

Research on the improvement of urban public space vitality based on the concept of social resource sharing—taking Tianlin community in Shanghai as an example

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Abstract: Based on the concept of social resource sharing, this paper takes Shanghai Tianlin community as an example and proposes feasible suggestions on how to improve the vitality of public space in the stage of urban accumulation and development. The Tianlin Community is located in the east of Xuhui Innovation Industry Park which brings a rich cultural and scientific resources together in the downtown of Shanghai. With the increase of land prices, the widening gap between the rich and the poor is obvious and the serious closed community phenomenon have led to the problems of weak public continuity and low vitality of the public space. The author selected 20 different public spaces in this area and evaluated them with five criterion: surface, identity, commerce, leisure and accessibility. By the usage of Grasshopper, a five-minute network of local connections with different degree was finally formed and found: (1) The area is not accessible everywhere and fragmented in different parts; (2) The area has some spaces in need for certain qualities while there are other spaces around have corresponding quality which can help to balance. In order to improve the accessibility of these 20 points of interest and sharing the public resources, the author tried to propose strategies of connection and balance to enhance the vitality of the public space in the Tianlin community: (1)Based on the current situation, increase the public access and visual corridors between the semi-closed community and the closed community; (2) According to the evaluation of surface, commerce, leisure and identity, provide various equipments in four categories to improve the wickest points. Through such strategies, it is possible to achieve a fair social resource sharing of the public space to the greatest extent, while at the same time solving the unbalanced development of different regions.

Keywords: public space; vitality; accessibility; closed community; social resource sharing

0. Introduction

In China, when talking about the vitality of urban public space, it is necessary to mention the public space inside the community area where people live in every day. There is a saying that "residence changes China", China is a large country with a population of 1.39 billion. In order to improve the quality and fun of people's daily life, the transformation of its daily public space is crucial. In other words, where, when and what the residents are doing in the city determine the vitality of the urban public space to a certain extent.

However, closed communities in China are a very common phenomenon. The lack of open-type models in communities has caused a number of urban and social problems, making



residents living in the same community unable to enjoy a completely equal outdoor public space, one of the important reasons that has led to the decline of the vitality of urban public space. In the face of the national policy of “promoting the block system and gradually opening the closed community and danwei courtyards”. How to change the situation, the unfair public space causing by the closed community will also be a big problem that China needs to face for a long time in the future.

This paper will first discuss the formation process of China's closed community and the urban public space problems caused by it. Taking the transformation of Shanghai Tianlin community public space as an example, this paper introduces the current situation of the use of public space and proposes some transformation strategies to enhance the vitality of its public space. I hope this article can be a reference to China's future urban public space development.

1. Background

In February 2016, in order to further strengthen and improve the urban planning management work, the Chinese government issued an important document of “Several Opinions on Further Strengthening the Management of Urban Planning and Construction”, which proposed that the new community buildings in China should promote the block system in the future and no closed community will be built. The completed community and danwei courtyards should be gradually opened to achieve internal publicization of roads and promote land use and utilization. The proposal of this policy shows that the state is paying more and more attention to the fairness and justice of urban public space. If the closed community is not conducive to the use of public space, then conversely the open block is an important solution to improve the vitality of urban public space.

However, the social development model of China's closed community has lasted for more than half a century, it is very different from the formation of the gated community in Europe and America. Now suddenly opening up the closed community which has been built, it will inevitably face conflicts with the current Property Law. More importantly, this is completely contrary to the concept of “deep house courtyards”. Chinese people have been pursuing for long, which is one of the typical concepts in traditional Chinese culture. In the past, Chinese urban residents have experienced siheyuan, danwei courtyards and now the closed communities, the only constant situation is "closed." It is no exaggeration to say that there is no home for the Chinese to have a room with no wall. Therefore, opening up the closed community is definitely not a one-step process, and it is necessary to constantly explore the transformation mode of the transitional stage.

2. The formation process of a closed community in China

2.1 Superblock mode

Tracing back to the history of China's community planning, it can be found that the concept of the community originated from the Soviet Union during the period of large-scale industrialization and was completely transformed in China. In the 1950s, after the Korean War, China formulated its first five-year plan (1953-1957), attempting to carry out comprehensive industrial modernization. The Soviet Union provided direct assistance which

including technology, equipment and labor force for 156 key projects in the "First Five-Year Plan." Therefore, China naturally began to seek experience in architecture and urban planning from the Soviet Union and the socialist countries in Eastern Europe (Huang, 2016). The superblock model from the Soviet Union was first used for experimentation which is Stalin's favorite. It emphasizes symmetry and enclosing space, but there are countless shortcomings. For example, residents living inside have only west windows and have to face the streets, a series of problems such as noise, pollution, and air convection generating here. Therefore, the pattern of the superblock soon was abandoned.

2.2 Microdistrict mode

As Chinese urban planners focused more on the economy and utility of community, a Soviet model called microdistrict caught the attention of planners. Actually, the microdistrict model was essentially indistinguishable from the superblock model, which is a basic unit of urban community with a relatively complete cultural and welfare facilities and surrounded by urban main roads.

2.3 Danwei courtyards

In the 1950s and 1970s, there was a big change in the development of community in China. At that time, a large number of communities emerged and the most widely accepted community planning model at that time was the danwei courtyards. Subject to the urban planning concept of the Soviet Union, China, which is learning from the Soviet Union, also put forward the slogan of "production first, life second". But we did not simply imitate the Soviet Union, we invented a unit model with some kind of Chinese characteristics. The Soviet Union allowed the distance between the community and the workplace to be no more than 40 minutes of commuting time. In China, the unit (Li,2017) was integrated into a place where living and working were integrated, then the danwei courtyards was born. However, the units built in the 1950s were not equipped with walls. Since the 1960s, various units have started building fences and walls. Danwei, as economic entities that combine production and consumption, are inevitably exclusive. The society is not equal, as the unit needs to rely on the wall to protect its own land and resources from the invasion from other area of the city, and also some other danweis.

2.4 Commercial housing mode

The failure of the planned economy and the decade-long Cultural Revolution have subsequently caused serious housing shortages for a long time. After the implementation of the economic reform policy in 1978, the Chinese government also implemented a series of reforms on real estate. The task of community development gradually shifted from the government to the private developers, and the commercial community development model gradually emerged. Although the planning department did not force developers to build closed communities, the development model of "who develops and who provides the facilities" set by the developers make it necessary for them to build private houses such as community and commercial buildings in the sites and they are also responsible for the common parts of roads, parks, and leisure facilities. The cost of the developer's construction part is shared by all the owners of the community, so the developer must make the public ownership of these

public facilities inside of the community. At the same time, the property management company introduced by the community has also played a role in promoting the closed community. According to some scholars' research, in 1991-2000, 83% of the communities in Shanghai were closed in this way.

3. The issues of public space development caused by closed residential

3.1 Social security issue

The closed community has greatly improved the security of the community by establishing the fence wall and the management of the property management companies, but it has increased the crime rate of urban public space outside the community. There is an old saying in China that "the skin does not exist, the hair will have nowhere to attach", and the complete separation of roads and communities has led to many unattended streets in cities. On the other hand, the security of public space is mainly achieved by neighborhood monitoring. A sufficient number of pedestrians and abundant street life are the main means to ensure the safety of urban public space. The closed communities greatly limit the natural surveillance of the inner public space by the police and the public.

3.2 Class isolation issue

E. Saarinen (1943) has proposed that "housing should mean home and a healthy environment, not just the walls and roofs made up of shelters from the wind", which means that the house shouldn't be limited as a living function (Lv,2006). It is also an important place to operate social relationship. Closed communities are manifestations of people's distrust of each other and even exacerbate the contradictions of different social classes. People of different classes live in different closed communities and social circles. Such social isolation has caused social unrest, resulting in people's selfish, xenophobic, and prejudicial characters, which seriously threatens the social harmony and the fairness of public space. Spatial justice is the foundation of urban vitality research, which is the key point for improving urban vitality (Cheng,2019).

3.3 Split urban public space

The formation of the closed residential is just like a cell whose cell wall protects the interior space well, but cuts off the connection between the internal and external space. Many public spaces with strong continuity have been cut off by these residential. Residents in the same community but not in the residential cannot enjoy the same public space. For example, some riverside green spaces will be blocked by residential, and people cannot walk or run along the river. Therefore, people can only do some activities in parks and squares, the scope of activities is very limited, which is also one of the important factors affecting the vitality of urban public space.

4. Exploring ways to improve the vitality of urban public space in community——Taking Tianlin community as an example

4.1 Introduction of Tianlin Community

4.1.1 Location

As seen in figure 1, our site is located in Xuhui district, southwest of downtown which is famous for its strong economic and culture, what was considered as the French Concession in the past. Huangpu River is an important canal in Shanghai and its formation is closely related to the flood-discharge of Taihu lake. The river flows from Panlong port to Huangpu River and Puhui Tong surrounding the bigger area of the site is part of this flow. The project site is situated in the northeast corner of the area.

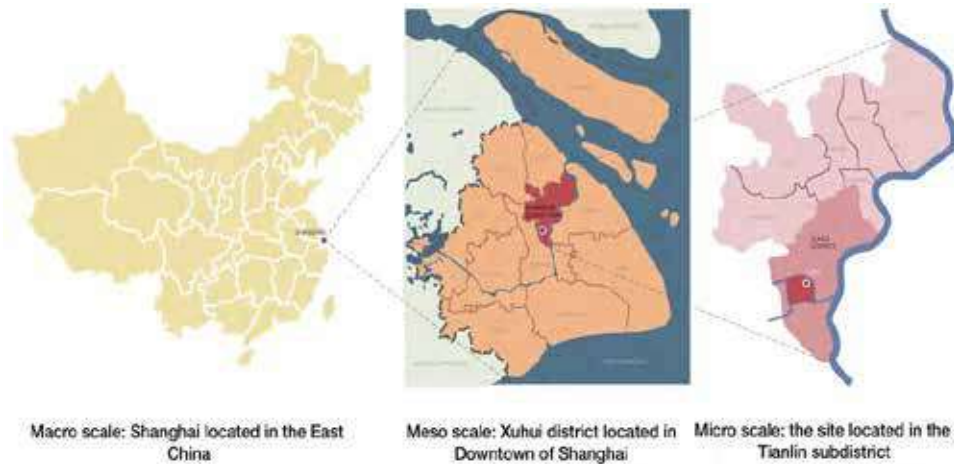


Figure 1. The location of the site from macro to micro scale

4.1.2 Built environmental factors

(1) Typology of residential buildings

The types of buildings in the Tianlin community are obviously different. Through field interviews and a large amount of network data collection, the height, shapes and year of construction are summarized. As seen in figure 2, most of these residential buildings are high-rise buildings, the newer the buildings, the higher the building's height and the old residential mainly distributed in the west of the Tianlin community. By comparing what we feel from the interview, we can also find that the more the residential buildings are of a lower height, the more the inhabitants are closer and know better each other. The more the community buildings are older, the more the inhabitants feel the sense of community as they know each other in comparison to new residents who have moved here recently. It is obvious to know that the built environment can affect the social relations among residents here.

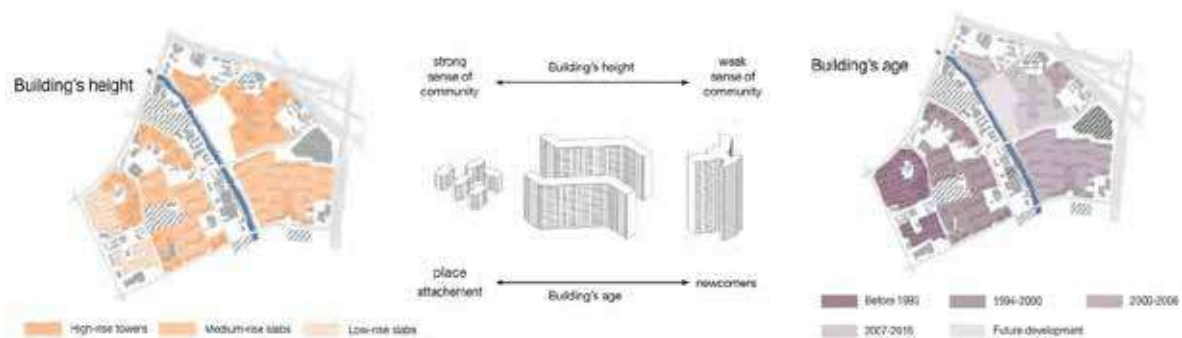


Figure 2. The typology of residential buildings in Tianlin community

(2) Resource analysis

The area is covered by bus system operating around 23 different bus lines while the metro provides 5 lines nearby: line 1, line 3, line 4, line 9, line 11 (Figure 3). It's sure that the Tianlin community has very convenient transportation resources for people to come here. Besides, the site is mainly supplied with restaurants, banks, cafes and shops. However, these commercial services are mainly distributed on the boundary of the site. There are not many destinations of that kind within the inner area which is composed of different residentials.

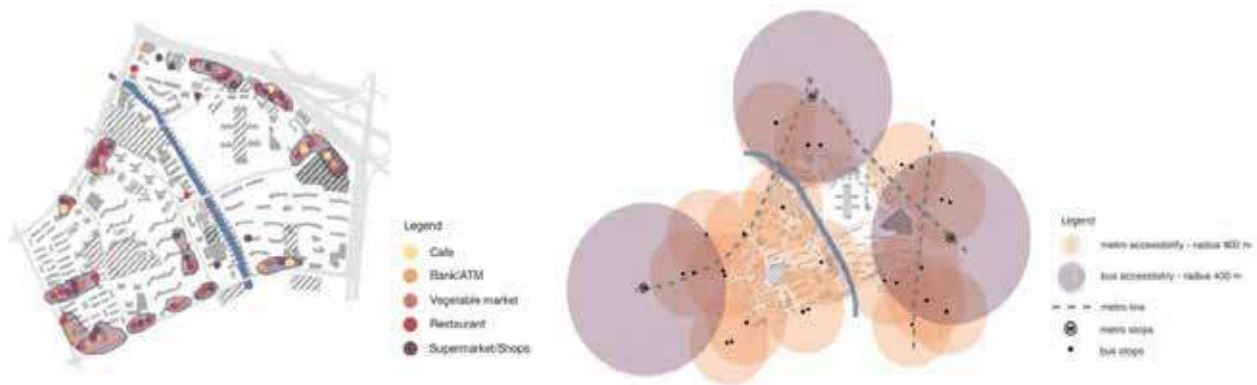


Figure 3. The resource analysis of the site

(3) Law of people's activities

By monitoring from 10 am to 8 pm, a total of six time zones of Baidu Thermal Map, we can easily find that people are mainly attracted by commerce, office and metro stations to move around the area but most of the time they spent in the boundaries of the area without getting inside(Figure 4). Especially during rush hours, there is the biggest flow of people around the site.

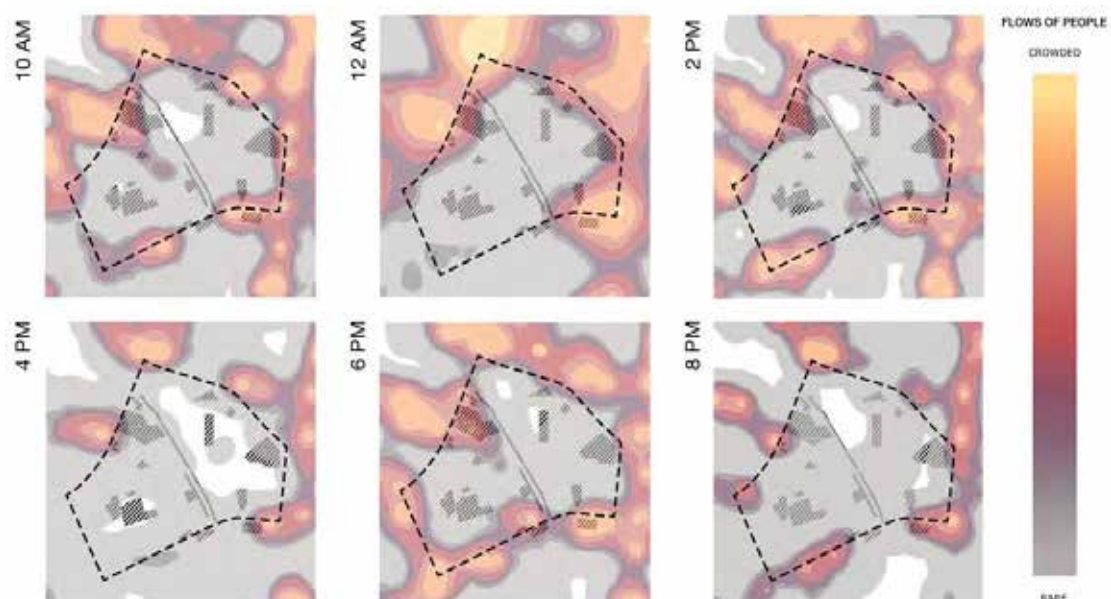


Figure 4. The law of people's activities in different time from Baidu Thermal Map

4.1.3 Public space

(1) Public space plaque selection

The area has around 20 points of interest which were chosen by a subjective criteria from the site survey (Figure 5, Table 1). Some of them are well-designed, suitable for leisure, commercial activities, others lack equipment, identity, have more greenery or are more lively. One of the main problem is that these areas have a different level of accessibility as there are big gated residential within the site and semi-public spaces in most cases not accessible to the inhabitants.

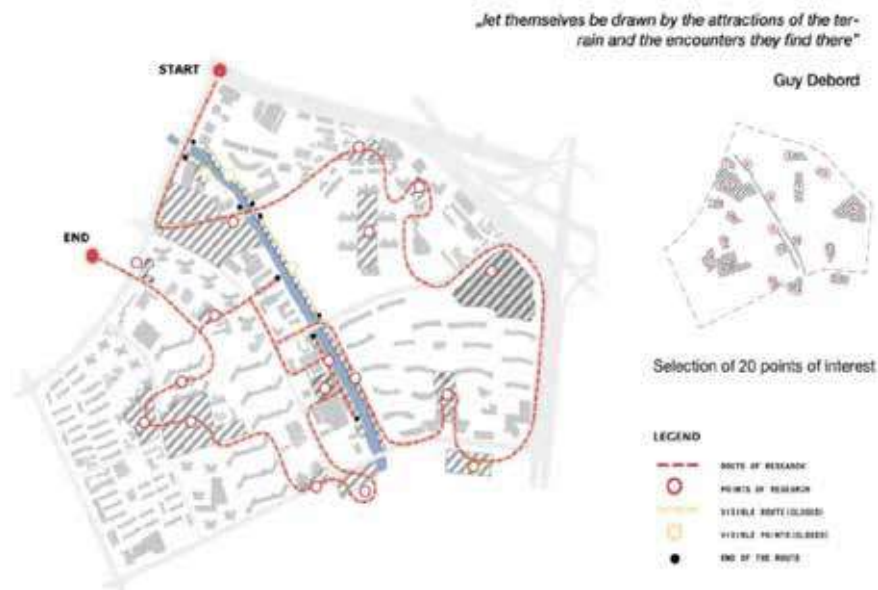


Figure 5. Public space plaque selection

1	Parking lot next to the bridge	2	Closed waterfront linear greenery	3	Greenery slope
4	Closed linear greenery	5	Community center	6	Community greenery
7	Greenery inside the gated community	8	Ikea	9	Waterfront behind the flower market
10	Open waterfront	11	Flower market	12	Square inside the gated community
13	Shopping mall	14	Waterfront of eagle park	15	Commercial front
16	Tianlin central park	17	Greenery inside community	18	Space between two apartments
19	Urban living room	20	Commercial corner		

Table 1. Selection of 20 points of interest

(2) Accessibility of public space

Due to the establishment of closed residential, the accessibility of public spaces within the Tianlin community is very poor, and many places cannot be arbitrarily passed through. And these public spaces are not systematic. Different gated forms of gated residential make up most of the space in the area (Figure 6). Furthermore, only streets can be classified as real public space. Gates prohibit a free access for people to many spaces of the area. Therefore, the public space in which people living in the Tianlin community can operate is very limited. As seen in figure 7, there are different arrangements along the canal, from a well-design public spaces, frequently used, to a waterfront not accessible for public. Many residents living here have never even visited the waterfront space adjacent to Puhui Tong.



Figure 6. The accessibility of residential

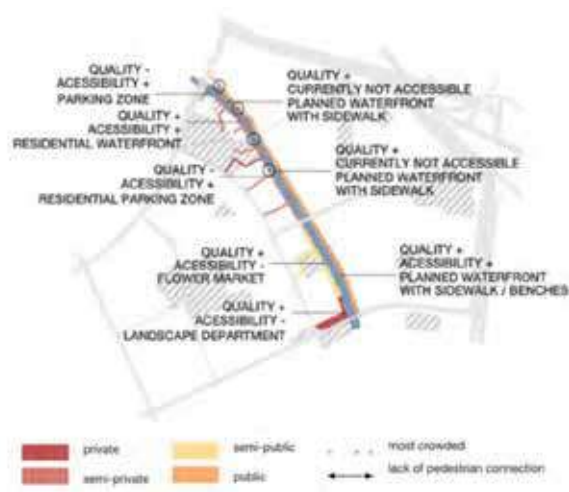


Figure 7. The accessibility of waterfront

(3) Summary of public space features

From our first impressions and further analysis of the waterfront seems to be a clear division and imbalance between different sides of the Puhui Tong which is the consequence of the built-environment but also lead different lifestyles: Older-Newer, Traditional-Modern, Permeable-Impermeable, Downscale-Upscale, Shared-Private, Local-Globalized. The types of public spaces within the Tianlin community are very abundant, but there are also large differences and low levels of integrity. On the whole, the frequency of use of public space is uneven, and generally low, as the vitality of space is truly low.

4.2 Concept—Social resource sharing:providing opportunities for the inhabitants to rediscover their place of living

4.2.1Goals and Vision

The concept of social resource sharing is a concept proposed for the closed community which bring about the separation of urban public space. Through this concept, the utilization rate of urban public space resources can be effectively improved, and the waste of idle space can be reduced. At the same time, it can also effectively activate people's awareness of the protection of the public environment, so that everyone can rediscover their place of living. In

other words, we would like to create a neighborhood that apart from meeting inhabitants' desires in terms of comfort also provides opportunities of a better life by getting them in contact with new experiences and people rather than mere existence (Figure 8).

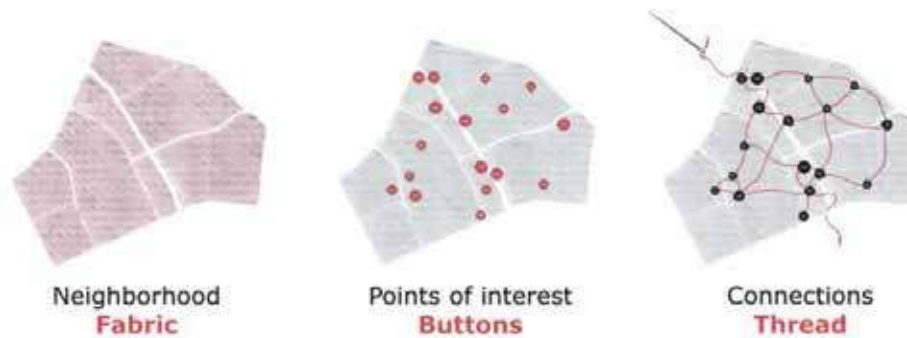


Figure 8. The metaphor of the concept

4.2.2 Methodologies

The site is totally divided into several parts, especially between west and east, as a consequence of the built-environment and different lifestyles. After the site survey, obviously the 20 buttons can be divided by two dimensions (Figure 9): One is the landmark, which are designed for all, attracting people also from outside (places embedded in public space). And the other is the urban living room, the place for the community to socialize, gather together (places embedded in private, semi-public space). After we evaluate the 20 points of interest from surface, identity, commerce, leisure and accessibility, we can visualize the site that need more design according to each of criteria. We find that the spatial attributes of different urban public spaces are quite different and lack close relationship with each other, which means that there is a serious problem of separation in public space in Tianlin community.

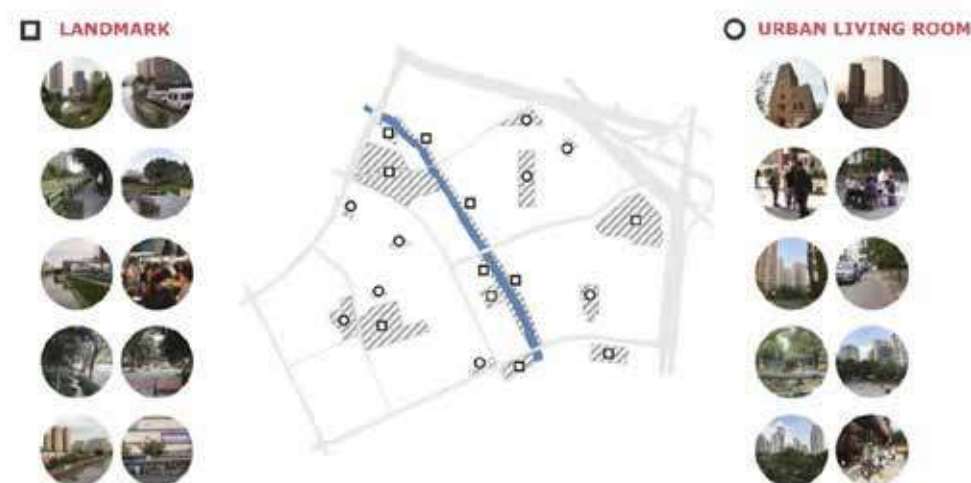


Figure 9. Two dimensions of the 20 points of interest

4.3 Reform Strategy for Enhancing the Vitality of Public Space in Tianlin Community

4.3.1 Connect: Enhance the correlation among public spaces

We can easily find that the area is not accessible everywhere and fragmented in different

parts. So what we would do is to provide new paths to link the twenty points in order to make the whole area more accessible, not only where there is a need for new design but connecting all the areas of the intervention.

According to the 5-minute life circle, we defined threads with the usage of grasshopper based on the 5 min walk radius (340m), and create a five minute network of local connections (Figure 10). The external manifestations of these connections can be bicycle lanes, walking paths, jogging paths or just a visual corridor, which in turn forms a relatively continuous and logically public space system. Then the next question is how to attract people to visit the 20 public spaces along the space path we designed, to rediscover the living space they live in.

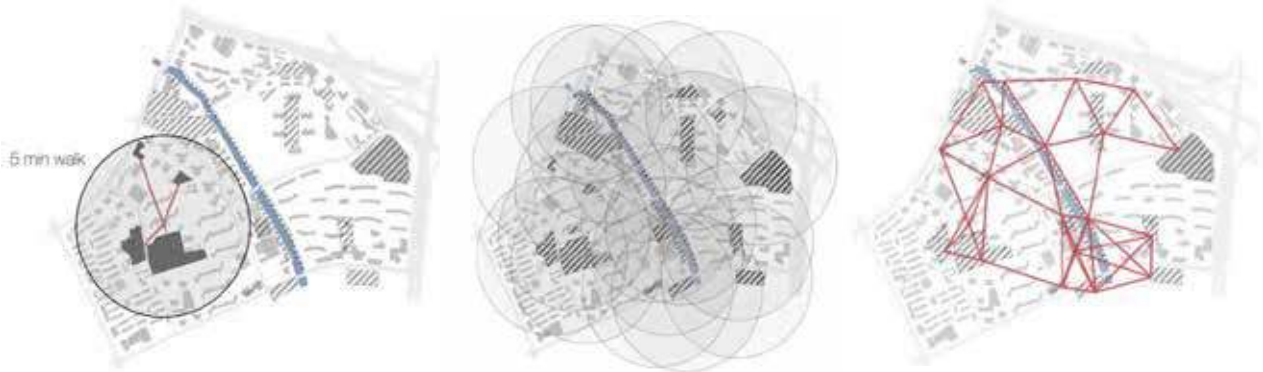


Figure 10. A five-minute network of local connections

4.3.2 Balance: Balancing the spatial attributes between public spaces

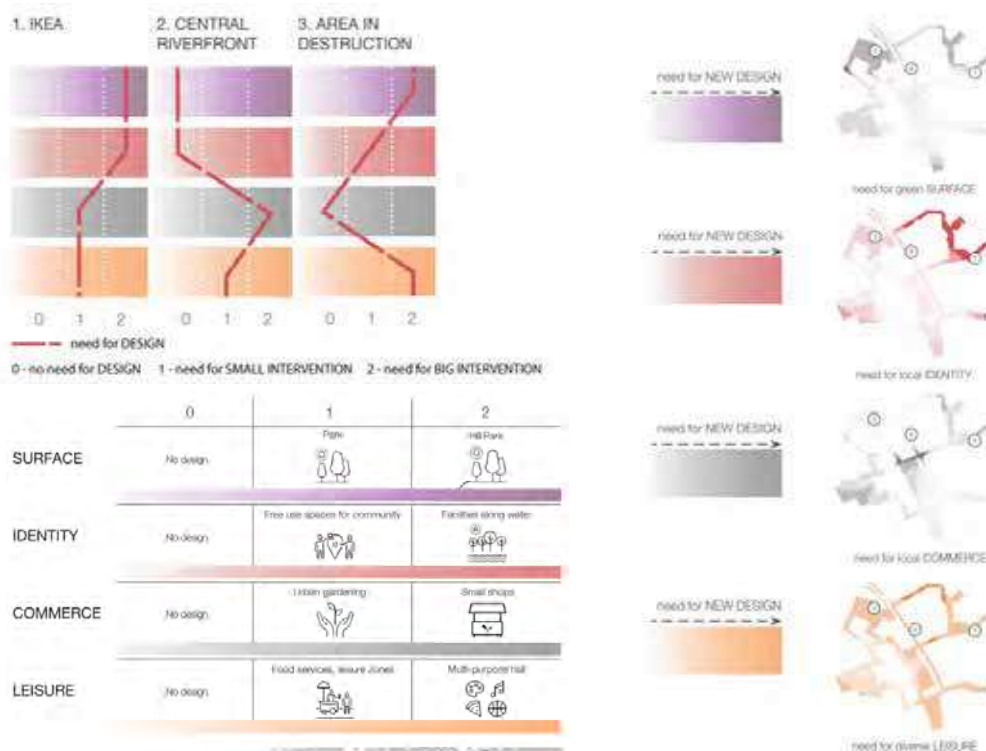


Figure 11. Reform strategies of balancing the spatial attributes between public spaces

The area has some spaces in need for certain qualities while there are other spaces which

have this corresponding quality. According to the evaluation of surface, commerce, leisure and identity we provide various equipments in these four categories to improve the wickest points so that there will be a certain balance between the various public spaces (Figure 11). According to the evaluation of the status quo, we divide the degree of each point needs to be designed into three levels: no need, need for small intervention and for big intervention. Take the central waterfront for an example, the current surface and identity is good enough, so what we need to intervene is to provide more commercial facilities to attract people to visit here. On the other hand, the quality of its leisure space needs to be improved, providing more leisure activities for people to enhance their public space, it can be food service and also multi-purpose hall. And for the commercial service of area in destruction is very good enough, but its scores of surface and leisure is really low, indicating that this area needs to improve its environmental function and quality.

5. Conclusions

The popularity of closed communities in China is the result of historical factors, social development and many other factors. Although, it satisfies the pursuit of safety and living environment quality within the community to some extent. Such development is limited and the negative effects on urban public space cannot be ignored also. If we compare the city to a giant organic organism, then the closed community can be regarded as a parasitic body with incomplete functions. Its wall is equivalent to a semi-permeable membrane, which filters and blocks the exchange of energy and matter. However, the closed residential, must rely on external functional organs to function properly (Zhang and Wang, 2013)

Therefore, through the concept of social resource sharing, we continue to unblock the community and enhance the continuity of urban public space. This matter is related to the fairness and justice of the urban public space, but also reorganizes the separated social relations, allowing people to get out of closed work and living spaces, to promote interpersonal communication. These practices are of great significance to comprehensively enhance the vitality of urban public space, and hope to provide reference for the future development of Shanghai's public space.

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