

Analysis on the Modeling Characteristics of the Masonry in the Han Dynasty Architectural Portraits

Lai Zhou^{1,*}

¹College of Art and Design, Wuhan Textile University, Wuhan, Hubei, China

*Corresponding author. Email: yliu@nufe.edu.cn

ABSTRACT

The Han Dynasty portrait masonry left a lot of architectural drawings for later generations. These architectural performance drawings played a key role in the study of Han Dynasty architecture. However, is the building on the portrait masonry a reproduction of the real building or a product of artistic processing? It requires careful reading and analysis. This article attempts to make a basic analysis of the Han Dynasty architectural portrait masonry from the perspectives of modeling, perspective, and detail portrayal, and analyzes the spiritual atmosphere of the Han Dynasty architecture by modeling the architectural patterns on the portrait masonry.

Keywords: Architecture, portrait masonry, modeling, the Han Dynasty

I. INTRODUCTION

The Han Dynasty society is a magnificent historical era, and the richness and prosperity of its portraits and masonry is breathtaking. So far, there are no less than 10,000 Han Dynasty portrait masonry works collected and sorted out by academic circles, among which there are countless architectural works, pavilions, and gates. The author makes some analysis of decorative modeling techniques on some of these characteristic works.

Because of the wooden frame building system that has been formed in China for thousands of years, the physical objects of the Han Dynasty have long disappeared. Today, most of the research and arrangement of Han Dynasty architecture comes from archaeological sites, burial object archetypes and portrait textual researches. The buildings on the portrait masonry can indeed provide a lot of valuable information for the study of Han Dynasty architecture, but due to the contradiction between the three-dimensionality, space-time of the architectural art and the flatness and limitation of the portrait masonry, the two can't be completely equivalent in the content. In other words, people can learn about the structures, components and shapes of the buildings at that time from the portrait masonry, and understand some basic layout methods and functional space arrangements, however, the architectural painting on the portrait masonry can't be regarded as the architectural presentation of the Han Dynasty. [1]

The transformation between life and artistic works' "like and unlike" exists in many works of art. Taking Chinese decorative paintings as examples, they are full

of decorative methods such as deformation, exaggeration, and flattening. All point, line, and surface elements follow the rules of formal beauty. The architectural works on the Han Dynasty portrait masonry provide people with a window to understand the Han Dynasty architecture, and also provide a series of pictures of the Han people's living style, living habits, economic level, and superstructure and so on. And this picture is rendered artistically based on the portrait masonry. Studying the architectural patterns of the portrait masonry mountain is helpful for people to analyze the aesthetic tendency of the plastic art of the Han Dynasty, and it is also helpful for people to understand the style of the Han society.

Architectural works on portrait masonry mainly include palaces, temples, buildings, pavilions, high platforms, water pavilions, bridges, gardens, courtyards and other types, covering almost all architectural forms in the Han Dynasty. It can be interpreted from the following aspects.

II. MULTI-ANGLE TECHNIQUE OF EXPRESSION

A. Different perspective expression techniques

The perspective in modern architectural theory is divided into the following points: one-point perspective, two-point perspective, three-point perspective, and multi-point perspective. Among the architectural drawings, the first two perspectives are used the most.

Multi-point perspective is also called scattered point perspective in Chinese painting. It is usually used in

long scroll works. As the plot progresses, the vanishing point appears constantly instead of only one or two vanishing points. In ancient China, the ancients did not come into contact with the modern perspective theory system. Ancient artists and craftsmen incorporated their own perspective techniques into the picture based on observation and experience. There are no lack of one-point perspective and two-point perspective recognized by modern science.

Han Dynasty portrait masonry is based on plot and frame size, and three perspective laws are all involved. For example, in the Banquet of Eastern Han Dynasty ("Fig. 1") [2], there is a feast on the ground, the middle is the saint, the left and right crowds are on both sides, and the saint is where the vanishing point is in the middle. This is a portrait brick with a little perspective technique that was rare at the time and the various cuisines in the middle seat look small in the distance and big on the contrary and it also looks a lot in the distance and few on the contrary. Because the size of Chinese painting figures is determined by the hierarchy, if safety follows the principle of looking small in the distance and big on the contrary, the middle saint should be drew the smallest, which is inconsistent with the ancient social etiquette of humility and order. Therefore, the characters in the picture do not follow the principle of looking small in the distance and big on the contrary, and basically the characters at the banquet are the same size. Although this work can't be viewed completely with modern perspective techniques, it can be seen that the Han Dynasty craftsmen knew and could flexibly use one-point perspective. At the same time, because the table and food follow the perspective of looking small in the distance and big on the contrary, it shows an interesting effect. If you look closely, there is a distant view on the right side of the picture, and the characters in it are much smaller, indicating that the craftsmen of the Han Dynasty really understood perspective and were good at using perspective techniques.

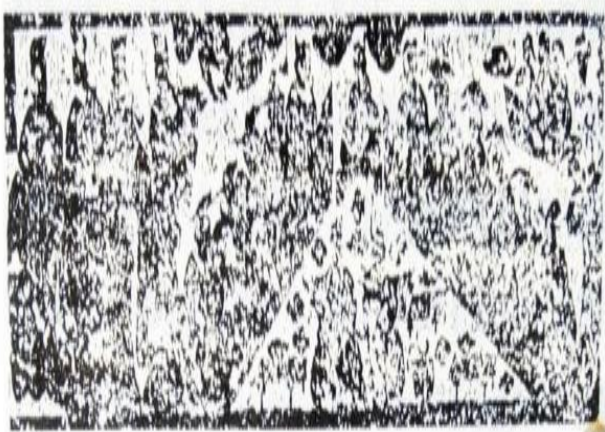


Fig. 1. The Banquet of Eastern Han Dynasty.

In the "Laboring. Pension Drawing" ("Fig. 2") [3], the upper part is double sheep, the middle part is the barn and house, and the lower part has the scene of stilt style architecture and farmland labor. After carefully looking, the backgrounds are divided into the mountain top, the intermountain, and the foot of the mountain. Several buildings are three-dimensional and have a perspective relationship. Together, they form a unique effect of scattered perspective in the picture. A picture used easily expresses the life of grazing on the top of the mountain, living in the intermountain and the manor life of farming in the foot of the mountain. If strictly in accordance with modern perspective theory, the aerial view is used to express the bird's-eye view, the farmland is large, the houses are small, and the animals and people are difficult to distinguish, which make it impossible to achieve the expression effect of pictures. So the craftsmen of the Han Dynasty downplayed the farmland, highlighting houses, livestock, and characters. In these three, the houses are arranged large, the livestock is the second, and the characters are the smallest. The multi-angle perspective perfectly expresses this farming life. In the process of creating portrait masonry, both the perspective relationship and the picture effect are considered.



Fig. 2. The Laboring Drawing.

B. Combined expression of elevation and cross-section draws

In modern architectural drawing methods, there are many elevations and cross-sections, and these are also presented in portrait bricks in the Han Dynasty.

In the "one main-room and two wing-room" Architectural Drawing ("Fig. 3") [4], the combination of elevation and cross-section views is also the most common way to express architecture in Han Dynasty portrait masonry. In this architectural drawing, in order to represent the activity place of the character, the building usually retains several major parts such as the large roof, pillars, and foundations, which are expressed in the form of facades. In the figure, the characters are often large and occupy the main part of the hollow house. Because the characters move in the middle of the house, they can be seen in the form of cross-section

diagrams. Therefore, most portrait masonry is a combination of elevation and cross-section diagrams. The proportion of characters occupies the entire house space. In the building, the roof accounts for nearly half of the entire building. This does not represent the proportion of the roof of the real building, but it can explain the shape of the large roof of the Han Dynasty and the importance of the roof in the building.

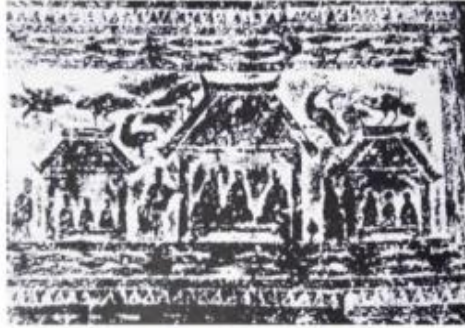


Fig. 3. The House Drawing.

C. Axonometric drawing expression technique

In these architectural paintings, in addition to the representation method of the elevation drawing, there is also a three-dimensional expression method. The axonometric drawing is used more.

In the Pavilion Map of Shandong Feixian ("Fig. 4") [5], the pavilion shows three sides: the front, left and right sides show a certain perspective relationship. According to the current diagram theory, it is a cabinet drawing. However, strictly speaking, the left and right sides are completely symmetrical, which does not fully comply with the cabinet drawing, but its multi-angles show the activities of the characters in the cabinet, which has both the characteristics of axonometric drawings and the taste of perspective views. It is a masterpiece of Han Dynasty artisans in order to express more viewing angles. It is also rare in Han Dynasty portrait masonry works.



Fig. 4. The Architectural Drawing.

D. Multi-angle comprehensive technique of expression

This Courtyard Drawing ("Fig. 5") [6] is an aerial view work. The courtyard is rich in architecture from the gate, the main house, the wing-room, to the attic and so on. There are flying birds and poultry in the yard, which vividly reflects the form of the manor at that time. When dealing with the courtyard relationship, the author set the fence of the courtyard in the middle according to the outline of the masonry, and used axonometric methods to separate the space with the fence. Among the steps in the main hall, some are inclined to the left and some are inclined to the right, which belong to freestyle and are very vivid. Characters and animals use facades, so that they can depict the whole, and are not limited to proportional relationships.

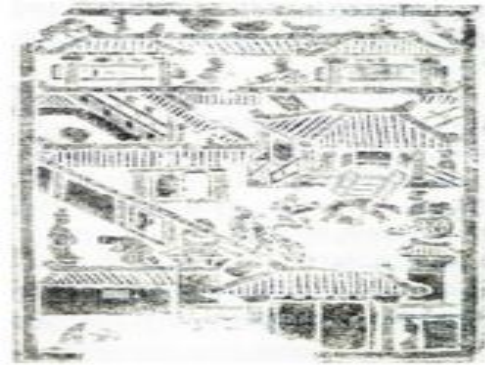


Fig. 5. The Courtyard Drawing.

In the Han Dynasty portrait masonry, there are many buildings listed on a flat surface. Even if it is a building with contextual relationship, many of them will use the bottom of paintings to represent the front hall and the upper of paintings to show the tiled structure of the backroom [7]. The building with the spatial contextual relationship will be flattened to tell the story on a plane. As shown in ("Fig. 6") Architectural Drawing [8], at first glance, this figure seems to be a two-story building with three open rooms on the lower level, with characters in the middle, two horses on both sides, and three houses on the upper floor, each with characters activities. Combining the characteristics of the Han Dynasty architecture, it is impossible to raise horses on the first floor and live on the second floor. People with identity and doorsteps will be separated from humans and livestock, and livestock have special warehouses. This should be a storyline of performance. The arrival with riding on a horse, the reception by servants and the pulling horses are shown in the lower part of the picture, and the upper part of the picture shows the plot of receiving by the host after entering the room. In other words, the lower part expresses the front door, and what the upper part shows is the front hall of the reception. Moreover, after carefully observing, the building in the middle of the upper floor is blocked by the left and right buildings,

forming a "品" glyph. The characters in the middle building sit with feet in the air instead of sitting on their knees. In the Han Dynasty, high-foot furniture was not popular. People sit on heels on formal occasions. A large number of feasting pictures were in the form of sitting on the floor. Sitting with feet in the air can only appear in privacy, which is indecent in the public. Therefore, it can be judged that the house in the middle is actually the back bedroom, and the owner can sit with feet in the air on the couch in the back bedroom and enjoy a moment of relaxation. Therefore, although the elevation is shown in this picture, the activities of the characters in the buildings with different depths are presented one by one in a tiled manner.



Fig. 6. The Architectural Drawing.

In the Xuzhou Han Portrait Stone Architectural Drawing ("Fig. 7"), [9], the elevation is mainly used, and the building on the left uses the effect of superimposed shaded to show the context and increase the sense of space of the building.



Fig. 7. The Architectural Drawing.

The Reception Banquet ("Fig. 8") [10] is a format composition; the lower level is a grid, from right to left to express the arrival of the carriage and the host welcoming guests by the door. The upper floor is a grid, which shows the scene of feasting and celebrating in different buildings. In addition, in the Han Dynasty portrait masonry, the multi-grid technique is used

everywhere to place different storylines in them to form a whole. In modern terms, a grid is equivalent to a montage, and scattered shots are cleverly connected by the ancients for the audience to read. Therefore, the above architectural drawings people have seen are all comprehensively used from multiple angles and multiple methods.



Fig. 8. The Reception Banquet.

The author believes that the reason why there are so many expression methods is that the Han Dynasty artisans have different understandings of anatomy and perspective, and some have observed small in the distance and big on the contrary, superimposed back and forth, and some are accustomed to using the flat method. There is no uniform stipulation of technical methods, all of which belong to the creation of collective consciousness in a period. The processing methods such as carriages and characters are relatively uniform, while the processing methods for three-dimensional buildings have their own characteristics. However, all artisans follow the point of view that the elements of the picture serve the theme. The pavilion is an integral part of the storyline, so no matter which method of processing, it is all unique.

III. THE STYLIZED EXPRESSION

As mentioned earlier, the masonry portraits of the Han Dynasty all have some stylized expression techniques, especially on carriages and characters. The carriages are all on the side. The characters do not pay attention to facial details with mainly describing the movements and matching the trend of the clothes, using a large area of black and white patterns to express the storyline. There are also many stylized expressions in architecture.

A. Roofs

The expression of the roof is basically frontal and symmetrical, and occasionally there are three-dimensional and aerial views expressing several faces. The roof is generally a flush gable roof, with a ridge, and some with strigidae tails and eaves tiles dripping. The structure and decoration of the roof at that time were briefly drawn in the picture. Judging from the masonry roof of the portrait, there are the hip roof,

double eaves hip roof, overhanging gable roof, gable and hip roof, and flush gable roof and so on. It can be seen that the roof of the building at that time has appeared most systems of later generations. From the emphasis on the roof in the portrait, it shows that the roof was the most important part of the building at that time.

B. House bodies

The house body includes beam columns and bucket arches. From the portraits, it can be seen that the commonly used building structures such as column and tie construction, beam-lifting type, and log cabin type have already appeared. The bucket arch also has a hodful three-liter arch and a double-type bucket arch. In the series of Waterside Pavilion Drawing ("Fig. 9") [11], the entire pavilion is supported by bucket arches, standing on the water surface, and there is a staircase next to it. You can enter the pavilion from the stairs to enjoy the scenery. The fishes and birds in the water are playing, which is pleasing to the eye. It can be found that no matter how complicated the stylized expression of the bucket arch is, it is basically a hodful three-liter structure. The stairs are taken from the side armrests, forming a sloping line from the bottom to the top of the screen. Behind the armrests are a group of characters who go up the stairs to express the intention of going upstairs. The author believes that there is only one pavilion in the picture, which is far from satisfying the space for a large number of guests to board the building. In fact, the building should be a pavilion combination, but because of the limitation of the picture of the masonry and the stylized application of "pitting one against ten" in the picture, only one pavilion is drawn. It is also simplified and exaggerated for more complicated bucket arches. Often, a large hodful three-liter bucket arch is used as an example to be painted in the figure. The staircase also adopts the stylized method of side railings. The stairs are filled with guests to exert the imagination of the audience. Looking at the four pavilion pictures, except for the differences in some details, the layout, character placement, and detail depiction are almost the same, indicating that stylized expression has become a common practice in Han Dynasty portrait masonry.

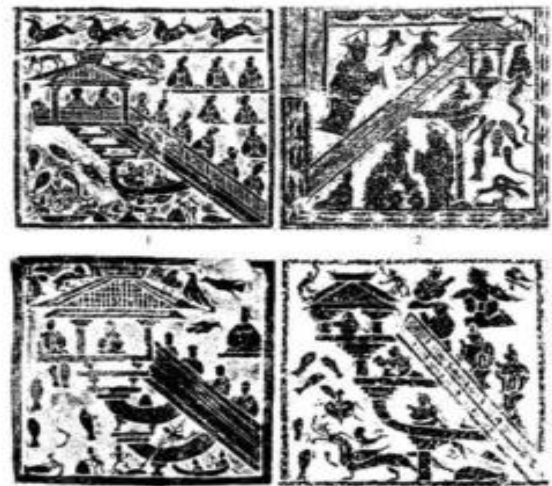


Fig. 9. The Waterside Pavilion Drawing.

C. Roof corners

Because the roof has a certain slope, there will be two corner parts of the white space. One of the characteristics of Han portrait masonry is fullness, which emphasizes fullness in composition. The wise ancients used birds and beasts to fill the blanks of the corners. The author believes that there are two reasons for this. First, there are strange images such as chi wen (ornament on roof ridge, in the shape of a legendary animal), beasts, and immortals on the ridges of higher-ranking buildings in the later generations. These may be the origins from the roofs of the Han Dynasty buildings. Many images of immortals and beasts came from the Han Dynasty. Secondly, the Han Dynasty was a society that focused on the thinking of immortals and "regarding death as life" [12]. Humans and beasts dance on the masonry; birds and beasts are mixed in the portrait masonry; buildings such as divine birds and rosefinches are often drawn on the building. Therefore, in the treatment of architectural corners, the ancients showed their romantic nature and talents. Various flying beasts and birds have also brought vitality to the building itself.

IV. CONCLUSION

In short, the rich portraits of masonry buildings in the Han Dynasty brought people rich research materials and visual experiences. For its interpretation, it has architectural significance, pattern and modeling rules, and sociological and ethnological significance. Studying the architectural images on the masonry of the Han Dynasty portraits is not just a look at a Han Dynasty encyclopedia. People can understand the image, shape, roof shape, building details, lifting beams, column and tie construction, log cabin and other basic structures of the Han Dynasty architecture, as well as the way people lived in the Han Dynasty. The

portrait masonry of the Han Dynasty is the crystallization of the collective wisdom of the working people, and the architectural pattern is a particularly exciting part. With their unique expression methods, they show the human settlements, divine residences, and animal habitats of the Han Dynasty in multiple angles and dimensions, presenting people today with a world of coexistence between humans and gods, mixed with reality and imagination.

References

- [1] Zhou Xueying. "Interpretation of Han Dynasty Culture in Portrait Bricks" [M]. Zhonghua Book Company 2005.10 p.81. (in Chinese)
- [2] Banquet. "Comprehensive Study of Han Portrait Stones" Figure 32, p.55. (in Chinese)
- [3] Laboring. The Editorial Committee of the Complete Works of Chinese Portrait Stones: Complete Works of Chinese Portrait Stones (7th Series) p.46. (in Chinese)
- [4] House Drawings. Cultural Relics, No. 5, 1986, p.26. (in Chinese)
- [5] Architectural Drawings. Editorial Committee of the Complete Works of Chinese Portrait Stones: "Complete Works of Chinese Portrait Stones" (3rd series), Figure 9 on p.30. (in Chinese)
- [6] Courtyard Drawings. Editorial Committee of the Complete Works of Chinese Portrait Stones: "Complete Works of Chinese Portrait Stones" (2nd Series), p.19, Shandong Fine Arts Publishing House, Henan Fine Arts Publishing House, 2000. (in Chinese)
- [7] Zhou Xueying. "Interpretation of Han Dynasty Culture in Portrait Masonry" [M]. Zhonghua Book Company, 2005.10, p.174. (in Chinese)
- [8] Architectural Drawings. Editorial Committee of the Complete Works of Chinese Portrait Stones: "Complete Works of Chinese Portrait Stones" (4th series), p.19, Figure 24. (in Chinese)
- [9] Architectural Drawings. "Xuzhou Han Portrait Stone Architectural Drawing" Figure 98. (in Chinese)
- [10] The Reception Banquet. Editorial Committee of the Complete Works of Chinese Portrait Stones: "Complete Works of Chinese Portrait Stones" (4th series), p.33, Figure 7. (in Chinese)
- [11] The Waterside Pavilion Drawing. Li Yali. Study of the Pavilion Building in Han Portraits [J]. "Archaeology and Cultural Relics" 2015.2. (in Chinese)
- [12] Book of Rites. "The Doctrine of the Mean". (in Chinese)