

Main Focus

Sustainable building



(Top) Shinjuku, Tokyo's first major skyscraper development area with buildings over 200 metres tall.

Supporting sustainable ways of living

Over the last decade, sustainable building and construction has come to be seen as representing a sustainable built environment encompassing the structures and infrastructure built, the processes used to build them and the many stakeholders involved. This holistic approach of ensuring that the built environment is healthful and pleasant for humans is more and more perceived as a crucial productivity issue.

Since 1950, the world's population has more than doubled, most of which has occurred in the developing world. By 2007, around half of this growing population will live in urban areas. Such trends consequently lead to an increased need for buildings and infrastructure.¹⁾

Think sustainable, avoid risky business

Whether in the developed or developing world, adding to the existing built environment will have numerous social and environmental impacts. There will always be the inevitable health risks on worksites and the need to increase transport systems to service new communities. More building leads to a depletion of raw materials extracted for construction, land use change such as land clearing, noise pollution, dust and water pollutants on the sites as well as such concentrations within buildings, increased water use and waste water generation and that of other resources, which need to be dealt with appropriately.

It is believed that construction uses about half of all resources extracted from nature. Most significant is the

1) WRI/UNEP/WBCSD (2002) Tomorrow's Markets: Global Trends and Their Implications for Business, Paris.

increased use of energy and associated greenhouse gas (GHG) emissions. Since today the life span of an average building is 80 years, the design will have long-term implications on its performance and environmental impact.

“According to the UN Environmental Programme, the built environment accounts for about 40% of world green house gas emissions.”

It is therefore imperative to include sustainability principles from the initial stages with the developers, architects, engineers, owners and government authorities. They must consider increasing energy produced in the buildings in a sustainable manner to reduce the GHGs produced throughout its life. Equally, contractors, building managers, labourers, recyclers, salvagers and landfill/incinerators working on the construction and cleaning up the sites must

do everything possible to carry out their duties in a way that avoids wastage, unnecessary pollution or damage to the surroundings or anyone entering the site throughout the entire process. According to the United Nations Environmental Programme, the built environment accounts for about 40% of world GHG emissions.²⁾

More construction more employment

On the other hand, communities and workers can also benefit from the construction industry, which has a worldwide market volume of over USD 3 trillion and provides around 7% of world employment. In most countries it is the largest single employer. It is not only the construction jobs themselves that are created, but the subsequent related economic activity. The Council for Research and Innovation in Building and Construction (CIB) estimates that for every dollar spent on construction, three dollars is generated in other sectors.

Todaiji Temple in Nara, Japan. Completed in 751, the temple remains one of the largest wooden buildings in the world.



The potential for growth in the sector's labour force remains considerable in both developing and developed countries. In developing countries, many structures are being constructed for the first time. In China, for example, the construction workforce tripled between 1980 and 1993 and in Europe, numerous jobs are created by the renovation and maintenance of old buildings to reduce GHG emissions in areas where space limitations in old cities make new construction impossible.

Conference calls for action

The 2005 World Sustainable Building Conference was held for the first time in Asia in Tokyo, the first city in the world to reach a population of 10 million. The

2) UNEP/CIB/CSIRCIDB (2002) Agenda 21 for Sustainable Construction in Developing Countries. Pretoria.

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conference emphasized the urgent need to take immediate “action for sustainability”, a particularly important issue for the future of Asia, which is home to approximately 60% of the world’s people and where mega cities with high population densities continue to emerge.

Building related professionals adopted the SB05 Declaration to implement sustainable building principles, promote the spirit of the Kyoto Protocol³⁾, bridge the gaps between regions, through closer domestic and international cooperation, continuous education and train-

ing, and between stakeholders through participation and collaboration.

In her address to the conference, Her Imperial Highness, Princess Takamado said that she thought it was “imperative that action be taken at all levels – international, national, industrial and individual” and added that it should be done with a “sense of urgency”. She was encouraged by the attendance of a variety of experts from industry and concluded by saying that as the dominant species on the planet, humans “have a duty to all existing life forms

to maintain the harmony and balance of the earth’s eco-system”.

More than 1 700 participants from over 80 countries, including government representatives, architects, engineers, suppliers and others linked to the building industry attended the event. Discussions focused on global cooperation, innovation of technology and social systems and the significant impact current building practices and human settlement patterns have on resource use, global environment degradation and climate change.

The conference was hosted by the Japanese Ministry of Land, Infrastructure and Transport (MLIT), the International Council for Research and Innovation in Building and Construction (CIB), the United Nations Environmental Programme (UNEP), and the International Initiative for Sustainable Built Environment (IISBE).

For more information visit:
www.sb05.com

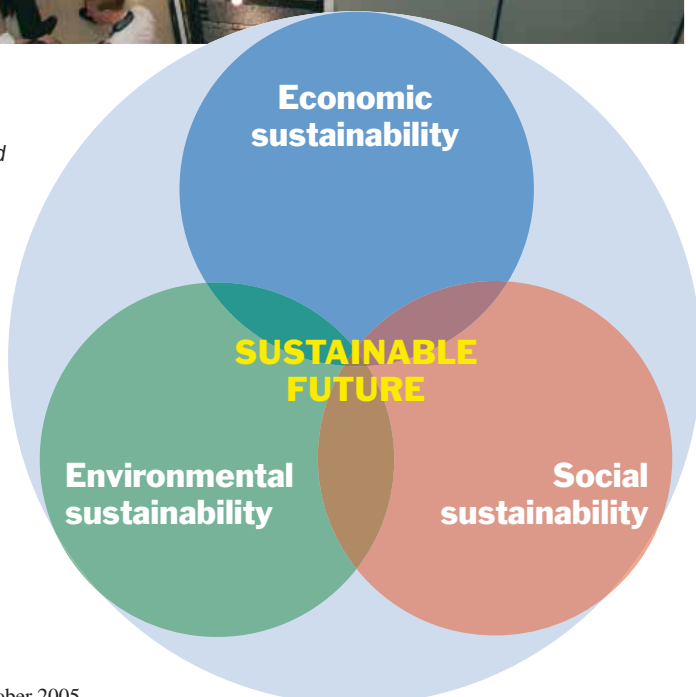
(Photo left) Exhibition showcase sponsored by Hong Kong’s Professional Green Building Council displays specific initiatives in sustainable buildings in Hong Kong.

(Photo below) Participants from more than 80 countries exchange ideas and best practices for sustainable buildings.



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According to the United Nations Agenda 21, sustainability has environmental, social and economic aspects. Prior sustainable building conferences gave priority more or less to scientific and engineering aspects of built-environment. SB05Tokyo focused on other strongly related aspects as well, while keeping the original scientific nature of the SB Conference.



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3) Kyoto Protocol to the United Nations Framework Convention on Climate Change is an amendment to this international treaty on climate change. Countries ratifying this protocol, commit to reducing their carbon dioxide emissions and five other greenhouse gases.