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Research on Spatial Activation of Historic City under the Background of Urban Renewal-Taking Macau Historic City as an Example

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Abstract

Historical urban areas are often important places that reflect the cultural connotation and local characteristics of a city. With urban renewal and development, the status quo problems in historical urban areas have gradually emerged, which hinders the overall development of the city. Among them, the use of public space has always been one of the obstacles to the development of Macau. Through the analysis of the current situation of Macau's historical city, the characteristics and problems of various space types are summarized and the renewal strategy is proposed, which provides inspiration for the future urban renewal of Macau.

Keywords

Macau; Urban renewal; Spatial activation; Historic city.

1. INTRODUCTION

In recent years, with the construction and development of the Guangdong-Hong Kong-Macao Greater Bay Area in full swing, as one of the important cities in the Greater Bay Area, Macau's development issues and strategies are also a part of the government and the public that are very concerned. According to the "Guangdong-Hong Kong-Macao Greater Bay Area Development Plan Outline" released in 2019, the Guangdong-Hong Kong-Macao Greater Bay Area must not only build a vibrant world-class urban agglomeration, an international technological innovation center, and an important support for the "Belt and Road" construction, the mainland and Hong Kong and Macau The in-depth cooperation demonstration zone should also be built into a high-quality living circle that is suitable for living, working and traveling, and becoming a model of high-quality development. Among them, the four central cities of Hong Kong, Macau, Guangzhou and Shenzhen are the core engines of regional development. The development orientation of Macau is to build it into a world tourism and leisure center. This requires that the Macau region can provide tourists with a comfortable travel experience, not only the experience of tourism services, but also the space experience of tourists. In the Macau peninsula where the tourism industry is booming, high-density urban space is an indispensable label for urban areas. This not only weakens the regional cultural characteristics of Macau, but also seriously affects the spatial experience of tourists. The adjustment of the functional structure of the public space is exactly the important change of Macau in the context of urban renewal. Through the form of space activation, the citizens and tourists have a sense of regional identity. Today's urban renewal is not just a simple material restoration and transformation, but more attention is paid to the sustainable development of the region. While reshaping a pleasant space environment, it must also enhance the cultural connotation and local identity of the built environment.

Macao's historical city has a profound cultural heritage. It is the center of the fusion of Chinese and Western cultures. Numerous religious and cultural relics are located in the front of the

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historical city or next to important nodes, thus forming a historical city dominated by Western architecture and Chinese and Western architecture coexist. The historical city of Macau is composed of a core area and a buffer zone. The core area covers an area of about 0.16 square kilometers. It is mainly composed of 22 well-preserved historical and cultural buildings and 8 forelands. The development of the historical urban area has witnessed the gradual formation of the characteristic spatial layout of the city, which is the core embodiment of the urban cultural connotation. Among them, the limited use of land resources and the comfort of the population are also particularly prominent in historical urban areas. By studying the existing problems of public space in historical urban areas, and structural adjustments to the spaces, it will be beneficial to the continuous development of historical urban areas. In addition, activating the public space in the city center plays a major role in the cultural heritage and flexible development of the city.

2. THE COMPOSITION AND CONSTRUCTION CHARACTERISTICS OF THE MAIN PUBLIC SPACE IN THE HISTORICAL CITY OF MACAU

2.1. Foreland

Macau's front land types are mainly composed of two types: building front land and street front land. The building front land is a small open space enclosed by churches and public buildings. Its main functional requirements are for religious activities or leisure. For entertaining citizens, open and bright spaces are provided to facilitate citizens to gather and share exchanges. The front of the building generally connects to the surrounding streets leading to other important nodes, and becomes the center of the road network system in a partial radial form.

The open space in front of the street is formed by the expansion of the street at the local node position. It is also closely connected with the surrounding roads and has strong accessibility. However, because there are no important public buildings or churches around it, the space atmosphere is quiet and mainly meet the functional needs of rest. The exist of street fronts can effectively break the monotonous and consistent depth of the street in the past. The empty street fronts and the narrow streets are organically intertwined and integrated, which not only makes the historical urban area form a spatial sequence with a degree of retraction, but also Let citizens get more interesting space experience from it.

Figure 1. Largo do São Domingos
(source: Photo by authors)

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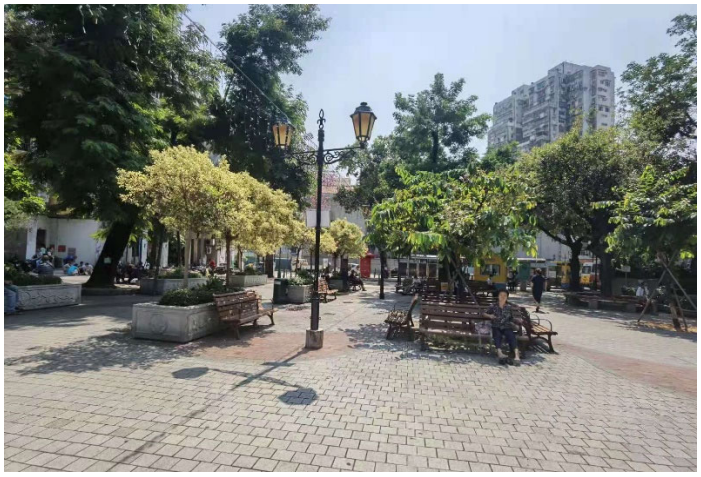

Figure 2. Praça de Luís de Camões
(source: Photo by authors)

2.2. Park Green Space

In the old days, most of the parks and green spaces in the historical city of Macau were privately owned. Later, the parks were purchased by the government during the urban greening revolution and all became public parks for citizens to enjoy free of charge. Among them, there are many parks with European style and characteristics, such as some typical park representatives such as Jardim de S. Francisco, Jardim da Penha. and so on. In terms of plant landscape configuration, the park adopts the planting principle of suitable tree and planting, mainly based on local native plants, supplemented by exotic plant species. Common plants include: albizia tree, banyan tree, Bauhinia. The variety of plants in the park green space not only enriches the biodiversity of the historic city, but also greatly improves the quality of the surrounding ecological environment, creating as much green space as possible for the high-density city center.

Jardim de S. Francisco has a long history and is the first garden in Macau, also known as South Bay Garden. Jardim de S. Francisco is divided into two parts. Some rose-red low wall columns and fountain water features were built to highlight the exotic European style. Along the stone stairs, there is a two-story European-style cylindrical building standing on the foothills of Guiyang Mountain. It is the European War Memorial and is used to commemorate the Portuguese soldiers who died in World War I. The buildings outside the pavilion are dominated by rose red and white, surrounded by arched windows, and the walls are carved with exquisite patterns, which is very eye-catching.

Figure 3. Jardim de S. Francisco
(source: Photo by authors)

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2.3. Street Public Space

Since the basic terrain of Macau is basically hilly terrain, the streets of Macau are developed completely based on the ups and downs, and then under the influence of history and culture, forming linear spaces with different styles, such as: along the streets of Tap Shek The street-view buildings in the city are composed of typical European-style buildings; the main road of the Republic of China relies on the surrounding water bodies; the two sides of Fulong New Street are dominated by traditional Chinese buildings. In the historical city of Macau, there is a straight street as the main street that runs through the city's road network, and then a number of irregular branch roads are derived from the straight street, thus forming a large number of enclosures and linings. In the entire radial road network system, there are many square spaces appearing on some important street nodes. These public spaces serve as a link between the past and the next and ease the traffic. In fact, the formation of streets in historical urban areas has not been systematically planned. Most of them are extended to the periphery with religious churches as the base point, forming an irregular distribution.

The streets in Macau are divided into main roads, roads, streets, slanted roads, slanted alleys, fences, terraces, and li. Among them, the main road is the widest and the longest, and the li is the shortest and narrowest. The sloping lanes, sloping roads and alleys are in the middle. In the historical city, due to the influence of cultural relics, the height of buildings next to traditional streets is limited, so the aspect ratio of most traditional streets is less than 1 and greater than 1:3. Affected by the uneven terrain, Macau’s streets will always be zigzags and twists and turns. With the changes of the lanes, there will be different street landscape effects.

2.4. Ancillary Public Space

The road layout adapted to local conditions has resulted in many idle green spaces scattered around the buildings and plots in the historic city area. These public spaces are generally different from traditional parks, and there is no specific planning and layout and the area is relatively small. Affiliated public spaces include long and narrow public areas between buildings or between buildings or idle spaces on the roof. Although the ancillary public space has a single function, it is also an indispensable part of the ecological space of the entire urban area, playing an auxiliary and regulating role in every corner of the urban area.

3. ANALYSIS OF THE STATUS QUO OF THE HISTORICAL URBAN AREA OF MACAU

3.1. Low Utilization of Public Space

As the urban fabric in the historical city of Macau is particularly complex and detailed, many of the public spaces have been divided into scattered and scattered waste spaces by the crisscross road network system and disorderly distributed housing constructions, and the close connection of various spaces is insufficient, resulting in many small dotted plots were left unattended in the end. When overlooking the historical city of Macau, it is not difficult to find that the roof space of most buildings in Macau also has the problem of underutilization. Due to the aging of the houses in the block, many newly built buildings gradually replace the damaged old houses. However, almost all roof spaces are spontaneously carried out by residents in order to improve their own living environment, and they have not really participated in the renewal and activation of the block.

3.2. Urban Green Space Resources Are in Short Supply

According to the 2018 Statistical Yearbook published by the Macau Statistics and Census Bureau, the green area of the Macau Peninsula only accounts for 19% of the entire territory of Macau. Due to the year-on-year increase in building density, the green space resources of

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Macau's historical urban areas are also being swallowed up year by year. The allocation of green space resources in various districts of Macau is uneven. A large number of ecological green spaces are mainly located in Taipa and Coloane, while the Macau peninsula is densely populated and the per capita green area is less than 2 square meters. Scarce green space resources are difficult to find in the dense urban public space, and the top priority should be to strengthen the management of the surrounding green space and dig into the value of the landscape.

3.3. Insufficient Walking Space Connection

The historical city of Macau is mainly composed of a narrow strip on the southwest side and a plot centered on Colina da Guia. The walkability between these two plots is low, which will not only affect tourists' travel experience, and will cause uneven distribution of people in the two places. As a whole of the historical city, the independent state of the two plots is still a major obstacle to the development of characteristic tourism. In the complex street network, the mixed space of pedestrians and vehicles seriously affects pedestrian accessibility, and the pedestrian space is gradually occupied by expanded motor vehicles.

3.4. Weakening of the Characteristics of Urban Nodes

Strong cultural characteristics can always be presented through street structures and religious buildings in urban areas, but when these characteristic religious buildings are removed, some of the cultural blending colors that should belong to the local Macao are difficult to reflect in the node space of the block. Among the numerous buildings, there are still many places and spaces with a single form, serious homogeneity, and unclear characteristics. They cannot reflect the unique cultural atmosphere of Macau, and at the same time are isolated by many historical buildings. At the same time, the corner spaces with unclear characteristics are easily occupied by some residents illegally, which affects the spatial environment quality of the market, and increases the burden of dredging the flow of people on the originally narrow streets.

4. REVITALIZATION STRATEGY OF MACAU'S HISTORICAL CITY

4.1. Realize Spatial Grouping and Reconstruct Street-facing Buildings

Make full use of the corner spaces in the city, and find opportunities for sharing and communication in these negative spaces. Reorganize part of the dilapidated and decayed building clusters to form a number of small green spaces and establish connectivity between greenways to compensate for the lack of space in a large area in the city. First, we can evaluate the comprehensive value of the buildings along the street in the historical district, and classify them according to their historical value and preservation status. Some buildings with poor artistic value will be partially demolished, deployed and recombined in a unified manner, and the streetscape can be standardized to integrate them. Into a public green space.

4.2. Improve Street Greening and Establish A Walking Network

The walking characteristic is one of the characteristic attributes of the public space in the historical city of Macau. Therefore, it is recommended to re-section and improve the greening of the roads in the historical city. The planting of the plant landscape can achieve the isolation of the pedestrian and the vehicle, and at the same time can reduce the noise and air pollution. In fact, there are good walking conditions in the historical city, because the government can comprehensively consider the spatial scale and regional characteristics of the street, so as to formulate a walk-oriented overall space that best reflects the tradition of Macau. At the same time, the improvement of ground paving and plant configuration in the pedestrian space can further enhance the spatial experience of visitors.

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4.3. Create Characteristic Supporting Facilities

The rich types and varied forms of supporting facilities on the street can not only enrich the cultural experience of the urban space, but also enhance the participation of citizens. The supporting facilities in the center of the historic city should have more superior service functions and diverse facilities to meet the needs of tourists of different ages. At the same time, it is necessary to coordinate the construction of physical facilities and virtual platforms, which can inject modernity into the culture of historical public spaces. In order to enhance the local cultural atmosphere of the city, the local cultural and artistic atmosphere should be respected. Under the premise of controlling the overall light environment, some shops can have a lively atmosphere through various three-dimensional signs.

5. CONCLUSION

As the core carrier of a city's culture, the historic city is the source of the local people's sense of belonging to the city. The activation of public space in the context of urban renewal is the urgent task that we as urban planners complete. We should recognize the importance of how to correctly guide the transformation of the old city and activate the cultural vitality of the old city, and use today's advanced technology and planning technology to help the historic city and even the entire city to renew and rebuild, and find the uniqueness of the city itself. In short, public space is one of the key factors that promote the development of historical urban areas. We should always adhere to the people-oriented design concept, so as to make our own contribution to the transformation of urban public space.

REFERENCES

[1] Wang Di. (2020). Spontaneity and planning——Research on the micro-space activation strategy of Jingzhou historic district under the background of post-urbanization. Chinese and Foreign Architecture (02), 78-81.

[2] Yu Xue. (2019). Research on the renewal strategy of public space in old cities guided by space activation. Doors and Windows (18), 135.

[3] Ye Anqi. (2019). Research on the integration strategy of public space in Macau's historical urban area based on the greenway theory (Master's thesis, Hunan University). https://tra.oversea.cnki.net/KCMS/detail/detail.aspx ?dbname=CMFD202002&filename=1020703481.nh

[4] Zhou Miaoying. (2016). The influence of multiculturalism on the foreland space in Macau (Master's thesis, Huaqiao University). https://tra.oversea.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201701&filename =1016919053.nh

[5] Yang Zhen. (2016). Urban design and urban renewal: British experience and its reflection on China. Urban Planning Journal (01), 88-98.

[6] Gao Wei & Cheng Zhuo. (2015). Analysis of the spatial characteristics of the former land of Macao. Chinese Garden (06), 57-62.

[7] Yuan Zhuangbing. (2011). Analysis of the evolution of the urban spatial form of Macau and its influencing factors. Urban Planning (09), 26-32..

[8] Yan Ruogu, Zhou Suhong & Yan Xiaopei. (2011). Research on Urban Renewal. Advances in Geographical Sciences (08), 947-955.

[9] Liu Pengfei. (2009). Roof catalyst for historical districts in Macau (Master's degree thesis, Tsinghua University).

ISSN: 2472-3703 DOI: 10.6911/WSRJ.202111_7(11).0031

https://tra.oversea.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD2011&filename=2010215335. nh

[10] Zhai Binqing & Wu Meiqin. (2009). The concept of urban renewal and the reality of Chinese cities. Urban Planning Journal (02), 75-82.

[11] Tong Qiaohui. (2005). Space characteristics of traditional streets in Macau. Huazhong Architecture (S1), 103-105+116.