

Classical Form and New Form-----Approach to the Form of Linear Cities' Spatial Layout in Eastern Region of Northwest China¹

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ABSTRACT: Eastern region of northwest China includes Shaanxi, Ningxia Hui Nationality Autonomous Region and the area to the east of Lanzhou city, Gansu Province. Most of the region is covered by Qinling mountains and Loess Plateau that is a crisscross network of gullies, Urban land for construction shows a form of ribbon, thus creating a large number of linear cities. In this paper, based on the theories of "linear city" which is Mata's classic theory of urban form, and based on linear cities' status and trends of development in eastern region of northwest China, we put forward the concept of "organic growth" and "dynamic growth" into linear cities' study. Based on this, the paper combines with examples of typical cases, to explore a new form of linear cities' spatial layout which combine dispersal and compaction, and not only give full play to Linear Cities' advantages, but also as far as possible to avoid the disadvantages, with the aim of changing the passive situation in the development of these cities.

KEYWORDS: new form, linear city, urbanization, local identity, organic growth, dynamic growth, compact cities, dispersed cities

1 UNIVERSALITY AND PASSIVITY OF LINEAR CITIES IN NORTHWEST REGION

Owing to the limitation of topographic condition, linear cities in large amount had been formed in China, especially is common in eastern part of northwest region of China (Mainly including Shaanxi Province, Ningxia Hui Autonomous Region and areas to the east of Lanzhou City in Gansu Province). The abovementioned areas are of relative complex landforms such as the loess plateau and hilly areas except Guanzhong Plain with relative flat topography. Urban constructional land appears to be long narrow belt shape under this kind of topography; this feature is one of factors in curbing development for cities; that's what causing the development in this area to be extended along the belt, as a result, lots of belt-shaped cities had been formed. With respect to scales of these cities, within which including megalopolis with the population over million, but also small-and-medium-sized cities; on the other hand, as development stage of city is concerned, not only boasts small cities at the early stage, but cities that searching ways in transition of functional structure, and cities with its development prone to be mature and stable. Since these cities differ from one another, without no exception, they are restrained by the natural conditions to a great extent, had been or will be reflecting the belt-shaped space structure.

According to relevant statistics in 2008, there been altogether 27 cities in eastern part of northwest region, within which, 11 are belt-shaped cities, taking up two fifth of the total number, namely cities reflecting belt-shaped space structure are quite common. In the 11 cities: 1 megalopolis-Lanzhou, 3 metropolis-Yinchuan, Xianyang and Baoji and 7 small-and-medium-sized cities; that is to say, belt-shaped cities going through the city system in eastern part of northwest region are extremely typical.

However, full cognition and consideration are lacked for belt shape-the particular space structure in plan and during the construction process of these cities, failing in actively combining development of cities with feature of belt-shaped cities so as to maximize favorable factors and minimize unfavorable ones; in other words, forming, planning and constructing for these cities are relatively blind and passive. In the process of developing these cities, problems of all kinds resulted by the abovementioned blindness and passiveness

¹ Supported by the National Natural Science Foundation of China (Grant No.50678147); Supported by the Foundation for Young Scholars in Xi'an University of Architecture and Technology(Grant No.QN0908)

were gradually exposed such as insufficient building area, impeded expansion for city scale, accelerated fragile ecological environment caused by city developing, lower service efficiency for public service facility, strong pressure for traffic of cities that in major axis direction, insensitive orientation sense, etc. Therefore, analysis and study were carried out concerning the passiveness occurred in the development process for belt-shaped cities and problems it brought, it is obviously important to turn around the current passive situation by active exploration to the utmost, the discussion is as follows by combining specific examples.

2 EXAMPLE EXPLORATION

Excluded the above 11 belt-shaped cities, a great many of small-sized cities and towns in eastern party of northwest region are belonging to the typical belt-shaped cities; in recent years, under the background of rapidly developing social economy in eastern part of northwest region, these cities and towns had been gradually entering the accelerating development stage. Especially for northern part of Shaanxi, rocked development was achieved for many cities and towns while accompanying with quite a lot of problems, which are in desperate need of reasonable and efficient control and instruction planned for the development of cities. Taking typical belt-shaped city -Shenmu in Shaanxi as an example, the following problems currently existed in the development and construction of the city: Limited expandable space, excessive gathers at the core with fragile service function, prominent chemical & industrial business, poor strength in solving issues concerning agriculture, countryside and farmers since the pervious urban land layout is failing in combining with belt-shaped land topography.

To solve or ease the problems above, not only a macro strategic mastery over the overall spatial structure is required but also specific, viable thoughts and schemes on distribution and configuration shall be given. From the perspective of writer, the following points shall be given priority in planning and construction of Shenmu (North of Shaanxi): (1) Perfect and optimize the industrial structure. (2) Expand new space for urban development. In an effort to keep structure, function and configuration of Shenmu County intact in larger spatial dimension, new urban area will be built in planning to tackle the problem of lacking in land resources occurred in urban development, making up for the shortcomings of the previous planning. (3) Enhance the service function of the city. Such functions as working, living and relaxing of new urban area shall be exerted, nature eco-environment and residential environment of the city be improved, and beautiful urban image of riverside oasis be shaped, all of which can strengthen the city's attractiveness and promote the city's competitiveness. In other word, reasonable functions organization and configuration in land use of the new urban area are crucial to deal with the current urban problems. Therefore, the writer is drawing experience from the theory of typical urban configuration raised by Matta, an idea of introducing "organic growth" and "dynamic growth" on the basis of "belt-shaped city", which is for one thing to give theoretically a new interpretation of belt-shaped city, the typical urban configuration, for another, to conduct practical exploration by taking the unique features of Shenmu into consideration.

2.1 Introduction of New Idea

2.1.1 Organic Growth: The development of any city can be considered to be a kind of growth but not an organic growth. Organic growth lays emphasis on co-existence, meaning the growth of urban distribution and configuration is like that of organism with each constituting parts coordinating organically, growing together, promoting and relying mutually to form as a whole and accomplish various complicated activities jointly. Belt-shaped cities are just bestowed with the innate structure advantages for organic growth in that belt-shaped development to axial direction is likened to the growth of protozoan and vertebrate, thus cites can stretch out endlessly by following traffic branches (like the skeleton of animals) with each functional land (like the flesh of animals) distributed by adjoining the traffic branches. This characteristic makes it possible to the largest extent for shape-belted cities to grow continuously, organically and step by step.

2.1.2 Dynamic Growth: Dynamic growth attaches importance to process, which means, rather than to pursue the realization of the final prefect state, but to pay attention to the process of realizing it so that the city can be in a state of dynamic balance during development; It emphasizes flexibility, which indicates to design flexible spatial structure and configuration in accordance with actual situations of different cities to leave enough room for selection in urban development, and not to pursue the city scale in number. Features that belt-shaped cities extent boundlessly by following development axis and various functional lands are distributed parallel enable urban development to maintain complete and reasonable comparatively at any

stage, what's more, the urban development in the next stage can match well the formal configuration and form reasonable growth tendency. In a word, belt-shaped cities possess obvious dynamic growth advantages.

2.2 Growable Distribution and Configuration Planned

Compared with other types of distribution and configuration, Belt-shaped cities own outstanding advantages of organic growth and dynamic growth. To give full play the merits of belt-shaped cities and

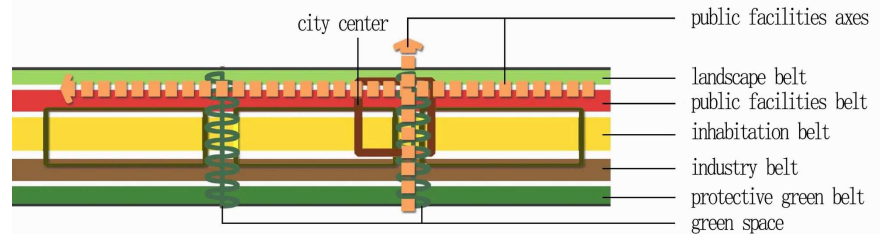


Figure 1 Structure pattern of Shenmu New Area

avoid its shortcomings, in the overall planning of

Shenmu new area, more attention is paid to dynamics and ecology of belt-shaped cities and simplicity and fluency of it is intensified rested on learning from the belt-shaped city theory to shirk their monotony and stiffness as well as overcome low efficiency and high consumption. A parallel configuration structure is adopted in Shenmu new area with multifunctional lands proceeding at the same pace; such configuration way of dividing the city as units and groups with afforestation among them, to avoid the endless extension of city and intensify the centrifugal force of belt-shaped city. Growable spatial configuration with good adaptability can be formed wholly. specific configuration: Public center is located at south part of new area adjacent to one side of flood-preventive dam and is equipped with land for commerce, working and leisure to strengthen the cohesion of belt-shaped city center; two axis of public construction, also spatial axis of public activities, intersect vertically at public center; three complete residential areas separated by natural environment are formed in succession in light of south-to-north time sequence; Long axis direction parallel to belt shape makes each functional land present parallel distribution with landscape belt of new city, public living zone, industrial zone and protection green belt set for reducing interference of railway and road with the city one by one from east to west. Such configuration sequence not only forms the belt-like area of multi-functional lands but also makes convenient lateral ties among all functional lands available and shortens the commuting distance, which is beneficial to dynamic development. Two green corridors going through east and west connect with external high-pressure traffic corridor to avoid the extreme length of longitudinal direction of

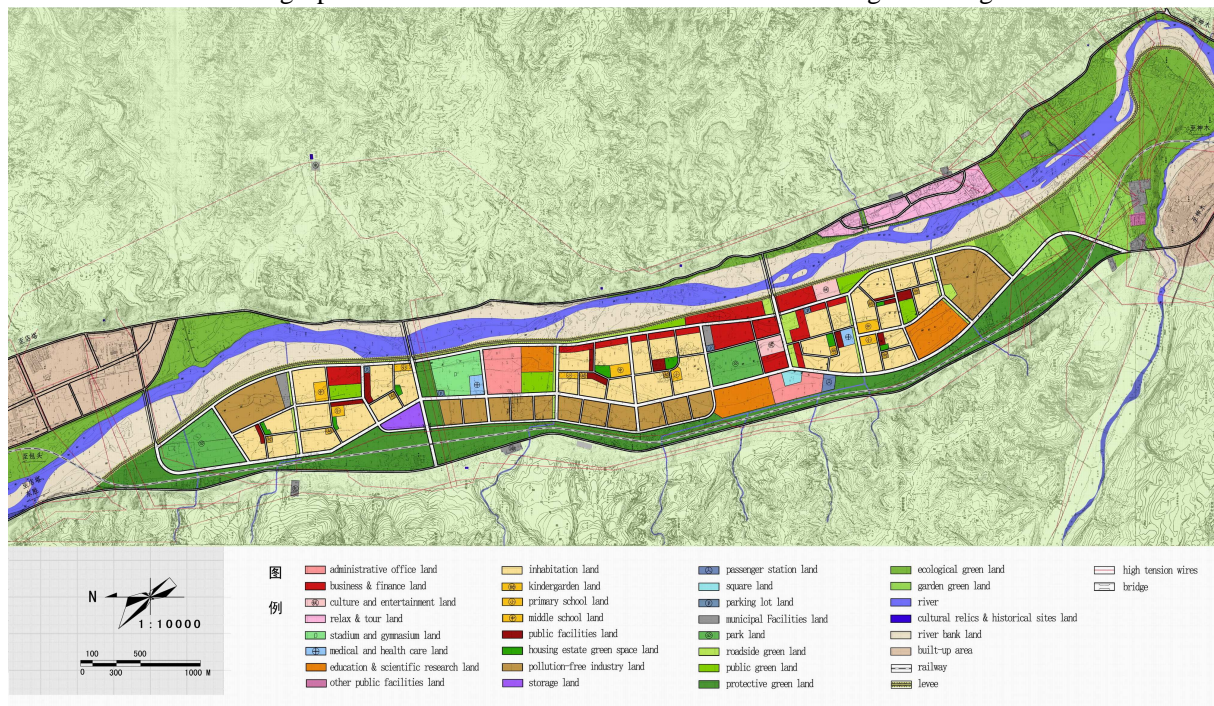


Figure 2 Layout of Shenmu New Area

new area and monotony of configuration.

2.3 Dynamic Development

Owing to the parallel configuration and group division, the final configuration state of the new area can be realized gradually through rolling development. During the development, the city can always situate in a state of dynamic balance that is able to weaken time limit and ensure a certain intactness of the new area at any development stage. Completion time of the final scale is not emphasized; on the contrary, the possible final scale and the reasonability and feasibility of realization process are preferred.



Figure 3 Developing scheduling of Shenmu New Area

Supported by the National Natural Science Foundation of China (Grant No.50678147) ; Supported by the Foundation for Young Scholars in Xi'an University of Architecture and Technology(Grant No.QN0908).

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