

# New Developments in Green Building



**HRM Environment & Sustainability  
Standing Committee**

Halifax, NS  
March 1, 2012

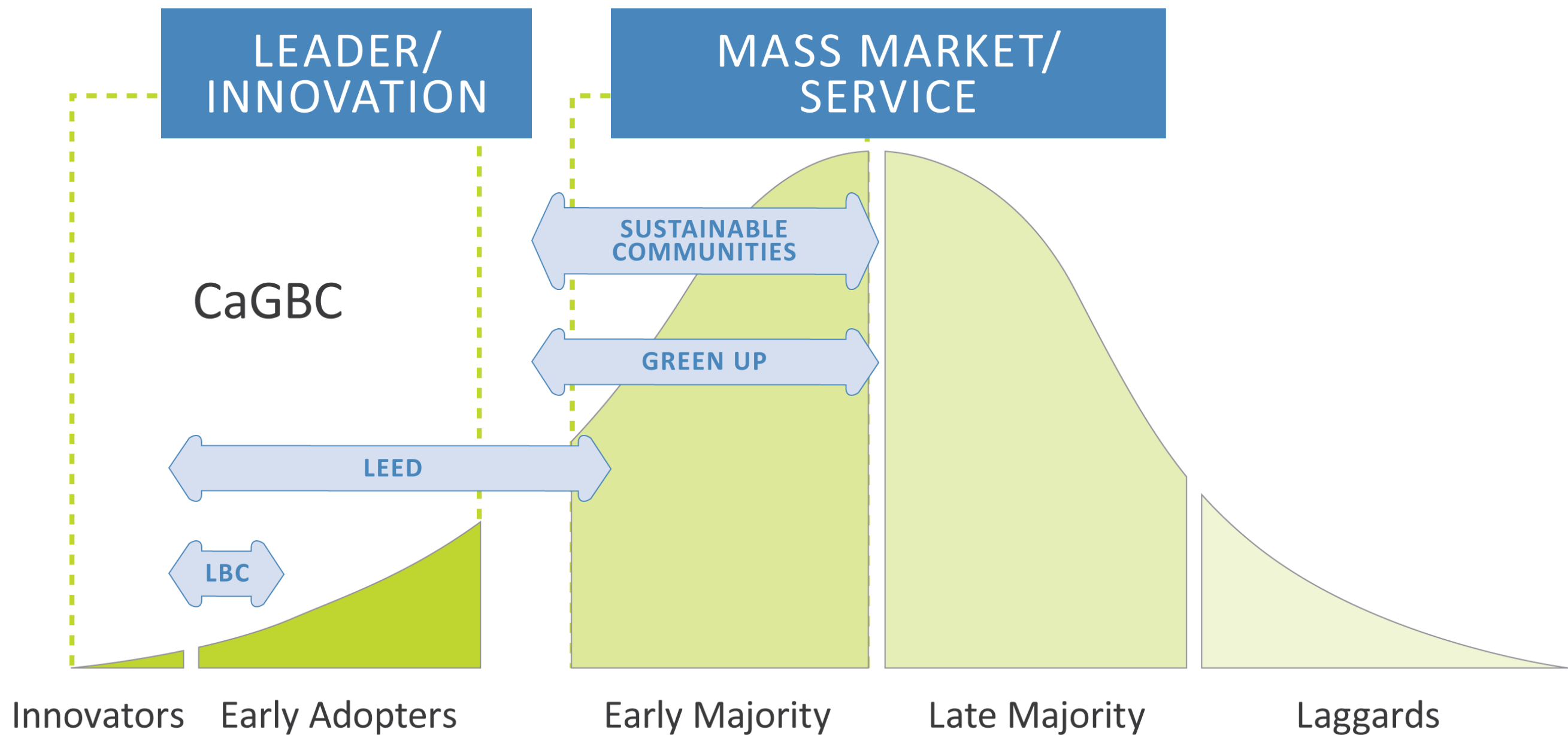


# CaGBC focus areas

Positioning green building as climate change solution  
Advancing the next generation of sustainable design  
Enabling broader market adoption  
Promoting performance measurement & verification  
Collaborating on rating tool development & application  
Realizing international trade opportunities



# Engaging the Broader Market

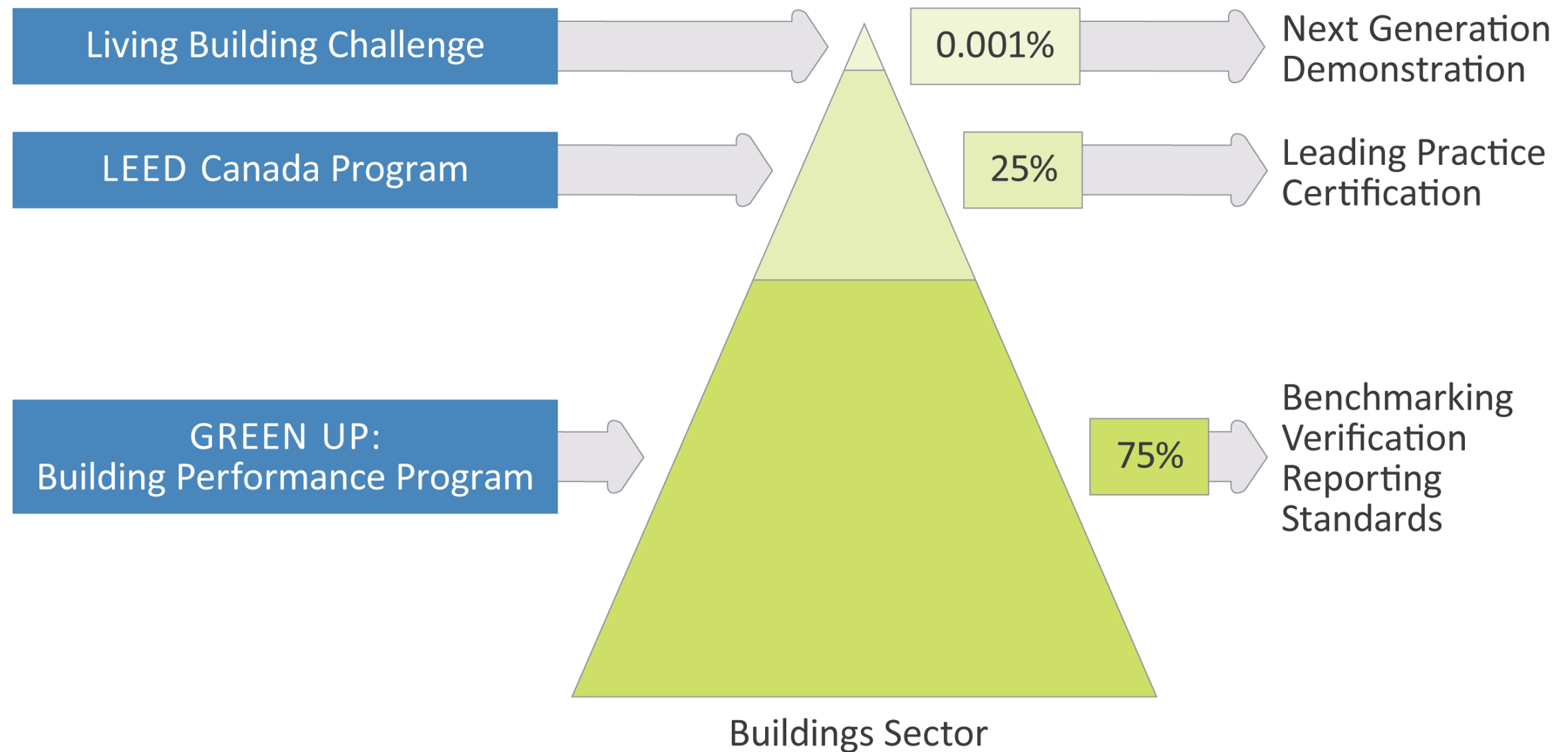






# Every Building Can Be Green

## Programs & Tools





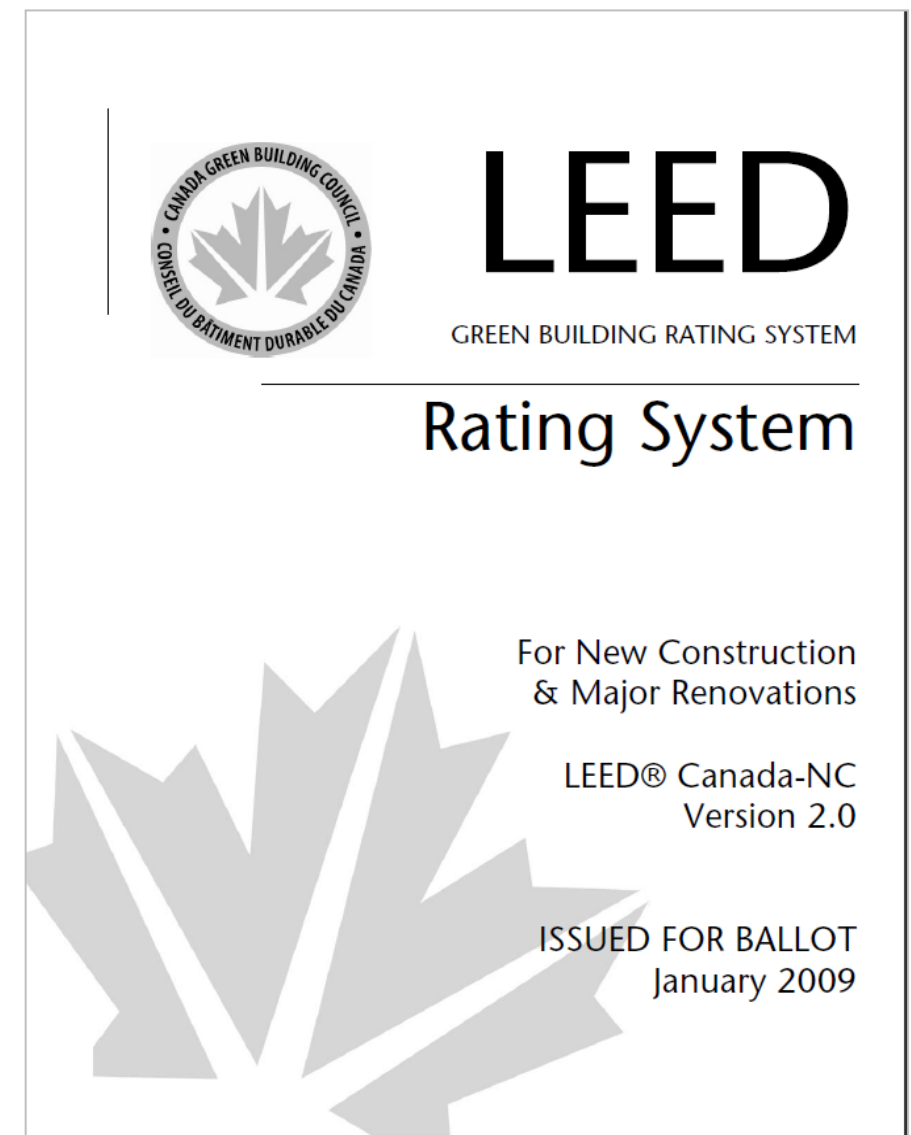
# LEED® Canada current systems

## LEED Canada 2009 for Green Building Design & Construction

- Special guidance for:
- Core & Shell projects
- Multi-unit residential buildings
- Campus & multiple buildings
- Leased tenant space

## LEED Canada:

- LEED Canada for Commercial Interiors
- LEED Canada for Homes
- LEED Canada for Existing Building Operation & Maintenance
- LEED Canada for Neighbourhood Development





# LEED Buildings in Atlantic Canada

## LEED Registered Projects

- Nova Scotia – 107, up from 78 last Sept
- Newfoundland and Labrador – 39, up from 29 last year
- Prince Edward Island – 3, up from 2 last year
- New Brunswick – 41, up from 36 last year

**Total – 190, up from 147 last year**

National Statistics - 2772 ( 1825 from NC)



# LEED Buildings in Atlantic Canada

## LEED Certified Projects

- New Brunswick – 6, one new certification in 2011
- Nova Scotia – 6, two new certifications in 2011
- Newfoundland and Labrador – 0
- Prince Edward Island – 2, two new certifications in 2011

**Total – 14**, up from 9 last year

National Statistics - 363 ( 220 from NC)





# Next Generation of Design Centre for Interactive Research on Sustainability

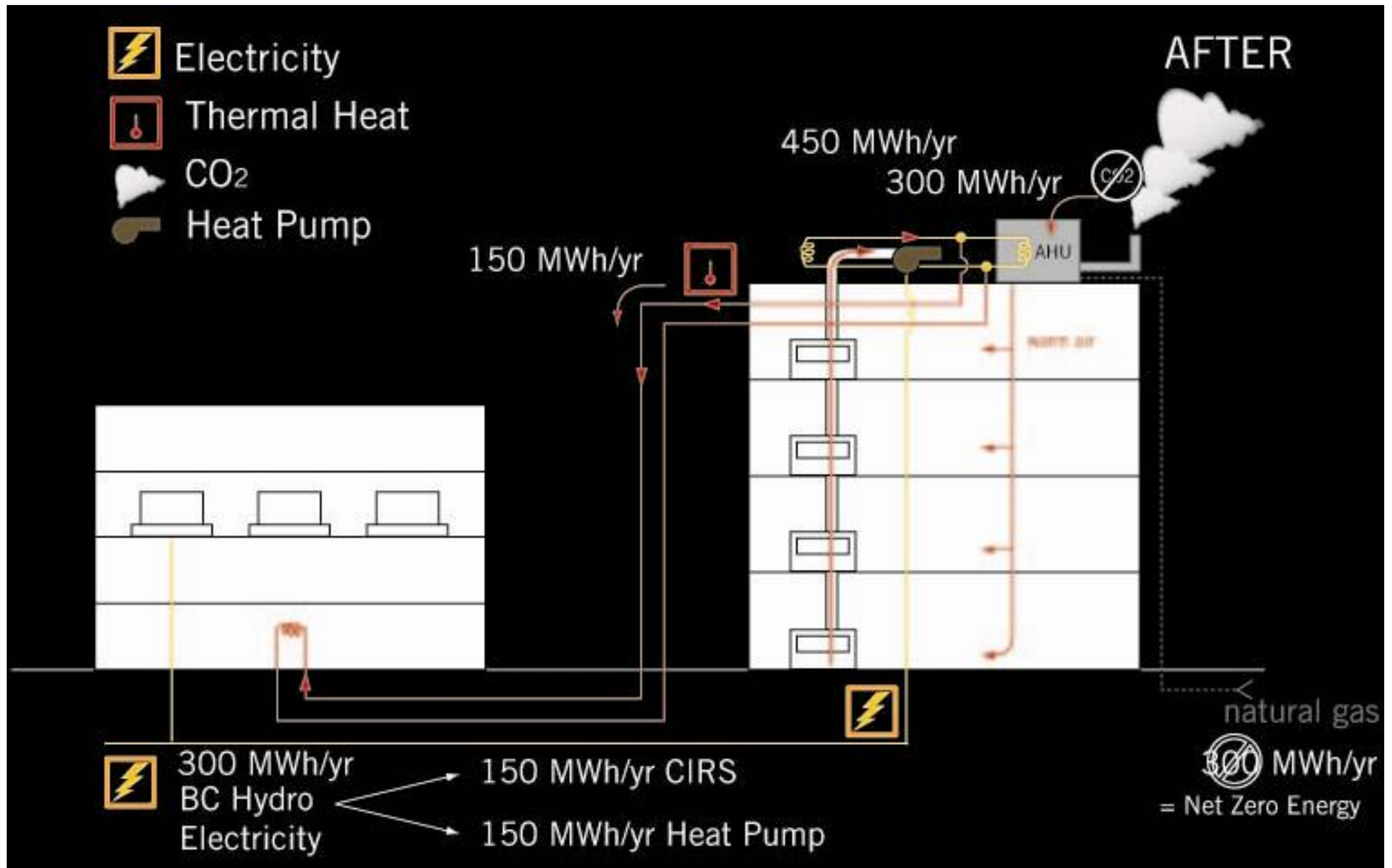


Target is to be carbon-negative for both construction and operation



# Net Carbon Negative Strategy

## 50 Tonnes of CO<sub>2</sub> reduced per year





# Key National Commercial Building Statistics

**1,153 million PJ**

Annual Energy Consumption  
in 2005

**65.3 MtCO<sub>2</sub>e**

Annual GHG Emissions  
including Electricity in 2005

**36.8 MtCO<sub>2</sub>e**

Annual GHG Emissions  
excluding Electricity in 2005

**1.54 GJ/m<sup>2</sup>/year**

Annual Energy Intensity in 2005

**\$17.6 billion**

Annual Energy Cost for Canada's  
Commercial Building Sector

**1.5%**

Annual Growth of New Buildings

**2%**

Annual Rate of Retrofits  
in Existing Buildings

**\$28.8 million**

(up to 22% from 2003)

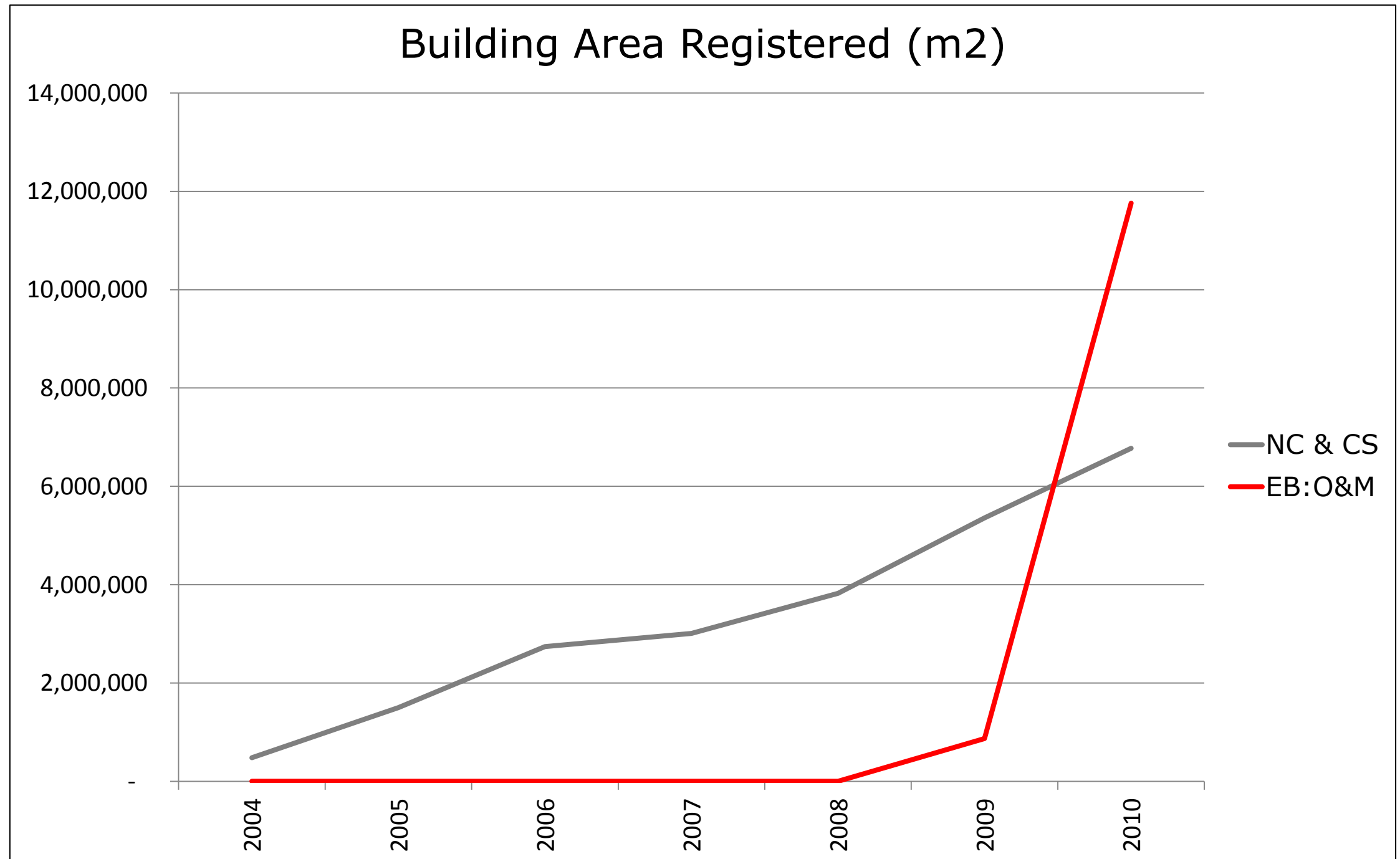
Value of Building Permits 2007\*

\* Includes commercial, institutional and governmental building permits.

Source: Geared for Change: Energy Efficiency in Canada's Commercial Buildings Sector, NRTEE & STDC, 2009



# LEED Registrations by building area

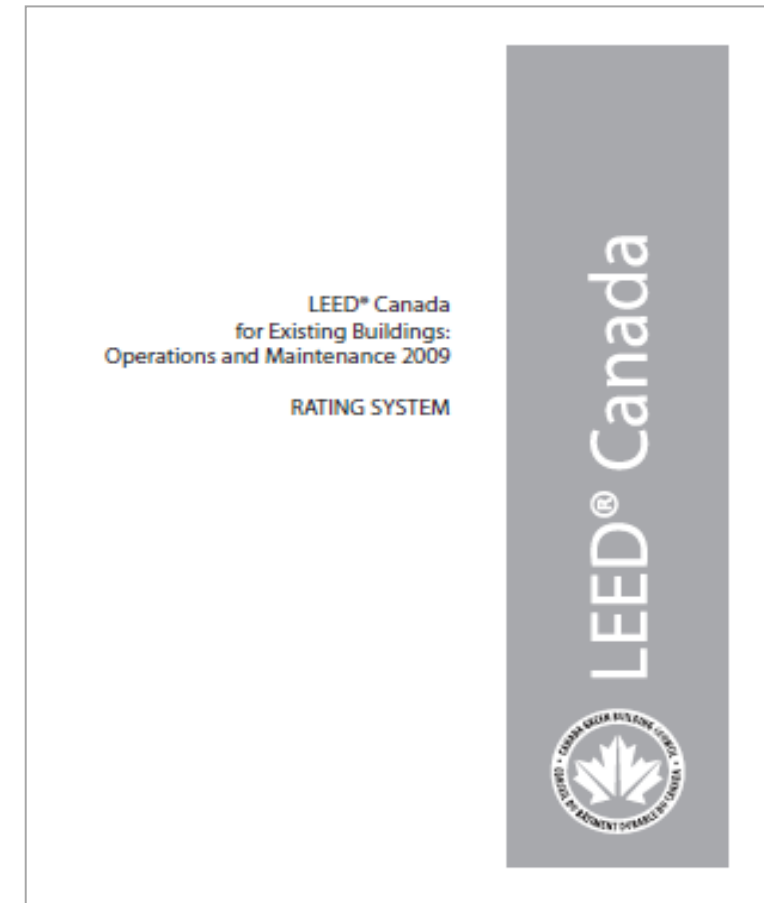






# LEED® Canada EBOM 2009

- Focus on actual building operating performance, not design expectations
- 90% of floor space must participate in the program
- Certification based on performance over a defined set of time
- Performance period
  - Choice from 3 to 24 months for most credits
  - 12 months of data required for Energy & Atmosphere Prerequisite 2 and Credit 1
- Certification is valid for 5 years
- Option to recertify every year



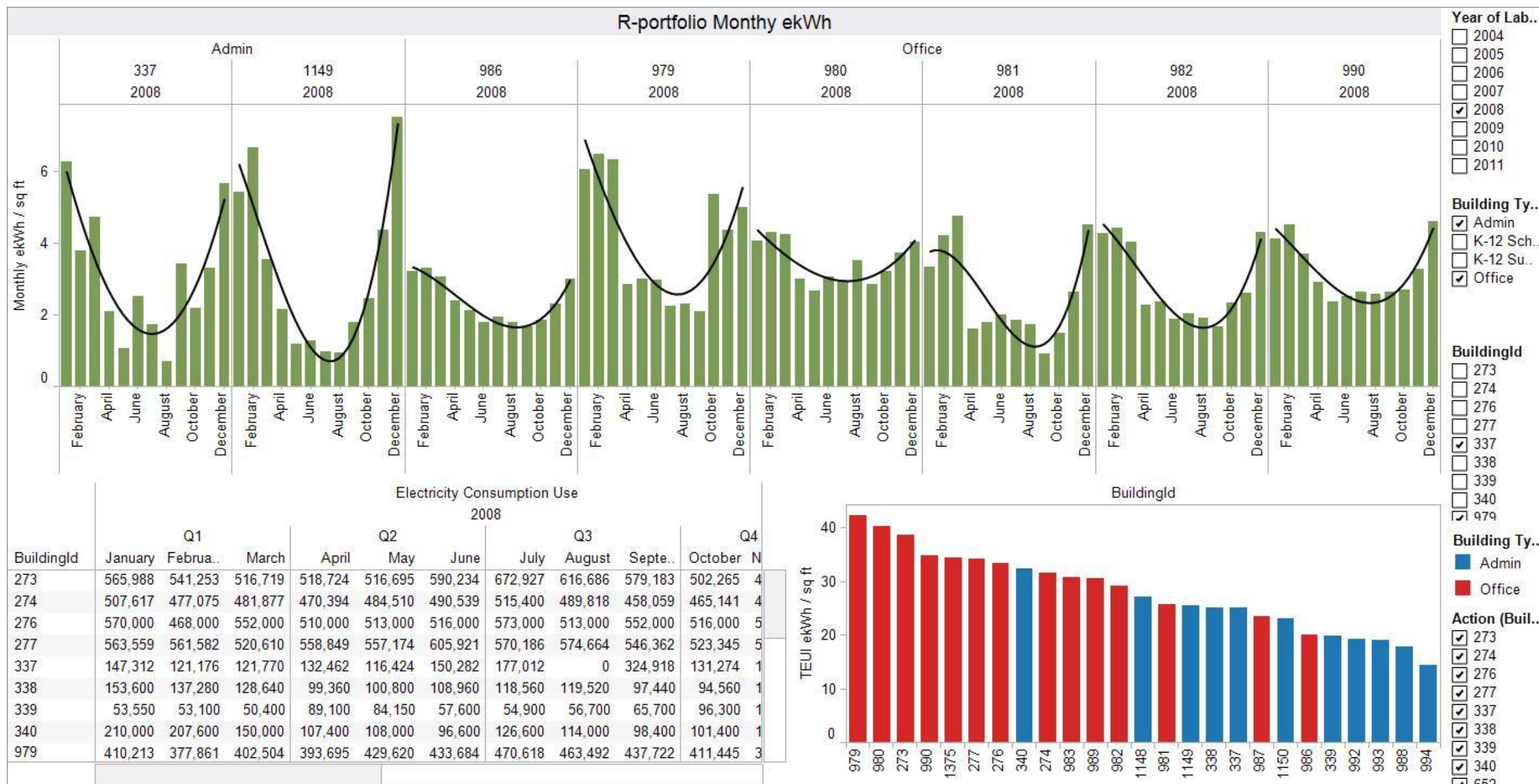


# GREEN UP Program

- GREEN UP is a Business Intelligence Program for
- building owners and managers to measure, compare and improve
- the building performance of their real estate portfolios

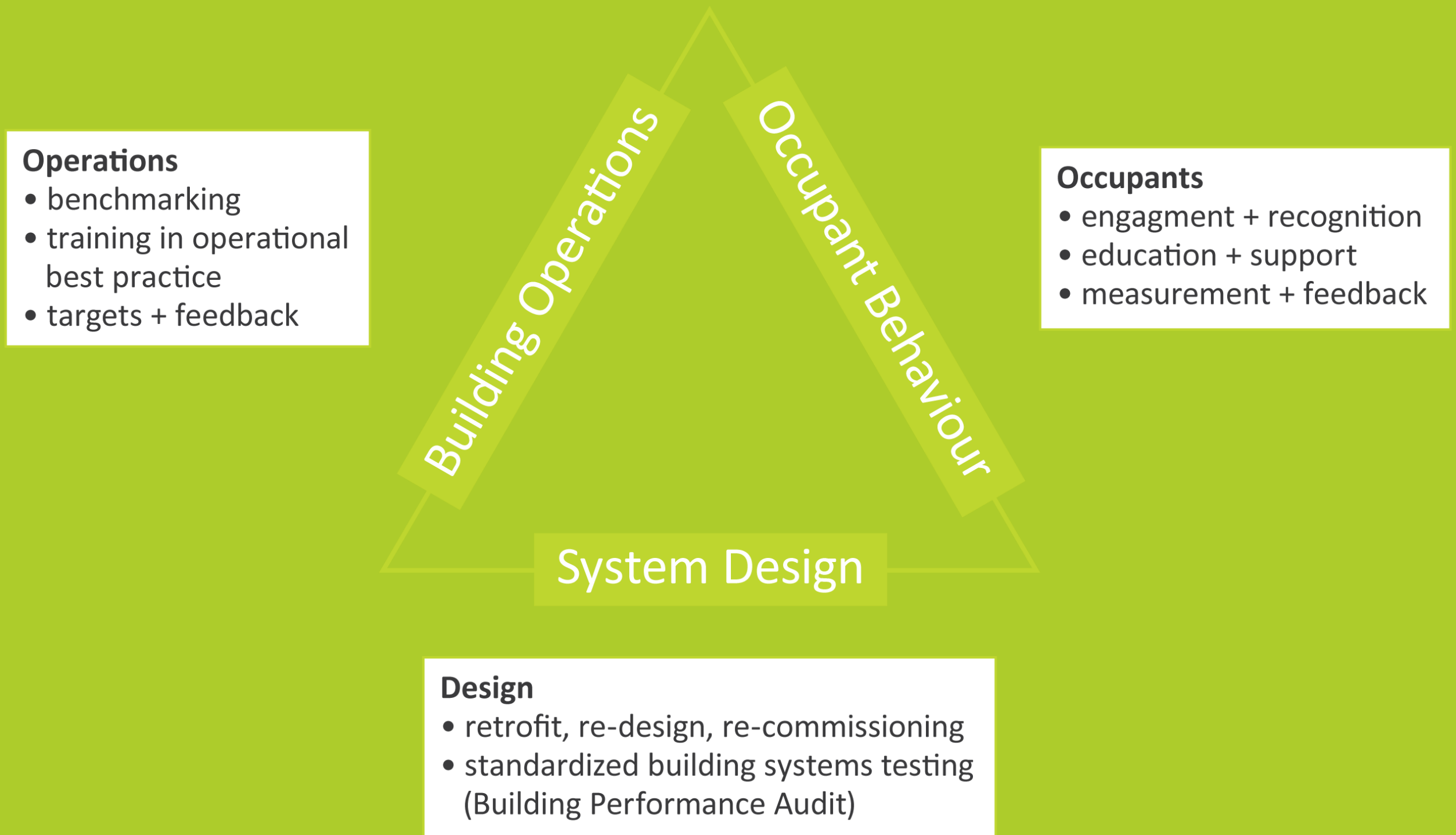


# Portfolio Analysis & Benchmarking





# Achieving High Performance in Existing Buildings



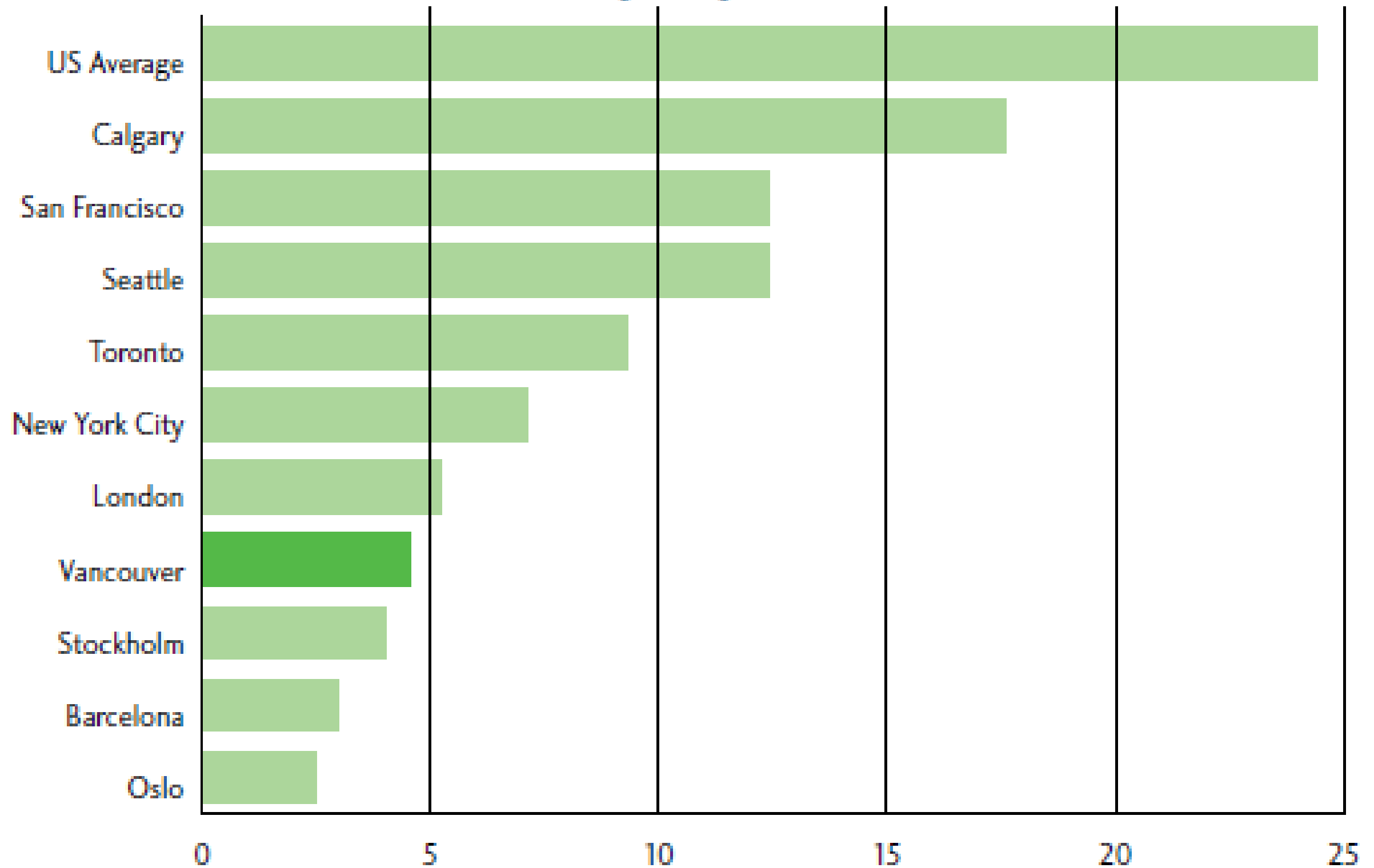




VANCOUVER 2020 A BRIGHT GREEN FUTURE

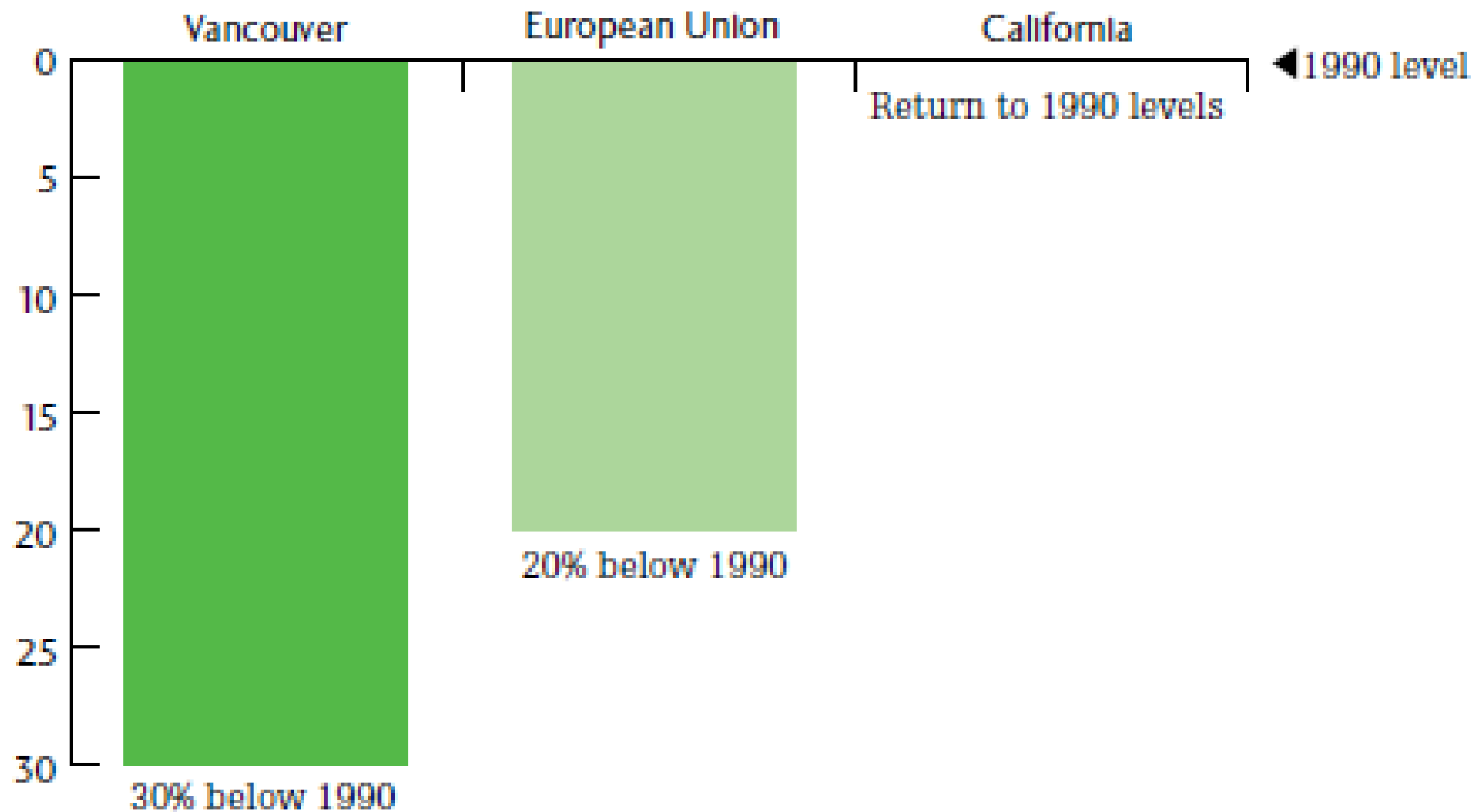


## Greenhouse Gas Emissions per Capita (metric tonnes)





# Target 2020 Greenhouse Gas Emission Reduction from 1990 levels (%)





# ONE

## Green Economy, Green Jobs

1. Green Economy Capital: Secure Vancouver's international reputation as a mecca of green enterprise  
**2020 Target: Create 20,000 new green jobs**
2. Climate Leadership: Eliminate Vancouver's dependence on fossil fuels  
**2020 Target: Reduce greenhouse gas emissions 33 per cent from 2007 levels**
3. Green Buildings: Lead the world in green building design and construction  
**2020 Targets: All new construction carbon neutral; improve efficiency of existing buildings by 20 per cent**



# TWO

## Greener Communities

4. Green Mobility: Make walking, cycling, and public transit preferred transportation options

2020 Target: Make the majority of trips (over 50 per cent) on foot, bicycle, and public transit

5. Zero Waste: Create zero waste

2020 Target: Reduce solid waste per capita going to landfill or incinerator by 40 per cent

6. Easy Access To Nature: Provide incomparable access to green spaces, including the world's most spectacular urban forest

2020 Targets: Every person lives within a five-minute walk of a park, beach, greenway, or other natural space; plant 150,000 additional trees in the city

7. Lighter Footprint: Achieve a one-planet ecological footprint

2020 Target: Reduce per capita ecological footprint by 33 per cent



# THREE

## Human Health

8. Clean Water: Enjoy the best drinking water of any major city in the world

**2020 Target: Always meet or beat the strongest of B.C., Canada, and World Health Organization drinking water standards; reduce per capita water consumption by 33 per cent**

9. Clean Air: Breathe the cleanest air of any major city in the world

**2020 Target: Always meet or beat World Health Organization air quality guidelines, which are stronger than Canadian guidelines**

10. Local Food: Become a global leader in urban food systems

**2020 Targets: Reduce the carbon footprint of our food by 33 per cent**



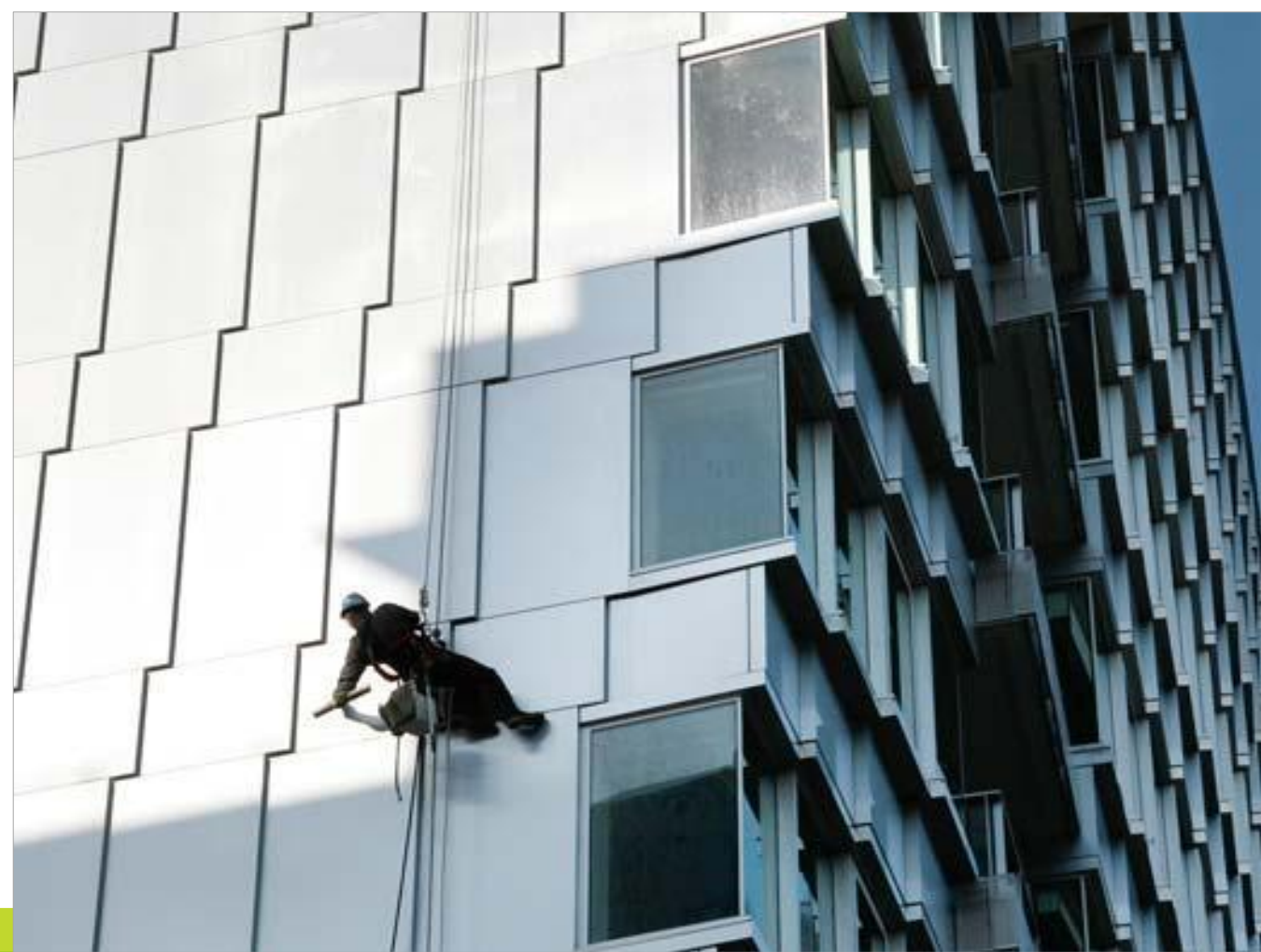


Vancouver Athletes' Village  
2010 Winter Olympics  
LEED Platinum



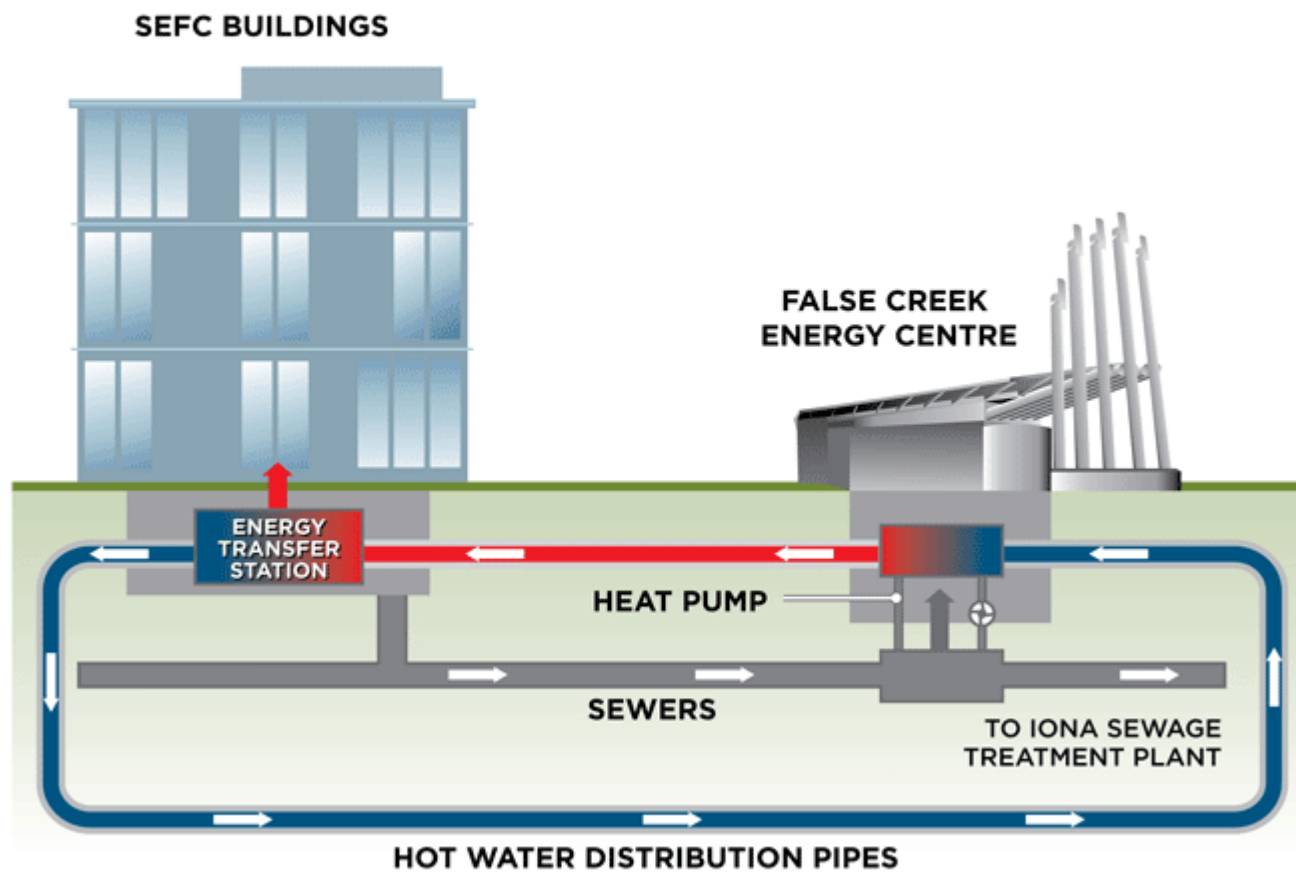




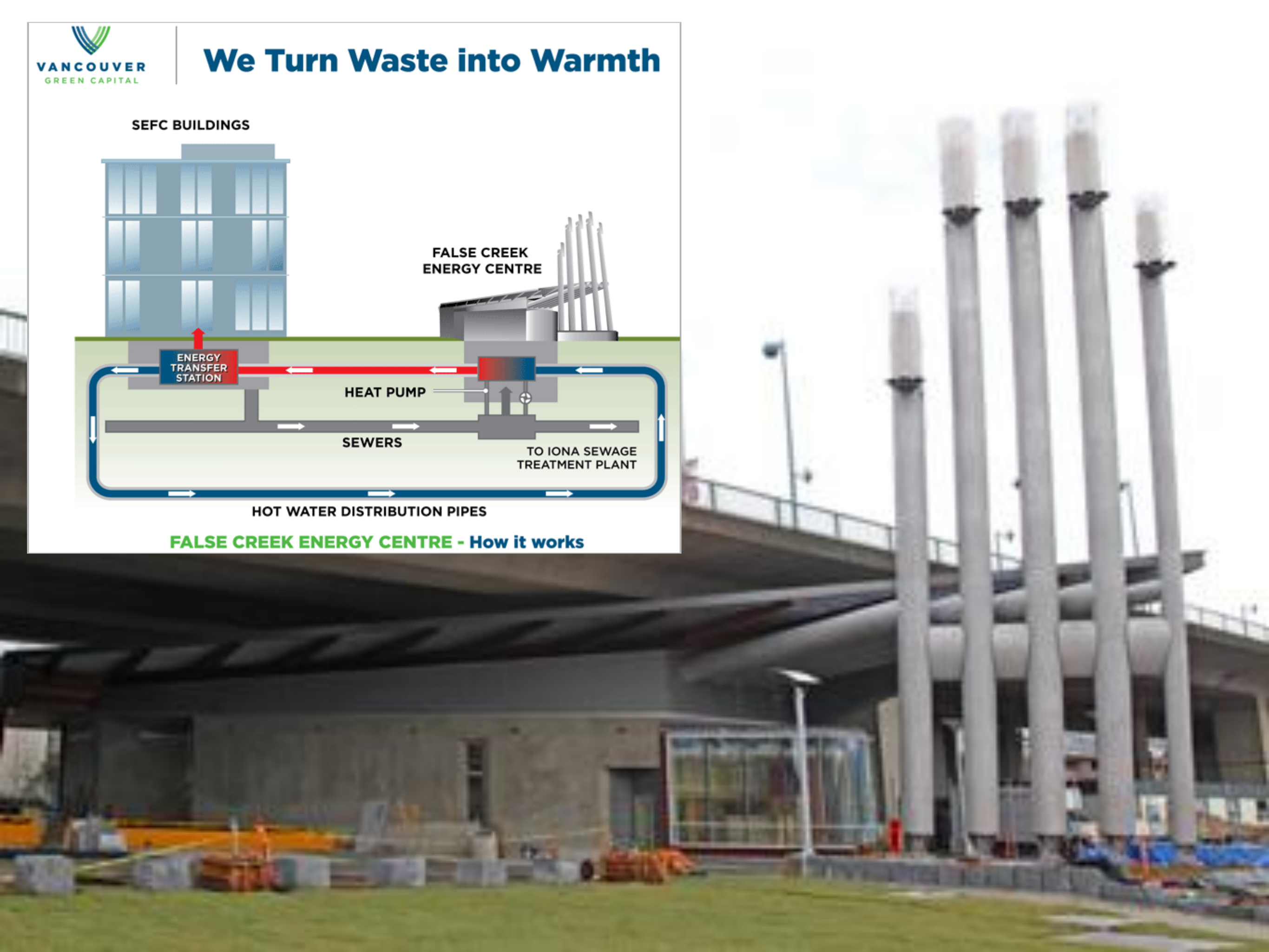




# We Turn Waste into Warmth



**FALSE CREEK ENERGY CENTRE - How it works**







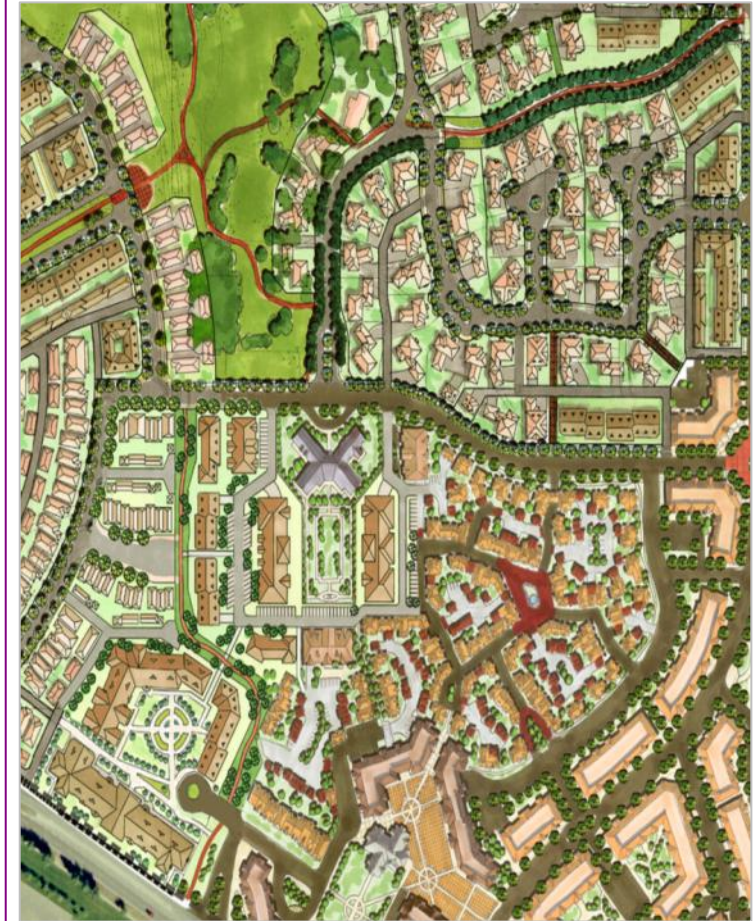




# LEED for Neighbourhood Development

## overview

- Integration of land use, urban design infrastructure & buildings
- Tool to certify communities designed to principles of:
  - smart growth
  - new urbanism
  - green building
  - sustainable infrastructure
- Applies to whole, fractions of or multiple neighbourhoods, infill projects & mixed use developments
- Launched in Canada in summer 2011









# What is an EcoDistrict?

An EcoDistrict is a neighborhood committed to sustainability that links green buildings, smart infrastructure and behaviour to meet sustainability goals over time

EcoDistricts are the right scale to accelerate sustainability — small enough to innovate quickly and big enough to have a meaningful impact.

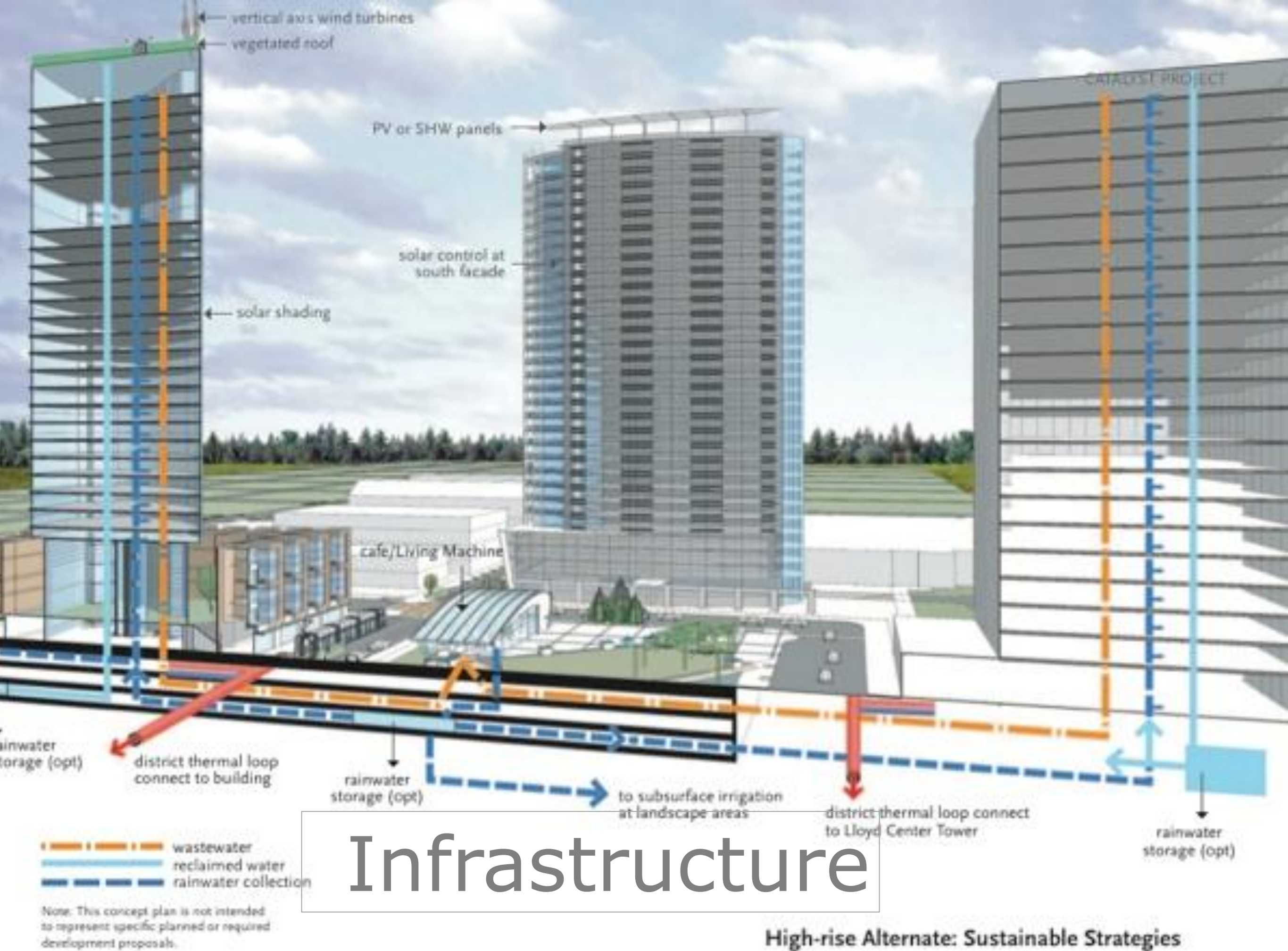
Revitalizing existing neighbourhoods along sustainability principles



# Urban Design & Nature











# Alternative Transportation



# Food Production



ZGF

Portland  
Sustainable  
Institute





# BedZed

## Green Lifestyles

Home Energy Use  
Local & Sustainable Food  
Sustainable Transportation  
Reducing Waste





# Sustainable Communities Toolkit



- Tool 1 : Introduction
- Tool 2 : Community Planning
- Tool 3 : Natural Environment
- Tool 4 : Transportation
- Tool 5 : Buildings
- Tool 6 : Infrastructure
- Tool 7 : Energy





# CaGBC Atlantic Chapter

Questions?