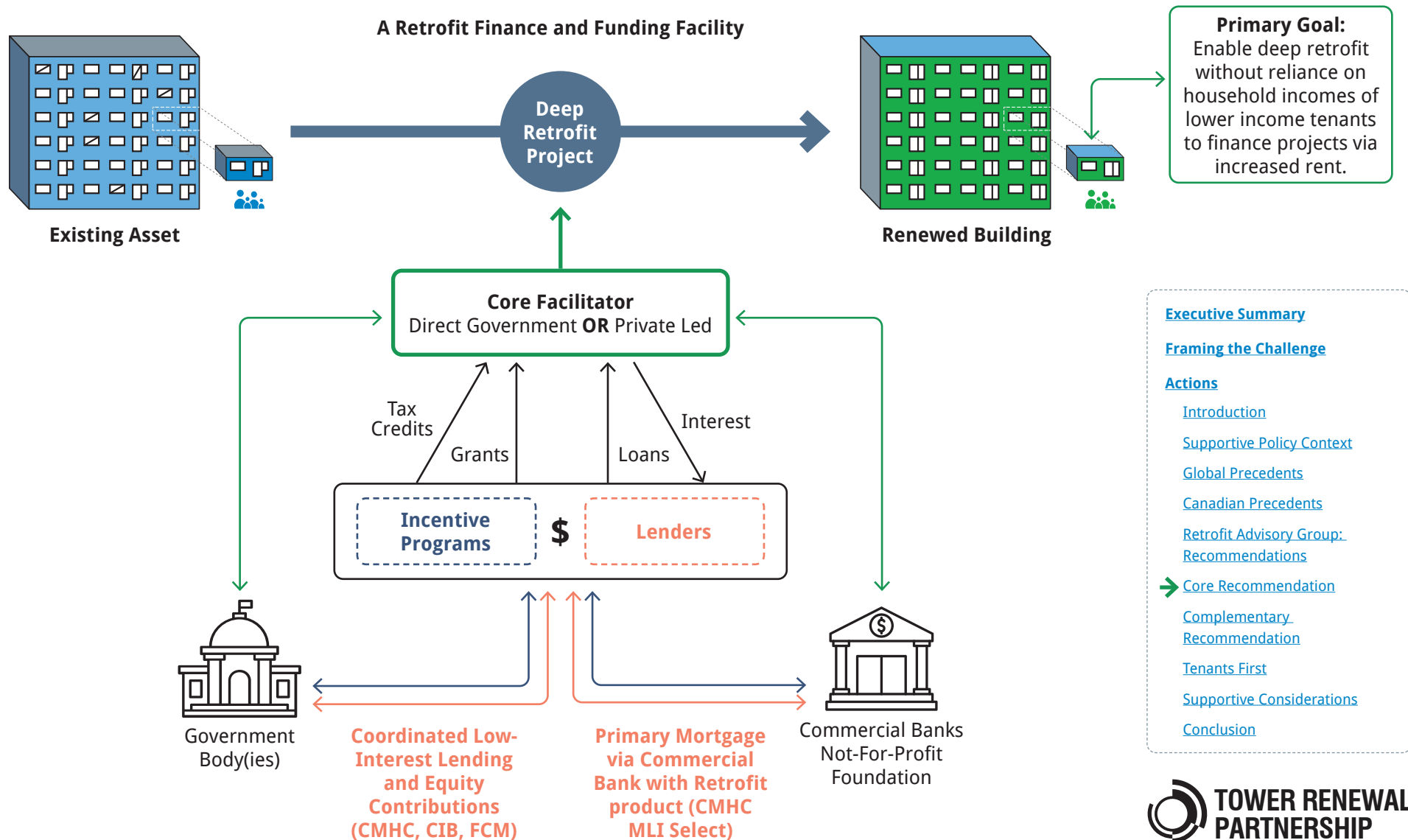
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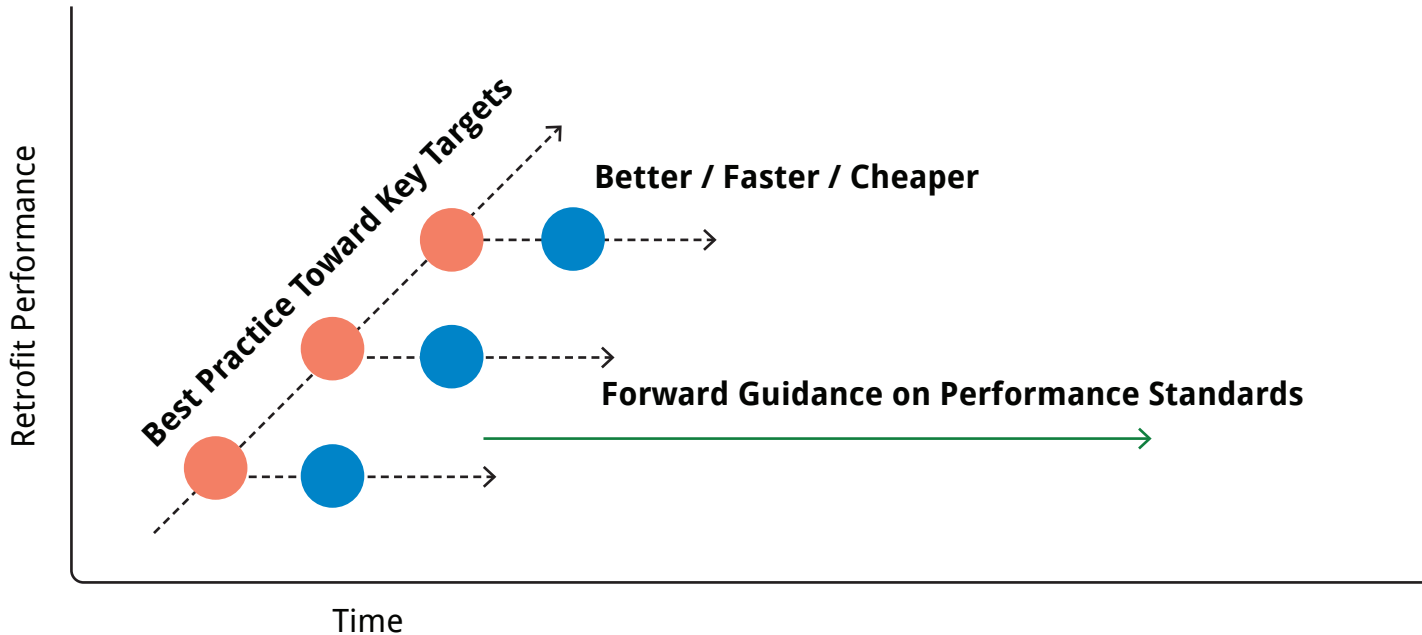
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CORE RECOMMENDATION

Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

Targeted Retrofit Pilot Strategy



A robust retrofit pipeline with clear performance targets will mobilize industry in both pushing performance best practice, and refining innovation to deliver retrofits that are better, faster and cheaper. This strategy of targeted outcomes within a 'market place' of solutions, will support both critical innovation and de-risking toward broad scaling.



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COMPLEMENTARY RECOMMENDATION

Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

In Summary, the Retrofit Advisory Group Recommends the following Core Action:

- **Comprehensive and Combined Retrofit Remortgage Tool and Grant Program:** Bundle existing retrofit funding and grant capacity into a single point of entry, combining the capacity of CMHC, the CIB, FCM, and Commercial Banks to streamline participation and provide sufficient support to close the financial gap in today's market conditions

The Retrofit Advisory Group also outlines the following complementary recommendations for the design of the tool::

- **Target the most challenging buildings and Incentivize Deep Retrofit Best Practice:** Tie project grant value to project performance to incentivize excellence toward meeting and surpassing Canada's 2030 & 2050 decarbonization goals
- **Attract Private Sector Leadership:** Broaden current retrofit program criteria to include privately-owned rental housing providers and incentivize their participation through direct financial support to kickstart private sector retrofits and leverage private sector investment
- **Preserve Affordability:** Ensure the rents of sitting tenants are safeguarded from the costs of retrofit and affordability plans. Consider the following actions:
 - Prohibit above-guideline rent increases
 - Sublease blocks of units to Not-for-Profit Operators to manage as below-market affordable homes
 - Transfer entire buildings to Not-for-Profit Operators to manage as below-market affordable housing
 - Require covenants that protect affordability at tenant turnover and ensure long term housing security.
- **Set Clear Targets:** Ensure projects are aligned with Canada's decarbonization targets and broader health, safety, and resilience goals
- **Design a Tenants First Approach:** Ensure projects anticipate the full costs of retrofit, including resident engagement, customer care activities during the retrofit, and post-construction training and commissioning to ensure long-term stewardship
- **Create Additional Financial Tools:** Create a national Low-Carbon Retrofit Tax Credit that is refundable and transferable for private and non-profit operators

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TENANTS FIRST

Affordability and Tenant Customer Care

Today, investments in privately owned legacy towers often evoke fear and suspicion among residents, who worry about rent increases or being forced to move out due to renovations. **To address these concerns, there needs to be a transition towards partnership, where residents can actively participate in the changes to their homes, be involved throughout the construction process, and truly benefit from the transformation without affecting affordability or tenure.** This begins with program designs that enable project capitalization while ensuring rental security for sitting tenants. Additionally, adopting a 'customer-first' approach to design and construction methods is essential.

Living through renovations can be challenging, especially considering the scale and duration of large-scale retrofit work. However, fostering innovation and partnerships among owners, constructors, and residents can lead to greater efficiencies and higher impacts as retrofits expand.

Photos courtesy of ERA Architects



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TENANTS FIRST

A Customer Care Approach

There is local and global excellence in engaging in deep retrofit with residents in place. Yet care and attention needs to be taken to ensure these practices are built into projects from day one. Below are some consideration:

- **Develop and implement a strong tenant engagement strategy** for the entire duration of the retrofit, from initial planning to post-commissioning. What is being contemplated and how will it improve homes? How is the project performing and can it be improved?
- **Ensure tenants are empowered and informed** with clear paths of communication from residents, to building manager, to constructor. Communication should be translated into commonly spoken languages (employ a tenant if possible) and include the following information:
 - Overview of the renovation, including timeline
 - Contact information of tenant liaison and/or social media site to air concerns/provide input
 - Requirements for tenants to prepare for the retrofit
 - Implications of construction process on health
 - Impacts on energy performance
- Co-benefits of the retrofit (affordability, health, aesthetics, thermal comfort)
- Information on how to use equipment post-retrofit
- **Assign a point person as the tenant liaison**, a member of the retrofit team that works directly with tenants and the construction team throughout the retrofit to keep tenants informed, sequence activities and timelines, and minimize impacts.
- **When tendering a retrofit project:**
 - Include minimize tenant disruption in terms of reference
 - Provide a clear codes of conduct from workers, including information on how these are enforced on site
 - Include a tenant liaison role in contractor requirements
 - Include residents in Contractor selection to evaluate their 'customer care approach'

For further ideas, see '[Tower Renewal: A Field Guide to Retrofits in Occupied Buildings](#)'.



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SUPPORTIVE CONSIDERATIONS

The Retrofit Advisory Group's primary recommended action is the establishment of a **Comprehensive and Combined Retrofit Remortgage Tool and Grant Program**, which is critical in providing a capital facility sufficient to motivate immediate action toward the deep retrofit of legacy housing and preservation of affordability. However, alongside the launch of this tool, a series of complementary actions related to retrofit standards, industry readiness, and cross-sector innovation is also recommended. Together, these actions will increase uptake, reduce risk, and be self-reinforcing, leading to the scaling required to meet housing needs, affordability and decarbonization objectives.

Complementary to Retrofit Advisory Group's financial tool recommendation, broader ecosystem recommendations include:

The following recommendations target federal leadership and action in strengthening the Retrofit Ecosystem in addition to Retrofit Finance:



1. Establish a national strategy: Develop a comprehensive and coordinated national strategy with clear GHG reduction and affordability targets, timelines, and funding mechanisms.

- Set annual retrofits targets scaling over time for all buildings, supported by targeted Acceleration Funding for aggregator and to support start-up work
- Establish a regulatory ecosystem for tenant protection



2. Strengthen regulatory frameworks: Strengthen building codes and regulations to require higher energy efficiency standards for existing buildings and establish mandatory energy audits and disclosure requirements.

- Develop federal model retrofit standards to outline a trajectory on future requirements to spur industry readiness, align with the insurance sector, and update provincial and territorial codes
- Require owners of MURB buildings to benchmark and implement 'decarbonization' plans to meet 2050 targets, encouraging phased but 'stackable' retrofits

An Ecosystem Approach

The success of the European Union's efforts toward deep retrofit comes from an integrated approach involving industry: design, technology and trades; building regulations; and substantial public investments motivating both public and private action to reach ambitious targets both in terms of energy performance and volume of homes retrofitted. As a result, the average operational carbon intensity for buildings in Germany

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3. Provide technical support: Provide technical support to building owners and contractors to ensure effective and efficient retrofit projects.

- Establish demonstration and training centres to support education and trades training in partnership with trade schools, colleges and universities
- Guide owners with specialized retrofit service support from initial assessment through to implementation



4. Develop industry capacity: Build industry capacity with a focus on supply chain and trade expertise, creating jobs and building a retrofit economy.

- Propel industry through targeted research and development funding for products and assemblies required to fill identified market gaps



5. Foster innovation: Support research and development of innovative design, technological and process solutions to achieve deep retrofit targets through labs, industry partnerships, and targeted demonstrations.

- Establish design labs to develop integrated solutions partnered with industry to advance 21st-century retrofits

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6. Collaborate with stakeholders: Collaborate with building owners, tenants, contractors, designers, suppliers and community organizations to ensure that retrofit initiatives are tailored to meet the needs of different communities.

- Establish a cross-Canada retrofit forum to advise on targets and regulatory frameworks and identify local barriers and opportunities nationwide



7. Demonstrate Best Practice: Lead by example through immediate action in deep retrofit with early adopters, accelerating through a multi-year rollout.

- Prototype next generation retrofits & holistic site renewal tackling identified technical and supply chain gaps
- **“BETTER, FASTER AND CHEAPER”** Repeat proven solutions at scale targeting product and process innovation

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CONCLUSION

Conserving Affordable Legacy Housing

Strategies to retrofit our legacy apartment housing are critical in achieving Canada's housing affordability and decarbonization goals.

The backbone of rental housing in cities across Canada is legacy purpose-built rental apartment towers, the bulk of which were constructed in the 1960s and 1970s. These apartments are home to hundreds of thousands of Canadians with lower and moderate incomes. They resulted from targeted public policy, government incentives, and private initiatives that led to a massive investment in rental homes from the 1960s through the mid-1980s. A similar public-private partnership can be established to renew and preserve these homes for current and future generations.

This housing is currently at risk of aging into disrepair and of becoming unaffordable to current and future tenants as housing demand pressures dramatically raise rents. While the supply of new affordable and moderately priced rental housing is crucial in meeting Canada's housing needs, retaining the stock we have is similarly imperative.

A lack of action leading to a sustained net loss of affordable units will destabilize both the housing system and urban economy. It will remove housing options for key workers, lead to homelessness for those of low income, and hinder the ability of newcomers and younger generations to establish themselves, and ultimately invest.

Supporting the current legacy rental stock is significantly more economically efficient than replacing these same units through new affordable housing development. Roughly, a deep retrofit costs \$200,000 per unit compared to \$550,000 per unit for new rental replacement at current construction values. **Preservation Is Supply.**

The Retrofit Advisory Group's Call to Critical Action: A Comprehensive and Combined Retrofit Remortgage Tool and Grant Program

The retrofit of our legacy apartment housing can reposition at-risk housing assets as key housing infrastructure for the 21st century and beyond. Those of modest incomes who call these apartments their homes cannot bear the cost of engaging in holistic retrofits. Alignments and support through government action can unlock investment and make deep retrofit more accessible to all.

Global progress in deep retrofit has relied on an effective, stable, and streamlined government-backed retrofit finance mechanisms to address the capital gap that is today's large barrier to action. The Retrofit Advisory Group identified implementing this tool in the Canadian context as the key action to accelerate deep retrofit that will have an immediate and long-term impact.

The Retrofit Advisory Group recommends a **Comprehensive and Combined Retrofit Remortgage Tool and Grant Program** be created that bundles existing retrofit funding and grant capacity into a single point of entry. It would combine the capacity of CMHC, CIB, FCM, and Commercial Banks to streamline participation and provide sufficient support to close the financial gap in today's market conditions.

The **Comprehensive and Combined Retrofit Remortgage Tool and Grant Program** will be targeted for outcomes and enable focused pilots across Canada that test specific technical, financial and resident-focused milestones. A funded retrofit pipeline will inspire industry innovation, create market confidence for performance regulation, reduce perceptions of risk for owners, and create both bottom-up and top-down demand by showing what good looks like.

Public-private partnerships can leverage private investment to achieve retrofit while maintaining housing affordability, enabling a just transition in the building stock that secures healthy homes for lower-income Canadians while decarbonizing and growing the economy.

Canada has conducted a series of ground-breaking retrofit experiments nationwide over the past decade, demonstrating technical capacity and political leadership for decarbonization and affordable housing preservation. As the housing and climate crisis continues to deepen, there is an urgent need to build on these successes and scale up efforts to achieve Canada's housing and climate goals. The time for action is now.

APPENDIX A

RECOMMENDATIONS LONGLIST

SUMMARY OF RECOMMENDATIONS BY STAKEHOLDER – ILEO RETROFIT ADVISORY GROUP

The ILEO Retrofit Advisory Process has led to a key action: Developing a Combined Retrofit Remortgage Tool and Grant Program to directly fund deep retrofit projects and stabilize housing affordability, specifically by avoiding dependency on tenant rent increases.

The Primer report recommends: Establishing a comprehensive program and testing its effectiveness through immediate financial pilots.

Furthermore, the Retrofit Advisory has proposed these additional recommendations to support the broader retrofit ecosystem, grouped by key organization:

Federal Government, Crown Corporations, and Federal Agencies	POLICY AND PROGRAMS • Set a National Retrofit Strategy, and ramping annual targets to meet 2030 and 2050 decarbonization goals, and 2030+ housing security goals; • Support targeted pilots that advance Canadian retrofit capabilities; • Collaborate with Provinces and Territories to development retrofit tax credit • Develop the Combined Retrofit Remortgage Tool and Grant Program (The Retrofit Advisory Group Core recommendation)
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	Additionally: CMHC: With its target of repair and renewal of 240,000 units across the country, CMHC has a unique opportunity to facilitate communication, provide supports for early adopters, and assist owners undertaking retrofits through guidance, review, and data-collection. • Communicate growth areas by quantifying the size of the low carbon market and by working with Provinces and Territories to attract labour market toward the skilled trades. • Enable Not-for-Profits (NFPs) to purchase housing assets via an acquisition program (funds to NFP, tax credits to owner). NFPs will then have access to NFP-specific funding to do retrofits. • Support and develop demonstration centres for proof-of-concept, product testing and cross-industry education and training. • Provide financial project support to encourage early adopter demonstrations that tackle identified market gaps with potential to scale; • Provide guidance documents and other knowledge dissemination to owners undertaking retrofits with residents in place; • Build requirements for tenant engagement and mitigation of disruption to sitting tenants into retrofit program eligibility criteria, and assign budgets to these activities; • Enhance existing retrofit programs to remove barriers to uptake as well as encourage more holistic projects, incorporating GHG emission reduction targets towards Net Zero Carbon, resilience and wellbeing improvements, and accessibility upgrades retooled to mitigate negative impacts on sitting tenants; • Provide clear technical and best practice guidelines for retrofits for owners, contractors, and design professionals, including guidance on phased retrofit approaches to avoid ‘locking in’ carbon; • Support cross-Canada high-performance building forums and networks whose mandate is to: compile evidence base for early-adopter outcomes through central database; advise on targets and incentive/regulatory frameworks to meet targets; identify barriers and opportunities nation-wide; • Provide publicly-funded design assist and review services for complex retrofits; • Incentivize early adoption country-wide by requiring publicly-owned asset retrofits to meet the highest targets; • Require owners of rental MURB buildings to develop ‘decarbonization’ plans to meet 2030/2050 targets, encouraging stepped but ‘stackable’ retrofits.
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INNOVATION, SCIENCE AND ECONOMIC DEVELOPMENT CANADA, NATURAL RESOURCE CANADA (NRCAN) AND NATIONAL RESEARCH COUNCIL (NRC):

These ministries and agencies have an opportunity to catalyze tremendous economic growth through the decarbonization of the building sector, stimulating labour markets, international trade, and supporting the growth of robust Canadian knowledge networks.

- Encourage Canadian manufacturers to compete to address enhanced performance goals through new product development (ie: higher performance windows; low-cost cladding assemblies; balcony enclosure window systems);
- Streamline process and provide funding to support the certification of international off-the- shelf retrofit solutions (ventilation solutions for retrofit; retrofit-ready ductwork etc);
- Encourage technical partnerships between proven international manufacturers and capable Canadian partners to fill product gaps (external roller blinds; trickle vents; structural thermal breaks);
- Provide targeted research and development funding for products and assemblies required to fill market gaps;
- Establish centralized repository of product and technology gaps, and establish concierge service at federal level to streamline CSA testing and certification for international manufacturers ready to fill those gap areas; and support for international-Canadian manufacturing partnerships;
- Support and develop demonstration centres for proof-of-concept, product testing and cross-industry education and training.
- Provide specialized training and certification for retrofit and high-performance builders to allow them to distinguish themselves in the market;
- Support colleges and universities to develop high-performance building labs that offer ongoing training for tradespeople, architects and engineers;

	• Communicate growth areas by quantifying the size of the low carbon market and by working with Provinces and Territories to attract labour market toward the skilled trades. • Provide clear technical and best practice guidelines for retrofits for owners, contractors, and design professionals, including guidance on phased retrofit approaches to avoid 'locking in' carbon; • Support cross-Canada high-performance building forums and networks whose mandate is to: compile evidence base for early-adopter outcomes through central database; advise on targets and incentive/regulatory frameworks to meet targets; identify barriers and opportunities nation-wide; • Create demonstration centres as knowledge-dissemination hubs for information, training, product and methodology showrooms, and other supports for high-performance new-builds and retrofits. NRCAN, NRC AND THE CANADIAN COMMISSION ON BUILDING AND FIRE CODES: These agencies and ministries have an opportunity to catalyze industry shifts through introduction of model national step codes and overseeing their implementation throughout the country. • Support direct retrofit grant programs, that • Ensure that incentives to support retrofits are stackable with other tools, easy to access, provide greater incentives for deeper retrofits, and consider social impact metrics, affordability, and tenant security. • Incorporate grant dollars within pro forma/underwriting processes. • Ensure that grants cover pre-development costs, base state of repair, and tenant engagement strategies. • Encourage applicants for financial assistance to take a portfolio approach. • Support cross-Canada high-performance building forums and networks whose mandate is to: compile evidence base for early-adopter outcomes through central database; advise on targets and incentive/regulatory frameworks to meet targets; identify barriers and opportunities nation-wide; • Create demonstration centres as knowledge-dissemination hubs for information, • training, product and methodology showrooms, and other supports for high-performance new-builds and retrofits; • Develop a federal model step code, like those implemented in Germany and British Columbia, providing a trajectory and guidance on future code requirements to spur industry readiness, and work with Provinces and Territories to plan for their adoption; • Disseminate knowledge and require training to encourage step code readiness, allowing industry to up-skill and decision-makers to plan on that basis.
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Provinces/Territories	POLICY AND PROGRAMS • Collaborate with the Federal Government to enact retrofit tax credits • Support retrofit industry develop through targeting education and training at colleges and universities, including the development of specific retrofit certified trades; • When a building that needs to be retrofitted is (or is about to be) on the market, enable NFPs to purchase via an acquisition program (funds to NFP, tax credits to owner). NFPs will then have access to NFP specific funding to do retrofits. • Enable alternative capital to support deep retrofits from public health funds, recognizing the health benefits associated with deep retrofits particularly in terms of thermal comfort, air quality, and noise control. • Provide support for district energy centres to reduce the costs of emissions reductions to individual owners via economies of scale. • Increase funding available for direct grants and/or low-interest financing, and adhere to tool recommendations, such as: • Ensure that incentives to support retrofits are stackable with other tools, easy to access, provide greater incentives for deeper retrofits, and consider social impact metrics, affordability, and tenant security. • Ensure that grants cover pre-development costs, base state of repair, and tenant engagement strategies. • Encourage applicants for financial assistance to take a portfolio approach. ENABLING READINESS FOR A REGULATED ENVIRONMENT • Provide support with energy benchmarking to take stock of building components and systems, assess condition, and recommend energy conservation measures. • Embed retrofit pathways and decarbonisation guidance in the future updates to the Ontario Building Code; • Elevate information about incentives and cost/benefits of retrofit, as well as providing technical support like roadmaps with technology-specific archetypes with expected savings, cost, and return on investment. Create and/or mobilize educational materials for different audiences. • Collect and disseminate retrofit project results using consistent metrics. • Develop a comprehensive framework to support deep retrofits that maintain tenant security via a variety of regulatory mechanisms such as energy disclosure, low-income energy programming, energy benchmarking, and rental law.
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Municipalities	POLICY AND PROGRAMS • Embed preservation of rental housing stock and housing renewal into official plans, secondary plans and zoning by-laws to prevent stock erosions. • Embed retrofit and affordability planning when undergoing significant community/neighbourhood (re)development, such as when planning for transit-oriented development; • Employ intensification allowances in conjunction with deep retrofits. In doing so, set up carbon budgeting such should a developer wish to add infill, they may need to retrofit existing buildings/units to keep within their carbon budget. • Enhance municipal licensing and standards bodies to evaluate building resilience, health and carbon impacts of aging buildings; • When a building that needs to be retrofitted is (or is about to be) on the market, enable Not for Profits (NFPs)NFPs to purchase via an acquisition program (funds to NFP, tax credits to owner). NFPs will then have access to NFP specific funding to do retrofit. • Provide support for district energy centres to reduce the costs of emissions reductions to individual owners via economies of scale. • Create a local market that monetizes the tax or carbon credits in a manner that allows owners/buildings to trade both affordability and credits amongst themselves • Increase funding available for direct grants and/or low-interest financing, and adhere to tool recommendations, such as: • Ensure that incentives to support retrofits are stackable with other tools, easy to access, provide greater incentives for deeper retrofits, and consider social impact metrics, affordability, and tenant security. • Ensure that grants cover pre-development costs, base state of repair, and tenant engagement strategies. • Encourage applicants for financial assistance to take a portfolio approach. • Enabling readiness for a regulated environment • Set greenhouse gas and energy regulations related to meeting 2030 and 2050 decarbonization goals with clear information symmetry and dissemination regarding penalties for non-compliance in terms of both energy performance and reporting processes; • Require owners of rental MURB buildings to develop ‘decarbonization’ plans to meet 2030/2050 targets, encouraging stepped but ‘stackable’ retrofits. • Provide support with energy benchmarking to take stock of building components and systems, assess condition, and recommend energy conservation measures. • Develop retrofit best practice guidelines and train building code reviewers and site inspectors;
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	• Elevate information about incentives and cost/benefits of retrofit, as well as providing technical support like roadmaps with technology-specific archetypes with expected savings, cost, and return on investment. Create and/or mobilize educational materials for different audiences. • Collect and disseminate retrofit project results using consistent metrics. • Develop a comprehensive framework to support deep retrofits that maintain tenant security via a variety of regulatory mechanisms such as energy disclosure, low-income energy programming, energy benchmarking, and rental law. • Target early adopters for a deep retrofit program by approaching action ready NFPs; owners with ESG targets and deep roots in the community who are already planning on spending money on other upgrades and connect with architecture and engineering firms, market development teams, concierges, and aggregators who have connections to owners in place and can influence deeper retrofits. • Act as aggregator.
Utility Companies	• Enable on-bill financing to enable owners to fund retrofits via utility savings. • Consider providing grants for design and enabling works • Increase funding available for direct grants and/or low-interest financing, and adhere to tool recommendations, such as: • Ensure that incentives to support retrofits are stackable with other tools, easy to access, provide greater incentives for deeper retrofits, and consider social impact metrics, affordability, and tenant security. • Ensure that grants cover pre-development costs, base state of repair, and tenant engagement strategies. • Encourage applicants for financial assistance to take a portfolio approach. • Act as aggregator.
Financial Institutions	• Collaborate with the Federal Government on a Retrofit Remortgage product; the commercial lender may do the initial screening and underwriting and then go to the government for loan financing/grant contribution. • Incorporate grant dollars within pro forma/underwriting processes. • Enable incremental payments from energy savings to installation and/or construction, allowing for distribution of risk. • Consider either supporting aggregation to access reduced rates at your institution or acting as an aggregator to access these rates from another institution.
Insurers	• Recognize the beneficial insurance implications of deep retrofits on risk and reflect implications in premium pricing.

Foundations & Impact Investors	• Provide alternative capital either to directly support deep retrofit projects, and/or towards supporting aggregation, market development, and/or the concierge approach. • Create a revolving pool of capital to lubricate the market to get to aggregation.
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APPENDIX B

FULL ADVISORY GROUP PRIMER PRESENTATION

ILEO RETROFIT ADVISORY GROUP BACKGROUND AND PRIMER DOCUMENT

JUNE 13, 2023

ILEO RETROFIT ADVISORY GROUP

The ILEO United Way team and CMHC are convening the Advisory Group to advise on the challenge statement:

“How might we design concrete and practical solutions that motivate private building owners to meet future decarbonization regulations via deep retrofits in a manner that maintains housing security for tenants?”

This project will consider the parameters to enable investments required to existing private housing to make this transition. There are many not-for-profit examples of deep retrofits that address capital repairs needs, reductions to operational greenhouse gas production and maintain housing affordability that were completed with public funds. We are probing how to make this possible with privately-owned buildings, notably the types of partnerships and ecosystem development with multiple public and private entities.

CONTEXT

For millions on Canadians, older apartment housing is home. Built in the apartment boom of the 1960s and 70s, and supported through public finance and planning regimes, this 'legacy' housing was built with the aim of providing decent and more affordable homes for a booming country, and in so doing largely solved the housing supply crunch of the 1940s and 50s, which is similar to the one in which we find ourselves today.

This housing inheritance has been the backbone of the rental housing system ever since and represents the vast majority of purpose built rental housing found in our cities today.

In some regions this housing is deeply affordable, with legacy private apartment rental buildings providing rents well below regional median or average levels. This is the case in the Greater Golden Mile, home of some of the Toronto region's more affordable rental housing, much of it private.

IT IS AFFORDABLE.

IT IS AGING.

IT IS UNDER THREAT.

IT CAN BE TRANSFORMED.

For additional information, please click links below

[CMHC'S 2030 GOAL - THAT ALL CANADIANS HAVE A HOME THEY CAN AFFORD BY 2030](#)
[A POLICY PRIMER RELATED TO SCALING APARTMENT RETROFIT](#)

CANADIAN HOUSEHOLDS LIVING IN HIGHRISE BUILDINGS (FIVE STOREYS AND HIGHER)

By Period of Construction, 2016

Legend:

- 1980-1989
- 1990-1999
- 2000-2009
- 2010-2015

Map Data:

Province	1980-1989	1990-1999	2000-2009	2010-2015
Alberta	1,400	1,400	1,400	1,400
Saskatchewan	1,400	1,400	1,400	1,400
Manitoba	1,400	1,400	1,400	1,400
Ontario	1,400	1,400	1,400	1,400
Quebec	1,400	1,400	1,400	1,400
Atlantic	1,400	1,400	1,400	1,400

Summary:

Period	Count	Percentage
1980-1989	37,610	03%
1990-1999	739,490	55%
2000-2009	335,970	24%
2010-2015	276,075	20%

Ontario Data:

Period	Count	Percentage
1980-1989	886,706	55%
1990-1999	197,800	56%
2000-2009	177,830	56%

Tower Renewal Partnership Slide, 2022



CONTEXT

AFFORDABILITY THE GREATER GOLDEN MILE (GGM)

The market context of the GGM positions it as one of the lowest market zones in the GTA, with median rents providing a high degree of affordability as compared to the Toronto average.

The City of Toronto's 80MMR for a 1 bedroom apartment (\$1,168) a rent level greater than East Scarborough's 100MMR (\$1,028)

Therefore, within the GGM, private accommodation is providing de-facto affordable housing.

This projects aims to explore means to reinvest in this housing, while stabilizing and safeguarding these affordable rents, and prioritizing the needs of residents.

Today, legacy rental buildings provide deep affordability and critical housing to lower income Canadians; however affordability due to temporary market conditions is not stable.

Tower Renewal Partnership Slide, 2022

Central Toronto (100MMR)
Central Toronto (80MMR)
Scarborough East (100MMR)
Scarborough East (80MMR)

Bachelor	1 Bedroom	2 Bedroom
1,152.00	1,460.00	1,877.00
921.6	1168	1501.6
840.00	1,028.00	1,150.00
672	822.4	920

GOALS

Private Partners in Affordable Housing Retrofit

The core question for this project is:

"How might we design concrete and practical solutions that motivate private building owners to meet future decarbonization regulations via deep retrofits in a manner that maintains housing security for tenants?"

GOALS

This project will examine the paradox of directing substantial investment toward private sector housing assets, with the aim of stabilizing rents and maintaining affordable housing. Primarily a financial discussion, the project will ask:

- 1. What objectives must be achieved to justify direct public financial support to private rental housing?**
- 2. How can risks be shared and appropriate incentives be developed to enable the private sector to work with different entities within the public sector?**
- 3. What are the roles and responsibilities of each stakeholder? What minimum vested interests must be met for participation?**

And Critically:

- 1. What short term actions can be taken to pilot housing transformation in the GGM?;**
- 2. Which longer term systemic actions are required to scale and deepen investments broadly?**

For additional information, please click links below

[FOR FURTHER REFERENCE, SEE UNITED WAY REPORT: VERTICAL LEGACY](#)

GOALS



Legacy apartment housing is aging and most buildings systems are at their end of life. The most distressed assets require significant investment for base repair and to meet 21st century expectations of health, comfort and climate resilience.

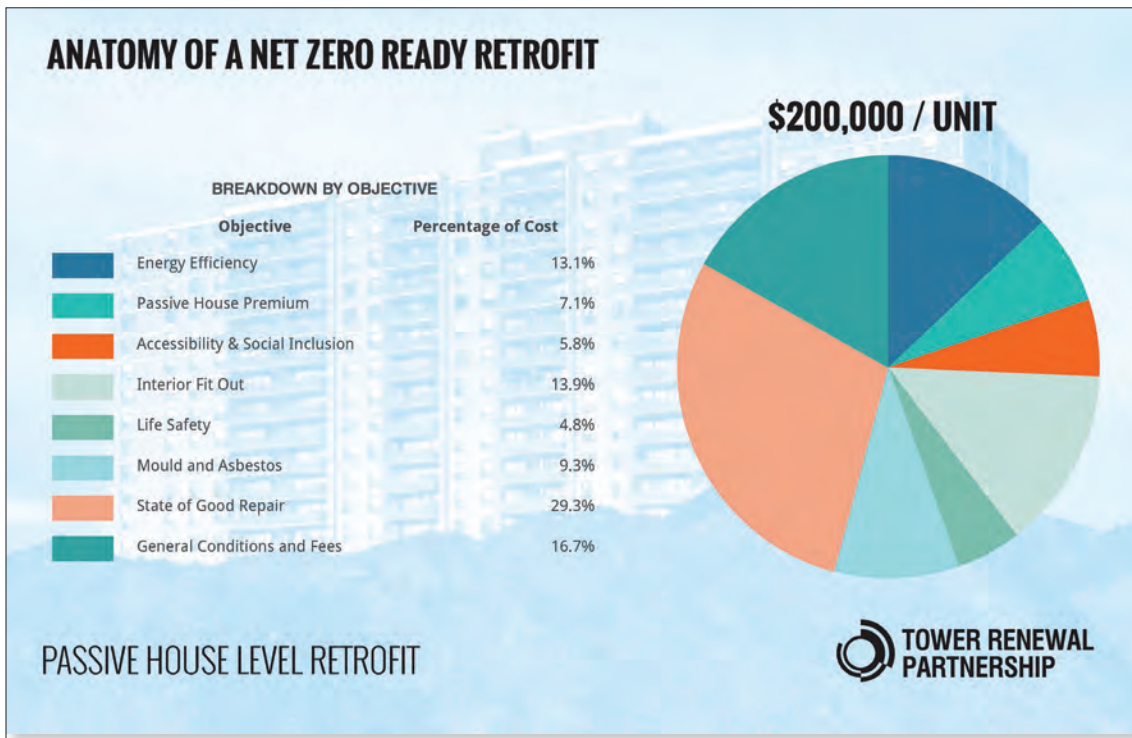
Tower Renewal Partnership Slide, 2022

GOALS



Distressed asset transformation is the primary focus of this project. For the purpose of solutions modelling costs for housing transformation, inclusive of full asset renewal and resilient retrofit is pegged at \$200,000 per unit, derived from aggregated data of real world retrofits.

Tower Renewal Partnership Slide, 2022





CHANGING CONTEXT

Future Code Readiness

CHANGING CONTEXT

This project will pilot the transition for older apartment homes to meet future codes. Decarbonization mandates towards a 2050 Net Zero economy will place pressure on multiple levels of authorities to mandate performance through codes, insurance premiums, disclosure at sale and other compulsory requirements. The next two decades will see a strong push to decarbonize, from voluntary to mandatory.

Similarly, recent events such as COVID-19, the Grenfell Tragedy, a growing number of overheating deaths, and catastrophic system failures in older housing assets have placed a broad awareness on the critical need for improvements to the health, safety, comfort and resilience of our aging housing stock.

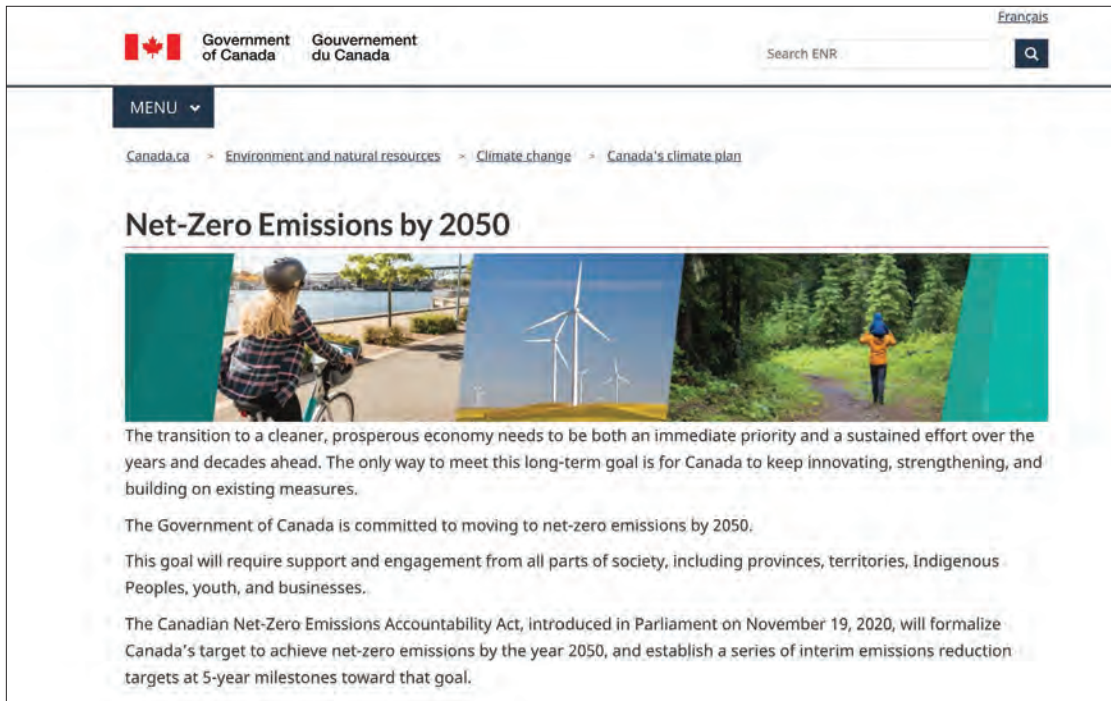
This project will consider what is required to enable investments to existing housing to make this transition, and what private and public partnerships may be required for this to be achieved in the short and long term.

The \$200,000 per unit figure has been chosen as a placeholder to represent a realistic and fulsome value for the purpose of analyzing financial models and discussion within this project. It is inclusive of both performance upgrades and typical life-cycle repairs for a building of this age. The unique site conditions, state-of-repair, design and building systems will require nuanced review and will have an impact on this figure.

For additional information, please click links below

[SEE MORE AT THE CITY OF TORONTO'S NET ZERO EXISTING BUILDING STRATEGY](#)

CHANGING CONTEXT



Targets to achieve a net zero housing stock and broader economy by 2050, coupled with efforts to achieve broad affordability in the housing system by 2030, underpin our challenge in designing a framework for the private investment in affordable housing renewal.

Tower Renewal Partnership Slide, 2022



National Housing Day Message from CMHC 2020

"Access to safe, stable and affordable housing underpins social inclusivity and is essential to our sustained economic growth and competitiveness."





ACHIEVED OUTCOMES

ACHIEVED OUTCOMES

We are past the pilot stage.

Deep retrofits have been achieved throughout Canada, largely in the non-profit sector. These projects have been largely enabled through public programs – such as the National Housing Strategy’s Repair and Renewal Funds, and the Federation of Canadian Municipality (FCM)’s Sustainable Affordable Housing Fund, and comparable provincial initiatives. These projects have targeted distressed housing assets and enabled their transformation as model resilient, sustainable, healthy, and affordable housing, that is able to address 21st century challenges.

These projects offer lessons related to scope, technical solutions, finance structures, and resident satisfaction. This project will use these achieved outcomes to frame a model retrofit from which to test solutions viable for private sector assets.



Tower Renewal Partnership Slide, 2022

For additional information, please click links below

[A DETAILED CASE STUDY OF THE KEN SOBLE TOWER CAN BE FOUND HERE](#)

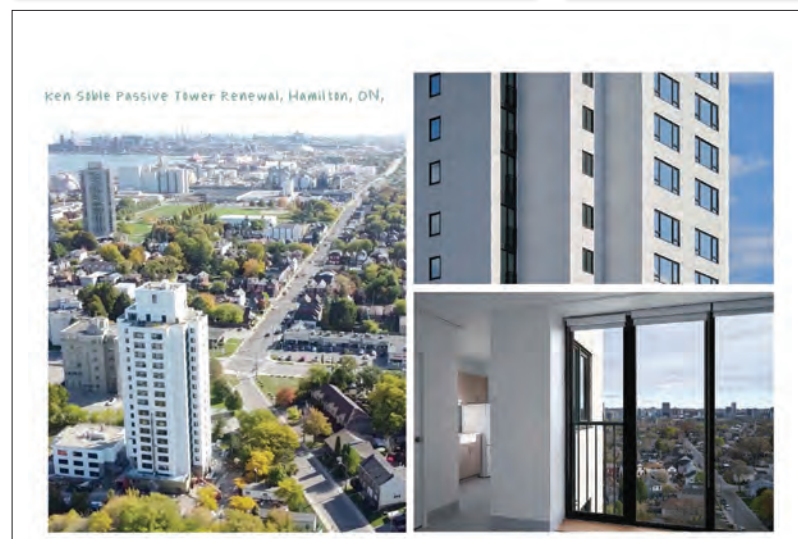
ACHIEVED OUTCOMES

Landmark not-for-profit deep retrofit projects have been enabled through federal, provincial and local investments and showcase what is possible today:

Tower Renewal Partnership Slide, 2022

SELECTED DEEP RETROFIT PROJECTS:

- Ken Soble Tower, world's largest residential passive house retrofit, Hamilton ON, CityHousing Hamilton ([Link here to learn more](#))
- Toronto Community Housing, broad implementation at scale of deep retrofits through a fully funded 10-year capital plan ([Link here to learn more](#)) and more information on an example project ([Link here to learn more](#))
- Windsor-Essex Community Housing, retrofits to 4700 units with residents in place are underway across multiple buildings ([Link here to learn more](#))
- BC Housing's Grandview Terrace, a deep retrofit completed with a resident's first mandate ([Link here to learn more](#))



THE CO-BENEFITS

THE CO-BENEFITS

Health, Climate, Equity:

Legacy housing stock is often affordable due to lack of desirability such as location, upkeep or quality of home. This need not be the case.

The pandemic and climate change have changed our expectations of housing. High quality ventilation systems are no longer a 'nice to have'. With more extreme climate events, there is renewed focus on cooling to address extreme heat periods, and back-up systems to guard against winter storm black outs. The reliance on burning natural gas and the production of massive amounts of Greenhouse Gases (GHG) emissions through building operation are no longer perceived as acceptable. Safety, comfort and climate resilience are core expectations.

Housing retrofits will not only sustain legacy housing, but ensure that those residing in them thrive in the face of 21st century challenges. Building from solid foundations, housing transformation can improve health outcomes, reduce greenhouse gas emissions, guard against catastrophic climate events, and continue to provide housing stability for the hundreds of thousands of households who call these buildings home.

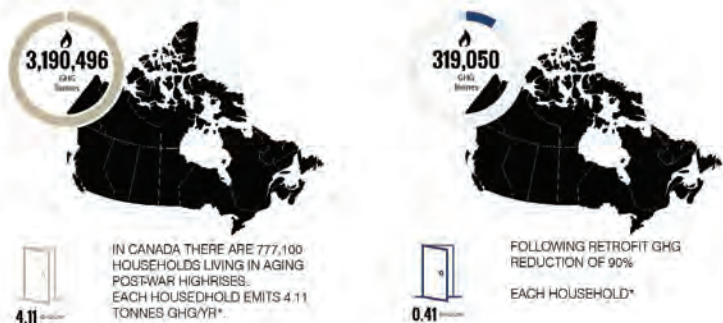
Enabling deep retrofit to reposition distressed assets as 21st century housing while maintaining housing stability is the core premise of this project.

For additional information, please click links below

[A primer related to new goals for healthy and sustainable housing can be found here.](#)

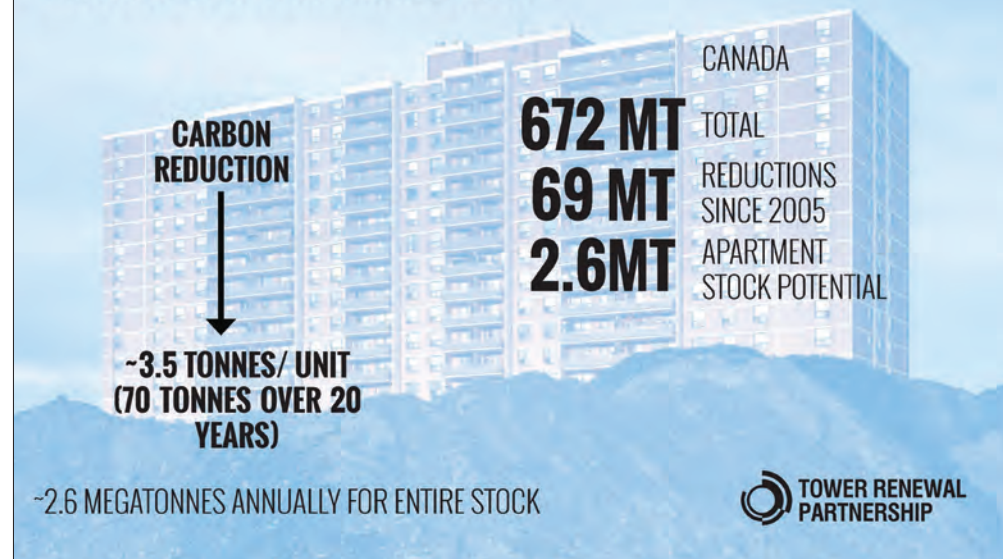
THE CO-BENEFITS

NATIONAL IMPACT



The operation of legacy apartment housing is highly carbon intensive and relies on burning natural gas for heating and domestic hot water. As a result, the average legacy housing building requires as much as 300 kWh/m² of energy and produced more than 4 tonnes of GHG per unit per year. Through retrofit, this can be reduced to below 100 kWh/m² and less than 1 tonne per unit per year.

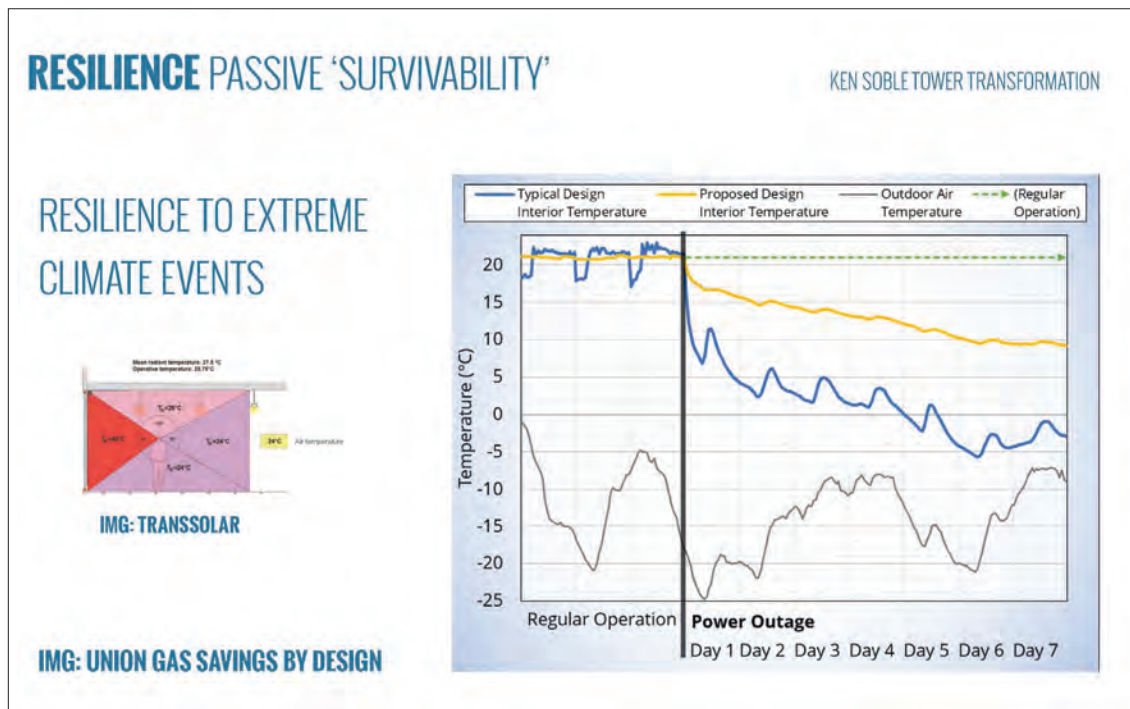
ANATOMY OF A NET ZERO READY RETROFIT



Tower Renewal Partnership Slide, 2022



THE CO-BENEFITS



Deep retrofit toward resilient housing will significantly improve day to day comfort and protect against climate shocks.

The chart to the left outlines how a high performance retrofit (yellow) retains indoor warmth during a winter power outage – staying above minimum habitable temperatures for four days. A code minimum building would lose heat within hours –a legacy apartment built to 1960s standards sooner still.

Project planning that is quality of life focused, with a comfort-first approach, can ensure healthy, safe and resilient housing with the critical co-benefit of significantly reduced carbon.

Tower Renewal Partnership Slide, 2022



THE CO-BENEFITS



Building retrofits can be accompanied by direct community investments. Examples in Toronto abound. Complementary mixed income developments can further enhance current sites where appropriate.

Tower Renewal Partnership Slide, 2022

EXAMPLES OF COMPLIMENTARY COMMUNITY INVESTMENTS:

- Toronto Community Housing Lawrence-Orton, addition of a daycare and upgrades to community facilities ([Link here to learn more](#))
- TCH and MLSE Gordonridge Multi-Sport Court ([Link here to learn more](#))
- East Scarborough Storefront ([Link here to learn more](#))



THE RESIDENT FIRST

THE RESIDENT FIRST

Today, investments in privately owned legacy towers are often met by many with fear and suspicion. Fear that rents will increase or works will force residents to move out. This state of fear needs to transition to partnership - how can residents be partners in how their homes will change, partners through construction, and true beneficiaries of the transformation process without an impact on affordability or tenure?

Public and private buildings have achieved remarkable retrofits with residents in place – in Canada and around the world. Living through renovations for anyone is a challenge, particularly at the scale and duration of large scale retrofit work. Innovation and partnership, between owners, constructors and residents will lead to efficiencies and higher impacts as retrofits scale.

One of the questions this projects asks is how to build a model where housing stability is secured for the long term and where retrofits do not mean displacement.

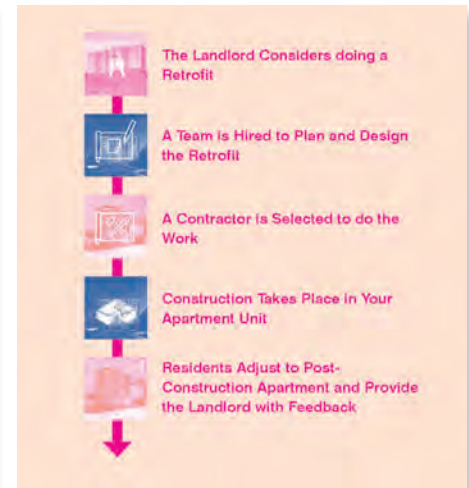
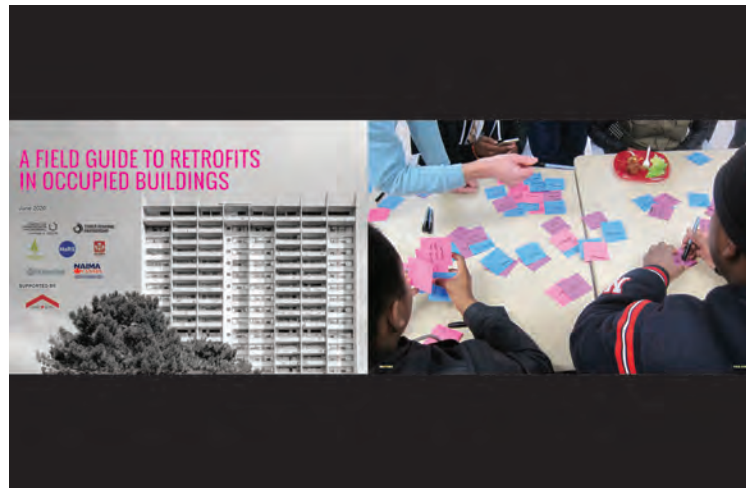
For additional information, please click links below
[A Field Guide for Retrofits with Residents in Place](#)



Living through construction is a challenge at the best of times. Designing a project plan that accounts for best outcomes with residents in place and as partners in the process is critical. There are opportunities for substantial industry innovation.

Tower Renewal Partnership Slide, 2022

THE RESIDENT FIRST



Worldwide, performing deep retrofits with residents in place is a growing area of specialized construction. This expertise is beginning to develop in Canada. Each party can play a role to ensure success – owners, designers, builders and residents. Residents should be involved in the contractor selection committee to evaluate the ‘customer care approach’ and be given tools to keep the construction team accountable. Likewise, ensuring trades are trained in retrofits with residents in place is a key strategy.

Tower Renewal Partnership Slide, 2022



THE DO NOTHING SCENARIO

THE DO NOTHING SCENARIO

A Net Loss of Affordable Housing

As growing regions place pressure on limited housing supply, the net number of private sector rental units that are today affordable will decrease due to rent up filtering at turnover. Concurrently, as buildings continue to age, units within the most distressed assets may go offline due to compounded repair backlogs. The result may be a significant net loss in affordable housing supply.

Substantial investments in new purpose-built affordable housing are required to keep pace with growing needs. If net loss of existing housing occurs unchecked, these housing investments will simply be used to replace the stock we already have rather than building net new.

If affordable homes are not replaced through new construction, and the pool of affordable homes diminishes, our regions will be impacted through a general loss of economic competitiveness; a reduced ability to attract newcomers; and critically through the crisis experienced by growing numbers of households experiencing acute housing precarity or homelessness. Our regions need more affordable homes - not less.

With direct development cost of new affordable housing as high as \$450,000+ per unit, in addition to land costs, and with comprehensive retrofit less than half this value, this project aims to test the efficiency and efficacy of sustaining regional housing stability through stabilizing existing affordable assets through public / private partnerships rather than either party bearing the full cost of replacement. The costs are simply too high.

For additional information, please click links below
[CMHC SUPPLY SHORTAGE PRIMER](#)

MATH SIDE BAR

(leave as a placeholder for now, we'll discuss at 2pm)

THE DO NOTHING SCENARIO



The most distressed legacy housing is at risk. The building failure at 650 Parliament Street in Toronto led to the displacement of nearly one-thousand residents for over a year. That was one building. What if two went off-line? What if ten did? The housing system cannot absorb this loss and adequately rehouse those displaced– investments to prevent such failures are critical.

Tower Renewal Partnership Slide, 2022

CASE STUDIES & MODEL DEVELOPMENT

CASE STUDIES & MODEL DEVELOPMENT

Transformative retrofit are underway across Canada, primarily in the not-for-profit sector. To establish a baseline, a model retrofit finance stack will be shared, providing framework from which to outline gaps, and innovate solutions.

Not-for-profit retrofits are generally designed to meet the parameters of key funders, such as CMHC, FCM, or provincial programs. They generally use the full capacity of Net Operating Income (NOI) at a 1:1 Debt Coverage Ratio (DCR); have access to long term, low interest financing; and are supported by performance-based grants providing as much as 30% direct equity to a project. Debt capacity is expanded through lowered operating expenses and marginal rent increases, though buildings achieve deep affordability for 70-80% of units. These buildings are not required to be financially performative, rather, they provide a stable balance sheet while supporting growing reserved funds.

Private sector buildings look quite different. NOI is retained or invested; building debt capacity is used to leverage other ventures, and rents are increased as the market, and policy, will bear.

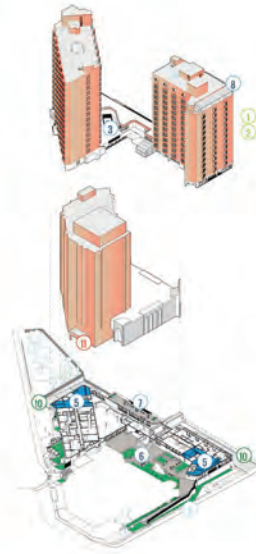
It is the aim of this project to flesh out a private sector retrofit; to uncover under what conditions private buildings will make substantives investments; and through which mechanisms of partnership the public sector might participate – to support both building performance and rent stability.

For additional information, please click links below

[A REPORT EXAMINING THE OPPORTUNITIES AND CHALLENGES OF PRIVATE SECTOR RETROFIT CAN BE FOUND HERE:](#)

CASE STUDIES & MODEL DEVELOPMENT

ST HILDA'S CAMPUS UPDATED



ENVELOPE

- ① New Windows
- ② Repair to Existing Masonry

AMENITIES SPACES

- ⑤ Modernization Lobbies
- ⑥ Updated Courtyard
- ⑦ Updated Share Space Terrace
- ⑧ Updated Roof Amenities

ACCESSIBILITY

- ⑨ Existing Ramp Update - Improve access to Courtyard and Dufferin Main Entrance

STATE OF REPAIR

- ⑩ Repair in Underground parking

FUTURE UPDATES

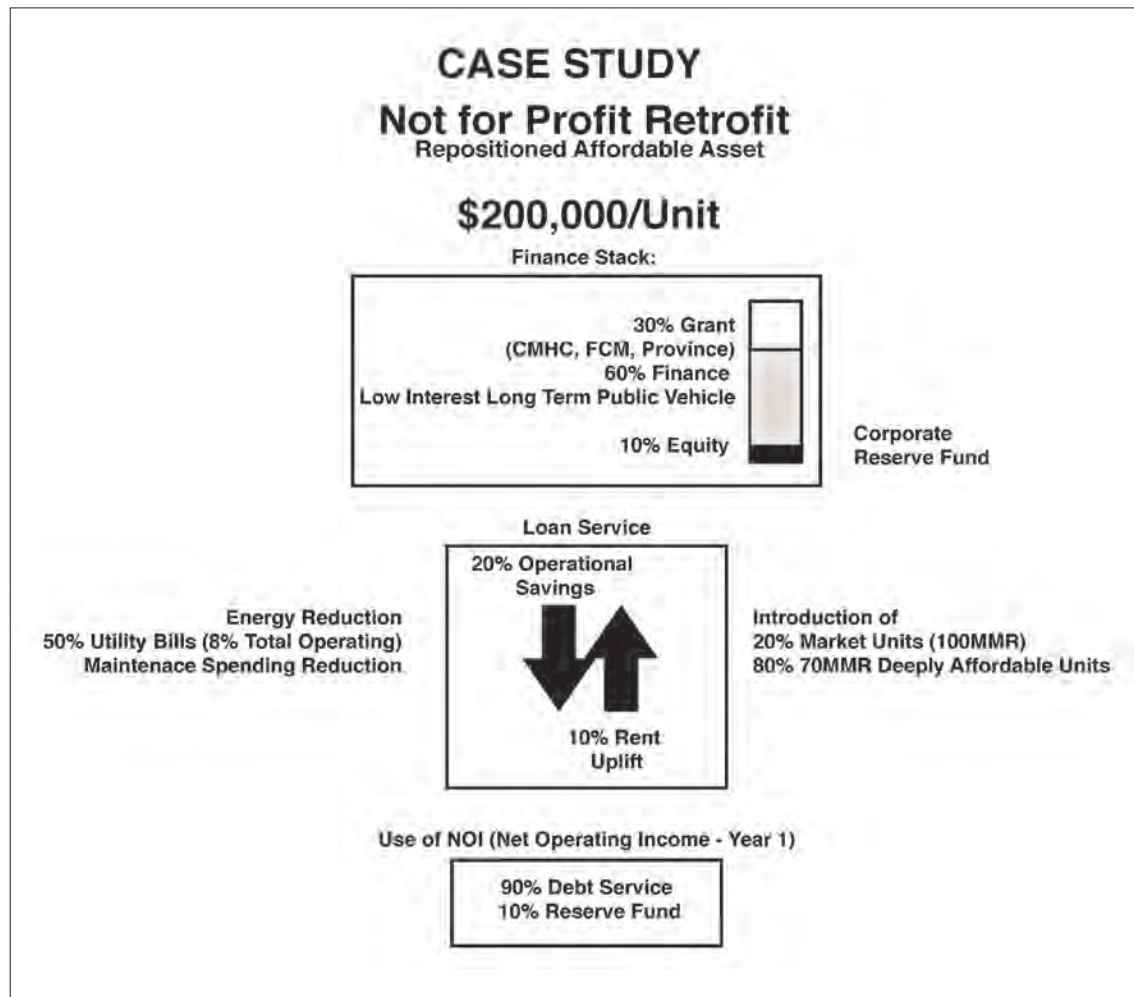
- ⑪ Future New main Entrance for Campus

The transformation of legacy housing is underway across Canada and worldwide. Learning from these successes will provide a baseline for enabling investments in private market housing.

Tower Renewal Partnership Slide, 2022



CASE STUDIES & MODEL DEVELOPMENT



Not-for-profit retrofits have been achieved by expanding project debt capacity (through lowered operation costs and marginally increasing rents), the use of low-interest and long term Government backed finance products, and through access to direct public equity contributions (from CMHC, FCM, City and Provincial Partners.) **This direct public investment has preserved thousands of housing units from going off-line and helped to kick-start Canada's low-carbon retrofit industry.**

Tower Renewal Partnership Slide, 2022

CASE STUDIES & MODEL DEVELOPMENT

CASE STUDY For Profit Retrofit Repositioned Private Asset

Considerations:

1. Taxes account for 15%-25% of operating expense
2. Free NOI is reinvested with target ROI or taken as dividend
3. Debt taken on assets is used for performative investments inside or outside housing portfolio
4. Rent increase at turnover primary source of revenue uplift

Retrofit investments in Private housing presents a paradox: How can substantial capital be directed toward asset renewal without raising rents, in a manner attractive to asset managers, that accounts for project risks, and does not freeze capital otherwise invested elsewhere? Doing so will likely require significant public support. **Our project is to outline under which terms doing so would be attractive and effective.**

Tower Renewal Partnership Slide, 2022

GAPS AND TOOLS: \$833/MONTH

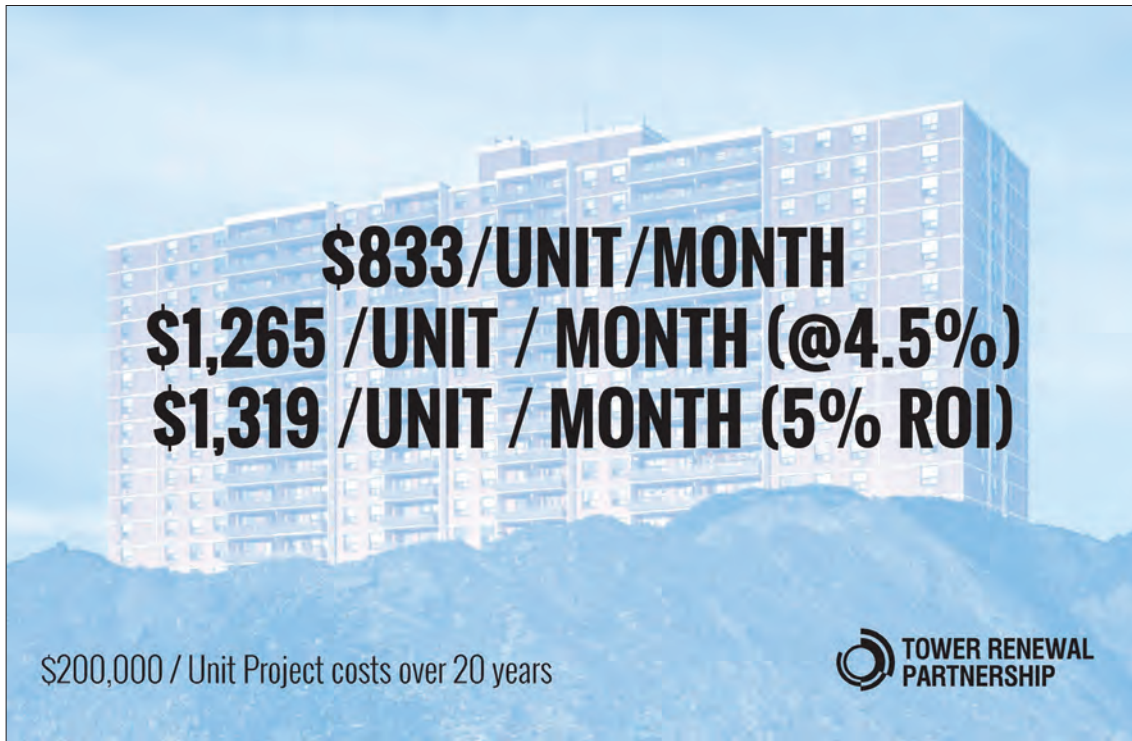
Assuming a capital cost of \$200,000 per unit as an upper limit for a comprehensive deep retrofit that includes deferred maintenance and capital repairs of a distressed asset, the cost per month, without borrowing interest, over twenty years would be \$833. Using a 4.5% debt product, the cost would be \$1,265 per month. If a project were financed by direct equity, and assuming a 5% annualized Return on Investment, the monthly costs would be \$1,319 a month.

The core question of this project: Who pays for this monthly increase? What portion is from owner equity? What portion is financed through operations savings? What portion is through public support? And what portion is a fair contribution of renters?

Further, what form should public support take? Is it a retrofit tax incentive? Direct Equity contribution? A rent supplement? Outlining the roles of private and public actors, and the key terms of support, initially as it relates to the GGM and later proposing potential broader solutions, will be an output of this project.



GAPS AND TOOLS: \$833/MONTH



In simple terms, our challenge is to determine how \$833/unit/month can be raised to cover retrofit costs, assuming a 20 year horizon. Which actor pays, when and how?

Tower Renewal Partnership Slide, 2022

1. HOW CAN PRIVATE CAPITAL BE ATTRACTED?
2. WHAT IS THE FORM AND CONDITIONS OF PUBLIC SUPPORT?
3. UNDER WHAT CONDITIONS SHOULD RESIDENTS CONTRIBUTE?

GAPS AND TOOLS: \$833/MONTH

THE GAP

	Building A (High NOI)		Building B (Moderate NOI)		Building C (Low NOI)	
Full Debt Capacity (1.1 DCR)						
Total Monthly	\$	52,500.00	\$	37,500.00	\$	22,500.00
Per Unit /Monthly	\$	350.00	\$	250.00	\$	150.00
Potential Loan Value	Building A (High NOI)		Building B (Moderate NOI)		Building C (Low NOI)	
CIB (0.5%/20 Years)	\$	11,988,110.76	\$	8,562,936.26	\$	5,137,761.76
Per Unit	\$	79,920.74	\$	57,086.24	\$	34,251.75
CMHC NHCF (2.5%/30 Years)	\$	13,287,072.43	\$	9,490,766.02	\$	5,694,459.61
Per Unit	\$	88,580.48	\$	63,271.77	\$	37,963.06
FCM (3.25/ 25 Years)	\$	10,773,292.02	\$	7,695,208.58	\$	4,617,125.15
Per Unit	\$	71,821.95	\$	51,301.39	\$	30,780.83
Remaining Gap to Retrofit	Building A (High NOI)		Building B (Moderate NOI)		Building C (Low NOI)	
Retrofit Cost Scenarios (Per Unit)	CIB Gap (% of Total Project Costs)		CIB Gap (% of Total Project Costs)		CIB Gap (% of Total Project Costs)	
\$ 200,000.00	60%		71%		83%	
\$ 150,000.00	47%		62%		77%	
\$ 65,000.00	None		None		20%	

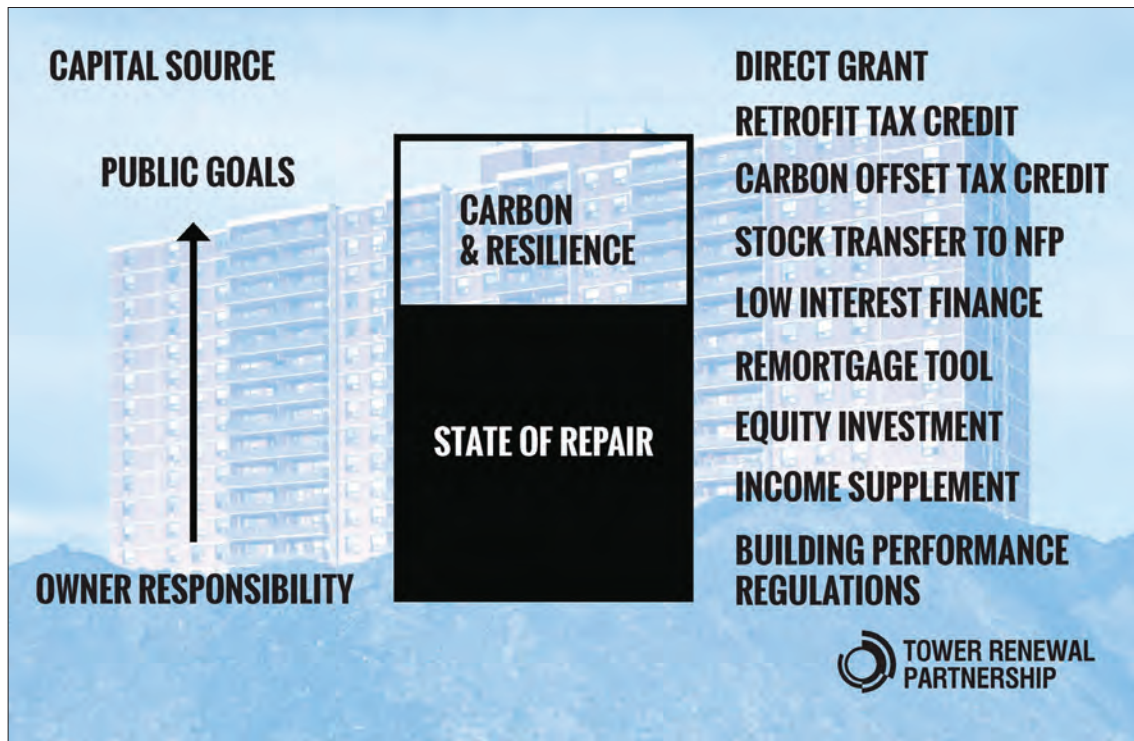


An analysis of the debt capacity of various buildings looks at the remaining capital gap using various public debt products. Filling these gaps is our challenge.

Tower Renewal
Partnership Slide, 2022



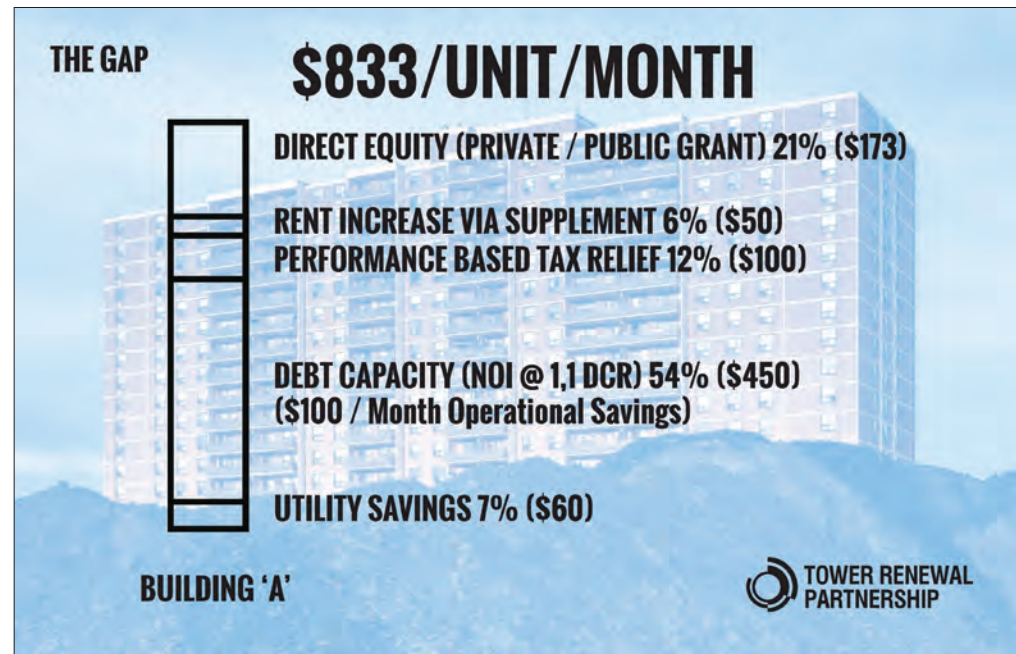
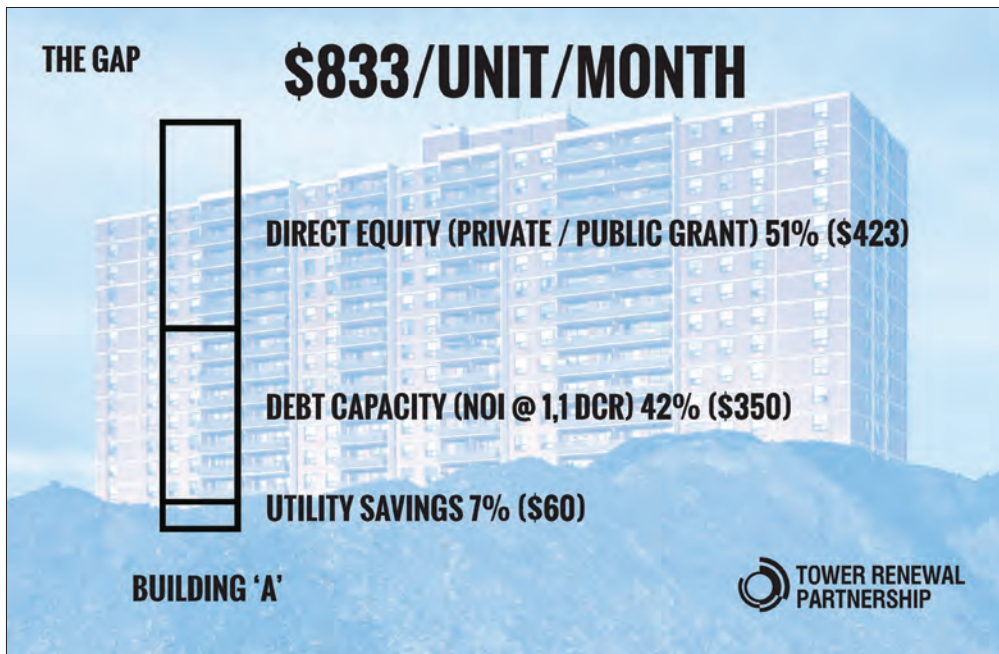
GAPS AND TOOLS: \$833/MONTH



A variety of existing and potential tools should be explored - which are more effective for owners and public expenditure? What are we missing? How can these work together? This is our assignment.

Tower Renewal Partnership Slide, 2022

GAPS AND TOOLS: \$833/MONTH



Using a baseline building for illustration, current debt capacity, potential utility savings and remaining gap are shown (Left). Additional tools in filling the gap are tested for illustration purposes (Right).

BUILDING THE ECOSYSTEM

Beyond the scope of this project is directly tackling the broader retrofit ecosystem. The ecosystem will need to include specialty retrofit hardware, means and methods refinements, and integrated supply chains that are motivated by clear and mandatory decarbonization timelines. Coupled with deep knowledge from sub trades to portfolio managers, the retrofit ecosystem will spur innovation, reduce costs, risks, and timelines in order to catalyze retrofit at scale.

This project is at the beginning of such a process, piloting what is today possible, but with an eye to the future. It is setting the table for how public and private entities can work together to support private sector housing and create an anchor for broad investment and industry mobilization.



Tower Renewal Partnership Slide, 2022

For additional information, please click links below

[A PRIMER OF THE RETROFIT CHALLENGE AND GROWING ECOSYSTEM](#)

BUILDING THE ECOSYSTEM

ACCELERATING RETROFIT INDUSTRY



Innovation will streamline retrofits, particularly specialized products designed for rapid installation. Many of these products are currently available in the EU –technical partnerships can accelerate adoption in North America. Broader industry adoption can, in the longer terms, increase efficiency and reduce risks.

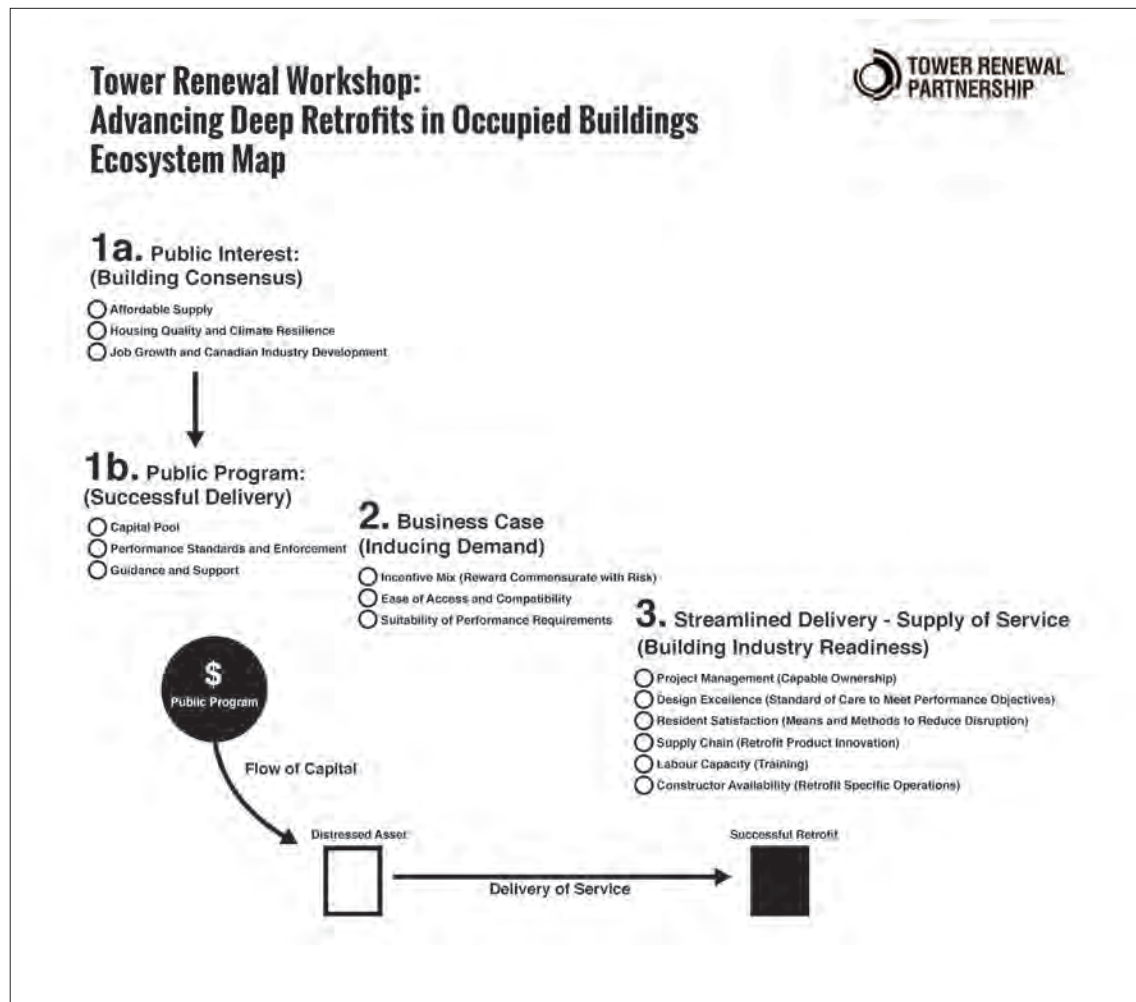
Private sector pilot projects and broader sector collaboration can help accelerate this transformation.

Tower Renewal Partnership Slide, 2022

ADVANCING RETROFITS IN THE CANADIAN MARKET



BUILDING THE ECOSYSTEM



Broader uptake and scaling will also be dependent on a frictionless process – that capital flow, design, construction and resident partnership is clear, smooth and, as much as possible, de-risked. Considerations for such a program design is part of our assignment.

Tower Renewal Partnership Slide, 2022



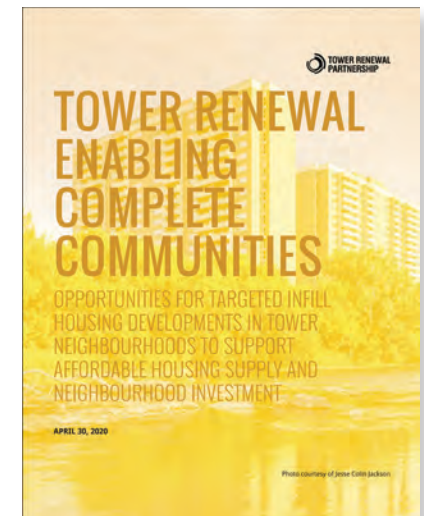
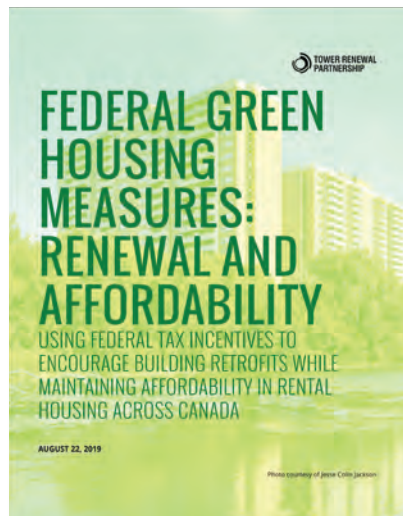
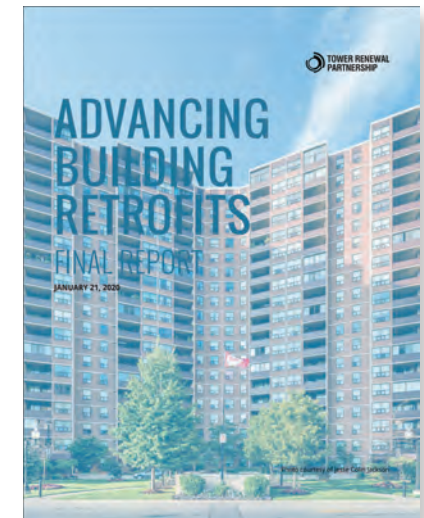
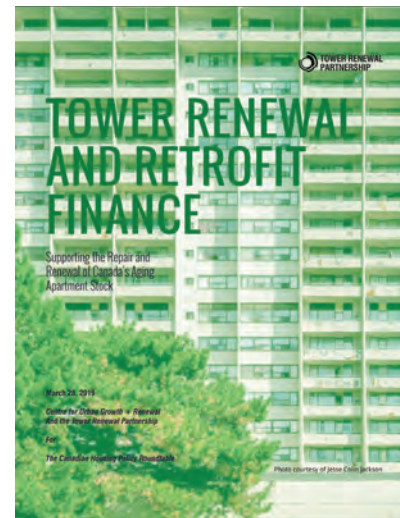
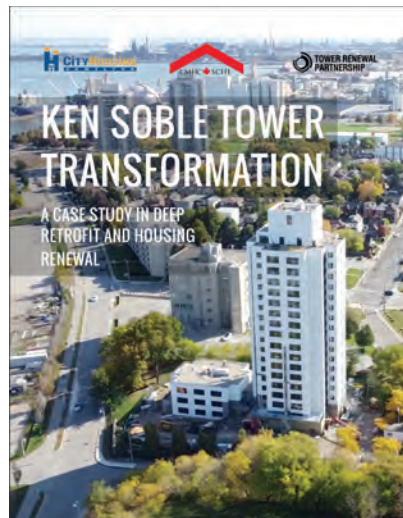
OUR FOCUS

OUR FOCUS

The project will place focus on three topics:

- 1.Overcoming the Capital Gap to achieve Deep Retrofits
- 2.Developing a Framework for Effective Public & Private Solutions
- 3.Achieving Resident Focused Outcomes

As a starting point the group will align on challenges and assumptions related to these topics, followed by solutions development and testing. The schedule of meetings can be found in the accompanying slide deck provided by CMHC.



APPENDIX C

FULL RETROFIT ADVISORY GROUP SESSION NOTES

Financers/Funders

PAINS	OPPORTUNITIES
FINANCIAL LOGIC	
Lower rent buildings cannot be leveraged/borrowed against to the same degree as those that charge high rents	• NOI uplift to monetize
COLLABORATION	
One funder alone cannot adequately fund a project	• Build an ecosystem of trusted and reliable funding partners that work together to stack project funding
RISK and DATA	
There is perceived risk in funding owners who do not have a proven track record of delivering on construction/retrofit projects	• Build an ecosystem of trusted and reliable delivery partners • Protect asset via bond • Subordinate risk (NFPs can do this)
There is perceived risk in funding projects that harness lesser-known technology	
There is a lack of quality and easy to access data by which to accurately assess a projects risk profile (data as sub-theme for financers/owners)	

Owners

PAINS	OPPORTUNITIES
FINANCING PROCESS DESIGN	
It is difficult to navigate the programs and their applications	- Align requirements across funding programs - Consolidated sources of information with clear descriptions and financing support across government, private, and public supports - Easy to navigate program applications
It is difficult to stack funding programs due to misaligned requirements	
FINANCIAL LOGIC	
Many owners do not have the upfront capital available to undertake deep retrofits and it can be hard to cover costs when needing to maintain profitability	- Patient upfront capital that can wait for the amortization of benefits - Longer amortization - Lower insurance prices - Provide backup funds for emergencies - Contained unit monitoring - Ability to measure and report potential savings on balance sheets and financial statements - Being able to clearly demonstrate the benefits of retrofits
Paying for other people's consumption	
It is difficult to share benefits of retrofits with shareholders on financial statements	
Traditional financiers don't understand "green" accounting practices	
Rent increase allowances do not align with inflation	
RISK and DATA	
Deeply retrofitting older buildings is more complicated and higher risk than doing so in newer buildings	- Lower the cost of insurance - Provide backup funds for emergencies - Train contractors in new tech - Evidence to demonstrate the benefits of retrofits and tools to make it easy to tell the story
There is a perceived risk in using newer technology due to fear of poor performance and lack of expertise in the contractor community	
There is a lack of quality and easy to access data by which to accurately assess a projects risk profile (data as sub-theme for financiers/owners)	
RESIDENT MANAGEMENT (TRUST)	
Retrofits of any size disrupt residents, leading to retaliation against workers, constant complaints, and rent reduction requests	- Single point of contact for owners, contractors, residents to go through - Tenant swing space - Phased retrofitting
Owners are the middle person between shareholders and tenants and the desire to be a 'good owner' does not align with the financial logic or the risk profile of deep retrofits	
There is strong media and political retaliation against owners who are perceived to be 'bad'	

Residents

PAINS	OPPORTUNITIES
RESIDENT MANAGEMENT (TRUST)	
Retrofits cause disruption to tenant's daily lives as it relates to scheduling and their physical space (noise, dust)	• Tenant accommodation plans that consider schedules, accessibility, and disruptions to the physical space • Provide insurance or guarantees to tenants in the event their belongings are damaged • Tenant engagement plan that includes clear explanations of process, benefits, and opportunities for tenants to provide feedback about the process and input into scheduling • Tenant liaison who leads with respect and validation • App to schedule and provide feedback to contractors/owners • Appropriate heating and cooling options • Beautiful home • Tenant swing space
Personal and tangible risk concerns (e.g., stuff getting damaged) inherent to having someone else in your space	
Tenants feel anonymous, powerless, and uniformed throughout the retrofit process, and do not trust that any parties (owners, contractors) have their best interest in mind	
Unsuitable and deteriorating livable conditions	
(Fear of) rent increases and unpredictable bills due to retrofits	

Common pain themes across actors

Financial Logic

- Lower rent buildings cannot be leveraged/borrowed against to the same degree as those buildings that charge high rents
- Many owners do not have the upfront capital required to fund deep retrofits/cover costs to maintain profitability, especially when they struggle to share the benefits of retrofits with shareholders and financiers via financial statements

Risk

- Risk falls into three categories: financial, physical, reputational
- There is perceived risk in funding owners who do not have a proven track record of delivering on construction/retrofit projects and funding projects that use lesser-known technologies. Much of this perceived risk is due to a lack of quality and accessible data by which to accurately assess a projects risk profile.

Data Collection, Analysis, Value, and Mobilization

- There is a lack of quality and easy to access data by which to accurately assess a projects risk profile
- It is difficult to meaningfully incorporate data and communicate the benefits of retrofits with shareholders and residents, making such projects harder to justify using traditional valuation processes

Resident Management and Trust

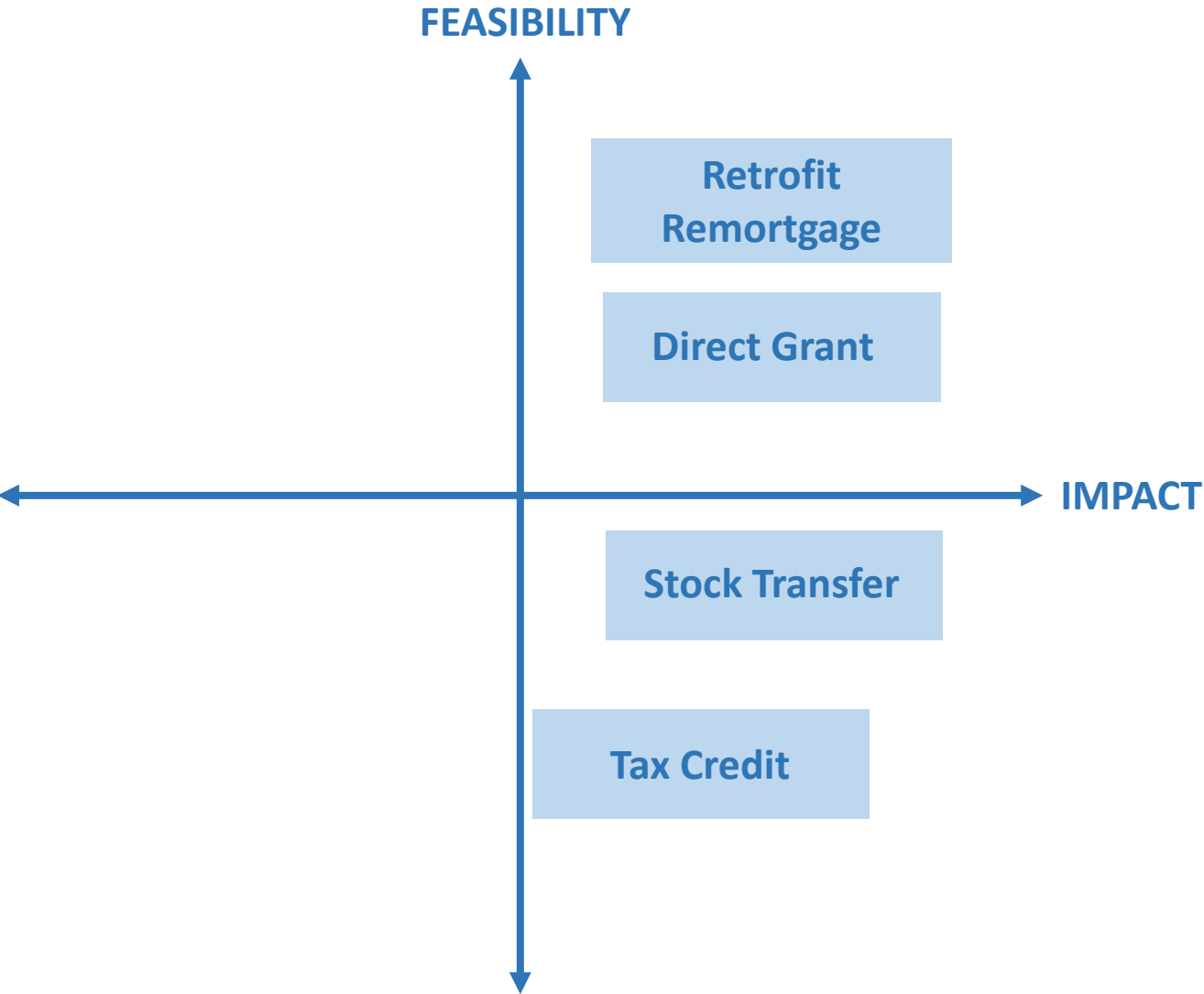
- There is the potential for a retrofit to seriously disrupt a tenant's entire quality of life and they often feel uninformed and powerless throughout the process , which breeds a lack of trust
- When residents experience disruption and do not trust owners/contractors, there is a risk that their response can delay a project, increasing its overall cost

Overall Insights

- **Current funding opportunities feel misaligned from one another and hard to access**
... so the solution must consider reducing the cognitive load of accessing financing
- **Due to the high capital cost, no one group can fund deep retrofit projects**
... so the solution must consider collaboration/stacked funding
- **Various building, financing, and retrofit process conditions impact the effectiveness of solutions**
... so we must consider these various conditions when testing our solutions.
- **Moving towards a valued and well-funded deep retrofit ecosystem will require gaining trust across the actors through data (about owners, technology, and financial/quality of life impact)**
... so the solution must (re)consider how it will meaningfully use, quantify, value, assess, and contribute to data in the retrofit space. To do so we must consider:
 - *What data is meaningful to various stakeholders;*
 - *How we quantify and story tell the non-financial benefits of retrofits*
- **Activating deep retrofit projects will need to involve every actor reconsidering how they assess and *manage risk***
... so the solution must consider:
 - *What would it take to fund and adopt lesser-known technology?*
 - *What would it take to support an owner with fewer assets or retrofit experience?*
- **Adequate resident management (including knowledge sharing, communication, scheduling input, QOL considerations) would benefit ALL actors and outcomes in the retrofit ecosystem**
... so the solution must have a clear resident management focus.

ILEO RETROFIT ADVISORY GROUP

Impact and feasibility



Conditions to consider

Market	Low inflation	High inflation
	Low rent	High rent
Building	Poor condition	State of good repair
	Small owner	Large owner
Owner	Private company	Public company
	One large retrofit	Phased retrofit
Process	Per building	Cluster (one or multiple owners)

How can the tool...

be simple and clear to design, understand, and use?

- The tool must reduce administrative burden, easily stack with others, and be predictable and consistent.

be applicable to the GGM and beyond, and sustainable long-term?

- The tool must apply to a variety of business models and set the groundwork for the retrofit industry to self-sustain.

have a significant impact on the business case?

- The tool must have a direct and indirect impact on the business case.

incent other outcomes?

- The tool must consider social outcomes, such as maintaining affordability and tenant security.

Retrofit Advisory Group Exploration Spaces

To prevent the loss of these already affordable units, we need to support capital investments that motivate and enable private owners to undergo deep retrofits while keeping rents affordable, to ensure affordable and healthy living for vulnerable populations across Canada. To do this we must:

Find a way to reduce the capital gap for owners.

To do this we will explore:

- Grants
- Remortgage Tools
- Tax Credits

**specifically, we will explore under what tool conditions an owner would forgo future revenue from rent uplift for access to the equity tool*

Determine what mechanism is best to preserve rents.

To do this we will explore:

- Different affordability requirements attached to the equity tool
- Partial/Full stock transfer to NFPs

**we will also dedicate time to exploring tenant experience during retrofit*

Greenhouse Gas and Energy Regulations

Should there be regulations in the next 5-10 years, owners will be required to either undergo a (deep) retrofit or pay penalties. Below are examples of regulations and penalties from other jurisdictions.

NYC Local Law 97, 2024

A law that permits a certain level of emissions based on zoning designation. Emissions must be reduced by 40% by 2030 and 80% by 2050, with annual penalties for non-compliance.

- Applies to all residential and commercial buildings over 25,000 square feet with leniencies for income-restricted and rent-regulated housing.
- Penalty of \$268 per metric ton over the allotted limit; one building estimated a penalty of \$2.4M.
- Offered alongside incentives and a support program, but it is the owner's responsibility to finance and manage the retrofit.
- Annual analysis of energy use is required.
- Option to purchase renewable energy credits in place of retrofit, but this will likely only benefit the commercial sector.

Boston's Building Energy Reporting and Disclosure Ordinance 2.0, 2025

An ordinance that permits a certain level of emission based on building typology. Buildings must reach net-zero by 2050. Daily penalties of up to \$1,300 for non-compliance.

- Applies to all commercial and residential buildings of at least 20,000 square feet or 15 units.
- Penalties for non-adherence to the emission standards, as well as for non-compliance with reporting requirements and failure to accurately report emissions.
- Owners required to submit decarbonization plans with targets every five years.
- Energy Star Portfolio Manager is used to report energy and water consumption.

Owner Types

Small private owners:

These owners run small portfolios that range from a single to half a dozen buildings. They are often limited in financial capacity, dependent on mortgage finance, and have limited corporate capacity to engage in large and complex projects. However, they often have flexible decision-making capacity with private and family run boards.

Mid-sized private

owners: This class of owner operates portfolios of up to several dozen buildings. They have the decision-making flexibility of small owners but with greater financial capacity. They are often tied to development corporations.

Large private investment

fund owners: This class of owner operates large portfolios tied to investment funds, managing assets to enable a rate of return for private investors with both long and short-term horizons. Decision-making is made by a private board of directors and is tied to fund performance. There are two classes: non-taxable corporations, (e.g., pension funds) and taxable corps (e.g., private investment)

Large Publicly Traded Owners (including REITs):

Publicly traded private companies, often in the form of Real Estate Investment Trusts, manage large portfolios of properties. Decision making is tied to quarterly reporting, stock unit performance and dividend expectations. They can leverage large sums of capital at low interest rates, yet investment is tied to financial performance as outlined.

Owner and Building Variances

For profit owners are motivated by long-term Net Operating Income (NOI) and based on their priorities and financial situations, different owner classes have different relationships with debt and taxes, influencing what types of incentives will motivate them to undergo deep retrofits. Building characteristics will also impact the attractiveness of each type of tool and must be considered when determining widespread impact.

Financial Priorities

- Institutional owners have long term interest in holding assets so will likely not be motivated by capital gains in the short term. They will weigh the benefits of access to capital and related commitments with the opportunity cost of reduced long-term rents.
- Smaller owners are more concerned about the impacts on their realization of their asset at sale.

Portfolio Size

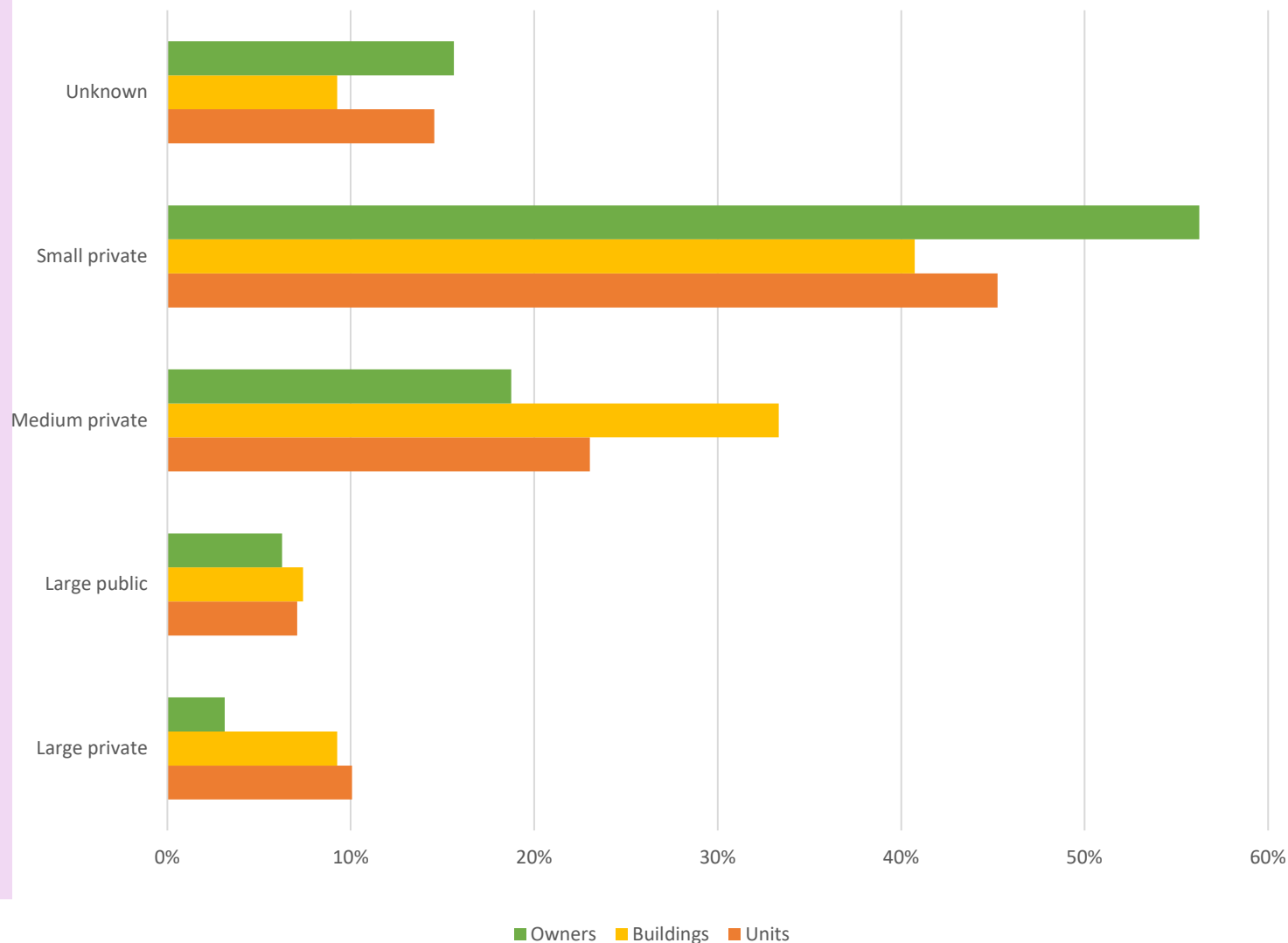
- Owners with a smaller number of units will have a larger capital gap to overcome per project.
- The lead time and planning needed to access funds is at times prohibitive on a single building basis.
- Institutional owners have long term interest in holding assets so will likely not be motivated by capital gains in the short term.

Vacancies and State of Repair

- In buildings with high vacancies and high annual maintenance costs, retrofits can lead to new net revenues through expanded rental income via reduced vacancies and reduced maintenance costs.
- Buildings with substantive repair backlogs will likely require greater upfront investment for retrofits.
- Retrofits are more difficult on older buildings.

The Greater Golden Mile Owner Types

- There are approximately 40 distinct owners in the GGM (90 buildings, 13,000 units).
- Small private entities account for the largest percentage of buildings, units, and distinct owners.
- Expanding our bounds from the GM to the GGM increases the market share held by small and medium private entities.
- Approximately 20% of buildings had a property manager listed in place of an owner; they were excluded from this analysis.



Direct Grants

Direct Grants are financial incentives to contribute towards retrofit project costs and may include costs associated with general asset renewal. Funds may be for specific interventions or for the total share of the project costs up to a maximum funding cap, but often come with strict eligibility requirements. These funds primarily come from public organizations and utility companies.

Strengths

- Simple for the funders to design and administer
- No requirement to hit profitability metrics
- Can be catalytic for additional debt financing
- May allow for streamlined data collection that can catalyze the industry and de-risk future projects
- Suitable across owner types
- Can be stacked with tax credits and favourable debt products
- Can have a sliding scale with larger grants given to those groups that have a larger capital gap to overcome

Challenges

- Due to limited availability and reliance on political support, grants are seen as having low potential to make long-term impact
- With a high administrative load (that can include environmental assessments/audits/modelling) and a lack of clarity about grant eligibility/application process, owners can find applying for grants to be difficult and uncertain
- The need for technical audits often require 3rd party support, which is an additional cost
- Very specific program requirements, use restrictions, and application timelines do not always align with owners needs and can make grants hard to stack with other programs.
- Grants typically have a max cap on funding
- Hard to build complementary programs around multiple Provincial grants

Direct Grant Case Studies



FCM's Sustainable Affordable Housing Grant

This **\$300M initiative (grant/loan combination)** supports affordable housing providers to retrofit existing affordable housing units or construct energy efficient new builds that emit lower greenhouse gas emissions. It is available for a **range of project stages**: planning, studies, pilot projects, and capital project and the grant/loan combination is **reflective of energy savings and depth of retrofit, funding up to 80% of retrofit costs.**

Eligibility

- NFPs, housing co-ops, and municipally owned corporations
- Northern applicants have less stringent commitments and further incentives
- Must have municipal support

Commitments

- Affordability: 30% of units are less than 80% of MMR for duration of loan repayment (up to 50 years)
- Environmental: minimum 25% reduction in energy consumption; further incentives available for deeper retrofits

Key Insights

- Offered alongside a capacity-building program led by established organizations to help proponents access funding and maximize energy and greenhouse gas savings
- Minimal work is required by the applicant ahead of the planning grant
- Eligible costs include base state of repair in addition to energy/GHG
- Av. wait time of 2-3 months for plans/studies and 6 months for capital projects causing delay between completion of studies/application and project start time



Vancity's Not-for-Profit Retrofit Program

This **up to 80K in grant funds** supports the planning for deep energy and carbon retrofit projects. A second phase is coming shortly to expand eligibility to the co-op sector and finance project implementation. It was designed to **complement existing supports**, including FCMs and CMHCs offerings

Eligibility

- Non-profit housing providers and organizations that support them; expanding to housing co-ops shortly
- Vancity member

Commitments

- Must move buildings towards net-zero

Key Insights

- There are no stipulated commitments in terms of environmental, economic, or social requirements
- There is no formal application process; process is adjusted based on the organization
- First phase is designed to support portfolio planning, feasibility studies, energy studies, and building organizational capacity to eventually feed into the second phase of the program (project implementation)
- Vancity funded strategic partnerships with BCNPHA, AHMA, and Affine Climate Solutions to support applicants in developing climate-aligned portfolio plans
- The program is funded by Shared Success, a program through which Vancity shares 30% of net profits with members and the community

Direct Grant Case Studies Continued



This **low-interest loans and contributions** (forgivable loans) program can be used to renovate existing buildings for affordable housing to ensure energy efficient, accessible, and socially inclusive housing that is mixed-income, mixed-tenure, and mixed-use. The forgivable loans are only available in certain circumstances (higher performing projects, community housing etc.) and projects must have **support from another level of government**.

Eligibility

- Community housing providers
- Municipalities, provinces/territories as well as Indigenous governments and organizations
- Private sector

Commitments

- Affordability: 30% of units at 80% MMR for 20 years
- Energy and GHG: 25% reduction over previous performance
- Accessibility

Key Insights

- Additional prioritization for proximities to amenities, social inclusion, and supporting priority groups; evaluation methodology is unclear
- Coordination with another level of government is very difficult for some
- Accessibility requirements are a major challenge for existing buildings due to the scale of required expenditure (often require floor plan reconfiguration)
- Project by project approach
- Required documentation for project application comes at a substantial financial/administrative cost
- For repair and renewal only; cannot be combined with new build infill

Direct Grants Recommendations (1)

The group suggested ways we may tweak, shift, and improve direct grants. Below are some challenges and innovative ways to address them based on the ideation sessions.

Due to limited availability and reliance on political support, grants are seen as having low potential to make long-term impact.

To address this, consider:

- **Accessing capital from foundations**, many of whom have an interest in climate and sustainability initiatives
- **Developing social impact metrics** to get access to other mission capital
- If **government health funding could be accessed** given health benefits for tenants
- If **CMHC could provide additional grants** using income from our insurance program
- **Partnering with an insurance company** to offer grant money, as these retrofits should lower risk and therefore carrying costs of the building. If owners could get grants by from participating insurance companies and undergoing retrofits for a future reduced rate, it could be a win-win for both insurers and owners.
- **Service companies providing grants for the due diligence phase** of the work so that this isn't covered by the owner

With a high administrative load (which may include environmental assessments, audits, modelling, etc.) **and a lack of clarity about grant eligibility/application process, owners can find applying for grants to be difficult and uncertain.**

To address this, consider:

- **Enabling diverse granters to harness one consistent platform, application, or grant requirements**
- **Enabling a “one stop shop”** that can support with various types of financing. This may be a **concierge service** who can provide clarity, forward guidance, and redirection to programs the owners are eligible for
- **Phased approach applications** that start with an expression of interest prior to larger commitments of resources

The need for technical audits often require 3rd party support, which is an additional cost.

To address this, consider:

- **Making enabling costs eligible** for grant spending

Direct Grant Ideation (2)

The group suggested ways we may tweak, shift, and improve direct grants. Below are some challenges and innovative ways to address them based on the ideation sessions.

Very specific program requirements, restrictions, and application timelines do not always align with owners needs.

To address this, consider:

- Providing **upfront funding**
- Allowing **funding to be put towards tenant experience or other upgrades that go beyond regulated upgrades**
- **Using an aggregator**, who is approved by the granter for a package of funding, as they can deploy grants/stacked capital more quickly than individual project approval by the granter

Grants typically have a max cap on funding.

To address this, consider

- **Tying funding to savings performance:** the deeper the savings, the greater the funding

It is hard to build complementary programs around multiple grants.

To address this, consider:

- Enabling diverse granters to harness **one consistent platform, application, or grant requirements**
- **Combine the granting and financing pipeline** so financiers can help owners access grants and include these into the lending assessments

Retrofit Remortgage Tool Ideation (1)

The group suggested ways we may tweak, shift, and improve retrofit remortgage tools. Below are some challenges and innovative ways to address them based on the ideation sessions.

Although it can be stacked with a grant, grants are often accessed via another source, adding some administrative load. This combined with long wait times make Retrofit Remortgage Tools hard to access.

To address this, consider:

- **A concierge service** that provides turnkey access to both financing and grants
- **Having a commercial lender do the initial screening and underwriting and then go to the government for loan refinancing and potentially a grant** (the federal contribution). This will streamline and speed up the process for owners and commercial lenders are able to work faster than government lenders

Retrofit Remortgage tools should incentivize deeper retrofits.

To address this, consider:

- **Converting up to 30% of the loan to a grant** to incentivize deeper retrofits
- **Tailoring GHG reduction requirements to regional emission factors**, as 40% is not very high in some areas, depending on emission factor of the region
- **Gear interest to GHG emissions** (like CIB and MLI)
- **Including the grant portion in the financing assessment** of the asset amount they can leverage in the loan
- **The role of additionality**: for a retrofit to be considered additional and not have occurred in the absence of the tool, the possibility to receive the preferred terms must play a make-or-break role in the decision to undergo it

Retrofit Remortgage Tool Ideation (2)

The group suggested ways we may tweak, shift, and improve retrofit remortgage tools. Below are some challenges and innovative ways to address them based on the ideation sessions.

Retrofit Remortgage Tools are not easily applicable across owners and building types.

To address this, consider:

- **Allowing a minor rent uplift in the NOI** to make more capital available

Retrofit Remortgage tools be made more attractive to owners.

To address this, consider:

- **Loaning upfront so the group can get started, which includes employing experts need to** drive higher quality results
- **Loaning for elements that enable the retrofit** (including tenant needs and other physical requirements to access building systems)

Direct Grants Recommendation Case Studies



[Environment Funders Canada](#) (formerly Canadian Environmental Grantmakers Network – CEGN) is a national network of philanthropic foundations and other organizations that support efforts to transition toward a more sustainable world. Members work with NGOs, community groups and other charitable organizations to develop and deliver programs that can make communities healthier and more resilient, while protecting vital ecosystem services and the natural world's storage technologies.



[McConnell Foundation](#) is a Canadian foundation that contributes to diverse and innovative approaches to address community resilience, reconciliation, and climate change. They recently hired to receive advisory services from [Dunsky Energy + Climate](#), a group that leads governments, utilities, firms and non-profits in their efforts to build a sustainable energy future. Their focus is on the demand side of the equation, which includes deploying energy efficiency and other demand-side energy resources in buildings and industry, accelerating the deployment of energy and storage technologies.



In November 2022, the [Ivey Foundation](#), which is focused on improving the wellbeing of Canadians and Canada's natural environment, announced that it will wind down operations by 2027 and distribute its full \$100 M endowment, starting in 2023. They announced that the majority of the funding will be used to address climate change and advance Canada's low Carbon economy. The Board of Directors made the decision to spend the money now as they want to address the critical issues Canada faces today and that addressing climate change requires timely capital distribution to achieve maximum impact.

Retrofit Tax Credit

Retrofit tax credits are refundable income tax credits for qualifying retrofits that improve the energy efficiency/greenhouse gas emissions of eligible buildings, which meet a specific target or objective, which are typically a certain percentage of the project costs. Other tax credits include:

- **Capital Gains Tax Reductions**, which spare a seller from paying taxes on a portion of earned profits at point of sale)
- **Capital Cost Allowance (CCA)**, which is the amount of allowed depreciation on a building that can be claimed by a building owner in any year, reducing taxes payable on the income from the property in that year. These are decided on by the CRA and dependent on total revenues of all properties in portfolio. It is a form of delayed income taxation, reducing taxes in the early years. CCAs are only effective when an owner can finance a project with debt and have enough income to take advantage of the tax benefits.

The effect of a tax incentive is dependent on the length of time the current owner is likely to hold the asset, the owner's tax treatment, their level of debt on the property and their cost of capital (opportunity cost attributed to the capital that is being invested), and assumptions about future cost and price inflation. General tax credits are more broadly applicable and attractive than other tax incentives but more difficult to institute. The tax credit can only be applied against owners tax liability, but could be distributed to owner/investors in a partnership or limited partnership that owned the building and applied against corporate or individual tax liability related to other income producing activity.

Update: The 2022 fall economic statement just announced a new refundable investment tax credit of 20-30% for investments in air-or-ground source heat pumps. This is a more significant incentive than the existing accelerated depreciation incentive, and useable for more private apartment owners because you can get the full amount even if it exceeds your tax liability (refundable).

Strengths

- Opportunity to link to standardized certification to increase simplicity and scalability
- Less stringent eligibility requirements than grants
- More politically neutral than direct grants, so often have stronger staying power
- More predictable than grants

Challenges

- Tax credits are fragmented between Federal and Provincial governments, making them harder to scale
- Changing Federal tax laws takes a long time
- Larger owners benefit more from tax credits than smaller owners
- It can be difficult to communicate the financial benefit of a tax credit to a less sophisticated owner

Tax Credit Case Studies



BC's Clean Building Tax Credit

This is a **refundable income tax credit** for qualifying retrofits that improve energy efficiency, amounting to **5% of qualifying expenditures** paid on the retrofit that is **claimed on the proponent's income tax return** filed with the CRA.

Eligibility

- A corporation with a permanent establishment in BC
- An individual/trust that lives in BC or earns income in BC
- Commercial buildings
- Multi-unit residential buildings with four or more units

Commitments

- Must reduce energy use intensity (targets depend on type of building)

Key Insights

- Eligible expenses are limited to specific measures
- The retrofit must be certified with the Ministry of Finance, requiring a certificate from a qualified professional stating the energy savings achieved



United States' Low-Income Housing Tax Credit

This tax incentive is for housing developers **to construct, purchase, or renovate housing for low-income individuals or households**. It is offered as a 10-year tax credit of either 9% (no other credits or subsidies) or 4% (other credits or subsidies). **Managed by the federal government**, funds are allocated to states according to their population.

Eligibility

- Housing developer constructing, purchasing, or renovating housing for low-income individuals

Commitments

- Low-income: must rent to low-income tenants for a 15-year period
 - 20%+ of tenants earn less than 50% of median income
 - 40%+ of tenants earn less than 60%
 - No tenants earn more than 80%

Key Insights

- The tax credit can cover almost the entirety of the taxable expense for the building
- States manage the application process
- There are usually more applications than credits available; developers must compete for permits

Tax Credit Case Studies



Germany's Tax Deductions for Building Renovations

A tax incentive for homeowners to undergo energy efficiency renovations with deductions of **20% of renovation costs** up to 40,000 euros from their taxes.

Additional credits are allotted for a certified energy consultant (up to 50% of the cost).

Eligibility

- Owner-occupied dwellings
- Owner must be a tax resident in Germany
- The building can be located in other EU-member states or countries of the European Economic Area

Commitments

- Cannot transfer the property within a three-year period, or else any unclaimed benefit is forgone

Key Insights

- Eligible costs are limited to specific measures associated with energy savings
- Payment is distributed over three years
- Projected to save up to 3.4 million tons of CO2 by 2030
- States will receive compensation for losses in tax revenues from the federal government

Tax Credit Recommendations

The group suggested ways we may tweak, shift, and improve direct grants. Below are some challenges and innovative ways to address them based on the ideation sessions.

Larger owners benefit more from tax credits than smaller owners due to scale of expenses.

To address this, consider:

- **Longer periods to roll over tax credits** to accommodate owners who offer affordable rents and do not have a high net operating income (NOI)
- **Offering an annual credit** (vs. one time) that offsets rent uplift and is more beneficial to yearly NOI

Tax credits should incentivize deeper retrofits.

To address this consider:

- **The role of additionality:** for a retrofit to be considered additional and not have occurred in the absence of the tax credit, the possibility to receive the credit must play a make-or-break role in the decision to undergo it
- **Tying credit to performance:** the deeper the owner goes with their retrofits, the more funding they receive in terms of tax credits

Other innovative ideas include:

- **Create a local market that monetizes the tax credits** in a manner that allows owners/buildings to trade both affordability and credits amongst themselves
- In addition to capital investment credits, **add production credits** for GHG reduction that is ongoing and performance based
- **Designate preferential tax treatment zones for owners who make retrofit investments while maintaining affordability.** These zones can align with affordability and climate data or areas when governments are making large infrastructure investments
- Consider the additionality framework of carbon credits

Tax Credit Recommendation Case Studies



New Market Tax Credits offer tax credits (5% of initial investment for three years, 6% for the next four, for a total of 39%), to CDE's (Community Development Entities) making investments in designated areas. These entities have the primary mission of serving low-income communities via geographic investments. Tax credits can only be applied to annual federal tax returns. Since its beginnings in 2000, it has funded over 5,400 business and developed 178 million square feet of business space. NMTC must be annually approved by Congress. To note, there has not been much empirical evidence on the impacts of NMTCs on poverty reduction.



Opportunity Zones are defined as economically distressed communities where new investments may be eligible for preferential tax treatment. This benefit permits previously earned capital gains to be temporarily deferred by placing these assets in Opportunity Funds (an investment vehicle organized as a corporation or partnership for the purpose of investing in Opportunity Zone property). Those assets are not taxed until they are no longer in the possession of the investor. With capital gains placed in an OF for at least 5 years, the investor's basis on the original investment increases by 10%. If it is invested for at least 7 years, the amount increases by 15%. After 10 years, any additional appreciation on the initial investment is tax-free. This program is part of the IRS rule and does not need to be approved yearly. Critiques of this have named that capital dropped in a community is not the same as capital designated for community benefit and that the gains are more waited to the financial gain of investors over value add to community members.

Retrofit Remortgage Tool

A **retrofit remortgage tool** offers better loan terms (interest and amortization) based on energy and greenhouse gas reductions, as well as other criteria. The more committed owners are to the outcomes, the better the incentives.

Remortgage tools also offer owners the **opportunity to access some of the equity in their building**, which is of particular benefit to owners who do not have other sources of equity to fund a retrofit, reducing reliance on building NOI. Although one can remortgage at any time, it is traditionally best to do it at the end of the current mortgage so as not to pay a prepayment penalty.

The tool could be **provided either via commercial banks or direct lending**; the terms rates and volume of lending would vary depending on the approach, with lower rates possible through direct lending and a larger program with broader reach possible through commercial banks. The **paradox between ease of program engagement and ensuring quality execution** with these types of programs can be tackled by creating national standards with a designer accreditation system on the front end and an auditing system at the back end. This type of tool is traditionally best suited for assets with large repair backlogs, high operating expenses, and high vacancies.

Update: BMO and CIB are currently partnering on a product, looking at a tool for current BMO clients at end of their initial mortgage period. They would roll the existing commercial mortgage into a bridge loan, which would finance the retrofit construction period and retrofit construction loan.

Strengths

- Stackable with grants to augment base finances
- Can be structured so owners benefit from reduced operational costs
- Retrofits extend the life of the building and lowers operational cost, which improves NOI and the value of the building, which can extend amortization periods, driving monthly savings that reduce reliance on rent uplift
- If done through a bank, has the potential to reach a wide range of building owners, making it a widely scalable tool
- This is a tool people are familiar with and is streamlined within standing refinancing cycles, which means additional loan applications (and administrative work) are not required
- Target assets at point of sale, which is when owners are primed to make major investment in a building
- When the bank retains the senior secured position as the lender, the client benefits from lower rates due to the security on the building

Challenges

- Energy retrofit measures are generally accounted for in terms of payback period rather than yearly ROI so when additional funds are accessed, the debt position of the primary lender can impact the rate and terms of subsequent debt, making use of additional debt for low yield investments unattractive
- Asset managers do not like taking on debt
- Harder to apply across different building conditions
- Although it can be stacked with a grant, the grant is often accessed via another source, adding some administrative load

Retrofit Remortgage Tool: Diving Deep

- Are there new and innovative ways to **approach remortgage tools** that this group can test?
- Are there new and innovative ways to **make a retrofit remortgage tool beneficial to more owner and building types?**
- Is there a new and innovative way we could **approach affordability and retrofit commitments** to increase uptake that this group can test?
- Is there a new and innovative **risk mitigation mechanism that could be added** onto the remortgage tool that this group could test?
- What would need to be true about **remortgage tool design** to increase uptake? Consider:
 - Application and administration;
 - Capital flow timing;
 - Flexibilities; and
 - Stackability with other incentives.
- Who are **ideal stakeholders and what roles would they need to play** to test this solution?

Conditions to consider

Market	Low inflation	High inflation
	Low rent	High rent
Building	Poor condition	State of good repair
	Small owner	Large owner
Owner	Private company	Public company
	One large retrofit	Phased retrofit
Process	Per building	Aggregated

Retrofit Remortgage Tool Case Studies



A multi-unit mortgage loan insurance product focused on affordability, accessibility, and climate compatibility for both new and existing properties. It **offers reduced premiums and longer amortization periods based on commitment levels and uses a point system** that allows applicants to focus on either a single area or to commit across multiple priority areas.

Eligibility

- Standard rental, SRO, supportive housing and retirement homes, student housing owners and developers
- Minimum of 5-units with at least 70% residential space

Commitments

- Affordability: 10- or 20-year commitment based on median renter income
- Environment: energy and GHG reductions over current performance (retrofit) or 2017 NECB (new construction)
- Accessibility: CSA standards

Key Insights

- Matrix-style approach promotes flexibility for a wide range of applicants; does not mandate minimum points for any of the categories
- Clear standards for each of the three areas of commitments
- Applicants are relatively easily able to reach the minimum requirements



KfW's EBS Program

KfW is a German and state-owned investment and development bank that **offers a hybrid grant/low-interest loan model calibrated to building performance outcomes for new construction and retrofits**. It provides up to 100K euros per unit (up to 30% is offered as a grant if commitments are exceeded). The **commercial banking sector works in collaboration with KfW** to provide the initial screening of applications; the KfW then refinances the loan at a more favourable rate and converts a portion of it to a grant should the applicant exceed retrofit standards.

Eligibility

- Private homeowners and homeowner associations
- Housing companies

Commitments

- Environmental: must adhere to the national retrofit standards set in place by the federal government

Key Insights

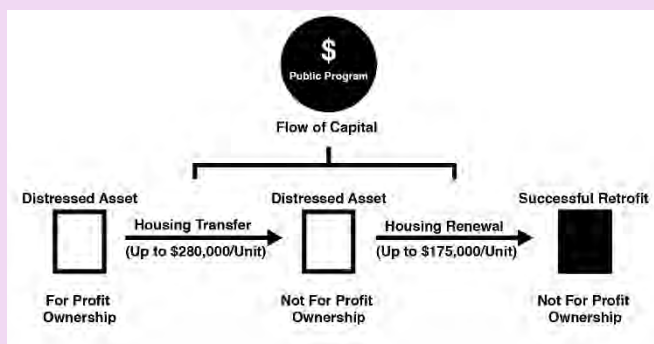
- The program is enabled by the federal government's strong climate change policy with national retrofit standards
- Relies on accredited professionals who follow clear performance guidelines and submit design and energy performance reports as part of the finance approval process
- Covers only costs associated with reduced energy and greenhouse gas emissions 41

Stock Transfer to a Not-for Profit

A **stock transfer to a not-for-profit** is the process through which an owner transfers either a percentage of units or an entire building to a not-for-profit. It is a mechanism that **ensures affordability** in these buildings is maintained and/or they are not entirely lost once the owner puts the building up for sale.

If the entire building is transferred, a NFP can then seek NFP **specific funding to undergo a deep retrofit**. Depending on the agreement, these units may be owned or leased by the not-for-profit who manage the operations and tenancy of the units/building.

There is also an **option for the transfer to start as a lease and transfer to ownership overtime**. Asset transfers between not-for-profits are more common than those between private owners and not-for-profits. These transactions can be enabled by public funding (grants and financing) that jointly supports acquisitions and renewals, tax treatments that incentivize the sale of housing assets to NFPs through capital gains tax reductions, and/or elimination of land transfer tax.



Strengths

- Provides certainty that the units would be kept affordable in perpetuity
- Opportunity to provide additional supports to tenants via the NFP, providing additional social outcomes to tenants and the community at large
- There are a variety of retrofit funding opportunities for NFPs already in market
- Longer time horizons (5-10 years) support the payback of the NFPs capital investment
- Opportunities for infill can enhance the appeal of this transaction for the NFP
- The current market may be a good time for stock transfers as REITs are slowing acquisitions, making the market less competitive. Some REITs are also looking for capital and may be selling some of their stock.

Challenges

- Sellers are often looking to sell for maximum profit and cash constrained NFPs are not competitive in heated housing markets
- It can be difficult for NFPs to determine how they will pay for the transaction (and a retrofit) while maintaining affordable rents
- Within current ecosystem conditions and available programs, not many NFPs would have the capital to both acquire and retrofit a building
- Requires a lot of financial engineering to line up funding for acquisition and retrofits

Stock Transfer to NFPs Case Studies



Opportunity made here.

Daniels, Sunlife, and WoodGreen's EVOLV Public-Private Partnership

Within Daniel's 346 rental until EVOLV Building in Regent Park , 34 units are designated for graduates of WoodGreen's Homeward Bound program. Daniel's and Sunlife have a Head Lease and Ancillary Agreements with WoodGreen, who play the role of tenancy manager, supporting tenant recruitment, retention, and vacancy management as well as collecting and forwarding rents. They also provide additional supports to tenants as needed. Affordable units are funded through the City of Toronto's allocation of the Federal-Provincial Ontario Housing Initiative which committed \$150,000 for each of the affordable units and waived property taxed through the Open Doors Program

Commitments

- Apartments are rented at 80% AMR for 40 years with rents being adjusted to 80% of CMCH's AMR when vacated

Key Insights

- Demonstrates the possibility that a NFP can manage units within a privately owned building while ensuring that affordable units go to those in need
- WoodGreen's services cost approximately \$68,000/year
- WoodGreen did not invest any capital and owners assume responsibility for the building development and operations
- WoodGreen is the sole partner in the project that was eligible to access public affordable housing funds, and assumed responsibility for obtaining government funding and upholding the responsibilities of the 40-year contribution agreement with the City of Toronto



Opportunity made here.

Partial WoodGreen Ownership at 125 George Street

125 George Street is a 39-storey mixed use building in downtown Toronto developed by Diamon Corp and Alterra. In exchange for leniencies regarding heritage preservation and the opportunity to exceed height and density limits of the existing Zoning By-laws, the City of Toronto secured 7 affordable units for operation by WoodGreen Community Housing (1 one-bedroom, 4 two-bedrooms 2 three-bedroom).

Commitments

- Apartments are rented at 80% (or below) of the City's current definition of affordable housing for a minimum period 49 years (which is currently AMR)
- The condos fees for the affordable units are reduced by 50% for 49 years
- All tenants of the affordable rental dwelling units with access to, and use of, all amenities in the development at no extra charge and with the same terms and conditions as other residents

Key Insights

- The obligations for the Section 37 Agreement are registered on title to the lands
- Developer exchanged the ownership of affordable units for other development leniencies and access to Open Doors Affordable Housing incentives
- WoodGreen pays the condo fees, not the residents

Stock Transfer to NFPs Case Studies



Canada's Ecological Land Reserves Tax Credit

This program **completely eliminates the capital gains tax on certain gifts** of publicly listed securities and ecologically sensitive land (to note: gifts are usually taxed at 50%). **Donors are not taxed on any of the capital gain accrued on the donated property and receive the full benefit of the donation tax credit** on donation.

Eligibility

- Tax payer who owns ecologically sensitive land

Commitments

- Must be a property on ecologically sensitive land (certified by the Minister of Environment and Climate Change)

Key Insights

- Between 1995 and 2022, 1697 ecological gifts valued at over \$1 B have been donated across Canada for conservation efforts through this mechanisms, protecting over 216,00 hectares of wildlife habitat
- Corporate donors may deduct the eligible amount of their gift directly from taxable income (approximately 29% of the value)
- An individual receives a non-refundable tax credit
- No limit on the dollar amount of donations in any given year
- Any unused portion of a gift may be carried forward for up to 10 years
- Can be stacked with provincial/territorial tax credits



City of Toronto's MURA Program

The MURA (Multi-Unit Residential Acquisition) Program is a non-market, public and community-based **rental acquisitions strategy to preserve the existing supply of affordable rental housing** in the city. Funding facilitates the purchase and conversion of at-risk private market rental housing to create permanent affordable homes owned by non-profit and Indigenous housing organizations, including community land trusts.

Eligibility

- NFPs (including CLTs) and Indigenous housing providers
- 6-60-unit privately-owned residential or mixed-use properties that are either occupied or vacant, with a focus on multi-tenant homes or low-rise apartment buildings

Commitments

- 99-year affordability with rent not exceeding 100% AMR for any one unit with the objective of overall project average rent of 80% AMR
- Programs may be required to accept tenants in receipt of housing benefits

Key Insights

- Properties are eligible for purchase and renovation funding of up to \$200,000 per dwelling unit for apartment buildings and \$150,000 per dwelling room for multi-tenant houses, with the remainder to be funded or financed by the proponents.



City of Montreal's First Right of Refusal

To respond to the shortage of affordable rental housing in Montreal, the City of Montreal has introduced a right of first refusal (ROFR) bylaw. Introduced in March 2020, the bylaw gives the City the ability to purchase properties with priority over any other buyer by substituting itself for the latter when the seller has accepted an offer to purchase. It does this in order to carry out projects that are deemed for the benefit of the community, such as creating or preserving social housing. Owners of land or buildings subject to the city's ROFR bylaw are sent a notice informing them that their property will be subject to the bylaw (for a period of 10 years). The notice is then entered into the City's land registry database. The ROFR bylaw does not force any owner to sell their property - ownership rights remain intact. That said, as soon as an owner of a property subject to the ROFR bylaw accepts an offer on their property, they must inform the City. The City then has 60 days to inform the owner of its decision to exercise or not its ROFR right. If it choose to use its ROFR bylaw right, the City has to notify the owner that it will replace the potential buyer.



City of Toronto's transfer of TCHC single family homes to NFPs

The TCHC transferred 643 properties with 761 units to The Neighbourhood Land Trust and Circle Community Land Trust. The goal of rh transfers was to help improve service to the tenants, bring the units into a state of good repair, protect the affordability of the units in perpetuity, and build the capacity of the NFP housing sector.

Commitments

- Both CLTs entered into social housing agreements with the City that are registered on title, ensuring that the properties remain affordable in perpetuity
- Programs may be required to accept tenants in receipt of housing benefits

Key Insights

- Both CLTs entered into social housing agreements with the City that are registered on title, ensuring that the properties remain affordable in perpetuity
- City will continue to have a strong oversight role in the operations of the assets
- TCHC, the Land trusts and the City created a joint transition team to lead the transfer for the financial, property, and tenant records
- Land Trusts got funding for the purchase from VanCity and CMHC Co-I funded the repair
- Neighbourhood Land Trust partnered by YWCA Toronto to serve as the landlord; all tenancy and rent administration goes through them

Stock Transfer to NFP Recommendations

The group suggested ways we may enable stock transfers to not-for-profits. Below innovative ways we may increase the uptake of this method to preserve affordability (and potentially increase retrofit uptake).

Focus on owners that may be more open to transferring their stock.

These may include:

- **Family owners who have community roots who are interested their long-standing legacy in the community**
- **Buildings with high needs tenants**, as they present less competition and NFPs are willing to pay asking price
- **Those that get good publicity and/or meet certain ESG targets**, as some owners may be hesitant to stock transfer to NFPs in order to maintain a certain profile. As such, consider ways to offset this risk.

Focus on methods that may enable stock transfers to NFPs.

These may include:

- **Providing tax credits for owners who stock transfer**, which could open capital for other projects
- **Providing grant/tax credits to the private owner to manage the renewal upon commitment they will transfer units to an NFP to maintain affordability**
 - Note- conditional sales like this do present risk
- **Transferring a portion of units first and reducing retrofit costs for private owner by tapping into financing specifically for NFPs re: the NFP held units**

Potential Paths Forward

Should there be GHG regulations in the next 5-10 years, owners will be required to either undergo a (deep) retrofit to be compliant or pay penalties (if applicable). Once this occurs, there are five possible scenarios:

Owner wants to keep building and complete the retrofit

- 1) Owner is enabled to retrofit building and commits to maintaining affordability as per the agreed affordability terms of the capital support
- 2) Owner is enabled to retrofit and makes a partial stock transfer of units to an Not For Profit (NFP) to maintain affordability as per the agreed terms of the capital support

Owner wants to sell building

- 3) Owner is incented to sell their building to a NFP (over private sector), and NFP is enabled to acquire and retrofit the building
- 4) Owner is incented to sell to municipality (over private sector), municipality is enabled to bulk purchase buildings and retrofit
- 5) Owner sells to private sector and affordability is (likely) lost

Should the owner want to retrofit:

- **New innovative tax credits** are NOT a viable solution to enable in the short-term due to long timelines to amend current provincial / federal tax credit laws
- There is a lack of **existing grants** to address full capital gap
- A **mortgage could be the base of the capital stack**
- In order to drive widescale uptake, we will need to determine **how the different tools can come together to address the capital gap in such that owners are willing to maintain rent prices affordable for tenants**

Aggregation

Aggregation refers to the process of **grouping together several similar buildings into one large project portfolio with the aim of supporting multiple projects while driving down costs.**

This occurs **by reducing the fragmentation** and lack of understanding within the retrofit sector (and financing sector) and **designing easily repeated retrofit solutions** that drive up economies of scale and drive down costs.

A designated entity plays the role of aggregator that enables the process, including access to **lower-cost financing** from institutional investors who want to make large investments **and/or retrofit solutions.**

Depending on the entity, the aggregator **may also provide technical and project management expertise** to design, build, and operate the retrofits.

To note, aggregators **can be commercial** (bank/private entity) **or public** (NFP/municipality)

Strengths

- By reaching more buildings, aggregators harness a broader portfolio approach to enable more private finance in the retrofit sector
- Combining projects reduces project development transaction costs, which have historically been a barrier for smaller owners
- By increasing economies of scale, aggregation enables innovative retrofit approaches (e.g., prefabrication) which can simplify retrofits and reduce disruptions for occupants
- Aggregation shifts performance risk away from the individual building owners to the portfolio, which reduces risk to any one specific project and/or owner
- Greater ability to link grant programs and funding programs into aggregation process (e.g., CIB)
- One larger competitive bidding process could attract new players to the retrofit sector (particularly those with innovative ideas to test, or greater R&D budgets) that would otherwise be uninterested in a smaller project
- With access to aggregated and standardized data, there is the opportunity to build evidence for best practices and replicable retrofit solutions that will eventually drive economies of scale and drive down costs. This aggregated evidence can reduce cognitive load for other owners.
- Aggregation can encourage standardization of investments, and potentially certification programs to reduce administrative burden for evaluators and proponents of retrofit funding/financing programs

Challenges

- Because it is a relatively new approach there are fewer designated entities who can play the role of aggregator
- Aggregation works best with similar type buildings and when owners have similar responsibilities and interests, reducing the number of buildings that can be effectively bundled and/or increase the complexity of the aggregation
- Takes a lot of time, skill, and energy and there is currently a significant skills gap in workforce capacity when there are large scale projects, necessitating large-scale education and training.

Aggregator Recommendations

The group suggested ways we may contribute to the aggregation space. Below innovative ways we may enable this method to drive more projects forward,

Focus on getting more foundations involved.

Additional information:

- **Foundations don't require the aggregation of multiple projects** as they are willing to write smaller checks for refinancing.
- **Foundations could be used to create a revolving pool of capital**, similar to the money provided by TAF. This revolving capital could be used to lubricate the market to get to aggregation.
 - Note: This would get around the fact that TAF funding can't be used with CIB funds due to their cap on Federal funding in a project.

Aggregation Case Studies



[Efficiency Capital](#) provides clients with upfront capital to undertake required retrofit work in exchange for a share of end-of-project utility cost savings. They design, invest, install, manage, and measure building upgrades. EC allows owners and managers to increase building profit by realizing savings on operating costs. **EC is serving as an aggregator for CIBs \$2B commercial building retrofit initiative.**

Key Insights

- Beyond aggregating demand, EC takes a structured approach that mitigates design and implementation risk and ensures improved performance and reduced energy consumption while generating sustainable financial savings
- No upfront investment or internal resources are required from building owners
- Technology agnostic: flexibility on choice of equipment, offering the best technology at the most competitive price
- Building owners pay only for results, reducing the financial risk (equal to or less than energy savings)
- Building owners retain all savings after project payback (7-10 years)

* List of approved aggregators for CIB's Building Retrofit Initiative available [here](#).



[SOFIAC](#) is an investment fund agency that enables owners to increase their cost-effectiveness and competitiveness while reducing energy consumption and GHG production. SOFIAC has access to \$200M for investment over the next five years for building owners with annual energy expenditure of more than \$500K (portfolio). It provides complete turnkey solutions for large-scale energy efficiency retrofits of commercial and industrial assets. **It is funded by CIB as an aggregator.**

Key Insights

- SOFIAC funds deep retrofits (25-40% energy savings, 30-50% GHG reductions) with 12–15-year paybacks
- Supports the full cost of retrofit projects and offers specialist technical consultant support
- Recoups investment through the appropriation of energy savings
- Interest rate of loan is determined as a direct function of the reduction in GHG emissions realized by the various projects
- No upfront investment or internal resources are required from building owners
- Non-recourse, long-term junior debt has no impact on borrowing capacity
- Involvement of CIB is essential to SOFIACs success as it mitigates the financial risk and facilitates the bankability of projects

Concierge Approach / Market Development Teams

The concierge approach is a “one-stop-shop” that provides **project management, and technical and financial support** to enable building owners to undergo deep retrofits.

The approach aims to **overcome the complex, fragmented, redundant, and costly** approach to retrofits via **massive scale-up**. Playing the role of project partner, they guide building owners through the retrofit.

Typically, they favour **systematic and modular approaches** to affordable deep energy retrofits.

Market development teams stimulate demand, facilitate access to financing, and standardize delivery to ultimately reduce retrofit costs, mitigate risk, generate financial savings, and improve building performance.

Beyond benefits to individual owners, this process builds industry capacity to develop the market conditions necessary for a massive scale-up of deep energy retrofits.

Strengths

- The standardized delivery, technical/financial support, and project management support reduces risks and administrative efforts for building owners and contractors
- Greater capacity to demonstrate the technical and economic feasibility of whole building retrofits that integrate energy efficiency, decarbonization, and climate adaptation
- Facilitates access to, and structuring of, funding and financing, including increasing the uptake of funding and financing programs offered by various levels of government and utilities
- Facilitates equitable access to the full range of support required for deep retrofits enabling those with less technical and financial capacity to undertake more complex retrofit projects
- Standardizes project delivery and procurement to reduce overall costs
- Highlights and drives towards co-benefits for owner, such as maintaining rents, minimizing disruption to tenants, and returning value to owners and investors, which increases retrofit uptake
- Ability to include social, environmental, and economic outcomes, (often including maintaining affordability); individual owners must adhere to these outcomes to participate in programming
- Stimulate and aggregate demand, which in turn creates local economic activity and jobs
- Ability to tie in with a regulatory framework (building codes, equipment standards) due to localized nature of market development teams

Challenges

- Tends to serve a specific market segment or geographic region, meaning that a network of market development teams are required to service all of Canada
- Tends to work best with buildings with similar retrofit pathways and approaches
- Requires public investment to establish and maintain market development teams, which is usually separate from program funding set aside for capital projects

Concierge Model / Market Development Team Case Studies



The Atmospheric Fund is a regional, NFP climate agency that invests in low-carbon solutions for the GTHA. Funded by endowments, it was originally created to combat climate change and improve air quality in Toronto. It provides a carbon emissions inventory, impact investment, direct grants, and programs, including the [Retrofit Accelerator Program](#), which helps building owners reduce carbon emissions and improve their housing via expert services to deliver deep energy retrofits in the MU sector.

Key Insights

- Collaborates with building owners, utilities, governments, residents, and other stakeholders to maximize health, social, environmental, and economic outcomes
- Acts as a partner throughout the retrofit process
- Stimulates and aggregates demand
- Facilitates access to and structuring of funding and financing, including navigating and increasing uptake of funding programs
- Standardizes project delivery and procurement to reduce costs
- Plans and coordinate project delivery
- Provides accountability for social, environmental, and economic outcomes



Reframed Initiative is a market development initiative of BCNPHA, the City of Vancouver, Metro Vancouver Housing Corporation, and the Pembina Institute. It brings together the construction industry, building owners, policy makers, and the financial sector to scale deep retrofits through a demonstration project with 6 MU buildings throughout BC.

Key Insights

- Seeks to demonstrate retrofits that integrate energy efficiency, decarbonization, seismic safety, and climate adaptation
- Scale-up solutions that keep rent affordable, minimize disruption to tenants, and return value to owners and investors
- Uses collective problem solving and exploratory pursuit through workshops to develop repeatable schematic designs for retrofits that integrate co-benefits
- Invites public to participate in design sessions as deep retrofit solution providers
- Dropped “energy” from “energy retrofit” to expand bounds of what can be achieved via retrofit



In an effort to build a systematic and modular approach to affordable deep energy retrofits, the [ReCover Initiative](#) seeks to develop a market for the Energiesprong model. Through their work, research and lessons learned in Nova Scotia, they are building a community to enable the acceleration and scaling of solutions to address climate change and build a sustainable economy.

Key Insights

- Faster and less disruptive than a traditional retrofit; occupants can remain in-home
- Following a systematic process reduces risk to contractors and cost to owners
- Emphasis on local production
- Sharing research and lessons learned is key to their mandate; operate as an “open source” organization
- Focus on low-rise multi-family buildings because of their prevalence, simple structures, and uniform window sizes in Nova Scotia
- No funding model to accompany EnergieSprong; a third-party funder or financial institution needs to prioritize this to enable scaling
- Looking to ensure that the work does not promote rent increases and that vulnerable populations can remain in place

Clustering

Clustering refers to **identifying buildings in proximity that are of similar construction, building typology, and age in order to introduce a range of deep retrofit measures and upgrades within the cluster.** The approach has the potential to harness various economies of scale, bring in additional building owners, and demonstrate projects of best practice.

Clustering tends to be best suited in neighbours where the building age and type of construction are similar. Benefit are amplified when demographics and affordability are similar, as it supports with outreach and generating understanding/acceptance.

Strengths

- Develops larger local markets to demonstrate and scale the use of technology and its benefits
- Can catalyze energy sharing/district energy approaches due to their proximity
- Can phase development across multiple sites, which could minimize the disruption caused by relocation
- If buildings are clustered together, there is an opportunity to coordinate site design, which may enable better community design via coordinate use of community benefit funds
- Can harness the benefits of engaging in longer term labour contracts and larger supply acquisition

Challenges

- May take longer to get group participation and buy-in on common approach
- When an owner has multiple properties in a cluster, the economic and logistical requirements are challenging to align given the varying asset management plans and equipment needs



Innovation Pilot Idea:

Could the municipality implement a “carbon budget” for clustered sites? For example, when a developer wants to add infill they need to retrofit their other building to keep within their carbon budget.

Affordability Covenants

In absence of a Stock Transfer, affordability covenants attached to contributions will need to balance both tenant and owner needs as it relates to rent and profit. Finding a balance that entices owners to act will be a delicate balancing act.

Learnings and Ideas

- Each state that harnesses the US Department of Energy's Weatherization Assistance Program (increases energy efficiency of low-income households, reducing their energy costs), have their own affordability covenants. Some states mandate that landlords can never increase rent as a result of improvements made by WAP while others have time limits (12-24 months for rent stabilization)
- City of Toronto's Hi-RIS program requires that property owners agree not to apply for any rent increases above the guideline as identified in connection with any improvements funded through the Program, however they do not have any rules re: vacancy decontrol
- Proformas in Ontario assume vacancy decontrol (10-15% yearly turnover which moves rent to AMR). Affordability covenants attached to Retrofit Funding could mandate a prorated rent upon turnover, which would mimic the portion of the building that does not turnover very often.

Further Questions

- Is there a reasonable allowable rent uplift for owners?
- Is there a role of long-term rent supplements which provide more stability to revenue then market rent?

Owner Motivation

Different owners and building types will have different motivations for decision making. Below are some considerations when thinking about attracting owners to undergo deep retrofits that maintain affordability:

**Early adopters will likely need to be actively approached.
Consider owners who:**

- Have stated ESG targets
- Have deep roots in the community and want to continue to have a positive reputation/legacy
- Are 3rd/4th generation owners who want to maintain their buildings so they can keep them within their family
- Opportunistic early adopter as those who were already planning to spend money on other upgrades. For example, a roof upgrade cannot harness CIB funding but it can be covered should it be part of a solar panel upgrades. Also, even when certain elements aren't end of life, could use logic that adopting deep retrofits can reduce projects costs AND net present value of the projet.

**The Government will play a key role in adoption.
Consider how every level of government can play a role in:**

- Providing support with benchmarking to identify both the work and potential savings
 - Ex. City of Toronto's STEP Program, which does a high-level inventory of building components, systems, and condition assessments and recommends energy conservation measures
- Setting regulations and ensure there is clear information symmetry and dissemination regarding penalties for not meeting performance standards and not reporting.
 - Vancouver and Toronto have announced but not yet enforced regulations
- Elevating information about incentives and costs/benefits as well as providing roadmaps in one easy to access location, to reduce cognitive overload and motivate action, which should include technology specific archetypes citing expected savings, cost, and return on investment (ROI).
- Develop educational materials for different audiences including condominium boards, building owners etc.
- Collect and disseminate project results using consistent metrics

Additional Considerations

Innovative ideas have been raised about additional partners and contexts that can catalyze or set the conditions for the models we are testing to thrive.

Additional catalyzers

- **Incremental payments from energy savings to installation and/or construction**-allowing for distribution of risk and better retrofits
- **Beneficial insurance implications**- improvements lower building risk in a variable climate, risk costs are starting to influence business cases.
- **Connect with engineering firms and HVAC companies** who have connections to owners
- **Economies of scale**- can increase savings and net present value of projects when deep retrofits are added to other upgrades
- **Support for owners to capture any additional income stream from retrofits** via proactive support with monitoring/reporting and supporting in recoup of investments, including factoring energy savings into financial statements and assessments to reassure shareholders
- **Investment recovery via utility bills** (e.g. on-bill financing)
- **District Energy Centres**, which would reduce costs of emissions reductions for individual buildings via economies of scale while freeing up capital for other projects.
- **Enabling infill development in conjunction with retrofits**
- **Alternative capital** from impact investors or health funds

Ways we may test (now or in the future)

- **Including retrofits and affordability planning when building transit oriented communities**
- **Creating 'regulatory sandboxes' in neighbourhoods with big unfractured investments.** These would allow governments to experiment with new rules and regulations in order to test what works and adopt the best solutions. These are frameworks that make it possible to trial new business models in practice by relaxing rules and regulations on a trial basis in order to permit them to develop. Examples of this could be Opportunity Zones that test tax credits (see Tax Credit Iteration Signals).

Perceived and Actual Tenant Harms from Retrofits

Despite the potential for a range of benefits for tenants resulting from deep retrofits, potential harms do exist and must be mitigated.

Although there are many tenant benefits associated with deep retrofits, potential harms include:

- Disruption and inconvenience to daily living due to noise, contractor access needs and potential temporary relocation requirements
- Feeling a lack of control or understanding related to work done on their homes
- Deepening distrust between landlord and tenant
- Risk of above guideline rent increases, impacting the affordability of unit
- Increased bills due to installation of new HVAC systems (e.g. heat pumps, cooling systems, etc.)

When tenants are unhappy it can not only lead to budget increases of 5-20% but it can also impact the landlord's reputation, which can impact business further down the line.

Facilitating a Positive Tenant Experience (1)

Deep retrofits with tenants in place is possible but intentional and sufficient tenant engagement and considerations are necessary to ensure projects stay on time and on budget and that tenants maintain a strong sense of security. Below are overviews of some well documented mechanisms for achieving a positive tenant experience:

Tenant Engagement Strategy

- A strong tenant engagement strategy for the entire duration of the retrofit (including planning) can be a requirement to achieve funding to ensure tenants are equitably and accessibly considered and consulted throughout the project lifecycle. This includes in detailed communication re: expectations, scope, timelines, tenant prep, etc.
- Spending on tenant engagement strategies should be eligible for funding
- A tenant stakeholder group can be a key element to the strategy. They can be collaborators (help choose contractors), champions (share benefits and spread the word with other tenants) and support the tenant liaison

Tenant Liaison

- A tenant liaison is a member of the retrofit team that works directly with tenants and the construction team through the retrofit to keep them informed, sequence activities and timelines, and minimize impacts on tenants through planning and communication. They work to understand and address tenant concerns and work to accommodate special needs and scheduling by ensuring tenants are being considered throughout the project scope
- Having a tenant liaison requirement and ensuring this position is eligible for full funding can support more positive tenant experiences

Facilitating a Positive Tenant Experience (2)

Deep retrofits with tenants in place is possible but intentional and sufficient tenant engagement and considerations are necessary to ensure projects stay on time and on budget and that tenants maintain a strong sense of security. Below are some well documented mechanisms for achieving a positive tenant experience:

Hiring contractors with tenant lens

- Ensure contractors have experience retrofitting with tenants in place
- Include "minimize tenant disruption" in design terms of reference
- Get clear codes of conducts from workers and ask how these are enforced on site
- Include tenant liaison role in contractor requirements via the project tender documents

Pre-fabrication and efficient installs

- Do as much offsite fabrication as possible allowing for quick installation to minimize noise and vibrations
- Try to do same day installs by pairing trades to reduce the number of unit entries required
- Accessing a unit for eight hours on one day is often preferred to twice for four hours over two days

Swing and back-up spaces

- When units need to be accessed, consider having swing spaces that can be used by tenants. These could be empty units or modular spaces outside the building
- Consider providing meal vouchers for nearby cafes so tenants have somewhere to go for to go for respite from the noise
- Prepare a weekly schedule that includes additional backup units if a tenant could not accommodate access on the scheduled day

Facilitating a Positive Tenant Experience (3)

Deep retrofits with tenants in place is possible but intentional and sufficient tenant engagement and considerations are necessary to ensure projects stay on time and on budget and that tenants maintain a strong sense of security. Below are some well documented mechanisms for achieving a positive tenant experience:

Tenants of Communication

- Communication between property management, construction company, and tenants before, during, and after retrofit, should focus on the following information:
 - Overview of the renovation, including timeline
 - Contact information of point-person and/or social media site to air concerns/provide input
 - Requirements for tenants to prepare for the retrofit
 - Implications of construction process on health
 - Impacts on energy performance
 - Co-benefits of the retrofit (affordability, health, aesthetics, thermal comfort)
 - Information on how to use equipment post-retrofit
- Written materials should be translated into commonly spoken languages; employ a tenant to do the translation if possible

Mechanisms to Maintain Affordability (1)

Our group has been exploring ways to fill the financial gap for retrofits to prevent landlords needing to recoup costs via rent uplifts. Despite filling this gap, we still need to explore other motivating factors for landlords to undergo retrofits **AND** maintain affordable rents.

Affordability covenants

- Public grants and low-cost financing may be tied to affordability covenants for a set number of years. Typical formulations include:
 - Tenant-focused: x% of tenants at or below a set income level
 - Rent-focused: x% of units are at “affordable” rents; rents remain fixed; rents remain within a set range, rents can increase by x% with turnover
- “Affordable” is typically defined as either 80% of MMR or 30% of tenant income
- It has been speculated that mission-oriented developers or owners subject to additional affordability criteria are those that primarily engage with covenants. ***How do we make covenants more appealing to other landlords?***

Examples

[Efficiency Nova Scotia](#): rebates covering up to 80% of costs for specific energy efficient interventions for affordable multifamily units, rents are to be maintained as affordable for 12 years

[City of Toronto Deep Retrofit Challenge](#): grants up to 25% of project costs (up to \$500k), cannot apply for above guideline rent increases

[Minneapolis 4d Affordable Housing Incentive](#): 40% reduction in tax rate on qualifying units, 20% of units are affordable for households making 60% of median income for 10 years

Mechanisms to Maintain Affordability (2)

Our group has been exploring ways to fill the financial gap for retrofits to prevent landlords needing to recoup costs via rent uplifts. Despite filling this gap, we still need to explore other motivating factors for landlords to undergo retrofits AND maintain affordable rents.

Shared savings

- When tenants pay for energy use, some sort of shared incentive between landlord and tenant may help compel landlords to invest in retrofits
- When owners pay for energy use, landlords may demonstrate how utility savings benefit tenants
- Shared saving agreements may be done through lease structures, making them relatively simple to implement
- These agreements enable owners to spend money on efficiency improvements and recoup costs by raising rent by a certain percentage of realized energy savings passed on to the tenant

Examples

[New York City:](#) owners' capital expense can be passed on the tenant for up to 80% of predicted utility savings in a given year, tenants therefore receive savings of +/-20%

[Efficiency Nova Scotia:](#) offers on-bill financing for energy efficiency upgrades, tenants are then supported to negotiate a reduction in rent equivalent to all or part of the on-bill financing

Considerations when Considering Affordability Mechanisms

The response to affordability mechanisms are as nuanced as the owners we need to adopt them. Below are some considerations as we work to tie affordability levers to deep retrofit support.

To consider in general:

- There is no set understanding of the relationship between incentive and covenant. It differs depending on the building and owner.
- The larger companies like REITs are less likely to engage with covenants associated with low-cost financing as they likely already have capital available. They tend to limit their participation to grants.
- Affordability covenants must directly speak to the objective of the program, such as contributing to the Affordable housing stock, ensuring existing tenants are able to remain etc.
- Covenants are both financially and psychologically fettering so must be worthwhile. Public funding must be sufficient to generate reasonable uptake.

To consider when thinking about early adopters:

- The pioneers would likely be mid- to large-sized owners with ESG requirements and a critical mass in the area, but not REITs (i.e. Oxford). Smaller owners may be late adopters because of fear/uncertainty, or, if they were to adopt early, would need significant support
- The pilot must be implemented alongside a push for a comprehensive framework to support deep retrofits that maintain tenant security via a variety of regulatory mechanisms such as energy disclosure, low-income energy programming, energy benchmarking, recommended updates to the RTA etc.

Ontario's Regulatory Framework (1)

One of the reasons why tenants are hesitant to support a retrofit is a fear of above guideline rent increases and/or eviction. In Ontario, the existing regulatory framework outlines legal protections with respect to rent control, eviction, and renovation/repairs. It protects from major rent increases in existing units but upon unit turnover there are no legal protections to maintain affordability.

Rent control

- Rent can only be increased once in a 12-month period. The rent increase must come at a minimum of 12 months after the last legal rent increase or when tenancy began. 90-day notice must be given to the tenant.
- The yearly rent increase is limited to a set guideline. For 2023, this increase is 2.3%. This does not apply to new units, additions, or buildings (built after Nov 15 2018) or when the unit turns over.
- Landlords can apply to the Landlord and Tenant Board for an Above Guideline Increase under certain conditions, including significant renovations, repairs, and replacements to the building or units. If the renovation is eligible (i.e. is not cosmetic and is done to increase accessibility or conserve energy), the landlord may be allowed to increase rents by an additional 3% above the yearly guideline for up to 3 years.
- Tenants can challenge an illegal rent increase.

Eviction and renovation/repairs

- Landlords are permitted to renovation/repairs during a lease if the repairs are not overly disruptive.
- If a landlord chooses to undergo major repairs, the tenant may be temporarily evicted with 120 days notice. They are entitled to return to the same unit at the same rent upon completion of the renovation.
- If the building has 5+ units, the landlord must compensate the tenant for vacating the unit.
 - If the tenant plans to return, the landlord must pay the equivalent rent for the duration of the renovation, up to 3 months.
 - If the tenant does not plan to return, the landlord must pay this amount or offer another acceptable rental property.

Ontario's Regulatory Framework (2)

In 2022, the City of Toronto has put forward [recommendations](#) for Council, the Province of Ontario, and the Federal Government to prevent renovictions.

Amendments to the Residential Tenancies Act

- Require landlords to find temporary accommodation for their tenants if they need to leave a unit so that it can be repaired or renovated, and the tenants intend to move back post-repair/renovation
- Provide the same rights afforded to tenants in buildings with five or more units to those in buildings with less than five units
- Re-introduce rent control to cover units occupied after Nov 15 2018
- Amend AGI rules to make expenditures that are necessary to address non-compliance with municipal property standards/municipal orders around health, safety or maintenance standards to be ineligible for AGIs
- Require landlords to provide tenants with clear, detailed information about the scope of work to be performed on a rental unit well in advance of it being carried out, and to provide evidence of actual costs incurred, in order to be eligible for an AGI

Other Recommendations (not exhaustive)

- That the Government of Ontario to establish a centralized data system and rental registry
- That the Federal and Provincial governments to establish acquisition programs to create permanent affordable rental homes