



"One person's choices or actions alone aren't enough to make a huge impact.
It's only in numbers that we can really change things."

A model for deep tenant
engagement

Tenant engagement for **maximizing**
co-benefits in energy and building retrofits



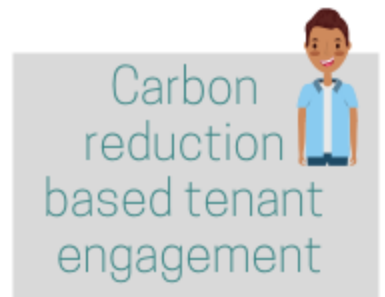
One third
of Ontario's rental
housing stock
needs repairs

TENANTS
DESERVE
RESPECT
ACORN



Contents

Introduction	4
What is ACORN?	7
Context	9
Approach	11
Housing Issues	15
Co-benefits	18
Co-harms	22
Tenant Barriers to Retrofits	25
Climate Action	27
Tenant Experience of Retrofits	29
Why Should We Engage Tenants?	31
Benefits of Tenant Engagement	32
Tenant Engagement: Best Practices	34
Tenant Engagement Evaluation	38
Influencing Behaviour Evaluation	40
Co-benefits Evaluation	42
Recommendations	46
Appendix A	52



Introduction

Climate change is a growing problem affecting Canadian, and global, citizens. Heatwave-related deaths are predicted to double by 2050, while storms like the one that flooded over 4,700 homes in Toronto in 2013 are expected to become more common. Low and moderate income communities are disproportionately affected by climate change and the related health impacts. In Hamilton, for example, the lowest-income neighbourhoods have three times more cardiopulmonary disease deaths than higher-income neighbourhoods.

Low-income tenants, including seniors, children and racialized community members, are often less equipped to deal with the effects of climate change. These groups are more likely to live in lower quality, inefficient housing with higher energy costs and are more prone to illness from extreme heat, extreme cold, and substandard living conditions as a result.

In the GTHA and across Ontario, we have a unique opportunity to reverse these trends. For example, the City of Toronto has committed to reducing carbon emissions by 80% by the year 2050, compared to 1990 levels. As buildings are responsible for over a quarter of Ontario's carbon emissions, retrofits will be essential to ensure climate goals are met.

Successful energy retrofits can specifically benefit residents of low-income apartment buildings. Programs like TowerWise show that retrofits can lead to a 30% reduction in energy and carbon usage. Energy efficiency programs can also have up to a 2:1 cost-benefit ratio. Retrofits of low-income housing can potentially result in the co-benefits of carbon reduction, energy efficiency, and costs savings, as well as positive health outcomes. On a macroeconomic level, retrofits can reduce the need for government spending on health and energy subsidies, which can be redirected to other types of social spending for low-income Canadians.

Retrofits

Energy retrofits can be defined as upgrades or refurbishments to help to improve a building's energy performance. Some of the benefits of energy retrofits include increased energy efficiency, reductions in energy consumption and improvements to health and living conditions. Examples of retrofits include insulation, energy efficient lighting, heating and cooling system upgrades, energy efficient appliances, window and door upgrades, weatherization measures such as caulking and weather stripping, and boiler upgrades.



Many low-income tenants are dependent on their landlord's interest in retrofit programs to benefit.

With one third of Ontario's rental units in need of repairs, support for retrofits in low-income apartment buildings is needed from all levels of government to take advantage of the potential gains in energy efficiency, health, and building improvements.

A one size fits all approach to tenant engagement is inadequate, particularly in high-rise buildings where each unit has varying retrofit needs and residents are often not consulted by their landlord regarding changes. For retrofit programs to be a success, and for carbon reduction goals to be met, tenants must be engaged at each stage of the retrofit process: from before the project starts, during the planning and implementation stages, through to completion and beyond.

As a tenant engagement leader in Canada, ACORN has consulted with our low-to-moderate income tenant membership to consider the best practices in deep tenant engagement to guide energy and building retrofit projects and maximize co-benefits for tenants.



Tenant engagement



Building people power

What is ACORN?

ACORN Canada (Association of Community Organizations for Reform Now) is an independent national organization of low and moderate income families.

We believe that social and economic justice can best be achieved with an active membership who are invested in their organization and focused on building power for change. We have a unique organizing strategy of door-to-door outreach coupled with local leadership development. This allows us to build the capacity of low and moderate income Canadians to civically engage on issues they care about. With an evidence-based train-the-trainer model, the impacts of our methodology are far reaching.

We have been organizing tenants in apartment buildings since 2004. Our tenant leaders have led efforts to improve living conditions in their buildings, participated in community gardening and climate actions, engaged in civic

processes, and raised awareness of the health and safety issues facing tenants as a result of unhealthy living conditions in apartment buildings.

This deep outreach work enables ACORN to build strong roots in communities across the country. As a result, we have a unique understanding of the issues facing low-to-moderate income tenants and are well-placed to lead tenant engagement in apartment buildings across Canada.



Over
113,000
members



In
twenty
chapters



Across
9
cities

ACORN Outreach Activities

Each staff member has one-on-one conversations with eight families per day, or 160 families per month

Staff distribute 50 informational materials per day, or 1,000 pieces per month

We conduct thousands of leadership house visits each year, supporting and building members' capacity to run meetings, speak to the press, lead outreach, and run forums and larger events

Staff make contact with an additional 100 to 200 families per month through community meetings

We facilitate approximately 500 meetings and events each year, led by our volunteer members. This is the equivalent of \$225,000 in community volunteer hours

On top of our door-to-door outreach, we layer on phone and digital outreach, such as calls, emails and texts to our contacts across Canada

We also conduct outreach to, and build strong relationships with, faith organizations, unions, and other neighbourhood institutions to disseminate information to their members



Context

Support for energy retrofit activities varies between levels of government.

For example, municipal governments have indicated support for energy retrofits and other climate actions. The City of Toronto has introduced a number of policies to promote building quality and meet climate goals. Toronto's Poverty Reduction Strategy outlines the City's target of improving the quality of all affordable housing, while the City's resilience office, ResilientTO, has recognized that energy retrofits will be a key driver of increasing building resilience and achieving emission reduction targets. Toronto's climate action strategy, TransformTO, details the City's target of improving energy performance by 40 per cent, by completing energy retrofits in all existing buildings by 2050. The City of Hamilton has committed to reducing GHG emissions by 50 percent based on 2005 levels, by 2050. Hamilton has also opted into the "Bay Area Climate Change Office", which aims to coordinate efforts to reduce greenhouse gas emissions in partnership with the City of Burlington and Mohawk College. The City of Hamilton's Climate Change Action Plan also identified retrofitting as a key tool to reduce building emissions and encourage energy efficiency.

Provincially, there is some uncertainty about the future of energy retrofits for social housing and private apartment buildings. The Ontario government's recent Environment Plan outlines the Province's proposals for climate action. However, there is no mention of supports for low-income communities, such as energy retrofits in social housing. A lack of funding, coupled with a lowered carbon reduction target, could reduce motivation for climate action in Ontario.

ACORN's low and moderate income tenant membership has selected energy retrofits as an area of focus for the organization. Retrofit programs can help to address a range of issues experienced by tenants living in substandard apartment buildings. As a result, ACORN's Housing campaign focuses on increasing tenants' access to affordable and livable housing.



The Vancouver Declaration on Clean Growth and Climate Change outlines the Pan-Canadian commitment to improve quality of life while transitioning to a low carbon economy. Nationally, there is a target to achieve a 30% reduction in emissions by 2030, compared with 2005 levels. The federal government has outlined their plan to build and repair affordable housing with 25% improved energy efficiency in the National Housing Strategy. The National Housing Co-Investment Fund's 'Repair and Renewal' stream provides over \$5 billion in loans and capital funding to support the repair of 240,000 units. Existing building retrofits were also identified as an area for investment in the Pan-Canadian Framework on Clean Growth and Climate Change, and the \$2 billion Low Carbon Economy Fund was announced in November 2018 to support carbon reduction activities. The federal government is also launching an Advisory Council on Climate Action to target emission reduction in the building and transportation sectors.



Approach

The aim of this project was to understand tenants' priorities for retrofitting and the best strategies for co-creation of co-benefits through tenant engagement. We engaged a number of experts in the field of retrofitting to guide the project. Our research involved several elements, including:



1. A scan of the literature exploring best practices for maximizing co-benefits through tenant engagement;
2. Two focus groups with low-to-moderate income ACORN members, in Toronto and Hamilton;
3. A survey to ACORN's low-to-moderate income membership.

Key themes from the literature

- Low-income people are more likely to live in inefficient buildings and are more vulnerable to the effects of climate change, but less likely to invest in energy efficiency due to a number of barriers.
- Inefficient and substandard buildings can lead to heat or cold related illnesses, respiratory and coronary issues, and allergies.
- Successful retrofits can unlock a range of co-benefits including increased energy efficiency, building improvements, and positive health outcomes.
- Tenant engagement is central to the success of retrofit programs, offering opportunities to build support for retrofits, understand and communicate priority co-benefits, involve tenants in the design of the project, understand and influence tenant behaviours through tenant-led strategies, address and minimize potential co-harms, and maximize co-benefits.
- Features of effective tenant engagement include: a tailored engagement strategy that is tenant-led and facilitated by a trusted institution, co-creation of co-benefits and strategies to influence behaviours, clear communication throughout the process, and ongoing support.



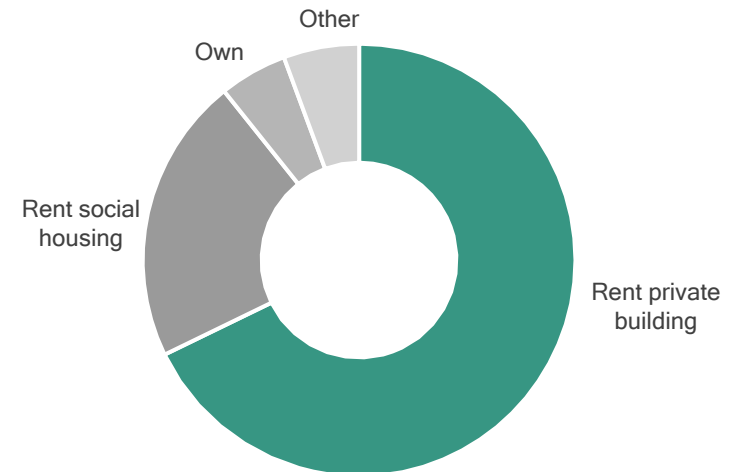
What we heard from the survey

Consistent with the demographics of ACORN's membership base, the majority of the survey respondents were low-to-moderate income tenants. 58 per cent of survey respondents had household incomes below \$30,000; 13 per cent had household incomes below \$10,000. Respondents were primarily renters in high-rise buildings of 12 storeys or more, in private buildings (68%) or social housing (21%). Only 5 per cent of respondents own their home.

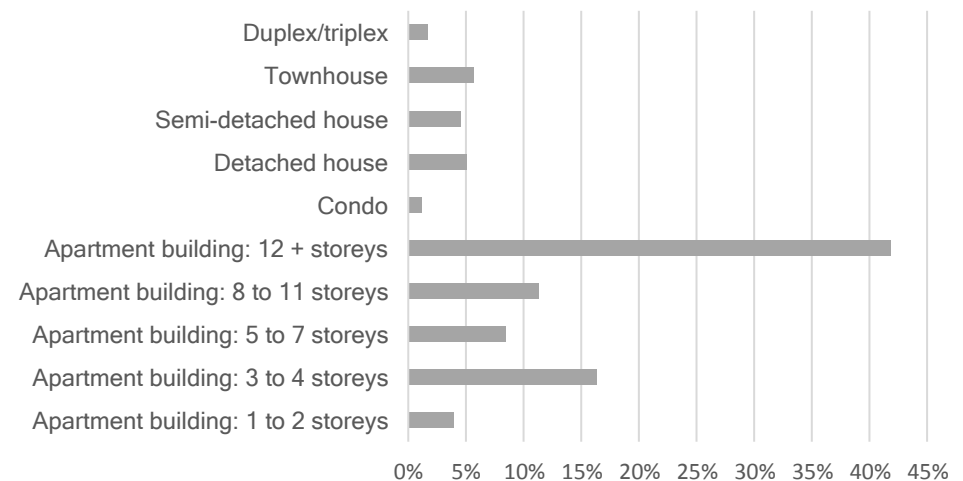
ACORN members were invited to complete the survey via email, social media and in person, and the majority of responses were received online. As a result, the data may not be reflective of tenants who are unable to access the internet due to cost or other barriers. 177 survey responses were received from the GTHA and Ottawa areas.

Low and moderate income tenants frequently experience housing issues, including pests, ventilation problems, issues with heating/cooling systems, drafts, and general disrepair. Tenants value co-benefits that address these issues, such as building improvements and the resulting health benefits. Tenants want to improve the condition of their homes, but are also interested in conservation and reducing emissions. Low and moderate income tenants indicated that they are concerned about climate change, and already take a number of climate actions including recycling, using energy efficient lighting, and adopting alternative transportation methods.

Do you rent or own your home?



What type of building do you live in?



However, respondents told us that they face a multitude of barriers that impact their ability to reduce their carbon footprint. Some of the barriers that we identified include: lack of insulation causing increased energy use, no recycling or composting facilities in building, no control over heating or cooling systems, the perceived cost of making more environmentally responsible choices, health issues, lack of home maintenance.

Survey respondents indicated that they believe individual actions have a limited impact compared to those of large polluters, and showed an awareness of the need to work collectively. Many respondents told us that they were willing to change their behaviour, including working with their landlord, to make their home more efficient. Thirty-two respondents had experienced energy retrofits in their building in recent years and 42% told us that the retrofits went well. Poor communication, disruption to tenants and lack of opportunity to provide input were some of the main issues that respondents identified as reasons for dissatisfaction. Despite positive responses to the potential co-benefits that could result from retrofitting their buildings, respondents indicated concern about potential rent increases due to repairs or upgrades being implemented. The majority of respondents told us they couldn't afford an above guideline rent increase (AGI): many would need to sacrifice basic necessities, or move.

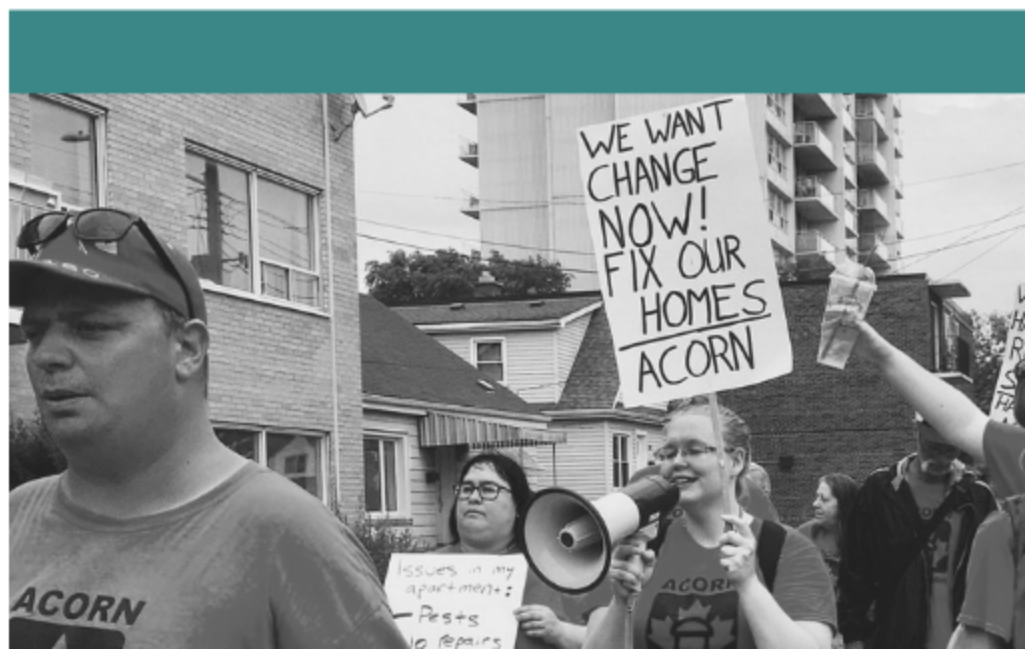
What we heard from the focus groups

Two focus groups, with a total of 26 participants, were held with ACORN members in Toronto and Hamilton. Again, the majority of participants were low-to-moderate income tenants living in private apartment buildings or social housing. Participants were invited to the focus group during door-to-door outreach to new

and existing ACORN members and via email and phone outreach.

Substandard housing

By far, the biggest problem facing the tenants that we spoke to was poor quality housing. Pest and rodent infestations, mould, and broken appliances were just some of the issues that the participants told us they experience. Many focus group participants told us that repairs were not completed in a timely manner. Some participants described the effect that their substandard housing has had on their health, including negative impacts on mental health, asthma, and sleeping issues. Focus group participants indicated that they were interested in retrofits that made improvements to their homes and buildings, and indicated that co-benefits that tackle poor housing conditions (and the resulting health impacts) should be promoted.





Tenant-landlord issues

Many focus group participants spoke of a fraught relationship with their landlord. Lack of trust was a major factor, with participants speaking of a deep fear that any request they made of their landlord would lead to an above guideline rent increase. Some participants had experienced (or suspected) unauthorized entry into their apartment by their landlord, others had witnessed or experienced harassment and intimidation of tenants. Many participants indicated that necessary repairs were not completed, or they had to pester their landlord to have their requests for repairs addressed.

Lack of engagement

The majority of tenants we spoke to indicated that the status quo was a lack of engagement. Participants did not feel that they had any decision making power, and often weren't

consulted about changes being made in their building. We heard that tenants experience a range of issues in their buildings and they want to have a say in repairs and upgrades that might improve their living conditions.

Cost of housing

A recurring theme was the conflict between the desire for repairs, juxtaposed with concern about potential rent increases. Participants in both cities spoke of the difficulties they faced finding affordable housing. Those who were living in housing that they could afford were scared about the prospect of rent increases or eviction. Many participants had either experienced or knew of instances where a landlord had used non-essential repairs as a means to raise rents for sitting tenants, or to evict tenants to raise the rents without rent control for new tenants (renovictions).

Climate action

Overall, participants had a good understanding of climate change and the resulting impacts. The participants we spoke to indicated that they want to play their part to tackle climate change, but often face barriers that make it difficult. For many, living in poverty made it impossible to prioritize climate action over simply surviving. For others, they try to do what they can but are limited by constraints out of their control. For example, some participants indicated that they have no recycling facilities in their building or the appliances that came with their apartment are inefficient. There was a strong consensus that tenants want to tackle climate change but could be better supported to do so.

Housing Issues

Housing stability and cost, dwelling conditions, the standard of housing, and the social environment of the community can all affect a tenant's health [1].

Low and moderate income tenants are more likely than other groups to live in substandard housing [2], often experiencing issues such as drafts, mould, and outdated appliances. Over 92 per cent of survey respondents reported having issues with their unit or building. Many participants indicated that they were forced to stay in undesirable living conditions due to the cost of rent: buildings and units that are in disrepair are more affordable. Rents across the province have risen by one third in the past 10 years, and often when repairs are completed to bring a building up to standard, tenants are given an above guideline rent increase. Social Justice Tribunals Ontario reported that, in 2017/2018, they received 559 AGI applications [3]. As a result of their concern about AGIs, tenants can be apprehensive about asking for necessary repairs.

We heard from survey respondents, and focus group participants, that they experience a wide range of issues with their apartments, including pests, drafty windows, and heating and cooling issues. More than 56 per cent of respondents have had issues with pests, presenting both health and environmental impacts, as harmful pesticides are often used to treat pests. One focus group participant told us, "The unit has issues with cockroaches and mice, making us have to spray it with poisonous gas regularly to control the issue."



What do tenants say?

"Lack of ventilation in my bedroom has caused my asthma to act up. Constant water shutdowns. Faucets constantly need to get tightened or fixed because they leak. I'm allergic to dust, and the heat in the apartment and dust that rises from the vents means I need to purchase, and consistently use, allergy pills. That is my biggest concern because sometimes I can't breathe in my apartment." - *Survey respondent*

"We have single pane windows and in the winter the draft is so bad that the curtains actually wave because of it. We are constantly having water shutdowns at very short notice. In the summer it's very hot and if you want to use an air conditioner you have to pay hundreds of dollars to do so." - *Survey respondent*



Inadequate living conditions can mean that low-income tenants are vulnerable to the impacts of climate change, with limited ability to respond to climate events, such as storms and extreme heat. We heard from focus group participants that they want to be engaged in the retrofit process to influence outcomes that make their homes livable. A 2016 City of Toronto report describes apartment building retrofitting as a “win-win action” which has the potential to deliver energy efficiency improvements, increased social cohesion and healthier living conditions [4].

By engaging tenants during the retrofits process, there is a unique opportunity to understand the issues in the building and involve tenants in the co-design of co-benefits that could potentially address these issues.

We asked survey respondents whether they experience any issues in their home. The top responses include pests, ventilation problems, odours and drafts.



“Since the building is a 100 year-plus house turned into a 16-unit apartment building, there are many issues, such as poor insulation causing a lot of noise exchange between neighbours, poor heat and cool retention, and outdated fixtures. There is also poor ventilation, causing allergies and stuffiness within the house.
- Survey respondent

Co-benefits

Beyond energy benefits such as reduced greenhouse gas emissions, reduced energy consumption and improved energy infrastructure, retrofit programs have the potential to produce additional positive outcomes for tenants, called co-benefits.

These benefits can impact health, home, and community. Effective retrofit programs can also help with problems related to climate change and pollution in communities, such as changes in weather patterns, increased asthma rates, and more. Studies show that retrofitting can result in a cost benefit ratio of almost 2:1 [5] with potential benefits available to a range of stakeholders. In instances where the carbon saving benefits are perceived not to be worth the cost, research has found that the health and social benefits can make carbon saving measures worthwhile [6]. Governments may benefit due to reduced expenditure on health care and energy subsidies and assistance, as well as boosts to the economy through job creation. Utility providers may benefit through the potential for reduced spending on non-payment disconnections, debt collection, and customer calls. The wider community may benefit through improved health, environmental benefits, and increased comfort because of reduced drafts, mould and odours. In addition, there is potential for other community benefits to be realized, such as the creation of good jobs. With an estimated one third of Ontario workers in precarious employment [7], the creation of stable work could provide a necessary boost to low-wage workers.

Research indicates that the potential non-energy benefits of climate investment may be more tangible at the community level than energy benefits, with a more immediate impact on well-being [8]. By promoting these co-benefits, it may be possible to boost support for retrofit programs and achieve outcomes that tenants want.

"Myself and both my kids all have asthma. Our apartment is too hot. We basically live with the windows open during the winter. For whatever reason, every apartment along that stretch of the building is the same. We get nosebleeds, dry nose, dry throat."

- Focus group participant



From our review of the literature, there are a range of co-benefits that could potentially be unlocked through energy retrofitting, including:

Financial benefits for tenants:

Retrofits may lead to lower energy bills due to increased efficiency [9], which could result in reduced occurrences energy poverty [10]. Where tenants do not pay the bill, they may benefit by the building owner or operator re-investing the savings back into building upgrades.

Financial benefits for building owners/operators:

Lower building operating costs as a result of increased efficiency and better building conditions [11].

Financial benefits for government/wider community:

Reduced expenditure on public health as a result of improved health outcomes [12];
Reduced need for shelters/housing programs as existing housing stock is sustained [13];
Growth in employment [14];
Reduced energy bills linked to investment in local economies [15];
Reduced expenditure on fuel assistance programs subsidies [16].

Improvements to housing:

Increased comfort due to more even temperatures reduced extremes of moisture/dryness, and reduced infiltration of odours [17];
Increased quality of housing [18];
Increased resilience against extreme weather such as extreme

heat [19], for example when old, inefficient cooling systems are replaced with central/more efficient systems;
Improved home health and safety as a result of repairs [20];
Quieter, more peaceful home, for example due to insulation [21];
Better indoor air quality [22];
Increased resilience to power outages [23].

Employment benefits:

Job creation through investment in energy efficiency [24];
Less time off of work/school due to illness leading to improved efficiency and better educational outcomes [25].

Health benefits:

Improved well-being and mental health as a result of improved living conditions [26];
Improvements in child development [27];
Reduced mortality, hospitalizations and chronic pain [28];
Reduced symptoms/occurrence of respiratory and cardiovascular conditions, rheumatism, arthritis, and other improved health outcomes [29];
Reduced impact of heat on vulnerable populations such as children and seniors due to improved cooling systems [30];
Reduced exposure to allergens and mould [31].

Social benefits:

Fewer restricted activity days [32];
Increased knowledge of energy efficiency for residents [33];
Improved building and community appearance [34]

Based on the co-benefits identified from the literature review, survey respondents were presented with a range of health, housing, employment, financial, and social co-benefits, and asked to select the benefits that are most important to them.

The results indicate that health benefits are important to tenants, unsurprising given that many respondents indicated they live in poor quality housing that impacts their health. Addressing substandard housing through retrofit programs could lead to improved health outcomes, such as a reduction in cardiorespiratory disease and allergy symptoms, and positive impacts on mental health.

The findings align with studies that encourage the promotion of health and other co-benefits over potential cost savings [35] or energy savings [36]. Health benefits are “immediate and quantifiable” and present a tangible boost to the welfare of impacted residents. Overall, the survey results indicate that the priorities of tenants are diverse.

Tenants in different buildings are likely to have different priorities, due to the fact that living conditions can vary greatly from unit to unit and building to building. Accordingly, there is no one size fits all approach to engaging tenants and promoting co-benefits:

“A resident engagement process should be co-created with the residents themselves; those who live there will know best how they want to participate in the process of identifying needs and aspirations, as well as how they want to learn about the energy and conservation measures that are part of the project.” [38]

Tenant engagement provides the opportunity to identify priority co-benefits that are feasible, and co-create a localized plan to maximize these co-benefits. Communication of the co-benefits that have been identified by tenants could help to build support for retrofit activities and may encourage other energy saving behaviours [39].



Survey respondents were asked to identify which of the following potential co-benefits are most important to them:

Improvements in your health, such as reduction of illness or pain, colds and flus, respiratory illness, headaches, and allergies, from improved air quality, ventilation, and mold removal	62%
Improvements in your health, such as irritation of eyes, runny nose, dry throat, cough, dry skin, exhaustion, from general improvements in air quality	57%
Providing a better life for future generations by reducing emissions and helping to tackle climate change	53%
Improvements in your health as a result of reduced stress due to living in a building that isn't maintained by the landlord	50%
Increased ability to conserve water and electricity	47%
Improving the conditions of your home, items and appliances in your home like cupboards, floors, fridge, stove and others	46%
Increased pride in your home	46%
Increased temperature comfort at home, such as cooler indoor temperatures in summer	45%
Increased temperature comfort at home, such as fewer drafts and more even heating	45%
Increased ability to control temperatures in your unit	40%
Creation of good paying jobs in your community (in energy service or energy-efficiency programmes)	39%
Improvements in your health due to a reduced amount of toxins from pest-killing products	36%
Improvements in your health due to a reduced amount of bites and contact with insects, mice and rats	35%
Investment in local economy as tenants use hydro bills savings to spend locally	35%
Increased comfort and safety during weather events like storms, extreme heat, power outages	33%
Improved relationships with your neighbours and/or other community members or services	33%
Reduced hydro bills	31%
Increased temperature comfort at home – other	25%
Other	11%

Co-harms

Despite the potential for a range of co-benefits to be unlocked through energy and building retrofits, co-harms also exist and must be mitigated. Meaningful tenant engagement should involve tenants in the co-creation of co-benefits, to address any trade-off between possible benefits and the resulting co-harms. Many of the co-harms listed below may be avoided when tenants are actively engaged and provided with adequate support to make choices that work for their local context. Experts also promote policy design that balances emission reduction with health and equity impacts to minimize co-harms [40]. Potential co-harms include:



Above guideline rent increases could mean higher rents, and/or displacement.

Cooling system installation may lead to increased energy consumption and higher bills in apartment buildings that previously had no cooling system in place.

Increased humidity, air tightness and/or temperature without adequate ventilation systems could potentially cause mould, asthma, allergies, and pests.

Potential for energy savings to be offset if community members spend financial savings in carbon-heavy industries (known as the rebound effect).



Of the thirty-two survey respondents who had recently undergone energy-related repairs in their building, seven received an AGI (22%). Others were given a rent increase, but were unsure of the amount. Focus group participants spoke in depth about their fear of rent increases, with the majority of the tenants we spoke to indicating that they were concerned that environmental upgrades would lead to higher rents, despite their appetite to take climate action and desire to see changes in their building. Research from the UK confirms this fear, indicating that during a housing shortage, upgrades to existing rental housing could lead to increased rents, with a number of negative impacts on tenants [41]. In Germany, landlords are allowed to pass the cost of energy retrofits onto tenants, which has contributed to a loss of affordable housing stock in cities where average rents are already high [42]. There is also increasing concern about the potential for energy retrofit related relocations, where tenants are displaced so that landlord can raise rents without the need to comply with rent increase guidelines as the potential implications for gentrification as a result of climate action are emerging [43].

Above guideline rent increases could mean higher rents, and/or displacement.



Cooling system installation may lead to increased energy consumption and higher bills in apartment buildings that previously had no cooling system in place.

Often in buildings without central or building-wide air conditioning, tenants install their own air conditioning units: Over half of the survey respondents indicated that they had installed an air conditioning unit in their home. Units added by tenants are often old, inefficient and poorly installed. Therefore, the impact on energy consumption, and cost, may be minimized with the installation of more efficient cooling systems. The energy penalty may also be outweighed by decreased vulnerability to extreme heat events.

Increased humidity, air tightness and/or temperature without adequate ventilation systems could potentially cause mould, asthma, allergies, and pests.

The rebound effect is frequently cited as a possible co-harm resulting from retrofit programs. However, tenants do not always benefit from financial savings as their hydro bill may be included with their rent payment. Research also indicates that despite the potential to impact possible GHG emission reductions, spending in carbon-heavy industries can bring additional benefits to the wellbeing of low-income households [44]. The rebound effect can be mitigated through tenant engagement prior to the retrofit to understand and work with tenants to influence behaviours [45]. The survey and focus group data indicated that tenants care about climate change and are willing to change their behaviours.

Some studies indicated that when ventilation systems are absent or poorly installed, there could be negative outcomes for residents [46]. Ensuring systems are properly installed and that end-users are supported to understand the systems are key mitigation steps. A Toronto-based study of thermal comfort in social housing units found that all seventy units included in the study experienced overheating in the summer, with some also experiencing overheating in the winter. The researchers recommend retrofitting buildings to address solar heat gains, provision of building-wide cooling systems, upgraded boilers, and individual temperature control within each unit, while balancing individual behaviours with carbon

Potential for energy savings to be offset if community members spend financial savings in carbon-heavy industries (known as the rebound effect).

Tenant Barriers to Retrofitting

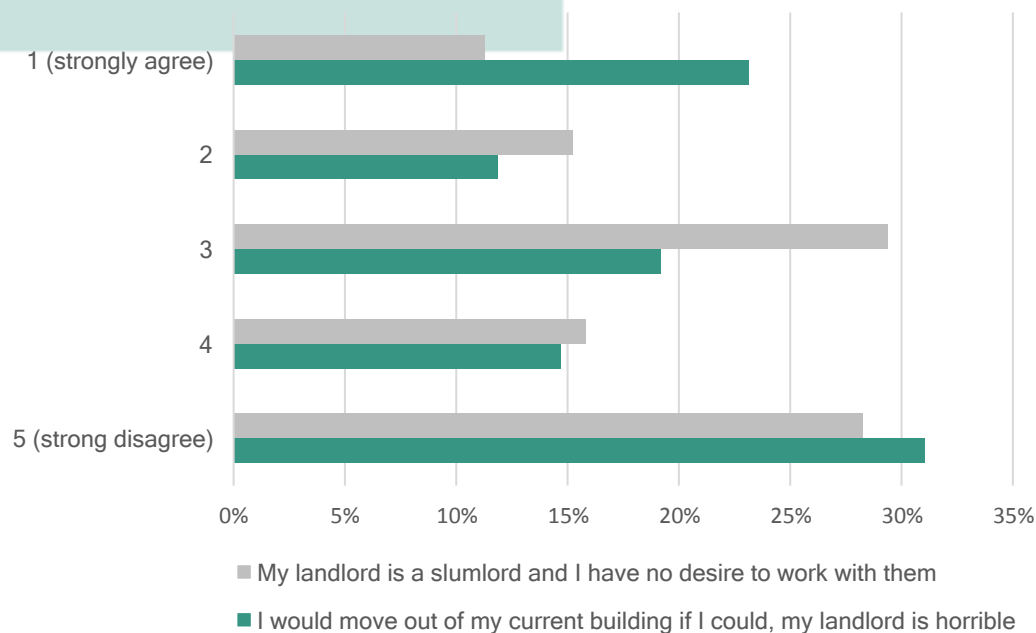
Renters are often unable to directly invest in carbon reduction actions, such as retrofitting, due to a lack of funds, or because they do not have the necessary control to make changes. Tenants may experience split incentive, i.e. when they pay the utility bills but do not control the maintenance or upgrading of appliances [48]. Consequently, tenants are reliant on their landlord being proactive in addressing energy inefficiency. Other tenants indicated that they are forced to make poor choices because of their lack of control, or suffer negative impacts.

According to one survey respondent:

“The heat in our apartment during the winter gets to about 28C, and we have no way of controlling the temperature. We frequently have to leave our windows and/or balcony door open just to get some relief”

The hostile tenant-landlord relationship in many apartment buildings is an issue that can impact the success of tenant engagement, and effectively, the overall success of retrofit programs. Tenants cite trust issues, slow or no responses to complaints, poor communication and intimidation as reasons for poor tenant-landlord relationships. Over a quarter of participants told us that they think their landlord is a slumlord.

Landlord-Tenant Relationship



These findings indicate that work needs to be done to bridge the gap between the needs of tenants and the actions of landlords, to support and encourage tenants to take carbon reduction actions and to ensure the effectiveness of retrofit programs.

Many focus group participants and survey respondents indicated that they live in a state of disrepair. In fact, 93 per cent of survey respondents told us that they had issues in their apartment. One focus group participant said: “Landlords want to do in-apartment repairs for only new tenants, who pay even more. People who have been in a dwelling the longest usually have to deal with the largest level of disrepair.” Longer-term tenants often have lower rents due to rent control, so landlords want to drive them out and raise the rent. As a result, participants reported that their landlords often do not do repairs.

A major challenge faces retrofit program implementers. On the one hand, tenant behaviour has a major impact on the effectiveness of building and energy retrofits, potentially increasing energy savings by up to 20 per cent. On the other hand, there are many barriers which can prevent the success of tenant engagement efforts and the potential for behaviour change to occur.

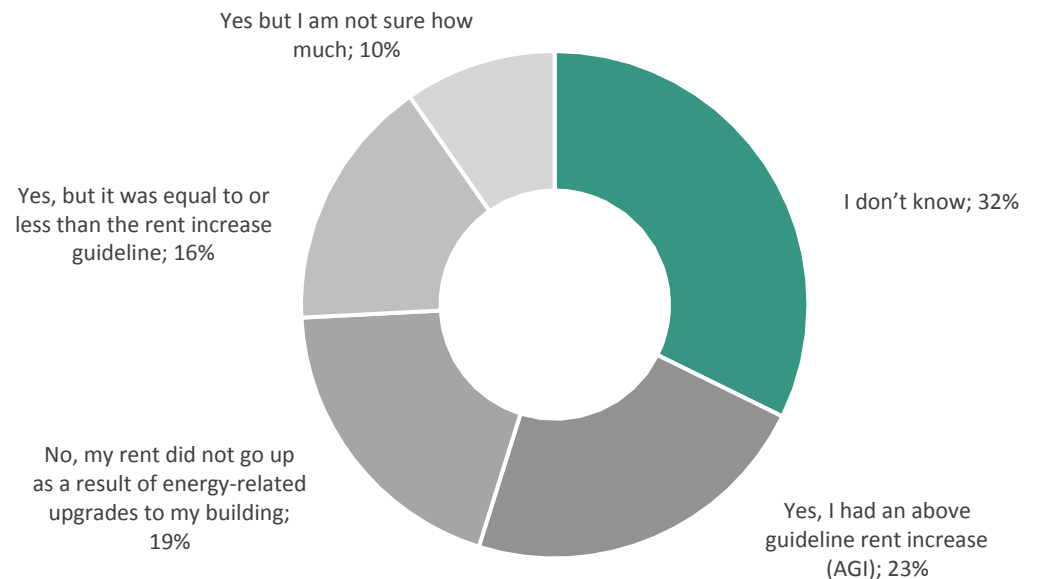
What do tenants say?

"The bathroom has mould and the ventilation is nil. There is no window.

Kitchen taps have leaked since 2015. There have been constant water shut downs while other apartments are upgraded when tenants move out. There is an ongoing bed bug problem. We were given a 4.8% rent increase, 3% above the guideline, to pay for the cosmetic work done. Plus another 2% above next year."

- Survey respondent

Did your rent go up as a result of energy-related upgrades to your building?



Climate Action

Low-income tenants are ready to take climate action. The majority of respondents agreed that they want to do whatever is possible to tackle climate change.

Overall, 99 per cent of survey respondents indicated that they currently take some sort of action to reduce their impact on the environment. Respondents suggested that they have also started to notice the effects of climate change and are taking actions to adapt, such as installing an AC unit at home (50%), preparing for crises (45%), paying for tenant insurance (44%), preparing for more power outages (30%). Retrofits could potentially increase the impact of the actions that tenants are already taking, for example by replacing inefficient, tenant installed AC units with more efficient central air conditioning.

Only 7 per cent of respondents indicated that they have not noticed any impact of climate change. When asked to rate the impact that they feel their everyday actions are having on helping fight climate change, where 1 is a strong impact and 5 is no impact, survey respondents ranked themselves as a 3, on average. There was a clear indication from respondents that although they are trying to reduce their impact on the environment, their actions are limited due to personal situations, external factors such as their landlord or building owner, and the negative impacts of taking climate actions.

68%

use alternative
transportation

70%

use energy
efficient lighting

84%

recycle

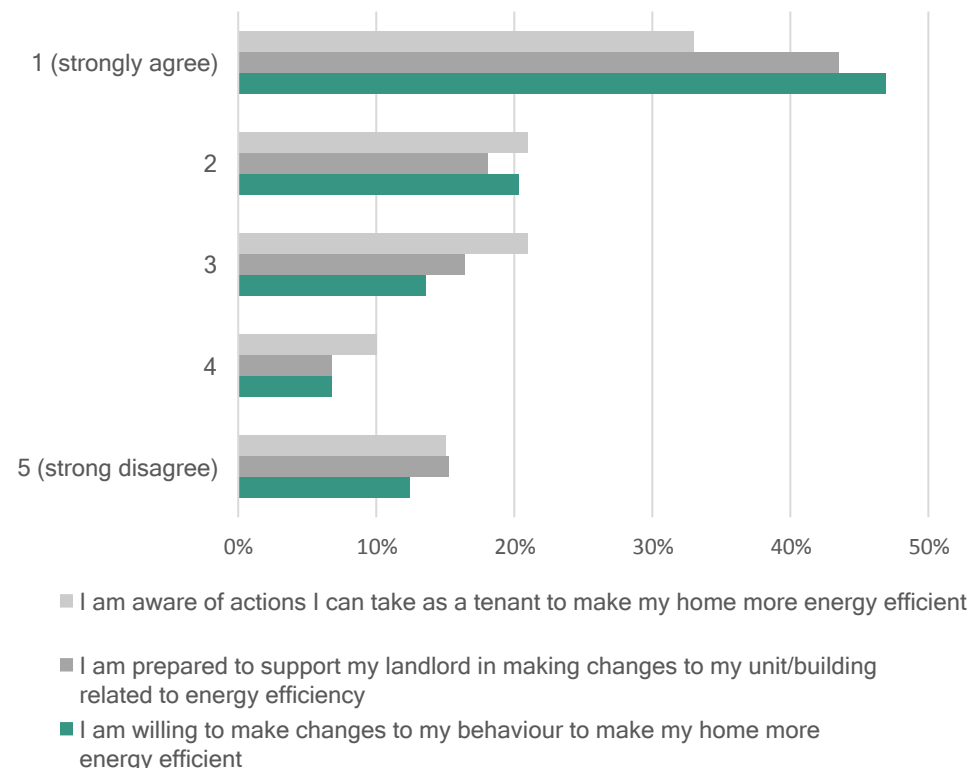
I'm VERY conservative in hydro use, water use, and am conscious of packaging materials in goods that I buy. I recycle and reuse almost everything. I compost. - *Survey respondent*

I try to have a very low carbon footprint. I don't drive and often bike. I'm very careful with recycling and try to use products that have a smaller amount of packaging or no packaging. - *Survey respondent*

Focus group participants and survey respondents indicated that they face a number of barriers to taking effective climate action, including a lack of insulation causing increased energy use, no recycling or composting facilities in their building, no control over heating or cooling systems, the perceived cost of environmentally responsible choices, health issues, lack of home maintenance. Both survey respondents and focus group participants expressed frustration that their actions did not make much of an impact when compared with the actions of large corporations and other polluters. However, many participants expressed a willingness to change their behaviours and work with their landlord. Almost 45 per cent of survey respondents strongly agreed that they are prepared to support their landlord in making energy efficiency-related changes to their unit or building. Research shows that rather than a top-down approach to overcoming the barriers that prevent support of retrofit measures, it is important to encourage values that will lead to energy efficient actions [49].

Engaging tenants in the co-design of a strategy to influence behaviours and maximize co-benefits will support actions are tenant-led and more likely to be adopted [50].

Tenant attitudes towards climate action



What do tenants say?

"I cycle to work. My wife takes transit. The car is only used 2 to 3 times per week. I am vegan. We keep our regular home temperature at 18 degrees Celsius... I wish we had better insulated walls. The brick is a good thermal mass which is uncomfortable in summer because it radiates into the house." - Survey respondent

"Preparation feels out of my control with regards to poverty, disability, etc." - Survey respondent

"I try, but feel like it is an uphill battle against corporations that are polluting our planet." - Focus group participant

Tenant Experience of Retrofits

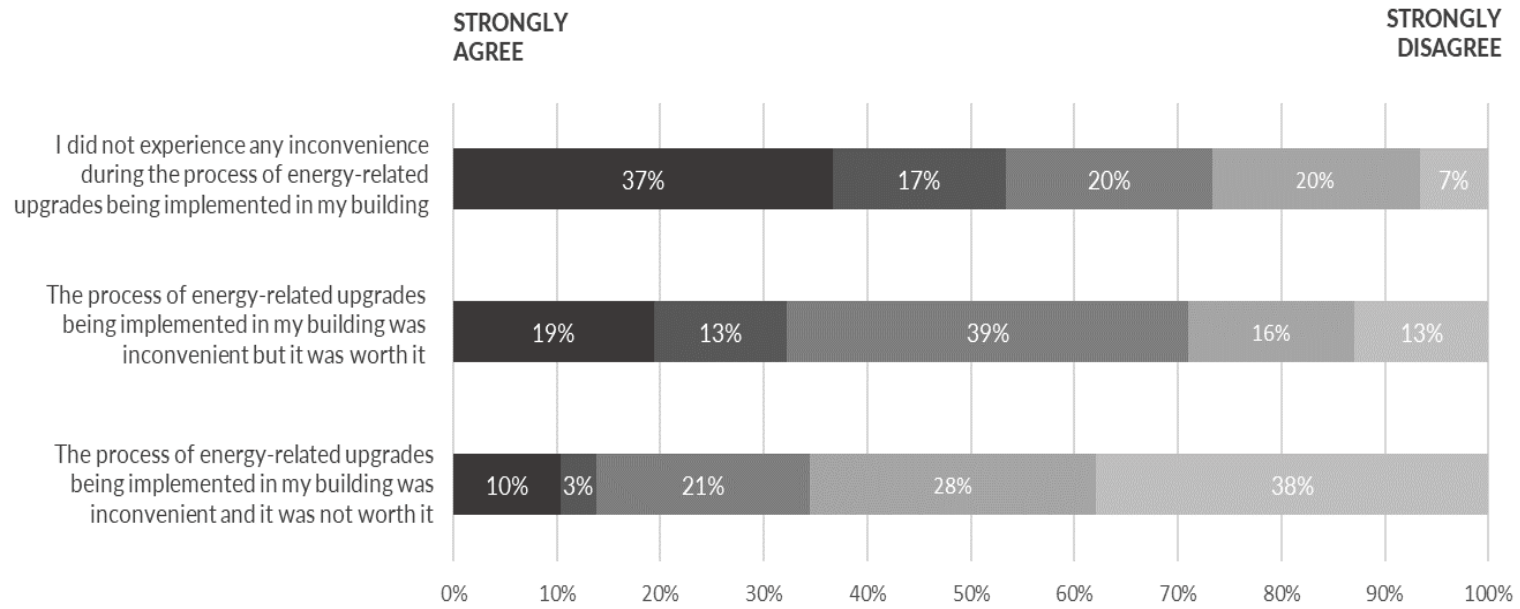
The potential for disruption to tenants' living situations due to noise, dust, possible displacement, and other factors, is a significant challenge to be managed when retrofitting buildings. Besides financial barriers, perceived or actual disruption to residents has been identified as a major barrier affecting the adoption of retrofit activities [51]. Survey respondents reinforced some negative tenant experiences cited in the literature, such as long delays, a lack of communication, and above guideline rent increases. Of the 32 survey respondents who have had recent retrofits in their building, 30 per cent said that more could have been done to minimize disruption to tenants.

Only 35 per cent of respondents who have had recent retrofits indicated that they were kept informed about what was going on, and that any timescales, delays, or updates were communicated. One third would have liked more opportunities to provide input into the work.

“One issue I have is that we didn't know what was going on or why. Perfectly good toilets and shower heads were being replaced. The replacements were not as good as the originals in a number of ways.
- Focus group participant

Existing retrofit programs present an opportunity to identify where future projects could be improved. Communication with tenants is a key factor influencing the effectiveness of retrofit programs. Repairs and upgrades should be completed in a timely manner and if the project runs over schedule, tenants must be kept informed [52]. One survey respondent explained that their windows were upgraded during winter, which was a negative experience for tenants. Another respondent indicated that there was no reason given for the changes being made to their unit. A lack of communication leads to confusion, and can make it difficult for tenants to buy into the project.

We spoke with focus group participants about their communication preferences. It was clear that not everyone can be reached by posting a flyer in the lobby. One participant spoke of rarely leaving her unit, which means she often missed notices about water shut offs. It is particularly important that efforts are made to reach vulnerable tenants and those who will be most impacted by the disruption: deep tenant engagement is necessary to connect with all tenants.





Meaningful tenant engagement is a vital stage in the retrofit process, allowing retrofit implementers to understand the impact of the occupants' behaviours on energy efficiency. It is crucial that tenant behaviour is taken into consideration to achieve the full benefits of a retrofit program [53], with one study describing tenants' impact on retrofit effectiveness as "pivotal" [54].

Wide disparity between energy bills in identical units indicates that individual behaviour has a strong influence on efficiency [55]. Research shows that tenants can negatively impact the efficiency of their units post retrofit if they are not given help to understand the upgraded systems [56], if there is no follow up support [57], and if tenant lifestyles are not understood [58]. One study refers to the "cat-flap paradox". Pet-ownership is given as an example of a lifestyle choice that must be considered. It is likely that tenants will be responsible for installing insulated and airtight cat-flaps. In reality, tenants will probably buy standard cat-flaps, which could undermine energy efficiency [59].

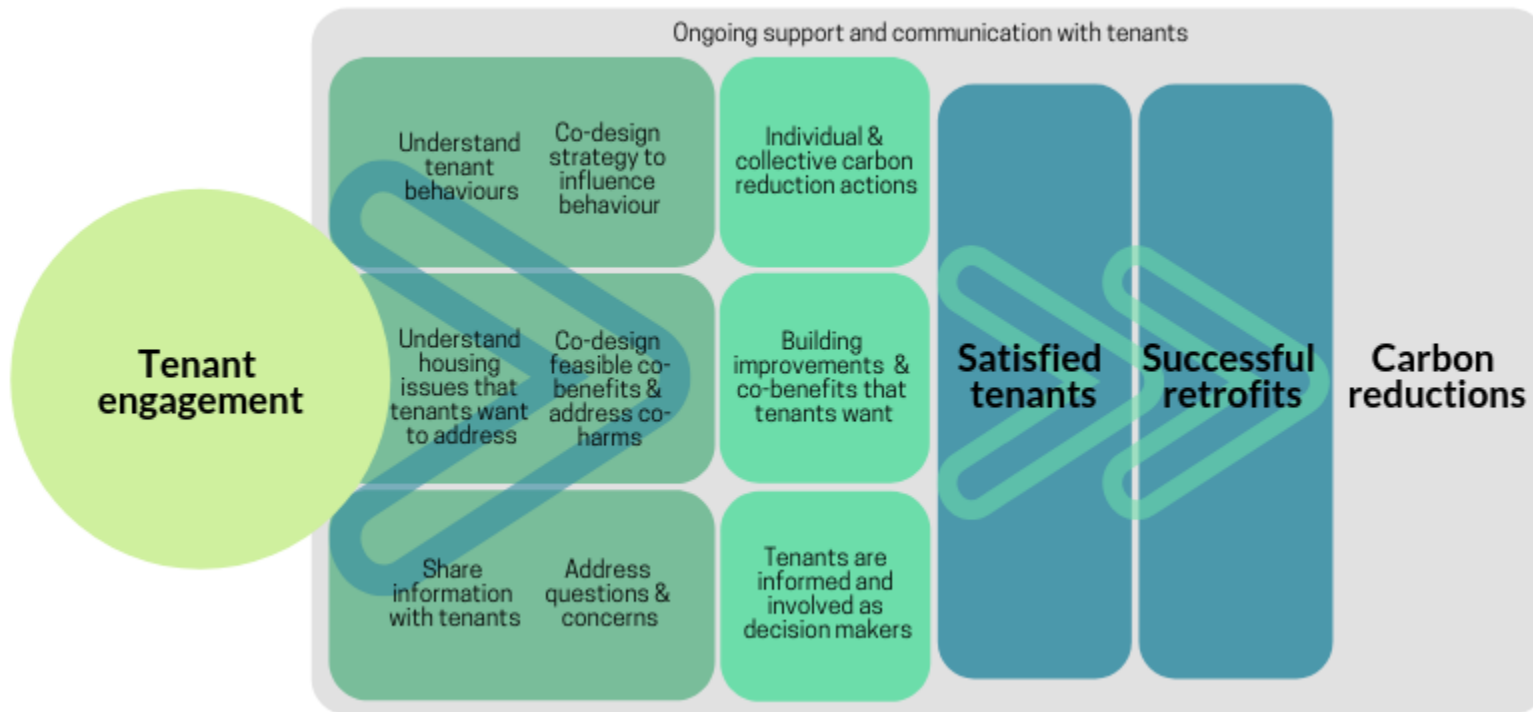
Our survey results indicate that the majority of low and moderate income tenants want to do what is possible to tackle climate change, but there are barriers preventing them from taking action. One focus group respondent in Toronto said: "I tried to separate things into recycling bags but it attracted the roaches, so I had to stop." Another focus group respondent indicated that they keep their windows open all winter due to the heat in their apartment. It is important to understand the unique challenges exist in low and moderate income apartment buildings. Incorrect assumptions about tenant behaviour can lead to an energy efficiency gap between expected and actual efficiency [60]. Tenant engagement presents an opportunity to co-create feasible strategies to influence behaviour in order to save energy and reduce emissions.

Further, by engaging tenants, there is an opportunity to co-design solutions that meet the tenants' needs. Focus group participants told us that retrofit implementers should "make sure everyone has a say". As discussed in the Housing Issues section, tenants experience a wide range of issues that vary from building to building; specific housing issues will impact which co-benefits are a priority for tenants.

The co-benefits that are both feasible and most desired by tenants should be communicated in order to boost support for retrofits.

Why Should We Engage Tenants?

Benefits of Tenant Engagement





Tenant Engagement: Best Practices



Tenants should be provided with multiple ways to engage in retrofit programs, including receiving informational flyers, attending meetings, house visits, providing input via email, social media, phone, and other appropriate methods, depending on the tenants' needs.

Our fourteen years of organizing in low and moderate income communities has told us that the needs of tenants vary from city to city, building to building, and unit to unit. Deep outreach is a vital step in engaging tenants to understand their needs and ensuring the success of building and energy retrofits. Often, well-meaning engagement attempts miss the mark. Involving one or two tenants in a committee or meeting can result in tokenized engagement and often does not give a voice to the tenants who are most impacted by changes in their building. Central to ACORN's tenant engagement approach is overcoming barriers to participation: going door to door, taking information to tenants in their homes, using multiple methods of communication (face to face, phone, email, social media), arranging meetings in accessible, neutral locations, as well as leadership development to ensure our work is tenant-led. More information about ACORN's engagement model is provided in Appendix A. From the research and literature review, we have identified best practices in tenant engagement:

1. Tenants should be involved in co-designing solutions that are relevant to their local context

The research indicates there is a clear need to work with tenants to co-create co-benefits and strategies to influence behaviours that work for their local context. A report exploring the role of Community Benefits Agreements in the Tower Renewal program promotes the co-creation of a strategy targeting energy conservation and action [61], while research on encouraging climate action in Australian cities recommends local-led strategies, and promotes community engagement as a means of identifying the most appropriate solutions [62].



Locally-led actions allow a diversity of experiences to be recognized [63], while coproduction helps get people involved in order to influence behaviour change [64], a vital step in achieving carbon reduction goals. During the focus groups, we heard that tenants have thoughts and ideas about the issues that need to be addressed in their buildings, and they want to be involved in the design of retrofit programs to tackle these issues. An EU study of retrofit projects promotes tenant engagement as a means of understanding tenant needs so that efficiency goals are met, while also achieving tenant support for the project [65]. Another study of a successful retrofit program in the UK found co-design with occupants to be “invaluable” [66].

By engaging tenants, it is possible to understand their needs, identify feasible co-benefits and address co-harms. This approach can lead to win-win situations where emissions are reduced and tenants get building improvements and co-benefits that are valuable to them, resulting in successful retrofits overall.

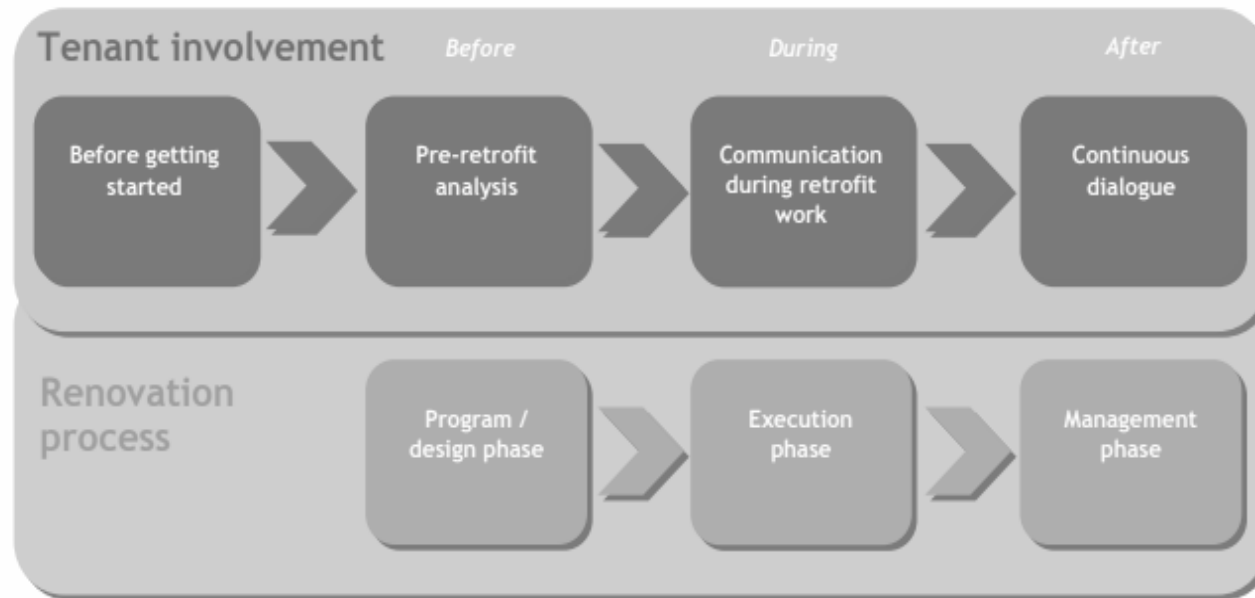
2. Identify and support the development of local leaders

ACORN’s engagement model is centered around leadership development. We identify any skills that tenants want to share or build and work with them to encourage development of their leadership capacity. As a result, all of our meetings, workshops and decisions are tenant-led. Within climate action, local leadership is identified by stakeholders as a highly effective engagement method that provides an opportunity for residents to be engaged using language that is familiar to them, from people they know [67]. Tenant-led initiatives are identified as a high level engagement activity in the literature, along with train-the-trainer approaches and the creation of communities of practice. In comparison, lower levels of engagement include sharing information with tenants via flyers, or tenant consultation [68]. A research paper detailing the tenant engagement activities conducted during Toronto Community Housing retrofit programs credited tenant engagement, in the form of tenant leadership and opportunities for tenant input, with increasing the success of the program [69].

3. Engage tenants early in the design process

Tenants should be engaged throughout the entire retrofit process. Their input can shape the project before it starts, and they should be given a seat at the table during planning and implementation stages, through to completion and beyond. Focus group participants told us they wanted to be kept informed when changes were being made in their building; many felt like they had previously been left in the dark or given insufficient information. Studies of past projects promote tenant involvement early in the process. For example, a case study of the Robert Cooke Co-operative retrofit, part of the TowerWise program, promotes engagement in the early stages of the design process [70]. Despite the success of this program, which achieved a 30% reduction in carbon emissions, residents opposed a lighting retrofit which could have led to further energy savings.

Engagement early in the design process could have provided an opportunity to share knowledge with residents, connect co-benefits to the needs of the occupants, and address any concerns. Similarly, a study exploring the use of energy technology recommends supporting uptake and community engagement by involving users in early in the design and decision-making process [71]. Early engagement also provides the opportunity to understand tenant behaviours and encourage the adoption of energy saving actions.



The main steps of tenant involvement [72]

4. Ongoing communication

According to one focus group participant, “communication, that’s the magic word”. Tenants want to be kept informed throughout the retrofit process. By communicating with tenants, there is an opportunity to provide the information they need to make informed decisions and address any questions or concerns. Regular interaction with tenants is promoted as best practice in energy conservation initiatives [73]. Further, in a case study of a UK high rise retrofit program, lack of communication has been identified as a key factor impacting the success of the project. The authors recommend communication throughout retrofit projects to keep tenants informed, so that they understand potential energy savings resulting from the project, and to share update regarding delays or other issues that might inconvenience residents [74].

Linked to behaviour change, it is important that communications meet tenants where they are at, to encourage energy efficiency behaviours, rather than top down communications that dictate what tenants should or should not do [75]. Communication of co-benefits could also secure tenants' support for retrofits and influence energy saving behaviours. A potential communications approach includes:

- A. Conduct outreach to tenants;
- B. Engage interested tenants in the design of feasible co-benefits;
- C. Communicate identified co-benefits to all tenants using a range of methods;

Public health experts promote climate communications that connect health issues such as heat and air quality with climate related messaging, while taking a non-alarmist approach and considering the target audience [76].

- D. Track progress on the achievement of identified co-benefits and report back to tenants.

5. Community organizations should be supported to lead deep tenant engagement to ensure retrofit programs meet the needs of tenants.

Research on behavioural and social influences impacting the success of retrofit programs promotes community-based approaches to influencing behaviour [77]. In the context of ventilation system improvements, the researchers recommend the use of a trusted community organization to share knowledge and support tenants to take actions to reduce their emissions. Community organizations can help tenants connect the issue of energy efficiency with positive outcomes for their wellbeing. A UK framework for influencing behaviour recommends working with trusted intermediaries to meet people where they are at and get them involved [78]. From the focus groups, we heard that it is important to build trust and overcome issues between tenants and landlords. One Hamilton focus group member explained, "I have someone who helps advocate between me and my landlord and there's still a problem". On the other hand, the need for tenant buy-in and action at the individual unit level is vital for retrofit programs to achieve their carbon reduction targets. By working with trusted groups and networks to engage tenants, it may be possible to increase support for energy saving behaviours and provide a positive experience for low and moderate income tenants.

Tenant Engagement Evaluation

Within the literature, support for a combination of technical evaluation coupled with evaluation of tenant behaviours and experiences with the retrofit is growing [79]. We propose the following evaluation to understand tenant perceptions of co-benefits, engagement and behaviours pre and post retrofit, to complement any technical evaluation that takes place.

During/Post-retrofit	Y or N
Has everyone's door been knocked on?	
Have tenants been provided with the resources and information?	
Have efforts been made to invite all tenants to tenant meetings?	
Have tenants been given an opportunity to identify priority co-benefits and issues?	
Have tenants been given an opportunity to share their priorities and issues with the landlord/developer?	
Are tenants able to have their concerns addressed by the landlord/developer in a timely manner?	
Are tenants being given feedback about the progress of the project?	
Are tenants being given feedback about their energy saving actions?	
Are tenants being given feedback about their neighbour's energy saving actions?	
Do tenants know their rights around AGIs, building standards and complaint processes?	

Enter your response
How many tenants were at each tenant meeting?
Meeting 1: _____
Meeting 2: _____
Meeting 3: _____
Meeting 4: _____

- Every door should be knocked on and flyered
- Conversations with approximately 50% of the building
- Around one third of people who say they can come to a meeting will attend. For example, if aiming for 30 meeting attendees, 60-90 tenants should be registered as attending the meeting, and 20-40 registered as maybe attending the meeting
- A meeting with 30 participants should result in 3-5 emerging tenant leaders
- An average of 2 house visits on every floor (to engage tenant leaders, connect with tenants who cannot attend meetings)

	Circle or enter your response
Who is leading the meetings?	Tenants Landlord/building owner Developer Other:
How has information been shared with tenants?	Flyers delivered to each unit Posters in the lobby/elevator Face to face Phone Email Other:
Are there opportunities for tenants to get involved? If yes, when?	Before the retrofit During the design stage During the implementation stage After the retrofit is complete N/A
Have tenants been supported to develop new skills? If yes, what skills?	
How many tenant meetings have been held?	
Who has been invited to meetings?	
Who has not been invited to meetings?	

Influencing Behaviour Evaluation

Pre-retrofit Please select any activities that you currently do:	Y or N
Recycling	
Reusable shopping bags	
Energy efficient lighting	
Alternative transportation - Walking	
Alternative transportation - Public transportation/Bus	
Avoid using energy at peak hours of the day	
Clean dryer filter before and after each use	
Buying second hand items	
Avoiding too much packaging	
Water conservation	
Composting	
Wash laundry in cold water	
Turn off and unplug lights and appliances when they are not in use	
Hang clothes to dry instead of using the dryer	
Use energy efficient appliances	
Alternative transportation – Bicycling	
Sharing tools or other equipment with neighbours	
Alternative transportation - Carpooling	
Fuel efficient transportation (i.e. hybrid vehicle or fuel efficient vehicles)	
Use programmable thermostats	
Energy efficient windows	
Insulated basement	
Insulated attic	
Don't know	
Other	
I don't do anything to help reduce my impact on the environment	

Post-retrofit Please select any activities that you currently do:	Y or N
Recycling	
Reusable shopping bags	
Energy efficient lighting	
Alternative transportation - Walking	
Alternative transportation - Public transportation/Bus	
Avoid using energy at peak hours of the day	
Clean dryer filter before and after each use	
Buying second hand items	
Avoiding too much packaging	
Water conservation	
Composting	
Wash laundry in cold water	
Turn off and unplug lights and appliances when they are not in use	
Hang clothes to dry instead of using the dryer	
Use energy efficient appliances	
Alternative transportation – Bicycling	
Sharing tools or other equipment with neighbours	
Alternative transportation - Carpooling	
Fuel efficient transportation (i.e. hybrid vehicle or fuel efficient vehicles)	
Use programmable thermostats	
Energy efficient windows	
Insulated basement	
Insulated attic	
Don't know	
Other	
I don't do anything to help reduce my impact on the environment	

Co-benefits Evaluation Pre-retrofit Survey

How often do you experience the following issues?	Never	Once or twice per week	Every day
Health issues such as illness or pain, colds and flus, respiratory illness, headaches, and allergies			
Health issues such as irritation of eyes, runny nose, dry throat, cough, dry skin, exhaustion			
Health issues related to toxins from pest killing products			
Health issues related to bites and contact with insects, mice and rats			
Problems with the condition of your home, items and appliances in your home like cupboards, floors, fridge, stove			
Comfort or safety concerns during weather events like storms, extreme heat, power outages			
Uncomfortable temperatures at home, such as too warm in summer			
Uncomfortable temperatures at home, such as too cold in winter			
Uncomfortable temperatures at home, such as drafts, uneven heating			
Inability to control temperatures in your unit			
Odours or bad smells between units			
Inability to conserve water and electricity			
High hydro bills			

How would you describe the temperature of your unit?	Too warm	Just right	Too cold
In summer			
In winter			

How often do you experience the following issues in your unit?	In summer			In winter		
	Never	Once or twice per week	Every day	Never	Once or twice per week	Every day
Condensation						
Dryness						
Window drafts						
Door drafts						
Vent drafts						
Odours or bad smells						

Co-benefits Evaluation Post-retrofit Survey

How often do you experience the following issues?	Never	Once or twice per week	Every day
Health issues such as illness or pain, colds and flus, respiratory illness, headaches, and allergies			
Health issues such as irritation of eyes, runny nose, dry throat, cough, dry skin, exhaustion			
Health issues related to toxins from pest killing products			
Health issues related to bites and contact with insects, mice and rats			
Problems with the condition of your home, items and appliances in your home like cupboards, floors, fridge, stove			
Comfort or safety concerns during weather events like storms, extreme heat, power outages			
Uncomfortable temperatures at home, such as too warm in summer			
Uncomfortable temperatures at home, such as too cold in winter			
Uncomfortable temperatures at home, such as drafts, uneven heating			
Inability to control temperatures in your unit			
Odours or bad smells between units			
Inability to conserve water and electricity			
High hydro bills			

How would you describe the temperature of your unit?	Too warm	Just right	Too cold
In summer			
In winter			

How often do you experience the following issues in your unit?	In summer			In winter		
	Never	Once or twice per week	Every day	Never	Once or twice per week	Every day
Condensation						
Dryness						
Window drafts						
Door drafts						
Vent drafts						
Odours or bad smells						

Were you told that any of the following benefits would be possible as a result of your unit or building being retrofitted?	Check any that apply
Improvements to health issues such as illness or pain, colds and flus, respiratory illness, headaches, and allergies	
Improvements to health issues such as irritation of eyes, runny nose, dry throat, cough, dry skin, exhaustion	
Improvements to health issues related to toxins from pest killing products	
Improvements to health issues related to bites and contact with insects, mice and rats	
Improvements to the condition of your home, items and appliances in your home like cupboards, floors, fridge, stove	
Improved comfort or safety concerns during weather events like storms, extreme heat, power outages	
Improved temperatures at home, such as too warm in summer	
Improved temperatures at home, such as too cold in winter	
Improved temperatures at home, such as drafts, uneven heating	
Increased ability to control temperatures in your unit	
Reduced odours or bad smells between units	
Increased ability to conserve water and electricity	
Reduced hydro bills	

Recommendations

Improve tenant protections to prevent AGIs as a result of building or energy retrofits

Participants in the research were clear that they did not want, and could not afford, rent increases as a result of energy retrofits in their buildings. In the UK, in cases where costs for retrofits have been passed on to residents through increased hydro costs, low-income households have been hit the hardest [80]. Increased rent is likely to have the same impact. Given the vital role of tenants in achieving carbon reduction goals [81], it is important that tenants are on board with the retrofit program. Unaffordable rent increases have the potential to impact tenants' engagement with the project. In Ontario, the Residential Tenancies Act s.126 (7) specifies that applications for above guidelines rent increases are valid for capital expenditures that are necessary to maintain the provision of a plumbing, heating, mechanical, electrical, ventilation or air conditioning system; or promote energy or water conservation. This allows landlords to apply to the Landlord and Tenant Board to for an AGI of up to 3% for a maximum of three years in a row.

Recommendation

The Province of Ontario should amend the Residential Tenancies Act s.126 so that energy retrofits are excluded from justifiable capital expenses, in instances where landlords or building owners are receiving incentives to complete these repairs or upgrades.

Fund energy and building retrofits for low-income tenants

In Ontario, the previous government committed to investing \$385 million to \$500 million for social housing retrofits, plus \$300 to \$400 million in incentives for retrofits in other private apartment buildings, funded through cap and trade revenues. As the cap and trade program has ended, there is uncertainty about the funding that was earmarked for retrofits. All levels of government should work together to ensure that there is funding available to retrofit low-income apartment buildings, given the potential gains in efficiencies and improvement of existing housing stock. For example, almost 2,000 Toronto Community Housing units are uninhabitable due to disrepair. Retrofitting these units would boost affordable housing supply while creating more efficient homes.

Recommendation:

The federal government should allocate funding from the carbon pricing system towards retrofitting low-income apartment buildings;

The Ontario government should reinstate funding for low-income apartment building retrofits;

Municipalities should fully fund social housing providers to retrofit existing units; advocate to other levels of government for funding to support energy retrofits, for example, through the National Housing Strategy; and promote retrofitting through local strategies and programs, such as the City of Toronto Poverty Reduction Strategy and Neighbourhood Improvement Areas.

Mandate deep tenant engagement in apartment building energy retrofit projects

We heard from research participants that there is a need to build trust and engage tenants during retrofit programs. The need for tenant engagement throughout the retrofit process is also well documented. However, engagement is often undervalued. Research from the UK warns of a reliance on voluntary engagement which can increase inequalities and prevent the most vulnerable community members from benefiting from retrofit programs [82]. Community organizations can act as trusted intermediaries who have the skills and experience to conduct meaningful tenant engagement [83].

Recommendation

Deep and independent community engagement should be a requirement of retrofit funding or incentives



Sources

- [1] Mari-Dell'Olmo, M, Novoa, AM, Camprubi, L, Peralta, A, Vásquez-Vera H, Bosch J, Amat J, Diaz F, Palència L, Mehdipanah R, Rodriguez-Sanz M, Malmusi D, Borrell C, 2017. Housing Policies and Health Inequalities. *Int J Health Serv.* 47(2):207-232.
- [2] Boardman, B, *Fixing Fuel Poverty: Challenges and Solutions* Routledge, London (2010)
- [3] Social Justice Tribunals Ontario, 2018. 2017 – 2018 Annual Report. Available at: <http://www.sjto.gov.on.ca/documents/sjto/2017-18%20Annual%20Report.html>
- [4] City of Toronto, 2016. Health Benefits of a Low-Carbon Future. Available at: <https://www.toronto.ca/legdocs/mmis/2016/hl/bgrd/backgroundfile-94549.pdf>
- [5] See Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009. Retrofitting houses with insulation: a cost-benefit analysis of a randomised community trial. *J Epidemiol Community Health.* 63(4):271-7; World Health Organization, 2011. Health co-benefits of climate change mitigation - Housing sector. Available at: https://www.who.int/hia/green_economy/using_report/en/
- [6] Howden-Chapman P and Chapman R, 2012. Health Co-Benefits from Housing Related Policies.
- [7] Ontario Government, 2017. The Changing Workplaces Review, p.43.
- [8] Markandya, A., Rübbelke, D.T.G., 2004. Ancillary benefits of climate policy. *Jahrbücher für Nationalökonomie und Statistik*, 224, 488–503.
- [9] See Pembina Institute, 2017. Benefits of Energy Efficiency. Available at: <https://www.pembina.org/reports/energy-efficiency-infographic-2017.pdf>; World Green Building Council, The benefits of green buildings. Available at: <https://www.worldgbc.org/benefits-green-buildings>; Chung, V and Dylan, H, 2016. Beyond carbon: The true value of energy-efficient buildings. Available at: <http://taf.ca/beyond-carbon-true-value-energy-efficient-buildings/>
- [10] Acadia Center, 2014. Energy Efficiency: Engine of Economic Growth in Canada, Available at: <https://acadiacenter.org/document/energy-efficiency-engine-of-economic-growth-in-canada/>
- [11] The Atmospheric Fund, 2018. Robert Cooke Co-Op Case Study. Available at: http://taf.ca/wp-content/uploads/2018/07/TAF_Robert-Cooke-Co-op_Case-Study_Web_FINAL_2018-07-27.pdf
- [12] Government of Canada Energy Efficiency Working Group, 2008. Energy Efficiency and Energy Affordability for Low-Income Households. Available at: http://publications.gc.ca/collections/collection_2009/ec/En4-100-6-2008E.pdf
- [13] Ibid.
- [14] Acadia Center, 2014.
- [15] Ibid.
- [16] Heffner, G and Campbell, N, 2011. Evaluating the co-benefits of low-income energy-efficiency programmes. Available at: http://www.healthyhousing.org.nz/wp-content/uploads/2012/08/low_income_energy_efficiency_Examining-the-CoBenefits2011.pdf
- [17] See Government of Canada Energy Efficiency Working Group, 2008; Sustainability Solutions Group, 2017. Technical Paper #4: Considerations of Co-benefits and Co-harms Associated with Low Carbon Actions for TransformTO; Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009.
- [18] Sritharan, D, 2018. Climate Solutions that Work: Bringing Community Benefits and Climate Action Together. Available at: https://www.torontoenvironment.org/climate_action_and_community_benefits
- [19] Ibid.

- [20] Heffner, G and Campbell, N, 2011.
- [21] Ibid.
- [22] See City of Toronto, 2016; Sustainability Solutions Group, 2017; Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009.
- [23] Sritharan, D, 2018.
- [24] See Pembina Institute, 2017; Acadia Center, 2014; World Green Building Council; Sustainability Solutions Group, 2017.
- [25] See Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009; World Health Organization, 2011.
- [26] See Pembina Institute, 2017; Chung, V and Dylan, H, 2016; Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014. 100 Unintended consequences of policies to improve the energy efficiency of the UK housing stock. *Indoor and Built Environment*, 23(3), 340–352.
- [27] Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014.
- [28] See Pembina Institute, 2017; Howden-Chapman P and Chapman R, 2012; Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009.
- [29] See Chung, V and Dylan, H, 2016; Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009; Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014.
- [30] Sustainability Solutions Group, 2017.
- [31] See Chung, V and Dylan, H, 2016; Chapman R, Howden-Chapman P, Viggers H, O'Dea D, Kennedy M, 2009; Heffner, G and Campbell, N, 2011
- [32] Levy, JI, Nishioka, Y and Spengler, JD, 2003. The public health benefits of insulation retrofits in existing housing in the United States. *Environmental Health: A Global Access Science Source*, 2, 4.
- [33] Lilley, S, Davidson, G and Alwan, Z, 2017. External Wall Insulation (EWI): Engaging Social Tenants in Energy Efficiency Retrofitting in the North East of England, *Buildings*, 7(4), 102
- [34] Heffner, G and Campbell, N, 2011.
- [35] Lowery D, 2012. Evaluation of a social housing retrofit and its impact on tenant energy use behaviour. Doctoral thesis, Northumbria University.
- [36] See World Health Organization, 2011; Markandya, A., Rübelke, D.T.G., 2004.
- [37] World Health Organization, 2011.
- [38] Graser, D, 2016. Community Benefits and Tower Renewal. Available at: https://www.evergreen.ca/downloads/pdfs/HousingActionLab/TowerRenewal_Report_FINA.L.pdf
- [39] Lilley, S, Davidson, G and Alwan, Z, 2017.
- [40] Sustainability Solutions Group, 2017.
- [41] Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014.
- [42] Grossmann, K and Huning, S, 2015.
- Energy-efficient retrofitting and affordable housing: Open questions for urban research and practice.
- [43] Bouzarovski, S, Frankowski, J, Sergio, TH, 2018, Low-Carbon Gentrification: When Climate Change Encounters Residential Displacement. *International Journal of Urban and Regional Research*, 42.
- [44] Sustainability Solutions Group, 2017.
- [45] Della Valle N, Bisello A, Balest J, 2018. In search of behavioural and social levers for effective social housing retrofit programs. *Energy Build*, 172, 517–524.
- [46] See Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014; Hamilton I, Milner J, Chalabi Z, et al, 2015. Health effects of home energy efficiency interventions in England: a modelling study, *BMJ*
- [47] Diaz Lozano P, E & Vakalis, D & Touchie, Marianne & Tzekova, E & Siegel, J.A, 2018. Thermal comfort in multi-unit social housing buildings. *Building and Environment*. 144. 10.1016
- [48] Mari-Dell'Olmo, M, Novoa, AM, Camprubi, L, Peralta, A, Vázquez-Vera H, Bosch J, Amat J, Diaz F, Palència L, Mehdipanah R, Rodriguez-Sanz M, Malmusi D, Borrell C, 2017.
- [49] Corner, A, 2011. Why can't we sell climate change like we sell soap? *Inside Track*, 27, pp. 5-6.

- [50] Graser, D, 2016.
- [51] See Chahal, S, Swan, W, Brown, P, 2011. Tenant Perceptions and Experiences of Retrofit; Lilley, S, Davidson, G and Alwan, Z, 2017; Pembina Institute, 2017.
- [52] Lane, L, Power, A and Provan, B, 2014. High Rise Hope Revisited. Available at: <http://eprints.lse.ac.uk/67854/1/casereport85.pdf>
- [53] See Crilly M, Lemon M, Wright AJ, Cook M and Shaw D, 2012. Retrofitting homes for energy efficiency: an integrated approach to innovation in the low carbon overhaul of social housing. *Energy and Environment*, 23(6-7) pp. 1027–1056; Joseph Rowantree Foundation, 2012, Renewable energy: getting the benefits right for social housing; World Health Organization, 2011.
- [54] Lowery, D, 2012.
- [55] See Banfill, P. F. G. and Peacock, A. D., 2007. Energy-efficient new housing – the UK reaches for sustainability, *Building Research & Information*, 35:4, 426-436; Gram-Hanssen, K, 2010. Residential heat comfort practices: understanding users, *Building Research & Information*, 38:2, 175-186; Karlsson, J.F, Moshfegh, B, 2007, A comprehensive investigation of a low-energy building in Sweden, *Renewable Energy*, 32:11, 1830-1841.
- [56] Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014.
- [57] Chahal, S, Swan, W, Brown, P, 2011.
- [58] Crilly M, Lemon M, Wright AJ, Cook M and Shaw D, 2012.
- [59] Ibid.
- [60] Gillingham, K, Palmer, K, 2014. Bridging the Energy Efficiency Gap: Policy Insights from Economic Theory and Empirical Evidence, *Review of Environmental Economics and Policy*, 8(1), 18–38.
- [61] Graser, D, 2016.
- [62] Bambrick, H, Capon, G A, Barnett, G, Beaty, M, Burton, A, 2011. Climate Change and Health in the Urban Environment: Adaptation Opportunities in Australian Cities. *Asia-Pacific journal of public health / Asia-Pacific Academic Consortium for Public Health*. 23.
- [63] Groundswell, 2019, Toronto Climate Action Community Engagement Workshop
- [64] DEFRA, 2011, A framework for sustainable lifestyles.
- [65] BEEM-UP, 2014. Tenant involvement strategies in retrofitting projects.
- [66] Crilly M, Lemon M, Wright AJ, Cook M and Shaw D, 2012.
- [67] Groundswell, 2019
- [68] Roy, P, Walsh, P, Ma, J, Attar, R, Exploring The Value Of Tenant Engagement For Energy Conservation: Understanding Owner And Manager Perspectives For Implementing Tenant Engagement Programs In Multi-use Residential Buildings In Toronto.
- [69] Gee, P. and Chiappetta, L. (2013). Engaging residents in multifamily building retrofits. In *Retrofitting the Built Environment* (eds W. Swan and P. Brown)
- [70] The Atmospheric Fund, 2018.
- [71] Gillard R., Snell C., Bevan M, 2017, Advancing an energy justice perspective of fuel poverty: household vulnerability and domestic retrofit policy in the United Kingdom *Energy Res. Soc. Sci.*, 29, 53-61
- [72] BEEM-UP, 2014.
- [73] Roy, P, Walsh, P, Ma, J, Attar, R
- [74] Lane, L, Power, A and Provan, B, 2014.
- [75] Corner, A, 2011.
- [76] Ontario Public Health Association, 2018. Developing a Health-focused Communication Strategy For Climate Messaging. Available at: http://taf.ca/wp-content/uploads/2018/09/taf_opha_report_2018_final.pdf
- [77] Della Valle N, Bisello A, Balest J, 2018.
- [78] DEFRA, 2011.

ACORN would like to thank The Atmospheric Fund who provided funding in support of this research

[79] See Chiu, LF, Lowe, R, Raslan, R, Altamirano-Medina, H and Wingfield, J, 2014. A socio-technical approach to post-occupancy evaluation: interactive adaptability in domestic retrofit, *Building Research & Information*, 42:5, 574-590; Crilly M, Lemon M, Wright AJ, Cook M and Shaw D, 2012.

[80] Gillard R., Snell C., Bevan M, 2017

[81] Lowery, D, 2012.

[82] Shrubsole, C., Macmillan, A., Davies, M., & May, N, 2014.

[83] See DEFRA, 2011; Ho, S., and Hays, J. (2010), *Increasing Demand for Home Retrofits: Community-Based Outreach and Mobilization*, A Green for All Best Practice Brief: Retrofit America's Cities Community of Practice; Della Valle N, Bisello A, Balest J, 2018.

[84] Della Valle N, Bisello A, Balest J, 2018.

[85] Della Valle N, Bisello A, Balest J, 2018.

[86] Lowery D, 2012.

[87] Lilley, S, Davidson G, Alwan Z, 2017.



Appendix A

Tenant Engagement Model



A trusted, independent organization should facilitate tenant engagement and outreach

Many participants indicated that they have difficulty trusting their landlords and are skeptical of any organizations connected with their landlord, such as developers or building management. Tenants expressed frustration that requests for repairs often went ignored or were not completed in a timely manner. A number of participants had been treated poorly or intimidated by their landlord. In addition, tenants were apprehensive about having repairs or improvements in their building due to fear of above guideline rent increases. Further, it's also important that engagement is lead by a trusted and knowledgeable group because no issue occurs in isolation. In low and moderate income communities, tenants face many challenges. It's vital that a trained organizer can help direct people to resources when other less related issues arise.

We need to get other tenants to attend a meeting, but it's not easy to go and hit on everyone's doors and talk to them.

Trust will be best developed when coming from an independent organization, like tenant associations and unions. Landlord associations act in the interest of landlords, trade unions act in the interest of trade employees, and independent tenant associations act in the interest of tenants. When asked who should lead tenant engagement efforts, focus group participants overwhelmingly felt that engagement should be tenant-led, yet they expressed concern about the lack of resources, time and capacity.

Focus group participants indicated that a community organization such as ACORN would be best placed to engage tenants and connect tenants with information about their rights.

As one participant put it, "Besides ACORN going round and informing tenants what's going on, I don't see another way to engage tenants". From our experience, it is essential that any organization leading an engagement process has experience of deep community outreach, so they can reach those who most need to be engaged but are often hardest to reach.

Knock on every door

ACORN knocks on every door in each building that we organize in. This allows us to have conversations with most tenants and enables us to identify issues that tenants want to see changed in their building and wider communities. Research shows that it is important to understand the local context to identify any behavioural changes that may be required by tenants as a result of the retrofit project [84]. From our experience, we can understand the local context by designing the rap/script that organizers use when door knocking to ask what changes residents want to see is important. This ensures that organizers ask the right questions and give everyone an opportunity to participate.





Let's go door-to-door
and ask what they
want. What's
important in that
house? And then let's
do it!

Identify potential leaders and invest in leadership development

Door knocking allows us to identify new community leaders or existing community leaders who want to use their skills. We believe that everyone has leadership potential, whether it is leading a meeting, conducting outreach, speaking to stakeholders, research, or other strengths. From our initial round of door knocking in the building, we identify interested tenants and have follow-up house visits with everyone who is interested. During these visits, we identify any skills people want to share or develop and work with the tenants to encourage development of their leadership capacity. Before each meeting, we conduct pre-meetings with tenant leaders to go over last minute details. And after each meeting, we follow up to discuss what could be improved or done differently. We then work with tenant leaders on an ongoing basis, to overcome challenges and support any skills they want to develop.

Thorough planning

Once we have identified potential leaders, we start to work with them to develop an agenda for the first tenant meeting. The agenda is informed by initial discussions with tenants, and the issues that were raised, as well as issues identified by the leaders. We discuss what might happen during each meeting, and potential responses. We connect leaders with the information and materials necessary so that they never have to turn up to a meeting unprepared. The meeting agenda would include space to discuss potential co-benefits residents would like to see.

It is through this process that we would work with the developing tenant leaders to co-create priority co-benefits and develop a process that fits the specific needs in their building.



Turnout!

Along with tenant leaders, we set a goal for turnout and conduct outreach in person, by phone and by email to all interested tenants in the building. We also deliver flyers. The combination of these outreach efforts ensures that each meeting is well attended and is representative of the tenants in the building. ACORN's rule for turnout is 1:3. For every 3 people who say they will attend a meeting, approximately 1 person will attend. For example, if the goal is 15–20 tenants attending a meeting, our organizers will need 45–60 people registered as attending the meeting, with about 50 people registered as maybe attending. Before each meeting, we do reminder calls to everyone who has registered, to confirm their attendance and check that they have the meeting details. We track the number of meeting attendees to ensure we are meeting our goals.





Provide multiple opportunities for participation and plan a launch meeting

Tenants should be engaged early in the process. The first meeting is an opportunity to bring tenants from diverse backgrounds together to identify common issues and begin to share ideas. Tenants will collectively determine priority co-benefits and outcomes. It is also an opportunity to discuss the process: what is happening in the building, what opportunities are available and what are the tenants' rights and responsibilities. The process would vary for each specific retrofit program and the needs of tenants in the building. However, one process may look like: Planning a second meeting that would involve a more detailed discussion of issues and priorities. This would usually have a higher attendance than the first meeting. By this stage, tenants would ideally be spreading the word and other people in the building would want to get involved. We generally continue our outreach simultaneously. A final meeting could involve a launch of the tenants' priorities and their desired process for engagement with the developer and landlord. Outside stakeholders, such as the landlord or developer could be invited to this meeting and tenants would have the opportunity to present their collective goals, needs and priorities and hear more about the next steps.

Reduce barriers to participation

Low and moderate income people are busy. They often work multiple jobs, look after children, manage illnesses and disabilities. Therefore, meetings should take place at a time and location that suits tenants. If tenants do not feel comfortable meeting in the building, meetings should be held at a community centre or other accessible venue. We ask tenants what works for them. Some tenants won't be able to make some or any of the meetings, so house visits to tenants are an important way to keep them updated help reduce many barriers and ensure they are still engaged.



Ongoing, meaningful engagement and feedback throughout the process

As the process continues, tenants may have developed stronger leadership capacity and a greater understanding of the details of the project and their rights around AGIs, legal building standards, complaint processes and more. There should be an open line of communication between the developer and the tenants so that any concerns can be addressed, as well as plenty of opportunities for meaningful participation. Often, participation is reduced to tokenized input from a few eager tenants. Using our model, many more tenants will have the ability to be involved.



Create space for continuous leadership development and feedback

One example could be monthly tenant meetings to allow tenants to respond to issues as they arise during the project. In these meetings, tenants could also share progress on climate actions being taken at the individual and collective level. There should be feedback available to tenants to allow them to measure progress against collective goals and actions. For example, experts promote the provision of aggregate feedback regarding actions taken by others [85], feedback on energy consumption [86], or feedback related to energy bill savings [87].

Build transferable skills

Through our process, tenants develop transferable skills that they can use to advocate on other housing issues. Our train-the-trainer model ensures that the reach of our tenant engagement efforts goes far beyond those who attend the meetings, as participants share their new skills with family, friends, other tenants and more. In addition, our tenant engagement process provides an opportunity for tenants to get to know their neighbours. The process leads to stronger, more connected tenant communities who know their rights and want to get more involved in civic activities.



ACORN



Recommendations

- ✓ Improve tenant protections to prevent AGIs as a result of building or energy retrofits;
- ✓ Fund energy and building retrofits for low-income tenants;
- ✓ Mandate deep tenant engagement in apartment building energy retrofit projects.



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