

# Background Information Kelowna and Green Bldgs

*March 3 2005*

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## Sustainable Development



- **Definition:**
  - Meeting the needs of today's generations without compromising the ability of future generations to meet theirs
- **Key Points:**
  - Economic, social and environmental health are interdependent
  - Think long term (50-100 years)



# The Challenges and Goals of Sustainability

## • Key Problems

- Climate Change / Air Qlty
- Energy supply
- Waste and resource scarcity
- Water quantity/quality supply
- Ecosystem damage
- Food supply / quality problems
- Economic inequities / instability
- Social and Community Health



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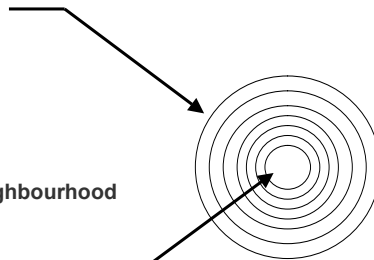
## • Sustainability Goals

- Reduce emissions
- Renewable energy & efficiency
- Reducing waste & recycling
- Better water management
- Ecological design/protection
- Organic, community supply
- Diverse, local systems & policy
- Individual health and community building and emergency response systems



# The Challenge of Scale

- Planet
- Continent
- Nation
- Bioregion
- Province
- Region / CMA
- City
- Community / neighbourhood
- Site
- **Building**
- Technology / product
- Activity



**Linkages** – The performance of each level is contingent on the performance of the levels below it.



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# Sustainable Urban Development (Sustainable Cities)



- **Definition:**
  - Settlements whose design and function sufficiently meet human needs (social and economic) and do so in such a way as to not undermine the health and ability of local, regional and planetary ecosystems to continue to provide for the needs of future generations.
  
- **Foundation Goal:**
  - *To address global sustainability challenges in a manner that brings significant “local advantage.”*



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## Sustainability Cities in time



Today's decisions on development are “century-scale” decisions

*We know a lot of things will be different within 50 years*

We need to plan ahead.

- **Obsolescence cycles**
  - **City structure and layout - subdivision & roads** (75-200 + yrs... & a lot of \$)
  - **Buildings** (50-100 yrs)
  - **Infrastructure** (20-100 yrs)
  - **Landscape** (10-100 yrs)
  - **Systems and Equipment** (5-20 yrs)
  
- **Urban design determines our sustainability in many ways**
  - *It defines how much (\$, E, W, W, etc...) it takes to keep you housed, fed, employed and happy*
  - *It takes centuries to “change” an urban design.*



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# Sustainable City Characteristics



- **Compact**
  - Higher densities, mixed housing types
- **Mixed use and supportive**
  - All people can live, work, play, learn, shop within a short distance
- **Person scale transportation**
  - Pedestrians, cycles (etc...), transit, shared vehicles, goods movement, etc...
- **Diverse richly designed open space**
  - Recreation and natural systems
- **Healthy environment and ecosystem**
  - Air, biodiversity, etc...
- **Efficient**
  - Energy, resources / waste, etc... within the carrying capacity
- **Prosperous**
  - Diversity of enterprise at all levels with access for all



# Green Building Elements

- Siting and orientation
- Building layout
- Roofing
- Envelope and glazing
- General materials
- Interiors and air quality
- Heating, cooling, ventilation
- Plumbing
- Energy, electrical and lighting
- Kitchen and bathroom
- Landscape
- Roads / driveways
- Construction practices



# Green Buildings

- **Key Challenges**

- Perceptions
- A new vision with rationale
- Business as usual momentum
- Policy gap
- Tools provision
- Incentives challenge
- Knowledge gap
- Materials and technology
- Building Code and regulations
- Financial tools and support

- **Overcoming challenges**

- Visible City commitment to green building future
- Education and exploration with development industry
- LEED – CaGBC
- Develop policy and guidelines and protocols
- More education
- Pressure on Province on building code
- Resources to be provided to industry on practices and technology
- Build excitement and momentum
- Pilot projects
- Utility partnerships



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# Green Buildings

- **5 years ahead**

- An accepted standard for green buildings in place in Kelowna and more widely (LEED?)
- Policies and bylaws harmonious
- More market technology
- Significant private sector uptake
- Energy efficiency in Bldg Code revised
- Significant “Kyoto” interest in green buildings
- Significant federal programs for support
- Market demand increasing



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# Vancouver's Experience

- **Influence** - Developers want to be able to shape green bldg policy, but also recognize LEED and 3<sup>rd</sup> party certification is valuable
- **Regulations** - Cities should just level the playing field with regs
- **Bldg codes** – moving toward performance based codes and equivalencies
- **Pilot projects** of very green buildings important to explore equivalencies
- **Work very closely with UDI** and other development groups – get the discussions on their turf and in their language.
- **Residential wood frame** systems important, in the absence of LEED
- **Energy efficiency standards** (CBIP equiv) important benchmark
- **Working groups** with developers are important
- **Good process**
  - Develop system and vet it internally
  - Note time period it will take effect
  - Educational workshops
    - Start general
    - Then to detailed working groups on the nuts and bolts
    - Lots of personal communication



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