

The Evolution of Traditional Construction Methods in the Process of Constructing Beautiful New Countryside in Southern Jiangsu

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ABSTRACT

Against the background of socio-economic changes and the integrated development of urban and rural areas, with nearly ten years of development of new rural new countryside, profound changes have taken place in the development model of rural areas in southern Jiangsu, which is reflected in the adjustment of resident structure and the changes in production and lifestyles, housing patterns and urban-rural relations. These factors have directly or indirectly affected the changes in the construction methods of village dwellings.

Keywords: Construction method, Material, Craft.

1. INTRODUCTION

The concept of "new socialist countryside" was put forward in the 1950s. In the early 1980s, building a new socialist countryside, as an important part of building a well-off society in an all-round way, was once again widely valued. The construction of new socialist countryside proposed at the Fifth Plenary Session of the 16th CPC Central Committee is another comprehensive rural reform under the new historical background and guided by a new concept. The plenary session proposed to carry out economic, political, cultural and social construction in rural areas in accordance with the requirements of "pursuing production, development, wealthy life, civilized rural style, clean village appearance and democratic management". At the same time, the central conference on rural works also proposed to actively and steadily promote the construction of new countryside, accelerate the improvement of living environment, improve the quality of farmers, and promote the construction of "new countryside" both in terms of material and human beings.

China's rural land area accounts for 57.59% of the total area. Under the general policy of building beautiful countryside, many villages with abundant natural resources give full play to the natural conditions of the site, develop the tourism industry,

integrate the power of design into the countryside, enhance the rural tourism economy, and realize the reconstruction of rural ecosystem and cultural creative economy. However, in the whole process of design and implementation, the aesthetic taste and regional characteristics are lacking. Therefore, Wu Liangyong has put forward the "modernization of vernacular architecture and regionalization of modern architecture" many years ago. He thinks that the puzzlement of architectural creation is China's large-scale urban and rural construction. The great achievements have been obtained, and excellent works appear from time to time, but the general level of architectural design and the direction of architectural creation are quite puzzling, which are mainly reflected in the following aspects. First, modern design is pursued too much while traditional rural architectural form is abandoned. When people walk into the countryside, what people see are all modern houses in the same form. The difference between villages may lie in the different decorative materials used due to the different levels of opulence. In the same village, the difference only lies in the different size and height of the building area. Second, with the material under industrial production, it lacks local humanistic care. In addition to bricks and tiles, rammed earth is often used in traditional rural buildings in Jiangsu and Zhejiang, not only saving costs, but also solving the problem of transition

humidity in plum rain season. But now it is rarely used in the countryside. Because the decorative effect is not perfect, most of them are dry hanging stone, decorative wall tiles and other materials. Although it highlights the improvement of income, it not only does not reflect the beauty of the countryside, but also produces a lot of nondescript semi-finished products.

Bernard Rudofsky mentioned the following two ideas in his book "Architecture without architects", what are the values and characteristics of vernacular architecture? Through the recognition and evaluation of local architecture, the beauty of "primitive" architecture is often ignored by people inadvertently. But until today, people realize that

"primitive" architecture, as an artistic form, comes into being when human wisdom is applied to various life styles. Indeed, Dr Rudofsky regards the design philosophy and practical knowledge of the builders who have not been trained as the inspiration source of the industrial age that has been trapped in the chaos of the city. He thinks that the architectural wisdom derived from this transcends the economic and aesthetic thinking, and touches on the more difficult and increasingly disturbing topic, that is, how people can survive and continue to survive. The survival here refers not only to the existence of human beings, but also to the development direction of traditional architecture today and in the future.



Figure 1 Houses of new countryside in Southern Jiangsu.

a Image source: <https://www.vjshi.com/watch/1670859.html>

Therefore, in the architectural design, people pay attention to the sense of science and technology, the special-shaped body and modern materials, and turn eyes to "beautiful countryside". The society and related specialties should pay attention to the combination of "beauty" and "rural areas". It is the direction that modern people need to explore to rediscover the regional materials and put them into new building.

The beauty of the city is quite different from that of the country. The beauty of the countryside lies in the simple way of life, the integration of architecture and natural environment, and the rational use of local materials. ("Figure 1") Only by further considering the lifestyle and habits in rural areas on the basis of full research, can the uniqueness of "beauty" be achieved through its combination with design techniques. Due to the protection of the environment and the scarcity of

wood, the traditional construction way of building cannot meet the requirements of modern construction aesthetics. But in the brick-concrete structure and frame structure, the intervention of regional materials can play an unexpected effect.

2. THE AESTHETIC EVOLUTION OF TRADITIONAL ARCHITECTURE IN SOUTHERN JIANGSU

Tradition is the carrier of culture, and characteristic is the embodiment of value. Lou Qingxi pointed out that "architecture has both material and spiritual functions, and it is also the carrier of history." From the "Liang's and Chen's plan" in 1950 to Ruan Yisan, the "guard of ancient city", cultural value is equally important for architecture in the past, now and in the future. Reflection on the past is the attitude towards the

future. The loss of traditional resources is an irreparable regret. At the same time, the new buildings completely copy the form and layout of traditional buildings, which are not suitable for the living mode of modern residents. Therefore, it leads to the issue of inheritance and evolution of traditional architecture, that is, the inheritance and continuation of traditional architectural features and the intervention of modern aesthetic mode.

3. THE APPLICATION OF TRADITIONAL BUILDING MATERIALS AND TECHNOLOGY IN SOUTHERN JIANGSU

As a carrier of inheriting history and culture, traditional dwellings in southern Jiangsu are protected, reflecting strong regional style and humanistic characteristics. From the site selection of villages and towns to the layout of specific buildings, the dwellings in southern Jiangsu are closely combined with the terrain. When they are combined with the water environment, the buildings are constructed directly by the waterfront, which is organically integrated with the function, space and structure. Their construction techniques are ever-changing and reach a very high level. In mountainous and hilly areas, the hillside is turned into terraces, and the roads in the village are zigzag and undulating along the terrain. The architectural layout is combined with the terrain and roadway, which is free and flexible. It often uses the hillside to construct small space. In different regions and environments, traditional dwellings reasonably arrange various functional requirements with rooms, corridors, halls, slopes, buildings, mezzanine, open sheds, courtyards and patios to obtain good lighting and ventilation effects. The ingenious handling method is perfectly combined with the surrounding buildings, roads and terrain. The buildings exist naturally in the whole building group, which is very harmonious and unified. There are many kinds of building materials in southern Jiangsu, such as bamboo, wood, stone, sand, brick and tile. In coastal areas, brick-making technology is relatively developed, and the application of brick and tile is also very common. Timber is abundant in mountainous area, so timber frame is used for the maintenance wall and partition wall. In order to prevent moisture, wooden houses are often built on the basis of masonry or in the form of stilts. In the area of stone production, the whole building is made of stone from foundation, wall, floor, roof to staircase. The exquisite and meticulous stone construction technology is second to none. With the

prosperity of culture and economy in Jiangsu and Zhejiang, people's aesthetic and cultural quality are improved, and their creative level and exquisite skills are affected. In architectural decoration, brick, stone, wood carving is particularly superb. The sculpture is vivid, often inlaid in the door cover, window lintel, group board, and the ridge, tile head, dripping water, wall foundation, column foundation and so on. The sculpture pattern is not only perfect in composition, elegant in color, but also closely combined with structural components, which makes the whole house more of high artistic value. The skilled craftsmen in southern Jiangsu have accumulated a lot of practical experience in the long-term construction practice, thus forming their own style, especially in hall building, card section, sculpture, wood structure production with unique folk skills.

4. THE INNOVATION

Beautiful new rural plan will bring a large number of buildings, and how to present will be an important topic. It is a feasible way to combine traditional construction materials with modern design techniques to re-present. For example, the Xiangshan Campus of the Chinese Academy of Arts designed by Wang Shu has presented a modern Chinese style and simple architectural volume, which is full of modern sense and the essence of traditional architecture. The old bricks and tiles all over the wall are combined in a unique proportion and superposition way. Density in modern aesthetic law and traditional building materials plays a clever chemical reaction. This is a very typical case, and it is believed that it is also applicable to the new rural construction.

In the actual construction of many B&B projects, many local "rammed earth", "bamboo", "stream stone" and other traditional building materials can be used in new buildings. These building materials can be seen at will in the local area, but they are ignored. In fact, the materials of "rammed earth" have great heat preservation and water absorption, which can keep the building at room temperature and dry in the plum rain season in Jiangsu and Zhejiang. However, its aesthetic value cannot be brought into full play by traditional technology. Bamboo is cheap and can replace wood, but it is easy to rot when it is used outdoors. Modern design techniques and techniques have given it new life. Compared with the stereotype in the past, the innovation of new materials and new technology in contemporary construction is very

popular. But there are also some directions worthy of optimization.

In terms of functional layout, further targeted design should be made according to different lifestyles and habits, and the volume of the building should be carefully considered to match the existing space resources and facilities of the village.

In terms of architectural style, it is required to respect the traditional style and texture of the original village, and not to copy the traditional style and popular style mechanically. It is suggested to follow the design principle of adjusting measures to local conditions, innovate and develop its own style and characteristics.

In terms of energy saving, more energy-saving technologies such as natural ventilation and lighting, external wall insulation, solar energy, rainwater collection and biogas utilization should be considered. On the premise of meeting the use demand, the new rural residence can save the living cost and improve the residential energy efficiency.

In the aspect of landscape design and environment integration, the combination of private plot and courtyard design should be considered. Through landscape sketch, trellis, garden and other ways, the landscape has certain functionality and practicality. ("Figure 2")



Figure 2 B&B in Southern Jiangsu (example).

a Image source: https://m.sohu.com/a/396716499_99911978

5. CONCLUSION

For the investigation of the new rural building construction mode in south areas of the Yangtze River, it is found that most of them take practicability, economy and livability as the main principles, conform to the living and production habits of rural residents, and reflect the practical needs of rural families. It is believed that in the aspect of the innovative application of traditional technology and materials, it will further explore the development space of traditional material technology, and explore the combination of architecture and regional in the new era.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Xiaohong Qian.

REFERENCES

- [1] Wu Liangyong. Introduction to Human Settlement Environment [M]. Beijing: China Building Industry Press, 2001. (in Chinese)
- [2] Yong Zhenhua. Jiangsu Folk House [M]. Beijing: China Building Industry Press, 2009. (in Chinese)

- [3] Xu Minsu. Suzhou Folk House [M]. Beijing: China Building Industry Press, 1991. (in Chinese)
- [4] Zhang Xiaolin. Research on Rural Spatial System and Its Evolution — Taking Southern Jiangsu as an Example [M]. Beijing: China Forestry Publishing House, 2008. (in Chinese)
- [5] Peng Yigang. Landscape analysis of traditional villages and towns [M]. Beijing: China Building Industry Press, 1992. (in Chinese)
- [6] Bernard Rudolfsky. Architecture Without Architects [M]. Tianjin University Press, 2011.