


SUSTAINABLE BUILDINGS & CONSTRUCTION - how to get there?

KAARIN TAIPALE
ETHOS CONFERENCE 2008
SÃO PAULO



GREEN ECO-BUILDINGS

BUILDINGS AND CITIES
ON THE ROAD TOWARDS

SUSTAINABILITY

CONTENTS

- A Global Agenda?
- The Local Agenda
- Role of the public sector
- Role of the private sector

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SUSTAINABLE DEVELOPMENT - A SHORT HISTORY

- **STOCKHOLM 1972 UNEP**
United Nations Environment Programme
- **VANCOUVER 1976 UN-HABITAT**
United Nations Human Settlements Programme
- **"OUR COMMON FUTURE" (BRUNDTLAND REPORT 1987)**
- **RIO 1992 UNCED**
UN Conference on Environment and Development
- **RIO+10 = JOHANNESBURG 2002 WSSD**
World Summit on Sustainable Development

national
governments!

A polar bear is shown walking across a thin, melting ice floe. The bear's body is mostly white, with some yellowish-brown patches on its legs and face. The ice is dark blue and black, indicating it is melting. The background is a dark, deep blue sea. The text "ONE OF THE GLOBAL AGENDAS: CLIMATE CHANGE AND CO2" is overlaid in white, bold, sans-serif font across the middle of the image.

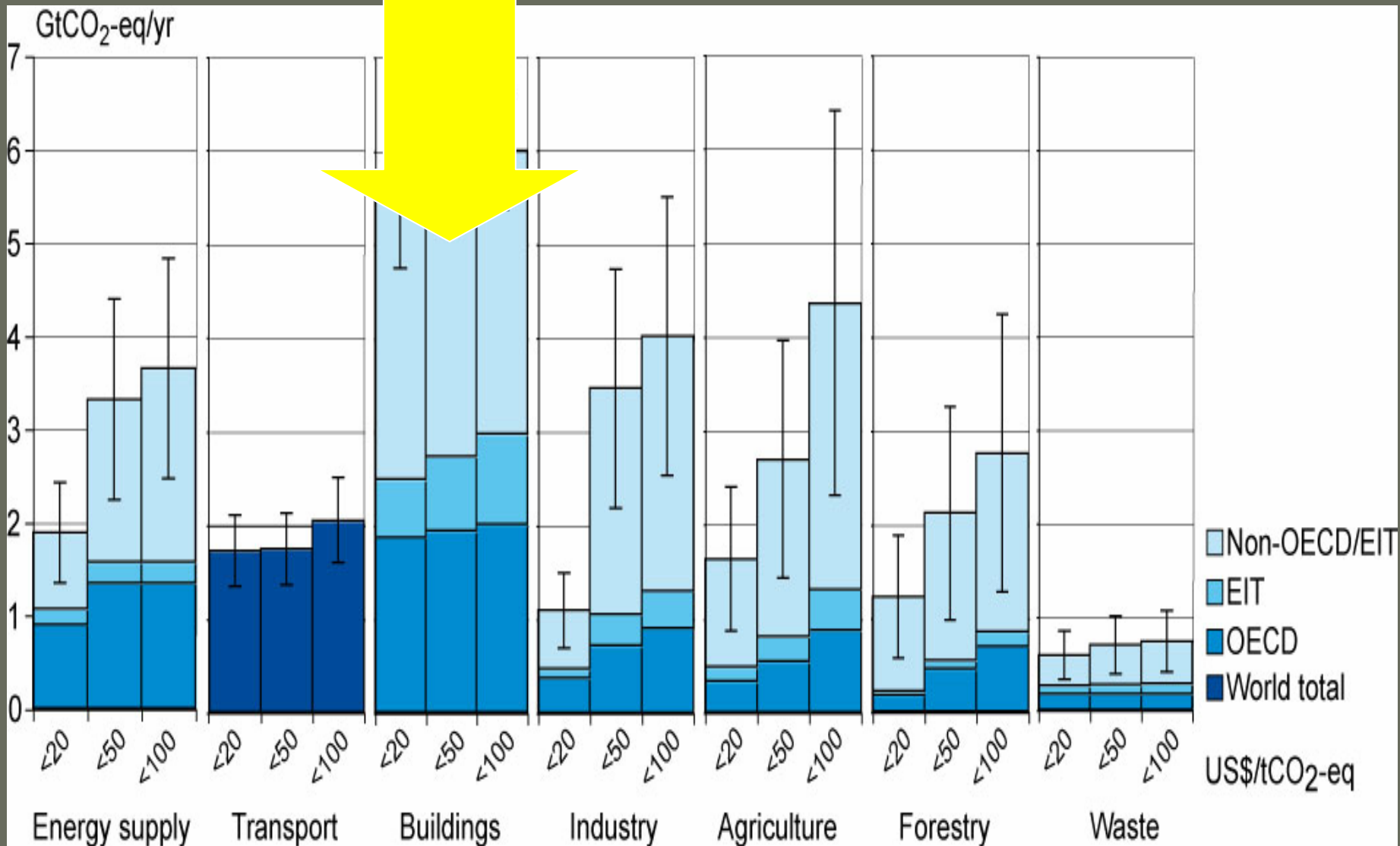
ONE OF THE GLOBAL AGENDAS:
CLIMATE CHANGE AND CO2

IPCC

THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

Fourth Assessment Report

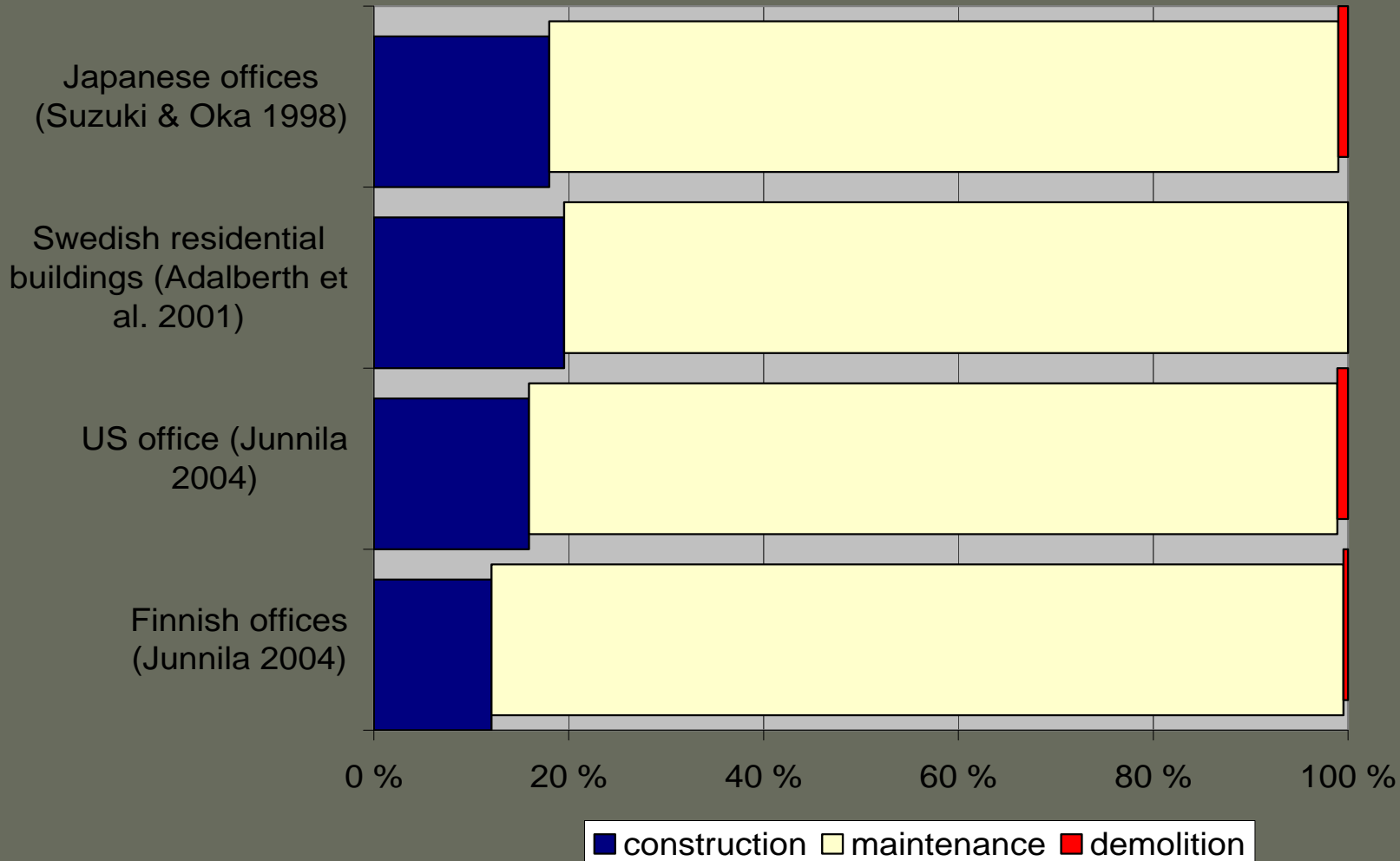
Nov 2007



IPCC assessment of emission reduction potential of different sectors depending on the market price of carbon credits

40%

ENERGY & LIFE CYCLE



COP-15 COPENHAGEN
CLIMATE SUMMIT
towards post-Kyoto

2009

PROGRAM

Opening

Ms. Kaarin Taipale, Chair, Marrakech Task Force on Sustainable Buildings and Construction

Buildings: Impact and opportunities for climate change

Ms. Sylvie Lemmet, Director, UNEP Division of Technology, Industry, and Economics (DTIE)

Industry driving energy efficiency in buildings

Mr. Christian Kornevall, Project Director, Energy Efficiency in Buildings (EEB), World Business Council for Sustainable Development

Buildings as energy producers, a case from Kuala Lumpur

Dr. Faridah Shafii, Associate Professor, and Chairperson, SB07SEA Conference

Property investors looking for incentives, too?

Mr. Craig Roussac, Morgan Stanley in Australia, member of the UNEP Finance Initiative (FI)

What can the UNFCCC do to promote sustainable energy use in the building sector?

Mr. Niclas Svenningsen, Coordinator, UNEP Sustainable Buildings and Construction Initiative (SBCI)

Discussion

Comments

Ms. Outi Berghäll, Vice Chair, Ad Hoc Working Group (AWG) on Further Commitments for Annex I Parties under the Kyoto Protocol

A light lunch will be available.

Realizing its mitigation potential

Construction Counts for Climate

Official UNFCCC side event
Friday 7 December, 13:00-15:00
New Conference Centre
Grand Hyatt – BIOFUEL room



Marrakech Task Force on Sustainable Buildings and Construction
Lead country Finland



UNEP SBCI
Sustainable Buildings & Construction Initiative



World Business Council for Sustainable Development

INTERNATIONAL ACTORS

- UNEP – SBCI, UNEP – FI
- MARRAKECH TASK FORCE ON SBC
- NAFTA – CEC, "Green Building in North America"
- iiSBE, SB Conferences (SB08 Melbourne)
- WBCSD; Cement Initiative, EEB
- Holcim Foundation for Sustainable Construction



MARRAKECH TASK FORCE ON SUSTAINABLE BUILDINGS AND CONSTRUCTION

lead country Finland



10-YEAR FRAMEWORK OF PROGRAMMES ON SUSTAINABLE CONSUMPTION & PRODUCTION

MARRAKECH TASK FORCE ON SUSTAINABLE BUILDINGS AND CONSTRUCTION, LEAD COUNTRY FINLAND
KAARIN TAIPALE, CHAIR / ETHOS CONFERENCE / SÃO PAULO 28 MAY 2008

WHAT IS SUSTAINABLE CONSTRUCTION?







B Energy and Resource Consumption

B1 Total Life Cycle Non-Renewable Energy

- B1.1 Annualized non-renewable primary energy consumption of building materials.
- B1.2 Annual non-renewable primary energy consumption of building materials.

B2 Electrical peak demand

B3 Renewable Energy

F Social and Economic aspects

F1 Social Aspects

- F1.1 Minimization of construction accidents.
- F1.2 Access for physically handicapped.
- F1.3 Access to direct sunlight from living areas.
- F1.4 Access to private open space for recreation.
- F1.5 Visual privacy from the exterior.
- F1.6 Access to views from work areas.

F2 Cost and Economics

- F2.1 Minimization of life-cycle cost.
- F2.2 Minimization of construction cost.
- F2.3 Minimization of operating cost.
- F2.4 Affordability of residential units.
- F2.5 Support of Local Economy.

G Cultural and Perceptual

G1 Culture & Heritage

- G1.1 Relationship of design to local culture and heritage.
- G1.2 Compatibility of design with local culture and heritage.
- G1.3 Maintenance of local atmosphere.

- C2.1 Emission of greenhouse gases.
- C2.2 Emission of acid-forming pollutants.
- C2.3 Emission of odors.

C3 Solid Wastes

- C3.1 Solid waste generated on site.
- C3.2 Solid waste recycled on site.

C4 Rainwater, Stormwater

- C4.1 Liquid discharge to water bodies.
- C4.2 Retention of stormwater on site.
- C4.3 Untreated stormwater retained on the site.

E Service Quality

E1 Safety and Security During Operations

- E1.6 Maintenance of core building functions during power outages.

E2 Functionality and efficiency

- E2.5 Spatial efficiency.
- E2.6 Volumetric efficiency.

E3 Controllability

- E3.1 Provision and operation of an effective facility management control system.
- E3.2 Capability for partial operation of facility technical systems.
- E3.3 Degree of local control of lighting systems in non-residential occupancies.
- E3.4 Degree of personal control of technical systems by occupants.

E4 Flexibility and Adaptability

- E4.1 Ability to modify facility technical systems.
- E4.2 Adaptability constraints imposed by structure.
- E4.3 Adaptability constraints imposed by floor-to-floor heights.
- E4.4 Adaptability constraints imposed by building envelope and technical systems.
- E4.5 Adaptability to future changes in type of energy supply.

E5 Commissioning of facility systems

E6 Maintenance of Operating Performance

- E6.1 Maintenance of building envelope performance.
- E6.3 Development and implementation of a maintenance management plan.
- E6.4 On-going monitoring and verification of performance.
- E6.5 Retention of as-built drawings and documentation.
- E6.6 Provision and maintenance of a building log.
- E6.7 Performance incentives in leases or sales agreements.
- E6.8 Skills and knowledge of operating staff.

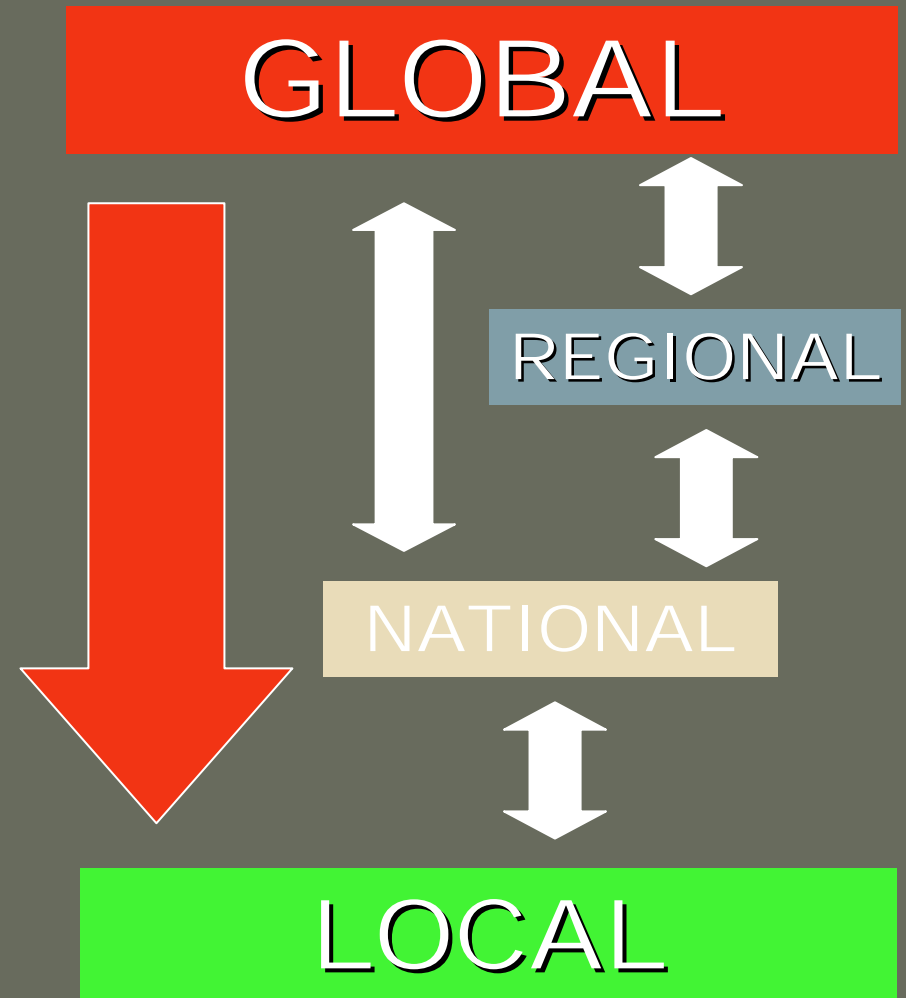
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GLOBALIZATION & GLOCALIZATION

pre-globalization > 1980s



post-globalization < 1980s







5TH AFRICAN ROUNDTABLE
ON SUSTAINABLE
CONSUMPTION AND
PRODUCTION
JOHANNESBURG 4-6 JUNE





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Buildings for a Better Future

POLICY OPTIONS IN A CHANGING CLIMATE

MARRAKECH TASK FORCE ON SUSTAINABLE BUILDINGS AND CONSTRUCTION



1. New construction
2. Housing
3. Refurbishment of existing buildings
4. Energy savings and energy efficiency
5. Use of renewable energy sources
6. National & federal policies & programmes
7. Local policies
8. Public procurement
9. Research and development
10. Building certification systems

PUBLIC PROCUREMENT

Top-Runner Approach in Japan

The best product on the market sets the standard for public procurement in Japan.

PUBLIC PROCUREMENT

Preventing corruption on construction projects

Transparency International has developed a Project Anti-Corruption System (PACS) specifically for construction projects. Implementation of PACS may be required by governments as a pre-requisite for project approval, by funders as part of the funding package, or by public or private sector project owners as a condition of participation in a project. It will also demonstrate the governments' commitment to the prevention of corruption.

LEAD BY EXAMPLE

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CITIZEN OR CONSUMER

- rights as citizen
- voice as a voter and a participant
- beneficiary of a public service
- public procurement
- rights as consumer
- voice as a shareholder
- buyer and user of a service or product
- purchasing

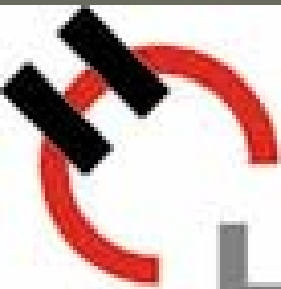
GOVERNANCE & PRODUCTION

- transparency
- equity
- basic services
- not-for-profit
- public goods
- place-bound
- efficiency
- accountability
- competition, IPR
- shareholder value
- CSR
- profit
- private goods, IPR
- independent of place
- efficiency
- accountability

1. Know your carbon exposure
 2. Take action to reduce your carbon footprint and assess business opportunities
 3. Influence the policy development process
- Hoffmann, Woody (2008) Climate Change, What's your business strategy?

LEAD BY EXAMPLE

...beyond the baseline...



Holcim foundation

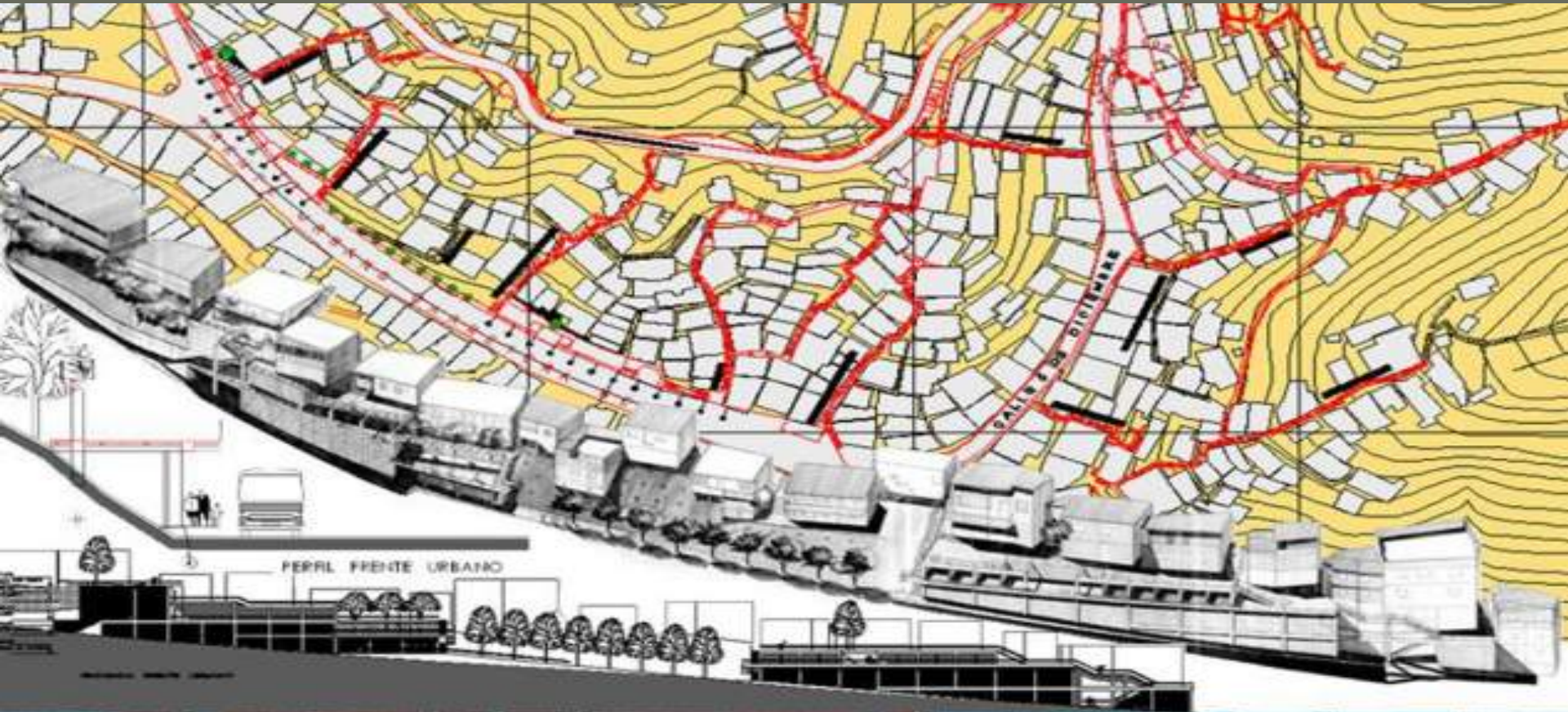
for sustainable construction

5 target issues of the HOLCIM AWARDS

1. **Ecological quality and energy conservation**
2. **Economic performance and compatibility**
3. **Ethical standards and social equity**
4. **Contextual and aesthetic impact**
5. **Quantum change and transferability**

Global Holcim Award Gold 2006

Mejoramiento San Rafael-Unido, Caracas, Venezuela



Global Holcim Award Gold 2006

Mejoramiento San Rafael-Unido, Caracas, Venezuela



ESCALERA 28 DE NOVIEMBRE



„Gracias por hacer nuestro mundo más sostenible.“

San Rafael-Únido, Caracas, Venezuela: Global Holcim Award Gold 2006

Mohandas Karamchand Gandhi



I will give you a talisman. Whenever you are in doubt,... Recall the face of the poorest and the weakest man [woman] whom you may have seen, and ask yourself, if the step you contemplate is going to be of any use to him [her]. Will he [she] gain anything by it? Will it restore him [her] to a control over his [her] own life and destiny? ... Then you will find your doubts and your self melt away