

Study on the Spatial and Architectural Morphological Characteristics of Buyei Traditional Settlements and Their Sustainable Development Strategies

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Abstract

The development of traditional settlements and architecture in China has changed along with the acceleration of the urbanization process, especially the changes are more obvious in the areas inhabited by ethnic minorities. We take the traditional Buyei settlement space and architectural form as the object of research, summarize its characteristics, and study the development and change of the traditional Buyei settlement after the reform and opening up, summarize the characteristics of the traditional Buyei settlement, and put forward the suggestions for the protection and construction of the settlement, which is of great significance to the protection of national culture and the construction of "beautiful countryside". The promotion of ecological civilization is an important part of the current social and economic development, and the traditional architecture of the Buyi people contains the concepts of the unity of man and nature, harmony between man and nature, and respect for nature, which should become an important part of the construction of China's ecological civilization. Especially in the context of rural revitalization, analyzing the sustainable development strategy of the vast minority areas is necessary for balancing economic development and ecological civilization, and can play a positive role in promoting urban-rural integration, accelerating rural construction and realizing green development.

Keywords

Buyei; Traditional Settlement; Architectural Form; Sustainable Development.

1. Introduction

The Buyei have long flourished in the Beipanjiang and Hongshui River basins and the area north of them. Concerning their origin, a more convincing view is that they originated from the ancient Yue people, and in the process of development, they have integrated Pu, Han and other multi-ethnic components. The vast majority of the Buyi population is still distributed in Guizhou. Guizhou is characterized by rolling hills, lush forests, distinctive solifluction landforms, and a wide distribution of sedimentary rocks. These natural conditions provide the Buyi with abundant construction materials.

In addition to the direct influence of natural conditions and material materials, the traditional housing of the Buyi is also constrained by cultural customs and family systems. In terms of national language, the Buyi language belongs to the Zhuang-Dong language group of the Sino-Tibetan language family, and is divided into three native language areas, namely, Qiannan, Qianzhong and Qianxi. In terms of production and lifestyle, the Buyi have a long tradition of farming, and were once called "Zhongjia" for their good planting skills; in terms of clan, the Buyi emphasize blood relationship, and their settlements are predominantly same-surname; in terms of family structure, the Buyi are monogamous and small-sized, and the spatial composition of their houses is correspondingly simple; in terms of beliefs, the Buyi believe in the spirit of all living things, and the Buyi believe that all creatures are spirits. In terms of beliefs,

the Buyi believe that there are spirits in everything, and especially emphasize the worship of family gods. In terms of beliefs, the Buyi believe in the existence of all spirits, and attach particular importance to the worship of family gods. At the same time, the Buyi live in a number of decentralized areas, and there are Han, Shui, Dong and other ethnic groups living near their distribution areas.

Generally speaking, under the background of multiculturalism, Buyei architecture shows great geographical differences and small regional similarities. And the common living habits and collective memories of the ethnic groups also make the Buyei architecture in different regions possess similar factors.

2. Space and Evolutionary Characteristics of Traditional Buyei Settlements

2.1. Site Selection and Layout

There is a folk proverb in Guizhou that says, "Miao in the high mountains, Zhongjia in the water, and Gelao living in the nooks and crannies of the mountains", in which "Zhongjia" refers to the Buyi ethnic group. From this proverb, the Buyi tribe must have a big river nearby, and the villages and cottages are located near the water's edge, which is conducive to irrigation and cultivation of the land. The Buyei settlements are located at the foot of the mountain, on the mountainside and on the top of the mountain. Villages located at the foot of the mountain tend to be smaller in size, with the village close to cultivated land and water sources. When the size of the villages increased, the villages developed along the contour to the hillside, and the number of such villages was the highest. The area where the Buyi are located has been in social unrest since the Ming Dynasty, and villages located on hilltops often have a history of war, and considerations of security outweigh the need for farming. Summarized, the principles of their settlement site selection are as follows: the settlement is mostly backed by the mountain and facing the sun, which can shelter from the wind and the cold and also keep the view open; the foot of the mountain and the hillside type of settlements are mostly placed in the river side of the field dams, and the housing estates are built on a slightly sloping slope in order to prevent flooding; the top of the mountain type of settlements pay more attention to the security, occupying the terrain that is easy to defend and difficult to attack.

On the layout of the settlement, the buildings tend to follow the mountain, distributed along the contour line. When the terrain is wide, the buildings are dispersed, each household has a large outdoor area to use, the layout is compact, but the overall camping idea is weak, and when the population increases, the village will go through multiple phases of construction. The historical background and cultural concepts also have a certain impact on it, which is specifically manifested in the following three points:

- (1) Defense. Guizhou has experienced long and fierce ethnic wars in history, and often due to social unrest, resulting in banditry, people's lives are precarious. Experienced the war in the village, often building towers, camping and other defensive facilities. Construction of housing close to each other, forming a retaining wall.
- (2) Similarities and affinities. Buyei villages are mostly the same family gathering, Walled blood relations are close, living on the concept of family and clan relations are also affected. Families with close blood relations will be closer in the choice of address.
- (3) Attention to Feng Shui. When building a house, please ask the feng shui gentleman to look at the land, determine the direction, open the door position, etc., the location of the house is often combined with the terrain environment, sunshine and air and other factors of the comprehensive choice.

2.2. Elements of Settlement Characteristics

The constituent elements of the Buyi settlement include houses, barns, sun dams, wells, land temples, campsites and so on. These elements together shape the production and living space of the Buyi. Barns are called "Sanghao" in the Buyi language, "Sang" means storehouse, and "Hao" means grain and cereal. Qianzhong Buyei people call the land temple "Baogendi", in which "Baobao" is the general name of Buyei people for male, and it is also the honorary name for male ancestor, in fact, Buyei people think "Baobao" is the god of their village and land. In fact, the Buyei believe that "Pao" is their god of the village and the god of the land. In a village with a close layout, people will choose a flat piece of land to be used as a sunning dam, a space for drying food collectively, and also a center for public activities.

Among the constituent elements of the settlement, the dwelling house occupies a major position, and the functional spaces inside the dwelling house include the hall, bedroom, kitchen, fire pit, granary and animal pens. Toilets are usually located outside the house.

In different Buyei settlement areas, the shape of housing varies. However, there are several common features, such as:

- (1) The retention of dry-fence genes. The local Han dwellings are mostly ground dwellings with patio courtyards, and the Buyei dwellings are mostly dry-rail one-type buildings.
- (2) The number of openings is not strictly limited to odd and even numbers. The common number of rooms is 3-5, with a minimum of 2 rooms and a maximum of 9 rooms.
- (3) It is more common for brothers to build joint houses. In this way, long houses were built, with the hall as the identifier of the small family and clear separation between households.
- (4) The use of materials is often localized and adapted to the local conditions. Stone, wood, and earth materials are used as the outer covering materials.

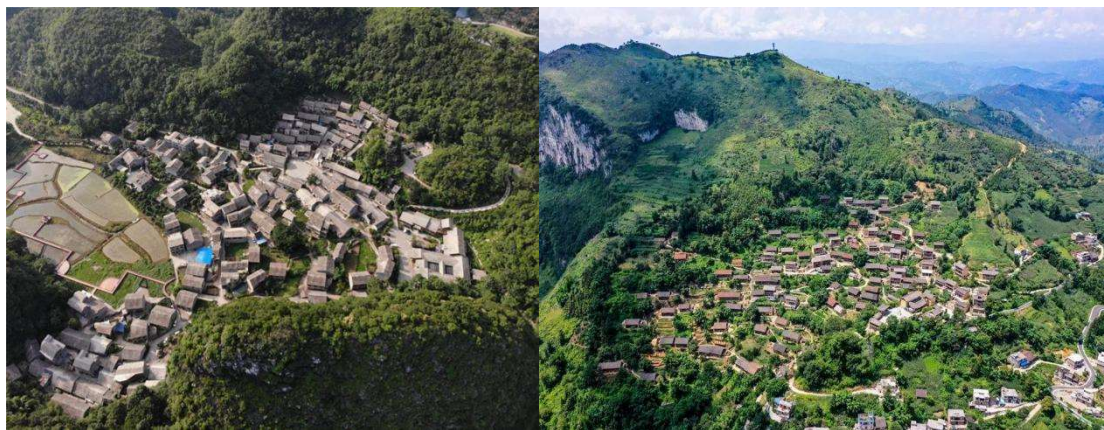


Figure 1. Distribution of Buyei settlements

2.3. Changes in the Spatial Form of Traditional Buyei Settlements

After the implementation of reform and opening up, the country's economy has developed rapidly, a large number of foreign cultures have entered China, scientific and technological progress and information modernization have spread rapidly, people's living standards have been improving, and the living standards of the Buyi people have also been greatly improved.

The living standard of the Buyei people has been improved greatly, and the landscape of the Buyei villages has also changed a lot, and the protection and development of national culture and the issue of national development have become the focus of social attention.

2.3.1. Changes in the External Spatial Form of Buyi Settlements

At present, the spatial changes of the Buyei villages are characterized by "significant linear spread, mutual expansion of neighboring villages or gradual increase in the phenomenon of

large village wells and small villages". Along with the change of living conditions, the villagers consider the convenience of farming much less in choosing a new site, and tend to look for places to build houses close to the road and convenient for business and transportation.

and convenient transportation to build houses, forming the village development trend of Buyei villages "spreading linearly along the carriageway". At the same time, after the implementation of the new residential planning "move the village and point", in order to vacate the land, or replace the farmland or set aside for agricultural parks and tourist areas, the population of several surrounding villages of the Buyei villages are concentrated in one village, so that several villages are merged into one village, and the general housing is turned into a multi-storey by the original low-rise, or several villages are moved collectively to an empty place to re-form a new village, which is a new village. The phenomenon of villages expanding into each other or "big villages and small villages" will gradually increase, and the form of Buyei villages will gradually evolve from dispersed and scattered to a compact and concentrated pattern.



Figure 2. Changes in Dazhai Village in Qianxinan's Ceheng County

2.3.2. Changes in the Internal Spatial Structure of Traditional Buyei Settlements

(1) Productive space has been increased. The traditional Buyei villages were originally for residence and leisure, but now they have developed from purely agricultural villages to mixed-function villages with agriculture, commerce and especially some small factories in the form of family workshops.

(2) Living space has been optimized. The traditional village is the main space for villagers' daily life, generally the roads are few and narrow, the villagers live in poor environmental sanitation, greening is just purely natural landscape-based, with the development of rural economy, the government and villagers to increase the construction of the village, repairing the road width, improve the sanitary conditions, greening is also from the natural landscape into a natural landscape and man-made landscapes are dominated.

(3) More diversified functions. Transformation from traditional agriculture to new agriculture. Agricultural village development is in a state of natural development, the villagers are mainly no longer engaged in agriculture, the young villagers more out to work, stay at home to engage in agricultural activities have also begun to introduce new technologies and advanced tools.

(4) In addition, some Buyei villages have gradually begun to develop in the direction of "tourism and leisure", and the villages with better preserved ecology, such as the villages with historical and cultural heritage, have changed their quiet and peaceful outlook, and slowly liberated themselves from traditional agricultural production, attracting a large number of foreign tourists to reside and play, which has made the commodity atmosphere in the village become rich.

3. Buyei Traditional Architectural Forms, Functions and Evolutionary Characteristics

3.1. Buyei Traditional Architectural Forms

The Buyei folk dwellings are colorful. From the external level of dwellings, there are slate houses, thatched houses, rammed earth houses, hammock houses, etc.; from the geographical location of dwellings, there are waterside dwellings, mountain dwellings, Tunbao dwellings, cliff cave dwellings, etc.; from the internal structure of dwellings, there are pierced-double, well-drying, lifting-toeing, tying-up, etc., but in general, they include early dry-rail type of buildings, transformed hammocks and slate houses, and with the economic and social development, many of them have emerged in the Buyei villages nowadays. With the economic and social development, nowadays many Buyei villages have a large number of flat buildings and brick-concrete bungalows.

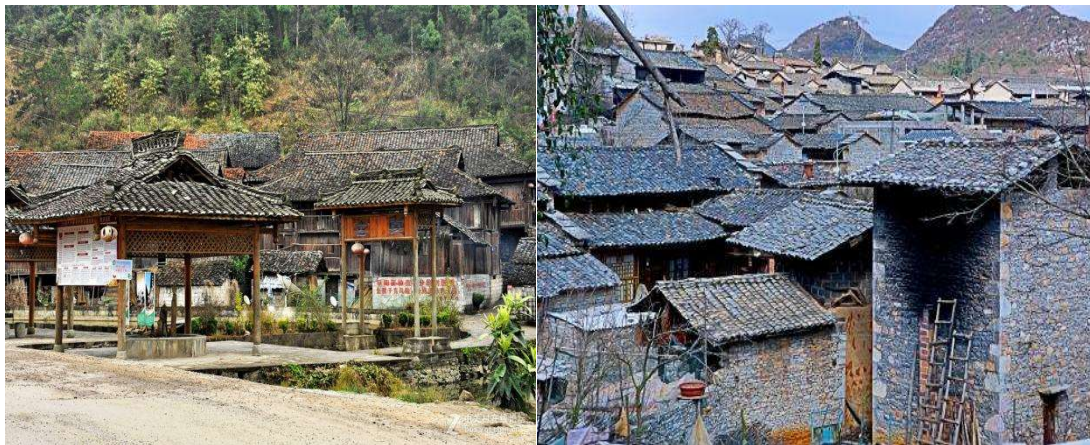


Figure 3. Buyei dry-structure and slate house

3.2. Structure and Function of Buyei Traditional Residential Architecture

Several modes of Buyei traditional residential buildings are generally similar in terms of structure and function. The dry-fence buildings and modified dry-fence buildings (i.e. hammock buildings) are mainly divided into three levels according to the vertical division of spatial composition: the first level, i.e. the ground floor, is mainly used for keeping poultry and livestock, piling up agricultural tools, and setting up grain processing rooms such as reef rooms and milling rooms; the second level is the main place for residents to entertain guests, cook, eat and live in daily life, which usually includes the living hall, fireplace, kitchen, bedrooms, etc.; and the third level is generally used to store grain and pile up sundry things. The third floor is generally used for storing food, piling up sundries, and bedrooms can also be set up according to needs.

3.3. Evolutionary Characteristics of Traditional Buyei Architecture

By dividing and comparing the types of Buyei dwellings, the following features can be summarized:

- (1) The difference between the plan logic of dry and semi-dry bar housing likely stems from the different ways of handling the terrain, i.e., the fire space of the semi-dry bar is set back. Both of them develop similar internal spaces under the wooden frame, with large-scale "halls" and freely enclosed bedrooms, which are open and changeable.
- (2) The prototype of traditional Buyei architecture may be a dry-structure house with an open hall at the front and a room at the back, in which the features of a multi-functional hall, a room

for the elderly at the back of the hall, and a room for the upper and lower animals exist in Buyei architecture of different layouts.

(3) The use of the hall space has been a long-standing tradition in the Buyei construction. The space of "tang" in the broad sense is the inheritance of their traditional living habits, but the "tang house" as an independent sacrificial space is related to the influence of the Han Chinese.

(4) In the process of the evolution of the dry-structure and semi-dry-structure building dwellings to the ground dwellings, the Buyei spontaneously tried out a number of reasonable or unreasonable results. After the Han Chinese entered Guizhou and came into contact with the local aborigines, the spatial layout of their buildings was selectively absorbed by the Buyi.

(5) Compared to spatial logic, the Han's way of construction was borrowed more by Buyi artisans. Han Chinese construction vocabulary appears abundantly in Buyei construction terms, and the frames across the Buyei have tended to be simplified and matured to varying degrees, which is similar to the construction methods of local Han dwellings.

The craftsmanship of Buyei architecture has transmuted with cultural exchanges, but the way of life, the way of coping with the living environment, and the way of applying materials have changed relatively slowly, and the tradition of dry fences of the Buyei people in various places is still continuing. Due to the diminishing demand in the market, the traditional craftsmanship of the Buyei people has been inherited by fewer people, and the characteristics of the villages have gradually disappeared. Although modernized construction methods can bring many conveniences, they still appear to be "a thousand villages in one" when compared to the historical deposits of traditional housing.

4. Analysis of the Reasons for the Changes in the Space and Architectural Forms of the Traditional Buyei Settlements

Nowadays, the morphology of some traditional Buyei settlements is not a quantitative change of individual types, but an overall change, i.e., transformation, whose main root is the social and cultural change and transformation. The reasons for the morphological changes of these traditional Buyi settlements are reflected in the following:

4.1. Progress of Science and Technology

Nowadays is a society of rapid development of science and technology, and every progress and innovation of science and technology will have a rapid impact on social culture. The fundamental driving force of the cultural change of the Buyei ethnic group comes from the technological progress, and the ecological environment of the village is constantly changing in the context of scientific and technological innovation and change.

4.2. Influence and Spread of Heterogeneous Culture

Heterogeneous culture is a foreign culture that differs from and opposes the native culture, and the spread of culture is extremely important to the impact of social and cultural change, and one of the driving forces of cultural change in the current traditional Buyei settlements also comes from the spread of culture. Its influence on the Buyei, social and cultural changes is multidimensional, and is particularly prominent on the material level, for example, the introduction of hybrid rice and other crop varieties and their cultivation techniques has played a pivotal role in the transformation of mountain agriculture. The changes and transformations of the traditional Buyei settlements have also been influenced by some aspects to a greater or lesser extent.

4.3. Influence of Urbanization

Urbanization is a symptom of social and cultural change and prosperity. The urbanization level of Buyei villages is not high at the present time, and although the impact is not great, it plays an

important role in the change of the material basis on which the traditional culture of the Buyei ethnic group relies. This role is mainly manifested in the fact that Buyei villages have slowly developed into tourist and leisure areas or centers of commodity exchange and circulation. In a certain sense, the advancement of changes and transformations in the traditional Buyei settlements is inseparable from industrialization and commercialization and marketization.

Therefore, in the current and future period, how to build the traditional Buyei settlements is a key topic to think about. The general goal of the Buyei traditional settlement construction should be carried out in accordance with the requirements of "distinctive features, perfect facilities, full functionality, beautiful environment, pleasant to work and live in", and strive to build a "beautiful countryside" with national and local characteristics.

5. Research on the Sustainable Development Strategy of Traditional Buyei Settlements

5.1. Adhere to the High Starting Point Planning, Upgrade the Grade, Planning is the Leader, is the First Element

The level of planning and the implementation of planning is good or bad, which directly determines the level of construction and development quality of traditional settlements. Planning is good, twice the effort, benefiting future generations; planning is bad, twice the effort and half the result, suffering the children and grandchildren. At the beginning of the construction of traditional Buyei settlements, there should be a certain height and depth, not staying at the general level, not only to consider the immediate, but also to focus on the long term. To combine the local natural geographic environment, the overall consideration of transportation conditions, economic and trade, the direction of the flow of people and logistics and the development of radiation capacity and other factors, the village planning and the natural environment, history and culture, industrial development, mountainous areas and ethnic elements of the organic combination of accurate positioning, highlighting the characteristics of the layout of a compact, from the functional positioning, regional layout, industrial support, cultural taste, architectural style, ethnic elements, etc., High starting point, high standard, high quality preparation of construction master plan, control detailed planning and special planning.

5.2. Adherence to High-efficiency Management and Enhancement of Strengths

To firmly establish the concept of harmony and unity of man and nature, revitalize the existing resources of the traditional Buyei settlements, resources into assets, assets into capital, capital into funds, and effectively run the Buyei settlements and villages construction. To be based on its own location advantages, resource advantages, the Buyei traditional settlement construction and the overall development of the Buyei villages closely linked to the development of rural secondary and tertiary industries organically combined. It is necessary to focus on the protection of the overall appearance of the Buyei villages and strengthen the infrastructure. The protection of ethnic villages is different from the protection of cultural relics, although it belongs to the second level. However, the general principle is to protect the texture and pattern of the village, retain the architectural shell, and remodel the interior to maintain the integrity and authenticity of the overall appearance of the traditional settlement. Under the premise of protecting the traditional pattern of the settlement, it can scientifically analyze the comparative advantages of its own resources as well as the market demand and market prospects, find the entry point, use the mountains and forests, dwellings, traditional production and living utensils, ancient paths, ancient city walls, ancient wells, etc., seize the advantageous products and industries, and pay attention to cultivating the leading industries.

5.3. Adhere to the Development of High Taste and Highlight the Characteristics

Characteristic is soul and taste. To be based on the Buyei traditional settlements with beautiful scenery and rich ethnic flavor, highlight the characteristics, promote individuality, shape the spirit, and really make each village have characteristics, temperament, and connotation, and prevent uniformity and one-sidedness of thousands of villages. Most of the Buyei villages rely on mountains and water, to do a good job of the water article, highlighting the water township style, the aura of water to create the traditional Buyei settlements; mountain villages to do a good job of the article, highlighting the mountain scenery, with the beauty of the mountains to create ecological villages. According to the special characteristics of mountainous towns and the unique natural conditions of the mountains, the natural landscape features can be highlighted in the planning and construction of the traditional Buyei settlements according to the conditions of the mountains and the water. It is necessary to fully excavate and protect the intangible cultural heritage of ethnic traditions, folk art and folk culture, and to create charming villages characterized by ethnic customs. It is necessary to deal with the relationship between development and protection, conform to, utilize and respect the characteristic natural resources as much as possible, protect the mountains, rivers, forests and other natural beauties bestowed on us by nature, and realize the harmony between human beings and nature. It is necessary to carry out careful planning, design and construction of important buildings and key buildings in traditional Buyei settlements to make them landmarks, and strive to make villages and hamlets in traditional Buyei settlements bright landscapes with their own distinctive features and characteristics, and work hard to create a stable and harmonious natural and social environment for living and working in peace and contentment.

6. Conclusion

In conclusion, the change and development of traditional Buyei settlements is a comprehensive engineering and historical development issue. Accompanied by the accelerated process of urbanization, the change and development of the traditional Buyei settlements involves not only the problems of ethnic policy and national sentiment, but also the development of the region, the life of the Buyei people and other specific issues. To build a "beautiful countryside" of Buyei villages, we should protect the characteristics of the traditional Buyei settlements, and also carry out timely development on the basis of protection. The protection and development of the traditional Buyei settlements require the joint and united efforts of all sectors, which is of great significance to the construction of a "beautiful countryside. This is of great significance to the construction of "beautiful countryside".

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