Case Study

Welwyn House

Non-Profit Retrofit Resilience Grant (NRRG) Pilot Program

BC Non-Profit Housing Association

CITY OF VANCOUVER

BC Hydro Power smart

Scope of Work

The project involved a comprehensive energy retrofit of a group home in Vancouver. Energy upgrades included the installation of double-glazed, low-emissivity (low-e) vinyl windows, enhanced attic insulation, and improved bathroom ventilation fans. Gas-based systems for space heating and domestic hot water were replaced with high-efficiency heat pump models, eliminating the use of fossil fuels and improving overall energy performance. An electric service upgrade was completed to support the additional 22.69 kW load. This leads to reductions of 98% in emissions, 66% in energy use, and approximately $1,220 in annual utility costs.

Before Equip	After Equip	Notes
		**Heating & Cooling:** Replaced a 1990 gas boiler (84.6% efficiency) with multi-split heat pumps (3 outdoor units & 13 indoor heads), adding cooling and improving efficiency.
		**Domestic Hot Water:** Replaced a 2016 40-gallon gas water heater (0.60 UEF) with a heat pump water heater.
		**Windows:** Replaced existing windows with double-glazed, low-e vinyl windows, with no change to window area or layout.
		**Bathroom Fans:** Replaced standard efficiency bathrooms fans (~60W) with Energy Star models (~11W) to improve efficiency and ventilation.

Society	Motivation, Power & Achievement (MPA) Society
Year built	1990
Building size	3,000 sq ft
Number of bedrooms	10
Number of storeys	2
Tenant population	Individuals with disabilities or health challenges, seniors, and those experiencing or at risk of homelessness

Project Savings

-193 GJ

of gas saved per year; approximately - $2,650 per year

+10,210 kWh

of electricity per year due to electrification; approximately +$1,430

-143 tCO_2eq

emissions over the project's lifetime; 98% emissions saved

Benefits

1. **Added cooling**
   Heat pumps provide cooling, improving comfort for residents during hot weather
2. **Envelope upgrades**
   Reduce leaks, improve comfort, and boost energy efficiency
3. **Fully electric systems**
   Removing gas systems reduces fire risk and improves air quality for residents

Purpose & Rationale

MPA Society faced aging windows and severe summer overheating, leaving residents vulnerable during heat waves. Portable air conditioners were inefficient and costly. When funding became available, the Society seized the opportunity to improve comfort, safety, and energy efficiency through a holistic retrofit approach.

Successes

The installation of heat pumps was the project's biggest success. MPA's Executive Director shared that they "*made an immediate difference in the housing environment.*" Before the upgrade, staff and residents struggled with high humidity and uncomfortable conditions. The new systems transformed the home, improving comfort and air quality almost overnight.

Careful planning was essential. With three group homes retrofitted simultaneously, clear timelines and strong coordination kept the project on schedule and within budget. The combined envelope and mechanical upgrades didn't just improve efficiency; they changed how the homes felt and looked. As the Society put it: "*We love it!*"

Challenges

Managing such a large scope was no small feat. Coordinating schedules across multiple homes led to a flood of emails, making it hard for the Society to track daily activities.

Working with vulnerable populations added complexity. Despite strong communication and efforts to minimize disruption, retrofits in occupied homes meant unavoidable noise and debris. The Society acknowledged: "*It was a challenge for them (the tenants) ... but these things were minimized as much as possible.*"

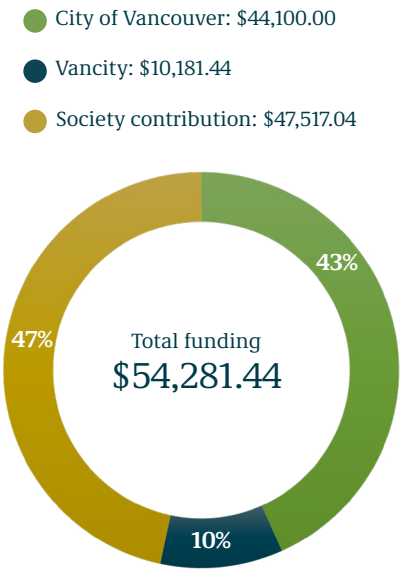
Lessons Learned

Communication is everything. The Society learned that timing matters - informing tenants too far in advance caused anxiety, while last-minute updates created confusion. Striking a balance and providing clear schedules helped manage expectations and maintain trust. Their advice: "*Request a comprehensive schedule of work before it starts.*"

Project handoff matters. Contractors provided training on new systems, which the Society shared with staff to ensure proper use and highlight benefits. This step was critical for long-term success.

Funding

Currently, group homes are not eligible for provincial income qualified electrification funding programs. City of Vancouver's Non-Profit Retrofit Resilience Grant (NRRG) Pilot Program supported this project with the aim to fill the funding gap by matching CleanBC's Energy Savings Program. Additionally, Vancity provided capital support through its Non-Profit Housing Retrofit Program.



> The heat pumps made an immediate difference in the housing environment.
>
> *Nick Blackman, Executive Director, MPA Society*

> The temperature seems more stable.
>
> *Nick Blackman, Executive Director, MPA Society*

Summary

This retrofit was more than a building upgrade - it was an investment in resident well-being and long-term resilience. By combining thoughtful planning, clear communication, and efficient systems, the Society created safer, more comfortable homes that reflect their commitment to care and sustainability. This transformation would not have been possible without the critical funding support from the City of Vancouver and Vancity, which enabled a holistic approach the Society could not have achieved on its own.

Project Team

Non-Profit Housing Provider – Motivation, Power & Achievement (MPA) Society

Mechanical Contractor – Season Energy

Electrical Contractor – Season Energy

Building Envelope Contractor – C-Sky Windows

Funding Advisor - BC Non-Profit Housing Association (BCNPHA)