



How to unlock your free desktop retrofit plan

Who we are

Alberta Ecotrust Foundation is a trusted leader in advancing environmental and climate solutions across Alberta.

A founding member of the Low Carbon Cities Canada network.



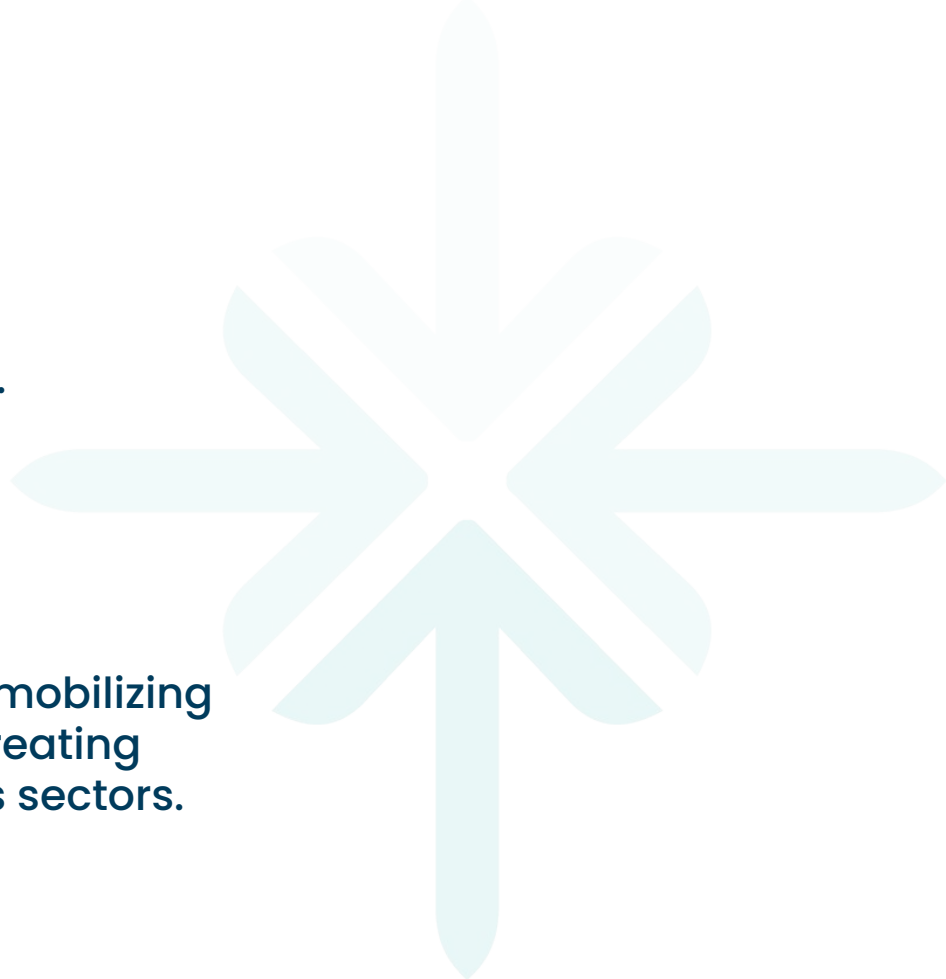
Vision and mission

→ *Our vision*

An Alberta where people and nature thrive.

→ *Our mission*

We realize our vision by recognizing gaps, mobilizing resources, investing in our communities, creating partnerships, and building capacity across sectors.

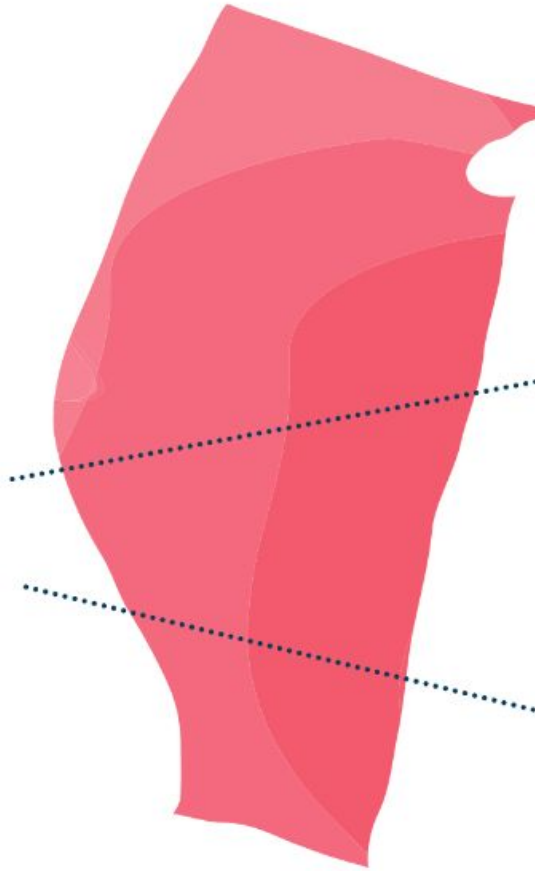


TREATY 8

Signed in 1899

TREATY 7

Signed in 1877



TREATY 6

Signed in 1876



Agenda

- **The Alberta Ecotrust Retrofit Accelerator**
- **Interactive map walkthrough**
- **Key insights from results**
- **Audette's desktop retrofit plans**
- **Sample desktop retrofit plan**
- **Using the results**
- **How to get started**
- **Q&A**

THE PROGRAM

Alberta Ecotrust Retrofit Accelerator

**Simplify your retrofit journey
with our free coaching services.**

The program aims to make deep retrofits more attainable for building owners, and reduce emissions in the process.



THE PROGRAM

For building owners

Free coaching support for deep energy retrofits

- Guide owners through the entire retrofit process
- Support the development of tailored retrofit plans and business cases
- Help identify service providers
- Partially fund studies
- Eligible buildings: Multi-family, commercial, and institutional



THE SOLUTION

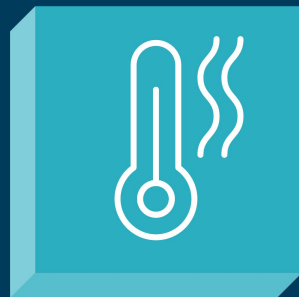
Retrofit projects optimize multiple building components, including...



**Windows
& doors**



**Insulation &
envelope**



**HVAC & water
heating systems**



**Renewable
energy**

THE BENEFITS

A retrofit can transform your building



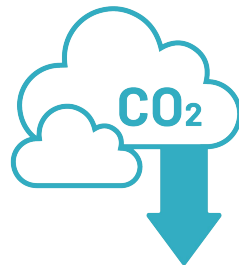
Lower energy
use and utility
costs



Improve building
performance
and comfort



Streamline
maintenance
and renewal



Reduce
greenhouse gas
emissions

What is a retrofit plan?

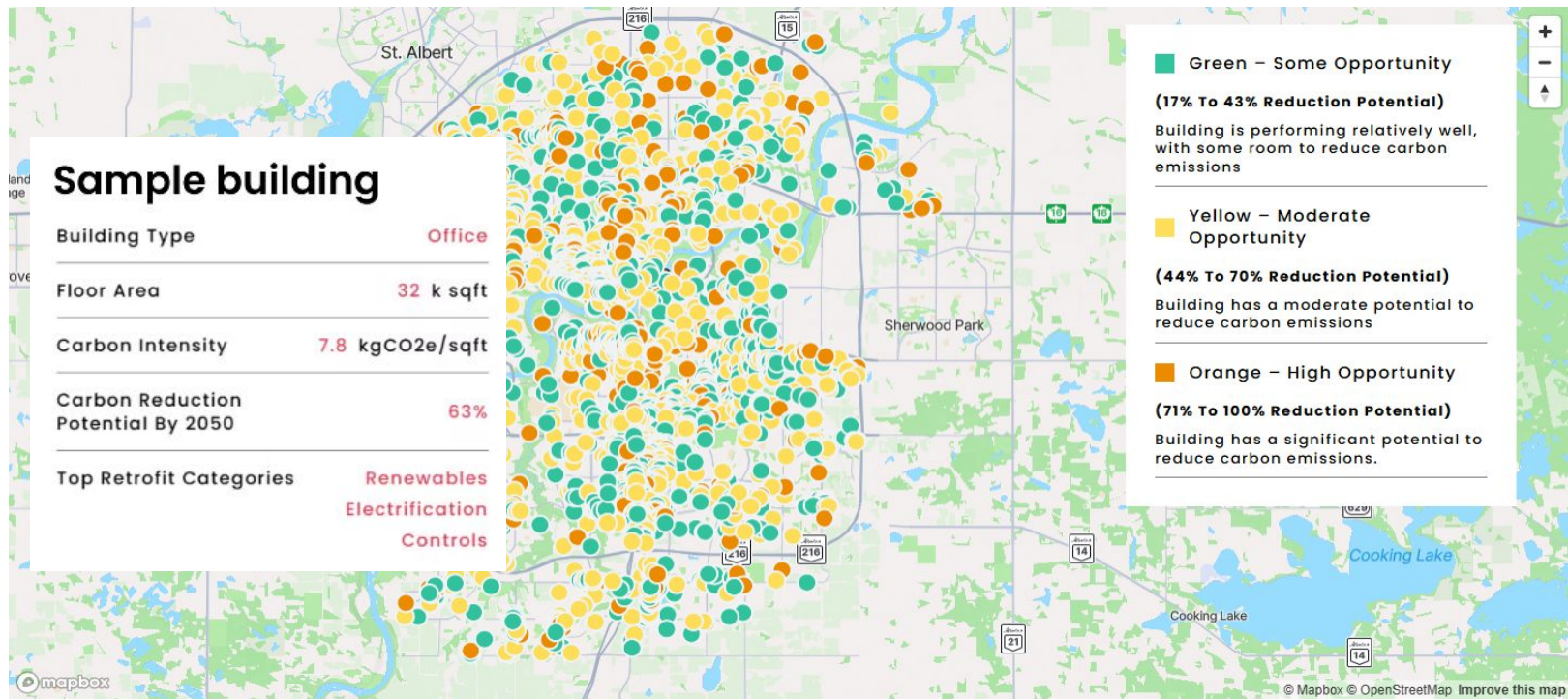
It includes the below:

- A retrofit roadmap and project schedule
- The total and incremental cost of retrofits
- Financial metrics such as return on investment (ROI), net present value (NPV), year-over-year cash flow, etc.
- Your building's current carbon emissions and its reduction potential by 2050

We've created these plans for nearly **8,000 buildings** across Alberta using **Audette**, a virtual retrofit planning tool to quantify the implementation costs, savings, and carbon reduction potential of retrofits!

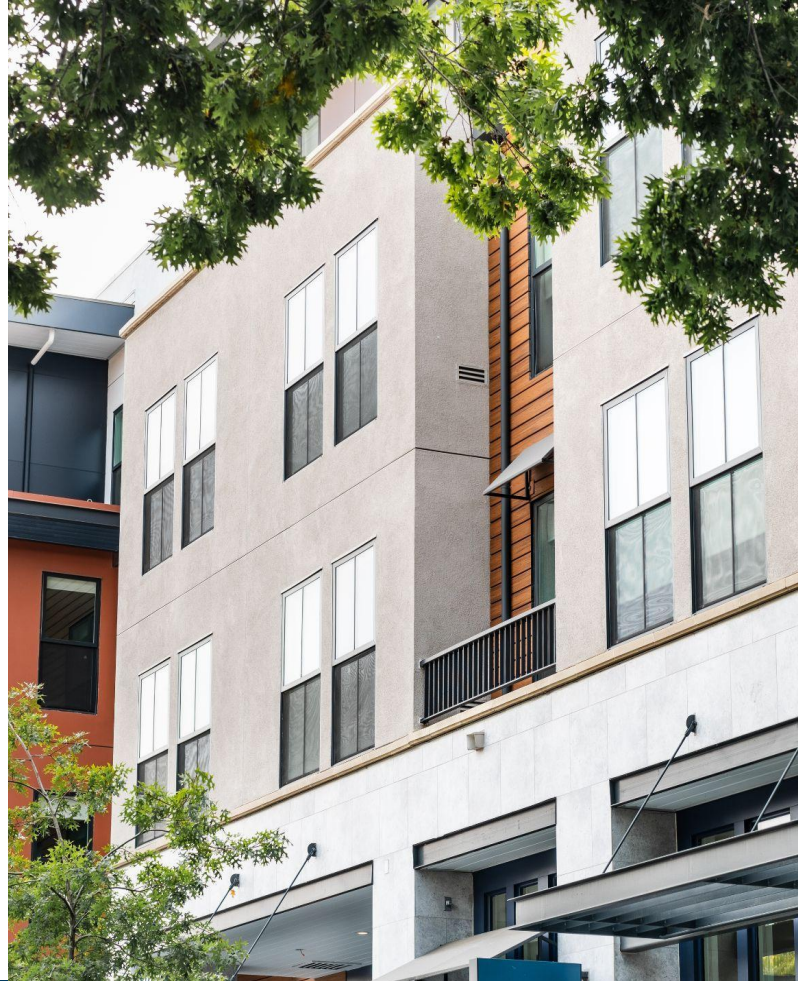


Interactive map walkthrough



Interactive map walkthrough

- Datasets were collected from the publicly-available databases of the Cities of Calgary and Edmonton
- Data points include **building address, year built, gross floor area, no. of storeys and building type.**
- Data points were analyzed using **Audette's** retrofit modelling platform trained on >800,000 unique energy model simulations and virtual retrofit plans were created.



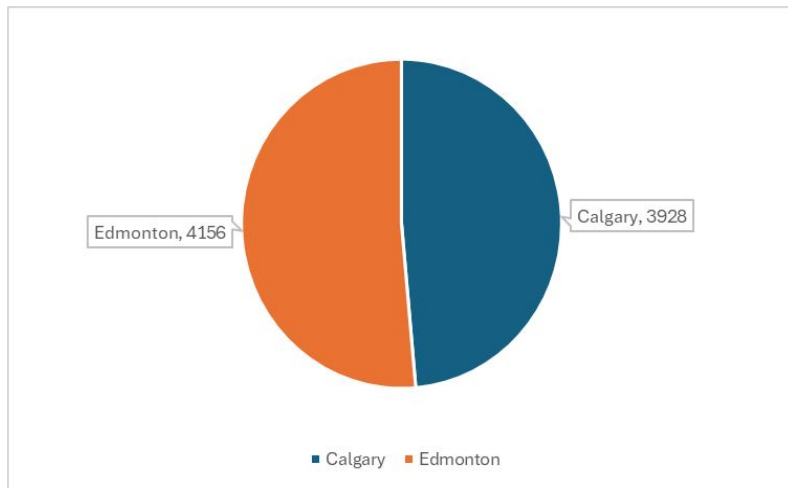
Interactive map walkthrough

Modelled building types

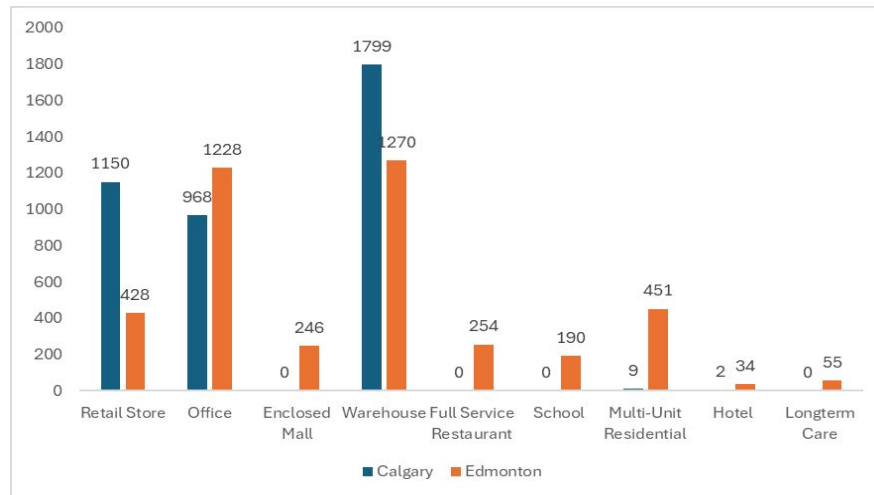
- Multi-unit residential buildings (MURBs)
- Long-term care facilities
- Offices
- Retail buildings
- Hotels
- Restaurants
- Warehouses
- Schools



Key insights from results

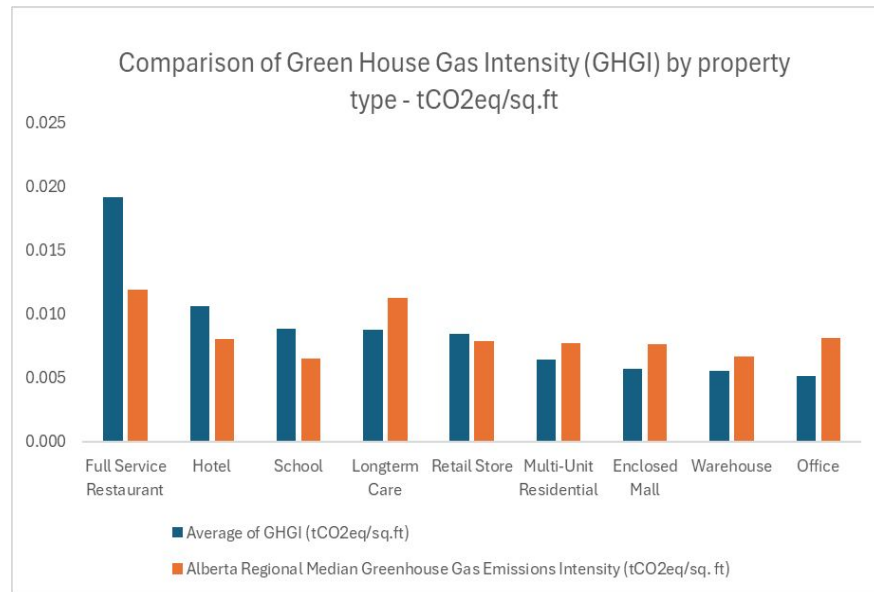
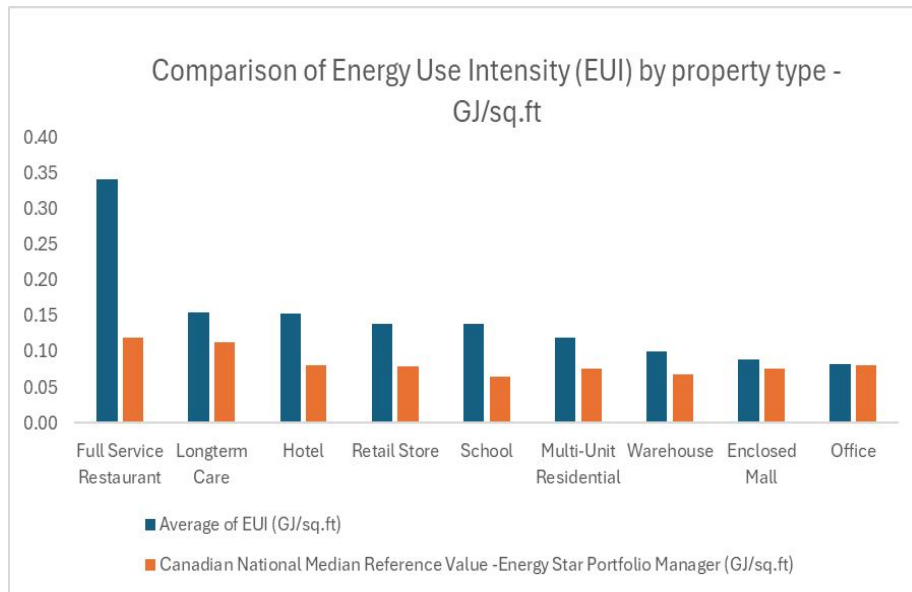


No. of buildings with desktop retrofit plans in Alberta



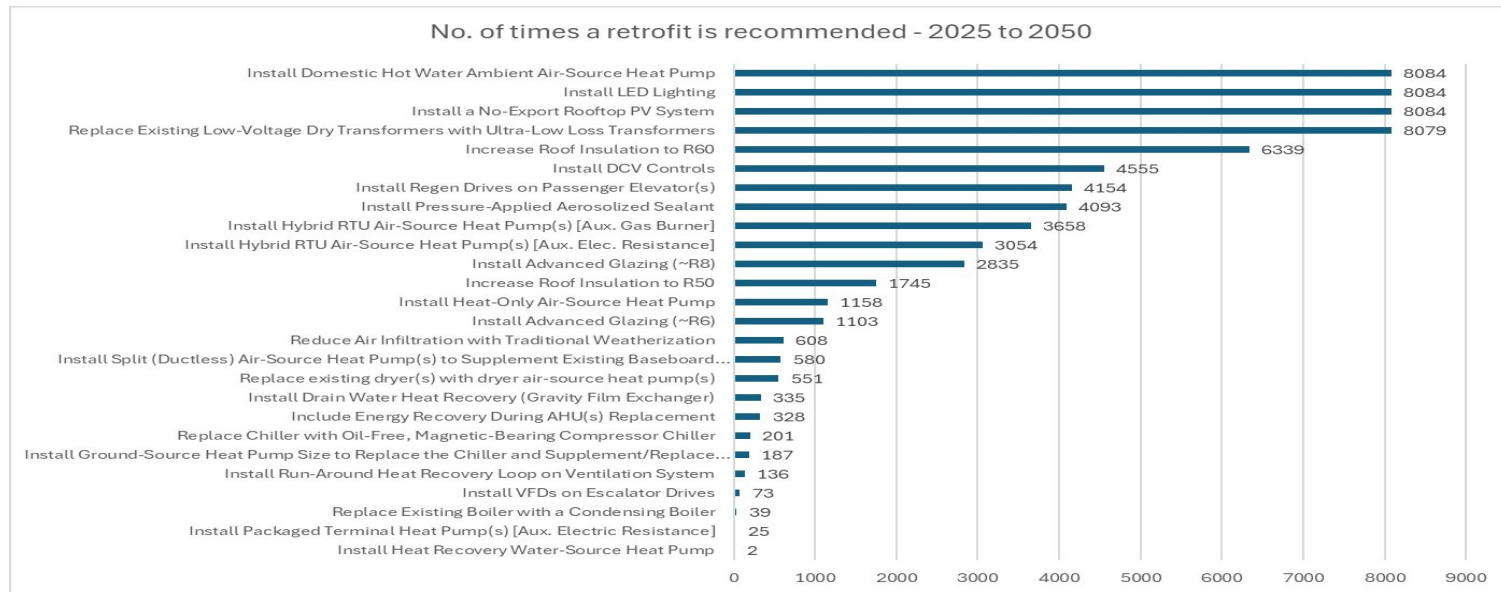
No. of buildings with desktop retrofit plans in Alberta by building type

Key insights from results



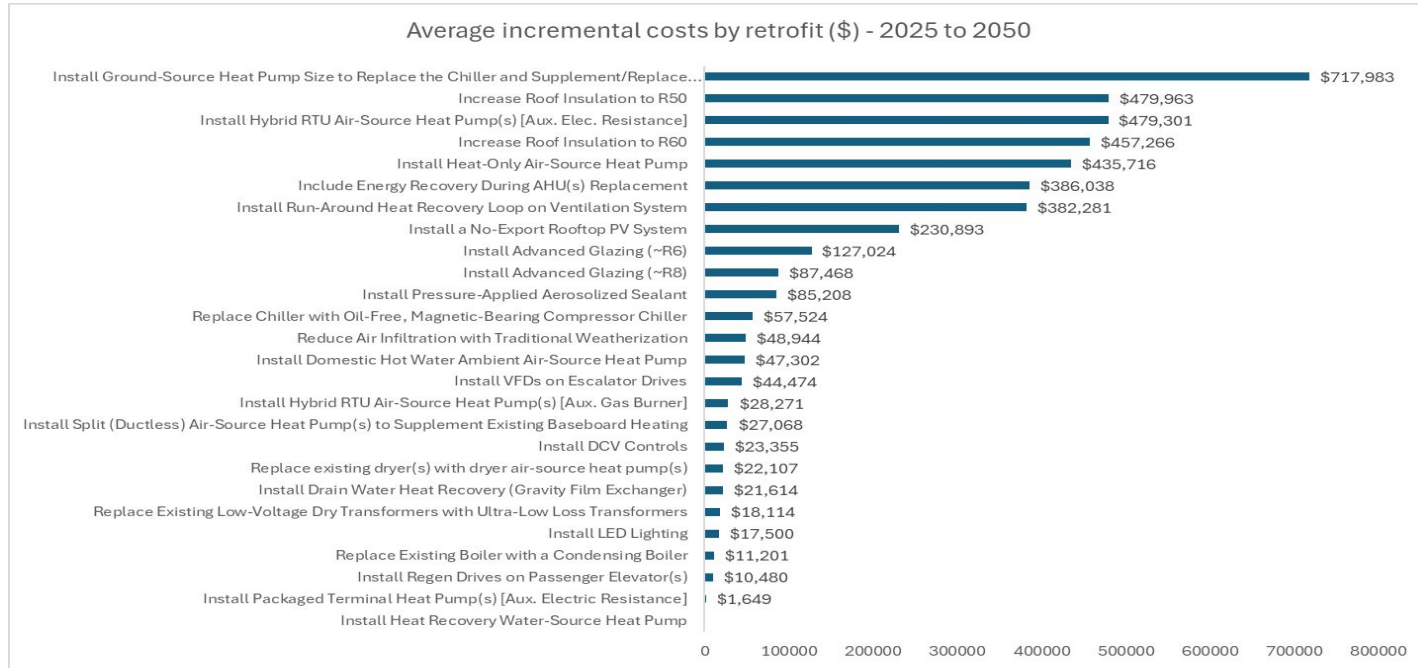
Full service restaurants have the highest EUI and GHGI amongst all property types whereas offices have the lowest

Key insights from results



The top 3 retrofits that are recommended
1) Domestic Hot Water Air-Source Heat Pumps, 2) LED lighting, and 3) Rooftop PV systems

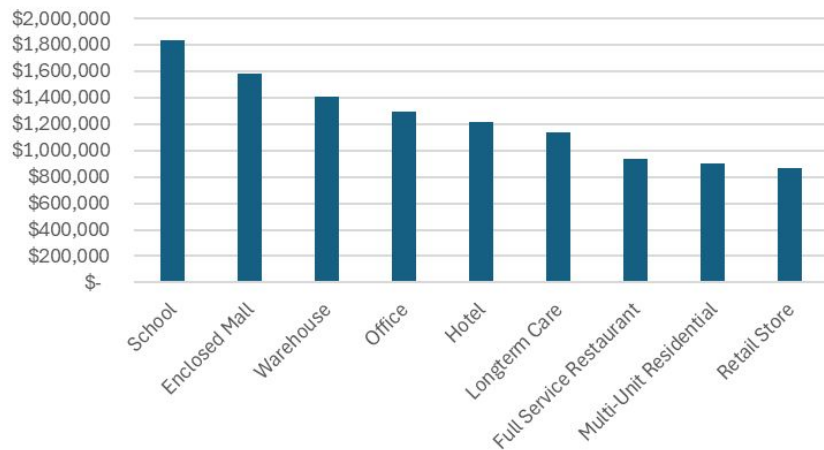
Key insights from results



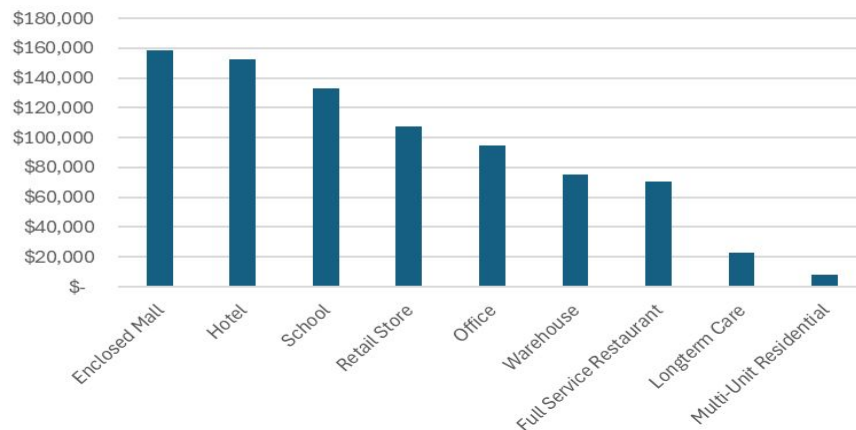
Tools such as the Clean Energy Improvement Program (CEIP), traditional loans, Energy Performance Contracts (EPCs) are available to help offset some of the implementation costs! And don't forget —the non-financial benefits, like greater tenant comfort and longer asset life, add real value too!

Key insights from results

Average Incremental Measures Costs Per Building
(\$)- 2025 to 2050

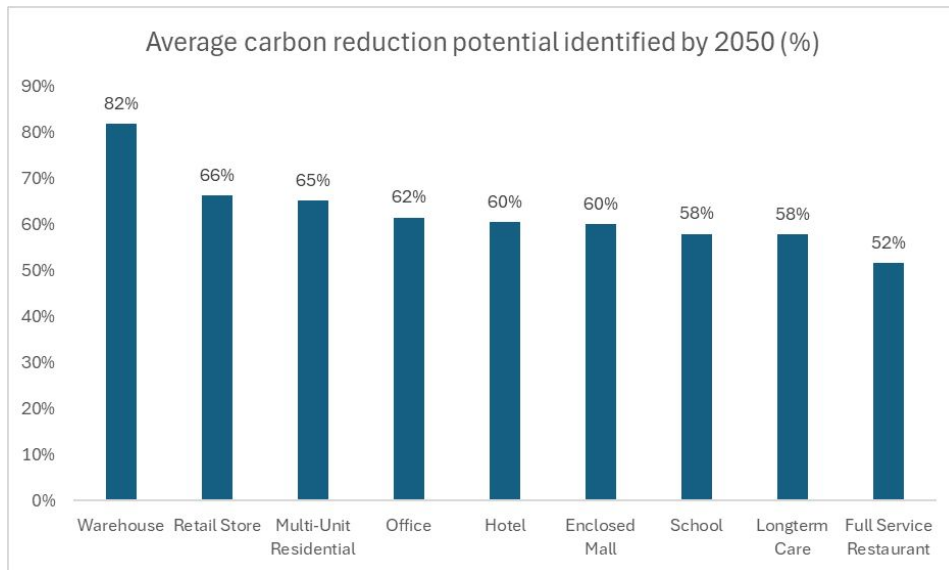


Average Utility Savings Per Building
(\$)- 2025 to 2050



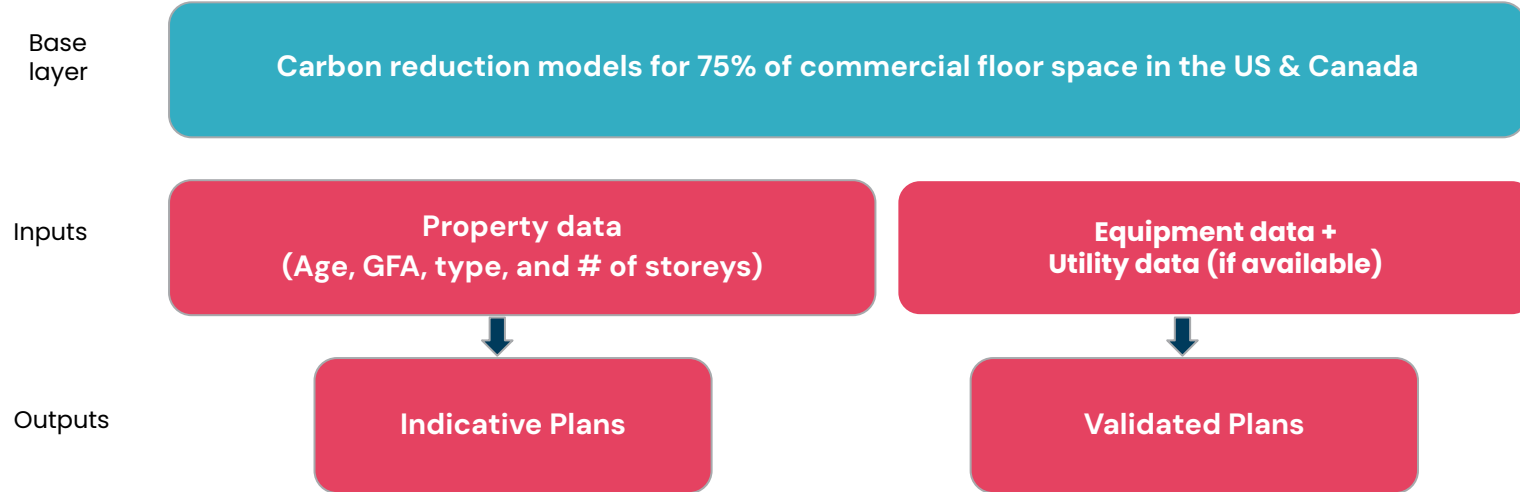
School buildings have the highest average incremental costs for retrofits (~\$1.8 million per building) whereas enclosed malls show the highest utility savings (~\$2.5 million per building) over a period of 2025 to 2050.

Key insights from results



Warehouses have the highest carbon reduction potential of 82% followed by retail stores and multi-family residential buildings

Audette's desktop retrofit plans



Audette's desktop retrofit plans

	Indicative Plans	Validated Plans
Address list <i>With GFA, building type, year built, # floors, # buildings</i>	Yes	Yes
Utility data <i>12 months of whole-building utility data</i>	No	Yes <i>Provided via ESPM sharing or Audette's spreadsheet template</i>
Equipment data <i>Age & size of major equipment systems</i>	No	Yes <i>Pulled from audits/BCAs or collected via in-app survey</i>

Audette's desktop retrofit plans

	Indicative Plans	Validated Plans
Application	For portfolio owners deciding which buildings to focus on first but no utility or equipment data is readily available	For owners who know the priority buildings and have access to equipment data but need to determine which projects to tackle
Next step	Validated Plans	Detailed energy or feasibility study

Sample desktop retrofit plan

123 Main Street (5-story Multi Family building)

Retrofit roadmap & schedule

Recommended decarbonization measure types

Measure name	Measure type	↓ Impact (%)	Incremental cost (k \$)	Like for like cost (k \$)	Emission savings (tCO ₂ e/yr)	Energy savings (MWh/yr)	Utility savings (\$/yr)	Implementation year
Install Split (Ductless) Air-Source Heat Pump(s) to Supplement Existing Baseboard Heating	Heating/Cooling	50	263	116	310	1,832	20,024	2027
Install Domestic Hot Water Ambient Air-Source Heat Pump	Domestic Hot Water	18	366.22	97.35	196	902.91	3,463	2037
Install a No-Export Rooftop PV System	Renewables	13	278.62	0.00	73	349.61	43,562	2025
Install Low-E Window Film with Climate Appropriate SHGC	Envelope	7	171.86	0.00	42	237.27	7,592	2026
Install Drain Water Heat Recovery (Gravity Film Exchanger)	Domestic Hot Water	6	18.22	0.00	40	224.37	8,715	2028
Install LED Lighting	Lighting	4	133.51	0.00	25	85.03	13,672	2029
Reduce Air Infiltration with Traditional Weatherization	Envelope	1	66.75	0.00	9	42.39	3,040	2030

Audette's Desktop Retrofit Plans can be customized based on a building owner's needs!

Split Air-Source Heat Pumps represent 50% of all carbon reduction achievable through retrofits, saving 310 tCO₂e annually

Sample desktop retrofit plan

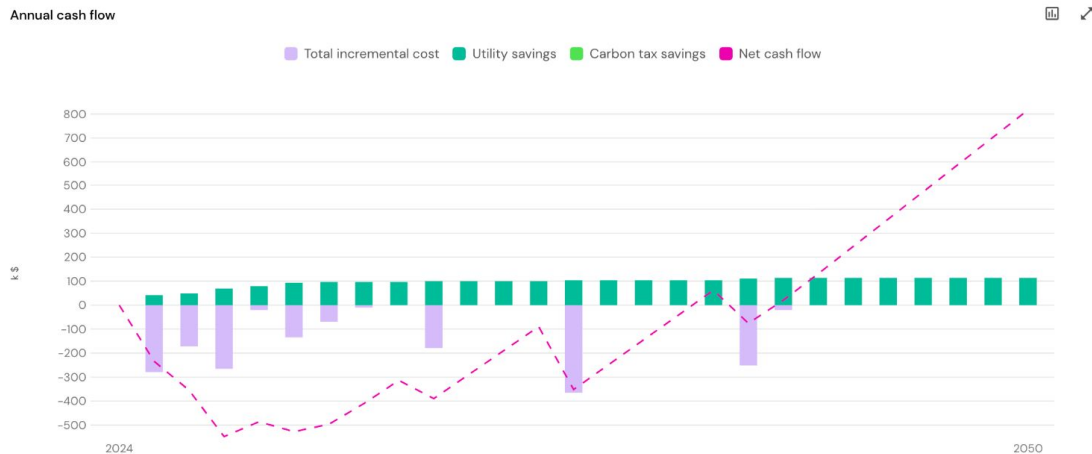
Financial impact

Incremental NPV		
\$293.55k		
Discount rate	3%	
Years	27 years	
Total cost	-\$2.96M	Total cost of decarbonization
• Like for like cost	-\$1.20M	Expected BAU cost expenditure for replacing equipment like-for-like at end of life
• Incremental cost	-\$1.75M	Incremental investment to replace equipment with low-carbon options ("green premium")
Total savings	\$2.57M	Expected savings in utility cost through 2050
ROI	17%	ROI based on aggregated NPV/incremental cost
Marginal abatement cost	-\$4/tCO ₂ e saved	

At 123 Main Street, maximum decarbonization costs an incremental \$1.75M and generates \$2.57M in savings, equating to an incremental NPV of \$294k over the course of the plan

Sample desktop retrofit plan

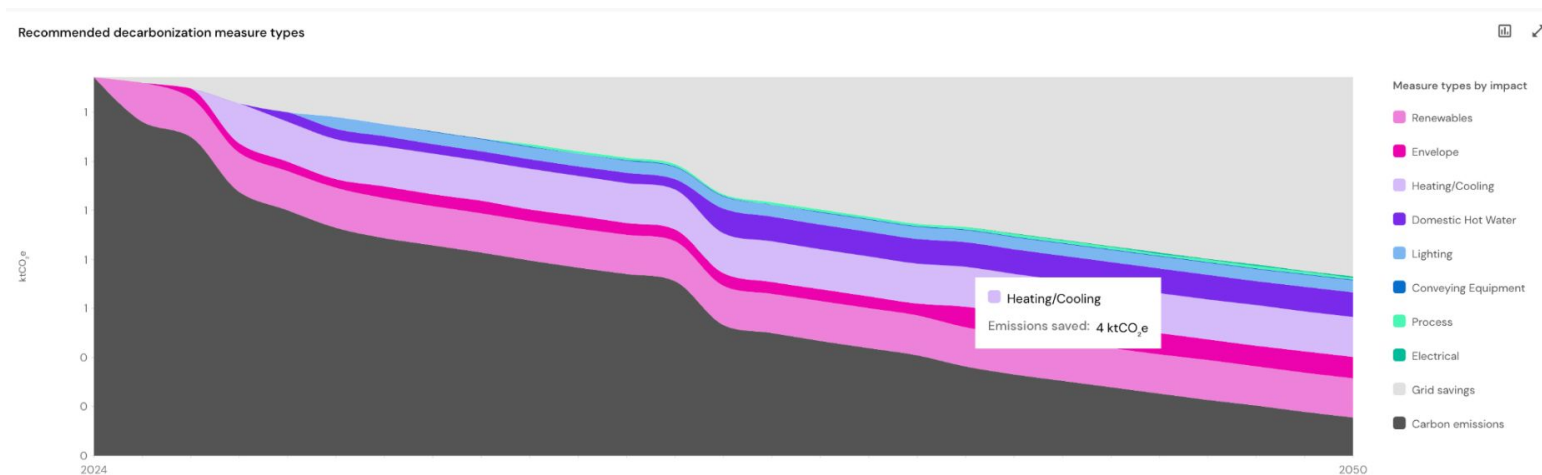
Expected cash flow over time



123 Main St has near-term opportunities to start decarbonizing, as soon as 2025

Sample desktop retrofit plan

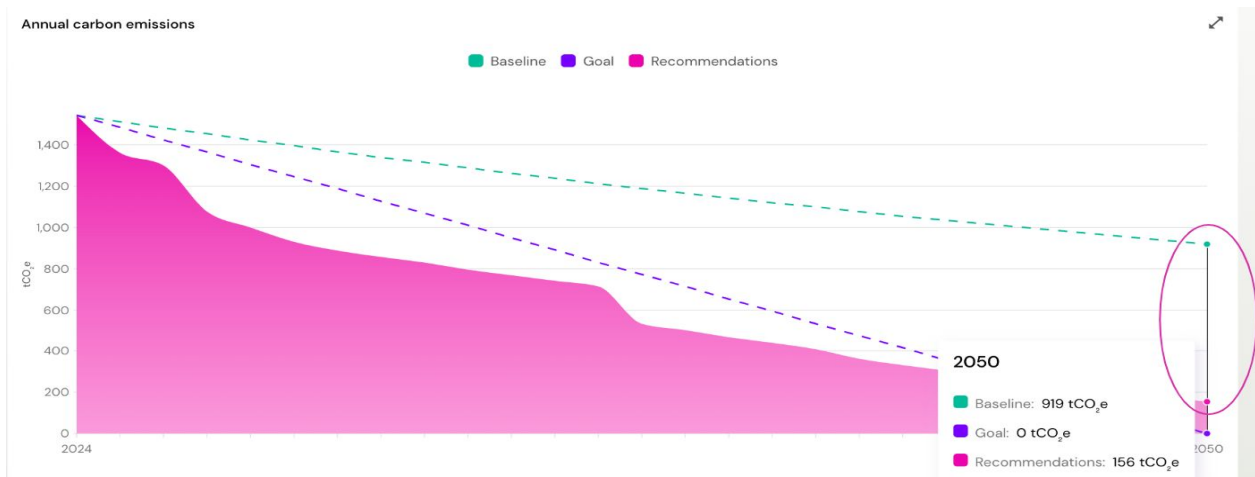
Retrofits by category



At 123 Main Street, heating/cooling is the highest-impact measure category

Sample desktop retrofit plan

Carbon Reduction Potential



Pursuing decarbonization closes 123 Main Street's business-as-usual emissions of 919 tCO₂e in 2050 by >80%, resulting in 156 tCO₂e of residual emissions in 2050 to be offset to reach net zero

Using the results

Building Owners

- Access these complimentary desktop retrofit plans by reaching out to our program.
- These plans will help you
 - identify which buildings and retrofit projects to prioritize
 - modernize your portfolio efficiently and cost-effectively.



Using the results

Municipalities & local governments

- **Building performance benchmarking:** Use building-level carbon intensity data to establish baselines and track performance to support existing municipal benchmarking programs or development of building performance standards.
- **Program design:** Help direct funding and incentives to retrofit categories or building types with the best cost-benefit or carbon reduction returns.
- **Policy design:** Help identify which retrofit categories (e.g., HVAC, envelope, renewables) deliver the highest impact, guiding where policy tools (incentives, regulations, rebates) will be most effective.

How to get started

Scan the QR Code to learn more
on our website!

Fill out the **contact form** to get in touch
with one of our coaches.

[https://albertaecotrusted.com/initiatives/
alberta-ecotrusted-retrofit-accelerator](https://albertaecotrusted.com/initiatives/alberta-ecotrusted-retrofit-accelerator)

Larger portfolios with >25 buildings can also enjoy
complimentary access to their plans with login
credentials to Audette's software through March 2027!



Our Funders

The **Alberta Ecotrust Retrofit Accelerator** program is an initiative funded by Natural Resources Canada under the Deep Retrofit Accelerator Initiative (DRAI).

This program is also made possible from RBC Foundation's Tech for Nature program.





THANK YOU
Questions?