

The Research on New Town Development Strategy in Metropolitan Outskirts: A Case Study of Liangzhu New Town

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1 ABSTRACT

New Towns in the outskirts of city has existed for a moment within the period of China urbanization, and lots of experiences are accumulated during the practices while building this system.

This essay is mainly established by the first multifunctional outskirt town, as well as the research object --- Liangzhu New Town, and it also make dicussions and summaries about the concept of design, the structure of this project, the operation process, the mode of operation and etc.

Overall, by combining the objective requirements of the outskirts new town development, which is affected by the metropolitan suburbanization, this paper explores a smart way in the construction of the new style urbanization, as well as the solution to the problems which may happen during the construction of the outskirts new town.

2 INTRODUCTION

In the past 30 years, China went through a fast track of economic development and urbanization process. From 1978 to 2009, the percentage of urbanization in China increased from 10.6% to 46.6%. State Council Development Research Center' study predicts that another 300 million people will move from countryside to cities in 20 years' time in China. Urbanization in China has shown its irreversible trends in various cities, which means the current way to promote urbanization is probably incorrect. The rapid growth of China's urbanization rate strongly depends on the low cost of land and labor, lack of public utilities and infrastructure. Moreover, China's land urbanization is significantly faster than population urbanization. One research points out that scale growth elasticity of urban land of China is 1.36-2.30, and this number is much higher than the world recognized reasonable limits of 1.12(Wu, 2010). Entering the 21st century, there is a tendency for China to find a smart way to improve the traditional way of urbanization. Such trends can be summarized as the following three points:

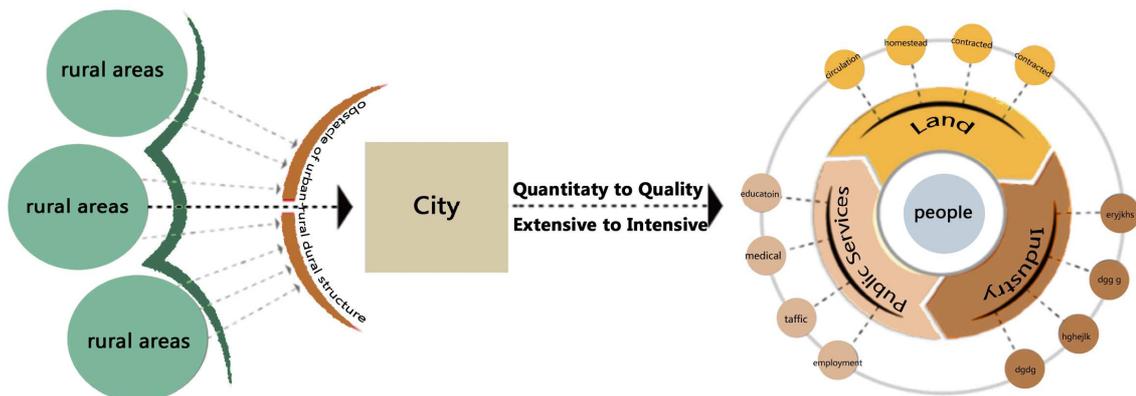


Fig. 1: Connotations on a new-style urbanization that puts people at the center

- (1) The existing urban-rural dual structure is the main obstacle to integrated development. Efforts must be made to allow farmers to participate in China's urbanization, and allowing farmers to make free choice in the migration.
- (2) Build a smart new-style urbanization that leads people to the center. Reform of the hukou (or household registration) system will accelerate the process of farmers become urban residents.
- (3) Form of urbanization changes from the extensive type to the intensive type. It is necessary to find a smart way to change from the tradition growth.

On the stage of new-style urbanization, there is a particular requirement of transformation. New-style urbanization strategy for the construction of the new town is full of opportunities, as well as lots of challenges.

The opportunity mainly appears in the following two aspects:

- (1) New towns will become the central space carrier of the new-style urbanization. Small cities and towns will usher in much more development opportunities and development resources.
- (2) By breaking the urban-rural dual structure, a new situation will be created in the urban and rural areas. The new town is in the forefront of urban and rural areas, and it will develop further in the process of promoting the development of urban and rural.

The main challenge reflects in the following points:

- (1) The traditional development pattern which relies on the land finance will be limited.
- (2) Under the situation of limited finance, how to solve the problems of migrant workers' housing, public services, and social security demand will be the biggest challenge.
- (3) The traditional mode of urbanization of land is limited. Urban and rural development need to rely on inefficient use of land to achieve the increase of construction land index, so that the cost and difficult in the construction of new towns will greatly improve.

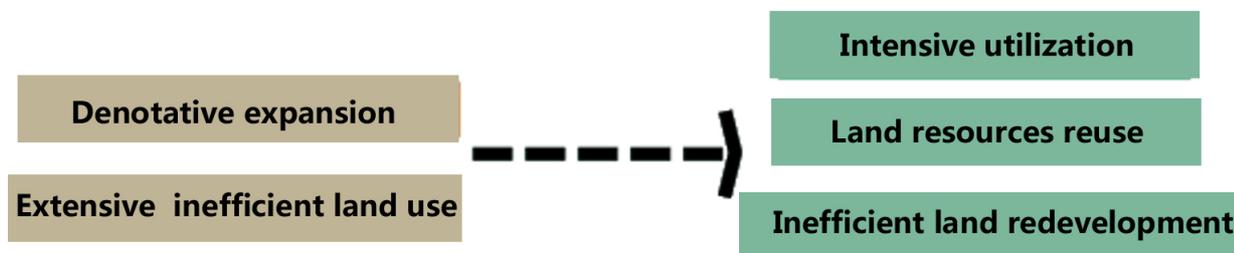


Fig. 2: A smart way of Urbanization

Towns in China has traditionally been the government's development and operation of the object. With the growing area of city suburbanization, however, private-developers oriented large-scale development of new towns in metropolitan outskirts becomes another new type of suburban development. This approach requires the size of initial land is large enough, and in the proper scale. These new towns should be able to achieve self-sustainable, instead of 'dormitory suburbs'. Private companies instead of government are responsible to real estate, municipal infrastructure and public transportation as a whole in this project, including planning, construction and management. The construction of suburban new town which is provided by private company has already seemed as a kind of brand-new concept, and it has been wildly accepted in China. Although the traditional extensive development mode has exposed a lot of problems, it is lack of operable case and model can be used as a great reference.

It is meaningful to draw lessons from private companies in the development of suburban new towns. How to accumulate the capital and improve the function and scale effect of the city through the development of suburban new towns is a new topic that people are concerned about. Situated north-east of Hangzhou, Liangzhu New Town is a residential project which is specially built by a private company Vanke Group in China. This paper introduces Liangzhu new town as a model project for private development, and it highly emphasizes the attention given to public facilities and a responsibility for the future of the community. As a dynamic case, Liangzhu new town may not be the standard "answer" to the ideal new town. It is enough to become a smart way for the consideration of China's new-style urbanization.

3 A GLIMPSE OF LIANGZHU NEW TOWN PLANNING

3.1 The town of Liangzhu

Hangzhou is the capital of Zhejiang province, as well as the political, economic and cultural center. Surrounded by enchanting natural beauty and abundant cultural heritages, the city is known as 'Heaven on

Earth' and it's one of the China's most important tourist venues. Liangzhu is one of the most renowned features in addition to the West Lake of the city.



Fig. 3: Location map of Hangzhou and zhejiang

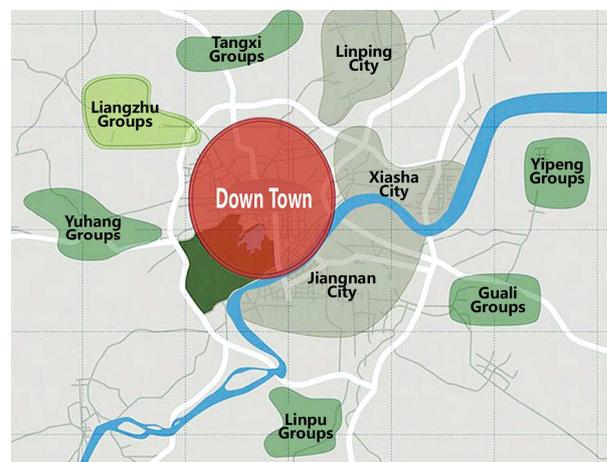


Fig. 4: Hangzhou strategic planning layout

In 2001, the master plan of Hangzhou made a determination about the leading industry of the Liangzhu group as leisure travel. Liangzhu New Town has been included in the key tourism projects of Zhejiang province. As the same time, Liangzhu New Town has the unique natural resources endowment which has wonderful connections with residential patterns and leisure tourism. The special location makes it is possible to create more interesting lifestyles in this new town than big cities. As a result, Liangzhu New Town becomes the new town construction exploring 'pilot' during the progress of Hangzhou new-style urbanization. It also carries the dual requirements of internal and external in the process of regional development. Liangzhu New Town is focusing on such a goal: Efforts to create a vibrant town with multifunctional integration, diversification of living, full employment.

Around the year 2000, Vanke Group started the construction of Liangzhu New Town of 8 sq. Km, and the skeleton of the new town was formed after 10 years' intensive development. Derived from the reformist ideas of Ebenezer Howard, and Liangzhu New Town's planning follows this philosophy, "A self-contained development with a balance of commercial, educational, social, and cultural institutions that satisfy all the needs of families and individual alike.": On spatial aspect, a village scale can provide more comfortable life, as well as coexisting with nature. Liangzhu New Town is divided into a number of different features and various themes of villages. In order to make a comfortable walking distance between the public facilities and open space, the New Town offers a variety of orchard road as the connections. From the function aspect, this community has plenty of advanced infrastructure to provide the residents here a better city life in countryside. Residents can have all their pervious daily activities here, such as catering, entertainment and sports. However, from the perspective of the whole town, there are different culture, tourism, leisure, and life supporting facilities, for instance, Liangzhu museum, resort hotel, shopping mall, parks, hospitals and

schools, all of these are strewn at random distribution. These facilities form a more completed system of the Liangzhu New Town.

3.2 The scale of the Liangzhu new town

The project covers an area of nearly 800 ha, which is consist of more than 400 ha natural landscape, 230 ha residential land, 80 ha tourism land and about 60 ha public facilities land. This entire project has eight series theme villages, including apartments, row houses, villas and other various products. The population is approximately 35,000 at built out, and the goal is to have 8,000 jobs on-site.

3.3 Land operation

On the outskirts of city, whatever slowly peripheral spread or ‘leaps and bounds’ space development, considering the low cost of land construction, Vanke Group hope this project can get a benefit through large-scale land development. So that the company can get control of the regional sustainable development. In 2000, Yuhang district government make an agreement on selling 800 ha to Vanke Group for 15 million dollars. All fees including the construction of roads, drainage, sewage ditch, parks and other infrastructures shall be borne by the developer.

3.4 Location of the project

This project is located on northeastern part of Hangzhou, Liangzhu New Town is 20 km far away from the city center, and 2 km to the type site of Liangzhu Culture (3400-2250 BC) which was the last Neolithic jade culture in the Yangtze River Delta of China. At east are Tiaoxi River and Tianmu Mountain range, and the Beijing-Hangzhou Grande Canale is going across Liangzhu County, Expressways of Shanghai to Hangzhou and Shanghai to Nanjing also have entrance in this region. Xuan hang railway and 104 National Road have transit in Liangzhu area. Environmental landscape is preserved to be original in this region. The site sits within a spectacular setting, with forested mountains to the northwest and the Liangzhu River to the southeast. Be richly endowed by nature of the geographical location, cultural resources, ecological tourism resources, this region has an excellent conditions of the town development, which make it become one of the most potential development place of Hangzhou.

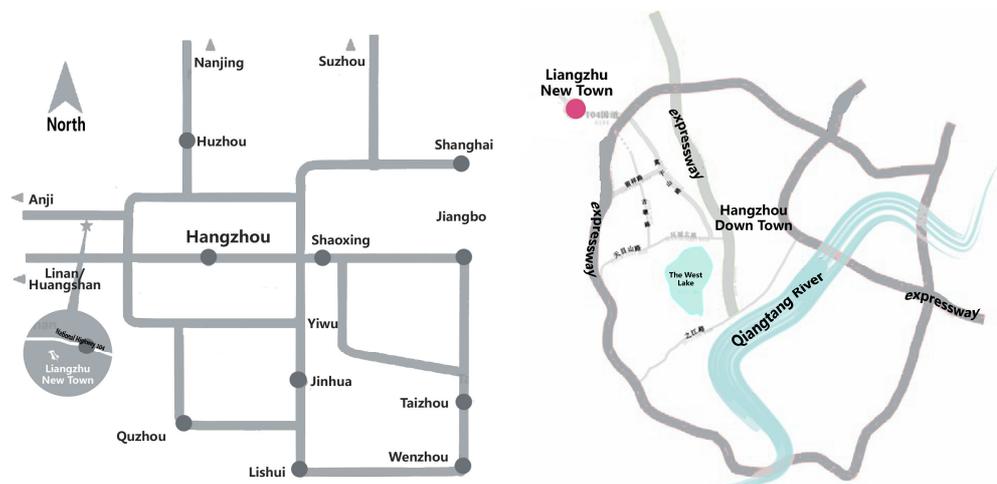


Fig. 5: Traffic zone map of Liangzhu New Town

3.5 The goal and principle of the project

As the continuously expansion of modern industrial cities, different kinds of “city diseases” gradually appear, such as the environmental pollution in urban area. Nature is leaving our city farther and farther away, which causes the natural daily life environment become most of people’s ideal living. “Let nature immerse into our life” is a pastoral dream between urban and rural areas, harmoniously dissolve into the surroundings; keep a proper population density, keep the balance of residence and working place. A new kind of infrastructure and industry without depending on the central city. Central city and country city are connected by convenience transport with radiative and circular shape. On the basis of this ability competition, it achieve lots of planning concept, such as countryside design, functional combination, and the revolution of village.

Following the traditional city special construction principle, including low-density, small scale, humane, close to nature, organic grow. Founded a comprehensive organic city body, which collected travel, residence and venture all together, which is also self-organization, self-circulation and self-balance. Since the beginning of 2000, Vanke Group hopes to achieve the dream of living in country life of urban people by cultivating its new ideal countryside on this ground ----- Liangzhu New Town.

3.5.1 A model project for New Town construction

Derived from the revolutionary dreams of the Utopians and the later reformist ideas of Ebenezer Howard, the planning of Liangzhu New Town inherit the concept of “Garden City” and it also involved the core ideas of organic evacuation, composite function and urban village. This project has created a unique and charming form of new town.

3.5.2 Included into the planning system of Hangzhou

Make sure the planning of Liangzhu New Town links up with the master plan of Hangzhou City in the aspects of land use function, traffic organization, municipal supporting and employment. The concept not only envisioned for the Liangzhu New Town, a liberating opportunity to achieve “modern” town forms and better ways of urban living, but also as a device for larger ends. To reshape city regions, and help to solve the social, economic and environmental problems of Hangzhou city.

3.5.3 Continued growing of small town life form

The plan of the Liangzhu New Town emphasizes the characteristics of the core concept of urban village which include compact layout, appropriate density, mixed land use, pedestrian zones, social space and flexibility. The final purpose is to make the new town become an organic syntheses which includes functions of tourism, housing and employment.



Fig. 6: Master Plan of Liangzhu New Town

4 MASTER PLAN OF THE PROJECT

4.1 Function layout

The project consists of 833 ha of existing agricultural and forest land, with 398 ha considered for residential and tourism development. The site sits within a spectacular setting, with forested mountains to the northwest and the Liangzhu River to the southeast. Designer has developed an overall master plan that foresees a series of eight villages linked by a major parkway boulevard. The villages are to be sized and spaced on a 5-minute walking radius. Open space links are to be preserved between the villages allowing ‘green fingers’ of the mountain forest to link with the riverfront.

(1) Road network structure: Based on the fast track zone, there is a three-level road network system: connection way, internal road and pedestrian road. Along the mountain and river, this road network forms two “axes” of traffic.

(2) Land use structure: The plan of Liangzhu New Town consists of two centers which are public building service center and tourist center, there cultural tourism functional areas, waterfront residential area.

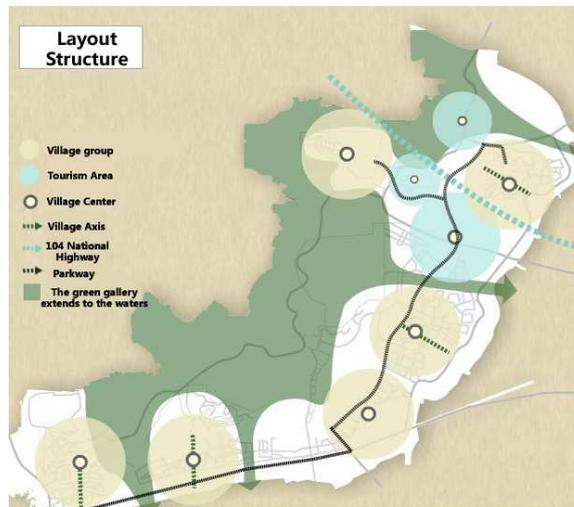


Fig. 7: Layout Structure

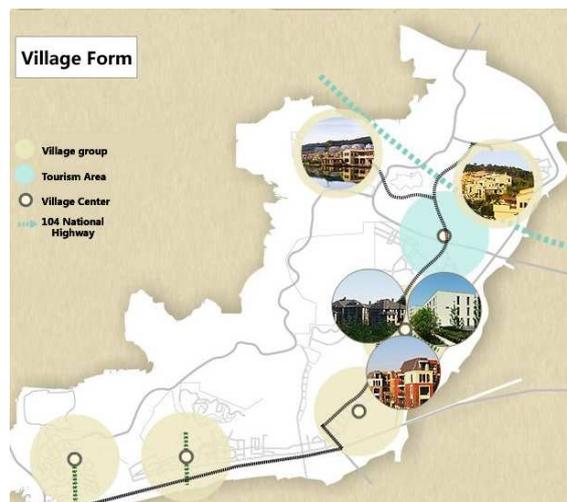


Fig. 8: Village Form

4.1.1 The urban form in natural ecology

Planning respects the natural texture. In order to effectively protect the original ecological system and native village distribution, every units’ location avoid to destroy the mountains in the north, instead, they situated in the south side of the mountain. Different theme villages present a banded structure. There is an open green space between each village, which means between each two groups there is a free unit, and each unit is a major parkway boulevard.

4.1.2 Urban life with multiple units

To emphasize the integrity of village life, the layout of the villages makes the cultural center, business center, and other supporting groups to be the center of plan. In which set up a more comprehensive business services and public entertainment facilities, so that the village can be widely shared. So as the new town becomes a self-contained development with a balance of commercial, social and cultural institution that satisfy all the needs of families and individuals.

4.1.3 Various themes of villages

Village is separated with 5 minutes’ walk: Taking village center as the center of the circle, buildings layout density decreases gradually from the center to the border. Villages always have 5 minutes walking distance

radius to the demands of the daily activities place, as well as providing the corresponding jobs. Planning puts the village public facilities and open space in the consideration of comfortable walking distance.

4.2 Road system

Liangzhu New Town has four categories of road systems, which are external roads, connecting roads, internal roads and pedestrian roads. On the basis of convenient, the design fully considered with humanity and rationalization to let residents have a relaxed state of mind no matter to travel, visit other villages or walk in town.

4.2.1 External road system

External road system is an important link of Liangzhu New Town's external traffic. At present, Liangzhu New Town mainly relies on the 104 National Highway and West-East Avenue. To make it convenient to the old city, 'new district', Xiaoshan airport and surrounding cities.

4.2.2 Connecting road system

Connecting road system is divided into three levels.

Town's important roads: Important roads are connected to the external road, at the same time, as an important way of connection among the village groups. It is convenient and fast for residents travelling within the town.



Fig. 9: External road system

Town's important branches: Important branches are the diversion roads of the important roads, connecting the important road and village groups. It make residents travel directly into their own village.

Town's ordinary branches: General branches are the connection roads between adjacent village groups.

4.2.3 Internal road system

Internal road system are connecting roads within the village group. It can not only convenient for residents to enter the village center but also satisfy villagers' travel demands.

4.2.4 Pedestrian road system

Pedestrian road along riverside: Residents can walk along the Liangzhu River enjoying the scenery.

Pedestrian road inside village: It can integrate the park, greenbelt, the Boulevard inside village.

Mountaineering Pedestrian road: It is throughout the mountain forest reserves of Liangzhu New Town.

bike in this town. Streets are also designed under this thought, it's belonged to human, not cars, that's why the planning of this town highly emphasize to bring street and walking road back to the public space.

Liangzhu New Town is set up as a new town, it not just only satisfy human a good living environment, it takes more effects on building a "happy working" atmosphere. Although Liangzhu is 30 mins car driving distance far away from the center of Hangzhou, it still commit to be an independent town. On the first phase of building Liangzhu New Town, it explored the road infrastructure and office park area, and then it went to explore the residence area, which means the industrial prosperity is basically fundamental to community development.

Liangzhu Project is a governmental explore project at the beginning. However, Vanke Group become a part of community government on some extent. In order to keep the sustainable development of this new town, Vanke Group's concept --- "From the community, service the community", it become a clue for designing a scientific management system, leads community healthily developed, improves the working efficiency, and stimulate the owners' passion for building a better home altogether.

Overall, from the angle of urban planning and management, Liangzhu New Town provides a great sample of new town for taking experience today.

Being as a small town under construction, Liangzhu New Town also has some problems. For instance, later construction increased the building density, which may causes the increase of the load of infrastructure; operating costs is high in this town, and it will be a problem to maintain the house; the transport in this town is a shortage, although till from now, there aren't lots of traffic. The public transportation system is not very well, and residents are almost using small cars for long distance, which also becomes a limitation of new town's scale.

7 REFERENCES

- Peter Calthorpe, Sim Van der Rym: *The metropolis in the future*. China building industry press, 2009.
- Zhang Tingwei, Huxiaoling, Qiu yuandong: *The MPC community*. China building industry press, 2008.
- Alonso, William. 1969. "What are New Towns for?" Research Conference of the Committee on Urban Economics, Cambridge, Massachusetts.
- Ames, Steven C. 1998. *A guide to community visioning*. Oregon Visions Project.
- Arnstein, Sherry. 1971, "Eight rungs on the ladder of citizen participation". In *Effecting community change*, ed. Edgar S. Cahn and Barry A. Passet. New York: Praeger.
- Biles, Roger. 1998. "New towns for the great society: a case study in politics and planning" *Planning perspectives*, 13: 113-132.
- Box, Richard. 1998. *Citizen governance: leading American Communities into the 21st Century*. Thousand Oaks, CA: Sage Publications.
- Boyne, George. 1992. "Local Government Structure and Performance: Lessons from America?" *Public Administration*, 70: 333-357.
- Burke, Edmund. 1968. "Citizen Participation strategies". *The Journal of the American Institute of Planners* 3J (September).
- Calvert, Randall, Mark Moran and Barry Weingast. 1987. "Congressional influence over policymaking: The case of the FTC." In *Congress: Structure and Policy*, ed. Mathew D. McCubbins and Terry Sullivan. New York: Cambridge University Press.