URBAN DESIGN STRATEGIES FOR SHANGHAI AND NANJING: APPLICATION OF "IN-BETWEEN REALM" AND "SHARING"

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Abstract

This paper explores the issue of exploiting anonymous urban space and buildings to improve the quality of people's life in developing countries such as China. And the background of the issue is based on the research on chaos caused by urbanization and aging problems in China. Firstly, this paper definitely traces the thoughts of the "in- between realm" in the architectural field since the architecture modernism, and further extends this spatial phenomenon into the urban context. Secondly, according to the research which used mapping as an relatively reliable methodology on "in- between realm" of specific urban blocks in China(including Nanjing and Shanghai), the existing problems about such anonymous urban spaces are summarized; finally, based on the related design in Shanghai and Nanjing that participated by the authors, a new strategy based on the concept of "sharing" and the "in- between realm" at both architecture and city aspects were explored.

Keywords: Sharing; In-Between realm; Urban design; boundary; public.

1. Introduction of the "in- between realm" and "sharing"

Space has great influence on people's social life. Since ancient times, people's understanding of public and private has gone through many phases. Since the 20th century, people's understanding of public and private concepts, and their understanding of architecture and urban space are constantly changing along with the transformation of architectural history. In fact, rapid urbanization in China has brought many potential urban space problems, especially the disconnection between planning design and architectural design has led to the emergence of many urban redundant spaces. In addition, how to coordinate the public and private buildings in the city is also a typical problem. In this essay, the transformation of the "in- between realm" issue will be examined. And the idea of "in- between realm" is applied in the later case research and design to optimize urban space and create a "shared" space instead of a "redundant" space between the public space and the private space.

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1.1 The role of "in- between realm"

The "in- between realm" here attributes of the "intermediate domain". In the inner shell of a building, such as classrooms, offices, clinics, theaters, etc., there are many targeted activities that often have a defined functional and functional shape; The "in- between realm" between the outer shell and inner shell, such as the foyer, the corridor, etc., it always holds public activities rather than taking the role of transportation. They bear more general public activities such as conversations and rest, and the requirements for the physical form of matter are not strict. It can be speculated that there is no special form requirement. However, although the "in- between realm" belongs to the interior space of the building, it has its own privacy, it still has its publicity because it undertakes public activities.

The Nolli Map drawn in 1748 is a case in point to expand the topic of in-Between realm from architecture to city level. The plotter left the public space in Rome city blank and blacked out the non-public part. Interestingly, he also divided the interior of the building into two parts: one part is left blank, which is consistent with the public space attributes such as street squares; The other part is blacked out as a non-public part. The area left blank in the interior of the building can be regarded as the aforementioned "in-between realm"-both private and public. On the whole map, one can read out a rich, clear and distinct public space system: from the most public squares and streets to the "the in-between realms" of the building, and finally to the most private parts. "Intermediate Domain" plays an indispensable role in the transition between public and private.

Urban space is an extremely important stage of human public life, while public life is one of the most indispensable activities for human beings. Habermas, a contemporary German philosopher and sociologist, is one of the world's most recognized and authoritative documents on the public sphere. In Habermas's book *Structural change of the public*, Habermas divides the world into two parts: the system world and the life world. The system world is a world of instrumental rationality, with the goal of achieving rational goals. Its goal is to make people's activities conform to the requirements of the world system operation. In the system world, people are equivalent to "screws on machines"; The living world is a world of communication, aiming at reaching understanding and consensus.¹ It can be inferred that only in the living world can public communication activities take place between human beings. It can also be speculated that most of the activities in the inner shell of the building are purposeful activities of the system world, emphasizing rationality and efficiency, while outside the inner shell, there are more colorful living activities.

With the development of society, people's demand for public communicative activities is increasing, and the quality of public space is also improving. Architects have the responsibility to demonstrate the important value of public activities by designing public space. As an important part of public space, the design of "in-between realm" needs more skills and creativity at the intersection of public and private space with different attributes.

¹ Habermas, J. (1962). *Structural change of the public*.

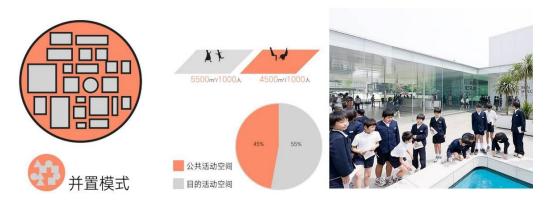


Figure. 1: The diagram of the Kanazawa 21st Century Art Museum designed by SANAA Source: author



Figure. 2: The diagram of the Seattle Library designed by Koolhaas. Source: author

Contemporary architects also have many original ideas on "the In-Between realm". The circular plane of Kanazawa 21st Century Art Museum designed by SANAA is like a city. Secondly, the exhibition hall space is designed as many independent white cubes. Public space surrounds these independent exhibition halls. The interface between the two is clear, forming an obvious bottom-to-bottom relationship and creating an art museum that can walk and stay freely. As a "middle field" of public space, accounting for more than 45%, a large number of glass curtain walls also give people a sense of "transparency and flow". This is a truly public art gallery.

After Koolhaas's Seattle Library has identified five "inner housing spaces" of "office, books and related materials, interactive exchange area, business area and park area". The five spaces are arranged in sequence from top to bottom to finally form a complex. In order to cope with the urban space, the outside has made corresponding movements. Therefore, the "gap" between each block is defined by inside and outside. As the "middle field" of the whole building, these public spaces are connected up and down in series. Some are used for reading, some are used for communication, and there is a special space feeling.

At the city level, Japanese architect Fumihiko Jeong completed the daikanyama Residential Complex (Hill Side Terrace, Tokyo, 1969-1992) over many years. He used rich and exquisite methods to deal with the "intermediate area", which not only ensured the privacy of the residence, but also showed a friendly attitude towards the city. Finally, he obtained a dual space experience that was both open and stable, maximizing the sharing of land resources by the city.

2. literature review

In 1962, Aldo Van Eyck had strongly opposed the absolute separation between inside and outside caused by modern architecture's "form follows function" in his essay *Steps Towards a Configurative Discipline*. He believed that the architecture and the city should be continuous and integrated. He tried to put a transitional area-"in-between realm".² In 1966, Venturi listed a large number of examples in the ninth chapter "indoor and outdoor" of the book " *complexity and contradiction in architecture*", trying to prove that there was a layer of redundant space widely existing in the buildings before the modernism movement and during the early modernism, which belongs to the space between inside and outside. Venturi believed that the building should have two layers of "shells". The shape of the internal space reflects the functional needs, while the shape of the external space reflects the treatment of the city or the external environment. Therefore, a layer of intermediate domain is created between the inner and outer layers of "shells".³ The building is just born at the junction of the indoor and outdoor functions and space. Colin Rowe also praised Venturi's understanding of the "in-between realm" in his book *Collage City*, and mentioned that there is a "call" for the middle field of the city.⁴

All these discussions are actually closely related to the "in-between realm" issue, and how private space integrated with public space. However, when turning the focus on contemporary existing urban sphere, the existing space involved with public and private and those common spaces are actually quite hybrid and even useless. Thus this research tries to make up for the gap between theory and practice in related existing cases, re-recognize in-between realm and use sharing strategies to re-activate the commons in urban sphere of contemporary cities.

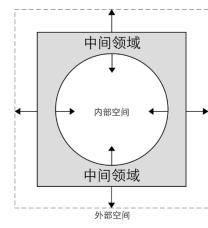


Figure 3: The diagram of the In-Between realm Source: author

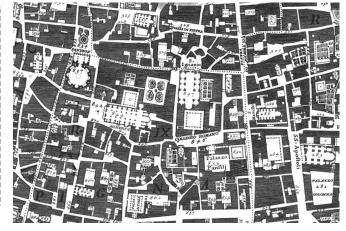


Figure 4: The Nolli Map, 1748 Source:https://www.pinterest.com/pin/3975834733244 49773/?lp=true

² Van Eyck, A. (1962, August). *Steps toward a configurative discipline*. In Forum (Netherlands) (Vol. 3, pp. 81-94).

³ Venturi, R., Drexler, A., Art, M. o. M., Scully, V., Scully, V., Art, M. M., & Arts, G. F. f. A. S. i. t. F. (1977). *Complexity and Contradiction in Architecture*: Museum of Modern Art.

⁴ Rowe, C., & Koetter, F. (1983). *Collage city*. MIT press.

3. Research methodology

In this research, several typical areas are selected firstly, and field research method is used to find the problems in the existing urban public space. Secondly, the problems are presented by means of diagrams and mapping, and then the reasons behind these problems are analyzed. According to the existing problems, corresponding design methods are adopted to optimize the existing space. Finally, return to the examination of the "in-between realm" theory, analyze its importance in the existing urban space design in China, and its effectiveness and limitations as a design approach. Although this process has its own limitation because the typical cases in China are not applicable to all cities, much more basic analysis is needed to broaden the research range in order to provide more justifiable approaches.

4. Application - "In-between realm" and "Sharing"4.1 background research : existing problems



Figure 5: Analysis of "the In-Between realm" at block Level of Hunan Road in Nanjing City Source: author

In 2016, a survey was carried out on the use of public space in Matai Street, Hunan Road, Nanjing City. The scope of the research includes Shiziqiao Pedestrian Street, Matai Street Community, Xiliu Bay Park, Xiliu Bay Street and Community, so as to get an on-the-spot understanding of the current situation of "the In-Between realm" in Chinese cities.

At first, the ground plan of the area is drawn in the form of Nolli map, and compared with the urban thermal map provided by Baidu map app, it can be found that the higher the proportion of "white" area, the higher the activity of the area. Take Shiziqiao Pedestrian Street as an example,

the "white" area accounts for more than 60%, and Shiziqiao area is indeed one of Nanjing's most popular food districts.

Different from Nori map, a large number of "grey" areas with low activity are found in Matai street area. Most of them are open spaces within the communities, which are the "the In-Between realm" for the transition from the communities to the cities. These "grey areas" in the communities are either idle or have been privately occupied by others.

In China, due to the limitation of norms such as sunshine distance, there are a large number of the "In-Between realm" with ambiguous attributes and no characteristics between houses and houses and between houses and the boundary of communities. They are shared by the collective (community), but they haven't been given full attention to their own values. For residents, the establishment of a similar order has led to the poverty and idleness of urban space. In "*The Death and Life of the Great American Cities*," Jane Jacobs believes that the supremacy of modernism has stifled the vitality of the city. This view is not from nowhere. However, in China, the simple and rough community wall insulates the "In-Between realm" of the community from the world, showing a very negative attitude towards urban space.

Since 2014, with the popularity of a series of physical sharing platforms such as Uber, Airbnb and Mobike, the "sharing economy" model based on temporary transfer of the use rights of idle resources or services between strangers has gained popularity, and China has entered into the "sharing" era. The era of "sharing" has five key features: idle resources, usage rights, connectivity, information and liquidity. The essence of sharing mode is the integration and redistribution of idle resources or services on the supplier, and requester uses resources or services by sharing methods such as rent and loan.

As mentioned earlier, the "the In-Between realm" in cities and buildings are shared by spaces with different attributes (public and private), and are naturally elastic. They-such as the "grey ground" of the community-are, first of all, idle resources that do not give full play to their value. The "middle field" in the existing buildings also needs to be upgraded due to the changes of the times and the needs of public life. With the advent of the era of "sharing", the perspective to cities and buildings is changing. The concept of "sharing" also brings new ideas and possibilities for designers to use these "the In-Between realm" to improve the quality of urban space and enrich public life.

4.2 Design Case study

A continuous interest in "the in-between realm" is still on the way, several designs of urban architectural space regarding "the in-between realm" are carried out based on the concept of "sharing". In the following part, several design cases participated by authors will be used as examples to state the ideas on relevant design strategies.

4.2.1 Case 1 Background

From November 2015 to January 2016, an 8-week investigation and analysis of the Bow and Arrow Square community and the design of community renewal were conducted in Nanjing.

Our research and design scope is a Community in Nanjing, which is located on the south side of Shengzhou Road in Qinhuai District of Nanjing. From northwest to southeast, it successively includes Bow and Arrow Square, Heilang Lane, Qin Zhuangyuan Lane and Xu Jia Lane. The

Confucius Temple Business Circle is not far to the east of the street. Bow and arrow workshop community has a large proportion of middle-aged and elderly residents due to its historical reasons (mostly the allocation of houses for units and the demolition of resettlement houses).

Field research

At first, the boundary map of the community was drawn in the form of Nori map, and the boundary of the community was investigated. There are two kinds of boundaries. One is the physical boundary (figure): there are four types of boundaries in the community, namely, bottom quotient, additional construction, wall and platform. Some communities have clear boundaries and are well maintained. Others are complicated and relatively poorly maintained. The second is the management boundary: there are currently 9 property management districts in the community, but there are still some districts that actually do not have property management, with Qin zhuangyuanli community as the largest.

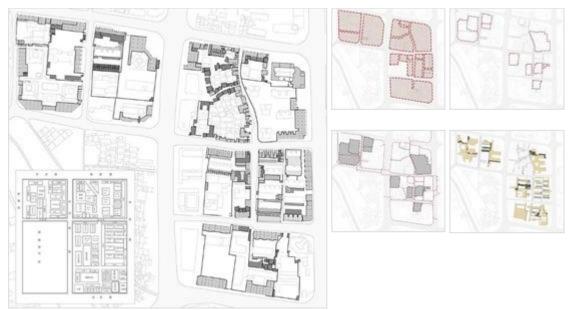


Figure 6: Border map; Source: author

Finally, the psychological boundary of the community is drawn through the investigation of the elderly in the community and the tracking of their behavior route: the so-called psychological boundary is not physical, it is a reflection of people's real feelings when walking in the community, and it can be called an "invisible boundary". The areas demarcated by the above-mentioned various types of boundaries do not completely overlap. We has made further analysis and induction on this, and obtained the contradiction between the material entities represented by the boundaries, "in-between realm" with ambiguous attribution and the daily activities of residents.

Contradiction between domain and boundary

First of all, the lack of clear division between buildings leads to the contradiction of unclear domain ownership. Take Qinzhuangyuan village as an example. There is no real estate management in this residential area, and the use of public space is worrying. Not only are there many private buildings built indiscriminately, but also there are unowned vehicles occupying the vacant land and no one cleaning it up. Residents on the ground floor of the building rent out more for use as shops, bringing many troubles to the residents.

Secondly, there is the contradiction of physical boundary division blocking public communication. Take the high-rise residential area of Bow and Arrow Square and the Roman Holiday Residential Area as examples. The two residential areas are mainly walled with garbage on both sides. There is a serious shortage of outdoor venues in the high-rise residential area of Bow and Arrow Square south of the wall. The Roman Holiday High-rise Community to the north of the wall has considerable venues, but there are not many people. The rigid wall blocks the possibility of mobility of residents in the two communities.

Then there is the contradiction that the physical boundary limits the movement route of community residents, especially the elderly. In order to save money, no.60-65 residential area in Qinzhuangyuan block has only opened one entrance for many years.

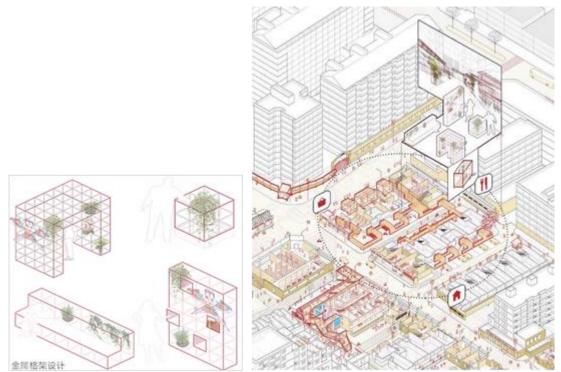


Figure 7: Border constructions; Source: author

This has brought a lot of inconvenience to the elderly living in this community. The routes for buying food and dining are very tortuous, and the route to the community hospital is even worse, which is just one wall away, has to be detoured. Not only that, the simple and rough physical boundary has also caused many broken ends, and there are many inaccessible dead corners in the community, which is not conducive to safety.

To sum up, the "the in-between realm" between buildings often becomes a "three-no-care" area because of unclear public-private boundaries and no clear attribution. The existence of hard boundaries between communities hinders the public activities among residents and the flow of idle resources. The "the in-between realm" between buildings and communities is generally considered as "marginal zone" and neglected, thus becoming a veritable "idle resource".

Strategy: sharing boundary

Based on the concept of "sharing", a community renewal strategy of "sharing borders" is proposed. We believes that the key point to solve the above contradiction lies in expanding the boundary with single function into the activity space shared by residents on both sides. On the premise of ensuring the safety management of the community, the "sharing boundary" is taken as the center to promote the effective use of the "intermediate domain" of the community.

In view of the field contradictions at different levels, two concept design of "sharing borders"border constructions and border buildings are further put forward, and relevant designs in several areas where problems are most typical in the community are carried out.

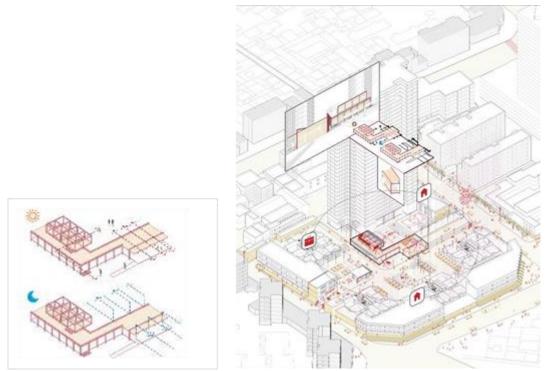


Figure 7: Border building; Source: author

Border constructions is to set up public facilities for residents to share in the "the in-between realm"-the open space in front of the house between the houses, which not only meets the daily needs of residents, but also serves as a flexible boundary to clearly delimit the public and private boundaries of residents.

Taking QinzhuangyuanLi No. 37-41 as an example, we plan to set up a border building between them that residents can share-light steel grilles. these light steel grilles with various purposes can meet residents' daily needs such as parking bicycles and planting flowers and plants. The second is to complete the demarcation of each other's fields with a flexible attitude. The front areas of each building in Bow and Arrow Square community are improved according to this strategy.

Border construction is to set up a public activity room for residents to share in the "the in-between realm" between the residential areas-the border zone. The two community units are colluded to share the activity land as the activity center and can also play the role of border management when necessary.

Take the above-mentioned high-level archery workshop and Roman holiday community as examples. On the basis of keeping the existing management boundary unchanged, we shared the activity space on both sides by putting into the boundary building, the shared activity room. The activity room is open to both sides. On the basis of ensuring the safety management of the two communities, it is open during the day to meet the public activity needs of residents in the two communities, to balance the public resources between the communities, and to activate the two "the in-between realm" centered on the activity room. Close the activity room at night to ensure safety. This kind of "border building" turns the originally negative wall into an active activity room, which becomes the occurrence point of community activities in the region and further stimulates the occurrence of positive community activities.



Figure 8: History and current situation of Jiangwan Stadium; Source: author

In the strategy of border construction, the level of the border rises to the neighborhood level. The placement of boundary buildings has improved the negative usage of the community boundary, and also made the idle "gray land" of the community flow, allowing the communities on both sides to share public resources, resulting in the effect of "1 plus 1 is greater than 2". Our attention to the renewal of the community boundary is actually the attention to the public space of the established community such as Bow Square Community. Due to historical reasons, such communities lack sufficient activity venues, and rigid physical boundaries hinder the flow of idle resources. With the continuous growth of the urban population, especially the aging of the social population, the negative and rigid border and community strategies are increasingly unable to meet the needs of people's activities. Especially for the elderly with mobility difficulties, the "shared border" with compound functions can promote the communication of daily life, and at the same time can conveniently meet various basic living needs.

4.2.2 Case 2

The second case is about how to re-activating the abandoned building resource. It's an adaptive renovation design course for existing urban stadiums in 2017, which is closely related to the issue sharing strategy of "the in -between realm".

In recent years, China's attention to football has gradually picked up, and the possibility of hosting the World Cup in the next 10 years has also greatly increased. According to the city master plan of Shanghai in 2040, it aims to "build a worldwide famous sports city" and hopes to become a first-class city in football and a city with famous professional clubs and strong football culture like London, Rome and Madrid. A professional football stadium is a stadium dedicated to holding football matches. The difference between this stadium and a comprehensive stadium is that there is no runway, the spectator stands are closer to the stadium, and most of the spectator stands are within clear sight distance. The spectator can truly experience the intense atmosphere of the match and the quality of watching the match is enhanced. In addition, professional football fields are more conducive to athletes' rest and broadcast. There are many professional football fields specially designed for football matches abroad. At present, there are only 5 to 6 professional football fields in China, and more are still under planning and construction. Shanghai alone will plan to build 5 to 10 professional football fields in the future will be considerable.

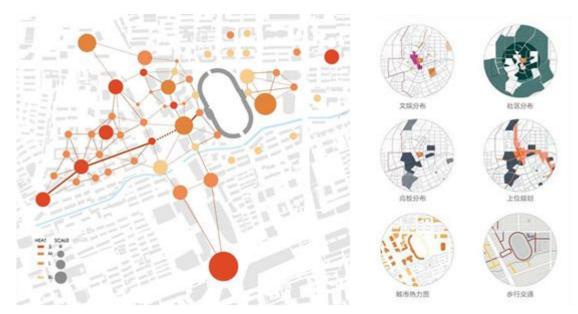


Figure 9: Thermal Map of Jiangwan Stadium Urban Space; Source: author

Jiangwan Stadium is located in Yangpu District of Shanghai, and has the potential to be transformed into a professional football stadium. Jiangwan Stadium was built in 1933 and was once called the "First Stadium in the Far East". It has hosted two national games of the Republic of China, two national games and the east Asian games after the founding of new China. The soccer friendly held here in 1977 also brought in world famous soccer player Bailey. The brick arcade on its facade and the exquisite east-west spectator tower all have a historical flavor. It is located in a sports park with beautiful environment. The nearby Wujiaochang business circle is quite popular. Next to it, the "Creation of Wisdom World" block designed by SOM in recent years is also gradually formed.

Compared with the newly-built football fields far away from the city, the football fields in the city have unique resources, which can easily meet the various activities of fans, thus driving the surrounding economy. Jiangwan Stadium was once the first choice for citizens' fitness activities. Now it has become a historic building. Although some commercial development models have been tried in recent years, including golf and football training fields, the actual operation has not been very successful. Most of the time the stadium is idle. Therefore, transforming it into a

professional football field was planned that it can accommodate 40,000 spectators and use it as a blasting point to activate the city vitality of the whole Jiangwan area.

According to the investigation of professional football fields and urban environment, the following two contradictions between cities and architecture were noticed. The first is the contradiction between the huge size of Jiangwan Stadium and the harmonious integration of the surrounding urban environment. According to the urban space and thermal distribution map made by the author, it can be found that the heat of Jiangwan Stadium in the city is far away from its surroundings, and its huge arcade volume hinders the mutual penetration of activities on both sides. The author calls it the contradiction about "big".



Figure 10: 1st Plan and Diagram of "Shared Sports Ground; Source: author

The second contradiction is that the volume demand of professional football field is smaller than the existing size of Jiangwan Stadium. Compared with other comprehensive stadiums, professional football stadiums have no runways, so the seating arrangement is more compact and the required size is smaller than the space available in Jiangwan football stadium. The author calls it a contradiction about "small".

Such a double contradiction between "big" and "small" forms a double shell in the Jiangwan Stadium. One is the "inner shell" mainly composed of professional football fields, and the other is the "outer shell" mainly composed of old architectural arcades. Between the "inner shell" and the

"outer shell"-the north and south ends of the stadium form two considerable "intermediate areas", which belong to the Jiangwan Stadium but are more closely related to the urban environment.

According to the "middle field" between the professional football field and Jiangwan stadium and the concept of "sharing", the author and his classmates put forward a design strategy different from the general professional football field-"sharing the stadium".

During the design process, the most important thing is about the planning of "in-between realm". In fact, for fans, football is not limited to 90 minutes of matches, but includes all-day recreational activities, including all kinds of recreational activities around the football field. Fans often stay around the stadium with their families and mouths. The professional football field does not only provide spectator activities, but also includes a series of related activities such as visits, catering, meetings and accommodation. The author and his classmates decided to build the entire Jiangwan Stadium into a football-related sports center by taking into account the full-time activity needs of the fans watching the match with sufficient "redundant" space on both the north and south ends.

The specific measures include designing the open spaces on the north and south sides into a 7person outdoor stadium and two 5-person outdoor stadiums, which will be shared by residents of surrounding cities. Then around the surrounding interspersed with commercial shops, forming a block-type business. The platform layer for spectators to rest and evacuate is arranged at an elevation of 8m and is connected with the top of the arched corridor, which forms visual interaction with the outdoor stadium and serves as a platform for observing the city. During the games, fans can stay comfortably all day in and around Jiangwan stadium and can participate in many football-related activities. The entire venue can be rented out to the public during nongames and become a football center for the surrounding citizens to share. The arcade, which once hindered the infiltration of activities, has been renovated to provide a space for "shared playground" to pass through and stay.

The second issue is the innovative strategy for the football stadium stands. Jiangwan football field occupies a unique urban environment. Compared with many professional football fields built in the suburbs of cities at home and abroad, how to make fans feel more "Location" inside the football field becomes very important. The stadium stand design of this plan specially reduces the upper west stand to open the field of vision, so that the inside and outside of the stadium can be seen through. Fans from the west axis of the city can feel the cheering audience of the upper east stand from a distance. As a result, the warm atmosphere during the games can be shared with more people.

How to implant the contemporary content programme in the historical site, and how to take this opportunity to rejuvenate the urban space and meet the growing demand of national fitness? These are all the problems that this design is trying to solve. However, it is a win-win strategy to share the original useless space of professional football fields with city residents as the "in - between realm". In this way, the football fields themselves can have more profits in operation.

5.Conclusion

In the era of sharing, the understanding of architecture and urban public space is changing. Within the application of new design strategies based on the research, "the in-between realm" as a

"shared" space resource between architecture and urban space should further play a vigorous role as common spaces in the future. Based on above observation, one of the design directions for future architects could be possible content programme that architecture and urban space could share with each other, so as to broaden the domain of the "in-between realm", and at least it could become the place where everyday activities take place. On the other hand, redesigning the community boundary as a public activity place shared by residents is also a possible way to alleviate the shortage of existing community public places in the city. "In-between realm" in contemporary cities is not a monological issue, instead it engaged with the hybrid existing condition of urban sphere, thus how re-activating the existing in-between realm within the notion of sharing is an imperative and tough task for contemporary architects.

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