Sustainable Cities

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Sustainable Urbanism in China
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Definitions

- Development which meets the needs of the present without compromising the ability of future generations, to meet their own needs.   –Brundtland Commission

- Balance local social, economic, and ecological systems and link local actions to global concerns.

Sustainable City Components

- Mobility
- Availability of Resources
- Production & Disposal of Wastes
- Urban Form

Mobility

Amsterdam – Bike Parking

- Reduce car dependency

  - Diverse public transit systems

  - Bike lanes & trails

  - Improved pedestrian networks

Curitiba – Bus Rapid Transit

Availability of Resources

- Energy
  - Incorporation of renewable energy systems
  - Wind farms, solar powered streetlights
  - Nuclear power plants
  - Trash incineration for energy

- Water
  - Permeable pavement
  - Rainwater collection
  - Green roofs

- Food
  - Farming within the city
  - Greenbelts around the city

UK's Greenbelt System

Reducing Wastes

- Landfill Waste
  - Recycling
  - Incineration

Sweden – Recycling Balers

- Waste Water
  - Grey water recycling
  - Sewage sludge reuse in agriculture and incineration

Urban Form

- High density
- Walkable
- Green space & parks
- Building Design
  - Orientation
  - Green roofs
  - Building codes

- London
  - All Buildings built after 2011 have to be net zero
- Chicago
  - All flat roof have to have Green roofs

Seattle – Olympic Sculpture Park

Singapore - Nanyang Tech. Univ.

Sustainability in China

Issues:

- Air quality
- Transportation pollution
- Coal-powered energy
- Increases in urban population

Solutions:

- Goal: Ideally have 90% of all traffic as walking, bike riding, or public transportation.
- Satellite cities
- Wind Farms
- Solar Powered Lights
- TIANJIN and DONGTAN