

2014

# BioTechnology

*An Indian Journal*

FULL PAPER

BTAIJ, 10(17), 2014 [9567-9572]

## Empirical analysis and strategies of small town spatial morphology control

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### ABSTRACT

Development of small towns is a great strategy of promoting rural economic and social development, status, this paper analyzes the small town in China's urban and rural areas from the role and development prospect, and carries on the analysis to the small town space form of basic research and space layout planning, in order to achieve the preliminary study on the optimization of urban spatial form overall planning of small towns.

### KEYWORDS

Small town; Spatial morphology; Strategies; Control; Analysis.



## INTRODUCTION

At the end of the twentieth Century, the CPC Central Committee and State Council issued. A number of opinions on the promotion of small cities and towns healthy hair" exhibition of the decision, requirements of small towns as a major strategy to promote the development of rural society and economy to grasp, to speed up the development and construction of small town has become a consensus of all levels of government<sup>[1-3]</sup>. The small town distribution of China's vast territory, different historical and cultural environment, and has formed the regional culture characteristics of small cities and towns. Because of the influence of the external objective factors, the traditional villages form the coordination of natural environment, social structure and folk life living environment; reflect local conditions and natural symbiotic combination construction idea. Combined with topography, land conservation, considering the climate conditions, energy saving, environment protection and landscaping, construction way with superb skills, local materials and localization, forming a natural and simple architectural style, embodies the harmony of man and nature<sup>[4]</sup>. It can be said that, according to local conditions, comply with nature is one of the leading thought of traditional villages and towns to create space. But in recent years with the expansion of the scale of construction of small towns and the speed, the construction of small towns is also gradually show appeared in big cities towns of similar appearance and lose town feature trend<sup>[5,6]</sup>. Therefore, as far as possible, the urgent need for small towns space design to provide some reference materials, so as to be able to guide. Based on the previous research, this paper proposed the "spatial form of small towns in this proposition, mastered the related knowledge of architecture, urban planning, geography and economics, there is discussion of targeted on this topic, hoping to contribute to the construction of small towns in China.

### Definition of small towns

The small town is the smallest city settlement, at the present stage is a kind of change is from the rural community with the coexistence of a variety of industrial toward a modern city transition of transitional community. The small town is situated between city and rural area, it is the city and the countryside two different regional organically into a whole bond. China's current definition of small towns has roughly the following 4 kinds: the small town city + + = small towns (belong to the city and township), sometimes adding a secondary city collectively referred to as the "small town", and that is a key part of Chinese city development. The small town = small city + towns, only refers to the small scale of urban areas, two types of small towns with populations of less than 200000. The small town = towns, belongs to the category of urban and towns in urban system is a synonym. The small town = towns + Town, including outside the county towns, county towns and market towns. As defined in this paper mainly refers to the difference between the small towns in urban and rural village has a certain scale, mainly inhabited by engaged in non-agricultural production activities of the population of the community, including formal approval from the administrative department for construction, with the towns, and Township People's government is located by the people's government at the county level and confirmed by the market evolved as a certain rural area economy, culture and life service center of non organic. That is fourth of the previously mentioned.

### The spatial form of urban

Urban morphology as a kind of space systems is in a particular geographical environment and social background, human activities. And the natural result of the interaction, it is composed of two parts material space form and social space form, shown in Figure 1. Material space form is mainly composed of concrete material composition, such as streets, roadways etc., its construction style, layout with urban markers, as a kind of architectural symbols to convey the information of urban. While the social space form is composed of the social elements of abstract, every town has its own unique social space form, with its development trace in the social structure, life style, customs, religious beliefs, cultural background etc.

The above shows urban natural environment has formed the external physical space, while the internal material forms from the town, the street, lane, nodes in the skeleton to constitute Town, shops, houses and public buildings constitute the town of substance, and the town people's social life, production, trade and social activity is a social space elements to support physical space.

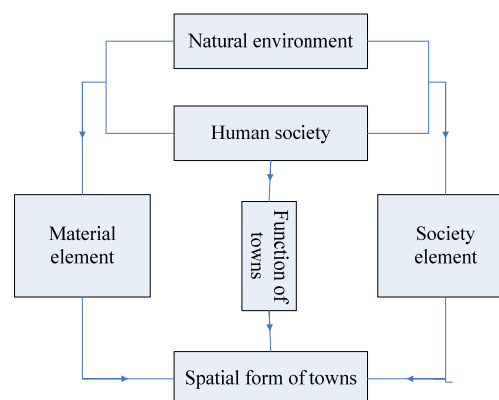


Figure 1 : Structure diagram of spatial form of towns

Many factors of the urban space form, the main factors can be summarized as natural factors, traffic factors, economic factors, regional factors and social cultural factors.

### **The basic principles of urban architectural form design**

Continuity. Urban architectural form design should uphold the responsibility of local architectural culture, walk the characteristic development road "whether it is a new town, with the historical background of towns and tourist towns, in building design must have continuity, architectural form of urban continuity refers to: the new town building must be able to reflect the local characteristics of geographical environment characteristics of the industry culture!! or characteristics such as lifestyle, and patterns in the construction with echo" characteristics of urban architecture form design prophase must form of traditional architecture on the local in-depth analysis, summed up the essence of the theory of traditional architecture, and then design under the guidance of the theory, form the status quo but from the pope that will be the formation of a variety of distinctive architectural form.

Characteristic industry refers to the local economy, as the saying goes: the economic base determines the superstructure "economy is the foundation of culture, on the survival of people's, is a symbol of urban power, and specific economic industry are based on the existence of a materialized form, materialized may take the form of symbolic form of abstract out, so the architecture design can be combined with the morphology, and applied to the construction design, the natural formation of the integration and economic architecture form, so that both blood, natural complement each other" when the architectural form with a certain characteristics, it will form a cultural industries and tourism effect, in turn, promote the development of "industrial economic design such as Wuliangye industrial park inside this relatively successful, pay attention to the design and construction planning of wine culture combined, the architectural form of express industry connotation, in order to get remarkable effect".

### **Adaptive innovation**

To carry forward Chinese traditional culture is rooted in the innovation of art, it is not enough to do the above renewable, history in the unceasing development, the progress of human constantly, the development of science and technology is changing, people's aesthetic consciousness and ideology is also in constant change, so the design of the urban construction from the only form of inheritance in today is doomed to no vitality, this is now a lot of the crux of the lack of protection of traditional architecture "domestic building great master change timing in a speech said, for Chinese architects, traditional, there seems to be confused, the tradition is not split, but if the traditional only understood as a form, so it would be difficult to get rid of the confusion of natural" in fact, draw lessons from traditional, efforts to innovation, the fundamental is to highlight a spirit of Chinese culture "in the creation, not constrained by form to deepen understanding of Chinese traditional culture, and in the context of modern reading, then writing can get rid of the confusion, out of the mountain, and innovation are also likely to" urban architecture design must be in today's new environment, to form the adaptability of innovation and breakthrough, the traditional architectural culture to flourish the new".

### **Morphological diversity and unity**

The architectural form of urban, architecture and surrounding environment complexity is inevitable, the design to the cultural background, geographical environment, building materials, the requirements of the building property and so on, in different parts of the part of architecture, each with different functions, different functions and different forms, and constitute the whole building, to complete a specific general purpose or function "therefore, many factors affecting the architectural decisions of architectural form diversification, but everything around a center, so that the whole building itself and become an organic whole with the surrounding environment, and not be, be reduced to fragments", from the structure of the complex variety of factors can be presented in the unit, join, contact and coordination role, so that the overall look a seamless heavenly robe". Only the same is inevitable in the simplest form of unified will produce monotonous, dull". Therefore, difference, unity for diversity, changes in demand, to create the taste and flavor"

### **The purpose and significance of urban construction design shape control**

The purpose is to adapt to the rapid development of urbanization and the strategy of building a new socialist countryside. The whole image of urban construction in China building also play a crucial role in the overall image, but the country's majority town building system has not been taken seriously by architecture, architectural design in a cluttered market "16 big reports pointed out that to gradually raise the level of urbanization, urban development, adhere to the coordinated development of big and medium cities and small towns and the road of urbanization with Chinese characteristics" and to develop small towns of existing county seats and of organic towns where conditions for the foundation, scientific planning, rational layout, combined with the development of township enterprises and rural services "system and policy barriers to urbanization must be removed, and guide the rational and orderly flow of rural labor force," the development of small towns should be according to its natural conditions and economic characteristics, gradually establish a distinctive urban system, the formation of medium cities urban scale structure of combining "16 big reports on speeding up the urbanization process, a clear emphasis on architectural design to develop small towns according to their own conditions as the foundation, to build a town the characteristics of local architecture form system" which makes the town form the design of the building has a clear theoretical guidance and control.

### **To improve the urban landscape and quality of the living environment**

The economy of some areas is developed, but the development of local towns construction is extremely backward, and coordinate with the development of local economy is not "investigate its reason, on the one hand, because the director to control urban architectural form the overall lack of attention, on the other hand also with the modern urban architecture design strength is weak, talent - accumulation to the big city is concerned, of course, the lack of control and guide local policy, will only cause local architectural developments in disorder", there are also some design institute in the design of local didn't consider the place characteristic and the overall control, or is unable to control, just by the subjective or developers guide for building design, do not make the field investigation and study, this certainly will cause great damage to the local architectural form, if we say that China now has become the foreign architects experiment field, then how can we bear to see town again became the major cities architect's experimental field "we speak of urbanization! Speak the harmonious development of society, yet our towns face such trampled, was wanton destruction, without any control and guide, has become a serious if when the time comes when we again under the background of urbanization control strategy of the city construction pattern, to take measures to assail and will cause the waste of resources and manpower greatly" control of the urban construction form is urgent, therefore, is related to the reality of millions of people living environment engineering".

### **The realization of sustainable development**

Rural settlement is the basic cell of Chinese social structure, is the people gathering, interest, aggregates production activities, after thousands of years of material culture accumulation, has formed a lot of rich and colorful architecture form and space system suit one's measures to local conditions, they manifest themselves, harmony between man and nature, harmony highly planning and architectural ideas, reflects the broad and profound Chinese thousands of years of traditional culture, the pursuit of a harmonious thoughts reflect the location in the entire town. Layout and architectural form design, the formation of architectural form and cultural style with local characteristics".

### **The status quo of the construction of small towns**

Around "small town, big strategy deployment strategy" across the country we set off a new round of urban construction climax. But because of the small town planning design and construction management work of a lack of seriousness, government regulation and insufficient most township area lack of planning and construction personnel, the emergence of various kinds of deviations in the construction of small towns. For example, the layout is not reasonable, low rate of land utilization, urban construction style mess behind, the infrastructure is not complete, "1000 town side" and so on, thus causing serious problems in the future development of small cities and towns. Therefore, how to update the small town planning concepts, strengthen the research on the development of the new situation of urban planning, improve quality, optimize the urban spatial morphology, and guide the healthy development of urban construction is the important issue to be studied.

The small town is the key link and development of the implementation of the twenty-first Century Chinese urban-rural integration strategy, it is the transfer point between urban and rural areas, the majority of the village center, city population development source, therefore the construction of small towns to the city China plays a key role in the future development.

### **The overall spatial layout of small towns and the space form**

Urban overall layout is of various types of town land functional organization. The overall layout of small towns, should be in the study of all kinds of land use characteristics, requirements and the relationship between the basis for the unified arrangement and planning of each part of the town, the town of the rational organization of production and living, so that they each is in his proper place and keep machine contact. The overall layout of the small town requires scientific and reasonable, do economic, efficient, which meet the needs of the recent construction, but also for the long-term development. The layout of urban development situation is evolved, which reflects the influence of the historical, political, economic, traffic, resource conditions and the development of science and technology for the urban layout. The overall planning should take full account of the status quo, and in the present layout of scientific basis, improved and perfected according to the needs of the development of rational planning. Good use of land, water and electricity is an important factor of necessary conditions for the development of small towns and affecting the overall layout. Resources based on the conditions for the economic development of small cities and towns, affect the spatial layout of industrial, commercial and agricultural. The external traffic is an important factor affecting the formation and development of urban, urban functional structure and layout has direct influence. The different nature of the functional organization of urban land demand and land use structure in different. leave town.

Urban morphology is composed of feature space form of the development of towns in the performance of the changing, is a kind of complex economic, social, and cultural phenomena and process. Morphological changes from towns can see the development track of town, with its unpredictable changes, not easy to grasp the characteristics, but it is an important aspect to explore the law of development of a town.

Due to the development of different forms of urban evolution, we summarized from the overall layout of the space which can be divided into two kinds of modes of centralization and decentralization.

### **The space layout and space optimization design**

Ecological priority, landscape ecological construction based on the continuous whole pattern. The town planning area of mountain, river, basic farmland in ecologically sensitive areas determined to prohibit the construction area, as the ecological environment of the "matrix" to be strict protection, make it become the urban ecological background; the rivers and important urban road planning for the "blue and green", the construction of ecological corridor, make the become eco network framework; Lin Shan or riparian location will be determined for a class of ecological impact area, the strict requirements of low strength, high rate of green construction, pay special attention to the fusion between space and landscape visual corridor and the reserved space.

The integration of multi levels, the combination of artificial and natural construction of urban space form. (1) The overall level of urban. The integration of large scale green wedge and urban external morphology. In order to realize the urban and natural fusion, the macro level to consciously reservation, control of some ecological wedged into the space, the peripheral natural environment into town. (2) District level. Green space system and the network structure integration + open space and public facilities integration. The quality of the landscape emphasizes "natural artificial - people" the combination of the three features. (3) the construction level. Emphasis on portfolio construction groups, focus on the streets of continuity, the relationship of control construction scale, orientation, entrance, properties and landscape environment fusion.

### **The small town construction shape control technique**

Urban architectural form design mainly refers to urban building appearance visual sense to express information from the angle of architecture to points, affects urban architecture form mainly has following several aspects: building color control of urban space form, design, and construction materials for the design of four parts, so the form of planning and control of urban construction, mainly from the above four aspects. Now, in order to highlight its own bright spots and improve the international competitiveness, on the world almost every city in a different tone, form and characteristics attract more attention in the present information and cultural high-speed integration times, regional architecture style difference gradually reduced, strengthening the construction of urban color design at this time, will undoubtedly have a very important role in promoting the local traditional architecture culture. Urban construction should be the excavation and protection of urban color characteristics, culture and tradition of any two cities are different, the design of urban construction planning should highlight these differences, avoid thousands of city side.

Design of building has always been our focus in the architectural design of the most, various schools also compare. Many Chinese, from traditional rich diversity of the slope of the roof, to now shapes of flat roof; from the intricacies of the European style architecture to modern architecture is simple and generous; from the strong local characteristics with vernacular architecture to urban atmosphere full of high tech style; building with different attitude! Style into our field of vision, the impact of our aesthetic, make people a rich and varied as the designer's imagination of admiration, as, the world no two are exactly the same leaves, the world is not exactly the same two buildings.

Most of the town in the process of historical development, has formed a kind of their own urban space system, and set up the space system is with the local geography, environment, humanities, testimonies and even at the time of the lifestyle factors are closely related, the practical value and protect the value of its existence, but now people production, life style and ideology and culture have changed, from a scientific point of view, we should treat the traditional urban blocks of space, can not simply deny, also can not completely copy, space heritage characteristic towns also cannot stay in oral on) empty inheritance "from the urban planning perspective, the new the control of urban district space form should mainly focus on three aspects: the establishment of spatial scale standard town block, coordinate the relationship with the protection of urban construction and environment have the traditional characteristics of urban space.

With the establishment of a global strategy for sustainable development, a new ecological values are becoming the norm of our guiding principle of the social behavior, the paradigm of science and technology have radically changed, namely the present ecological development situation in the architectural design field, it is shown as the high energy consumption of traditional building materials, and use the disorderly development of non renewable resources has aroused people's awakening and attention.

The mechanisms of sustainable development to build urban design framework targets will emphasis on natural resources and building

Keep the environment. This requires the adoption of effective methods will be built into a more attractive places in which to live and work. Urban sustainable design principles will be the status of the construction, infrastructure and road acceptance and reuse and recycling building materials reuse in the first place. From the long-term goal of urban development, should not make the article in the city appearance and environmental quality of small town style construction, more should be the style construction and urban economic growth, society and citizen quality linked to contribute to mutual development power.

## **CONCLUSIONS**

China has entered the stage of accelerated urbanization; urbanization has become one of the main driving forces to promote the healthy development of the national economy and society. It plays a key role in urban space layout and planning reasonable health for the future development of cities and towns, and how to realize the optimal allocation of urban space form is a big problem facing us, so we should think about the long term, based on reality, to construct the ecological

harmony, space structure is reasonable, Metro urban architectural form beautiful towns. If we want to shape a small town which has the characteristics of saving image of, it should be tailored to local conditions, rational utilization of land resources, scientific planning, reasonable layout, and correctly guide.

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