

可持续发展
城市

Sustainable Cities

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Outline

- Why sustainable cities?
- What is a sustainable city?
- Sustainable City Approaches
 - Smart Growth
 - Retrofitting Existing Cities
 - Building New Cities
- Important questions to ask?

Why Sustainable Cities?

- Cities are growing:
 - Over 50% of the world population lives in urban areas
- Increasing urban populations can cause problems in cities
 - Congestion, pollution, lack of resources

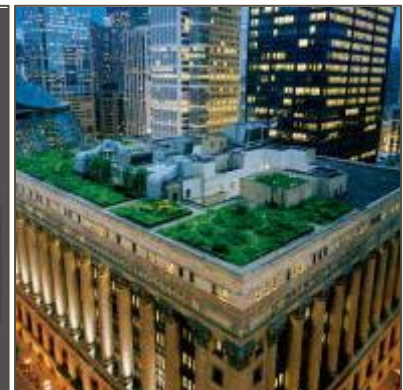
A Sustainable City



- Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.
- Balanced system: social, economic, and ecological
- Link local actions to global concerns

Sustainable City Ideals

- Smart growth
- Energy conservation
- Waste reduction
- Multi-modal transportation
- Water management



Sustainable City Approaches

Smart Growth

Retrofitting Existing Cities

Building New Cities

Smart Growth Principals

- High density
- **Walkable neighborhoods**
- Diverse housing options & land uses
- Community & stakeholder collaboration
- Strong sense of place
- Preservation of open space
- **Multimodal transportation**
- Compact building design
- **Direct development in existing communities**

Walkable Neighborhoods



- Concentrate critical services near homes, jobs, & transit
 - Improved personal health & fitness
 - Expanded consumer choice
- Adopt street design standards emphasizing pedestrians & non-motorized modes
 - Copenhagen Lane
- Provide grants to local communities for improvement projects
 - Illinois Balanced Growth for a Better Quality of Life

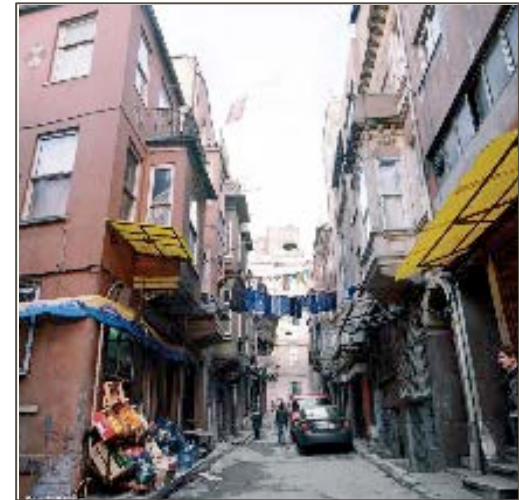
Multi-modal Transportation

- Focus on neighborhood-scaled streets (two or four lanes)
- Encourage high levels of connectivity
- Require sidewalks in all new developments
- Address parking needs & opportunities



Develop in Existing Communities

- Strengthen local **brownfield** programs
- Facilitate programs to encourage home **renovation** and **rehabilitation** in existing neighborhoods (Habitat for Humanity).
- Use incentives for business & home owners to locate in areas with **existing infrastructure**



Retrofitting Existing Cities Energy

Seattle, Washington, USA



Fuel Mix	
Generation Type	Percentage
Hydro	92.4%
Wind	4.1%
Nuclear	2.5%
Coal	0.5%
Others*	0.5%
Total	100%

* Includes natural gas, biomass, waste, petroleum, landfill gases and other.

垃圾

Retrofitting Existing Cities Waste

San Francisco, California, USA

City requires residents and
businesses to separate their trash:

Blue – Recyclables

Green – Compostable

Black - Trash



80 % of waste
not sent to
landfills

Retrofitting Existing Cities Water

Saitama, Japan

Metropolitan Area Outer Discharge Channel

- World's largest underground flood water diversion facility
- Reduces flooding stress during typhoons & rain



**Reduce flood
area by 80%**

Building New Cities Energy

Madsar City, Abu Dhabi, United Arab Emirates

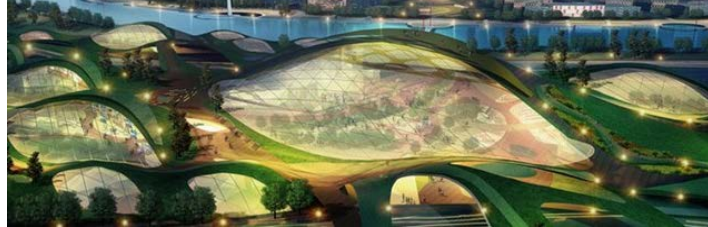
- Planned orientation of buildings for maximum energy efficiency
- Public transit is electric; pilot program for electric cars
- A solar power plant provides all city energy needs



生活品质

Building New Cities

Quality of Life



Tianjin Eco-city, Tianjin, China

"In the past, so-called eco-cities have been built in ecologically important areas or on useful arable land. We wanted to show that it's possible to clean up a polluted area and make it useful and livable."

- Ho Tong Yen (head of
Sino-Singapore Tianjin Eco-city
Development & Investment)

低碳

Building New Cities

Low Carbon



Tongzhou New City, Beijing, China

- “Pedestrian-first” transit & open space network
- 20% carbon footprint reduction
- Smart energy grid
- Cyclical utilization of water resources

Important Questions

- Balance of power?
 - Government's role in sustainability/smart growth
- Can large cities practice smart growth?
 - Beijing is expanding & growing
- What is a sustainable city in China?
 - Design components, public opinion
- Is growth sustainable?
 - Limited resources (food) as cities expand into agricultural land



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