

Discussion on Architectural Form of Ganbao Tibetan Village in the Multi-ethnic Integration Area

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Abstract—With the advent of folk tourism fever, Ganbao Tibetan Village rebuilt after the disaster is gradually known for her unique historical and humanistic value. Based on the analysis of the relationship between unique multi-ethnic coexistence and the rebuilding of residential buildings in Ganbao Tibetan Village, this paper discusses the relationship between architecture and ethnic cultural characteristics from the point of origin effect, and sums up the characteristics of residential buildings in line with modern ecological civilization, so as to guide the improvement of the local residential environment construction, avoid the loss of their own characteristics in the construction of buildings and settlements in ethnic areas and reduce the constructive destruction to characteristics of the local culture.

Keywords—ethnic; architectural form; Ganbao Tibetan Village

I. INTRODUCTION

In the center of "Tibetan-Qiang Cultural Corridor", Ganbao Tibetan Village sits in a multi-ethnic cultural collision and integration area, in the depth of high mountains and canyons in Western Sichuan Province. It is the most complete and largest Jiarong Tibetan Village preserved in Lixian County. It is built by the mountains and rivers and is so named Ganbao. In Tibetan it means "village on the slope". Under the background of special geographical location and multi-ethnic integration, the architectural form of Ganbao Tibetan Village presents unique regional characteristics and ethnic personality (see "Fig. 1"). The architectural style is simple, dignified and large in scale.



Fig. 1. Scene of residential buildings of Ganbao Tibetan Village.

Residential buildings of ethnic minority are the important carriers of their ethnic culture. New buildings should not violate the original culture. The preservation of ethnic characteristics in the design of residential buildings can not only maintain distinct ethnic regional characteristics in residential buildings, but also keep in harmony with the features of the ethnic areas. The ethnic culture can also be inherited and developed with the help of the external forms of buildings. From this point of view, the ethnic characteristics have the origin effect in the design of residential buildings of ethnic minority [1]. At present, although the preservation of ethnic characteristics have been taken as the basic starting point of architectural design in most ethnic minority areas, the architectural design of some ethnic minority areas has not completely continued the ethnic characteristics. As a result, it not only affects the inheritance and protection of the ethnic architectural culture, but also has a negative impact on the integrity of characteristics and features of ethnic minority areas. Therefore, at this stage, it is urgent to start from the origin of ethnic characteristics of national residential buildings and discuss the continuation of ethnic characteristics in the design of residential buildings in ethnic areas from many aspects, so as to form a reasonable and effective architectural design scheme and promote the sustainable development of buildings in ethnic areas.

II. ARCHITECTURAL TYPE

A. Folk Houses

Tibetan folk houses are an important component of Ganbao Tibetan Village. The houses in the village are built by mountains. There are more than one hundred houses in all. They are progressive in layers, connected inside and accessible to each other. They are like labyrinths, ups and downs, well-arranged in different places. Most of the houses in the village are about three stories, and the patio is replaced by the window, so as to achieve overall coordination of the external wall. Before the earthquake, the basement was for raising livestock, such as pigs and cattle. The ground floor was for living. The second floor was kitchen, restaurant, utility room and room for the old people. The third floor was the main living rooms and room for enshrining and worshipping gods. The progressive layout makes several platforms of different sizes on which the whole family can play and dry grains. After the earthquake, tourism and accommodation reception functions were introduced. The

first floor was used for receiving visitors, and the second and third floors were changed into residential guest rooms. Before the earthquake, river pebbles were used as building materials, while after the earthquake, mountain gravels were used as building material rich in regional characteristics. The walls of these houses were thick and the windows were small, which was conducive to thermal insulation. The doors and windows of the houses are rich in decoration patterns which are integrated with the auspicious elements of the Tibetan Eight Treasures (“Fig. 2”), symbolizing auspiciousness and good luck.



Fig. 2. Sketch of auspicious elements on houses of Ganbao Tibetan Village.

B. Public Buildings

Besides residential houses, public buildings are another main building space in Tibetan village for public activities of the whole village and tourists. The public buildings in Ganbao Tibetan Village are preserved and developed in the long-term production and life, which can be divided into building for public activity, building for sacrifice and building for defense.

1) *Building for public activity*: Buildings for public activities are generally located in public leisure and entertainment place. The architectural structure has special ethnic characteristics and excellent construction techniques. Buildings for public activity cover a wide range of areas. In daily life, there is Bobasengen Mentor-Mentee Center. In entertainment, there are Dianjiang Platform, Bobasengen Square, pavilions for rest and observatory for defense. The rest pavilions were built after the 5.12 Wenchuan earthquake. The style and function of the building are not of Tibetan style, but the products of ethnic integration.

2) *Architecture for sacrifice*: The architecture for sacrifice is the most characteristic part of the ethnic minority architecture, which is used for religious activities. The

sacrifice architecture of Ganbao Tibetan Village is not only used for the nature worship and ancestor worship, but also for activities of Buddhism introduced afterwards. The sacrifice architecture culture here is not only rich and colorful, but also has special ethnic characteristics. Because of the rich and colorful life, architecture not only embodies the essence of minority craftsmanship, but also represents the image of minority nationalities. The representatives mainly are the Mantra Barrels and the White Pagodas (see “Fig. 3”).

The Mantra Barrels are quite common in Tibetan areas. Concerning mantra, Tibetan Buddhism believes that the more times mantra is chanted, the more devotional they are to Buddha; and maybe they can get rid of the suffering of Samsara. Therefore, in addition to oral recitation, people also pack the scriptures in the barrels and rotate them by hand. The Tibetan people put the scriptures in the barrel, and each turn is equivalent to chanting the scriptures once. It has become a symbolic landscape architecture in the village. Visitors often like to turn the barrel here when they visit here. It is highly interactive.

The White Pagoda is built as a means of praying in Buddhism. The pagoda is a symbolic treasure. There are two pagodas in Ganbao Tibetan Village. One is the landscape pagoda at the entrance of square, and the other is the white sacrificial pagoda halfway up the mountain. Every first and fifteenth days of lunar calendar, the old people in the village climb from the bottom of the village to offer sacrifice to Buddhist pagoda and do related activities. The pagoda is mainly white, surrounded by colorful decorative flags. On the flag, there are scriptures fluttering with the wind. Every time they flutter, they represent the recitation of scriptures.



Fig. 3. White Pagoda and Mantra Barrels of Ganbao Tibetan Village

3) *Building for defense*: The defense buildings of Ganbao Tibetan Village are mainly blockhouses. In ancient times, Ganbao carried out the troop-stationing system, that is to say, all people were soldiers if there was a war; all people were engaged in agriculture in peace time. Therefore, special attention was paid to the establishment of the defense system [2]. The troop-stationing culture of Ganbao is mainly embodied in the existing Bobasengen Mentor-Mentee Center and the space of the cultural square of troop-stationing rebuilt after the earthquake. Compared with the Qiang blockhouse, the Tibetan blockhouses were not well preserved. The functions have changed from looking and

defense in the past to simple landscape, and tourists cannot enter, with slightly weak cultural experience.

III. FORMATION OF FOLK ARCHITECTURAL FORMS

A. *Natural Conditions*

Ganbao Tibetan Village is located in Lixian County, the eastern margin of the Qinghai-Tibet Plateau, built on mountains. It is mountain-type stereo climate. The elevation varies greatly, the terrain is complex, and the climate varies significantly. It has the characteristics of mountain-type stereo climate.

Influenced by the northern cold airflow of the Qinghai-Tibet Plateau in winter, the rain is scarce and the sunshine is intense. It is often windy in clear day. When the southwest monsoon strengthens in summer, it is warm and humid; the precipitation increases, forming a rainy season. In July and August, the high pressure is stable in the Qinghai-Tibet Plateau. The subtropical high pressure extends westward, and the precipitation decreases, forming a drought-prone season. The precipitation increases in September and October, forming a low-temperature rainy season. In order to withstand the cold wind and strong sunshine, the main doors and windows of buildings in the village are facing sun by the mountain side, with small openings and thick walls. Because rainfall of the plateau is scarce, the vegetation on the mountain is sparse, mostly deciduous trees, with long growth cycle. The wood is hard and the rate of finished wood is high. Ganbao villagers use wood and yellow stone slabs in-situ obtained from Zagunaohe River as common building materials. Considering the limited compressive strength of earth and stone slab, the buildings are generally controlled at 3-4 stories, forming a low stone building with Tibetan characteristics on the plateau. The village faces south with abundant sunshine. The melting water from valley ditches of snow mountains passes through at sunset in the northeast, and merges into the Zagunaohe River in the east of the village, forming a T-shaped water system, which can be used to irrigate the main cultivated land of the village and provide the precondition for the development of plateau agriculture in Tibetan village.

B. *Ideological Culture*

The composition of residents in Ganbao Tibetan Village is more complex, fully integrated by Tibetan, Qiang and Han nationalities. The aborigines were first a branch of the Tibetan people, the Jiarong Tibetan, mainly distributed in Kangba area, which is the Hengduan mountain system zone transiting from the eastern end of the Qinghai-Tibet Plateau to the Sichuan Basin. Since ancient time, Ganbao has been the national corridor of Tibetan, Han, Qiang, Mongolian and Hui nationalities in Western China for a long time with repeated migration, mutual collision and ethnic integration. The long-term and repeated multi-cultural exchanges form the unique Jiarong culture and special residential form. After thousands of years of ethnic integration and cultural collision, Tibetan culture in village still has a high degree of identification in architectural form. The construction of Wenma Highway has brought about Han civilization, which

has a great impact on the original ecological environment of the ethnic group in the village, and most of the younger generation has went outside for work. Nearly 80% of the residents in the village do not speak, do not know and do not use Tibetan. Han elements are obvious in villagers' daily life. After the earthquake, the material cultural signs of the Tibetan were almost destroyed. Architectural forms and religious beliefs became the most prominent elements of the ethnic characteristics. Religion and architecture gradually merged under the residents' natural consciousness and were mutually inclusive.

The stone masonry construction techniques of Ganbao Tibetan Village originated from the Di and Qiang people in Jiarong area. There are many similarities in the appearance, internal space, and functional structure of houses of Qiang people, which shows the residential and cultural characteristics of Diqiang family. At the same time, Tibetans add some religious and cultural colors to it. Inside the building, Buddhist bodhisattvas are enshrined in the scripture room of the top floor. They are well decorated. The crescent rocks at the four corners of the roof are the symbols of "four gods", and there are four Lama flag holes. On the top of the parapet wall, there are incense stoves for burning wood to pray for safety. On the eaves of the main entrance are Tibetan auspicious cattle-head totems to avoid evil spirits. In addition, in the Bobasengen Square where the crowds are concentrated, there are praying Weisang pagoda, which echo the white stone pagoda at the commanding height and are full of religious and humanistic flavor.

C. *Economic Conditions*

Originally a nomadic grassland people, Tibetans experienced the infiltration of Buddhist doctrine and farming culture in the process of development. Under this situation, some ethnic groups gradually broke away from the grassland tribes, searched for areas with abundant water and grass, sought a stable life, and became community farmers, such as Ganbao Tibetan Village. Previously, the villagers relied on the abundant water and soil along the Zagunao River to vigorously develop their planting industry and use the abundant medicinal material resources nearby to collect and sell, which became the early economic composition of the villagers. Later, with the completion of Wenma Highway, the tertiary industry of Ganbao Tibetan Village developed rapidly, and gradually became the pillar component of the economic structure. The linkage of primary and tertiary industries became the main mode of Ganbao's current and future economic development [3].

IV. COMPONENT ELEMENTS OF ARCHITECTURAL FORM

A. *Doors and Windows*

The West Sichuan plateau is very windy, so most of the doors and windows in Tibetan villages are designed in the direction of shade and with small openings. The eaves of the windows were strewed at 2-3 stories and form slopes under the eaves to prevent the wind. In wealthy families, they are decorated with gorgeous big-top small-bottom frames, metaphorizing "ox horn" and auspiciousness. The design of

doors and windows comes from nature, religion and legends. At the same time, near the doors and windows must be decorated with "Zashidajie", also known as the auspicious eight treasures, closely related to the Buddhist Dharma and deeply believed by Tibetans.

B. Exterior Decoration

Tibetans are deeply influenced by Buddhism and nomadic culture. Their architectural colors are brighter and brighter than those of Di and Qiang nationalities. It is commonly used in five colors: red, white, green, blue and yellow. The five colors are the five phenomenal elements of Buddhism that symbolize the nature: "flame, white clouds, green water, blue sky and earth", which are regarded as the material basis for life. In primitive nomadic life, "yak" is the material basis for Tibetans to survive on the plateau, which has provided the basic life security of Tibetan people, such as clothing, food, housing, transportation, burning and cultivation. It is regarded as "the soul of the plateau" by Tibetans. Among the important factors of doors and windows, it can be seen that the head of cattle and its derivatives. Mostly the top floors of buildings in Tibetan village are used for worshiping gods. White stones are arranged at the four corners of the roof to symbolize "four gods", and the flag holes are arranged near the four corners to show respect for the gods.

C. Walls

Temperature difference is large on the plateau, and the air is dry, indoor and outdoor heat exchange is very fast. Therefore, the wall is made of earth, wood and stone in situ, and its density and thickness are relatively large. The wall color is determined by the traditional building materials and dominant by natural tones, white, yellow and grey. The visual impact is formed by the large gamut span between the exterior wall colors and interior colors. The proper color matching is not easy to produce aesthetic fatigue, which reflects the harmony between the natural ecology and religious beliefs of Tibetans.

D. Architectural Colors

On the one hand, traditional Qiang buildings do not need to be evaded from the war; on the other hand, there are no strict religious restrictions. In addition to the white stone on the roof for worshiping quartzite, it breaks through the large area of original plain color. The roof of Qiang people is decorated with red and yellow colors symbolizing harvest, which is harmonious with the large area of lush fruit trees. Against the background of blue sky and white clouds, the integral architecture color is simple and rich. The overall color of Ganbao Tibetan Village before the earthquake was similar to that of the traditional Qiang Village, which was inherited from the long process of ethnic integration. After the earthquake, due to the development of tourism economy, planners introduced rich religious color into the architectural design, and strengthened the charm of cultural heritage to achieve the purpose of revitalizing the economy. In Ganbao Tibetan Village, the cloth stripes are mostly made up of blue, white, red, yellow and green. The parapet walls are painted

white, and the outer walls are gray-white. Most of them are painted in white, red and black. The doors and windows are generally blue, green, red, yellow and other colors. The roof is stone-based color with a little white. The interior colors of Gaobao villagers are different from the exterior (before earthquake). The wall paintings painted by rich colors and expensive plant juice blending show the worship of Jiarong Tibetans for their beliefs, and the wall painting skills accumulated over the years are the precious wealth of the nation.

V. THE INFLUENCE OF ETHNIC CULTURE ON ARCHITECTURAL FORM

A. Tibetan and Qiang Cultures

In the gradual formation of Qiang people's religious consciousness and the difficult environment and the wandering fate, nature is their spiritual sustenance and soul destination. The polytheism, ancestor worship and white stone worship that Qiang people believe in reflect the influence of specific environment on their religious ideology and are deeply expressed in the architectural ideology. For example, the location of houses and settlements should be oriented towards gods. That means "door facing to the space between mountains, grave to mountain". Tibetans are undoubtedly followers of Buddha. There are obvious differences between Tibetan and Qiang architectural forms (shown in "Fig. 4"). Jiarong Tibetan, as a new branch of integrated Tibetan and Qiang ethnic groups, inherits the belief worships and architectural form traditions of Tibetan and Qiang ethnic groups, and their architectural habits are internalized and integrated, retaining the aforementioned beliefs of white stone worship and multi-god worship. In architecture, they integrate the building for defense and retain the architectural form of the nomadic nation [4].



Fig. 4. Comparison of typical architectural forms of Tibetan and Qiang nationalities (left: Qiang's; right: Tibetan's)

The architecture of Ganbao Tibetan Village originated from the local ancestors of Diqiang nationality, and was greatly influenced by the Qiang culture. Its appearance, form, internal space layout, combination of dwellings and towers (as shown in "Fig. 5") are basically the same as those of ordinary Qiang villages. There are also many similarities with Qiang Village in architectural details, such as indoor pot stand, wooden ladders for going up and down the roof, and even white stones at the four corners of the roof. In addition, the Tibetans in Ganbao migrated from abroad, and their architectural forms show the common ethnic traditions and regional characteristics of Tibet. For example, the color of

Tibetan architecture is more active than that of Qiang people, adopting the favorite colors of Tibetans on the plateau such as red, yellow and white. On the functional layout of the house, the third floors are changed into religious and cultural space, offering sacrifices to the Bodhisattvas of Tibetan Buddhism. The space atmosphere is dignified and sacred.



Fig. 5. Combination of blockhouse and residence in Ganbao Tibetan Village.

B. Han Culture

With the increasing convenience of transportation, more and more Han people come to Ganbao to travel, and more young Tibetans go out to work. Ganbao villagers are gradually accustomed to the lifestyle of the Han people. The knowledge taught in local primary schools is in Chinese, and Tibetan has become a cultural course. It can be seen that the Han culture has a great influence on Ganbao as a whole. After the earthquake, Ganbao Tibetan Village has been integrated into tourism and homestay industry through unified planning. Most of the Tibetan houses have become places for Tibetan Agritainment. They have changed from residential function to tourist reception. The economic income of villagers has been increased through providing food and local specialties, and lodging to tourists. This has greatly changed the traditional indoor pattern and use space of residential buildings. The daily pattern and living style tend to be those of Han people, and the guest rooms occupy most of the space of the residential buildings. In addition, in view of the daily habits and recreational ways of the Han areas, the door gods, Spring Festival couplets and other Han cultural elements appeared on the entrance gates of the buildings, and modern living rooms and chess and card rooms with functions of meeting guests, offering sacrifices and singing appeared in their folk houses. These are the results of the influence of the Han culture on local architectural form.

VI. CONCLUSION

The cultural environment factor of multi-ethnic integration region is an important factor in the evolution of the architectural form of Ganbao Tibetan Village. Folk houses, public buildings and defensive buildings are the products of the long-term production and living practices of

the ancestors of the Tibetan-dominated multi-ethnic groups adapting to the natural environment. Based on the particularity of culture and the commonly practical and aesthetic construction tradition of Tibetan and Qiang nationalities, the architectural form are harmoniously unified with surrounding cultural environment, reflecting a simple concept of environmental art. Human, architecture, natural environment and culture are coordinated and unified in the architectural form. This highly harmonious relationship between architecture and culture has a certain reference for the construction of villages in multi-ethnic integration areas. In the future development of Ganbao Tibetan Village, the ancient Tibetan dwellings should be protected in a special way. The construction of new ones should fully draw on the ecological connotation of the ancient Tibetan dwellings, carry forward wisdom of the ancestors in the traditional architecture, inherit the ethnic characteristics and regional personality origin of Ganbao's architecture, and promote the sustainable development of the architectural form of Ganbao Tibetan Village.

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