briefing

Advancing Passive House Policy

NAPHN 2016 policy session 1 presentations

"The building sector offers the largest low-cost potential in world regions to lower emissions."

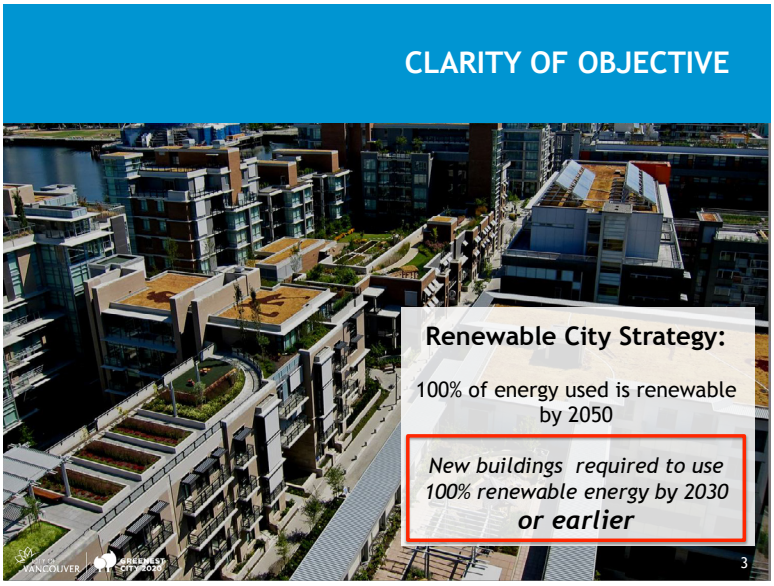
- Dr. Diana Urge-Vorsatz, Vice Chair, Intergovernmental Panel on Climate Change (IPCC)

be ex

building energy exchange

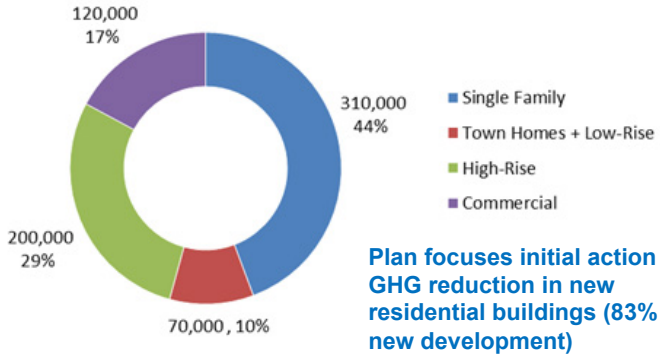
appendix c: session 1 presentations

Sean Pander
Green Building Manager, Vancouver



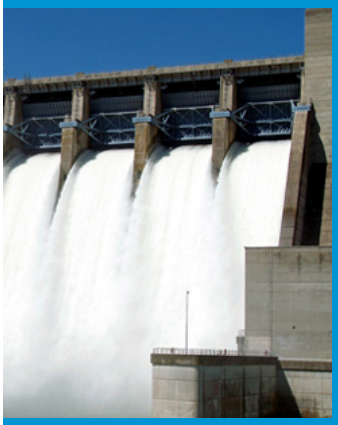
CONTEXT

2020 Built Area by Building Type (m²)



Plan focuses initial action on GHG reduction in new residential buildings (83% of new development)

CONTEXT



- Electricity in BC (Vancouver): minimum of 93% renewable by legislation
- Current grid mix is 97% renewable; power has 5% the GHG impact per kWh as natural gas
- Zero emissions buildings focus on heating energy

CONTEXT

- ASHRAE 90.1 (and therefore LEED) is an energy COST efficiency standard
- Current regulatory approach has resulted in poor building envelopes with complex mechanical systems
- Complex mechanicals in residential buildings seldom achieve modeled performance
- Building envelopes very challenging to improve post-occupancy

Passive House Standard

- Best global standard for efficient building envelopes
- Applicable to all building types; large global data and experience in residential PH building
- Supported by extensive building science research, design tools, training, and third party validation
- 80% reduction in space heating energy use; small remaining loads “easy” to serve with electricity
- Evolution of DHW technologies in Vancouver market required

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Leveraging Passive House for Zero Emissions Buildings

Challenges:

1. Very limited local experience
2. Potential conflict with existing regulations and permitting delays
3. Financial Barriers
4. Information and knowledge flow

1. Addressing Limited Local Experience

- ✓ Allow and promote PH as option to LEED requirement for Rezonings
- ✓ Engage potential early adopters (eg BC Housing)
- ✓ Internally champion initial proponents
- Restructure building code and policy to incorporate thermal energy demand limits
- Pursue Passive House for all feasible city-led development
- 2020 Rezoning Policy (4-6 story MURB to require Passive House

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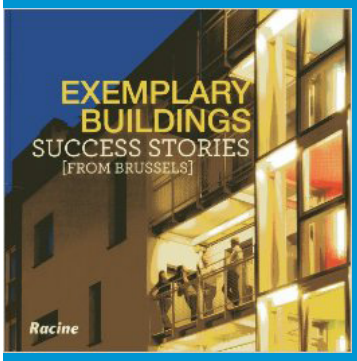
2. Addressing Policy and Permitting Conflicts

- ✓ Permit and inspection staff training (and pending file assignment priority)
- ✓ Wall thickness exemption for allowed floor space calculation
- ✓ Setback and height limit relaxations for single family
- Dedicated senior planning staff for additional policy barrier removal and process improvements
- Recognition of PHPP code compliance
- Streamline alternative solutions

3. Addressing Financial Challenges



- Develop incentives for detached, low-rise MURB, and high-rise Passive House for launch in 2017
- Offset design costs via funding for case studies and data sharing (cost, design, post-occupancy)
- Research maintenance cost savings
- Seek to develop financing tools for incremental costs and split-incentives

4. Facilitating Information and Knowledge Flow

Creation of non-City affiliated Centre of Excellence for Zero Emission Buildings

- Case study and research sharing
- Dialogues
- Identify trends
- Facilitate training and promote best practice
- Celebrate successes
- Public communications (eg tours, Passive House honeymoon suite, etc)

The Building Energy Exchange connects the Manhattan real estate communities to energy and lighting efficiency solutions through exhibitions, education, technology demonstrations, and research. We identify opportunities, navigate barriers to adoption, broker relationships, and showcase best practices at our resource center in the Surrogate's Courthouse in Manhattan.

be-exchange.org