Speaker presentation

Brand New Floors:
changing role and metrics of codes in Canada

Justin Pockar

Recovering architect/physicist/consultant

City of Calgary regulatory leader

Member - Standing Committee of Energy Efficiency [NRC]

Member – National Model Code Committee – Climate Mitigation

Chair - Alterations to Existing Residential Buildings task group

GBTAC Advisory Committee, joining the team from 2022-2025

I am NOT; an accountant, a planner, or a lawyer

Energy Efficiency & Cost

Impacts on inaction.

Legislative & Policy Framework

The rules and context of energy codes

How is Energy Efficiency Impacting Real Estate?

Total cost of ownership, incentives, green financing.

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How is Energy Efficiency Impacting Real Estate?

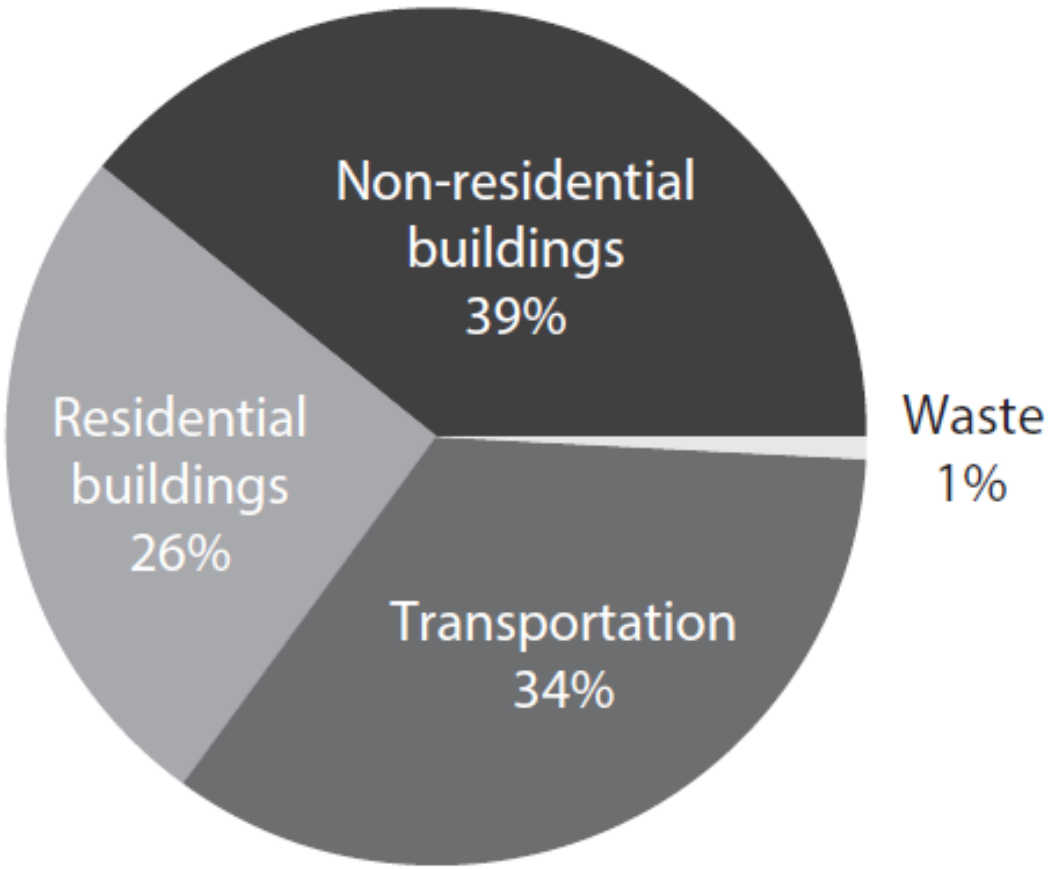
Total cost of ownership, incentives, financing.

goal for today: provide a basic overview of the opportunities and resources related of tiered energy codes and the future impact of code changes on the building market

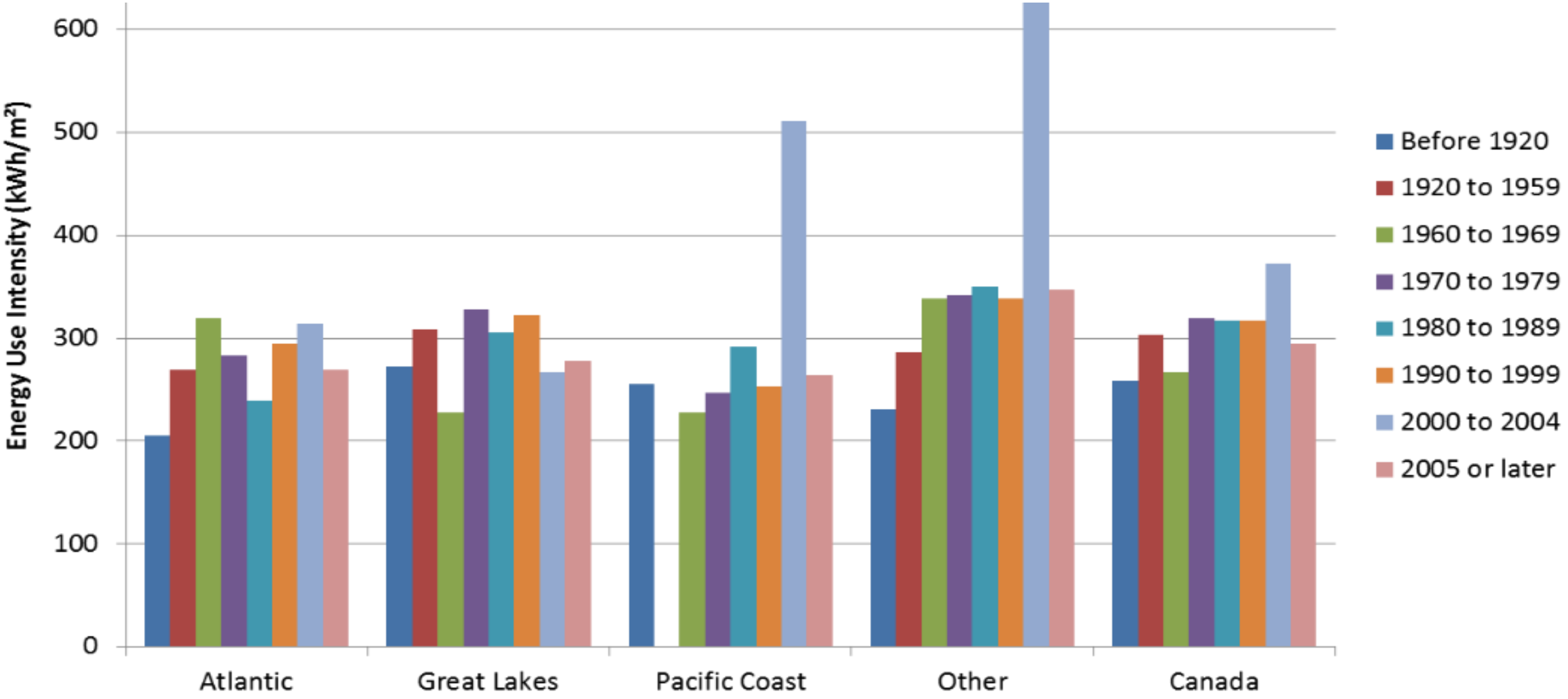
a few (not so) bold and (mostly) accurate truths:

buildings are a problem

FIGURE 1 – CALGARY COMMUNITY-WIDE GHG EMISSIONS BY SECTOR (2017)



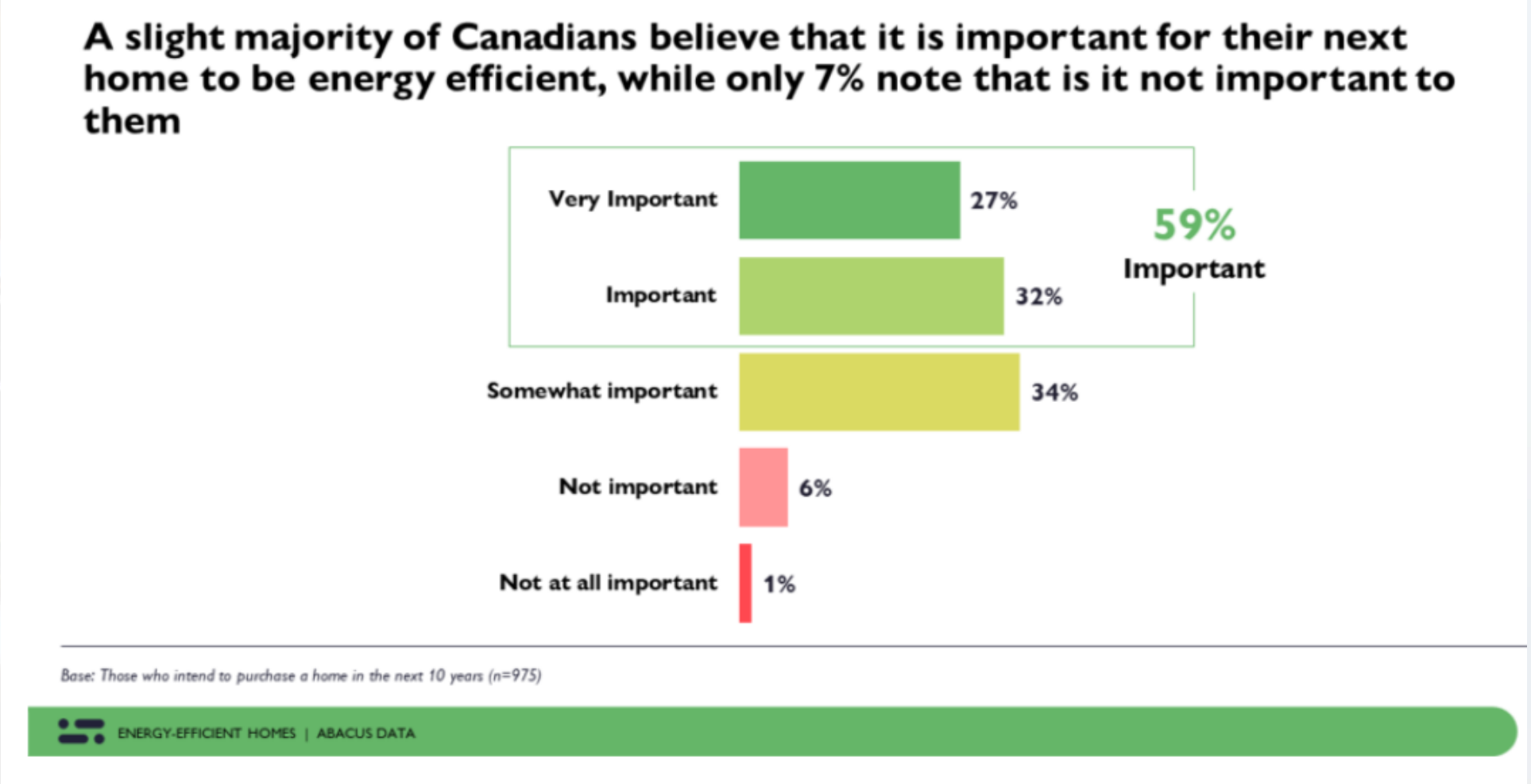
Source: City of Calgary Climate Change report



Source: National Research Council Canada (NRC)

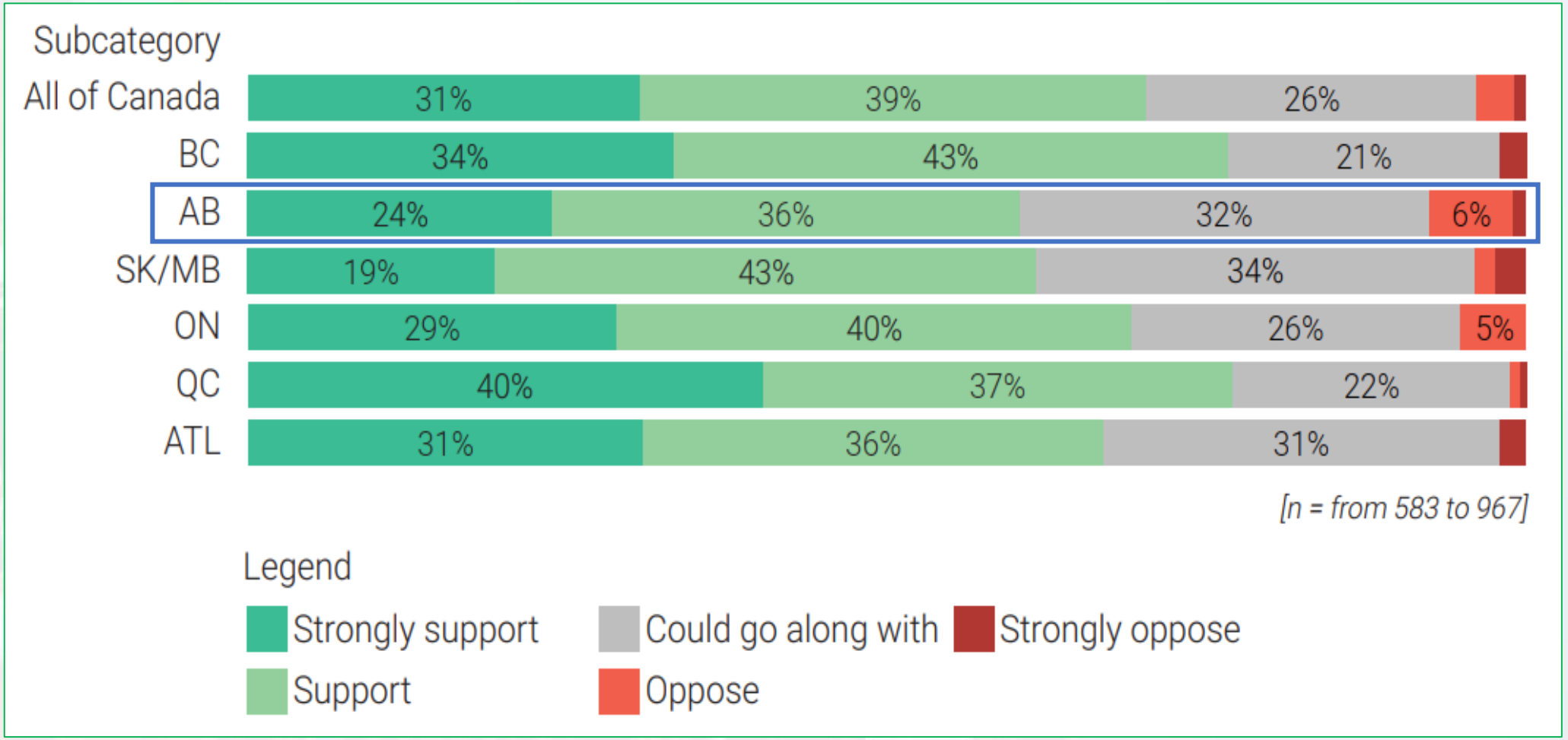
people like energy efficiency

Q: Does energy efficiency matter to you?



Source: www.abacusdata.ca

Q: Do you support energy efficiency legislation?



Source: Efficiency Canada. The Municipal Guide to Net-Zero Energy Ready Building Codes
https://www.efficiencycanada.org/wp-content/uploads/2023/02/Municipal_Guide.pdf

Q: What are the most important features you look for in a home?

TOP 10 MOST-DESIRED FEATURES OF 2024

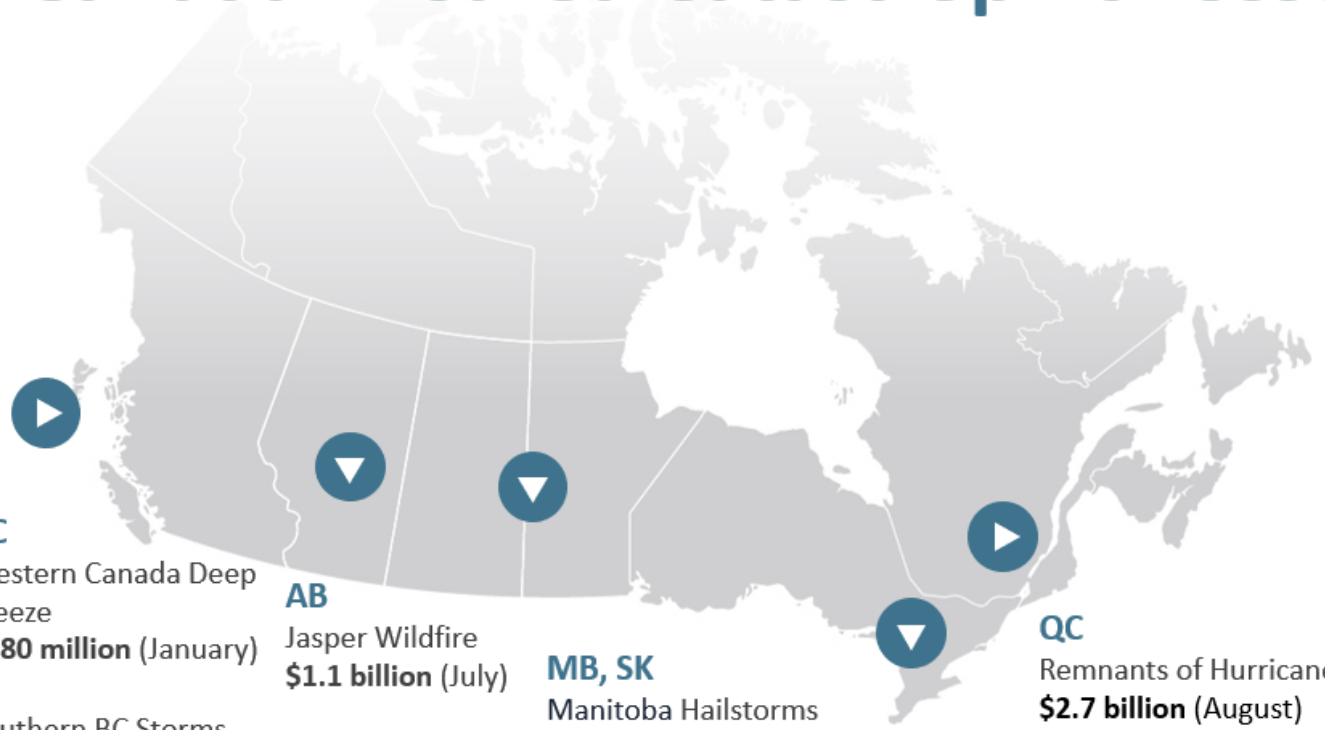
The top 10 overall “Must Have” home features identified by the 2024 study participants:

1. Walk-In Closets (Primary Suite)
2. Kitchen Island
3. High-Efficiency Windows
4. Walk-In Closets (Interior Of Home)
5. Energy-Efficient Appliances
6. Overall Energy-efficient Home
7. HRV/ERV Air Exchange System
8. Linen Closets
9. Kitchen: Hardwood / Wood-Look Floor
10. 2-Car Garage

Source: CHBA National customer Survey 2024

doing nothing does something

Canada: Insured Catastrophic Losses in 2024



Insured Damage Estimate:
$8.5 Billion+

BC
Western Canada Deep Freeze
$180 million (January)

Southern BC Storms
$120 million (October)

AB
Jasper Wildfire
$1.1 billion (July)

Calgary Hailstorm
$3 billion (August)

MB, SK
Manitoba Hailstorms
$60 million (May)

Saskatchewan Severe Storms
$135 million (June)

ON
Toronto and GTA Flooding
$990 million (July)

GTA and Southern Ontario Flooding
$110 million (August)

QC
Remnants of Hurricane Debby
$2.7 billion (August)

*The amount of insured damage is an estimate provided by CatIQ (www.catiq.com) under licence to IBC.

Source: Insurance Bureau of Canada – 2024 Report

Canada: Insured Catastrophic Losses in 2024

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*The amount of insured damage is an estimate provided by CatIQ (www.catiq.com) under licence to IBC.

Hail-elujah: A SHOCKING TALE

Source: Insurance Bureau of Canada – 2024 Report

$2.6 B 2050s Annual Cost	$7.8 B 2080s Annual Cost
Projected annual tangible and intangible costs from climate impacts by 2050s.	Projected annual costs will triple by the 2080s if action isn't taken.

Climate inaction will lead to severe weather events, infrastructure damage, health impacts, and ecosystem risks. This all impacts building serviceability and insurance rates for properties

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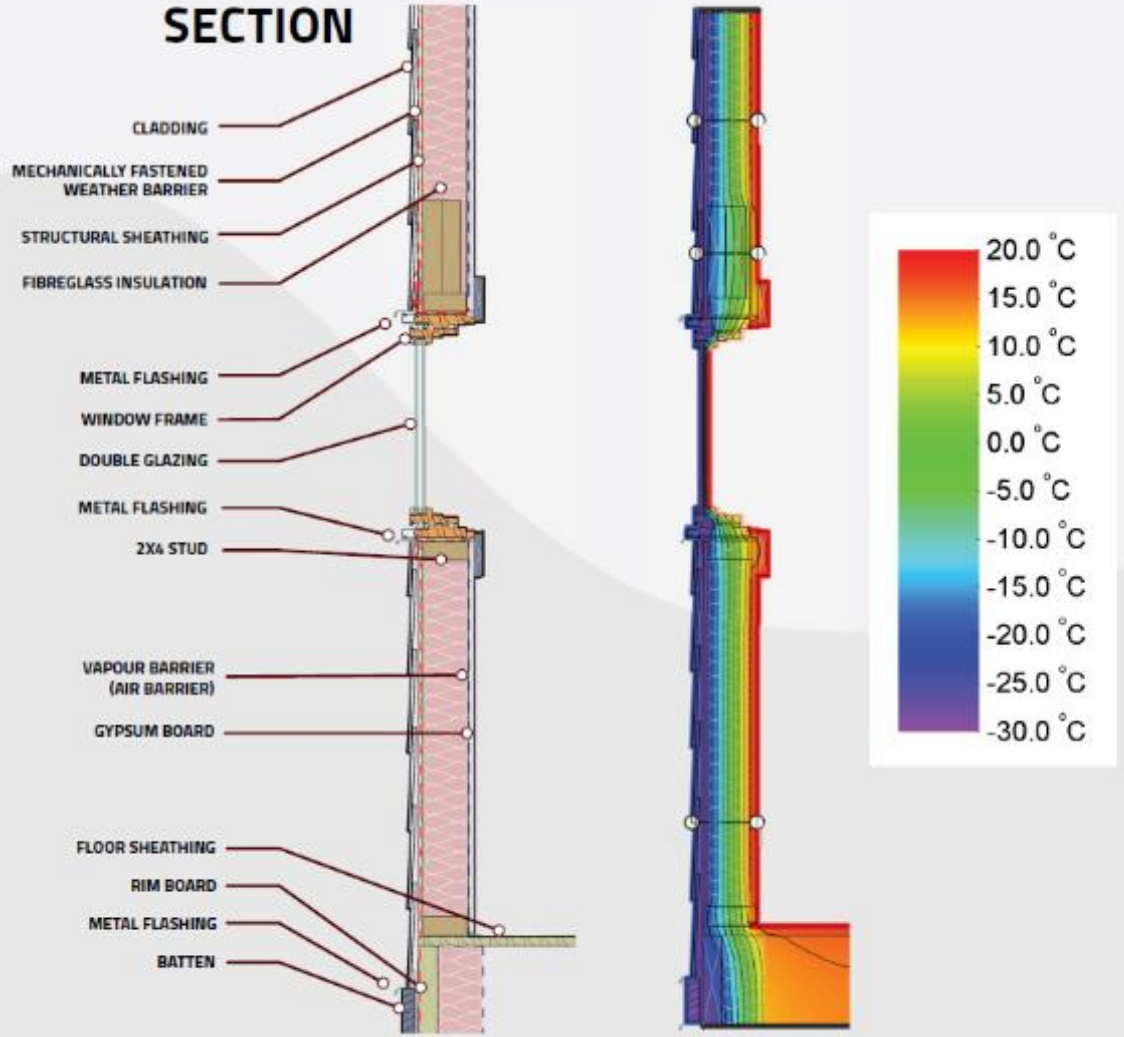
energy efficiency costs money

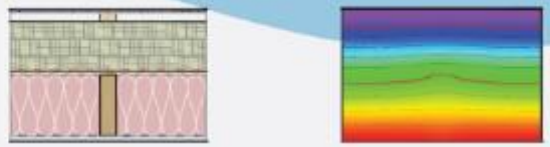
PLAN

SECTION



VS

PLAN



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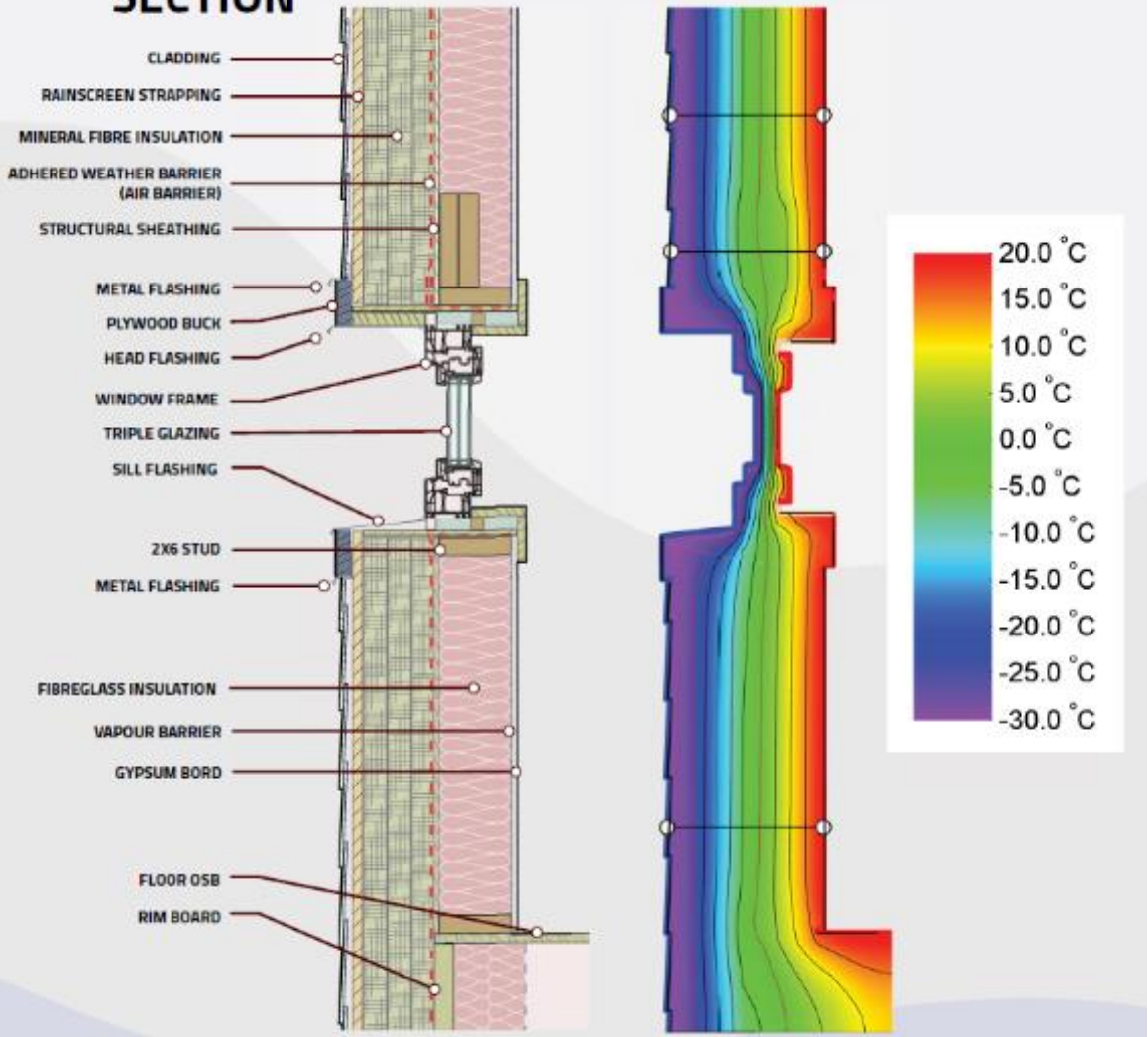

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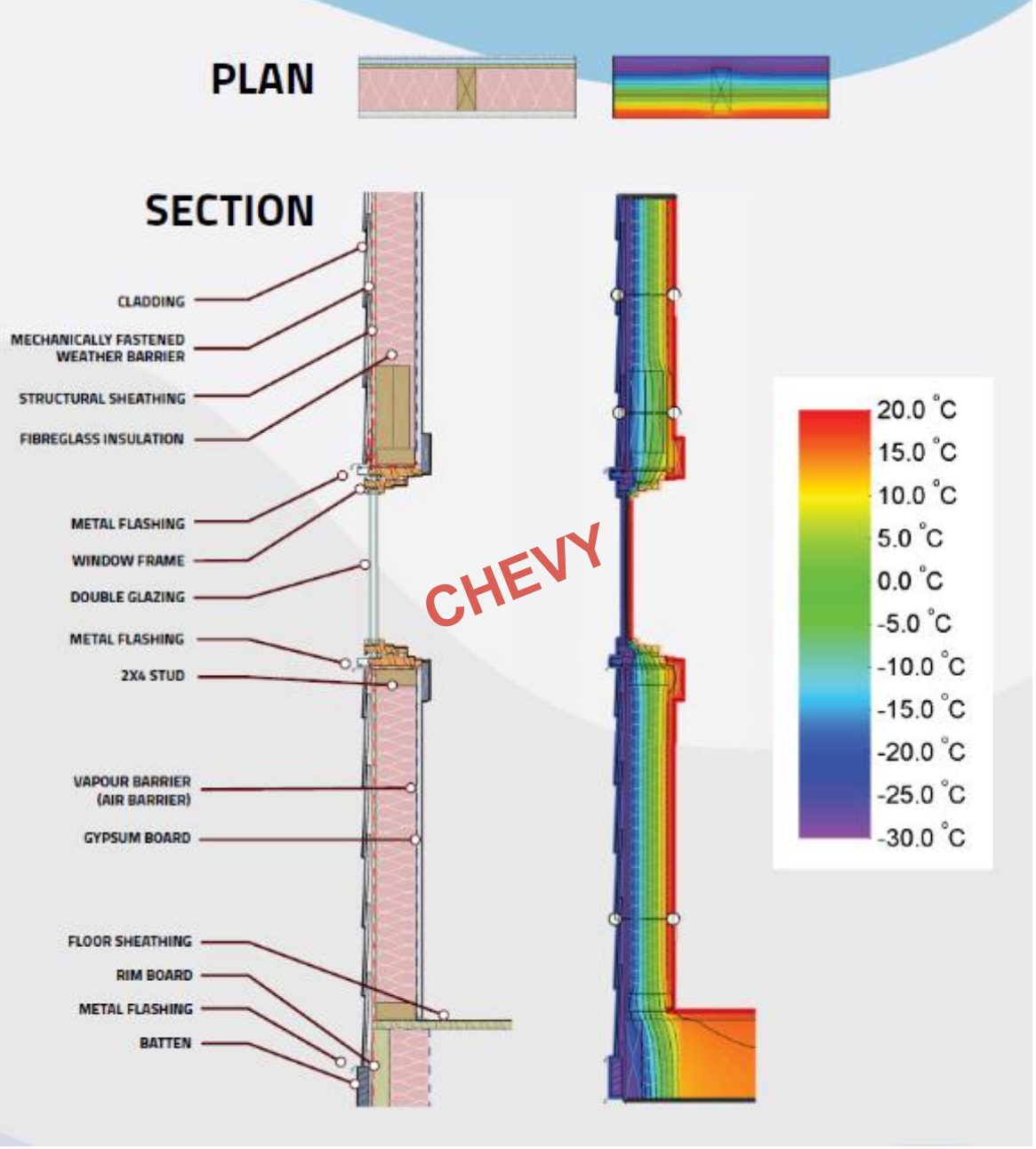

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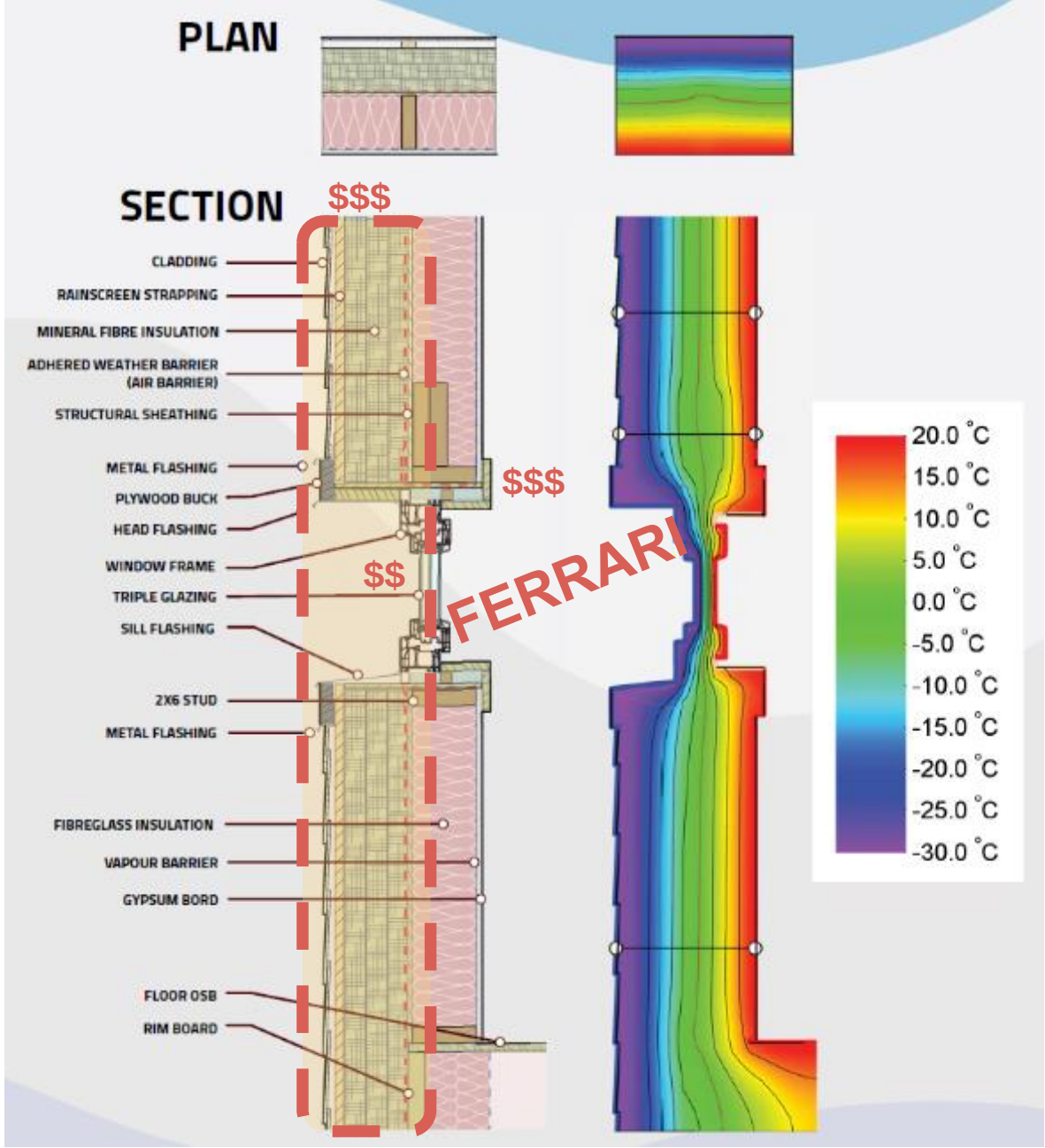

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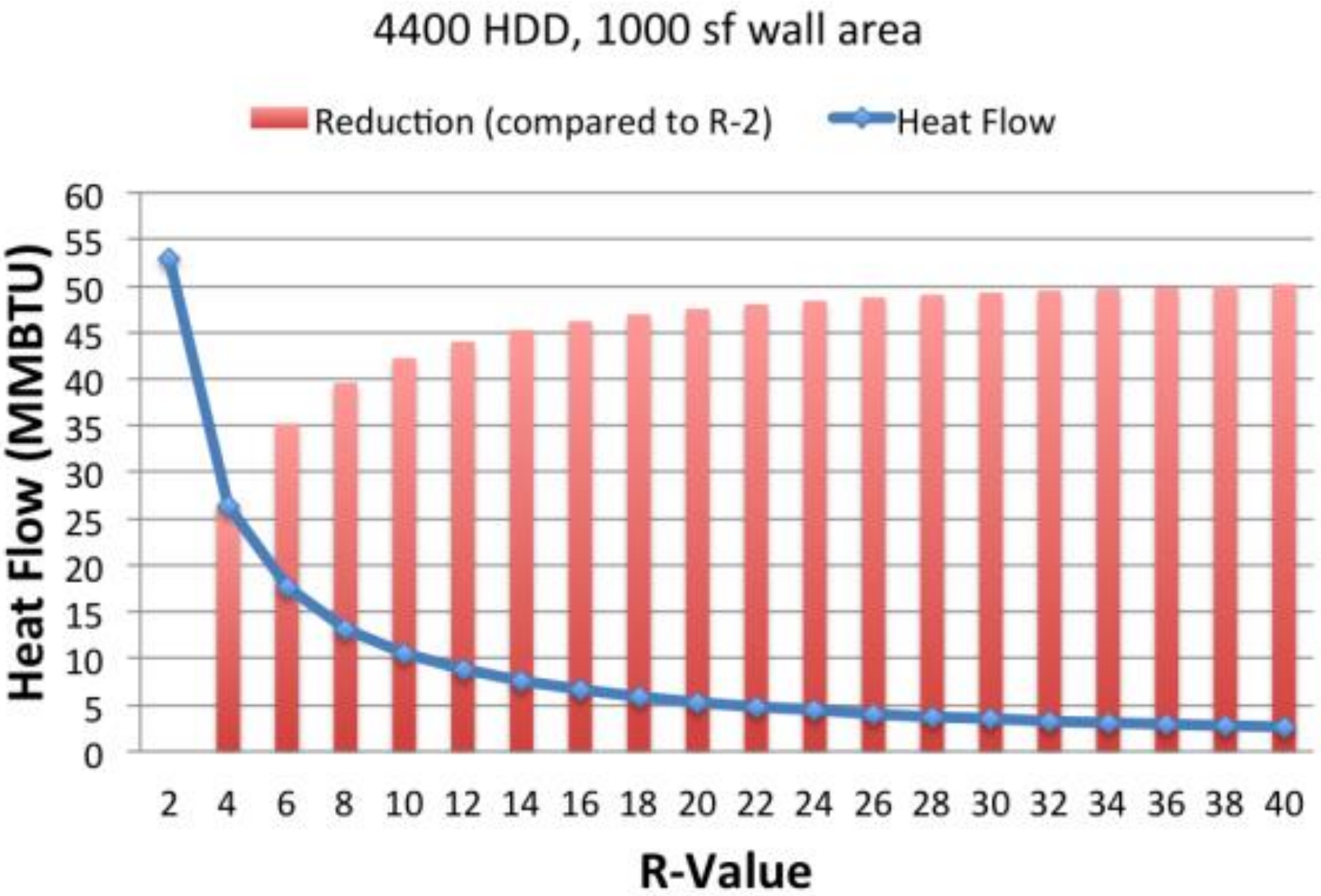

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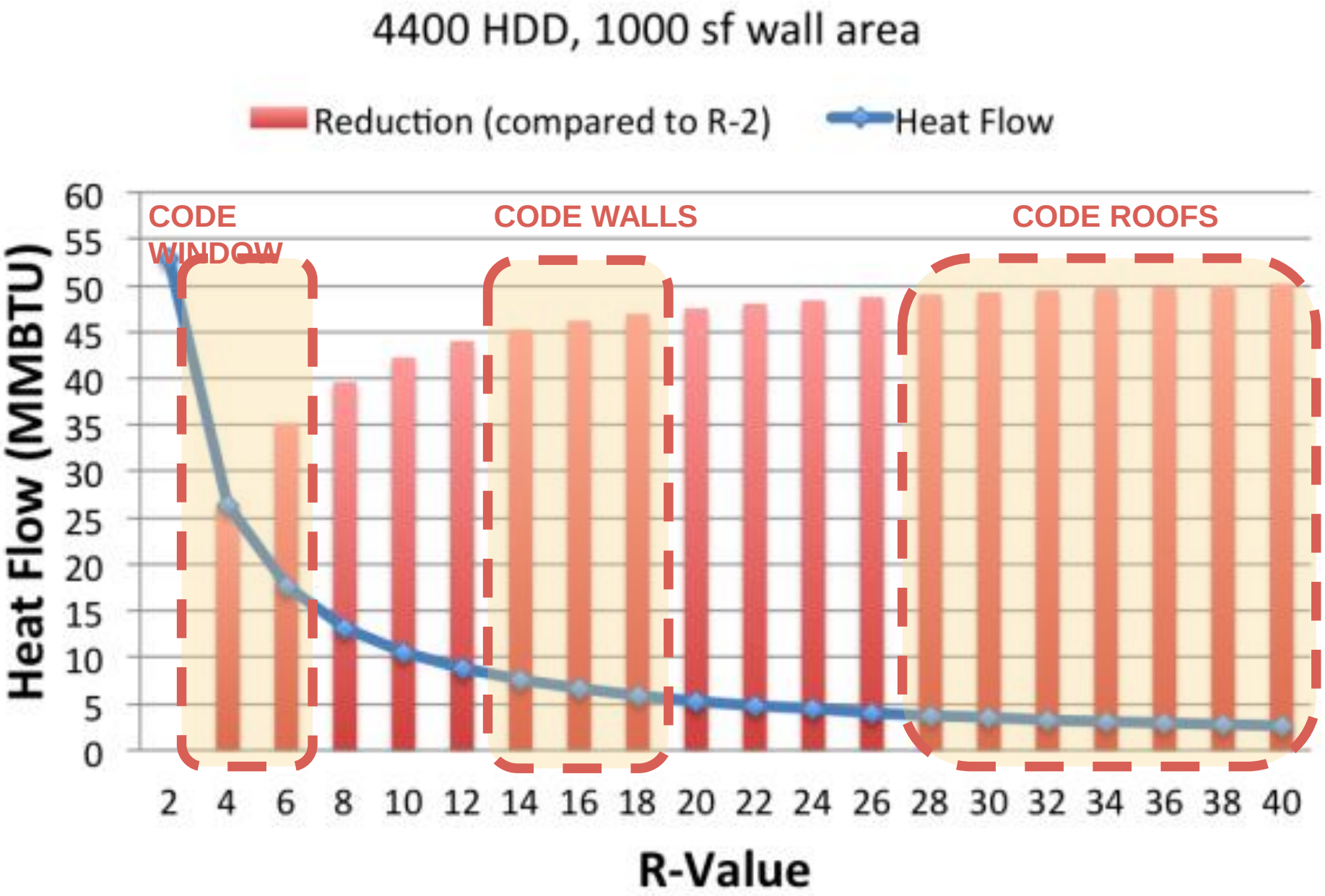

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LEGISLATIVE & POLICY FRAMEWORK

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Legislation

Let’s understand the legislation that impacts buildings

WARNING: BORING BUT VALUABLE LEGAL DISCUSSION AHEAD

Source: Long-Term Strategy for Developing and Implementing More Ambitious Energy Codes, Canadian Commission on Building and Fire Codes, 2016

Legislation

BUILDINGS HAVE A LEGISLATIVE HIERARCHY

Municipal Government Act

Cities can incentivize but not mandate higher tiers

Safety Codes Act

Municipalities cannot exceed provincial standards

Provincial Authority

Province of Alberta - authority over building codes

Legislation

BUILDINGS HAVE A LEGISLATIVE HIERARCHY

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Cities can incentivize but not mandate higher tiers

BYLAWS & INCENTIVES

Safety Codes Act

Municipalities cannot exceed provincial standards

CODES & PROCESS

Provincial Authority

Province of Alberta - authority over building codes

TIER LEVEL

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Bylaws and Incentives

ALL municipalities and counties can pass bylaws.

This includes rules around planning, setbacks, uses, and incentives

Source: Long-Term Strategy for Developing and Implementing More Ambitious Energy Codes, Canadian Commission on Building and Fire Codes, 2016

Incentives

Source: www.urbantoronto.ca

Source: www.biophiliccities.org

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Energy Codes

ENERGY CODES - SCOPE

- Operation Energy ✓
- Life Cycle GHG Emissions (Embodied Carbon) (**For Now !!!**) ✗
- EV and Renewable Energy Requirements ✗
- Sustainable Objectives (Biodiversity Waste Management etc.) ✗

Source: Long-Term Strategy for Developing and Implementing More Ambitious Energy Codes, Canadian Commission on Building and Fire Codes, 2016

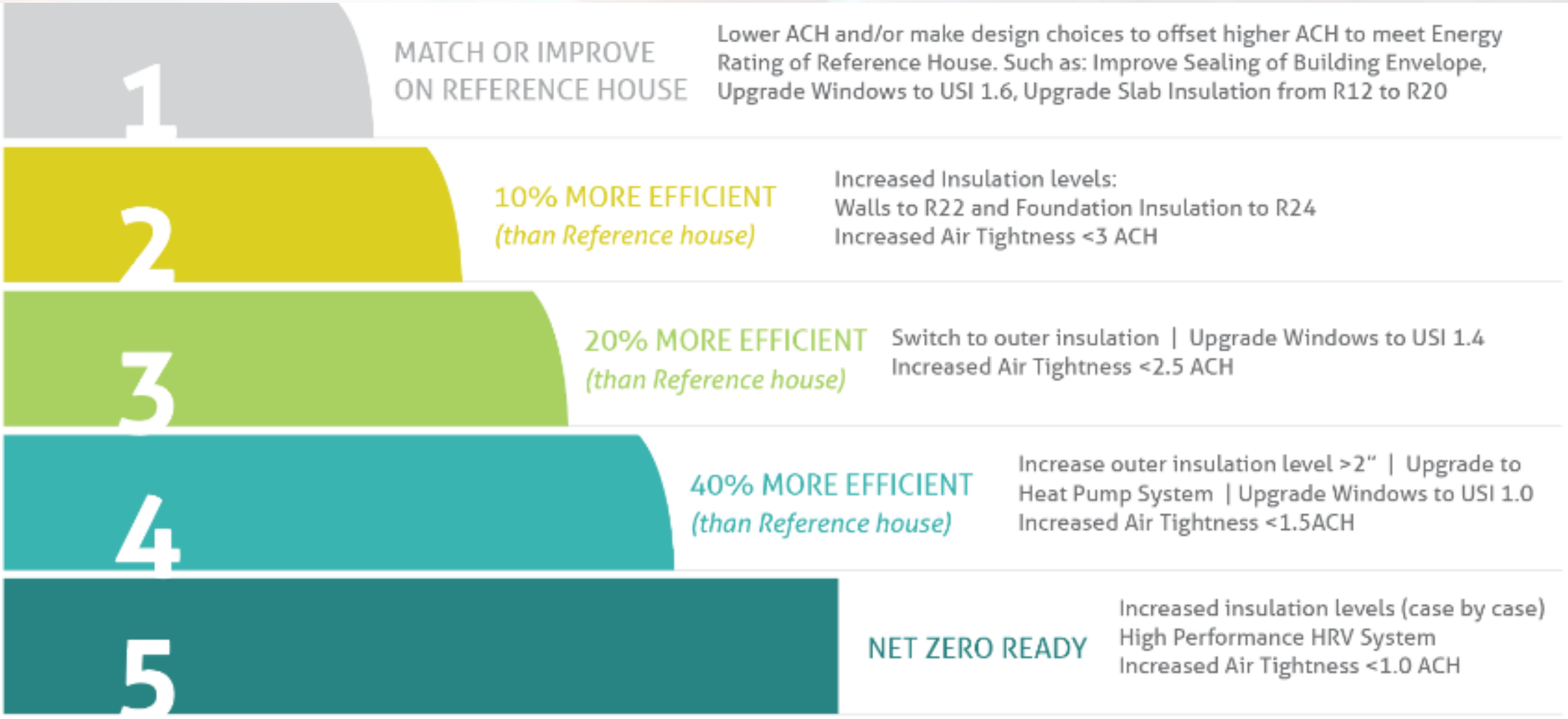
Energy Codes

Traditionally, building codes set minimum standards for construction.

The development of an energy code pathway (pre-determined tiers with flexible implementation schedule) changes the regulatory dynamic by providing industry direction on future criteria

Source: Long-Term Strategy for Developing and Implementing More Ambitious Energy Codes, Canadian Commission on Building and Fire Codes, 2016

Energy Codes



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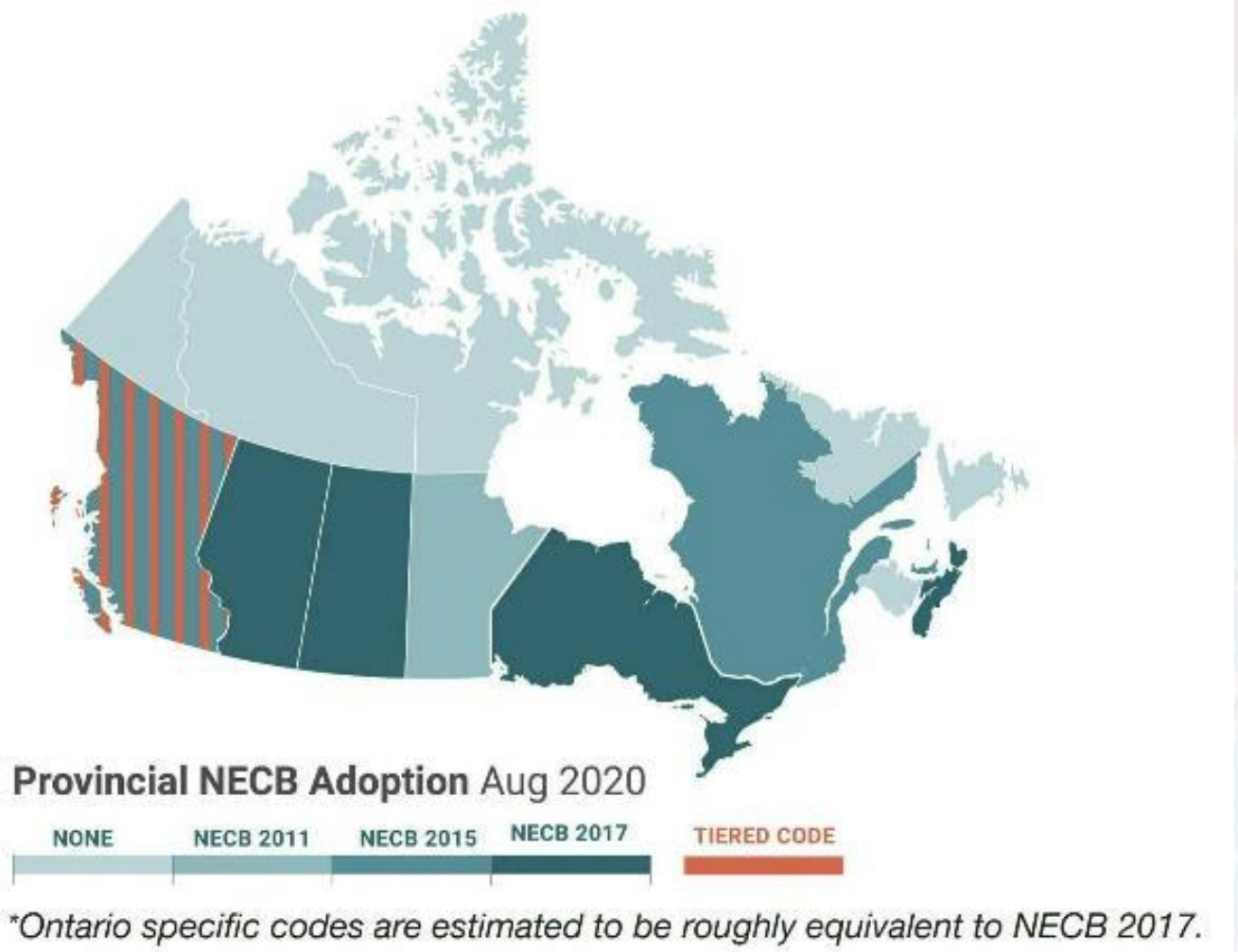
Energy Codes



Alberta has had energy codes in force since 2016. We are currently a Tier 1 province (basic compliance)

Tier 2 mandates are likely to be in force by 2027

The cities of Vancouver and Toronto each developed their own tiered energy compliance systems.

The Province of British Columbia (BC) expanding Vancouver's energy step code province-wide.

Source: Tiered Energy Codes Best Practices for Code Compliance, Efficiency Canada, 2020

Code implementation

Codes are NOT retroactive.

BUT…

Alterations to Existing Buildings are a thing that are coming…

Source: Long-Term Strategy for Developing and Implementing More Ambitious Energy Codes, Canadian Commission on Building and Fire Codes, 2016

Alterations to Existing Buildings

The absence of clear code requirements for existing buildings is resulting in a patchwork approach to dealing with alterations across Canada, causing confusion in the industry, among regulators and building owners/operators, as well as resulting in potentially unsafe practices.

Source: Final Report - Alterations to Existing Buildings, NRC, 2020

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Alterations to Existing Buildings

Minor alteration:

- It is typically a standalone project
- It is often isolated and small in scope or building area
- It does not:
  - involve modification to structural elements
  - impact other systems in other areas of the building
  - add risk to the adjacent property
  - render the active life safety system inoperative
  - make the means of egress unusable

Source: Final Report - Alterations to Existing Buildings, NRC, 2020

Major alteration:

- It applies to everything that doesn't fall under the scope of a minor alteration
- Other systems need to be considered. These systems might be indirectly linked to the alteration project (e.g. heating system and ventilation system after an extensive building envelope upgrade)

Alterations to Existing Buildings

The JTG discussed and analyzed various triggers – the critical decision points that determine whether or not a building requires mandatory upgrades.

1. Maintenance or repair or replacement with similar
    a. single component of a system (without further modifications)
    b. similar in function
2. Change of occupancy type
3. Addition
4. Space reconfiguration
5. System(s) upgrade
6. Other

The currently proposed concept has:

- an exempt level (maintenance or repair or replace with similar) – where buildings or interventions are exempt as long as the performance of the building (in relation to code objectives) is not reduced by the intervention
- a requirement level – where all buildings have to comply with some requirements and – based on building type, project size and intervention complexity – the level of requirements are divided into 2 groups: “minor alteration” or “major alteration”

Source: Final Report - Alterations to Existing Buildings, NRC, 2020

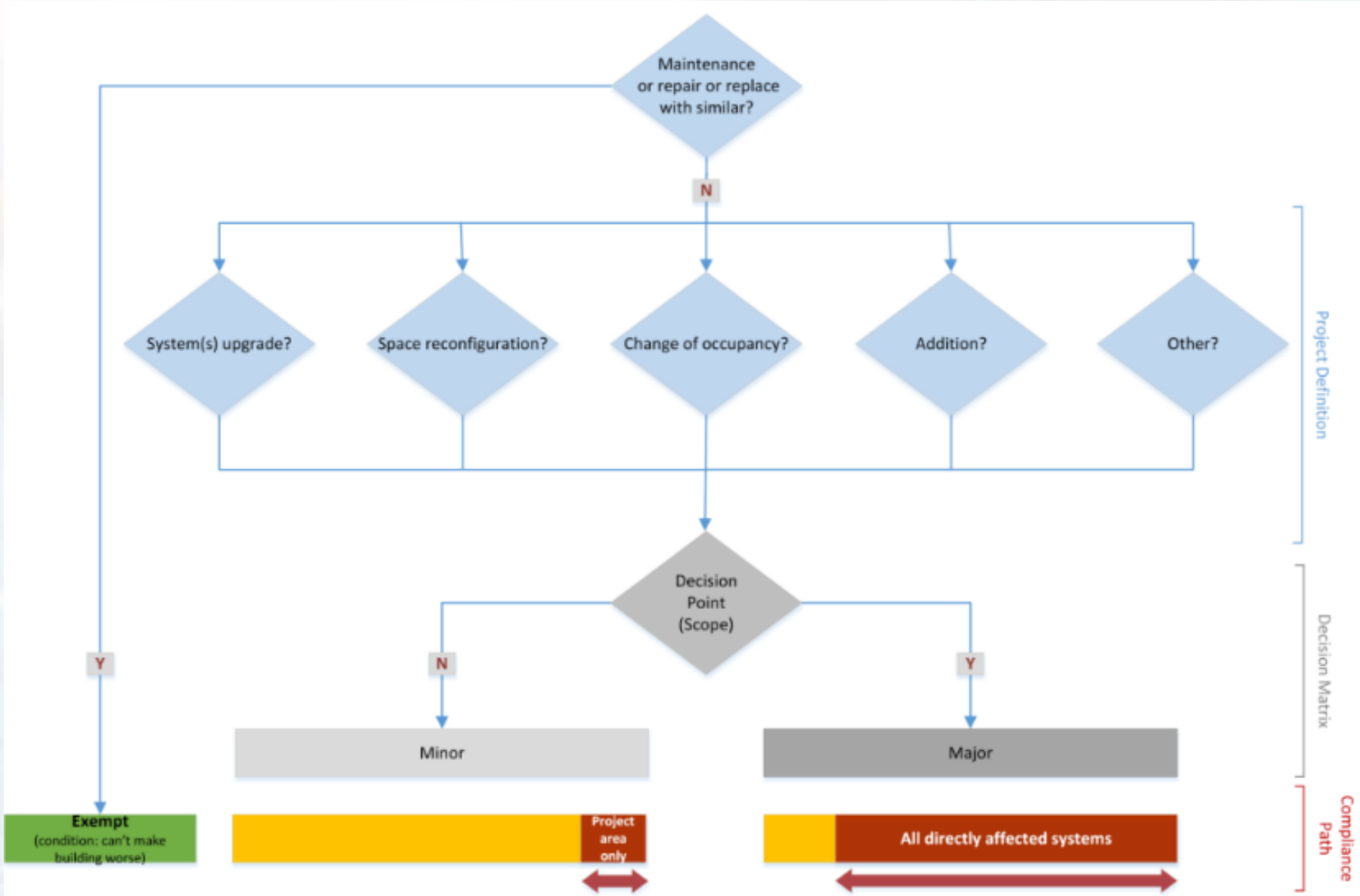

Figure 1. The conceptual diagram of the triggers, decision matrix and compliance paths that apply to alterations to existing buildings.

Source: Final Report - Alterations to Existing Buildings, NRC, 2020

Legislative Framework: Key Takeaways?

- ❑The traditional codes model is changing – slowly
- ❑The scope and breadth of energy efficiency standards is increasing
- ❑Tiered energy codes offer a host of metrics and performance levels.
- ❑Alterations to existing buildings is coming. This will provide the first attempt at mandating upgrades to existing buildings with respect to energy efficiency

IMPACTS ON REAL ESTATE

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Total Cost of Ownership

Total Cost of Ownership

['tō-tᵊl 'kȯst əv, 'ō-nər-,ship]

The purchase price of an asset plus the costs of operation over its life span.

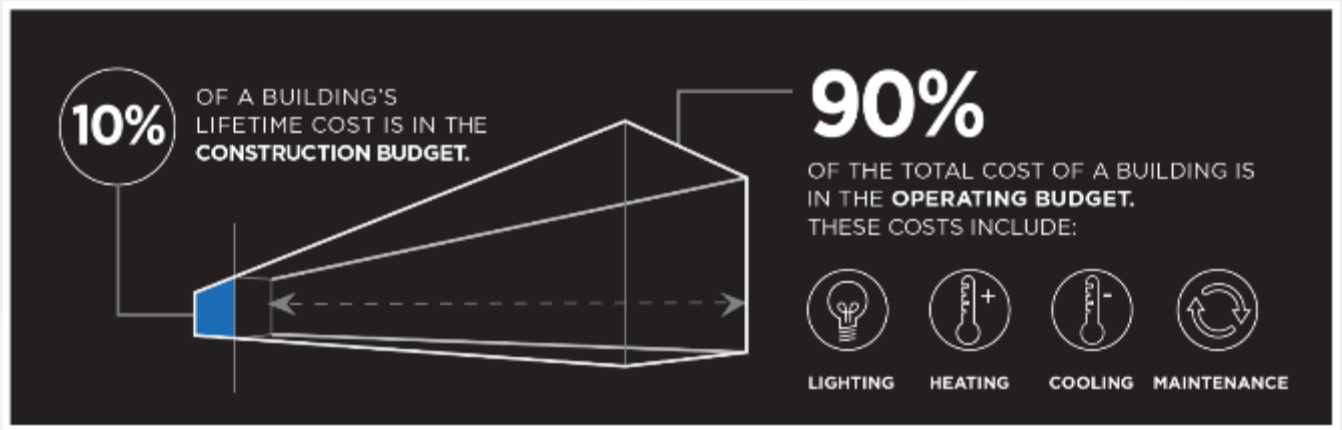
Total Cost of Ownership

The comprehensive cost of purchasing, owning, maintaining, and eventually selling a property.

Key Components:

- Initial Costs (CapEx)
- Ongoing Costs (OpEx)
- End-of-life/Resale

Total cost of ownership = better informed clients and smarter purchases



Source: TBD

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Total Cost of Ownership: CapEx & OpEx

Capital Expenditure (CapEx)	Operational Expenditure (OpEx)		End-of-life / Resale Costs
Upfront Costs • Purchase price • Down payment • Legal fees, title insurance, land transfer taxes, other closing costs • Property inspection & appraisal fees • Renovations or immediate repairs • Sales tax (if applicable)	**Ongoing Ownership Costs** • Mortgage interest • Property taxes • Home insurance • Utilities (electricity, gas, water) • Maintenance & repairs • HOA/strata fees (if applicable)	**Long-Term Expenses** • Major system replacements (roof, HVAC, plumbing, etc.)* • Renovations* (kitchen/bath updates) • Inflation-adjusted costs • Opportunity cost of tying up capital	**Resale Costs** • Legal fees, property transfer fee • Real estate commission, marketing expenses, & MLS Service Fee • Repairs & renovations* • Cleaning costs

Total Cost of Ownership: Examples

Appendix B : Downtown Office Assessed Rates (Updated: January 31, 2025)

2025 Downtown Office Cap Rates	
Market Zone	Rate
AA	6.25%
A	6.75%
B	6.75%
C	6.75%

2025 DT1,8 Office Operating Costs	
Quality	Rate
AA	$22.00
A	$20.00
A-/B	$16.00
C	$14.50

2025 DT2,3,9 Office Operating Costs	
Quality	Rate
AA	$22.00
A	$16.00
B	$16.00
C	$14.50

Leasehold Improvement Allowances All Market Areas	
Quality	Rate
AA	$7.00
A	$5.00
B	$5.00
C	$4.00

2025 DT1,8 Office Rental Rates	
Quality	Rate
AA+	$26.00
AA	$22.00
AA-	$19.50
A+	$15.50
A	$14.00
A-	$10.00
B+	$10.00
B	$10.00
B-	$10.00
C	$8.50

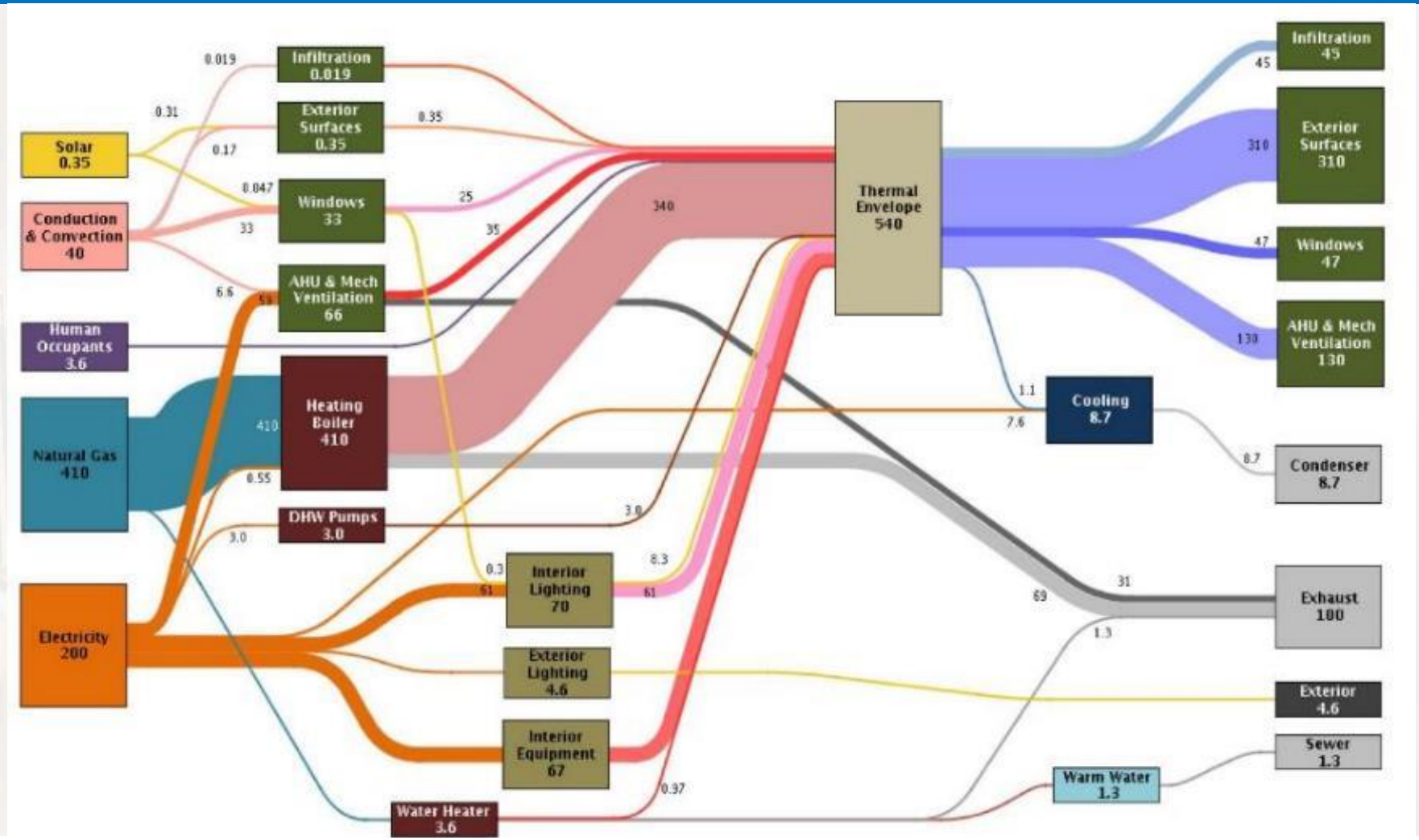
2025 DT1,8 Vacancy Rates	
Quality	Rate
AA+	6.00%
AA	11.50%
AA-	11.50%
A+	20.00%
A	24.00%
A-	27.00%
B+	27.00%
B	27.00%
B-	27.00%
C	30.00%

2025 DT2,3,9 Office Rental Rates	
Quality	Rate
AA+	$26.00
AA	$22.00
AA-	$19.50
A+	$15.50
A	$13.00
A-	$10.00
B+	$10.00
B	$10.00
B-	$10.00
C	$8.50

DT2,3,9 Office Vacancy Rates	
Quality	Rate
AA+	6.00%
AA	11.50%
AA-	11.50%
A+	10.00%
A	24.00%
A-	27.00%
B+	27.00%
B	27.00%
B-	27.00%
C	30.00%

Source: City of Calgary Office Leasing report - Update 2025

Understanding Op Costs



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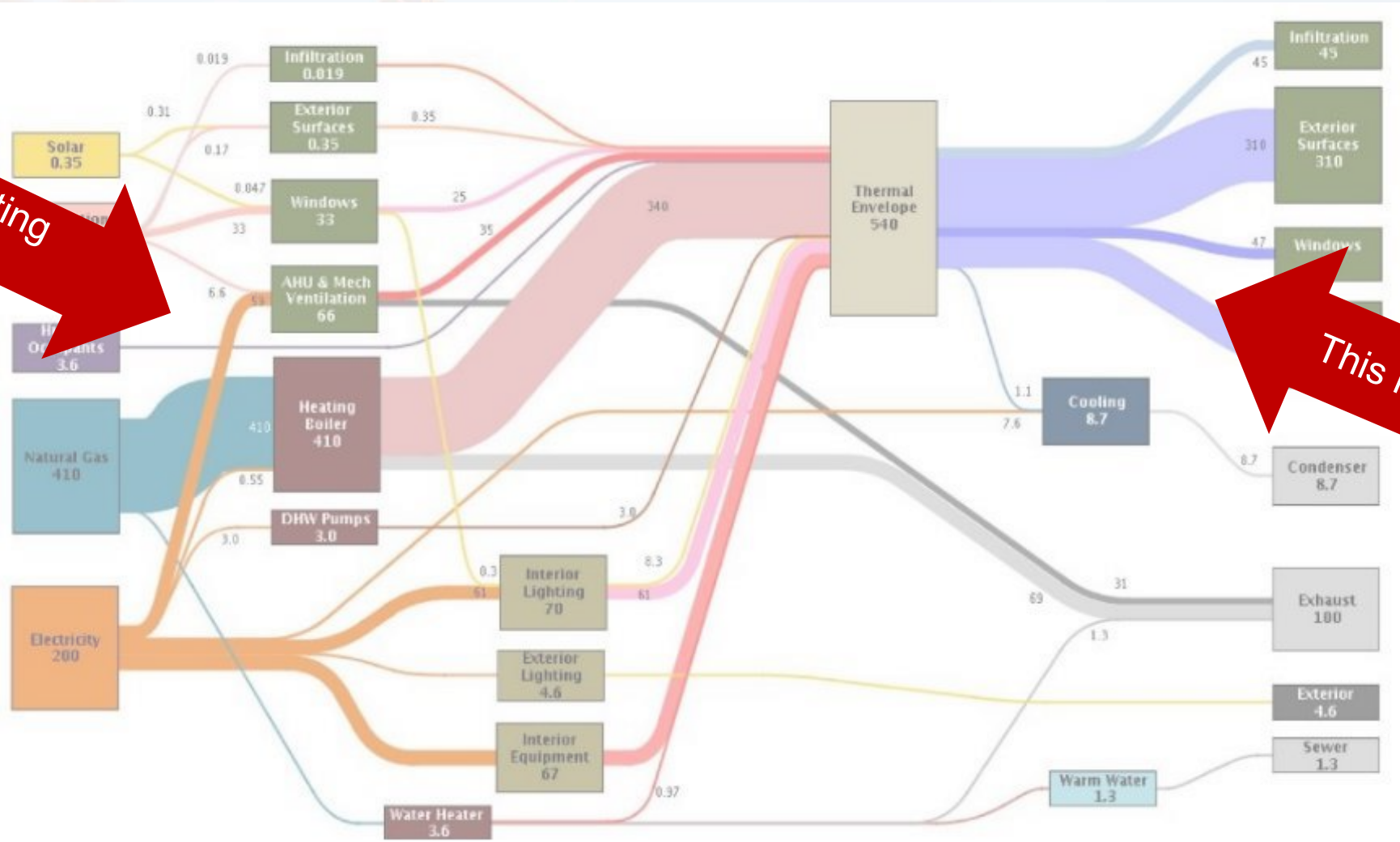
Understanding Op Costs



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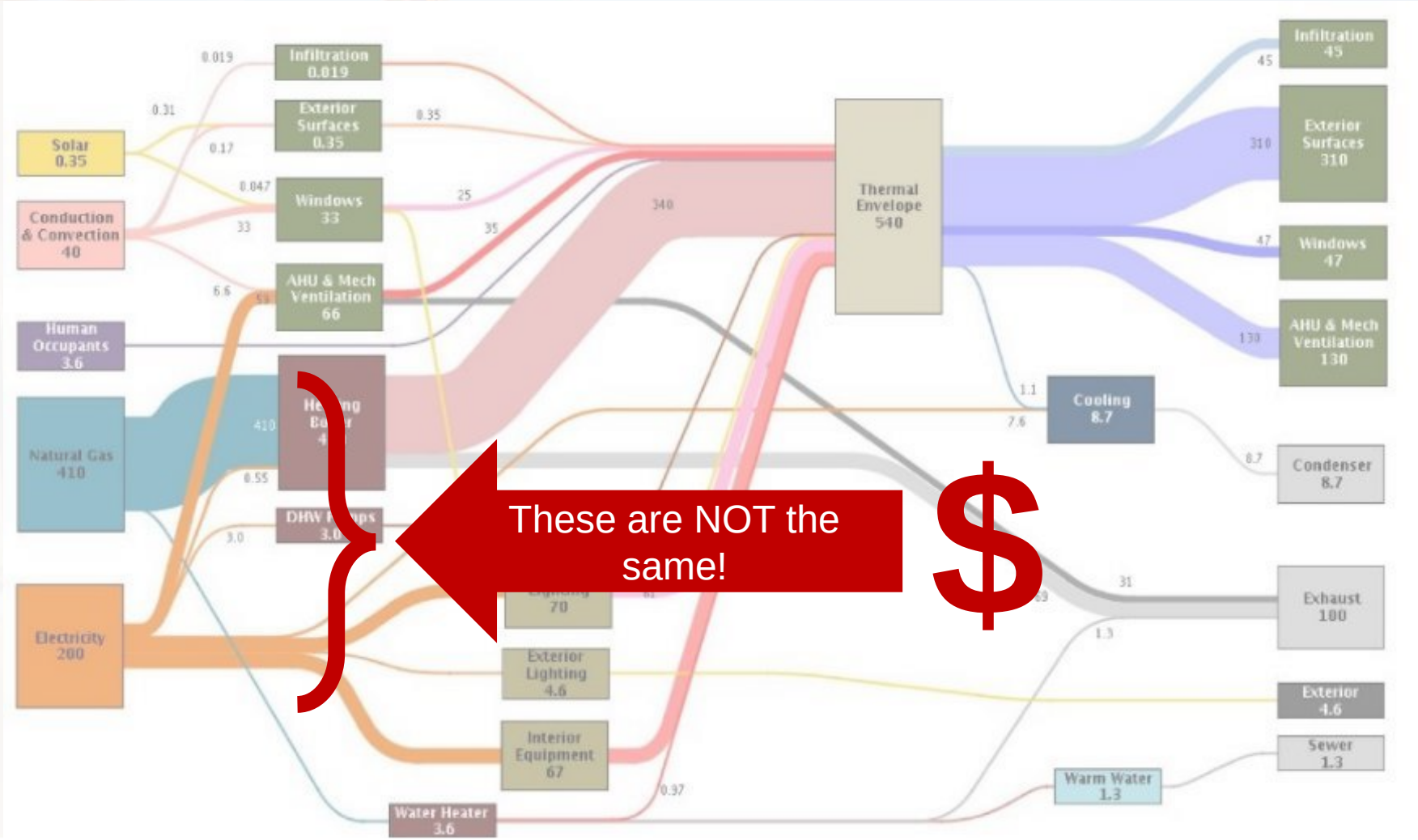
Understanding Op Costs



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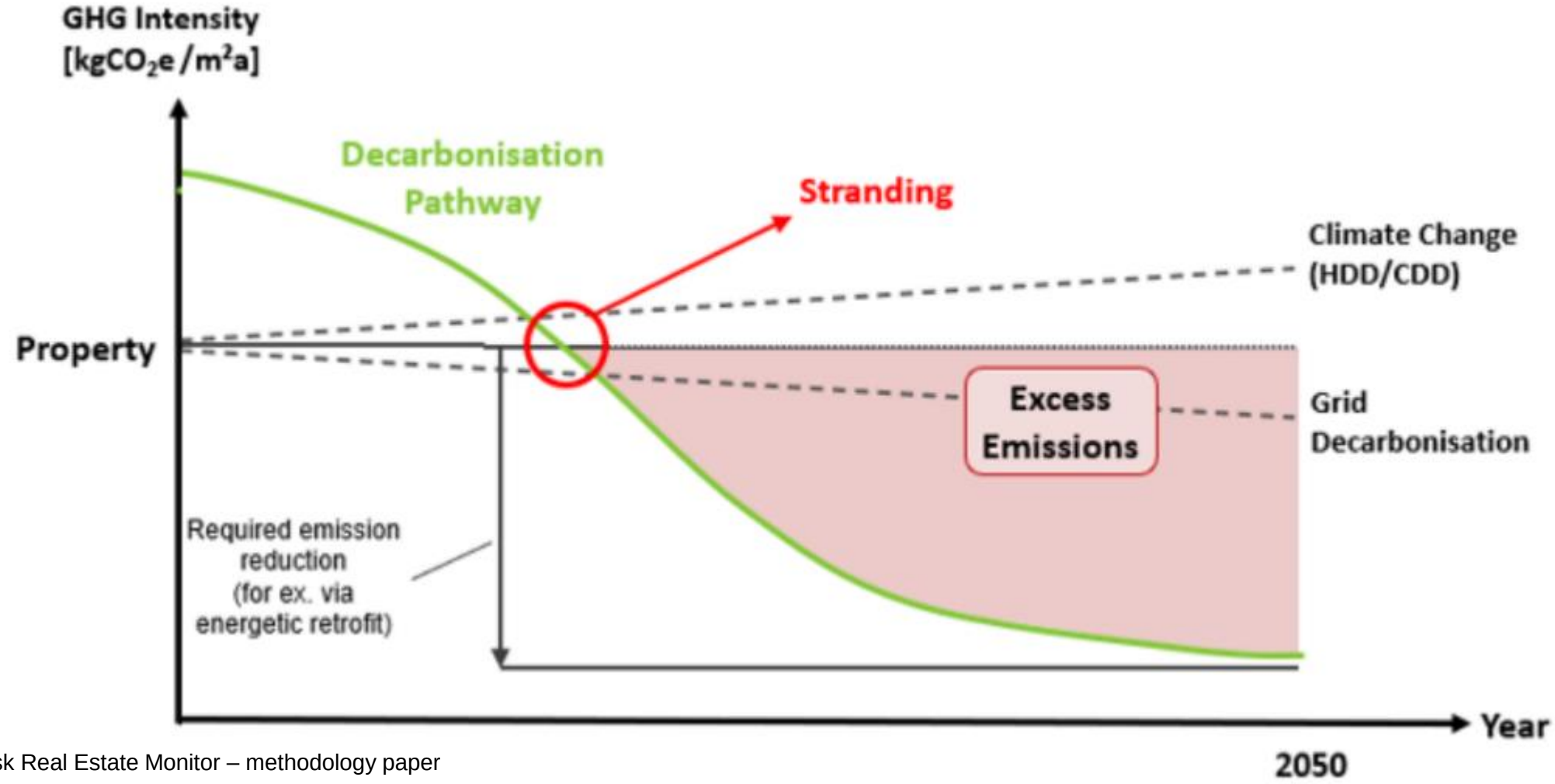
Total Cost of Ownership: Future Policy Impact



Source: Carbon Risk Real Estate Monitor – methodology paper

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Development Incentives

Opportunities Under the MGA

Land Use Bylaws **(Sec. 640)**	**Bonus Density | Zoning Relaxations**
Municipal Development Plans **(Sec. 632)**	**City can set policies requiring new developments to meet higher-tier performance.**
Fast-Tracking Permits **(Sec. 683.1)**	**Expedite permit approvals and reduce fees for energy-efficient projects**
Community Revitalization Levy **(Sec. 381.2)**	**City can provide levy rebates or allocate funds for projects committing to higher tiers**
Tax Incentives for Non-Residential Property **(Sec. 364.2)**	**City can offer temporary property tax reductions for high-performance commercial buildings.**
Clean Energy Improvement Tax **(Sec. 390.3)**	**City has the Clean Energy Improvement Program (CEIP) program that allows property owners to finance energy upgrade through property taxes.**

Development and Retrofit Incentives

Invest in energy efficiency and renewable energy upgrades and lower your utility bill, make your property more comfortable, & enhance your property value.

The Clean Energy Improvement Program (CEIP) puts it all within reach with an affordable and innovative approach to financing.

Source: ceip.abmunis.ca

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Total Cost of Ownership: Simplified Model

Capital Costs

- Sets mortgage cost
- Minimum threshold for entry

— Operating Costs

- Period costs
  - Insurance
  - Utilities
  - Taxes
  - Maintenance
  - Repairs

+ Revenue

- Rent

+ Resale $

- Value at disposal

= Investment

- Profit or loss

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Total Cost of Ownership: Bringing It All Together

Capital Costs

- Sets mortgage cost
- Minimum threshold for entry

IMPACTED BY ENERGY TIER?

AFFECTED BY DEVELOPMENT INCENTIVES

Operating Costs

- Period costs
  - Insurance
  - Utilities/Taxes
  - Maintenance
  - Repairs

PRODUCT OF ENERGY TIER!

REDUCED BY RENEWABLES/ CARBON OFFSET

Revenue

- Rent

IMPACTED BY ENERGY TIER?

CARBON OFFSET MARKET?

Resale $

- Value at disposal

PRODUCT OF ENERGY TIER!

REDUCED BY RENEWABLE ENERGY SYSTEMS

Investment

- Profit or loss

WHY PEOPLE BUY THE BUILDING!

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Total Cost of Ownership: Key Takeaways

- ❑ Help clients look beyond the sticker price of their potential purchase (not only CapEx, but also lower OpEx)
- ❑ Showcase the dollar value of energy efficiency for their buying decision (lower OpEx)
- ❑ Guide clients to maintain their home's value and use energy-efficient upgrades (Lower OpEx)
- ❑ Support financing strategies aligned with long-term affordability
- ❑ Position yourself as a full-picture advisor and add value by preparing clients for long-term success

questions

Questions?

Justin Pockar
justin.pockar@calgary.ca