

Research on the Development of the Style of Lingnan Homestead in Macau — Taking Mandarin's House as an Example

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Abstract—In today's society, along with the rapid development of economy and urbanization, the arrival of the new industrialization era and the era of big data, many traditional cultures have been affected, including intangible heritage and cultural sites. This study analyzes the development history and architectural layout of Mandarin's House in Macau, and analyzes the inheritance and development of Lingnan Garden Style in Macau. It aims to arouse the public's attention to the few well-preserved Lingnan Homesteads in Hong Kong and Macau.

Keywords—Lingnan House Garden; Mandarin's House; Lingnan Shell Window; Secluded Alley

I. INTRODUCTION

Macau, located on the west bank of the Pearl River Delta, is the southern part of Lingnan culture. There are not many existing Chinese-style houses. The famous ones are Lou Kau Mansion and Mandarin's House. They all have the distinctive expression of the Lingnan Garden genre, and at the same time, they absorbed the Western style of the Portuguese colonial era and made them unique in their artistic style.

Besides, Mandarin's House is also part of the eight former buildings that make up the 22 buildings in The Historic Centre of Macau (Macau Historic Buildings). It is also the largest residential complex in Macau and it was included in the World Cultural Heritage List by UNESCO in 2005. Zheng Guanying, the owner of Mandarin's House, even proposed a modern thinker of the famous "commercial warfare" theory. After the Sino-Japanese War of 1894-1895, the "Salvation Good Medicine" and Shengshi Weiyao (Words of Warning in Times of Prosperity) were written in the Mandarin's House.

Therefore, Mandarin's House has extremely important reference value and significance for studying the Macau's modern history, the history of urban construction and even the history of modern Chinese revolutionary revolution.

Through the analysis of historical documents and records of field visits, this survey aims to compare and analyze the inheritance and development of the Mandarin's House of the

Style of Lingnan Homestead by analyzing the historical origins, architectural art and current situation of Macau Mandarin's House. In summarizing its spatial layout, talking about the current status of repair and maintenance and future prospects, it has led to the thinking of the protection of historical and cultural heritage, and at the same time stimulated the public's attention to the few well-preserved Lingnan house garden in Hong Kong and Macau (as is shown in "Fig. 1").

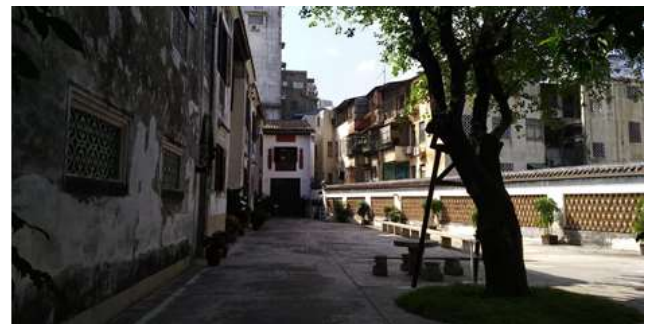


Fig. 1. View of the front courtyard of the Mandarin's House.

^a Photo taken by the author

II. THE HISTORY OF THE MANDARIN'S HOUSE IN MACAU

Mandarin's House, also known as "Casa do Mandarim" during the period of the Macau Portuguese government, is located at No. 10, the left side of Travessa de António da Silva, in front of the Largo do Lilau. At that time, Zheng Wenrui, Zheng Guanying's father, initiated the building of the Mandarin's House. His exact date of construction was not well documented. However, at present, it can only be judged according to the date of the settlement of the couplets in the Mandarin's House. The date of completion of the construction can be traced back to the eight years of Tongzhi in the Qing Dynasty, that is, 1869. Mandarin's House has experienced the process of "Establish-build-Damage-Repair-Open-Protection-Promotion". After the discussion and analysis of the remaining literature, the development context is sorted out. The relevant historical evolution is shown in "Table I".

TABLE I. THE HISTORY OF THE MANDARIN'S HOUSE IN MACAU

Period	Development Process	Causes
1869	Mandarin's House has been built.	/
After 1870	The Zheng brothers have been built one after another and the scale has been continuously expanded.	/
1872	Zheng Sixian, the brother of Zheng Guanying, built the JISHAN Masion.	/
1881	Zeng Guofan presented the "Chong De Hou Shi" plaque.	Zheng' family is good at giving, and the plaque is a gift.
In late May 1886	Zheng Guanying retired from the officialdom and returned to the Mandarin's House to start writing Shengshi Weiyan.	Politically suffered a serious setback, Zheng Guanying to recuperate the ground, he had to abandon official return home and back to Macau.
1887	Zheng Guanying was given the grand master for glorious happiness, and the "House of Grand Master for Glorious Happiness" in the Mandarin's House came from this.	Zheng Guanying and his father because the relief was granted official position.
1907	Zheng Guanying wrote the postscript of Shengshi Weiyan in the Mandarin's House.	Because the political situation changes, it needs to be re-edited.
1920s	The Mandarin's House was then rented out. At one time, there were more than 300 tenants packed inside the complex, constituting to poor living conditions.	The descendants of the Zheng's family moved out to live in different places. But, Zheng' family has always had a descendant as a landlord living in JISHAN Masion to manage rent.
About 1990	Real estate developers acquired the property rights of Mandarin's House from Zheng's family descendants.	The descendants of the Zheng's family were scattered around. After moving out, the Zheng's family house was occupied by multiple households.
1991	The Macau Portuguese government has negotiated with the developer to acquire the Mandarin's House, but it has not been successful.	The Macau Portuguese government developers cannot reach a consensus.
1992	Mandarin's House has been assessed as "artistic value of buildings with architectural".	/
1996	Cultural Bureau surveys and records the Mandarin's House.	/
1997	Due to structural safety issues, the upper cut wall on the side of Rua da Barra was demolished.	Mandarin's House has been in disrepair for many years, and has been rebuilt several times.
2001	The Macau SAR Government obtained the ownership of Mandarin's House in the form of land exchange and handed it over to the Cultural Bureau for protection and restoration works.	According to the legislation, the Macau government cannot force land acquisition, so it has been negotiating for ten years.
July 2001	After eight years of restoration, the basic architectural features Mandarin's House was restored.	When the government acquired the property, more than 80% of the property was damaged to varying degrees.
2002	Experts carry out restoration research and design on Mandarin's House and implement temporary protection works.	Mandarin's house architectural decoration craft lost in Macau, the material is difficult to find, so to hire Guangzhou experts to explore and repair.
July 15, 2005	As one of the components of The Historic Centre of Macau, Mandarin's House is listed in the World Cultural Heritage List along the entire historic city of Macau.	/
February 5, 2010	Mandarin's House is repaired, an official visit to the public, but the artifacts are still missing parts.	Mandarin's House has a long history of cultural relics have some difficulties to find.
January 29, 2011	A cultural relics consultation and gift shop was added on the first floor of the gate building on the right side of the Mandarin's House entrance.	In order to further promote the Mandarin's House of Culture.
Beginning in 2014	Mandarin's House has hosted a garden party, which includes young Cantonese opera and concerts.	In order to strengthen the public and tourists' cognition of Mandarin's House and traditional history and culture.
June 2018	The "Macau Intangible Cultural Heritage Promotion Carnival" was held at the Mandarin's House.	To carry forward and promote Macau's precious intangible cultural heritage.

III. ANALYSIS OF THE ARCHITECTURAL LAYOUT AND ARTISTIC FEATURES OF THE MANDARIN'S HOUSE IN MACAU

In Macau, which is expanding land through land reclamation, the size of the Mandarin's House is an area of 3,997m² on which are buildings and open spaces designed in various architectural styles. It is the only "House of Grand Master for Glorious Happiness" in Macau, it is linked to the Qing government of the imperial capital at the time; at the same time, as the only remaining works of the Qing Dynasty residential buildings in Macau, it is rich in the style of the Lingnan homestead architecture, and the traces of Western style can be seen everywhere.

Mandarin's House follows the Lingnan residential building style, having three halls and three enclosed open courtyards, hidden in a narrow street, but there is another world in the house. It is divided into a gated building, a servant's house building and two juxtaposed courtyard buildings behind the main gate building. Whether it is the hard hilltop roof of the servant's house building, the patio in the big house, the push and pull bar-door, the interlacing of the garden and the courtyard, the secluded alley, the lime modeling, the Lingnan Shell Window, etc., the style features of Lingnan architecture are everywhere.

A. Entrance Shrine Gate Officer

At the entrance to the Mandarin's House, there is a lime modeling door officer. The lime modeling couplets on the door are red-colored melons and green bamboo carvings.

The first line of a couplet is "Increase blessing, increase happiness, and increase life", and the second line of a couplet is "having wealth, having children, and having grandchildren", and the central line of a couplet is "Wang Xiang Hall". The exquisite luxury of the door officer depends on the economic and financial resources of the owner. During the restoration process, it has been discovered that this shrine of Earth God has 18 layers of color coatings. In other words, it had undergone at least 17 renovation or alteration tasks over the time (as is shown in "Fig. 2").



Fig. 2. Entrance shrine gate officer.

^a Photo taken by the author

B. Liuyue Courtyard and Lime Modeling

In Lingnan area, lime is often used as construction raw material of carving and painting, which makes the painting attached to the building walls or eaves. There is a small courtyard in the entrance space of Mandarin's House. The wall of the gate house is decorated with ornamental perforated window with porous colored glaze. The window is decorated with lime modeling, a common folk art in Lingnan area. The first line of a couplet is "Zhu Ma Ke Xin Rong Yin Gu", and the second line of a couplet is "Bu Chan Ren Shang Gui Hua Xiang Nong". The horizontal scroll is "Liu Yue", so this place is also known as Liu Yue Yuan. However, the present couplets were reconstructed according to the traces left in the wall during the restoration and the

remaining stone components abandoned nearby (as is shown in "Fig. 3").



Fig. 3. Liuyue Courtyard and Lime Modeling.

^a Photo taken by the author

C. Sedan Way

Sedan Way, less than one hundred meters, is behind the Yue Dong Gate. In the old days, both father and son in the Zheng family have official positions, and the House of Grand Master for Glorious Happiness is the entrance of their house. When visitors come to visit the owner of the house, they get off the sedan chair or dismount in this road, and then walk into the House of Grand Master for Glorious Happiness while the sedan chair bearers and attendants wait outside, so this corridor is also called as sedan road. There are ornamental perforated window with porous colored glaze on the wall on the right side of the sedan road. This wall is made from the water mill black brick, at the end of this road is the gate of the House of Grand Master for Glorious Happiness, and it is also the second door of the whole mansion. Grey model couplet, Moon Gate, the House of Grand Master for Glorious Happiness's Gate is located on one ax, which show distinctive levels.

D. Wenchang Hall and Main Garden

Wenchang Hall is the reading places of people in the Zheng family. Through the Yue Dong Gate, the Big Garden can be reached from the outside space of the Wenchang Hall. After the restoring, the present Wenchang Hall is used for displaying the life story of Zheng Guanying. Both sides of the Yue Dong Gate are decorated with lime modeling couplets. The first line of the couplet is "Xian Yin Yang Er He □", and the second line of the couplet is "Jie Lou Ge Yi Cheng Tian", with the horizontal scroll is "Lyre-playing, Chess, Calligraphy and Painting". The last word of first line of the couplet is missing, and we can get that the master hopes his descendants get the scholarly honor or official rank (in feudal times) from the artistic conception of the couplet. There are window-shades in the Wenchang Hall (as is shown in "Fig. 4"), the wood in middle of the window is carried up, the louvre blade is parallel, through which the hall can be ventilated and light-transmitting; when it is pulled down, the louvre blade is downward about 30 degrees angle. When it rains, raindrops drop down the slope of the louvre blade, which can drain away the rain, and the water does not

infiltrate into the house. The shutters also existed in the four famous gardens of Guangdong in the Qing dynasty, which has a wide application.



Fig. 4. Wenchang Hall.

a. Photo taken by the author.



Fig. 5. Main Garden and "Small Stone Paving".

a. Photo taken by the author.

The original layout of the main garden is hard to observe and study, and the existing flowers and trees are not that blooming compared with that in the past. The preservation degree cannot hold a candle to the Lou Lim Loc Garden in the Macau. In this garden, the floor is paved with small granites, which is the "Small Stone Paving" (as is shown in "Fig. 5"), a method widely used in ancient Rome and Europe at that time. Both the streets of Macau and the interior space of the residence have applied this method to pave the floor, fully reflecting the characteristics of western colonial culture.

E. The House of Grand Master for Glorious Happiness

The House of Grand Master for Glorious Happiness is the space between the servant room and the main room. It is a post and panel structure that can be commonly seen in Lingnan folk houses. Due to the warm wet climate in Lingnan area, there is Hui Nan Tian (Hui Nan Tian is a weather phenomenon in southern China. It usually refers to the phenomenon that the temperature begins to warm up and the humidity begins to rise every spring) every spring. Therefore, the column base of The House of Grand Master for Glorious Happiness is made from stone and the column shaft is made from wood. The eave is decorated with the wooden eaves carve, in which there are patterns of fruits and flowers as well as water grass that is common in the Lingnan area. A red plaque of "Rong Lu Di" (as is shown in "Fig. 6") is hung under the eaves, indicating that the Zheng's family was an official family in the past. It is reported that, the present horizontal inscribed board is the imitation, and the original has been sent to the Macau museum to preserve, which avoids the further weathering erosion.



Fig. 6. Rong Lu House.

a. Photo taken by the author.

F. Front Courtyard of the Mansion

The construction behind the House of Grand Master for Glorious Happiness is the front courtyard of the Mandarin's House. The wall of the yard is tile bounding wall with flower pattern, and there is an ancient well that was an important outdoor activity place for the Zheng family. The existing trees such as wax jambo are not planted when the house was built, but transplanted later. The tile bounding wall with flower pattern is the reconstruction after restoration. This yard has become one of the important outdoor places for the annual Macau official cultural activities.



Fig. 7. The Square Inner Courtyard.

a. Photo taken by the author.

G. Winding Corridor and the Square Inner Courtyard

The first yard on the left side of the front courtyard of the mansion is the square inner courtyard entered from the cloisters, which is surrounded by L-shaped cloisters and the outer walls of the two houses (as is shown in "Fig. 7"). There are Chinese moon gate and gourd window holes. There is a western-style arch structure on the entrance door of the cloisters. The design of the inner courtyard is western style. On the second floor of the corridor, there are western pillars, western windows and western couches. When visited, the author found that the square courtyard is still in the first phase of the renovation project that is presided over by the Culture Bureau, and the construction period of repair is unknown.

H. Yuqing Mansion and Jishan Mansion

Yuqing Mansion and Jishan Mansion are the main buildings of the Mandarin's House. They are traditional Guangdong buildings with two entrance, three houses and concave doorways. The walls under the eaves are painted with gray model colored drawing that is full of the folk content. In addition, the entrance is equipped with a "San Jian Tou" doors (Low door, also known as Foot door), Tang-Long door and Board door. Foot door is the low wooden door. There are two doors on both sides and the doors are foldable with the hollow upper part. Tang-Long door round wood gate refers to the round wooden fence gate that can be pushed and pulled horizontally with the parallel equidistant arrangement. Board door refers to the thick and high board door and there is one door on both sides. The plaque of "Tong Feng Di" is hung on the door and the lime modeling couplets on both sides are "Qian Lin Jing Hai" and "Hou Zhen Lian Feng" respectively, which show the superior geographical position of Mandarin's House that face to the sloping fields of the inner harbor and behind the mountain.



Fig. 8. Yuqing Mansion .

a. Photo taken by the author.



Fig. 9. Yuqing Mansion.

a. Photo taken by the author.

Yuqing Mansion (as is shown in "Fig. 8") is divided into two halls, the front hall applied the mixed structure of raised-beam frame and the bearing gable on both sides, which make the sense of space is relatively spacious. In addition, there are wide floor-to-ceiling windows, through which people in the hall can enjoy the scenery of inner port. The horizontal inscribed board of "Yu Qing" is hung on the beam of the hall. Yu Qing is the Tang Hao (Name of the house) of Zheng Wenrui (Zheng Guanying's father), which show that this

house for the main house in the Mandarin's House. There are wooden couplets on the pillars on both sides of the horizontal inscribed board: "Qiu Ming Qiu Li Bi Xu Qiu Ji Mian Qiu Ren, Xi Shi Xi Yi Bu Du Xi CAI Yuan Xi Fu" (we must depend on ourselves instead of others when seek the fame and fortune. We need to cherish our food, clothing and good fortune instead of only cherish wealth) fully, which show the stern exhortation of the Zheng's family to future generations. There is a birthday scrolls in the back hall of Yu Qing Mansion, and it is composed of twelve screens, which is the exquisite wood carving craft of Lingnan and it is also the most gorgeous existing wood carving in the Mandarin's House (as is shown in "Fig. 9").

There is also a patio between the two halls. In the traditional concept of Cantonese, water is the symbol of treasure, and rain water trickles down to the patio through the surrounding high eaves. Water gathering is the symbol of wealth gathering. This is the common construction method in the Lingnan area, achieving the same result with the Huizhou ancestral hall by different methods. Each house is separated from each other by the patio, which is unified and independent. Yu Qing Mansion possesses the arch structure on the door, which is an important embodiment of foreign western culture absorbing. The same structural decoration also exists in other places in Lingnan area, such as the famous gardens and folk houses in Qing dynasty in Guangzhou and Jiangmen.



Fig. 10. Lingnan Shell Window.

a. Photo taken by the author.

Lingnan Shell Window (as is shown in "Fig. 10") is the most beautiful decoration in the Yu Qing Mansion and Ji Shan Mansion with the typical Lingnan characteristics. Lingnan Shell Window is a translucent sheet of Marine shellfish shells, which is inlaid into the wooden frame on the windows. Under the sun, it will reflect the colorful lights. Besides, it is warm in winter and cool in summer, since the characteristics of the translucent can reduce the damage of the furniture that caused by the direct sunlight. Therefore, it is commonly used in the household of the Lingnan area and it is a traditional architectural decoration with regional cultural characteristics. However, since the making method of the Lingnan Shell Window is endangered, its materials are hard to find, and the manufacturing process is relatively complex, the Lingnan Shell Window inside the house looks old and dark, and some of parts are still stained and weathered.

There are two entrances and three houses in the Ji Shan Mansion, and its overall layout is similar to Yu Qing

Mansion. But the adornment is relatively less than that of Yu Qing Mansion. This hall is built by Zheng Sixian, Zheng Guanying's younger brother. After the Mandarin's House was rent out, the later generations of the Zheng's family ask to live here as the landlord, and they managed tenants and collected the rent, which become an important economic source of the Zheng's family. For the reason of security, there is a hidden loft on the second floor.

I. Secluded Alley

Secluded alley (as is shown in "Fig. 11") is constructed between the main buildings of Yu Qing Mansion and Ji Shan Masion, which is a common construction method in Lingnan area. Secluded alley is also called as Qing Yun Xiang (means Ping Bu Qing Yun in Chinese, which means someone rapidly go up in the world), Huo Xiang (means fire alley) and Shui Xiang (means water alley), which is the narrow alley with specific arrangement or the small corridor between the constructions. It is also known as the quintessence of the Lingnan traditional architecture because it possesses the functions of natural ventilation, fire prevention and drainage in the architectural design. The cross-section area of the secluded alley is very small. The wind speed will increase and the wind pressure will decrease when passing through this area. The hot air in each room connected with the secluded alley will be taken out, and the cool air will be brought to the room, by which ventilation can be completed. Under the hot and humid climate of Lingnan area, natural ventilation is more important than shading and heat insulation. Therefore, strengthening the natural ventilation has become an important part of the architectural design in Lingnan area.



Fig. 11. Secluded alley.

^{a.} Photo taken by the author.

In addition to the ventilation function, the secluded alley of Mandarin's House also possesses the drainage function. The drainage pipes on the walls look like the green bamboo favored by literati, which decorate the main building.

J. Ri Yue Guang Hua Gatehouse

At the end of the front courtyard, there is another gate house that has been locked now. This place is the back garden after the reconstruction. There are shutter on the gate house, and there are red lime modeling couplet on both sides of the window, "Si Bi Shan Huan Shui Rao, Yi Du Yue Ying

Hua Xiang" with the top scroll "Ri Yue Guang Hua" (as is shown in "Fig. 12"), which shows the excellent location and good atmosphere of the Mandarin's House.



Fig. 12. Ri-Yue-Guang-Hua Gatehouse.

^{a.} Photo taken by the author.

IV. THE CURRENT DEVELOPMENT OF THE MANDARIN'S HOUSE

Although the Mandarin's House is the continuation and development of Lingnan private garden architecture in Macau, due to historical reasons, it has been repaired for many times, and some of its features cannot be well presented (as is shown in "Fig. 13"). For example, the water mill black bricks wall in the Lingnan dwellings, only the right side of the sedan road is preserved in the construction in Mandarin's House. As for the walls of other constructions, they have been refurbished with lime for many times and covered with multiple layers. Now they have transformed from "blue brick wall" to "white wall" (as is shown in "Fig. 14"). Some walls are brushed a layer of cement, draw white lines between the brick and tile aperture with lime, which is a simulation of blue bricks in the past time. However, it lacks the original flavor of the Lingnan architecture, and it is same with the modern private houses.



Fig. 13. View of Mandarin's House.

^{a.} Photo taken by the author.

In addition to the necessary renovation projects, the Bureau of Culture also further promotes the history and culture of the Mandarin's House with its site. For example, the garden party was held for many times in the Mandarin's House, which displays the traditional craft of intangible cultural heritage and traditional drama culture. There is Mandarin's House gift shop where sales the gifts with the

cultural creative design. They made the hand-made gifts such as fridge magnet, notebook, tape, insulated cup cushion, pen holder and coin box with the patterns of the gatehouse and paper cutting in the Mandarin's House, which further arouse the public attention on Mandarin's House.



Fig. 14. View of Mandarin's House.

a. Photo taken by the author.

V. CONCLUSION

For some parts or space in the damaged traditional houses in Macau, scholars can carry out the digital inheritance of historical materials and the restoration of cultural relics through literature and techniques of artisans. In addition to this, related museums can try their best to collect and sort out relevant materials to avoid such cultural fault. Under certain conditions, with the help of VR, Sketch up and Lumion build a simulated 3d model, so as to show the spatial layout and architectural composition of the garden more intuitively.

For a scholar who is still studying in school, the original construction background and the evolution of styles under the influence of Portuguese colonization could be explored in the few existing Lingnan Chinese style house. The historical influence on Lingnan architecture system can be elaborated, which will provide a reference for future scholars.

For students in higher education institutions, they should cherish the historical and cultural heritage of Chinese landscape. Besides, students need to propagandize the modern Lingnan architectural layout, style of art and culture, for example, through the field investigation of the historical garden and the practical teaching in colleges and universities, they can carry out relevant practical teaching activities, photography competitions, special exhibitions, lectures and workshops derived from the garden (Such as the production experience of paper-cut, bonsai, miniature gray model decoration), through which let more people know the historical changes and unique artistic features through the practice. On the other hand, people can carry out the in-depth study or participate in the practice activity of the management institutions of existing modern and contemporary private garden in Macau through multimedia teaching mode and the teaching of urban planning, architecture, landscape architecture, history and literature.

Last but not least, the government can increase protection for the remaining Lingnan house garden, strengthen the

management, increase the capital input of the renovation and environment control. It can also host some activities to arouse the public awareness of the protection of the historical Lingnan architectural culture and promote their participation of the protection activity. At the same time, visitors can start from the trivial things around them while visiting historical sites and experiencing their cultural connotations, taking good care of cultural relics and doing their best to protect and inherit Lingnan private garden culture instead of damaging the hard-won sculptures and ornaments.

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