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PARTICIPATORY AND SUSTAINABLE STRATEGY-MAKING FOR COMMUNITY RENEWAL: THE CASE OF IAO HON IN MACAO

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ABSTRACT

The recent development of urban Macao calls for renewal or redevelopment of many historical community districts. The Iao Hon community is an old community with more than 40 years in Macao. The poor living conditions in Iao Hon have seriously affected the quality of life of its residents. This research takes on Iao Hon as the study site and conducts surveys of residents on satisfaction with their living conditions and willingness to renew. Descriptive and referential statistical analyses will be performed. The objective of this study is to identify and justify a set of practical and sustainable renewal strategies to revitalise the community. More specifically, the strategies will ensure Iao Hon to be an economically sustainable community with diverse businesses, an environmentally sustainable community with ecological and livable neighbourhoods, and a socially sustainable community with equality and happiness, so that Iao Hon becomes an exemplar community in Macao for other communities to emulate for renewal.

Key Words: Sustainability; Iao Hon; Participatory; Renewal Strategy.

1. INTRODUCTION

On October 17, 2016, the Third United Nations Conference on Housing and Urban Sustainable Development (or Habitat III) adopted the New Urban Agenda, which advocates “the city of all people” and emphasizing public participation of multiple stakeholder groups/ public /private and the community in urban planning and city management in the future. This UN agenda serves as a guide to the world on housing and urban sustainable development for the next 20 years (Chen Xiaojian, 2017). This study is also based on this agenda.

Since the return to China, Macao’s economic development has been unprecedentedly transformed. Macao’s per capita income reached \$71,148 in 2017. It is five times higher than that before the reunification. However, not all communities in Macao shared the economic prosperity equally. On the one hand, the newly established gaming area, which fully embodies the international urban planning concept and the world heritage tourist area, which well adopts advanced architectural heritage protection concept of Macao, have developed well. On the other hand, quite many local neighborhoods, have not been fared well with living conditions worse than prior to reunification. A large number of buildings in Macao were built over 40 years ago. In 5 to 10 years, more than 50% of the buildings in Macao will be over 50 years old. Therefore, urban renewal with sustainable community planning is urgently needed for community. “Old District Rebuild” was launched by government in 2004. However, fifteen years have gone by, there have been only a few successful community renewal cases. The development of renewal is very slowly. Therefore, this study will take Iao Hon community as an example, proposes community renewal strategies based on sustainable development by conducting community-wide public participation activities, collecting residents’ opinions and future community renewal expectations.

2. THE THEORETICAL BASIS OF SUSTAINABLE COMMUNITY RENEWAL AND PUBLIC PARTICIPATION

2.1 Sustainable community renewal

Since the 1990s, sustainable urban research has gradually changed from the urban system scale to community scale. The sustainable urban neighbourhoods and the sustainable 4C model of residential settlements, namely environmental protection, residents’ choice, community and cost, compact development, equal and integral neighbourhoods, were proposed (Rudlin, 1999).

Sustainable communities are compact and eco-friendly suitable for living in the physical environment. At the social level, a fair and inclusive community can provide equal opportunities and good services for all, providing residents with more convenient connection opportunities, communication spaces, and promoting the social cohesion among community members. From the economic perspective, Community sustainability can bring sustained and stable economic growth and provide more employment opportunities for community residents.

Community renewal is to rebuild, refurbish or repair a community that has been declining or dying. It can inject new economic vitality through the renewal of material space and promote community regeneration. After World War II, community renewal began to develop in Europe and the United States. In the early days, material space planning and reconstruction were the mainstays. Later, with the various social problems exposed in development, it was impossible to solve the problem by simply relying on material renewal, community renewal starts comprehensive research and analysis of social, economic, and cultural factors.

In recent years, community-based activities based on community-building occurred in Asia. Japan, Hong Kong and Taiwan have launched activities to mobilise residents to participate in the improvement of the public space environment of the community. Successful cases and formed a certain influence. In China, research and practice on community-renewal are also carried out in community renovation and beautification (Liu Yuelai et al., 2018).

2.2 Public participation theory

Perhaps the most seminar work on public participation is done by Sherry R. Arnstein in 1969, who studied the citizen involvement in the planning process in the United States and developed a “ladder of citizen participation” showing high and low participation by scales. Sherry’s eight-rung ladder are 1 Manipulation/ 2 Therapy/ 3 Informing/ 4 Consultation/ 5 Placation/ 6 Partnership/ 7 Delegation/ 8 Citizen Control. Sherry R. divides them into three phases: the first phase of non-participation (no power), the second phase of symbolic participation (degrees of tokenism), and the third phase of substantive participation (degrees of citizen power) (Sherry R. Arnstein 1969). This theory has had an important impact on the subsequent public participation in urban planning research, and is also the basis of this paper’s important theoretical research and practice (citation).

In recent years, some scholars have mainly studied the behavioural characteristics of the subjects from different aspects of the public and different organisational units. Paul D and Yang F testing the social norms and market rules in the initial stage, the role of organisation shall be the unit for thinking participation of citizens, even if there is no monetary compensation, they are willing to participate in the project decision-making. Wang A et al. improved the previous public decision-making model (GDM), established a two-stage PLS model for urban reconstruction and constructed a hierarchical linear public participation method, and proved its feasibility and creativity with case studies (Ma Hui, Huang Mengjiao& Wang Suzhen , 2018). Active public participation can effectively promote the exchange of information between stakeholders and reduce the occurrence of conflicts of interest. It is also the main

factor affecting the quality of decision-making and implementation of community renewal (Andrew Tallon, 2013). Therefore, the effective implementation of public participation plays an important role in promoting community renewal.

3. THE STATUS OF MACAO PUBLIC PARTICIPATION IN COMMUNITY RENEWAL

3.1 Macao's public participation and public policy advisory system

Before the return of Macao to China in 1999, due to language barriers, Chinese residents mainly expressed public opinion to the government through various associations and had little experience in participating in public affairs. After the reunification, the implementation of the "Macao people governing Macao and a high degree of autonomy" as set out in the Basic Law, the government actively explored channels for direct communication with the public to enable public participation to develop. On August 15, 2011, the No. 224/2011 Chief Executive's instructions were published, promulgating the Macao Special Administrative Region's "Guidelines for Regulations on Public Policy Advice" (referred to as the "Guidelines"). Relevant issues such as the subject, conditions, principles, processes, implementation, feedback summary and protection of personal data for public consultation have been clearly defined, and the government has established normative standards for public policy consultation, and public participation in administrative management. Legal protection is provided. Since then, the Macao government has carried out a large number of public consultation activities in policy formulation, and has received active participation and feedback from the public, with remarkable results.

3.2 Public participation in community renewal in Macao

With the improvement of the education level of local residents, the rapid development of the economy, and the enhancement of social identity, the residents' participation in their own demands has also been rising. The government has carried out a series of forms of public participation activities related to urban planning and historical urban protection and renewal after the "Urban Planning Law" promulgated in 2014, including public consultation, public lectures, popular science promotion, media promotion, questionnaire research, community workshops, etc., among which public consultation activities are the most frequent.

According to the information items published in the 2018 annual summary report published on the government website, there are a total of 8 projects, and a total of 41 public consultation activities were carried out, which were planned and implemented by eight relevant government agencies, and a total of 17,166 feedbacks were collected. As shown in Appendix, items 1 to 4 are related to urban planning and construction in Macao. A total of 19 public consultation activities have been carried out, which is close to 50% of the number of consulting activities throughout the year; four government agencies are involved. As shown in Table 3, a total of 13,998 opinions were collected, accounting for 81.5% of the total feedback in the annual public consultation, which is 4.4 times the total number of feedbacks from other projects.

[Table3] Public consultation activities on urban planning and development conducted by the Macao government in 2018

Public Consultation	Number of projects	Number of consultations	Opinions collected
Urban planning and development public consultation activities	4	19	13998
Total public consultation projects throughout the year	8	41	17166
Urban planning and development account for the annual project ratio	50%	47.5%	81.5%

(source Author)

As can be seen from Table 3, Macao's public consultation activities on urban planning and development direction are frequent, and the public's attention to and participation in this subject matter is high. It can be demonstrated that Macao has a good public participation base and platform. It provides a broad space and favourable conditions for the future of participatory community renewal.

In recent years, influenced by the community creation in Japan, Taiwan and Hong Kong, Macao has spontaneously generated a civil society organisation, "My City Community Planning Cooperative" (Lin Yijie, 2014), mainly for Macao's old community to carry out the "bottom-up" community building, there are several successful cases, but due to the smaller, has not yet formed certain social influence. However, there are few researches on the community renewal of public participation in Macao.

4. THE PARTICIPATORY COMMUNITY RENEWAL PRACTICE: THE CASE OF IAO HON COMMUNITY

4.1 Overview of Iao Hon Community

Iao Hon community (formerly Iao Hon new estate) is the first large-scale residential house in Macao with a total of 46 buildings and more than 2,000 units. But up to now the buildings have been more than 40 years without any renewal, and have seriously affected the safety of residents and living environment (see Figure 1). Besides due to the increasing population density, the outdoor public space and facilities are also beyond the capacity. In response to the current situation of the Iao Hon community, many social groups have repeatedly called the government to use the Iao Hon community as a pilot to promote community renewal as soon as possible and to improve the living envi-

ronment of residents. However, due to various reasons, the owners have not been able to meet the 100% consent to the legal requirements for building redevelopment, and the renewal plan has not been implemented yet.

4.2 Participatory Community Renewal in Iao Hon Community

This research explores and examines the effects of public participation and sustainability on community renewal in Iao Hon Community. First of all, using the method of urban impression research, we randomly select residents to ask their impressions of the regional boundaries and landmarks in the outdoor public places, and sketch on the maps to understand the residents’ perceptions of the community (see Figure 1). It is found that the impression of most residents on the geographical boundaries of the community is not clear, indicating that the community has more frequent interactions with the external space and most people have labeled Iao Hon Market for their awareness of landmarks.

Then through field questionnaire surveys, resident interviews, the survey was conducted on residents’ impressions of the district, residential satisfaction and vision of future community renewal. The research samples selected in this study are all residents of Iao Hon Community. The research sites are Iao Hon Market, Iao Hon Park and nearby commercial spaces. They have the most realistic and representative of the actual situation of the community.



[Figure 1] The current situation and Impression Survey of Iao Hon Community Picture : by Author

4.3 Survey statistics and analysis

A total of 100 questionnaires were distributed in this survey, 89 questionnaires were collected, and 82 valid questionnaires were collected. In this survey, women accounted for 36.67%, males accounted for 63.33%; most of them were between 45-60 years old; among them, there were more retirees; the proportion of self-owned housing was 93.33%, and their opinions reflected the self-occupied population. Improvements in the community environment. Those who have lived in the community for more than 20 years account for 53.33%, they are more comprehensive about the situation and advantages and disadvantages of all aspects of the community.

(1) Satisfaction Analysis of Living Environment of Iao Hon Community.

According to the survey statistics (see Figure 2(a)), residents are more satisfied with the current situation of traffic in the area. They can get to most places conveniently, and can walk to the Border Gate. However, the satisfaction with the walking environment and living conditions is poor, indicating that most of the buildings in the community are dilapidated and very dangerous. Residents have the lowest satisfaction with the landscape environment and leisure facilities. Respondents said that there is very limited space to interact with each other. Often, only the seats facing the motorway are available for rest, and then they can only talk with the traffic, breathing the exhaust fumes.

(2) Public service facilities and space satisfaction analysis

According to Figure 2(b) survey statistics, community residents are generally satisfied with grocery shopping, educational facilities and the environment, thanks to the later construction of Iao Hon Market, where the general needs of residents can be met and reachable with high accessibility. Most of the life-like public service facilities and space are basically satisfied. However, the satisfaction of public activity space and green environment is low. Many respondents indicated that there is only one small area of Iao Hon Park in this area, which can’t meet the needs of residents’ outdoor leisure activities. I hope to have more spacious public space and a more beautiful landscape.



[Figure 2] Satisfaction statistics of living environment (a) and Public service facilities (b) of Iao Hon community(Picture : by Author)



[Figure 3] Statistics of the intention of Iao Hon community renewal Picture: (by Author)

(3) Survey and statistics on the intention of Iao Hon community renewal

This study designed a series of ideal community visions for the respondents to choose. According to the survey statistics in Figure 3, the community residents' attention to the future community renewal vision lies in outdoor public space and roof garden. This shows that after the living needs are met, the residents hope to have more spacious public space and a better ecological landscape environment, and can play chess and chat in a beautiful environment. The demand for public service facilities such as commercial and cultural centers is not high, which is also related to the age of the respondents.

5. PARTICIPATORY COMMUNITY RENEWAL STRATEGIES BASED ON SUSTAINABLE DEVELOPMENT

Based on the above survey and the successful experience of sustainable urban and community construction in Sweden, this paper proposes a series of sustainable renewal strategies from the perspectives of environmental ecology, social interaction and economic development, as follows:

(1) Deeper participatory in community renewal

In the whole process of community renewal, it is important to make full use of the power of the widely distributed community associations in Macao, and plan together with planning experts to carry out various kinds of public participation activities. We will establish a reward system for people's participation, fully mobilise their enthusiasm, and participate in the reconstruction of their homes.

(2) More compact communities with a large service complex

The Iao Hon community is mostly a six-storey residential building of over forty years old, and they have been seriously damaged. It is recommended to rebuild the old buildings into a super-high building of about 40 floors with setting commercial spaces on the street, enrich the type of apartment, improve space utilization rate. Although the people in this area are basically satisfied with the current situation of community service, the new community will attract a more diversified population structure and the population density will increase, and then the existing community services facilities will not be load. Therefore, a large community service complex need to be built, as can be shown in Figure 4, that were originally abandoned will be connected to the current Iao Hon Market and Park plots across the street, to provide residents with a culture, life, leisure, entertainment, business and other services. In order to attract more young people to live in the area to enhance the economic vitality of the area. At the same time, this building will become a landmark building of the Iao Hon community.

(3) Maintain existing street layout

According to the survey, residents are generally satisfied with the traffic and travel in this area, with high accessibility. Therefore, the community renewal will maintain the existing road texture and maintain the residents' sense of social identity as the left in Figure 4.

(4) More pleasant public open spaces and connections

According to the survey, residents are less satisfied with the existing public communication space and environment. Therefore, it is proposed to increase green areas, including ground greening, three-dimensional gardens and roof gardens, to enhance the public greening environment in the area. Connect the roof between each building, use the landscape of the roof garden and planting activities to create more space and opportunities for residents to interact.

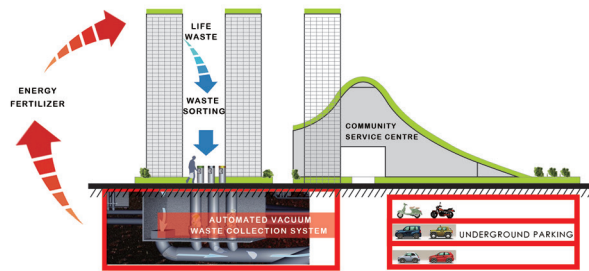
The roof landscape of the community service complex provides residents with a roof park that simulates "hills" (see Figure 4), building large artificial landscapes, and greatly improving the quality of outdoor public space.



[Figure 4] Renewal planning of Iao Hon community (Picture : by Author)

(5) More sustainable energy use and recycling systems

To build green buildings and enhance the ability of wind protection and disaster prevention to cope with the annual typhoon season. Heat energy is stored on the building surface to provide public space and residential use within the community. As can be shown in Figure 5, the kitchen waste processor is installed in each unit, which is connected to the automatic garbage recovery and treatment system established under the community to deal with the organic waste in daily life and turn it into fertilizer for planting in the roof garden. The generated gas can be used as part of the gas energy in the community.



[Figure 5] Schematic diagram of energy utilisation and garbage disposal system(Picture : by Author)

6. CONCLUSION

Macao, as a special zone under “One country, two systems”, has a unique social and cultural background that makes the community renewal issue to involve more stakeholders and more complicated relationships. In this regard, the author believes that public participation activities should be carried out to the greatest extent at each stage of community renewal. Make full use of good public participation in Macao, to promote the community renewal smoothly. Taking the Iao Hon community as an example, we conducted a practice survey of participatory community renewal, and proposed five strategies for community renewals based on sustainable: more in-depth participatory/ more compact communities/ more pleasant public spaces and connections/ more sustainable energy use and recycling systems. To make the area an eco-friendly, livable and equally friendly sustainable community, to provide reference for community renewal in other areas of Macao.

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