

Re-study on the Restoration of Lacquered Wooden Screens in the tomb of the NanYue King of Western Han Dynasty, Guangzhou

Wenrong Kang^a, Zhe Lin

School of Architecture, South China University of Technology, Guangzhou, China

Abstract: Lacquered wooden screen copper components unearthed from the tomb of the King of the NanYue in Xianggang Mountain, Guangzhou City, is an archaeological discovery of a practical screen relics of the Western Han Dynasty. Lacquered wooden screen copper components unearthed from the tomb of the King of the NanYue in Xianggang Mountain, Guangzhou City, is an archaeological discovery of a practical screen relics of the Western Han Dynasty. After excavation and organisation, its restored parts have become one of the important exhibits in the NanYue King Museum in Guangzhou. In this paper, according to the archaeological excavation report of the tomb of the King of NanYue of the Western Han Dynasty and related information, combined with the copper components of the screen in kind, using the Western Han Dynasty After the study, it is found that the materials used in its construction conform to a materials used in its construction conform to a certain scale modulus law, according to which the restoration results obtained from the research law are more reasonable and credible, and at the same time, it reveals the scientific nature of the research technology of small woodwork in Lingnan during the Western Han Dynasty. Western Han Dynasty.

1 Foreword

Discovered in June 1983, the Tomb of the King of the NanYue in Guangzhou was the tomb of Zhao Mo, the second king of the NanYue Kingdom during the Western Han Dynasty, and the lacquered wooden screen copper components unearthed from the tomb were included in 2002 in the list of China's first 64 cultural relics prohibited from going abroad (in the country). Based on the unearthed copper components, Guangzhou cultural researchers conducted restoration studies on the screen, and the restoration of the screen is now underway. Based on the unearthed copper components, Guangzhou cultural researchers conducted restoration studies on the screen, and the results of the restoration of the screen were exhibited in the centre of the NanYue King Museum The archaeological excavation report "*NanYue KING'S TOMB OF THE WESTERN HAN*"¹, Appendix 11, "Restoration of the Screen Unearthed from the Tomb of the King of NanYue" describes the details of the remains of the lacquered wooden screen elements and the methodology of restoration research. Appendix 11, Restoration of the Screen Unearthed from the Tomb of the King of the NanYue.

According to the research results on the construction technology of Lingnan Western Han Nan Yue Wang period in the past thirty years, such as "Guangzhou Xianggang Western Han Nan Yue Wang Tomb Room Plane Scale Analysis"² and other writings, we have a new understanding of its construction design technology,

and it is necessary to carry out another study on the lacquered wood screen copper components, with a view to It is necessary to carry out another study on the lacquered wood screen copper components, with a view to making the lacquered wood screen restoration results more reasonable and perfect. results more reasonable and perfect.

2 Bronze components of the screen and archaeological restoration results

2.1 Bronze component relics

A total of 17 bronze components of the screen were unearthed³ (10 structural components and 7 decorative components): the structural components were divided into four piles situated in the north-south line of the eastern wall root in the main coffin chamber; the decorative components and some of the divided into four piles situated in the north-south line of the eastern wall root in the main coffin chamber; the decorative components and some of the chopped horizontal protruding supports were piled up at the northern end of the eastern wall. The structural components were divided into four piles situated in the north-south line of the eastern wall root in the main coffin chamber; the decorative components and some of the chopped horizontal protruding supports were piled up at the northern end of the eastern wall root in the main coffin chamber.

^aE-mail: 2225034327@qq.com

From the point of view of bronze modelling art, the more important components can be divided into five groups of 11 pieces (Figure 1): gilt-bronze finials of vermillion sparrows (2 pieces), gilt-bronze finials of double-sided animal heads (3 pieces), gilt-bronze brackets of coiled dragons (2 pieces), gilt-bronze brackets of human-operated serpents (2 pieces), and gilt-bronze brackets of serpentine motifs (2 pieces). Bronze ritual vessels were key to the political legitimacy and social status of pre-imperial Chinese society, and the use of bronze for utilitarian vessels or luxury goods was an expected result of the largely completed social changes of the Han dynasty. Thus, the end of the social dominance of bronze ritual vessels led to other forms of affluent expression and freed decoration from the constraints of the vessel tradition. This is well exemplified in the art of screens from the NanYue king's tomb¹⁰.



Figure. 1 Photographs of bronze components of the main screen Image from <Three Major Discoveries in Qin-Han Archaeology>⁴

2.2 Lacquered Wooden Screen Exhibits

In our country tens of millions of cultural relics, lacquered wooden screen bronze components were included in the 64 pieces of the first banned from going abroad (territory) exhibition of cultural relics in the list, which can be seen that it has a very high value. In the early Western Han Dynasty, the efficiency of lacquer production was greatly increased due to the handicraft system, social demand and technological development. This background played a positive role, and the lacquer art of the early Western Han Dynasty has distinctive characteristics. Lacquerware in the early Western Han Dynasty was mainly of functional varieties such as boxes and plates, with a preponderance of everyday objects and imitation bronzes. The carcasses

of lacquer ware were mostly made of wood. Lacquerware was mostly made of wood and decorated with natural, animal and geometric patterns. The main patterns are cloud pattern, dragon pattern, phoenix pattern and so on, and the secondary patterns are cloud pattern, geometric pattern, bird pattern and so on⁹. In our country tens of millions of cultural relics, lacquered wooden screen bronze components were included in the 64 pieces of the first banned from going abroad (territory) exhibition of cultural relics in the list, which can be seen that it has a very high value. The screen has been since the Zhou Dynasty, until the Han Dynasty palace room generally popular⁵, the screen has become the display of the authority of the son of heaven furnishings. of the son of heaven furnishings appliances, and its restoration research on the understanding of more than 2,000 years ago, the highest rulers of the south of the Lingnan region of the real life of the living scene, has an irreplaceable role. Therefore, the important value of the restoration research on the lacquered wooden screen in the Therefore, the important value of the restoration research on the lacquered wooden screen in the tomb of the Western Han Dynasty King of NanYue in Guangzhou is obvious.

Published in 1991, "*NanYue KING'S TOMB OF THE WESTERN HAN*" in the article recorded in detail the screen components unearthed, after archaeological researchers recovered, the screen for a three-sided enclosure of the practicality of the lacquered wood. components unearthed, after archaeological researchers recovered, the screen for a three-sided enclosure of the practicality of the lacquered wood The screen for a three-sided enclosure of the practicality of the lacquered wood screen: The middle part has 3 bays, and the middle bay has a two-leaf door; left and right side of the wing barriers can be 90 ° folded to open and close.

The restoration study is mainly based on the distribution of the location of the components unearthed, morphological characteristics and digital coding and other information, its research results are more prominent mainly in the following points The restoration study is mainly based on the distribution of the location of the components unearthed, morphological characteristics and digital coding and other information, its research results are more prominent mainly in the following points.

(1) It is clear that the original screen is a practical lacquered wood screen of the Western Han Dynasty, which is quite different from the previously excavated Han Dynasty Ming ware screens.

(2) Detailed description of the morphological characteristics and functional relationship of each component at the time of excavation, provides basic information for the successor recovery study.

(3) Determined the basic form and structural characteristics of the screen, and the results of the restoration research to produce lacquer wood screen replicas, which became an important exhibit of the NanYue King's Tomb Museum, and also appeared in a variety of important touring exhibitions replicas, which became an important exhibit of the NanYue King's Tomb Museum, and also appeared in a variety of important touring exhibitions throughout the year.

3 Relationship between member cross-section dimensions and modulus ratios

3.1 Section dimensions of members

Practical screen production in ancient times for small woodwork types, belonging to the book no later than the Western Han Dynasty, but combined with the remains and then deep study of the books, it can be seen that "a comprehensive look at the understanding of the ancient Chinese architecture that has been grasped, and which has been developed in the past". architecture that has been grasped, according to the long-term development of the continuity and stability of the basic features, we have reason to speculate that in ancient times there must be a set of planning and design principles of the construction and the building⁶.

The structure is scientific and reasonable, not only with China's "wall down the house does not collapse" wood structure building similar, but also with modern buildings in the frame concrete structure similar. The wooden square is the main stress member, and when the wooden square is connected at 90°, the bronze member is set into it, which is the early practice of the early mortise and tenon structure that has not matured yet, and The structure is simple and firm. Lacquered wood screen wooden square cross-section is divided into two grades: the first level is 3 cun high and 1.5 cun thick; the second level is 3 cun high and 1.5 cun thick. Lacquered wood screen wooden square cross-section is divided into two grades: the first level is 3 cun high and 1.5 cun thick; the second level is 1.5 cun high and 0.75 cun thick⁷.

It can be seen that the wood cross-section of the material already has a clear grade and concise ratio, is the prototype of the standardisation of woodworking handicraft technology, and the Song Dynasty, "Building Methods", the Qing Dynasty, "Ministry of Public Works Engineering Practice" with It can be seen that the wood cross-section of the material already has a clear grade and concise ratio, is the prototype of the standardisation of woodworking handicraft technology, and the Song Dynasty, "Building Methods", the Qing Dynasty, "Ministry of Public Works Engineering Practice" with the comparison of the material can be seen to the later generations of the influence of the material (Figure2).

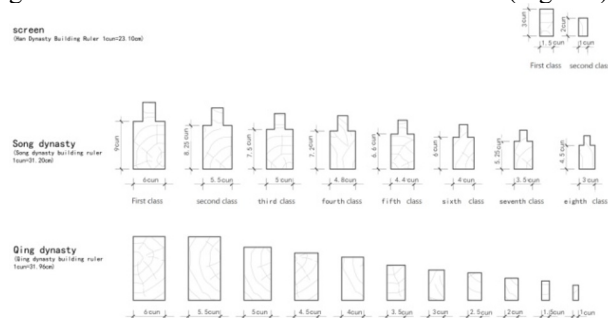


Fig.2 Comparison of the wood used for the lacquered wood screen of the Western Han Dynasty with that of later generations (self-painted by the author)

3.2 Bronze Component Scale

Based on the above analysis of the dimensions and proportions of the cross-section of the wooden square of the lacquered wooden screen, one of them will be and applied to the double-sided animal head gilt-bronze finial, coiled dragon gilt-bronze bracket, human manipulating snake gilt-bronze bracket, snake pattern gilt-bronze bracket and other components, which become new clues to be found in this restoration study (Fig.3).

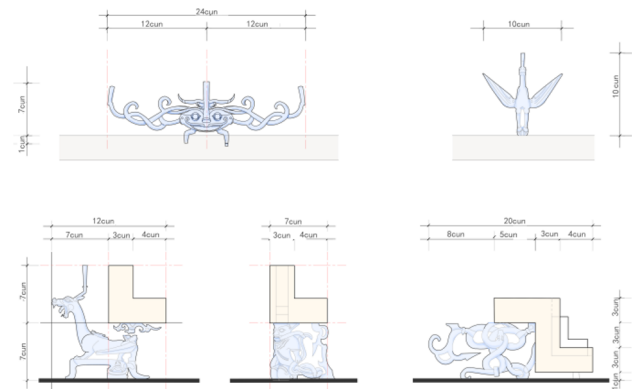


Fig.3 Scale of the bronze components of the lacquered wood screen of the Western Han Dynasty (self-painted by the author)

From the plane ratio, the form of each component tends to a certain size of the square superposition combination. If each component is simplified into the main part and the decorative part, when the component is not decorative part (non-load-bearing components), length and width can be simplified to a single square; when the component has a decorative part (load-bearing components), decorative part of the size and the size of the main body of the component is the same size, can be simplified to a superposition of two or more squares, the composition of the monomer is uniform, the proportion of the concise.

Bronze components are the main basis for the study of screen restoration, not only because of their important role in the structure, but also because the bronze components, as the main compositional elements of the screen façade, have a greater impact on the overall proportionality of the whole, so that different structural forms of the components of the monolithic form of proportionality and harmony of the whole, and the overall modularity of the relationship between the structural monoliths also provides a convenient design and construction.

4 Screen Restoration Exploration and Overall Research Improvement

4.1 Scale modulus recovery

The current screen recovery exhibits are set to 3 metres wide, each screen width of 1 metre, the height is set at 1.8 metres (Figure.4), in accordance with the screen components unearthed roughly the shape of the height of the space at the limit set, and to the Mawangdui Han Tomb in the unearthed lacquer wooden screen Ming ware height and width ratio of 5:3 as a circumstantial evidence, the

author after the study that the recovery work there is a need for in-depth exploration.

Since the screen is designed to be used in two ways, when the screen is closed, the three double-sided bronze animal heads will be on the same level. Considering the total length of the openings, the beasts' heads should be at least evenly spaced in the three openings, so that the total size of the openings would be 12 cun, and one opening would be 4 cun. This value also has a clear mathematical relationship with the length and width dimensions of the double-sided bronze animal heads and the corner elements of the centre door wrapping, which to a certain extent also supports the reasonableness of the values taken.

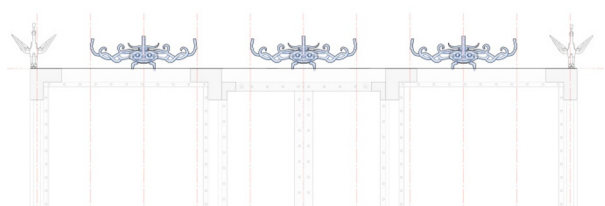


Fig.4 Schematic diagram of the relationship between finial and opening dimensions, drawn by the author

When the screen is buried, the height of the screen is limited by space, so the finial is removed and placed separately, and the total height of the remaining part should be within the range of 7 cun to 8 cun. From a compositional point of view, the total height of the screen (excluding the finials) should be 7.7 chi, with the main body wall height 7 cun (10 elements) and the supports 7 cun high when the individual elements are used as the basic compositional unit (Figure 5). This value is consistent with the range of values taken and confirms the influence of modular thinking on screen design.

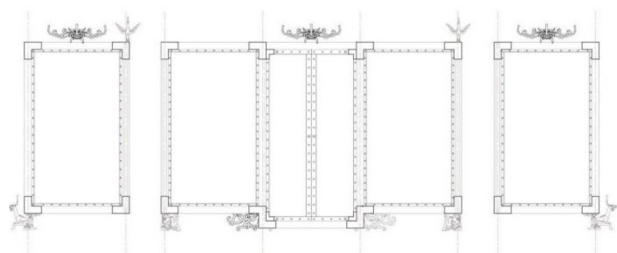


Figure 5: Restored elevation of a lacquered wooden screen of the Western Han Dynasty, self-painted by the author

4.2 Summarie

The restoration of the lacquered wooden screen in the The Museum of the NanYue King of Western Han Dynasty is a scientific research topic based on detailed archaeological data and complete sets of relics⁸, with sufficient theoretical and practical reserves. In the previous restoration studies, the screen components and the overall form have been discussed in detail, But it's worth believing that taking the screen's morphological characteristics as the main purpose of the study ignores the differences between the original design concept and modern design thinking. Therefore, this paper combines the copper components of the screen in kind, analyses

from the perspective of the length of the ancient construction scale, derives the scale modulus law of the screen's construction materials, and accordingly forms the restoration results with innovative ideas.

References

1. Guangzhou Municipal Cultural Relics Management Committee, Institute of Archaeology, Chinese Academy of Social Sciences, Guangdong Provincial Museum. NanYue king's tomb of the Western Han [M]. Beijing: Cultural Relics Press, 1991.10:433-451
2. LIN Zhe. An analysis of the plan scale of the tomb chamber of the Western Han NanYue King in Xianggang, Guangzhou[J]. Southern Architecture,2013(02):13-15.
3. Preliminary Report on the Excavation of the Tomb of the King of Nan Yue in the Western Han Dynasty[J]. Archaeology,1984(03):222-230+289-292.
4. Guangzhou Municipal Bureau of Culture. Three Major Discoveries of Qin and Han Archaeology in Guangzhou [M]. Guangzhou: Guangzhou Publishing House, 1999.10.
5. Wang Guo. Screen Art of Han Dynasty[J]. Journal of Suzhou Academy of Arts and Crafts,2006(04):87-88.
6. Chen, Ming-Da. Research on the large woodwork of the construction method [M]. Beijing: Cultural Relics Press, 1981.10.
7. Zeng Wuxiu, "An Overview of Chinese Scales Throughout the Ages," Historical Studies, No. 3, 1964, p. 20.
8. Lary,Diana.The tomb of the King of Nanyue--the contemporary agenda of history.[J].Modern China, 1996.
9. Jin-Hwa Song, Zhen Hua Song, Seung-Taek Lim, et al. A study of lacquer chairs from the early Western Han dynasty, China [J]. Journal of the Korean Furniture Society, 2022, 33 (1):
10. Psarras, Sophia-Karin. Sources of Han Décor: Foreign Influence on the Han Dynasty Chinese Iconography of Paradise (206 BC-AD 220). Archaeopress, 2019. JSTOR, <https://doi.org/10.2307/j.ctvwh8bvr>. Accessed 29 Jan. 2024.