

Green Building and Sustainable Development

Chapter 1: Building, Architecture, climate, resources and culture

The relationship between the development of architecture and the development of human society and civilization, the concept of architecture and urban and rural development, the relationship between architecture and climate and resources, the current situation of human settlement in the world and the problems to be solved urgently.

Chapter 2: Some basic concepts related to green building

- 1) China's national resource characteristics, the definition of green building, and the disciplines involved in green building;
- 2) The human body's requirements for thermal environment, acoustics, lighting and air quality, and the relationship between comfort and health;
- 3) The building life cycle impact on the environment;
- 4) Building energy consumption includes: air conditioning, space heating, ventilation, lighting, domestic hot water, and the concept of energy grade.

Chapter 3: Building energy conservation

- 1) Energy consumption during construction, construction scale of China and other countries;
- 2) Building energy consumption during operation period in China and other countries, the impact of life style or occupant's behavior on building energy consumption;
- 3) Roadmap for building energy conservation and building energy planning in China: residential, commercial, district heating, and rural area.

Chapter 4: Green building technology discrimination

The basic principles and applicability of green/energy-saving building technologies are introduced and analyzed, including BIPV, zero-energy building, ground source heat pump, building insulation and double skin façade, district cooling system, centralized air conditioning system in residential buildings, VAV system in office building, etc. The limitations and inapplicable conditions of these technologies are pointed out.

Chapter 5: Green building related policies, regulations and standards

Development and current status of green building standards or assessment systems in China and other countries around the world, as well as existing relevant laws and policies. Some green building rating systems in China (include Mainland, Hong Kong and Taiwan), and some of other countries such as LEED (USA), CASBEE (Japan) and BREEAM (UK).

Chapter 6: Green building cases at China and other countries

Several successful green Building cases in China and other countries are introduced and analyzed, including the Library of Shandong Transportation College, Shenzhen OCT sports center, Archives of Suzhou Industrial Park, Shenzhen Institute of Building Research, Building of Ministry of Environmental Protection, Queen Building of De Montford University UK, and Osaka central stadium Japan.