Comparative Study on the Style of Commercial Streets in Traditional Ancient Villages in Gui-Xiang-Gan-Wan Area

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Abstract: Using literature review, field survey, historical connection and comparative analysis four kinds of research methods, combined with urban space theory, street space theory and environmental psychology theory, and nature, climate, geography, history and social conditions of village, the landscape characteristics of the commercial streets of eight traditional villages in the Gui-Xiang-Gan-Wan Area are compared. The research content focuses on the interface along the street, the node landscape and the street section. The conclusions show that there are differences in the activities, architectural forms, commercial atmosphere expression, living atmosphere expression, spatial aesthetic expression and transportation mode of these commercial street spaces in ancient village; but it is the same in terms of aesthetic needs, cultural expression needs, designing ideas according to local conditions, and designing reference behaviors. In the end, it is further pointed out that “reference”, “integration”, “innovation” and “inheritance” should be regarded as the ideological principles of the protection and construction of ancient villages in Guilin.

1. Introduction

The ancient village not only has development value, but also has high scientific research value. In modern society, ancient villages must gain their competitiveness and vitality in their development, and must highlight their own characteristics, including the material and cultural heritage and spiritual and cultural heritage of ancient villages [1]. The material space form left by the ancient villages is a concentrated expression of the ancient people's spiritual culture; its expression of spiritual culture is naturally smooth and deep, especially for the modern rural planning and design to maintain the traditional characteristics of high reference value.

The commercial streets of traditional villages carry multiple functions of commerce, transportation and life, which are a highly concentrated place for interaction. The behavioral needs and cultural beliefs of different groups converge here, making the commercial streets have various types of buildings, perfect facilities, and unique landscape, thus forming a rich and energetic architectural space form. The spatial characteristics of traditional village commercial streets can take into account the commonality of the farming-reading-living ancient dwellings as well as the individuality of the business-like ancient dwellings, so it has a good research significance.
2. Origin of “Gui, Xiang, Gan and Wan Area”

“Gui-Xiang-Gan-Wan Area” is a concept proposed to adapt to this research. “Wan” refers to Anhui, “Gan” refers to Jiangxi, “Xiang” refers to Hunan, “Gui” refers to Guilin; the foothold is the study of the ancient village of Guilin; the appearance of the ancient dwellings in the four areas is similar (Figure 2), so it can be compared and try to use the dwellings as the source of exploration. The ancient village of Guilin was mainly formed during the long migration process of “Jiangxi Filling Hunan and Guangdong”. The ancestors came from Hunan, Jiangxi, Guangdong, Shandong and other provinces. The migration of the population brings about cultural integration, which in turn leads to the evolution of the architectural style, which makes the ancient villages of "Gui", "Xiang", "Gan" and "Wan" have a relationship with each other, so it is called "Gui-Xiang-Gan-Wan Area".

Fig. 1 Investigation scope of old commercial streets in each village

Fig. 2 Similarity examples of the style and landscape characteristics of Ancient Residences in Guilin, Hunan, Jiangxi and Anhui

3. Selection of survey geographic range

Fang Zhiyuan [2] studied the population flow in Hunan, Hubei and Jiangxi during the Ming and Qing Dynasties, and pointed out the post roads between Jiangxi and Anhui, Hubei and Hunan, including: 1) the waterway from Jiangxi Hukou through the Changjiang River; 2) the waterway from Jiangxi Nanchang through the Ganjiang River, Poyang Lake, Changjiang River, Xin'anjiang River to Anhui Xiuning; 3) the waterway from Jiangxi Shangrao through Wuyuan to Anhui Xiuning; 4) Jiangxi Ji'an to Hunan Chaling, then by Mishui River, Xiangjiang to Hengyang; 5) the land route from Jiangxi Nanchang through Ruizhou to Liuyang County of Hunan Province, then from Liuyang County through Liuyang River to Changsha; 6) Jiangxi Nanchang through Yuanshui, Lishui and Xiangjiang to Hengyang; 7) Jiangxi Nanchang through the Ganjiang River, Xihu, Mi River to Yuyang. Among them, 4, 5, 6 and 7 represent an important way of population mobility and cultural communication between Hunan and
Jiangxi. Further search for the traditional Chinese villages along the Gui-Xiang-Gan-Wan Area (up to the first three batches), and finally determine 24 of the 198 traditional villages with commercial street space. The paper selects the commercial streets of Hong Village, Xidi Village, Likeng Village, Wangkou Village, Luotian Village, Shanggantang Village, Xiongcun Village and Jiangkou Village as research cases. (Figure 1)

4. Comparison of style of commercial streets

(1) Comparison of commercial building types

The Hui-style ancient residential shops are mainly represented by the form of lower shops and upper houses, and the height is mostly two- or three-storey. Because the tall fire gable plays a better fire prevention effect, the height of individual commercial buildings can reach more than 10 meters. The outer walls are all made of masonry, with white plaster whitewashed. (Figure 3-b, c)

The Gan-style ancient residential shops are mainly represented by the form of lower shops and upper houses, and the height is mostly two-storey; the few are single-family or front shops and back workshops styles, and the height is single-story. The roof is built on stilts and used for storage. On the one hand, it prevents the items from getting wet, and on the other hand, it can be adiabatic in summer. Some of the exterior walls are all built by masonry, while some of the exterior walls have large-area wooden doors and windows, and the proportion of masonry walls is low; the outer walls are all black bricks, and covered no plaster. (Figure 3-a)

The Xiang-Gan style ancient residential shops are mainly in the form of front shops and back workshops styles. The heights are mostly single-storey, and the roof built on stilts and used for storage. A few commercial buildings adopt the form of the lower shops and upper houses style, and the height is two-storey. (Fig. 3-d) Most of the exterior walls of the building have large-scale wooden doors and windows, and the proportion of masonry walls is low; a few of the exterior walls of the building are entirely made of masonry, but such buildings are often non-commercial buildings but residential buildings or ancestral halls. The exterior walls are made of black bricks; some buildings only cover plaster on the walls inside the porch or on the high area of the fire gables. (Figure 3-e, Figure 5)

(2) Comparison of façade along the street

The two sides of Hui-style ancient commercial streets are mainly composed of building facades and courtyard wall facades with hollow patterns. The white color of the building not only creates an elegant exterior space, but also symbolizes brightness, simplicity, elegance and lack of strong personality, which is consistent with the characteristics of Confucian cultural thought. The courtyard wall of Hui-type dwellings is relatively short, and there are many windows with hollow stone carvings and large arches on the metope. The landscape has good permeability. There are two types of Hui-style ancient residential shops. The first kind of shop has very closed exterior walls and relies on hanging ancient commercial plaques, lanterns and flags to attract business. Another type prefers to set up a pavement on the upper floor. The building facade shows the quaint wooden column and lattice fence. The openness of the pavilion space perfectly conveys the commercial behavior to the pedestrians on the street. Both enhance the commercial atmosphere of the street. The landscape of the façades on both sides of the street is hierarchical: first, it is reflected in the combination relationship between the courtyard wall along the street and the individual buildings attached to it, that is, the front is the courtyard wall, and the back is the tall building; second, it is embodied in the vertical distribution of each layer of the single building, including three ways: straight up and down neat type, arcade type and set-back type; thirdly, it is reflected in the high and low scattered fire gable façade of the distant building group. (Figure 4)

The Gan-style ancient commercial streets are mainly composed of plain brick walls and large area of wooden windows. Large-scale door and window openings enable the behavioral process of communication and acquisition of business information between merchants and passers-by. Commercial buildings are decorated with golden plaques on black ground, red lanterns and commercial flags as commercial symbols to show the difference between them and ordinary residential buildings, thus creating a strong atmosphere of commercial activities.

The Xiang-Gan style ancient commercial streets are mainly composed of a small number of plain
brick walls and a large area of wood doors and windows. The design methods of the ancient commercial streets of Xiongcun Village and Jiangkou Village in Guilin are basically the same. The openings of doors and windows are more open than the ancient shops in central Jiangxi. The entrance of some commercial buildings directly consists of 4 or even 6 wooden doors. The facade of the building is completely composed of wooden boards. The texture of the interface is soft and easy to handle according to actual commercial conditions. The wooden door surface is all solid, and no lattice window with a hollow pattern is provided, which is obviously different from the purely residential Xiang-Gan style dwellings. Many of the shop gable walls in the lower space of the eaves are whitewashed, with the purpose of writing the name of the store and the important business information such as business items. The white wall and the black handwriting play a good role in contrast.

The commercial buildings lined up along the street, changing with the terrain, or turning, or undulating. The gable walls under the eaves form a layered landscape along the depth of the street. Looking into the distance, they are like a small “interval” on the interface between the two sides of the street, which have a sense of rhythm and sequence, and constantly express repeated rhythms. At the same time, it allows passers-by to obtain store business information while walking. Therefore, it is considered that such expression is simple, practical, convenient, intelligent and remarkable. (Figure 5-a, b) The outer walls of some buildings along the main street of Xiongcun Village are made of adobe bricks, with the khaki façade. Except for the local conditions of the building materials, it is more indicative that the economic situation of this village was worse than that of some ancient villages in Anhui and Jiangxi regions. Different from the above two villages, the shops in Shanggantang Village in Hunan is a form of lower shops and upper houses; the street is flat; the shops along the line have a little arcade and cornice features, and are slightly similar to the hierarchical nature along the depth direction of the street of the above two villages. (Figure 5-c) In addition, the facade of the Xiang-Gan style ancient shop is usually set with thick window sills and tall window fences. The window sills are all arranged outdoors, mostly made of black bricks, some of which are made of adobe bricks; they were used as paving platforms for goods in ancient times, which not only provided opportunities for the display of goods, but also effectively increased the business space of the commercial buildings. The shutters signal whether the shop is open or not. The window fence towers over the edge of the outdoor window sill, similar to the wooden wands used to enclose the courtyard in the north, mainly for theft prevention. (Figure 6)
Comparison of ground pavement

In the Hui-style ancient village, except for the Hongcun Village using dressed stone slates, the streets of other villages are dominated by green stone slates. Luotian Village in the central Jiangxi uses strip dressed stone as the main paving material, and is arranged in the bottom of the street space in a regular way, which is the same way as Hongcun Village. Both green stone slate and strip dressed stone slate have many advantages such as wide material distribution, wear-resisting, hard texture, easy to be smashed into boards, and the effect is solemn and elegant.

The pavement material composition of ancient commercial streets in Xiang-Gan style village is relatively complex, which varies from village to village and from place to place. The Shanggantang Village uses irregularly shaped green stone as the paving material; before the reconstruction of Jiangkou...
Village, the pebbles are used as paving materials. The most noteworthy is Xiongcun Village: green stone is only arranged in the steps, in the center of the road and in front of individual buildings [3]; many sections are paved with pebbles and rocks; due to the irregular shape of these stones, the gap formed after the arrangement is filled with smaller particle size stones; white stones are also used in individual roadways. According to the villagers, white stones can be burnt into lime; the white ash painted on the exterior walls of some ancient houses is made from such stones.

(4) Comparison of node space landscape

Some shops at the intersection of Hui-style ancient villages streets are affected by the culture of the local dwellings. The outer walls do not open windows, and the architectural form is relatively closed. For example, Shang Detang [3] is a commercial house built in the Ming Dynasty and the oldest residential building in Xidi Village. Due to the restrictions imposed by the feudal society's construction regulations, the main gate is in the side of the alley, not allowed to face the main street, which is very hidden. Despite its large volume and majestic architectural style, such an arrangement is difficult to focus on the pedestrians' views, so it cannot be a node landscape.

On the contrary, there is a brick-and-wood commercial building at the northwest corner of the intersection of the south side and the main street of Yudai Street in Xiongcun Village. [3] Although the style is dilapidated, people can still feel the busy business scene in front of the store. Windows can be opened on the east and south sides, especially on the south side, a small shop platform (remains) is arranged facing the street, using the intersection of the street to set the east and south business orientation, indicating that the landscape design is very exquisite. In a fiercely competitive business environment, the choice of multi-directional management will play a role in expanding the publicity of store business activities. If the model is based on other commercial buildings, of which the green brick gable walls are prominent in the street and are consistent with the gable wall position of the north side of the building, the line of sight will be blocked at the intersection of the street and the street landscape will be destroyed. Therefore, this place can constitute node landscape and has certain significance of landscape identification recognition. (Figure 6-b)

In ancient village of Hui Style, some ancient gates are set in succession, which makes the space landscape have a sense of hierarchy. And the setting of some ancient gates serves to divide the functional zones. The "watchtower" of Luotian Village in central Jiangxi is well preserved. The wall is made of green brick and there is a stone door-shaped door hole at the bottom; the upper attic is covered with wooden planks, and the attic railings are meticulously carved. The watchtower is located at the intersection of front streets and bystreets. The front street is the commercial block of Luotian Village. The back street is the cargo storage block of Luotian Village. The bystreet is the connecting section of the front street and the back street. Therefore, the watchtower has three functions of defense, landscape and functional zoning. (Figure 7-a) The ancient gates of Xiang-Gan style street can be divided into three types. The first type is the ancient gate in the form of a tower, such as the Purple Air Gate at the end of the south side of the front street in Xiongcun Village. It is condescending and imposing, with strong surveillance and defensive functions. (Figure 7-c) The second type is the ancient gate with a small attic. The upper level is a low-lying loft with a censer for worship; the lower level is an arched door. (Figure 7-b) The low gate size limits the use of the vehicle, which is not suitable for carriages, but at the same time effectively prevents the rapid invasion of the horse bandits. The third type is the single-walled
ancient gate, which has the same shape as the Hui-style ancient gate.

Based on different historical, cultural and social backgrounds, some important node landscapes in the ancient village commercial streets in each region also have obvious individuality in the types of markers and cultural significance. The node landscape of Hui-style ancient village commercial streets focuses on the flavor of the feudal clan system: the Shenming Pavilion is the landmark landscape of the core node of Likeng village. In ancient times, it was the gathering place of the village to reward the good and punish the evil. The Ancestral Hall of the Yu Family is located at the east end of the ancient commercial street of Wangkou Village, which is the most important node landscape of the whole village.

The Xiang-Gan style ancient village node landscape focuses on the commercial culture charm. No matter the spiritual culture connotation or the material space form, there is less restraint and more flexibility: the Jiangxi Guild Hall, the Hunan Guild Hall and the dock are the core node markers of the Xiongcun Village. However, the ancestral hall in village is only hidden inside the residential building group, and it is not prominent in terms of location and landscape; there is a green stone arch bridge in the water gap of the north end of the old street in Jiangkou Village. The ancient bridge was built in the Tongzhi Period of the late Qing Dynasty. It plays a connecting role in the north-south direction of the ancient post road and has important traffic and landscape functions.

(5) Comparison of street section

In the survey of the ancient village commercial streets in the Anhui and Jiangxi area, there are few steps, indicating that the location of the village is relatively flat.

In the Xiang-Gan style ancient village, the main street of Xiongcun Village and the old street of Jiangkou Village show a large degree of ups and downs along the depth direction. For example, the commercial street on the south side of the Jiangxi Guild Hall on the Xiongcun main street is more undulating, with more green stone steps along the line, and the street has a certain curvature. The distance condition is a significant factor affecting cognitive distance [4]. The appearance of steps can increase the sense of street distance from the perspective of human vision and psychology [3]. As you continue up the street, turn the corner, the street widens in front of you, and a temple with a small hill roof appears, bringing the rhythm of the street landscape to a climax. The number of steps along the main street of Xiongcun Village, which is about 700 meters in length, is as many as 86 (including 45 steps under the Purple Air Gate), which are distributed in 18 places along the street.
In the "Survey of the Street", Yoshinobu Ashihara said that when the ratio of the width of the street to the height of the building facade, that is, D/H = 1 to 2, the spatial scale gives a comfortable feeling; when D/H<1, the space scale gives a narrow feeling [5].

Referring to the research results of Zheng Hao, Wu Xiao and others [6], Chen Xiaodong [7], Huang Shiyu [8], Huang Junhua [9], it is considered that the general value of D/H in Xidicun commercial street is about 0.4, while that in Luotian Village commercial street is about 0.5.

Narrow street space is conducive to the occurrence of commercial activities [10, 3]. People often prefer to refer to the degree of enclosure and the area of the sky leaking from the street, that is, the smaller the exposed area of the sky, the stronger the sense of enclosure, and the stronger the business atmosphere.

Due to the demand for rain and sun protection, the Xiang-Gan style commercial building generally has larger cornice, which different from the Hui style. When calculating the D/H value, the horizontal distance of the cornices on both sides should be removed in the width of the street, and the edge of the cornices should be used as the boundary between the two walls. The study selected 17 points along the street for measurement. (Figure 9) The statistical data shows that the D/H value after removing the cornices distance is much lower than the D/H value of the unremoved cornices distance, indicating that the use of the cornices is very obvious for the encirclement of the sky. S9, S11, S12 and S14 are the measuring points on the street segment with the most concentrated commercial buildings with cornices in the village. The S13 point space type is between the street and the square and the absolute scale of the space is very different from other street space points. It is an individual case, so it is eliminated. Finally, the D/H value of S9, S11, S12 and S14 on the main street after removing the cornices distance is generally between 0.40 and 0.52. Similarly, the D/H value of old street in Jiangkou Village after cornices removal is generally between 0.42 and 0.58. It is calculated that the D/H value of the ancient commercial street in Shanggantang Village is generally between 0.21 and 0.28 after cornices are removed.

Fig.9 Xiong village survey point
5. Comparative analysis of the characteristics of style features

Summarize the differences of the style and features of commercial streets as follows.

Table 1  Summary of the spatial characteristics of ancient village commercial street in Guilin, Hunan, Jiangxi and Anhui

| Village survey | Ancient commercial street of Hui style | Ancient commercial street of Jiangxi style | Ancient commercial street of Xiang-gan style |
|----------------|----------------------------------------|-------------------------------------------|---------------------------------------------|
| Climatic conditions | subtropical monsoon climate | subtropical monsoon humid | subtropical monsoon humid |
| Base condition | relatively flat | relatively flat | higher fluctuation |
| Historical condition | relative social stability | relative social stability | much war chaos |
| Business gang culture | Hui merchants culture | Jiangxi merchants culture | Jiangxi merchants culture, Guangdong merchants culture |
| Architectural form | shop downstairs and residence upstairs | shop downstairs and residence upstairs, shop in front and workshop behind | shop downstairs and residence upstairs, shop in front and workshop behind |
| Commercial buildings | partial closed and partial opened | opened | opened |
| Business symbol | plaque | plaque, large area door and window opening | gables, fences, window panels, large-area doors and windows and openings picked out from beneath the roof |
| Permeability | construction of hollow courtyard wall | nothing | nothing |
| Openness | the Construction of pavilions upstairs | large-area doors and windows of shops | large-area doors and windows of shops |
| Arrangement | reflected between courtyard walls and buildings, vertical Direction of Buildings, the far end of the street | nothing | reflected on both sides of the street in the depth direction |
| Colour | white | the colour of cyan bricks, white, the colour of earth brick | the colour of cyan bricks, white, the colour of earth brick |
| Pavement | cyan bricks and granite mainly | granite mainly | cyan bricks, white bricks, cobble stone |
| Splicing mode | regular | regular | irregular in some places |
| Form | all single-wall arches | gatehouse | single-wall arches, attic arch, gate tower |
| Old Gate | Landscape function, zoning function | Defense function, landscape function, zoning function | Defense function, zoning function |
| Function | Patriarchal clan system has been strengthened, restrained atmosphere. | ——— | Patriarchal clan system has been weakened, flexible atmosphere. |
| Core node landscape | | | |
| Street cross section | Vertical Section | Cross section D/H | around 0.4 | around 0.5 | around 0.5 |

6. Conclusion

It is found that there are differences in six aspects. First, the difference in activity objects. Affected by the migration background and geographical advantages of the historical population, different business gang cultures are important reasons for the differences in the spatial features of the commercial streets of the ancient villages. Second, the difference in architectural form. It is influenced by climatic conditions and dominant culture. Third, the difference in business climate expresses. Many Hui-style commercial buildings are relatively closed, but they are good at using commercial symbol ornaments and pavilions. The Xiang-Gan-style ancient village commercial buildings are simple in appearance, but they are good at using paving, large-area windows and doors, window panels, cornice, etc., which have regional residential characteristics. The Gan-style ancient village commercial buildings are somewhere in between. Fourth, the difference in living atmosphere expresses. Hui-style ancient villages, especially Xidi Village and Likeng Village, are built with a focus on garden-style art style, and the living
atmosphere is relatively comfortable and cozy. While the Xiang-Gan-style ancient village is full of defensive atmosphere. The Gan-style ancient village is between the two. Fifth, the difference in the aesthetic expression of space. The beauty of the Hui-style ancient village space is derived from the solemn and elegant style of the garden, and the political charm is higher than the commercial charm. The beauty of the Xiang-Gan-style ancient village space is derived from nature, climate and geographical conditions, and the commercial charm is higher than the political charm. Sixth, the difference in transportation methods. The Hui-style ancient village commercial street is good for carriages; the Xiang-Gan-style ancient village commercial street is suitable for caravans. This affects the way goods are transported in commercial villages. In addition, there are similarities in five aspects. First, the same aesthetic needs. Second, the same cultural expression needs. Third, the same designing ideas to adjust measures to local conditions. Fourth, the same design reference behavior. The essence of innovative design of residential style is the re-combination of multi-cultural construction. The inheritance of architectural advantages should be higher than the inheritance of architectural forms. On the contrary, there will be a uniform rural style construction mode. Learning from, integrating, innovating and inheriting should be regarded as the ideological principle of the protection and construction of ancient villages in Guilin.

Acknowledgment

Project supported by National Natural Science Youth Foundation of China (51308139)

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