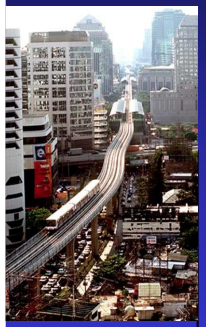
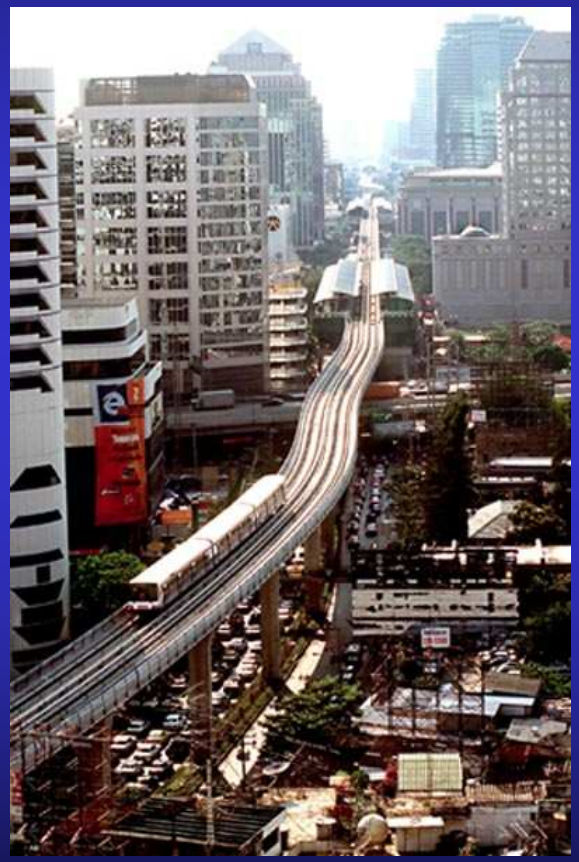
The Sustainable Buildings and Construction Initiative





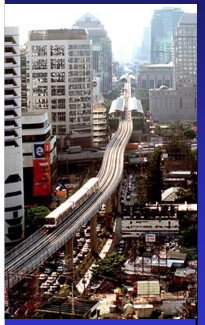
Niclas Svenningsen

United Nations Environment Programme

UNEP FI Property Investment Group

Paris, 7-8 Dec 2007

Why Building & Construction?



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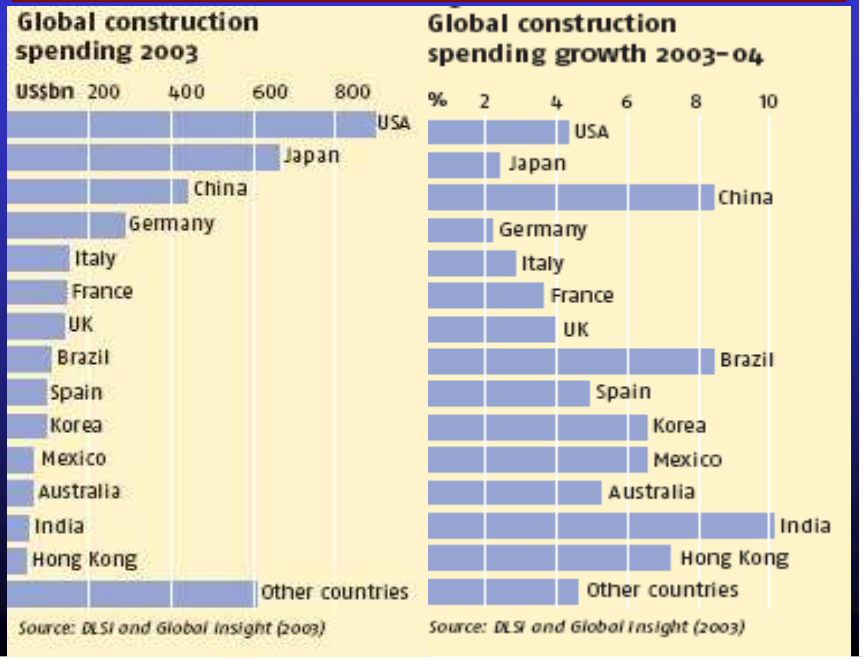
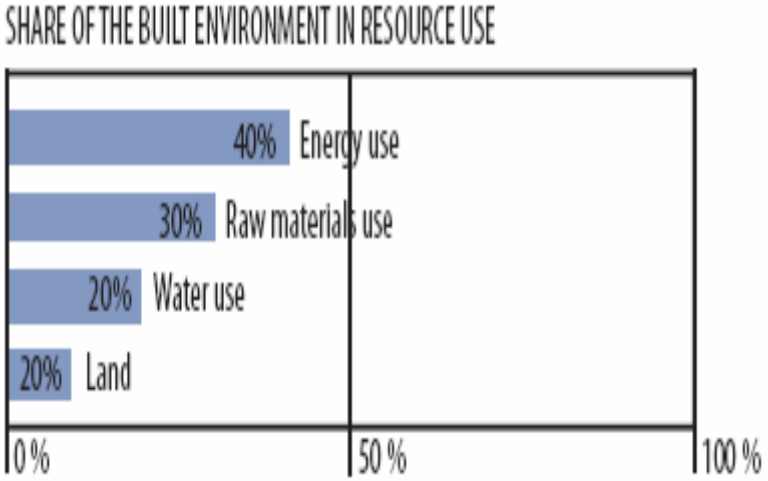
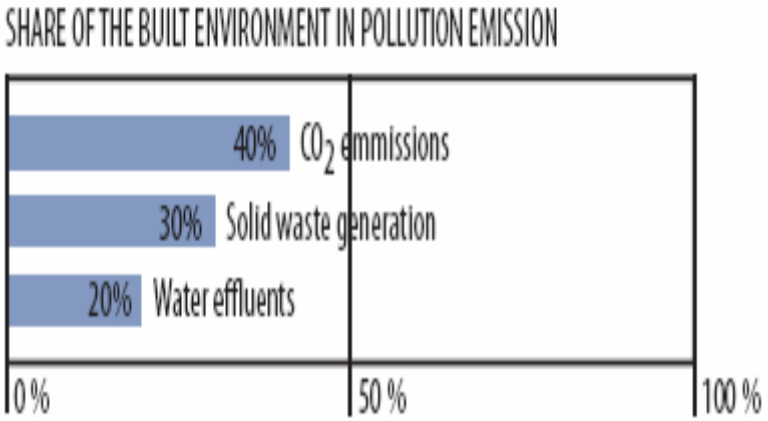
The building and construction market • The built environment

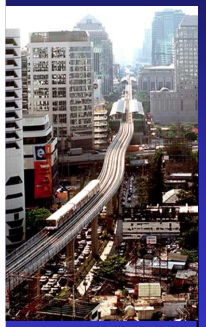
- 5-15 % of direct employment (111 million jobs)
- Investment US$ 3000 billion/year (10+% of GDP)
- To growth markets: Brazil, China and India (~10%)







SBCI in a nutshell:



Partnership between the Private Sector and the United Nations (UNEP).

Seeks to address common global challenges to sustainability in the B&C sector

Builds on synergies with other initiatives.

Key objectives:

- Life Cycle Approach towards a sustainable Building and Construction sector
- Global and sector cross-cutting initiative
- Focus on common and worldwide challenges
- Move beyond recommendations towards implementation

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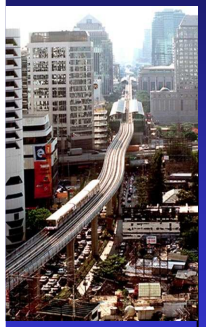
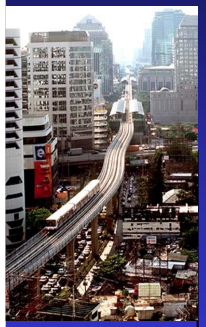
The SBCI Members



Members drawn from throughout the life cycle of buildings

Members support SBCI through membership fees and direct involvement in implementation

As of 15 October 2006 SBCI has 27 members from 14 countries, including China



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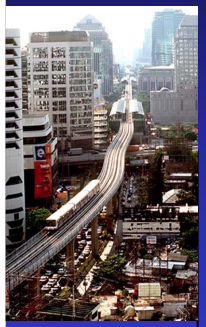
Two Key Focus Ares

1. **Climate Change: Qualify buildings and construction activities as eligible activities for support under the flexible mechanisms of the Kyoto protocol.**

2. **Economic incentives: Develop and promote economic incentives for a life cycle approach (LCA) in design, construction and financing of buildings, so as to create market conditions favourable to buildings that are optimized from a life cycle perspective.**

Focus Area 1: Climate Change



1. Background study on Buildings and Energy Efficiency
2. Think Tank
   - Elaborating recommendations for SBCI
3. Working group
   - Responding to TT recommendations
4. CDM projects in North Africa
   - Learning by doing
5. Partnerships with MTF, WBCSD etc.

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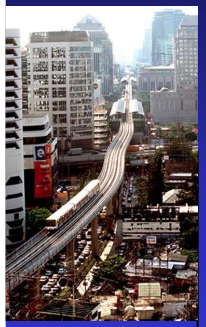
Focus Area 2: Economic instruments for LCA



1. Support global network of experts
   - To develop know-how
2. Project on Public Finance Mechanisms for energy efficiency in buildings
3. Think Tank on economic incentives
4. Partners (UNEP FI, LCI)

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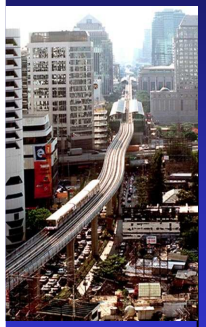
Other activities



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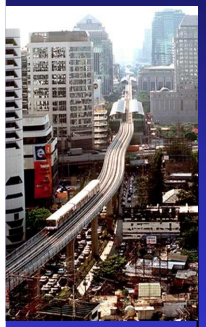
- Tsunami reconstruction project

- Outreach & Communication
  - Changsha
  - Greenbuild
  - Davos

SBCI Communication



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Strategic reports

SBCI strategic reports are published by the Think Tank and describes the work and findings of the Think Tank within each Focus area it addresses. Approximately two reports will be issued per year.

Tools & Strategies Briefings

SBCI Tools & Strategies Briefings are presenting the results of the work done by each working group. These can be in the form of guidelines, project proposals, electronic resources, training materials etc. Approximately two briefings will be issued per year.

Workshops

SBCI Workshops will be organised on a regular basis (initially two times per year) to present, discuss, and if suitable provide training on the current focus areas of the Initiative.

Pilot projects

SBCI Projects will be conducted as part of the regular work programme. SBCI members will be invited to support, take active part in the projects, and take part of the results through direct invitations and briefings.

Network Briefings

Prepared by SBCI Secretariat and published quarterly in electronic format, SBCI Network Briefings will provide members with news and activities concerning the Initiative.

Consultations

SBCI consultations will be organised with key stakeholders, international organizations, governments, industry sector initiatives etc. to present and promote the SBCI agenda and output. SBCI consultations will be organized as required, normally 2-3 times per year.

SBCI website

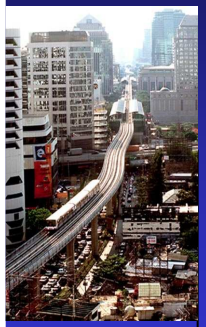
The website of SBCI will presente the Initiative to the world, and providing members with links, tools and resources on sustainable building and construction.

Annual meetings

SBCI annual meetings are organised with the entire SBCI membership.

Buildings and Climate Change

- SBCI First Strategic Report -



To find the answer to a few basic questions:

- What do we know about energy use in buildings?
- What factors decide how much energy we use?
- What barriers are there to reduced energy use?
- What instruments exist for encouraging energy efficient building?
- Recommendations

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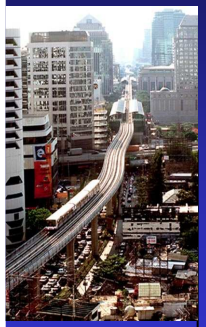
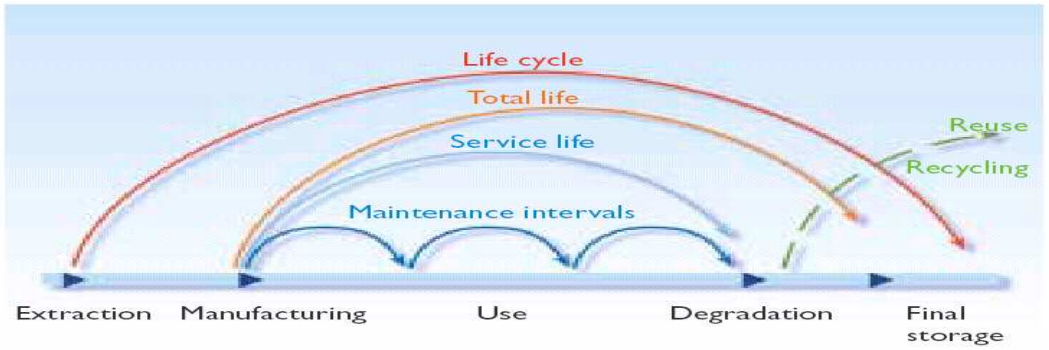
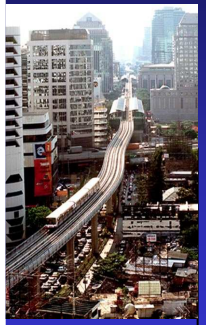
The Baseline

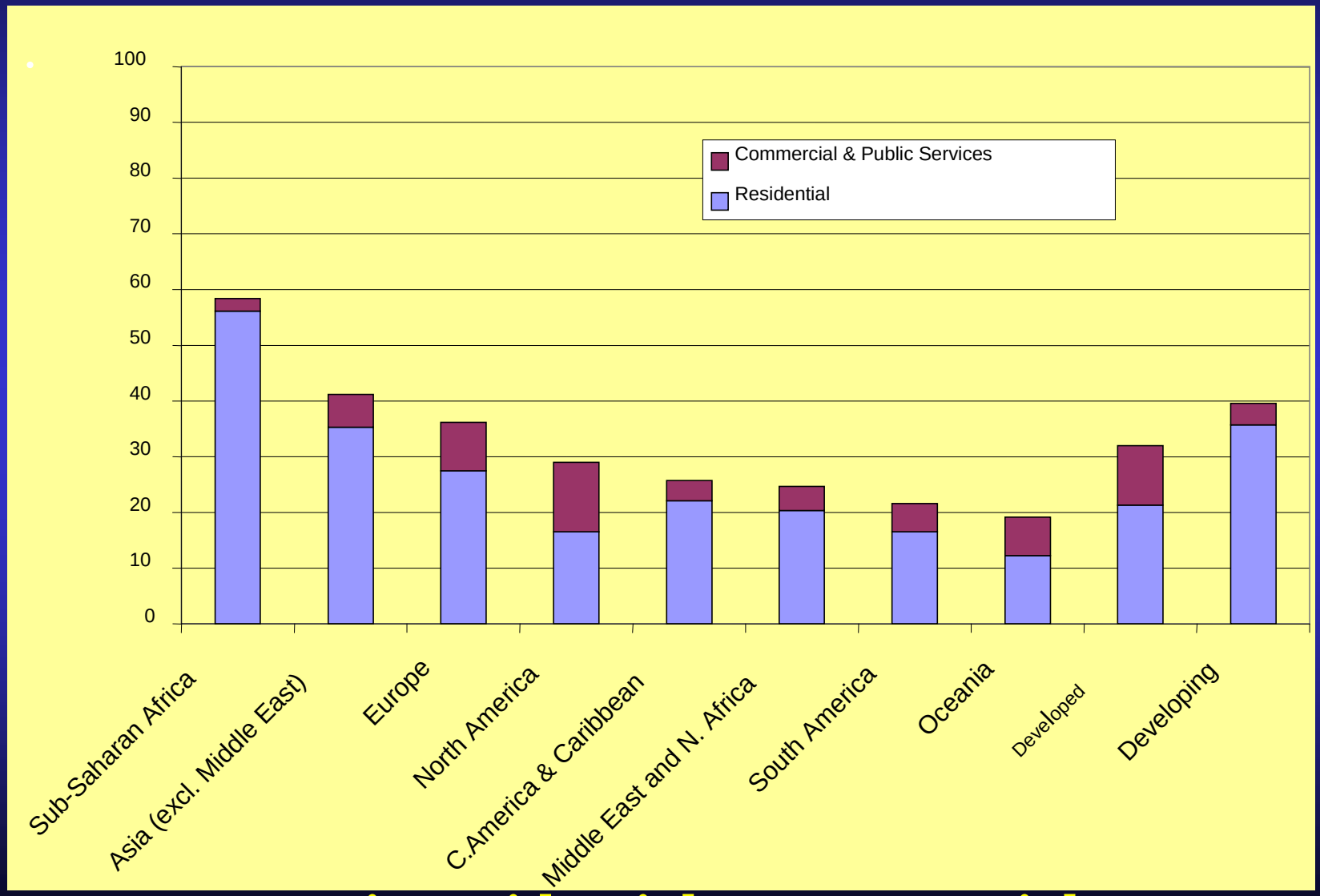




- 30-40% of global energy consumption takes place in the B&C sector (IEA)
- Lack of reliable data, especially for developing countries
- Biomass use in developing countries significant
- Potential energy savings are often 50%+
- Energy use in construction phase is typically about 5-15% of total energy use over the life cycle

The Baseline





Energy use in residential vs commercial sectors

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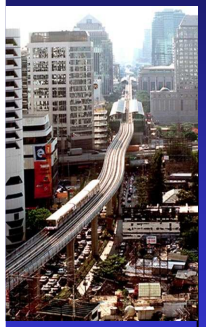
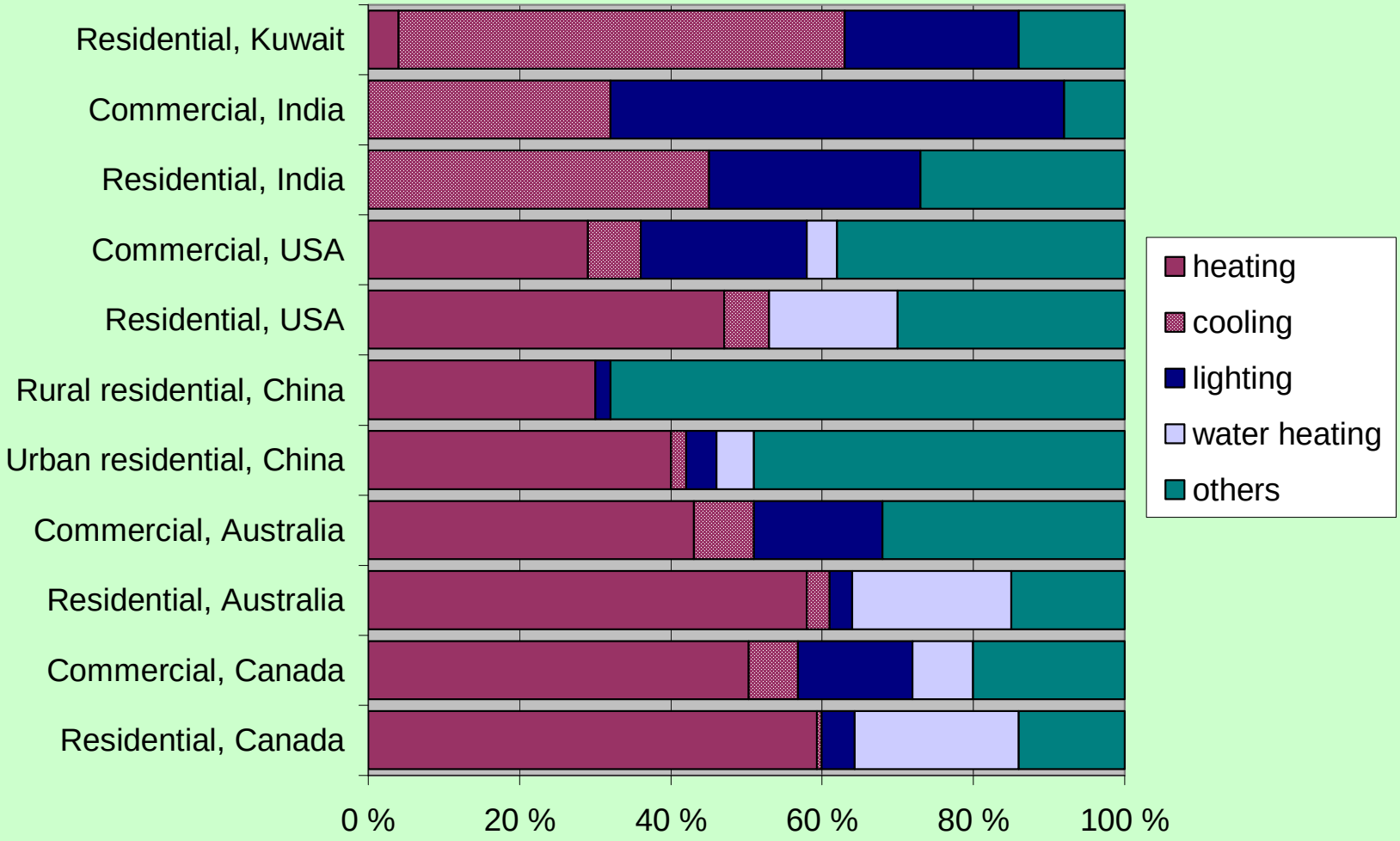
Sources for energy consumption





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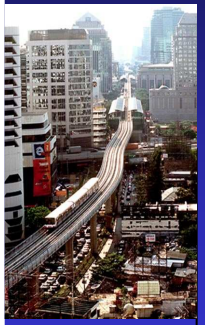
Energy efficiency factors

It is technically possible to build significantly less energy consuming houses



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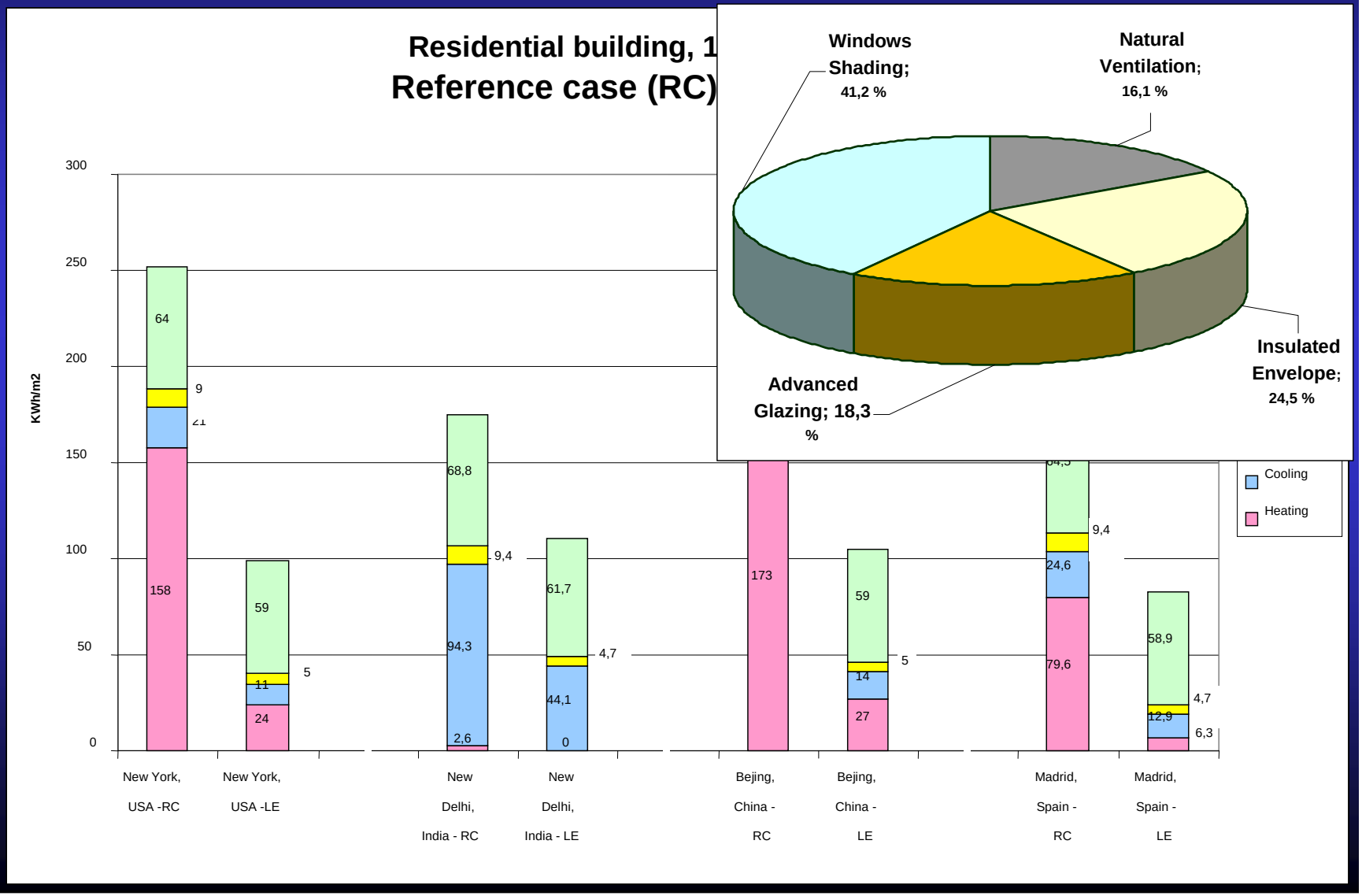
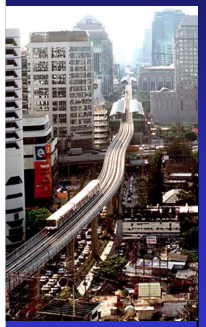
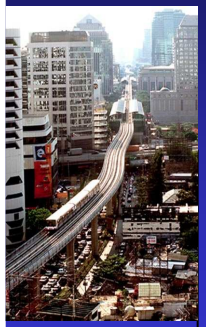


Energy efficiency factors



- Construction phase: Embodied energy
  - E.g. Steel vs. glulam or new vs. recycled aluminium
- Use phase: Envelope
  - Need for, and use of, insulation.
- Use phase: Energy dependent systems;
  - HVAC, hot water, lighting, appliances and other electric equipment
- Use phase: Human behaviour
- Demolition phase: Recycling

Energy efficiency factors



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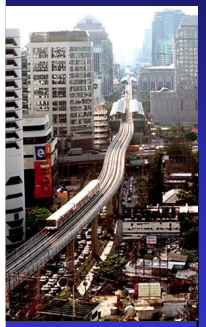
- Opportunities on heating/cooling
  - Low temperature heating systems
  - Good design
  - High efficiency A/C
  - Window design and technology
  - Cooking
  - Low-energy house
    - 60% reduction
    - Conservation before energy system: Integration!
  - Passive house

New or refurbished buildings?



- Europe: 1-2 % renewal of building stock, 70% built before first energy crisis and ½ before 1950.
- Developing world: Shorter life span and more urgent need for new buildings.
- Focus on added insulation
- Solar heating when suitable
- Flexible solutions of energy systems
- Consider commissioning

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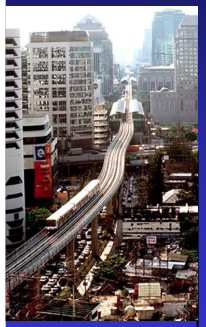
Encouraging energy efficiency



- Economic potentials significant
  (But lack of wall breaking figure)
- Policies & Legislation
- Economic instruments:
  - Dynamic tariffs (Real pricing?)
  - Energy audit (subsidized)

- Information & Education
  - EU - You control climate change
  - Parow pilot energ efficient retrofit and employee awareness campaign
- Technology transfer

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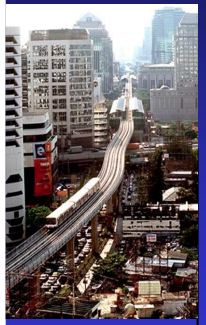
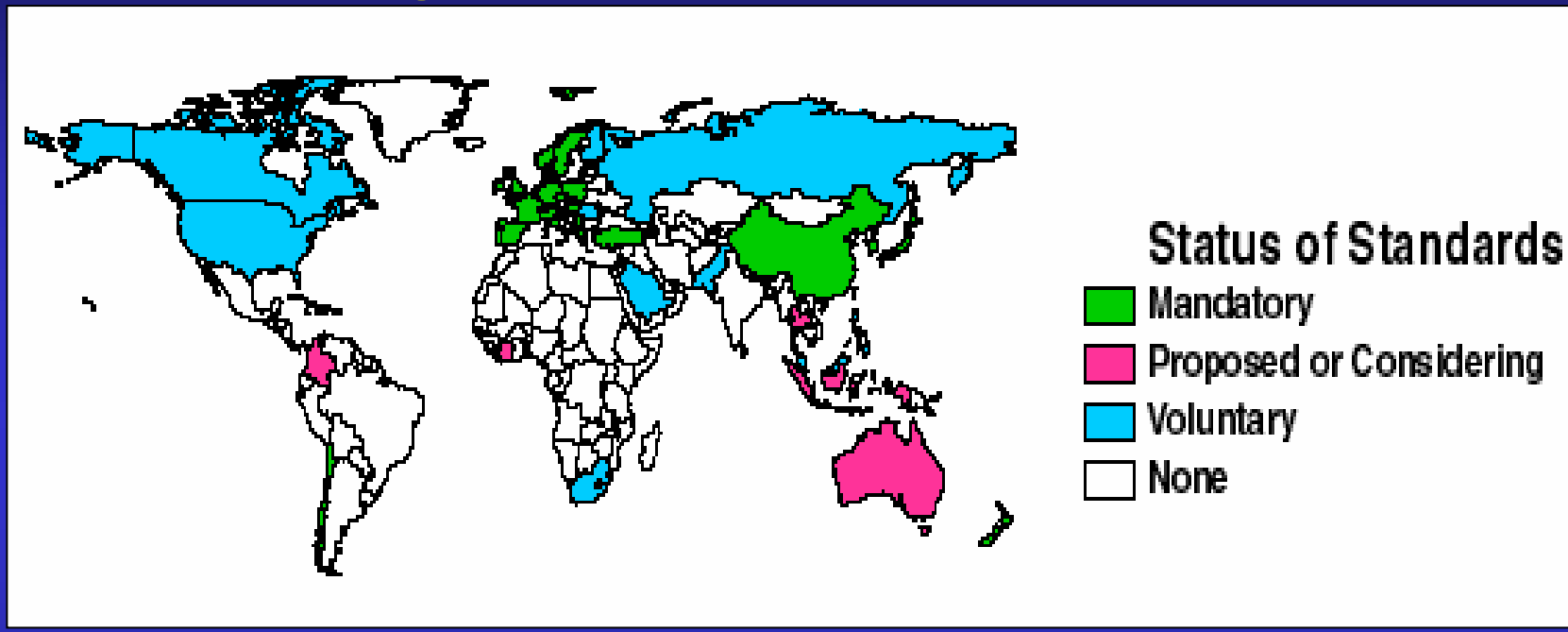
Encouraging energy efficiency

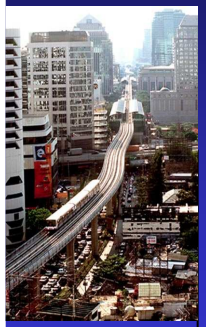
Policies and legislation





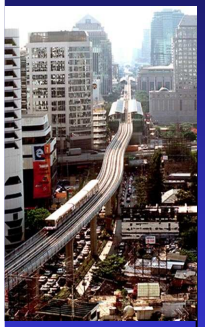
- India: Energy Conservation Act
- EU Directive on the energy performance of buildings
- Scandinavia: Standards & building codes
- Russia: law on energy savings
- China: Policy on 65% energy efficiency improvement

Barriers



- (Perception of) costs for energy efficient solutions
- Disconnect between builders and users
- Inadequate knowledge about benefits of, and opportunities for, energy efficiency
- Lack of technical know-how and basic equipment
- Lack of funding
- No immediate priority in many cases
- Incentives not tailored to the building sector
  - Owners that do not pay the energy bill
  - Kyoto flexible mechanisms not tailored to large number of small activities

Summary



1. SBCI has JUST started
2. Rapidly growing interest and attention, even from highest levels
3. Key issue is climate change, linked to economy of energy savings
4. Technology is there but not the means to mainstream it
5. SBCI has a narrow focus but a multi-pronged approach

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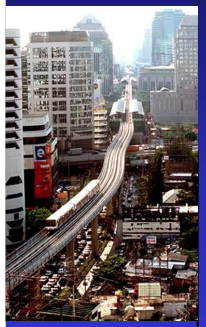

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Thank You!

For more information

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