

Qiao borrow "shape" potential —— Building renovation design based on traditional dwellings in northern Guangxi

Anfei Li^{1, a}, Shuling Wu^{1, b,*}

¹ Xiamen Institute of Arts and Crafts, Fuzhou University, Xiamen, 361000

^a 3010368775@qq.com, ^b 51916037@qq.com

Abstract. The northern Guangxi region has beautiful scenery, and its special landform type and the cultural characteristics of multi-ethnic settlement give birth to the traditional architectural culture with distinct regional characteristics. The traditional dry dwellings in northern Guangxi take advantage of the landscape through the wooden pillars, so that the building is no longer restricted by the foundation of the house, and forms settlements between the complex landscape. Through the analysis of the structure vocabulary, the relationship between the building monomer and the mountain and the layout of the building settlement, this paper explores the out the path of integrating the abstract landscape environment view into the concrete architectural design, in order to enlighten the modern activation of the traditional residential buildings in northern Guangxi.

Keywords: North Guangxi area; traditional dry column dwellings; column; landscape view.

1. Introduction

"Architecture is a reflection of history. Human beings constantly create new experience and new achievements in their labor. Since the dawn of civilization, the efforts of architecture and the development of other productive technologies always advance in parallel and influence each other. " Under the mutual influence of the special landform types, climate conditions and multi-ethnic settlement culture in northern Guangxi, the traditional dry bar architectural culture with distinct regional characteristics is bred. The architectural space and construction characteristics of the traditional dry residential buildings in northern Guangxi reflect their regional and cultural value. In order to adapt to the geographical environment of northern Guangxi, the traditional residential buildings in northern Guangxi retain the lifestyle of the ancestors and the form of wooden columns can effectively save the occupation of flat farmland. At the same time, the traditional residential buildings do not have many regulations, with more emphasis on adhering to the landscape and nature. The building forms the settlement and achieves the harmony and unity with the nature, which not only shows the wisdom crystallization of the people of northern Guangxi living in the mountains, but also reveals the common cultural psychology and social identity among the nations. The modeling technique of "shape" potential has created the style of the building embedded in the mountain, and the exposed rock wall has also become a good support for the construction of buildings. Therefore, the continuation of the integration of the natural environment is the key to.

2. The origin of traditional dry residential buildings in northern GuangxiSection Headings

2.1 The origin of the traditional Ganlan residential buildings in northern Guangxi

2.1.1 Overview of the traditional architecture in northern Guangxi

In Cihai, the dry column is defined as: a primitive form of residence popular in the Yangtze River basin and its southern area in ancient China, that is, using the erected wooden piles to form the bottom frame, to build a kind of house above the ground []. Ganlan, also known as Gan LAN, Gelan, etc., is translated from the Zhuang Dong dialect pronunciation. In the Zhuang Dong language, "dry" means a rice stalk and a stick, while "column" means a house, namely a house on a stick. Dry column architecture is also one of the earliest residential building forms in China, which can be

traced back to the Hemudu period. It is now mainly distributed in the more remote areas of China, such as Guangxi, Yunnan, Guizhou and so on.

Northern Guangxi is the northern region of Guangxi, northern Guangxi and Hunan and Guizhou, is an important birthplace of Baiyue Ganbar culture. Dry building is a traditional architectural form shared by all ethnic groups in southwest China. It is generally divided into two floors, with the upper layer living and the lower layer raising livestock. According to their own culture, the people of all ethnic groups have certain differences in the layout, form and decoration of the building, but the main structure is roughly the same. The traditional dry column residential building in northern Guangxi is caused by the natural geographical conditions, the commercial and social environment, the result of ethnic integration and the crystallization of cultural exchange.

2.1.2 Evolution from nest residence to dry bar

Nest residence refers to the house built on trees, which is the origin of dry column building. This is recorded in many Chinese historical records, such as in the middle of the Warring States Period: "The ancient animals but few people, so the people nest to avoid, day oak chestnut, the twilight wood, so the people of the nest."The earliest ancestors chose to nest in trees to avoid the encroachment of birds and animals. During this period, the natural tree trunk was mainly used as the support, with two forms: single-log nesting and multi-log nesting. Nest residence and developed into a dry column, "the old Tang Book Nanping liao" is: "rustic many miasma, the mountains have poisonous grass and sand lice, pit vipers. People live together, climb the ladder. Number is "dry bar"."

Archaeological discovery, between the nest to the dry bar, there is a transition form —— gate. In the gate house period, the artificial wooden columns have replaced the natural trees to support the houses. The appearance of gate house indicates that the ancestors changed from the limited objective nature to the subjective and ideal housing environment. With the progress of wood structure technology, the dry bar building can adapt to the complex terrain environment with its own structural characteristics, and at the same time can well ensure the dry ventilation, insect intrusion and privacy of the building.

2.2The cause of traditional dry residential buildings in northern Guangxi

2.2.1 Follow the terrain and follow the trend

The climate of northern Guangxi is humid, overlapping peaks, mountains and rivers, complex and changeable terrain. The bottom of the building is overhead, and the structure is light, which can well adapt to the local complex and changeable terrain. At the same time, the bottom of the overhead can also resist the harassment of insects and animals in the forest. The people of northern Guangxi is more critical to the convenience of production and life, the building only stands in the mountains, the crops can have a place to cultivate, the fields can have the benefits of irrigation, and the life can have the convenience of firewood.

2.2.2 Technology transmutation, update and iteration

Early dry column building mainly with wood (bamboo) as the frame, covered with thatched or bamboo. In the Song Dynasty "Gui Hai Yu Heng Zhi" recorded: "the residents of the sun Mao, for the double shed, called the fence, from the place, the cattle."A thatched house is a house covered with thatched. After the development of grid, the emergence of grid also means that human construction activities to get rid of the domination of nature, have a relative freedom. With the emergence and progress of mortise and tenon technology, the structure tends to be stable, the building no longer needs to plant piles, the wooden column can be directly placed on the cushion stone, the building site has become more flexible and extensive. On the other hand, the materials of the building are also constantly updated, from the early bamboo and wood to earth tiles and brick.adobe brick, plate wall, stone also gradually used in the dry column building.

2.2.3 Ethnic migration and cultural integration

The development of dry architecture is mainly in southern China, originating from Baiyue culture. In the Warring States Period, Qin and Han dynasties, its development reached a climax, and the national conquest and migration of this period expanded the influence and spread of Ganlan architecture. After the Sui and Tang Dynasties, the development of dry column was declining and excluded by the architectural culture of the Central Plains, and the distribution scope was shrinking, and finally mainly retained in the southwest of China. In this process, although the building is still the persistence of the southwest minority of the ancestors of the lower hundred Yue period, influenced by the Confucian culture, there are some changes: first, the spatial layout inside the building is no longer a single residence, and began to have a clear division; second, the shrine inside the building, began to worship the ancestors; third, the "fire bed" inside the building gradually weakened, gradually turned to "fire pond" .

3. By the "shape" potential- -the aesthetic characteristics of north Guangxi stem column architecture

3.1 The structural beauty of the column top thousand jun

"The column, converges and transmits the force flow, the force transmission center of the structure, supports and defines the building space []."The column has always been the core structure of the building. The column structure of modern buildings often tends to the interior space, and the facade is not so exposed. In the Ganlan building in northern Guangxi, the column not only determines the internal space of the building, but also determines the relationship between the building and the external environment (Figure 1). From the point of view of the building structure, the building mainly adopts the bucket frame structure. Pipe type structure in a roof truss, mainly divided into two kinds of ground column and melon column. The ground column is divided into the middle column, gold column and eaves column from the center. Among them, the middle column is the most important structural column, and the requirements for wood are the most strict, and the size and material are very exquisite. The melon column is located between the ground column, generally the bottom of the groove standing on the beam, fang short column, its section or square or round, used for the top upper eaves or flat pillar. The pillars of the building are neat and unified, making the internal spatial pattern distinct. At the same time, the repetition and change of the column structure form the aesthetic characteristics of rhythm and rhythm

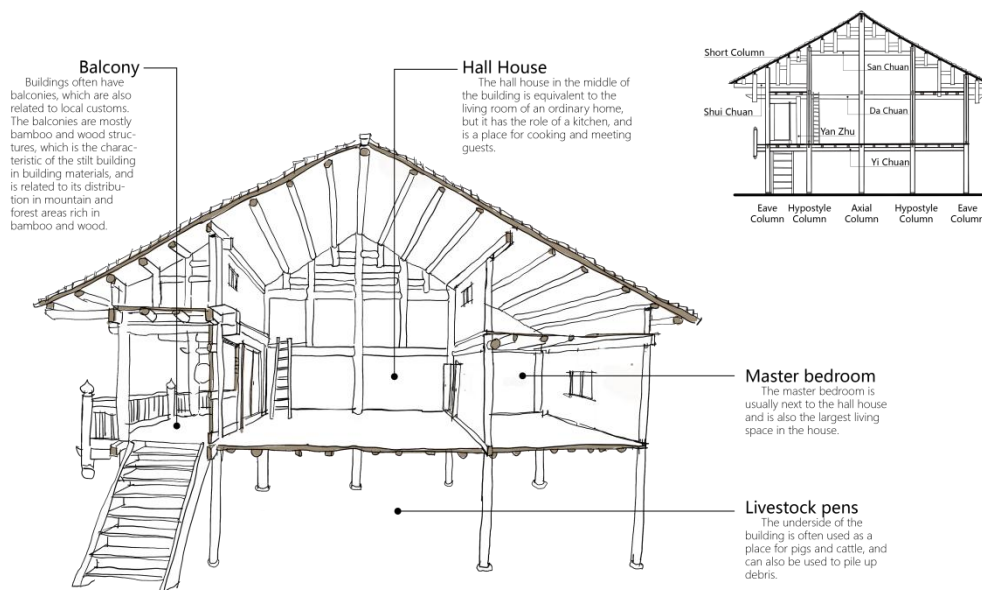


Figure 1 Structure of stilted building (painted by the author)

3.2The natural beauty of the mountain

North Guangxi dry column building site selection is very elegant, pay attention to the orientation, landscape vein and other factors. Generally speaking, the building will be chosen by the mountains and water, one end is leaning on the complex terrain such as slope and waterfront, and the other end is supported by pillars, so that the building can stand on the complex terrain. By changing the length of the front and rear gold pillars and eaves columns, it is adapted to the original shape. This not only makes the dry column building get rid of the limitation of the house foundation, but also makes the conflict between the building and the terrain no longer significant []. At the same time, the building generally sits south, with good lighting, ventilation and vision range. Trees are planted before and after the house, and the building pillars and trees cover each other, not easy to distinguish. Therefore, the building is based on the mountain and the water, and integrated with nature. Its pillar potential is "resonance" with the natural "shape" potential, forming a "landscape" of uneven and downs, reflecting the natural beauty of the people of northern Guangxi who pursue harmonious coexistence and the unity between nature and man (Figure 2).

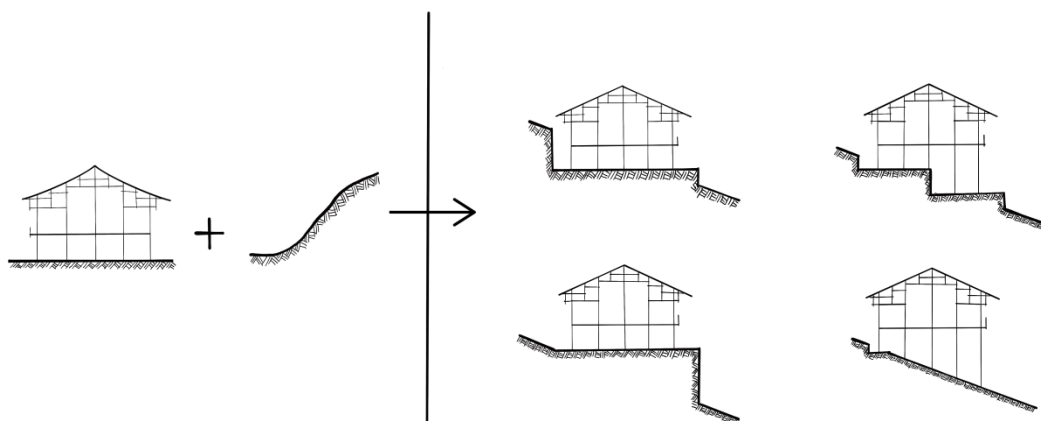


Figure 2 Integration of stilted buildings with different terrain (painted by the author)

3.3 The creative beauty of the collaborative environment

The harmonious beauty of the buildings in northern Guangxi is not only reflected in the characteristics of single buildings, but also reflected in the momentum generated by the organic combination of the whole complex (Figure 3). The height between the building body of the dry column is scattered along the mountains, the color changes and simplicity of the forest bring the human fireworks and gas, and the straight lines to unify the building and the forest in the changes, making the building itself, the individual and the community harmonious. Ganarchitecture is integrates with the natural environment of landscape. On the one hand, the beauty of architecture endows the natural environment; on the other hand, the beauty of landscape adds natural interest to the architecture. From afar, the beautiful stem column buildings stand between the mountains and rivers, the roads and houses are arranged in an orderly manner, eye-catching but not colorful, the surrounding green shade, surrounded by clear water, bird singing and flowers, the rice fragrance is charming. The quiet landscape scenery integrates into the artistic conception of the rural life of the people in northern Guangxi. Dry column architecture organically combines the characteristics of the landscape in northern Guangxi with the feelings of the people. It is an overall view of the simple, harmonious and consistent nature, reflecting the beauty of the collaborative creation of the subject of life and the external environment.



Figure 3 The form of stilted building complex in the mountains (painted by the author himself)

4. Architectural and landscape design practice based on traditional dry dwellings in northern Guangxi

With the support of government policies in recent years, the brand of "Guilin Landscape" has attracted more and more attention, and a large number of b & B and hotel buildings have emerged in northern Guangxi. There are various architectural styles, but the local "dry column" architecture is ignored by the designers. Therefore, it is difficult for people to feel and experience the unique charm of dry architectural culture in northern Guangxi through hotel architecture. Dry column architecture in northern Guangxi is created by the people in their hard work, and it is interdependent with it. It is the result of the combination of local national aesthetic psychology and folk culture. It

is also the product of the combination of architecture and landscape environment, so as to solve the contradiction between modern architecture and landscape environment. After the investigation and analysis of the current situation of Dongjing Hotel in Ziyuan County, Guilin city and the excavation and extraction of the aesthetic characteristics of the architecture in northern Guangxi, the design design practice of hotel space renewal based on the architectural culture in northern Guangxi is discussed from the following three aspects:

4.1 Space reshaped with a column

In the hotel building and landscape design based on the traditional dry dwellings in northern Guangxi, the original building is composed of three traditional "box" modules with "product" characters (Figure 4), and the shape veneer and the internal and outer space of the building are separated. As the support of the building space, the size, appearance, density and layout of the column have a decisive influence on the interior space and facade form of the building. Dry column building is the building on the "column", from the earliest natural trees as the column to the artificial column, the column runs through the development process of dry column building. Therefore, by reshaping the building space through the column, the original building of the project can break free from the shackles of the "box" module space, so that the column can have a more direct connection with the space, and make the space more rich, with a more sense of life and dynamics (Figure 5).

In the design of the "column", the traditional straight column is not adopted, but the form similar to the "nai-shi" giant column is selected [7]. These "columns" are more like open umbrellas, each one as a separate structural unit. The top surface of the "umbrella" is used as the usable space, and the column is no longer simply used as the building decoration; the "umbrella bone" part is the force transmission between the "top surface and column", and the giant column as the "umbrella handle" provides the force support for the space of the top surface. The umbrella shape highlights the column structure, like a statue attached to the building. But not so, the addition of the column has a new division of the original spatial pattern and supports the space. The top surface of the umbrella is mainly used as three functional space: as the platform, the column connects the upper space and the space in the vertical structure. As the decoration, the space, the column enables the regional culture, and the upright and simple column shape makes the building itself have more visual impact.



Figure 4 Before the modification (photo taken by the author)



Figure 5 After the transformation (painted by the author)

4.2 The landscape potential outlined by the column

When the column structure frame of the building gradually becomes clear, the building body begins to present the intuitive beauty of sculpture. The vocabulary of the structure of the main building space and the auxiliary building space of the building is unified under the intervention of the column, and the uniform space is gradually shaped by columns with different sizes and "pillars like mountain forests" into a disorderly flowing space (Figure 6). Although the architectural form is still simple, the shape of the building is different under different perspectives. The layer between columns makes the architectural space more hierarchical and complex. Column and columns are connected through the way of bridge corridor, and the scattered between columns makes the architectural landscape form produce a "dynamic potential like landscape". Therefore, compared with the original traditional architectural mode of "box" module splicing, it is more like the construction aesthetics presented by the cognition and response of landscape nature. (The so-called "Naishi" giant column refers to the column structure that often appears in Nailvi's design. Unlike the typical large columns that typically use large aspect ratios, concave shapes, and polygonal sections to visually slim down and reduce weight, the "Nai style" giant columns go the opposite way, defining and shaping space with sturdy scales, realistic textures, and unique shapes, becoming a "sculpture of force flow".)

The column extends and expands along the original building structure, transforming the original "product" character into the appearance of hills. The connection of the covered Bridges between the columns makes each space connected in series. The green plants on the pillars cover the visibility of the building and make the building faintly visible. The landscape environment around the building is mainly curved, in order to form a water potential. A circular corridor bridge is set up in front of the gate, and the center surrounds a circular pool. Using the reflection effect of water, the extension of the corridor bridge allows part of the building to be on the water, and then through the spray in the grass, the bottom of the building is hidden in the water mist, and the top is hidden in the clouds, which is connected with the landscape Chinese painting in northern Guangxi.



Figure 6 The ups and downs of the column form in the building (painted by the author himself)

4.3 The poetic dwelling between the mountains and rivers

Poetic dwelling comes from Holderline's *Man, Poetic Habitat*, which Heidegger explains and analyzes in his book *"The Language of Poetry"*. In its definition, poetic dwelling is not the familiar pastoral life, but the creation of an energy source that creates an atmosphere in the area covered by the surrounding things in a state that has not been seen before.

The column is the energy source in this space. The form of the column can not only make foreign tourists curious, but also make the local people feel familiar. The curiosity of tourists and the sense of familiarity of local residents build a bridge between people. The intervention of the column gives the building site characteristics, and the building integrates the column into the urban environment. Building the "dry column" with the column, expressing feelings in the scenery of the scene, and combining the aesthetic characteristics of the dry column architecture with people's feelings organically. Beautiful modelling "dry bar" building stands between the landscape, striking, strange on the structure of the greening plants and dissolve the building outline, vertical and horizontal orderly, law change of the column for architectural space shape, skyline contour fluctuation and dry column community form similar, so as to realize the harmonious coexistence between architecture and environment (figure 7,8).



Figure 7 Renderings (drawn by the author himself)



Figure 8 Renderings (drawn by the author himself)

5. Summary

The "shape" is the most important aesthetic feature that the traditional dry architecture in northern Guangxi can continue to this day. The aesthetic consciousness of structural beauty, natural beauty and creative beauty, shown by the external image, momentum and artistic conception of Ganarchitecture, has injected poetic aesthetic connotation into the architecture. At the same time,

the adaptability of the dry column building in various terrain conditions, but also provides it with eternal vitality. Therefore, it captures the aesthetic characteristics of the dry column architecture, combines them with the existing practice, and uses the column as the medium to create a poetic residence that condenses the common memory and arouses the emotional resonance.

The relationship with nature has always been the subject of architectural thinking. With "dry" architecture as the core, the mountain architecture in northern Guangxi contains the charming charm of regional culture and the survival wisdom of the working people, especially the philosophy concept of conforming to and respecting nature, which has profound aesthetic significance for the current construction of modern urban architectural design.

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