



**Building and the Environment**  
**- SUSTAINABLE BUILDING -**

**27 February 2002**

**1st Asian Forum for the Field of Architecture  
and Building Construction in Tokyo, JAPAN**



# Proposal for the 2<sup>nd</sup> Forum on Building and the Environment

## 1. Global Current Conditions

Present conditions of energy and resources

## 2. International Activities

Platforms of EU, North America and Japan

## 3. Needs for Asia

Possibility of Asian sustainable building

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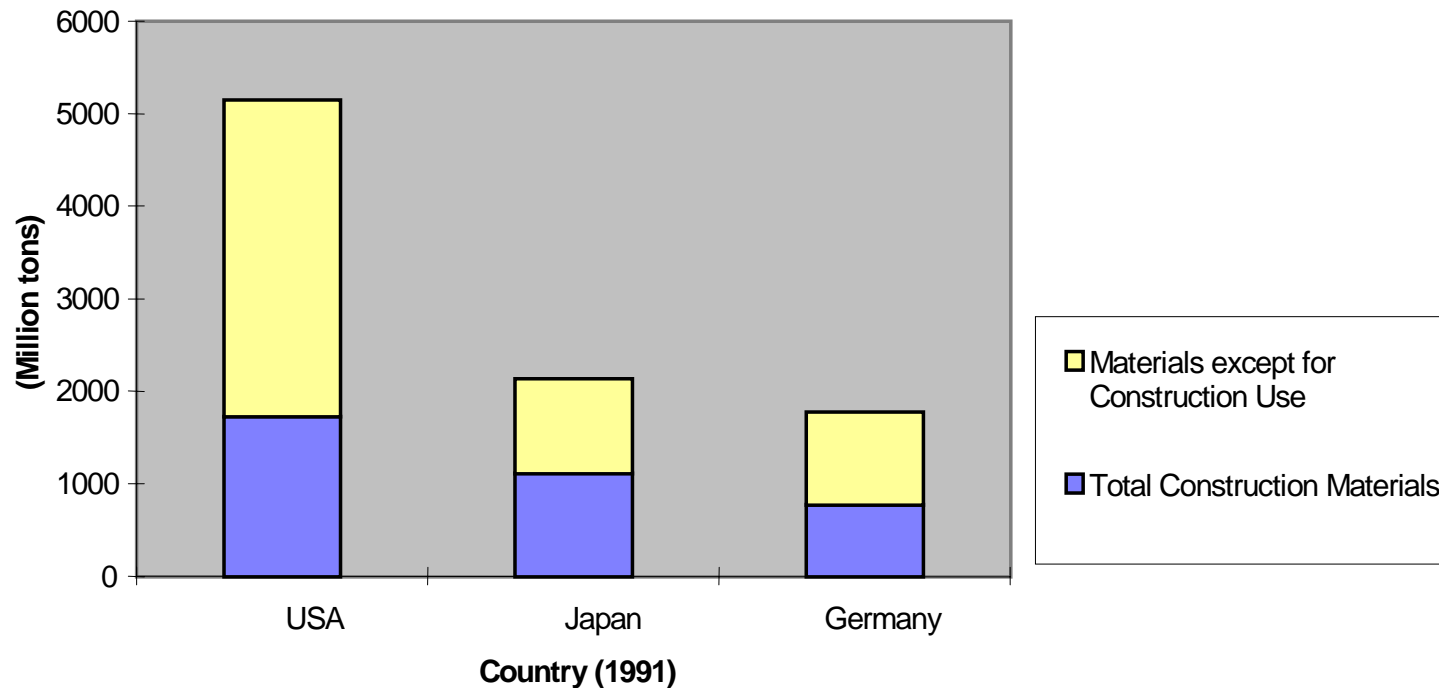
- **Global Current Conditions on Building and the Environment**

**Environmental Requirements to the 21<sup>st</sup> century's Building**

- 1) **Resource Efficiency**
- 2) **Energy Efficiency**
- 3) **Pollution Prevention**
- 4) **Harmonization with Environment**
- 5) **Synthetic Approaches**

# Resource Use of the Construction

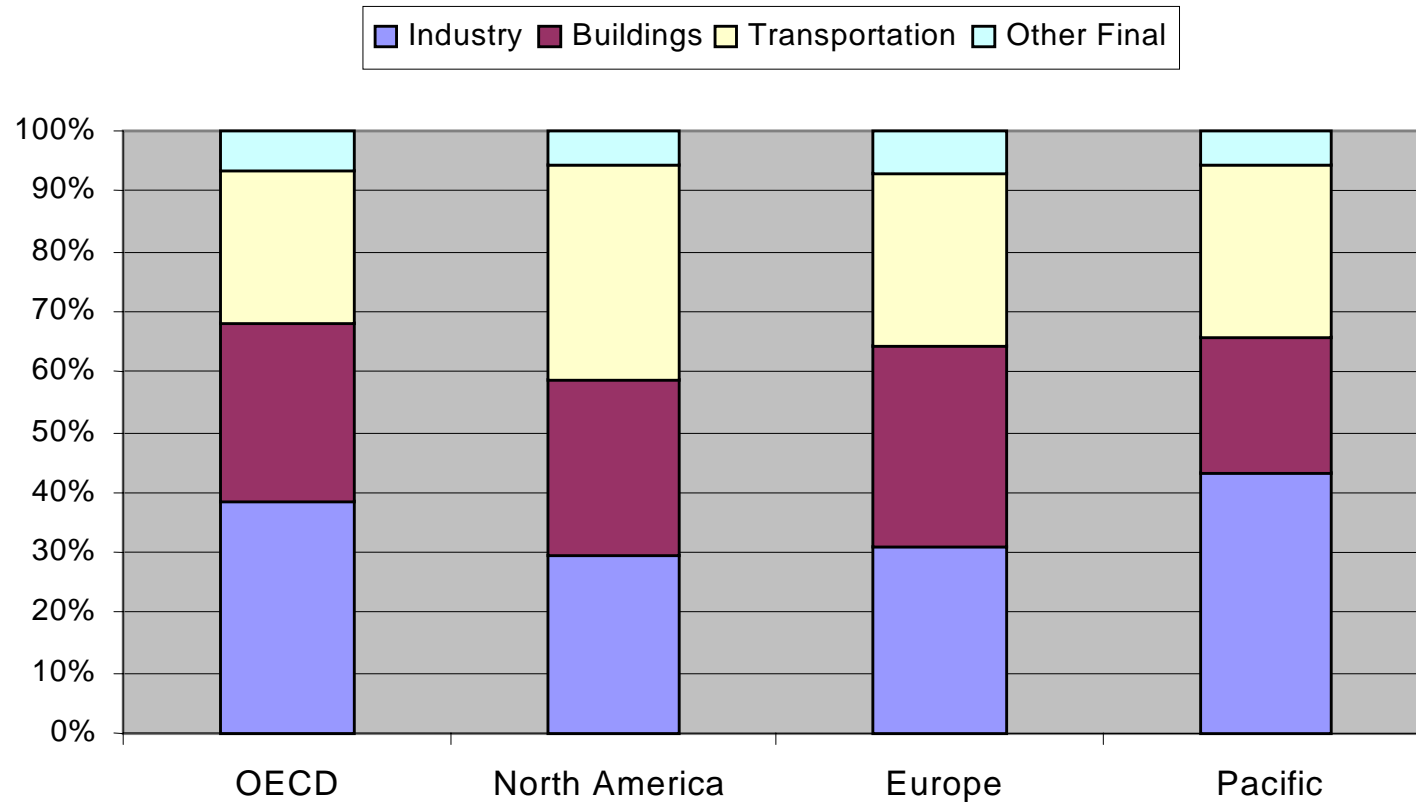
Figure 1. Total Commodity Flow



Data: World Resource Institute

# Energy Consumption by Sector

Figure 2 Share of Total Energy Demand by Sector (IEA,1993)



Data: International Energy Agency (IEA)

# CO<sub>2</sub> Gas Emissions from Building

Total Building  
Sector 36%

Data: International Energy Agency (IEA)



## **2. International Activities on Building and the Environment**

### **1) Information Exchange Platform**

- Green Building Challenge (GBC 98: Canada)
- Sustainable Building 2000 (Netherlands), 2002 (Norway)
- Int'l Initiative for Sustainable Built Environment (iiSBE)

### **2) Evaluation Tools**

- BRE Environmental Assessment Method (BREEAM: UK)
- GB Tool, BEPAC (Canada) etc.

### **3) Policy Development**

- OECD Sustainable Building Project (1998-2002)
- EU Ministerial Conference on Sustainable Housing

### **4) Research & Development**



# Japanese Current Tools for Sustainable Building (Examples)

- **Housing Performance Indication System** (including Energy Efficiency, Durability, Indoor Air Quality)
- **Premium Loan for Energy Efficient Houses** by Housing Loan Corporation
- **Construction Material Recycling Act**
- **Study on Building Eco Factor (BEF)** for evaluation and design tool of building



## **3. Needs for Asia**

- 1) Environmental Conditions**
  - Different Climate and Nature
- 2) Economic Conditions**
  - Needs for Economic Growth
- 3) Social Conditions**
  - Large population, High density
  - Different Culture and Life style
- 4) Technological Conditions**
  - Different Material and Disaster




# **Characteristics of Building and Building Industries**

- 1. Long-Lived Nature**
- 2. Heterogeneous Users**
- 3. Extended Supply Chain**
- 4. Heterogeneous Building Stock**
- 5. Co-ordination of Policies  
between Environment, Building Control,  
Energy & Urban Planning policies**

# Focus of the Next Forum

- **Information Exchange on Projects and Policies for Achieving Energy and Resource Efficient Buildings**
- **Discussion on Proposals for International Platforms of Sustainable Building from Asian View Points**



# Future Steps

- Discuss and Provide **policy guidelines** on sustainable building in Asia
- 2. Develop and Diffuse **proper model** of sustainable building
- 3. Propose the guideline and models to international platforms