The evolution of new towns in China: from industrial satellite towns to eco-cities

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outline

1. background
2. historical stages
3. development models
4. evaluation
5. eco-cities practices
6. conclusion
I. background
E. Howard in his book “Tomorrow: A Peaceful Path to Real Reform” proposed the concept of garden city as an ideal model of perfect blend of urban and rural attributes.
Welwyn, British garden city
New cities in Britain
Tablets in the new city plaza of Stevenage tells about the history of the city from 1946 to 1980.
Overview of Milton Keynes: a city layout based on road network links: www.networkrail.co.uk
Tysons Corner

New commercial cities at the edge of metropolis. In post-industrial age, sector of manufacturing service clustered in suburban areas, forming “new cities” which in nature do not fall into cities and towns.
Eco-towns in the UK

• Planning of 10 eco-towns proposed by Department Communities and Local Government, UK in 2007

• 75 bidding projects, most of which are modified versions of existing housing scheme proposals with a minimum of 5,000 to 20,000 household

• In 2009, a new Planning Policy Statement was prepared and published on 16 July 2009, describing the standards that eco-towns will have to meet include "zero-carbon" developments and should be exemplary in one area of sustainability, new design and architectures, and low-energy, carbon-neutral developments built from recycled materials.

• car-free, with pedestrian and cycle-friendly environments

• balance of living and employment, a minimum of 30% to 40% affordable housing in each eco-town

• There must be facilities and to develop residential area in an environmental friendly way.
II. historical stages
satellite towns in the 1950 – 1980s

- According to planning of Shanghai in 1948 and 1958, 5 satellite towns were announced as Minhang, Wujing, Anting, Songjiang and Jiading.

- By 1970s, new industrial towns took shapes with the initiation of Jinshanwei, Baoshan and other big industrial projects.
### Satellite towns in Shanghai

<table>
<thead>
<tr>
<th>城镇名称</th>
<th>主要产业</th>
<th>距人民广场（公里）</th>
<th>用地</th>
<th>人口</th>
<th>工厂企业</th>
<th>开始建设年份</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>现状（平方公里）</td>
<td>规划（平方公里）</td>
<td>现状（万人）</td>
<td>规划（万人）</td>
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<td>294.1</td>
<td>65.07</td>
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<td>闵行</td>
<td>机电</td>
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<td>50</td>
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<td>吴泾</td>
<td>化工</td>
<td>25</td>
<td></td>
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<td>嘉定</td>
<td>科研</td>
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<td>7.6</td>
<td>21.4</td>
<td>7.00</td>
<td>25</td>
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<td>安亭</td>
<td>汽车</td>
<td>40</td>
<td>5.0</td>
<td>16.7</td>
<td>2.70</td>
<td>15</td>
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<tr>
<td>松江</td>
<td>机床轻工</td>
<td>40</td>
<td>7.3</td>
<td>20.0</td>
<td>8.20</td>
<td>25</td>
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<tr>
<td>金山卫</td>
<td>石油化工</td>
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<td>10.0</td>
<td>71.0</td>
<td>10.00</td>
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<td>宝山</td>
<td>钢铁港口</td>
<td>20</td>
<td>44.8</td>
<td>105.0</td>
<td>24.00</td>
<td>50</td>
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In 1950s, industrial complexes in peripheral Beijing evolved into satellite towns.

1950s: "decentralized groups"

1990: 10 peripheral residential complexes
14 satellite towns
one city – nine towns in Shanghai

- Each town should have its own style.
Songjiang New Town, university town within it, and Thames Town as a residential enclave

Songjiang new city, college town and Thames Town
Beijing

11 new towns in 2004 Master Plan

Three major new towns of Yizhuang, Shunyi and Tongzhou
Linggang new town in Shanghai
new ‘towns’ as a new CBD
New Towns as new CBDs

Nanjing Hexi
Zhengdong (Zhengzhou East) new district / new town as a new CBD

New town as a new CBD

Zhengdong New District (CBD / new town)
Images from China Daily
development stages

• 1950s – 80s industrial satellite towns

• 1980s–90s extension of residential areas in to city periphery, but little attraction to residents

• After 2000: new comprehensive projects such as college towns, new towns of industry, service, technology and business

• After 2000: new-city-led development under globalization

• 2008: eco-towns and cities with low-carbon and ecological standards

• After 2010: investment platform under the name of new cities
III. development models
Chinese new towns and ‘edge cities’

Kunshan’s Huangqiao

Beijing’s Yizhuang
characteristics

• land development

• The market and the role of the state: administrative committee and New City Headquarters Of Develop Construction

• place marketing to attract investment

• A combination of Industrial development
Beijing’s 11 new towns and the ‘development belt’
Table 1 the composition of GDP in Beijing and various districts (2004) (Source: Beijing Basic Unit Census, 2004)

<table>
<thead>
<tr>
<th></th>
<th>Beijing</th>
<th>Haidian</th>
<th>Daxing</th>
<th>Tongzhou</th>
<th>Yizhuang</th>
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<td>0.1</td>
<td>9.7</td>
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<td>9.0</td>
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<td><strong>The secondary sector</strong></td>
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<td>Industry</td>
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<td>44.7</td>
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<td>public health, social security and social welfare</td>
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<td>1.6</td>
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<td>1.6</td>
<td>6.4</td>
<td>5.4</td>
<td>0.1</td>
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</tbody>
</table>
Residential and Industrial growth axes in Yizhuang
Yizhuang New Town Plan (2005-2020)
the space of governance
governance

• led by the management committee

• Mode of development: simplified structure of governance close to market

• Yizhuang new town of Beijing located in economic and technological park, originally under the municipality government but with some independence.
types of new towns

• large residential areas, mega-projects

• industrial new towns

• suburban business centres (CBDs)

• University towns, high-tech parks / new towns, specialised areas (e.g. mega project of financial district)
Demolition of Tangjialing

Tangjialing New Town
business new towns

- Kunshan Huaqiao new town
- edge city, sub-center of business
new towns in Guangzhou as investment platforms

- “investment platform”
- Huangpulingang Business area, Haizhu Eco Town
- ”123” functional structure: 2 peripheral new cities to decentralize population, “9 towns” in central area, poly-center
- initiative of district governments
- mega projects
Expansion of the city into new districts and in-between development areas
IV. evaluation
positive effects

• To relieve congestion in old city area and decentralize population (Nanjing)

• Combination of industrial developments instead of for pure function of living

• Good infrastructure and transportation facilities

• Explore eco-development
negative effects

- Land occupation, High density residential area but low-density industrial land

- TOD Mode: Urban expansion, long distance commuting

- Car-dependence

- Low place attachment and lack of cultural and entertainment facilities
Eco-town plan in south Zhenjiang
V. eco-city practices
Marriage between ecology and new towns?

- Internationally, pressure on emission-cutting

- Nationally, control over urban expansion, especially conversion of rural lands into construction lands

- Eco-city becomes the new theme after “college towns”

- Locally, new opportunities in investment and industrial upgrading and transformation

- International and national investment and design to promote “eco-reform” of planning
Dongtan in Shanghai

- No. 1
- 84 km²; 2020: 80,000 people
- Design of Arup
- Shanghai Industrial Investment Corporation (SIIC)
- compact city
- carbon balance

difficulties

- Mechanism: index of land use
- Sustainability of environment and society
- Property development to avoid sensitive environment
- Transportation inside and outside the area
- Governance: relations between central, local governments and enterprises and communities
- Cost of construction due to ecological standards, slim profit
Sino-Singapore eco-cities

Comprehensive Mega-projects by the State

- 30 km²: about 1/20 of Singapore
- Between Hangu (20 km²) and Tanggu (10 km²),
- A joint investment of 30 billion yuan
- 50-50% joint investment company
- Non-arable land: 1/3 saltpan, 1/3 deserted beach, 1/3 polluted water surface
- Neighbourhood unit, eco-cell
- Industrial parks and producer services

Source: news.sohu.com, 2009
Caifeidian eco-cities

residential area for large state-run enterprises

- relocation of Shougang Group
- 74.3 KM², 800,000 people
- Design of SWECO
- detailed index of planning

Source: people.com
Guangming District of Shenzhen

- Eco-economy
  - 2007, merge between Guangming and Gongming two street offices
  - 156.1 km²,
  - 2010, low-carbon city example by MHRUC
  - Industrial clusters, eg. LED
  - “Ecological high-tech new town”
  - Reflect the transition from earlier model to a new mode of development

Source: sznews.com
national pilot zone resource-saving and environmental-friendly society: Changsha-Zhuzhou-Xiangtan city group

out of a mode led by land development?

Changsha Dahexi (River West) Pilot Area
The aspects of eco-city development

• Upgrading or new development

• Combination of residential and industrial development

• Location: accessible, under-developed, enclave kind of new town
• The land: land quality, rehabilitation of deserted lands or farmlands

• Actors: local government + central gov. + overseas investors + planners + ⋯ and partnerships?
Dynamics for eco-city development

- As place promotion – helping a positive and futurist image
- As local growth pole
- helping the economy move up the ladder of service industry
- As entrepreneurial endeavour – helping the joint development
- As a national exemplar – helping to spread the sustainable development approach to other places
- As a solution to cutting greenhouse gas emission
problems

• Exemplar, promotion, futuristic city (not even in utopia sense)

• newest, far away from problematic inner areas, location, while neglect the valuable areas,

• disjuncture between economic and social sustainability

• New built rather than retrofit

• Contingent upon local government’s decision
Exemplar or ‘ordinary practice’

2009 ISOCARP Award: Changxingdian low carbon city planning

2010 ISOCARP award: Planning for Low Carbon Regional Urban-Rural Systems: Zhengbian New District Plan, Zhengzhou City

Arup has won the Sustainability Award at the British Business Awards 2010

Source: arup web page
More than 200 cities proposed their eco-city plan with high-technological input.

Property development under the name of eco-city, “green leap”

Vice-minister Qiu Baoxing: to avoid knockoff eco cities

first standard of eco city “a compact mix-use of land”

Subsidy from Ministry of Housing and Urban-Rural Development
Challenges

Challenge One: eco-city as a tool of development, apart from the trail of “ideal (society) city”.

current mode of urbanization and urban development

crisis (climate change)

Ecological modernization

devolution-oriented eco-city

“eco but not low-carbon”
Challenge Two: how to improve life quality meanwhile retain low-carbon development

- Income increase, impact on environment
- Demand for high-quality living environment
- Demand for energy

Energy consumption in residential buildings
The Future of eco-cities

• The eco-cities should be ‘sustainable places’, they should not be ‘enclaves’ of the rich, or ‘technoburbs’

• Not just a technical solution, but also a social project: who builds its, for whom?

• Governance in the eco-city is critical towards its success (institutional arrangement)
VI. Conclusion
Ebenezer Howard: garden city

Le Corbusier: future city

High-density suburban area

High-density development in Chinese New Towns
characteristics of Chinese new towns

• A special type

• Combination of garden city (in city fringe areas) and future city (high-density)

• Strong support of government in terms of planning and marketing of property
future trend

• planning as a ‘contract’, design competition, professionalization of new town design

• urban mega-projects。

• Corporation and investment platforms