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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



Welwyn, British garden city



New cities in Britain



1946-1980

During these years the
Stevenage Development Corporation was
responsible for planning and building
the New Town of Stevenage



LEWIS SILKIN
1889-1972

Tablets in the new city plaza of Stevenage
tells about the history of the city from 1946
to 1980.

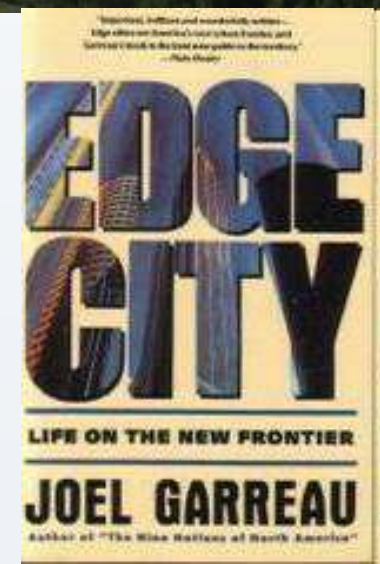


Overview of Milton Keynes: a city layout based on road network
links: www.networkrail.co.uk



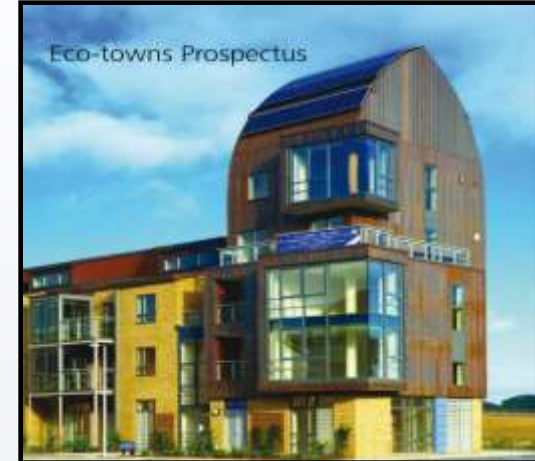
Tysons Corner

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



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

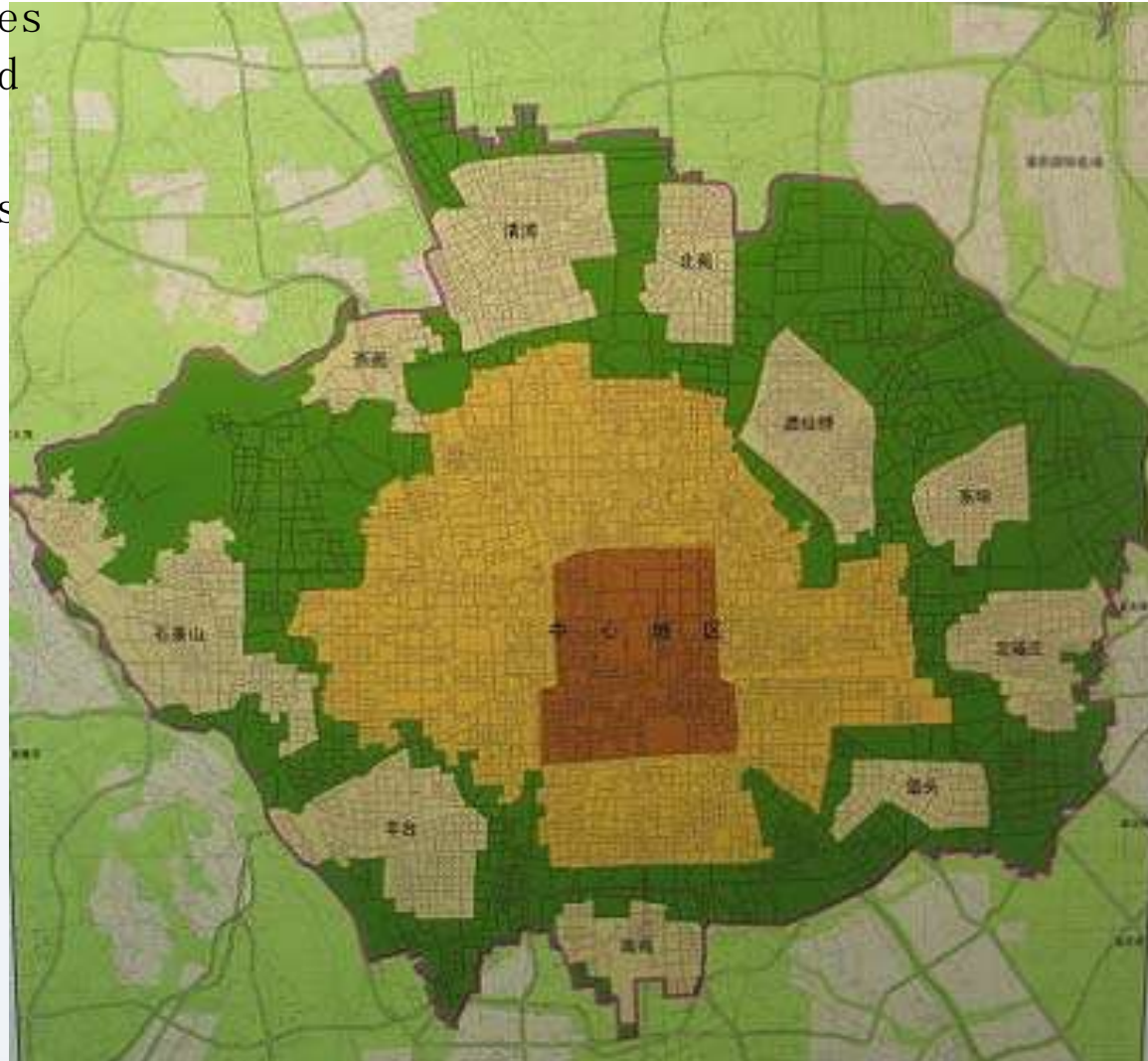
城镇名称	主要产业	距人民广场 (公里)	用地		人口		工厂企业			开始建设年份
			现状（平方公里）	规划（平方公里）	现状 (万人)	规划 (万人)	家	职工 (万人)	工业产值 (亿元)	
合计			95.4	294.1	65.07	210	803	44.73	287.2	
闵行	机电	32	20.7	60.0	10.65	50	100	10.29	22.3	1958
吴泾	化工	25			2.52					1958
嘉定	科研	33	7.6	21.4	7.00	25	112	5.59	20.0	1960
安亭	汽车	40	5.0	16.7	2.70	15	99	2.03	49.7	1959
松江	机床轻工	40	7.3	20.0	8.20	25	124	3.82	7.8	1960
金山卫	石油化工	70	10.0	71.0	10.00	45	92	6.10	41.6	1972
吴淞宝山	钢铁港口	20	44.8	105.0	24.00	50	276	16.90	145.8	1983

Peripheral residential complexes

In 1950s, industrial complexes
in peripheral Beijing evolved
into satellite towns

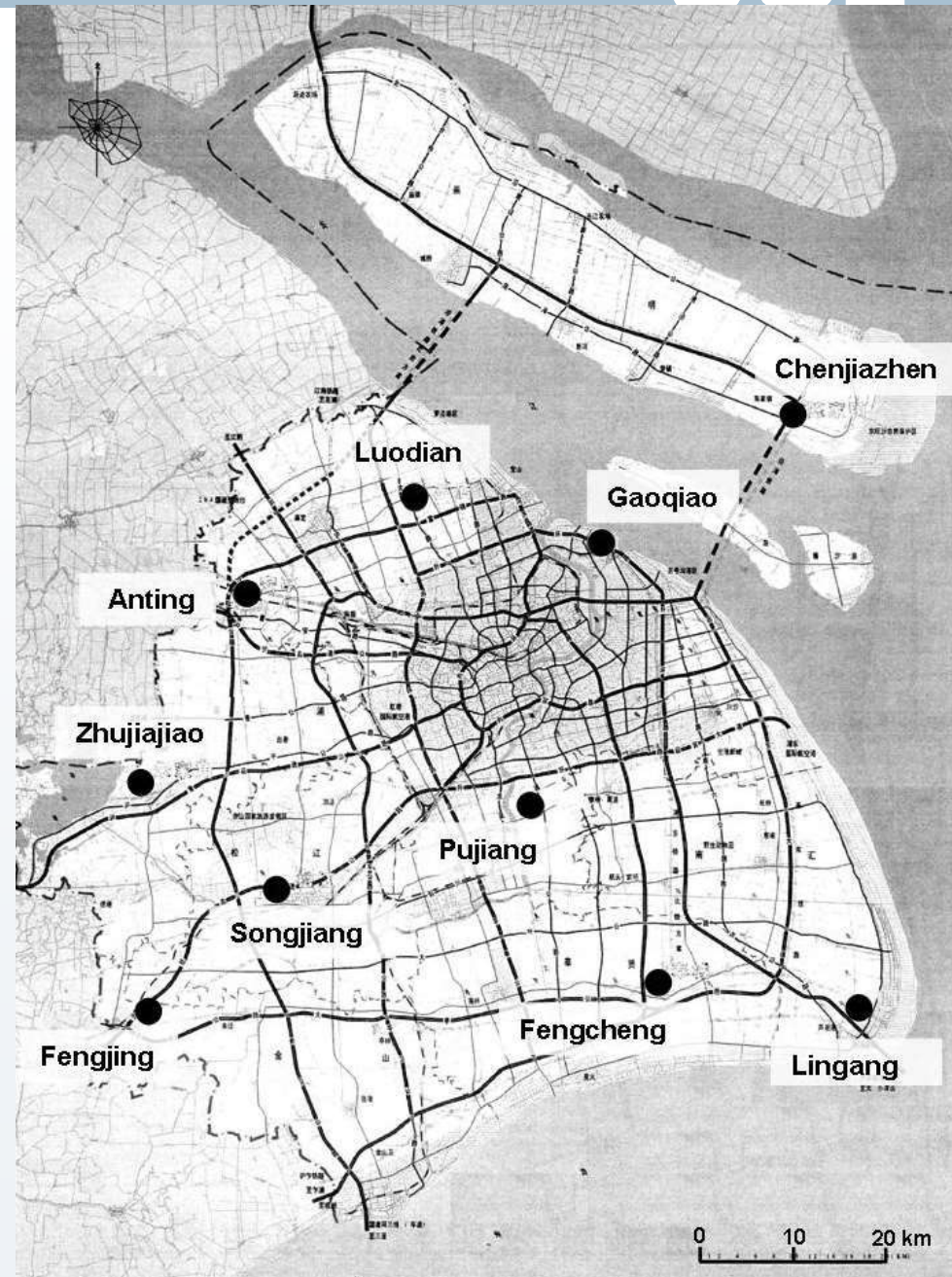
1950s: "decentralized groups

1990: 10 peripheral
residential complexes
14 satellite towns

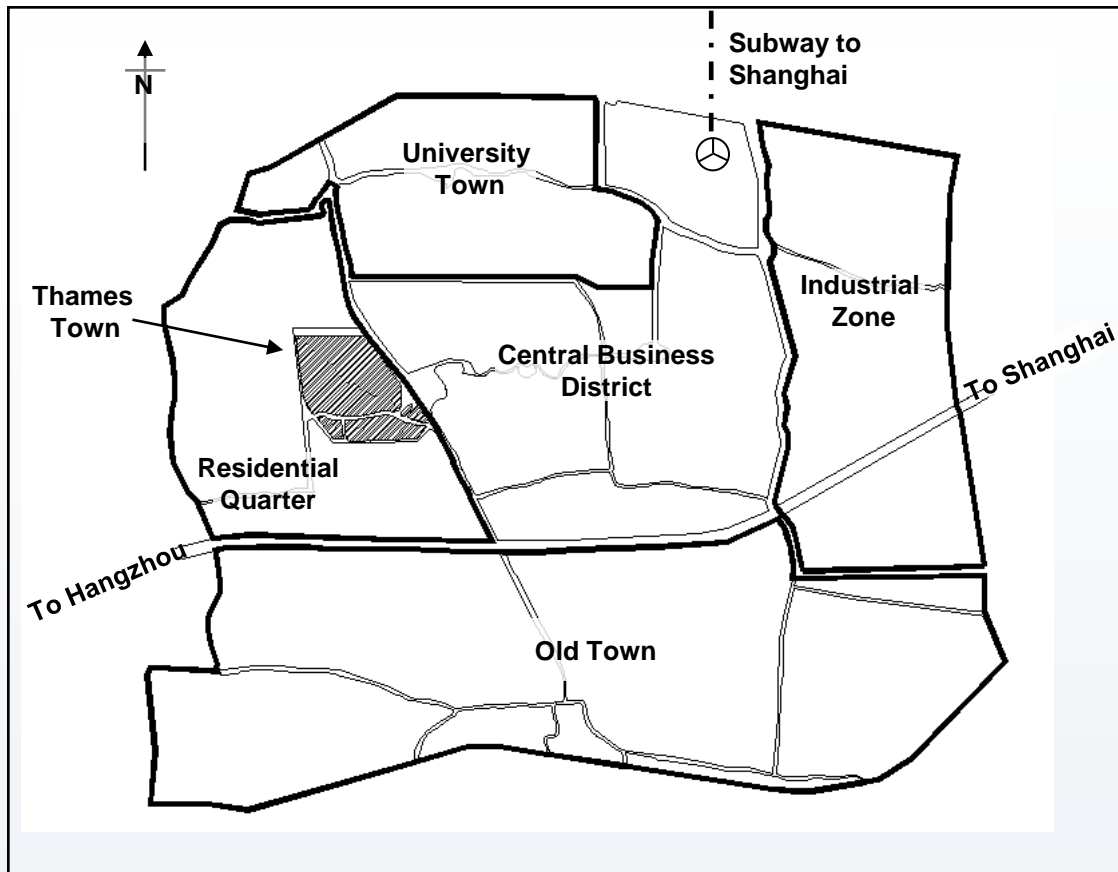


one city - nine towns in Shanghai

- Each town should have its own style.



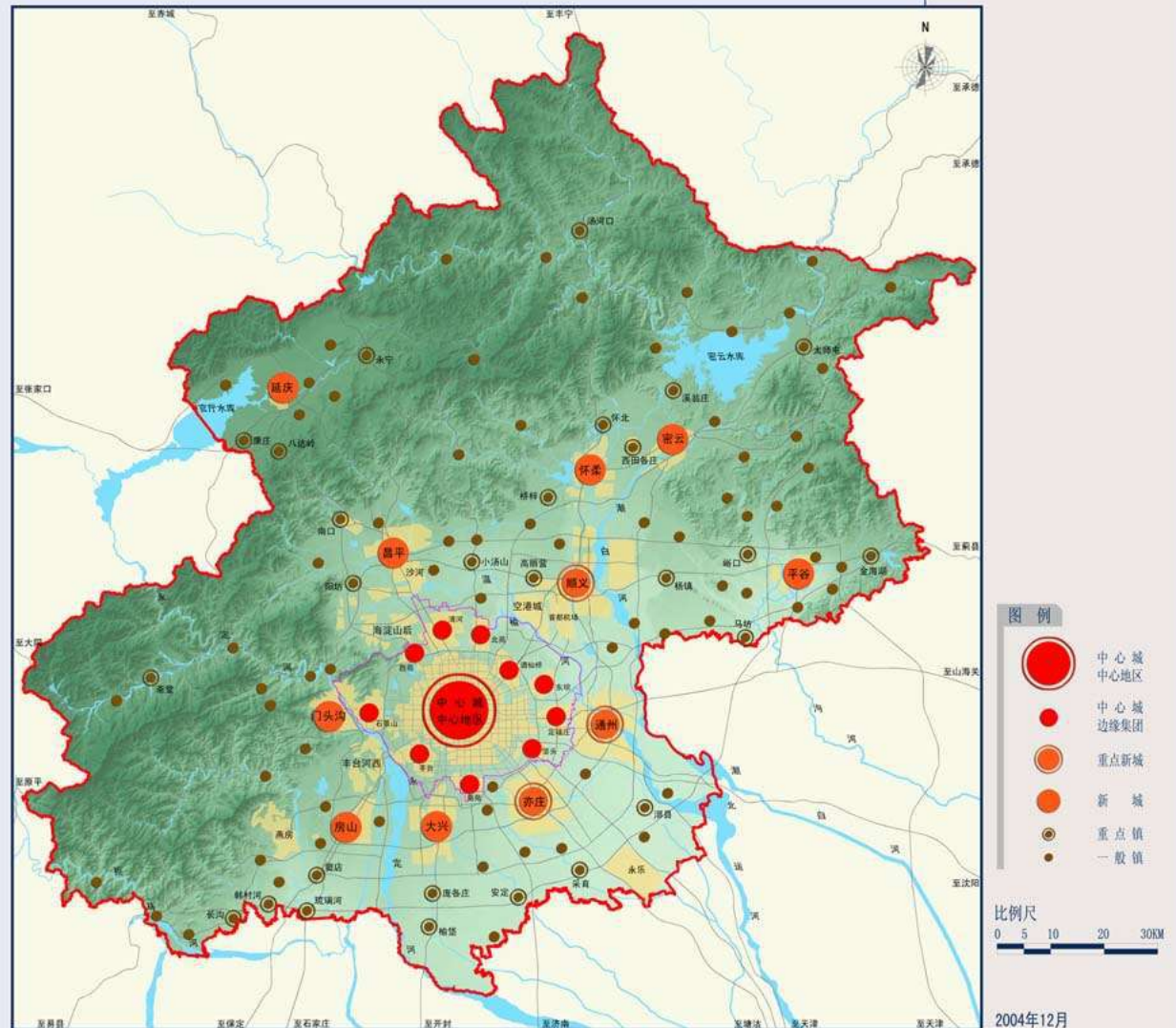
Songjiang New Town, university town within it, and Thames Town as a residential enclave



Songjiang new city, college town and Thames Town

北京城市总体规划（2004年-2020年）

图05 市域城镇体系规划图



Beijing

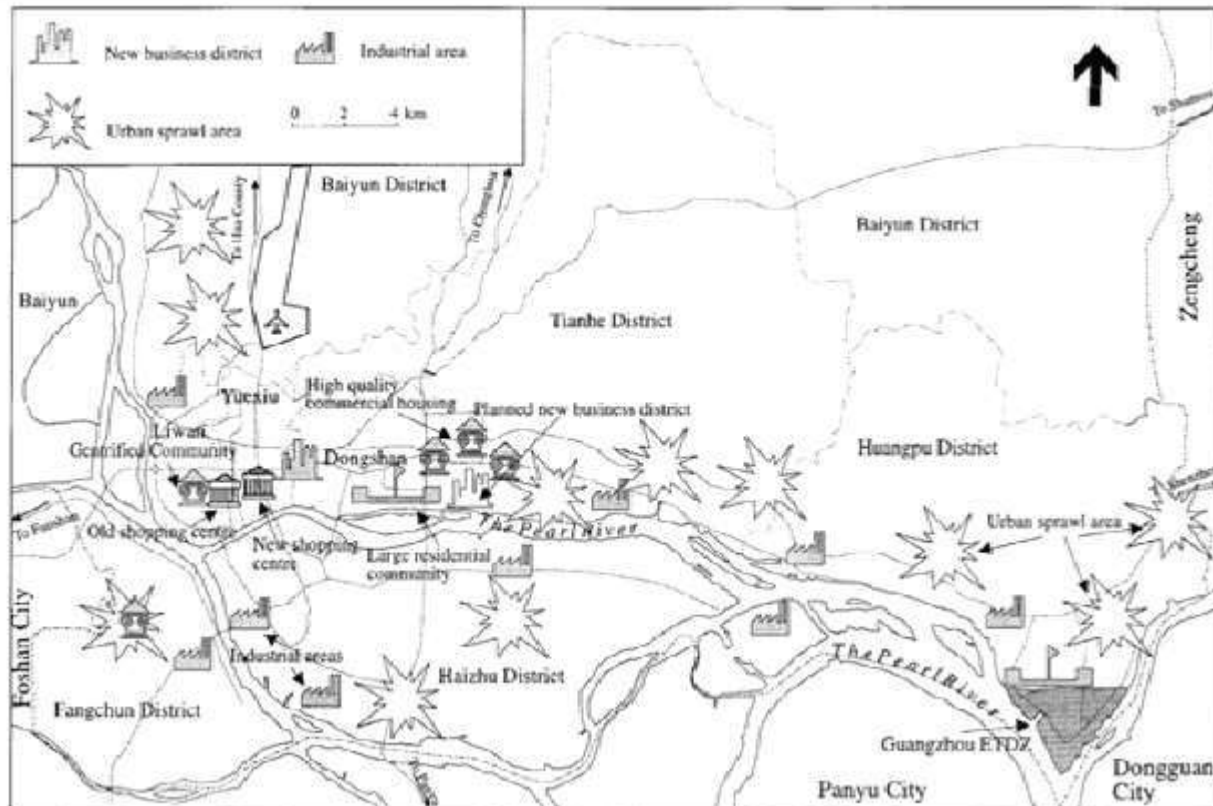
11 new towns in
2004 Master
Plan

Three major new
towns of
Yizhuang,
Shunyi and
Tongzhou



Linggang new town in Shanghai

new 'towns' as a new CBD



1993- Guangzhou

from wiki



New Towns as new CBDs

Nanjing Hexi

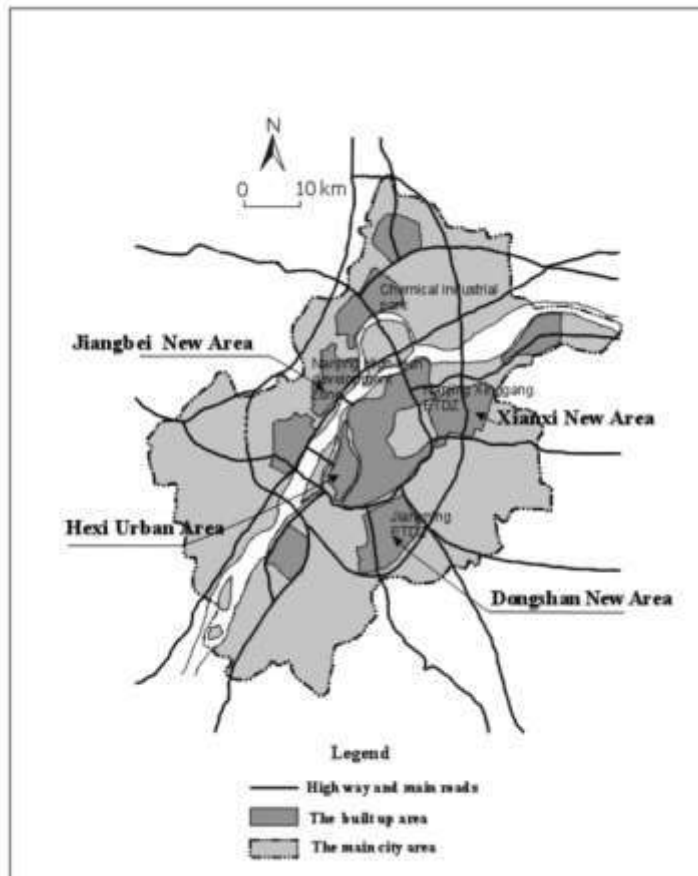


Fig. 2. Spatial strategy of the urban development in Nanjing.



Figure 1 The location of Nanjing Olympic New Town

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



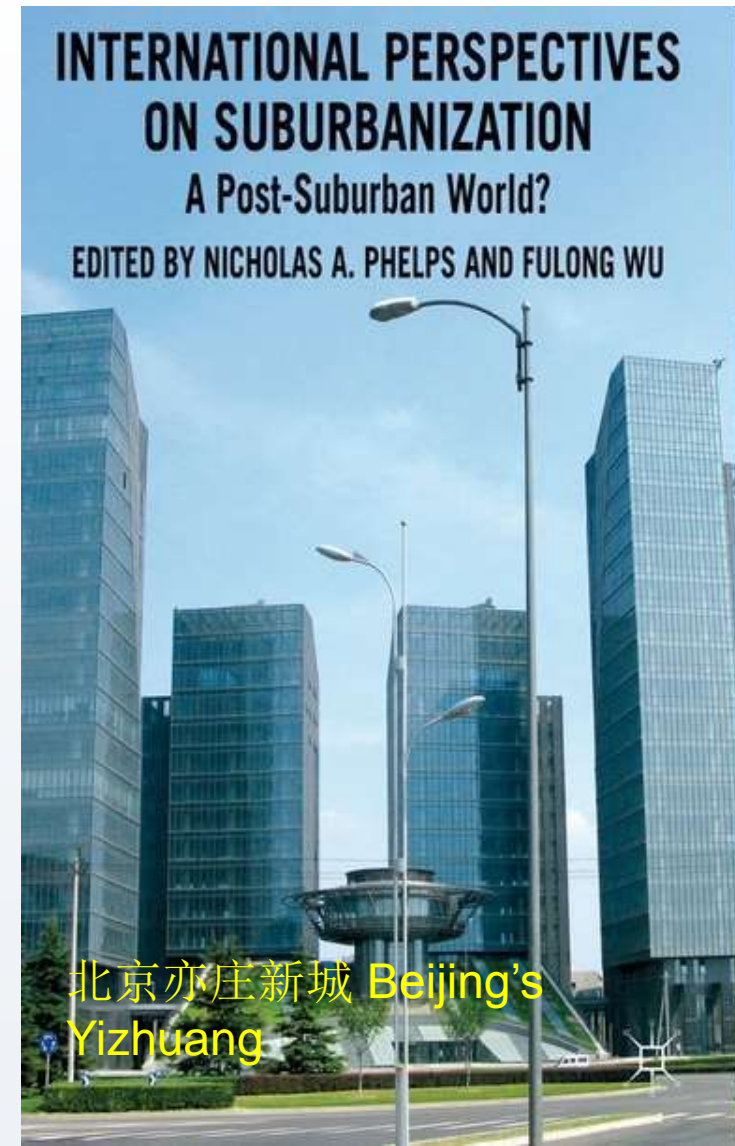
development stages

- 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, news 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



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'



Yizhuang as an industrial new town

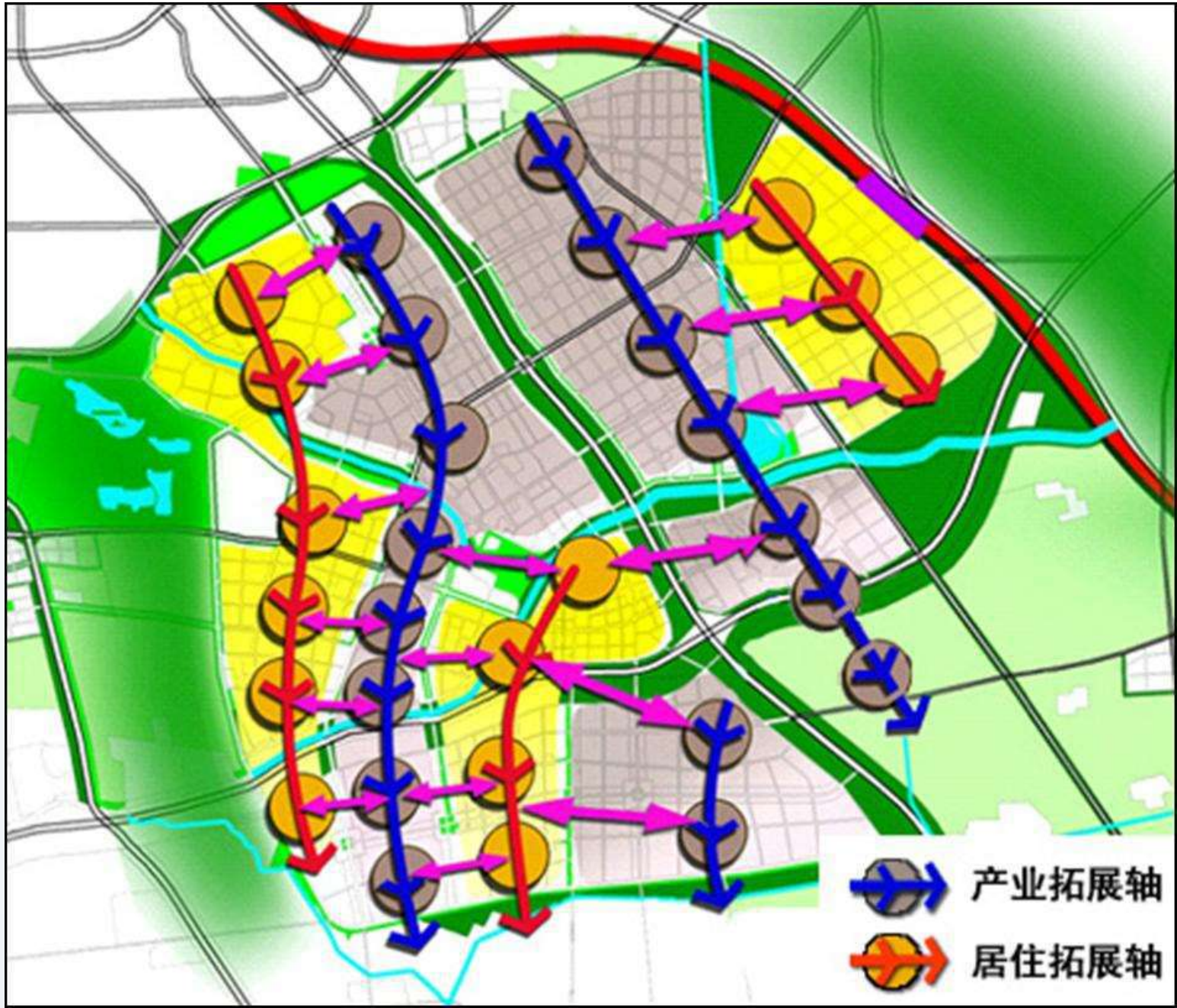
Table 1 the composition of GDP in Beijing and various districts (2004) (*Source: Beijing Basic Unit Census, 2004*)

	Beijing	Haidian	Daxing	Tongzhou	Yizhuang
Total	100.0	100.0	99.9	100.0	100.0
The primary sector	1.6	0.1	9.7	9.0	
The secondary sector	30.6	21.8	44.7	49.6	84.0
Industry	25.7	16.6	37.1	40.2	83.5
Construction	4.9	5.2	7.6	9.4	0.5
The Tertiary sector	67.8	78.1	45.5	41.4	16.0
transport, logistics and postal services	5.9	1.9	2.0	1.3	4.1
communication, computer and software	7.4	12.1	0.0	0.1	5.3
wholesale and retail	9.7	9.3	4.3	5.6	2.1
hotel and catering	2.7	3.0	1.8	2.5	0.2
finance	11.8	9.9	6.8	5.4	0.1
real estate	7.2	7.3	12.3	9.5	2.1
leasing and commercial services	4.6	4.5	1.2	1.6	0.5
scientific research, technological service and geological survey	4.6	9.6	0.8	0.6	0.9
water management, environment and public utility management	0.6	0.9	0.6	1.1	0.1
residential service and others	1.3	1.2	1.6	1.7	0.1
education	4.7	11.2	5.9	4.7	0.3
public health, social security and social welfare	1.7	1.3	1.6	1.7	0.0
culture, sports and recreation	2.3	4.3	0.2	0.2	0.1
public management and social organization	3.3	1.6	6.4	5.4	0.1



office development in Yizhuang

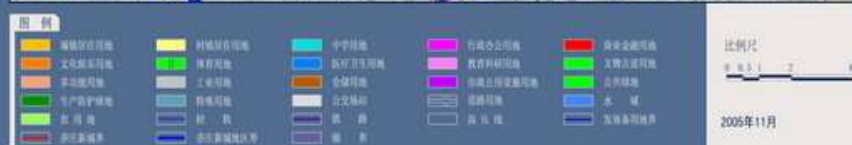
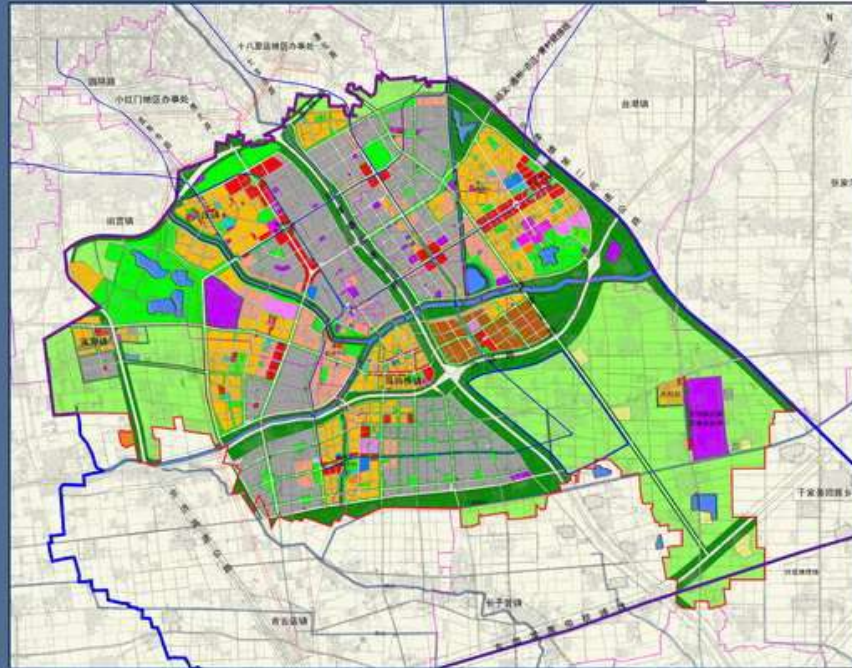




Yizhuang New Town Plan (2005-2020)

亦庄新城规划 (2005年-2020年)

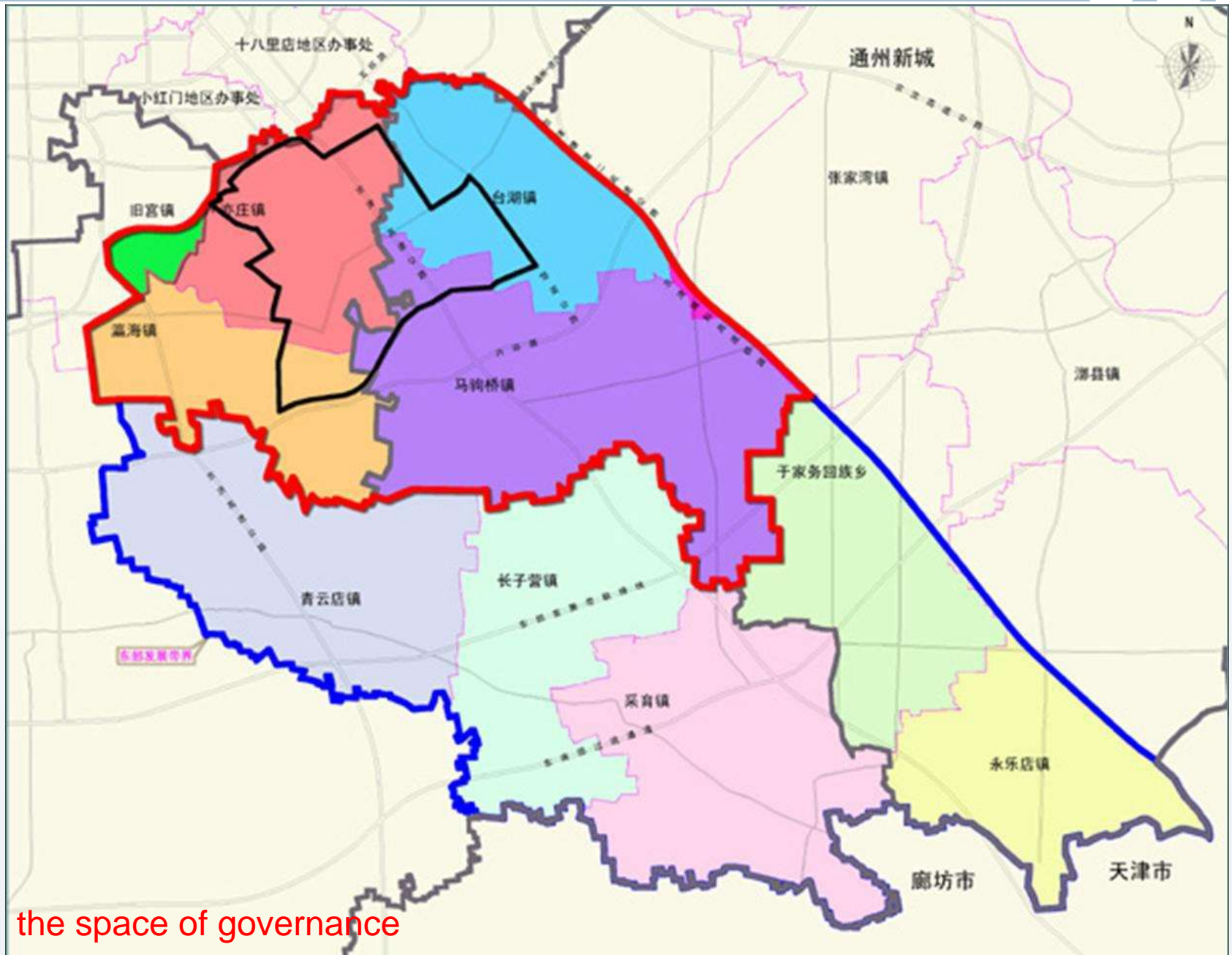
图15 新城用地规划图



亦庄新城规划 (2005年-2020年)

图13 功能结构示意图





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

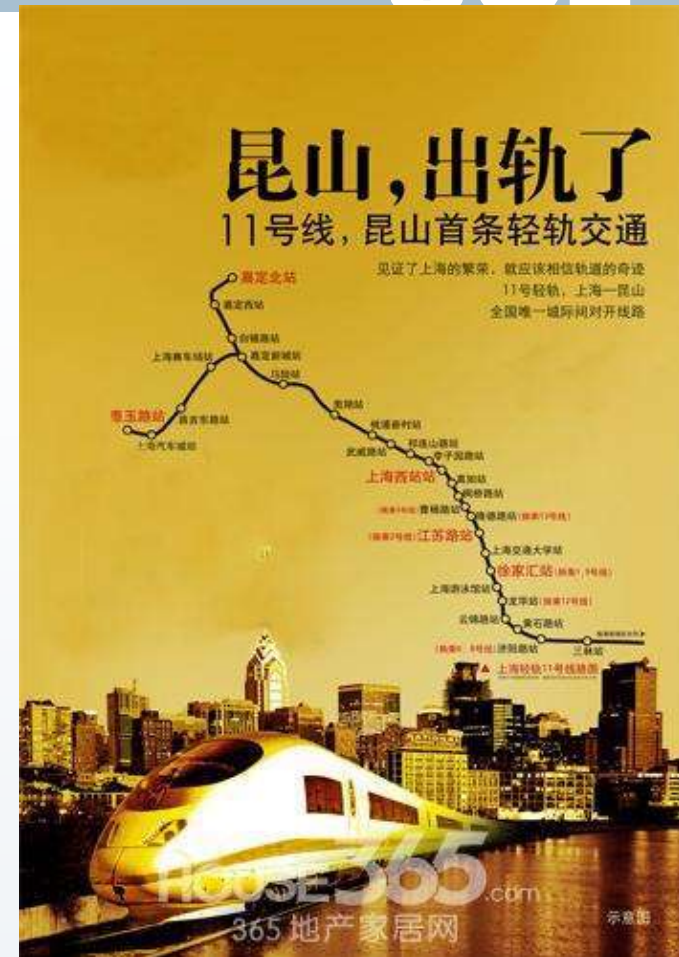


Tangjialing New Town



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



Zheng Bian New City



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

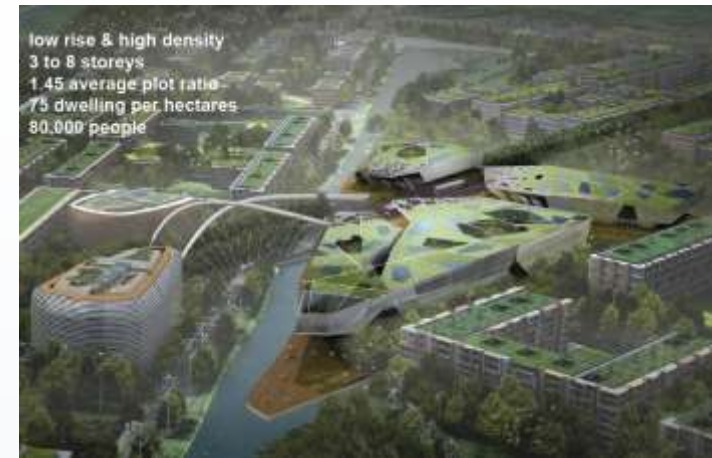
Dongtan in Shanghai

- 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



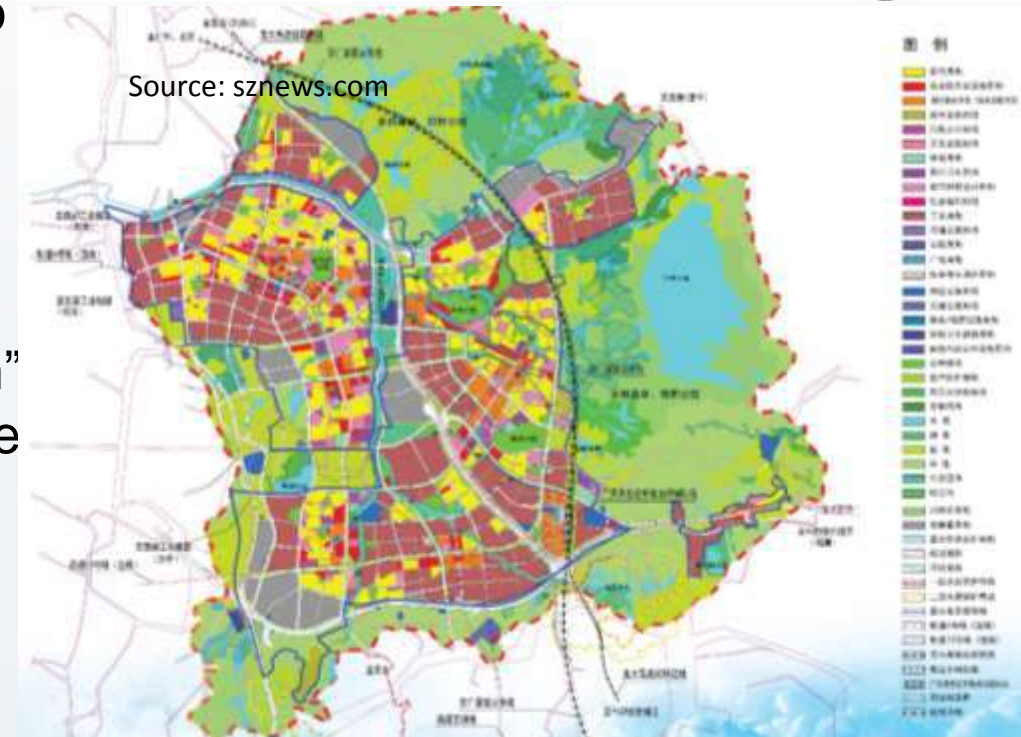
Source: people.com



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

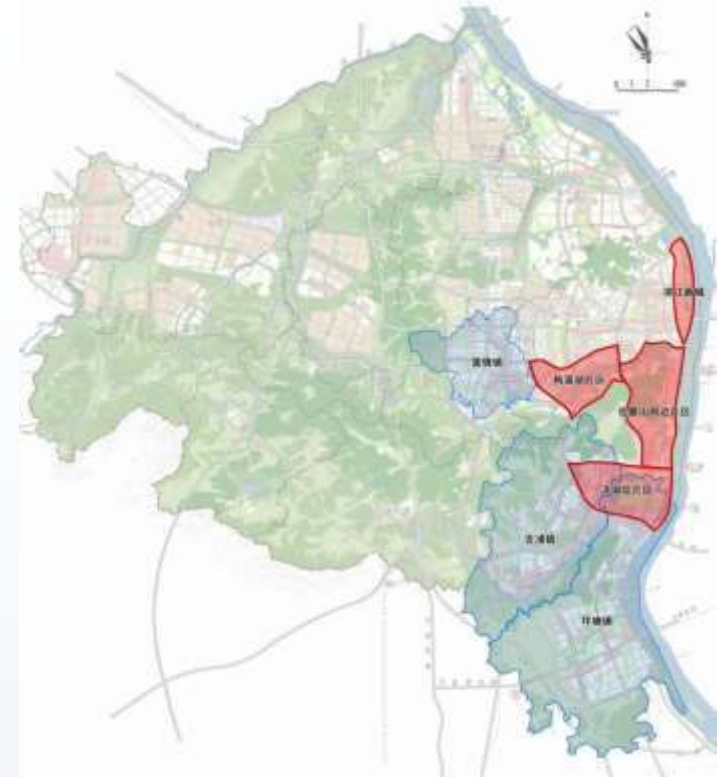


Source: sznews.com

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

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

Source: arup web page

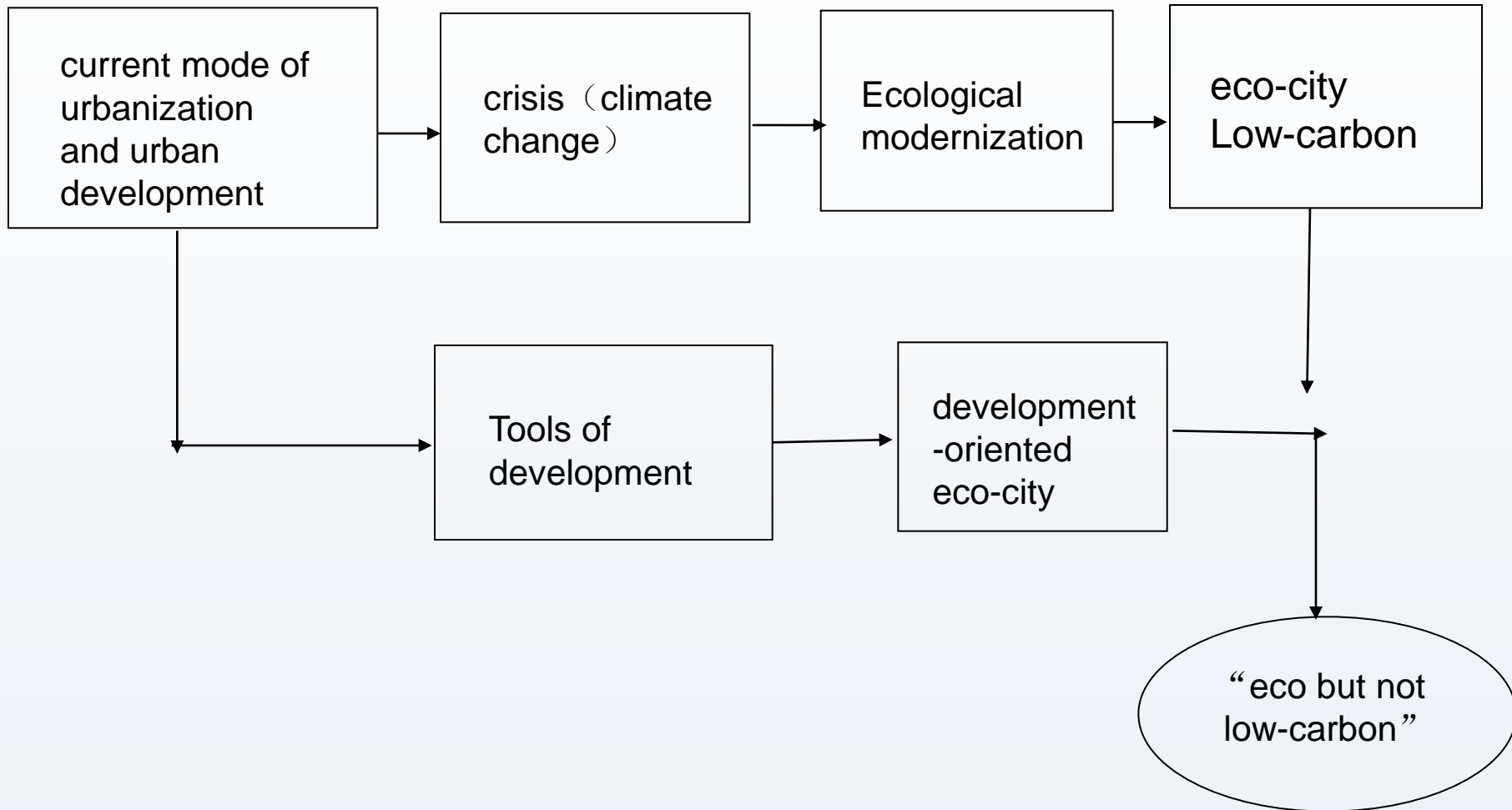
2010 ISOCARP award:
*Planning for Low Carbon Regional Urban-Rural
Systems: Zhengbian New District Plan, Zhengzhou
City*



“eco- revolution”?

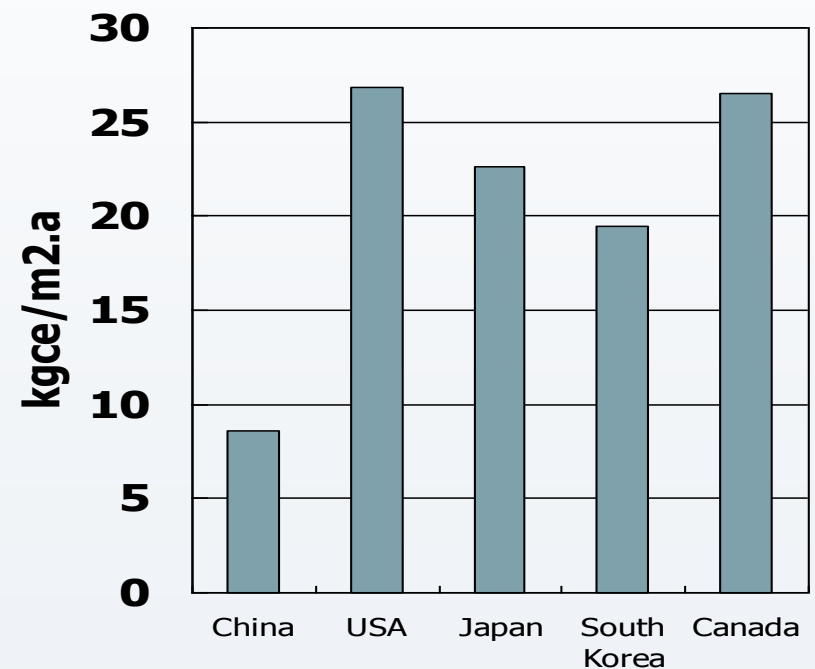
- More than 200 cities proposed their eco-city plan with high-technological input.
- Property development under the name of eco-city, “green leap”
- Vice-minister Qiu Baoxing: to avoid knockoff eco cities
- first standard of eco city “a compact mix-use of land”
- Subsidy from Ministry of Housing and Urban-Rural Development

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



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

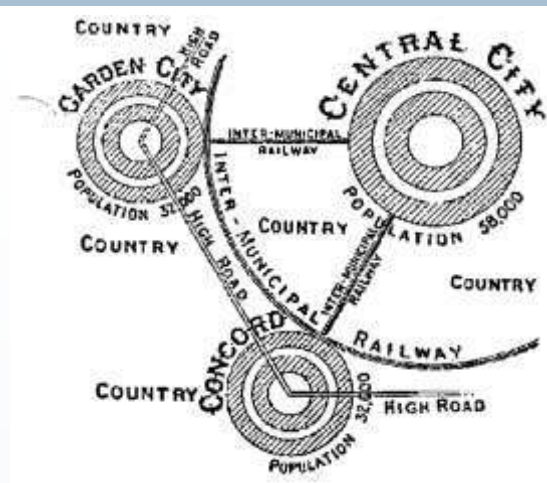


Energy consumption in residential buildings

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