

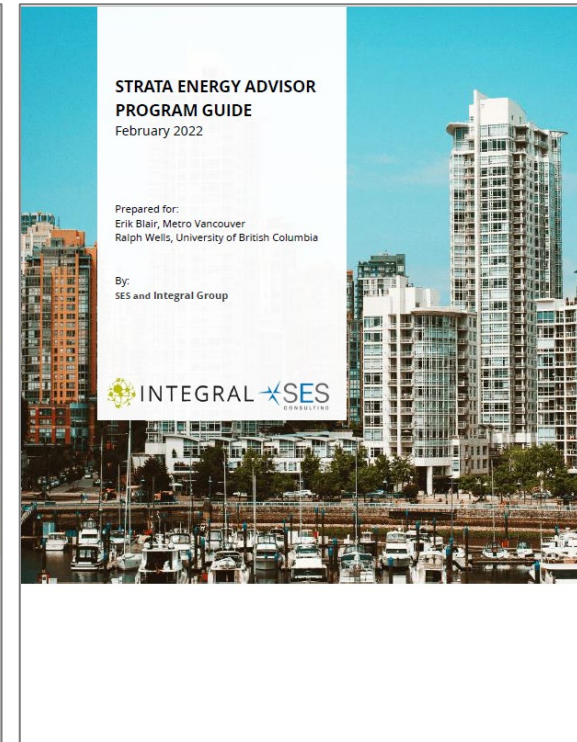
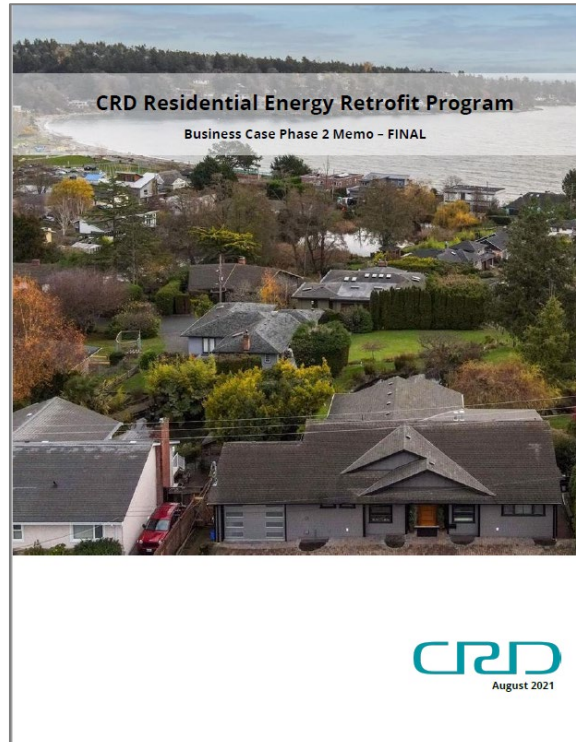
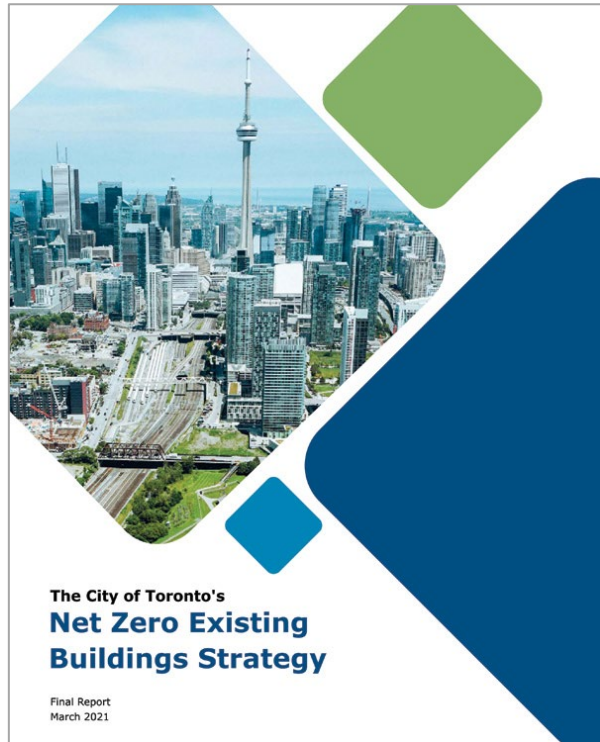
SEA Change: A Strata Energy Advisor Program for BC

BC Building Envelope Council
March 31st , 2022



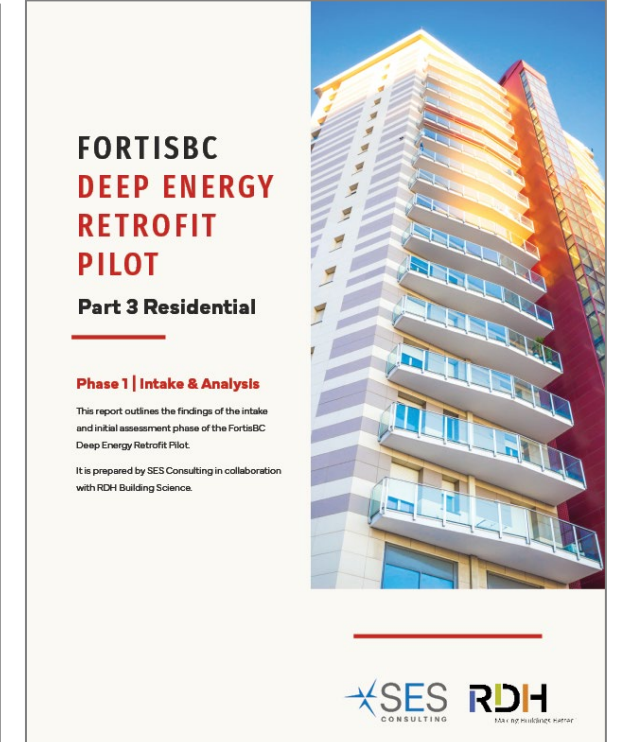
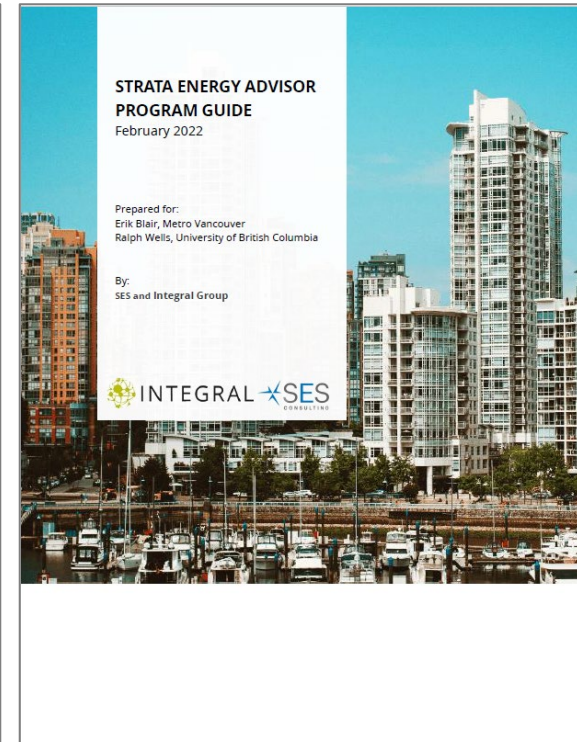
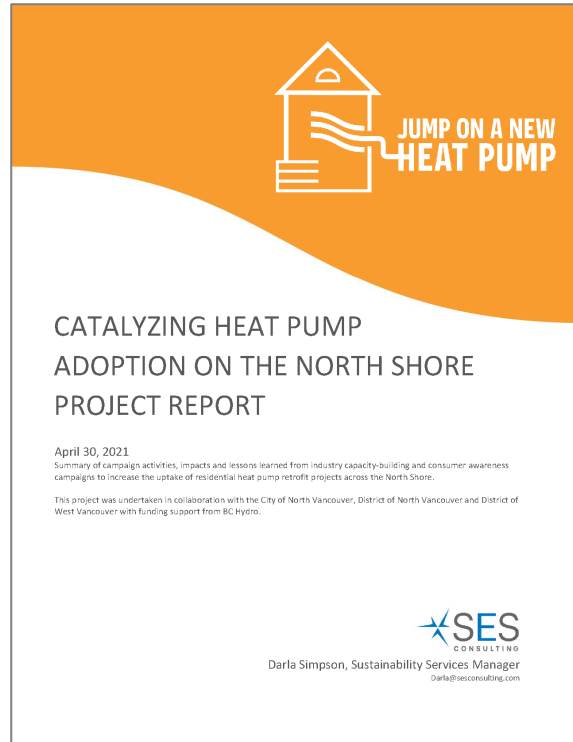
Integral

An international network of engineers and consultants collaborating under a single **“deep green”** umbrella.



SES Consulting | Engineering Energy Efficiency

We're a team of engineers and sustainability professionals dedicated to addressing climate change by reducing energy use in buildings.



Background

Our Project Objective

To define the value proposition and draft program playbook for a province-wide strata energy advisor program.

The medium-term goal is to see the SEA program launched **province-wide** as a partnership between local governments, the Province of BC and/or the Federal Government, with a strong emphasis on carbon reduction.



Project Partners & Stakeholders

Advisory Group

- **Metro Vancouver**
- **University of BC**
- City of Vancouver
- City of Victoria
- District of Saanich
- Resort Municipality of Whistler
- City of New Westminster

Steering Committee

- FRESCo
- BC Ministry of Energy, Mines and Low Carbon Innovation
- CHOA
- VISOA
- FirstService Residential
- BC Hydro
- Pembina Institute
- NRCan
- Ecolighten
- City of Kamloops
- Capital Regional District



Meeting Our Climate Targets

- **Provincial and federal 2050 targets:** net-zero economy-wide
- **Provincial 2030 targets:**
 - **Economy-wide:** 40% reduction in carbon emissions
 - **Buildings and communities:** ~60% reduction in carbon emissions
- Pembina Institute: need to retrofit **4.5% of buildings per year** between now and 2040



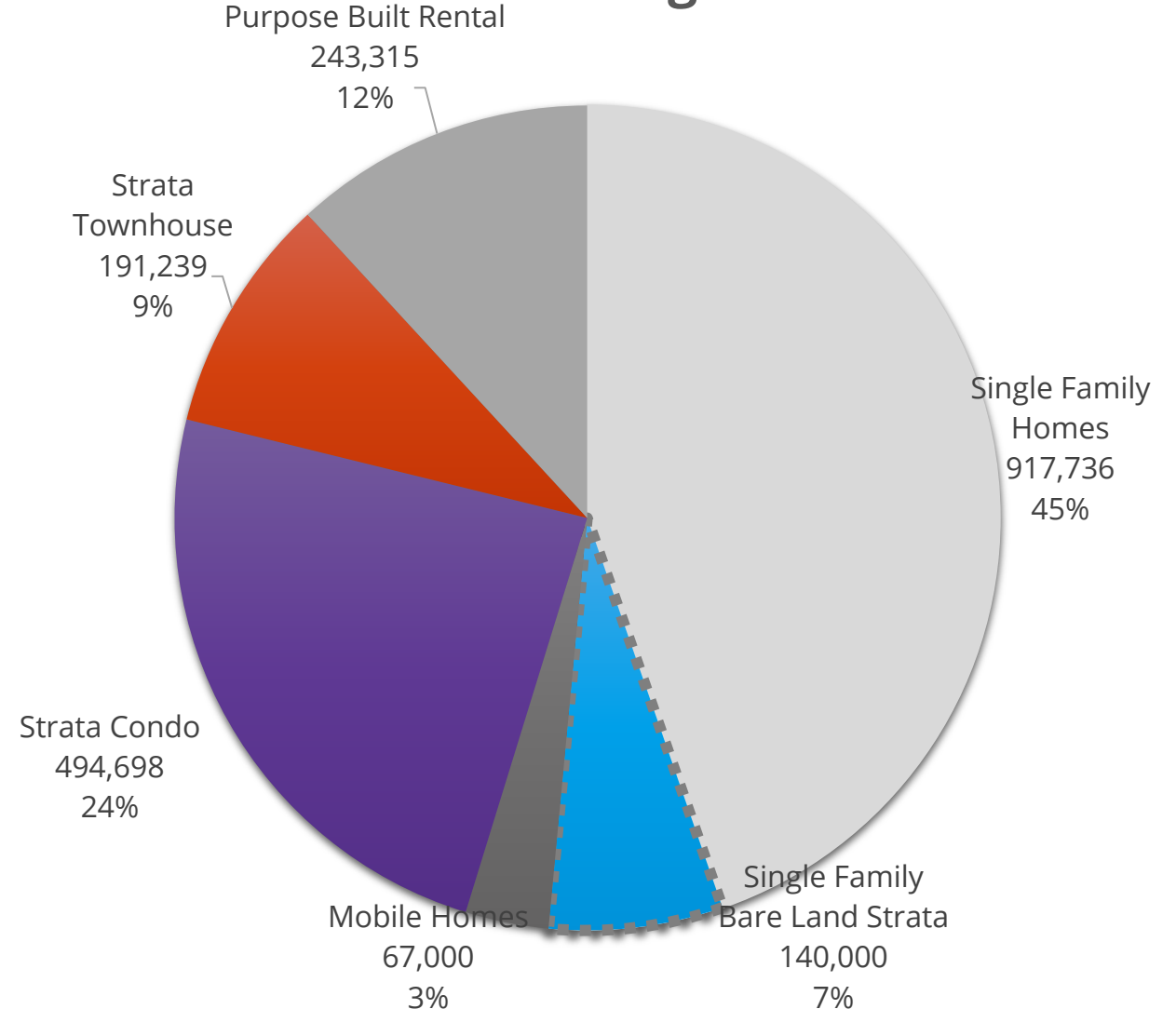
Strata Buildings in BC

- An estimated **~680,000 strata units** in BC*
- Strata units make up **~33% of housing units** in the Province*
- Baseline emissions:
 - 1.25 million tCO₂e per year*
 - **18% of BC building sector emissions***
- An estimated 7.5% of strata undertake a renewal project every year



* excluding bare land strata

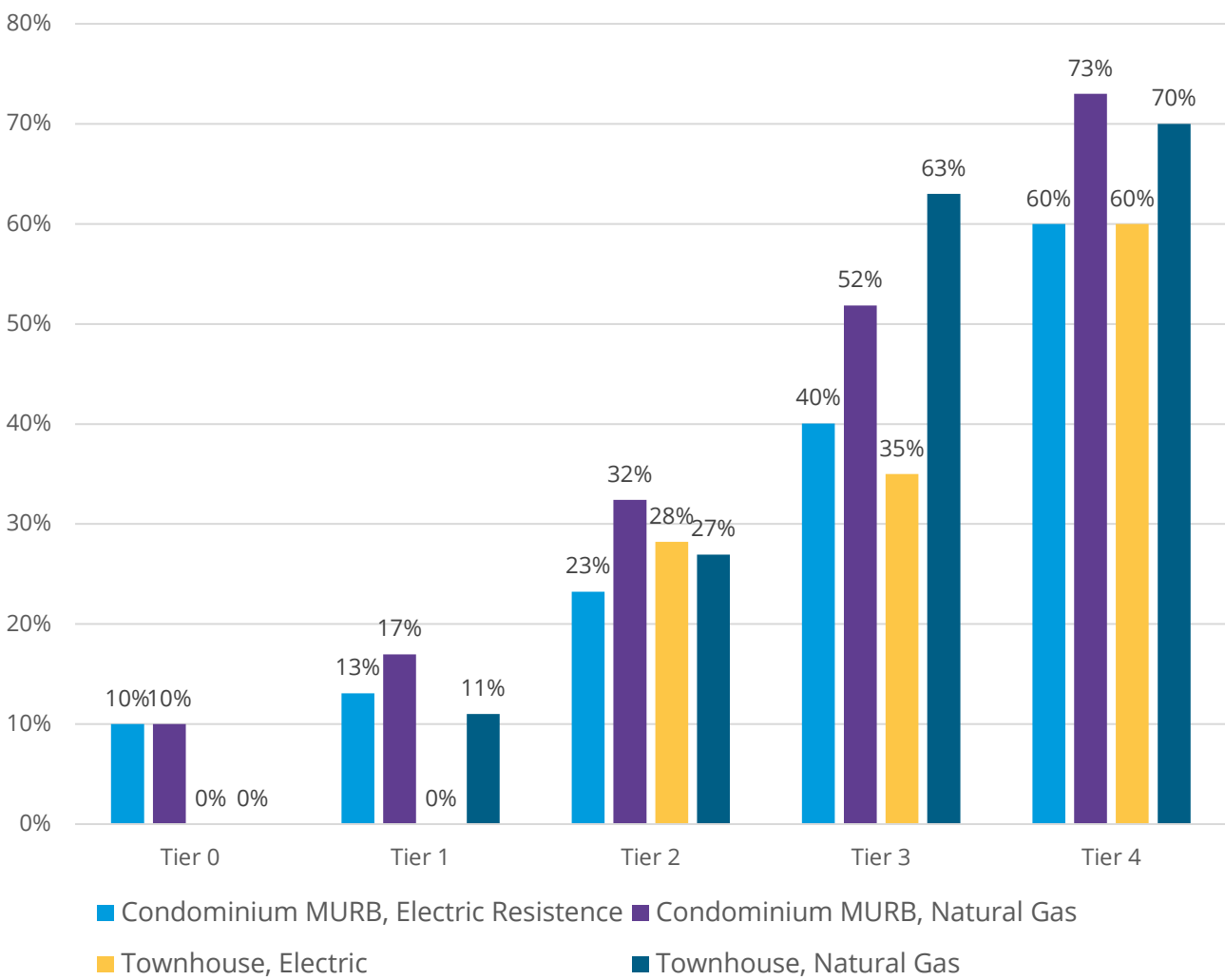
Residential Housing Units in BC



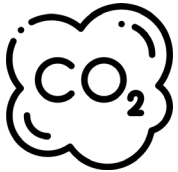
Estimating Strata GHG Savings Potential

- Generated **baseline energy use of stratas** by applying BC estimates of home energy use & heating types to strata stock
- Analyzed **5 tiers of** retrofits using SEA pilot and Integral studies
- Estimated savings for each tier and building typology across the stock to generate **total annual savings potential**
- Estimated cumulative savings based on varying levels of penetration (typical lifetime savings)

Tier	Retrofit
Tier 0	RCx/Tune-up (N/A for townhomes)
Tier 1	Normal Renewal
Tier 2	Energy Retrofit
Tier 3	Conventional Comprehensive Retrofit
Tier 4	Heat Pump Fuel-Switch Retrofit

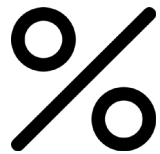


Strata Buildings Have Huge Emissions Savings Potential!



Total GHG savings potential

751,816 tCO₂e/yr.
17 million tCO₂e cumulative



Total annual strata GHG savings as a percentage of estimated strata emissions

60%



Total annual strata GHG savings as a percent of provincial building sector emissions in 2018

11.1%

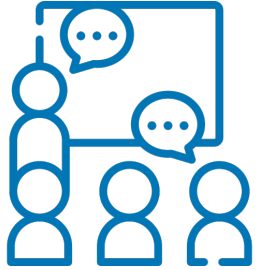


Total potential number of BC households impacted per year

~52,000



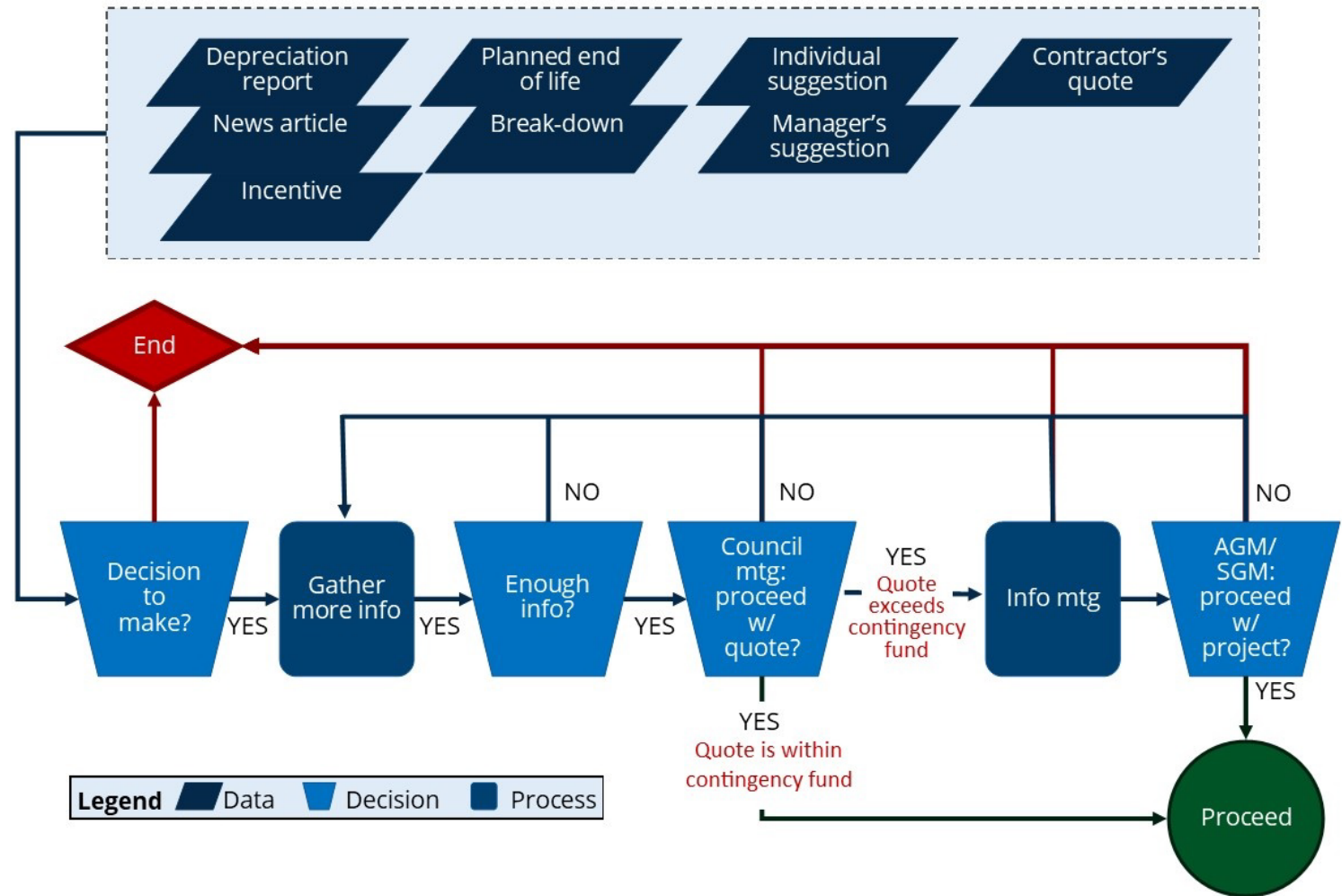
Known Barriers to Strata Retrofits



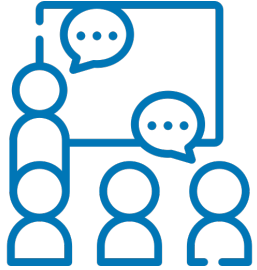
Complicated ownership structure

- Approval processes
- Strata council turnover
- Limited scope of depreciation report requirements

STRATA COUNCIL DECISION MAKING PROCESS



Known Barriers to Strata Retrofits



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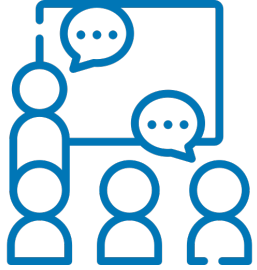


Need for specialized knowledge and capacity

- Capacity of strata councils
- Capacity of property managers
- Emerging low-carbon technologies



Known Barriers to Strata Retrofits



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Need for specialized knowledge and capacity

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- Capacity of property managers
- Emerging low-carbon technologies



Financial constraints

- Limited access to capital
- Increasing condo insurance rates
- Affordability



Benefits of Retrofitting

Carbon and Energy Reduction

- Preparing for forthcoming **energy and carbon regulations homes** and buildings
- **Value alignment** for prospective and current strata owners

Improved Resilience

- Increased resilience to **climate threats** including extreme **heat, and smoke from wildfires**

Decreased Energy Bills

- Energy and utility bill savings for residents
- ~60% of strata energy bills are paid through strata fees

Improved Health and Safety

- Better indoor air quality
- Thermal comfort

Jobs and Economic Growth

- Increased number of jobs for consultants/ trades
- Larger project scopes



Policy Landscape for Existing Building Retrofits



Policy Landscape for Existing Building Retrofits




Policy Landscape for Existing Building Retrofits



Policy Landscape for Existing Building Retrofits



A photograph of a multi-story red brick building. The building features several rows of windows. The top row consists of small, square windows. The middle row features larger, arched windows with decorative brickwork above them. The bottom row has tall, narrow rectangular windows. A black metal fire escape is visible on the left side of the building, running vertically. The overall scene is captured in a slightly desaturated, cinematic style.

Strata Energy Advisors: Proposed Program Overview

Strata Energy Advisor Pilot Program



metrovancouver

About Resources ▾

Strata
ENERGY ADVISOR

Expert Advice, Better Buildings

Free energy assessments for strata communities

The Strata Energy Advisor Pilot Program is now fully subscribed, but our website is full of great information to help stratas make smarter choices and improve their buildings.

Strata Energy Advisor Pilot Program- Streams



Tune-up or Automation

- 29 buildings
- 30% total lifetime GHG's saved



Major Mechanical

- 8 buildings
- 57% total lifetime GHG's saved



Building Envelope

- 1 building
- 13% total lifetime GHG's saved



Strata Energy Advisor Pilot Program - Results

SEA pilot participation

Over 200
strata
registered

Completed 82
walk-through
assessments

38 buildings
completed
retrofits

Resulted in 2,265 tonnes of verified lifetime GHG reductions



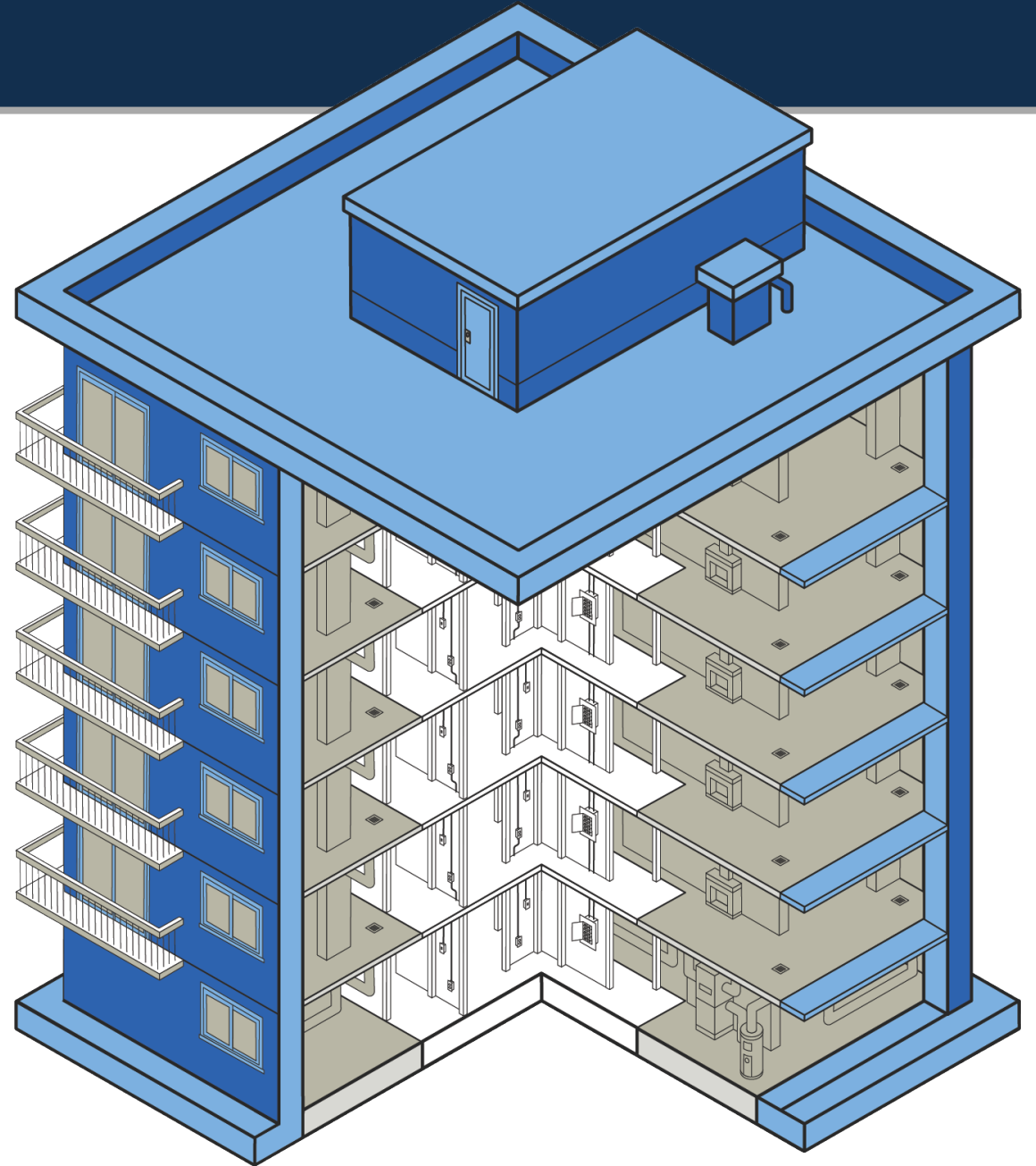
Strata Energy Advisor Pilot Program - What We Learned

- 1** Strata-owned buildings want to be more efficient.
- 2** Approval timelines can be shortened with the right support.
- 3** There is good opportunity to improve building performance and reduce utility costs.
- 4** Strong relationships are key to program success.
- 5** Education is a key component of any program.

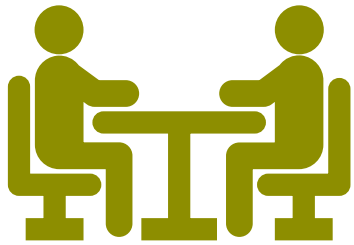


SEA Program Redesign

- **Intended host organization:** Province of BC
- Leveraging existing programs
- Building as a system approach (integrated, including resilience)
- Supporting a path towards Deep Energy Renewals
- Start smaller and scale-up
- Support will scale down over time



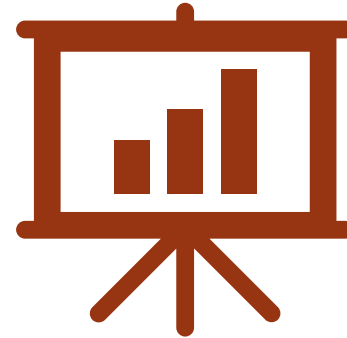
High Level Program Design – Core Principles



Relationships



Credibility & Trust



Information &
Interpretation



Ease of Access



Renewed Strata Energy Advisor Program



Program Features

← **Building Benchmarking**
+ online interface that can save information

↪ **L2 Building Audit** w/ small refundable fee when measures installed

↪ **Business Case** w/ systems approach + coordinated access to incentives

↪ **Renewal Road Map** w/ now – next projects aligned with depreciation report & low-carbon goals

↪ **Education & Support** w/ ownership communications & third-party advice*



How Might this Impact Strata Buildings

Raise Awareness

Clarify policy, renewal opportunities and their triggers as well as co-benefits

De-mystify Low Carbon

Create a path to a low-carbon building through renewal road map

Accelerate Approvals

Support strata's through approval process and reduce number of voting cycles

Increase Readiness to Act

Support to take action, including accessing rebates will create urgency to act

Reduce Uncertainty

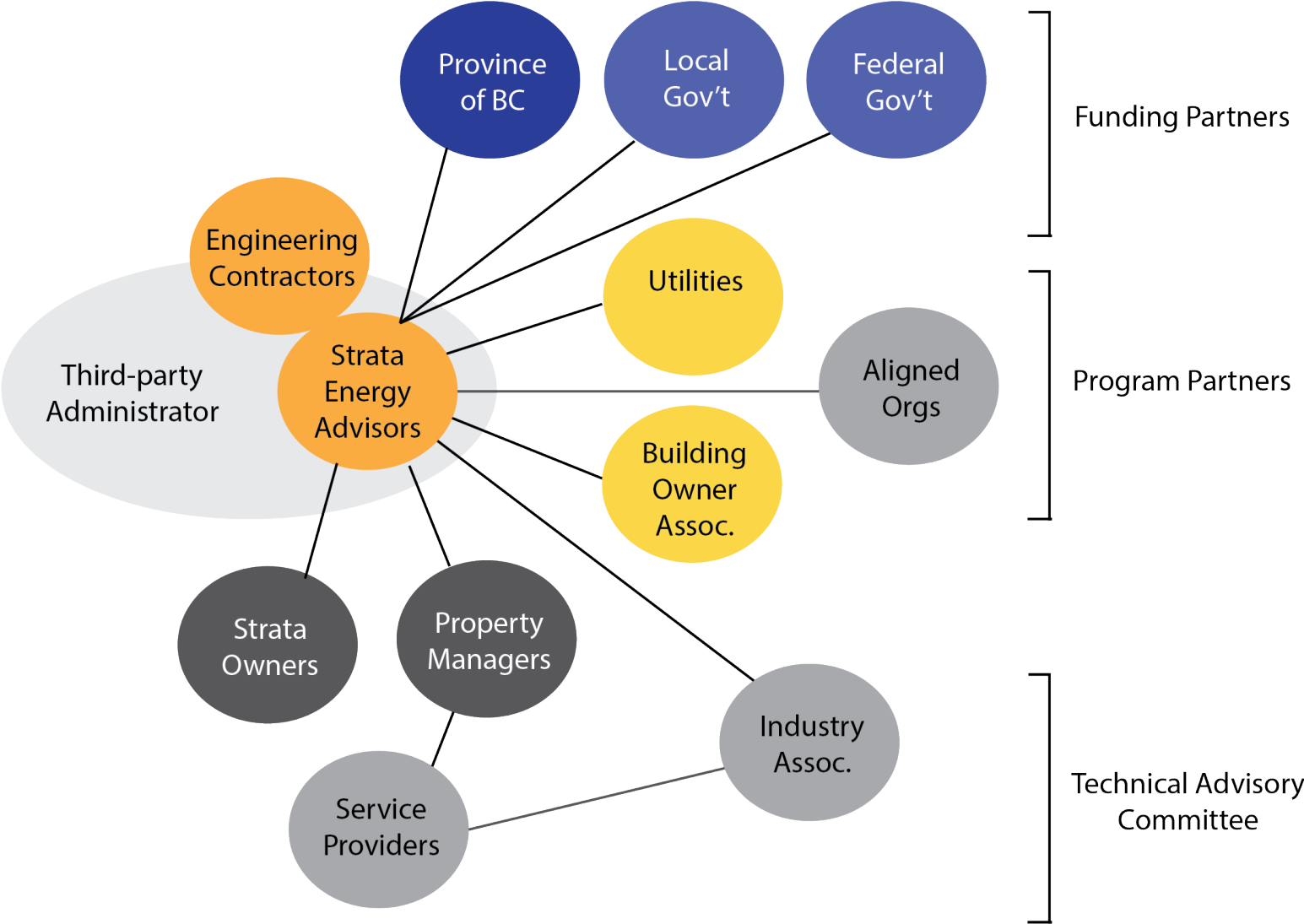
Prepare a business case, including co-benefits and compare options

Improve Outcomes

Support through implementation and focus on performance outcomes



Program Stakeholders



How Might this Impact Industry

Increased Demand

Policy and rebates will drive Strata's to ask for this service

Clearer Information

More comprehensive business case, clarity on co-benefits, leading to faster approvals

Building Performance

Shift towards building performance focus, especially around energy

Specialized Knowledge

Support for low-carbon renewals and more complex projects - team approach

! Technical Support

SEA support during procurement and implementation

Long-term Planning

Will encourage long-term relationships + need for institutional memory



What Role Might Industry Play?



Next Steps

1. Build a business case based on a phased program launch over the next 5-10 years
2. Advocate with key partners/potential host organizations
3. Start to build program architecture



A photograph of a modern, multi-story apartment building with a light-colored facade and numerous balconies. The balconies are enclosed with glass railings and some have potted plants. The building is set against a clear blue sky. A semi-transparent white rectangular box is overlaid on the right side of the image, containing the word "Discussion" in a bold, black, sans-serif font. The box is positioned over the right side of the building and the sky.

Discussion

Discussion Questions



- What value do you see in this program from your organization/industry's perspective?
- What parts are you excited about?
- Any concerns or important considerations?



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Thank you!

