

Respect History, Respond to History

The Historical Evolution of Urban Contexts in Jiangwan Area and the Design Method of KIC Plaza

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Abstract: Jiangwan area is one of the 12 historical and cultural protected areas in Shanghai, with a hundred years of industrial civilization and municipal civilization. Since the end of 20th century, the knowledge innovation industry has been booming in Jiangwan area. A large number of historical sites need urban renewal to adapt to new functions. Studying the historical evolution of urban contexts is of great significance to the renewal and shaping of historical sites. KIC Plaza is one of the earlier successful design explorations.

This paper takes a representative period from the historical evolution of the urban contexts in Jiangwan area and describes the major changes and characteristics of the urban contexts in stages as a basis for analyzing how the design of KIC Plaza responds to history. Then introduction of the social background and base design conditions at the beginning of the project will be given to distinguish the main task of the design. Finally, by comparing the implementation of KIC Plaza and the program, to explore the "built" and "not built" in the historical dimension.

1 The Historical Evolution of Urban Contexts in Jiangwan Area

1.1. *The Sprout of Urbanization*

At the beginning of the 20th century, the Jiangwan area was mainly covered by farmland and river which was a typical landscape of rural area in Southern area of Yangtze River. There are nearly 90 villages on this land. Local residents are mainly engaged in agriculture and hand-made cotton textile industry. Large-scale towns such as Jiangwan Town and Shenjiaying have produced more comprehensive public service facilities such as teahouse, textile workshops and carpentry workshops.

In 1908, Ye Yiquan, a Zhejiang merchant, invested in the Wanguo Racecourse in Jiangwan Town and built a private garden in the northeast. At that time, there were only racecourses in the concession, and the Chinese were not allowed to walk in the racecourse or build one. The construction of the Racecourse made Jiangwan Town become the center of the area. Facilities such as commerce and transportation were also rapidly revolving around the Racecourse, formed the early town center.

Around 1920, traders began to build a number of roads to transport goods from the wharf. In 1917, the Xitiyuhui Road opened to traffic. In 1921, Yinxing Road started to be built in the northeast. Since 1922, Songhu Road, Xiangyin Road, Xiang Yin West Road (Handan Road), Huangxing Road and Qimei road (Siping Road) connected this area and the adjacent area, which formed the Wujiaochang center. With further development of commerce and trade, Wujiaochang gradually became a trading center, marking the sprout of urbanization.

1.2. The Initial Formation of Urban Contexts

In 1930, the Central Government’s “the Greater Shanghai Plan” stimulated the large-scale urbanization in Jiangwan. As an advisor to the Construction Committee of Shanghai Central District, Architect Dong Dayou formulated a Radial and straight road network with symmetric structure and designed a large number of municipal buildings such as municipal government, libraries and museums in the city center with his team. Jiangwan Stadium was also designed and built during this period, and was known as the largest stadium in Far East.

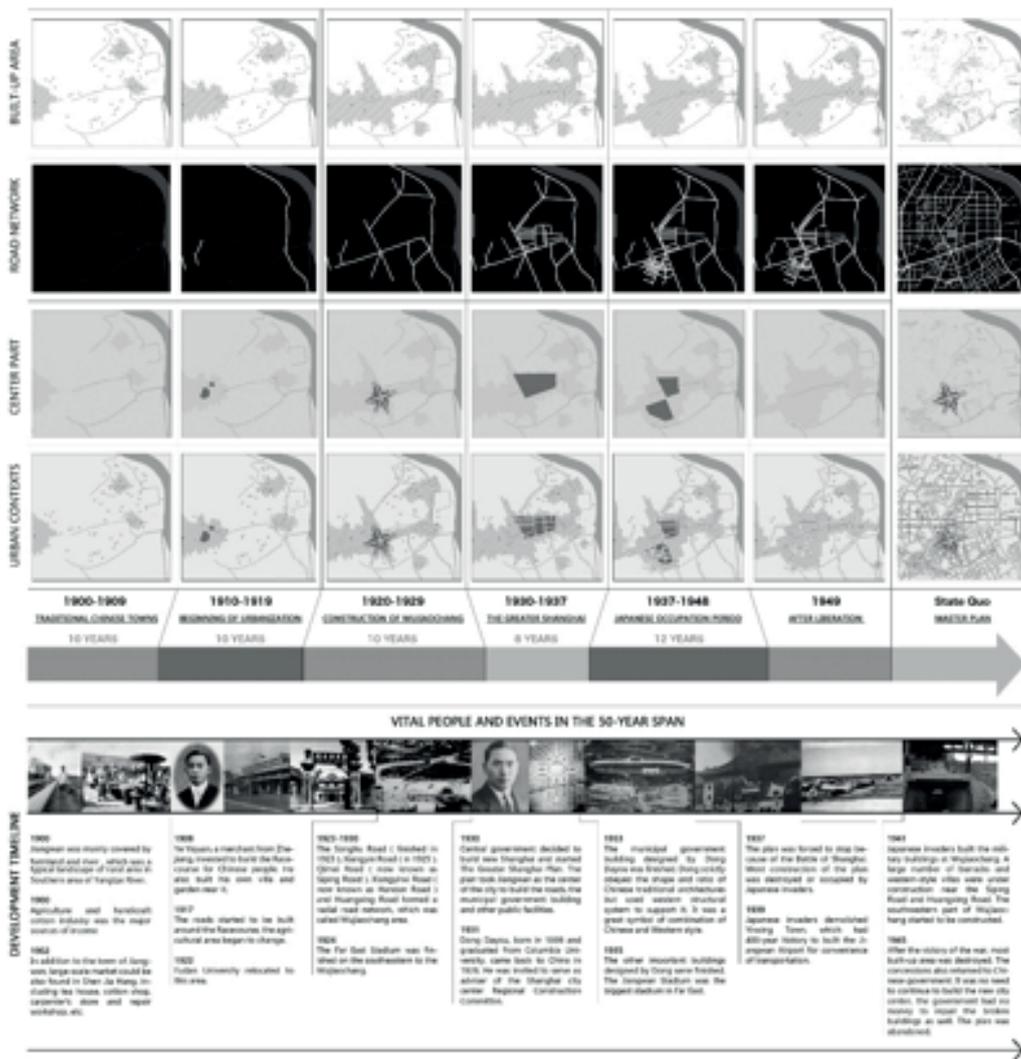


Figure 1. Historical Evolution of Urban Contexts in Jiangwan Area.

In addition to public buildings, a large number of new residential areas were promptly completed. The modern urban contexts with dense buildings and interlaced roads was initially formed and the land use functions in Jiangwan area also changed significantly.

1.3. Drastic Changes and Decline of Urban Contexts

In 1937, when Anti-Japanese War broke out, the “the Greater Shanghai Plan” under construction had to be temporarily stopped, and a large number of completed buildings and roads were destroyed in the war. Commercial buildings in Wujiaochang Center were occupied by the Japanese army, they also built headquarters building at the southeast corner, Wujiaochang gradually become the Japanese military base. In addition, Japanese designers built a large number of barracks and western-style villas and laid dense road network between Huangxing Road and Siping Road.

After the victory of the Anti-Japanese War in 1945, as the concession was withdrawn,” the Greater Shanghai Plan” was also suspended indefinitely due to shortage of funds. The Jiangwan area lost its central status and gradually declined.

1.4. Urban Spatial Characteristics of the Planned Economy Era

After entering the planned economy period, the Chinese government listened to the suggestion of the Soviet experts that business is a manifestation of consumerism and started to vigorously develop industry. According to the “Shanghai General Plan” in 1950, a large number of industrial facilities and supporting residential areas were built in Jiangwan area, but the central road network pattern in “Greater Shanghai Plan” was preserved. However, in order to meet the housing needs of an increasing number of workers in the city, Large-scale residential areas blocked the streets, damaged the axes and the remaining municipal buildings gradually overwhelmed by the workers’ villages.

2. Design of KIC Plaza and Construction Background

2.1. Project Overview

The KIC Plaza is located in Yangpu District, Shanghai, which is surrounded by Guohe Road in the east, Guoding Road in the west, Waizoumatang in the south and Sanmen Road in the north. It is jointly owned by Hong Kong Shui On Group and Yangpu Knowledge Innovation Center Investment and Development Co., Ltd. and designed by SOM. Chuangzhi Tiandi Plaza is a central district with a site area of about 6.8 hectares and is adjacent to Jiangwan Stadium, one of the important historical buildings in Shanghai. It is a modern office park centered on a large sunken open plaza.

2.2. Social Background

In the period of Planned Economy Era, Jiangwan vigorously developed its industries and occupied a larger proportion of industrial land and residential land in urban functions. After the industrial relocation in the 1990s, vacant factories, old municipal buildings and large-scale low-quality residential areas were left behind, and the development declined gradually. At the

end of the 20th century, Yangpu District put forward the development strategy from “industrial Yangpu” to “knowledge Yangpu”, and vigorously developed the knowledge innovation industry.

There are 14 colleges and universities in Jiangwan area. Combined with the original road network and universities distribution characteristics, the government tried to transform this area of separate universities into an integrated community of learning, working and living with a north-south and east-west corridors. Located at the intersection of east-west and north-south knowledge corridors, KIC is a hub of the entire Knowledge Innovation Zone and a pioneer in the “Three-Zone Linkage” project.

2.3. *Design Conditions*

As for land use functions, there are a large number of built-up settlements (partially removable) and abandoned industrial buildings and warehouses around and in the site. Commercial and public activities have very limited land use. In addition to three historic sports buildings, the stadium blocks are almost covered with greenery.

In terms of road traffic, the major roads built on the “the Greater Shanghai Plan” in 1935 were basically preserved, but the roads in the site are more chaotic due to the expansion of industrial facilities. The planned two subway lines, one passing through the middle of the site, one close to the border of the site, and a public transport terminal provides a large number of people for the development of commercial facilities.

2.4. *Evaluation of Former Design Layout*

The former urban design program has many problems. First of all, it stays in a traditional business mode. Generally speaking, the building density is too low and the interface is discontinuous. The design focuses on the visual node shape and almost is a graphical design that is not suitable for the behavior model of the knowledge innovation community.

The front plaza of the stadium is dominated by the greenery and supplemented by small-volume buildings. For historic buildings stadium, it takes “completely avoiding” strategy and doesn’t respond well to history although fully respects for history. As a result, up to 300 meters of the stadium facade was shown unobstructed to all, which cannot achieve the best viewing results. In addition, without the interface along the road, high-speed road traffic will influence the public place.

Besides, Jiangwan Stadium is well-structured and only needs reasonable repairs. In public places sufficient conditions, building sports facilities in the north is not intensive and reasonable.

3. Design Methods in Historical Perspective

3.1. *Isomorphic Morphology*

In the KIC Plaza, there are nine single buildings in a concealed layout along the boundary of site. The shape of the building uses the same morphology, each building is composed of different lengths of bar-shaped body. Relying on the side of the stadium, there is a thinner bar-shaped body, and near the side of Songhu Road, the vertical traffic body sticks between two bar-shaped bodies to form a massive whole body. The texture between the various small areas is similar, but with diversity, without losing the overall sense.

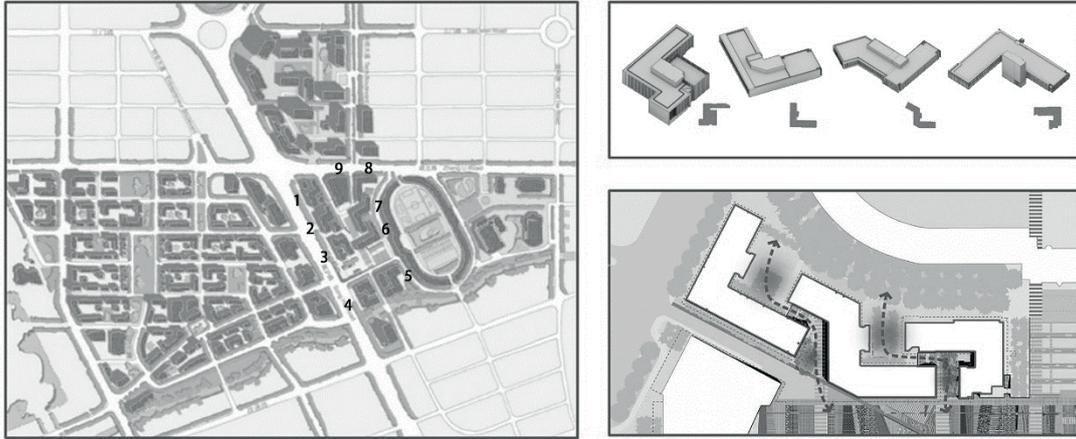


Figure 2. *Isomorphic Morphology.*

Because of the irregular boundaries and changeable directions, the amount of bar has also changed adaptively at the turning point of the border. Such as building No. 6, 7 and 8 formed good interface both on the stadium and the Tech Plaza sides, and formed relevant continuous courtyard between each other. The conference center at the end of Tech Plaza is formed by the superimposition of bar-shaped bodies on both sides of the Songhu Road and the stadium. It not only meets the functional requirements but also plays a role of transition.

3.2. *Continuous Interface*

Chuangzhi Tiandi has good continuity of building interface along the boundary and the inner square. Located on the northeast side of Songhu Road, the main interface is a large-scale glass curtain wall facade. The separation of the Songhu Road interface opened in front of the West Gate of Stadium. Similarly, the interface is continuous glass surface interrupted at the main entrance of Tech Plaza and other channels with the stone wall, staircase, balcony and other “mutation elements”, making the length of glass facade reasonable and the entire square not too closed and monotonous. It is special that the entrance of Tech Plaza singled out the volume, eliminating a large gap above the entrance to maintain a continuous interface at the same time produce gray space, play a delimiting role between the two plazas.

In addition, the opened gap on the Songhu Road creates a “frame” that limits the subject of viewing. The contrast between the blue glass material and the beige stone of the stadium facade, also between the simple and homogeneous glass façade and the carving details of the stadium highlights the historical building. The distance from Songhu Road to the interface is only 20

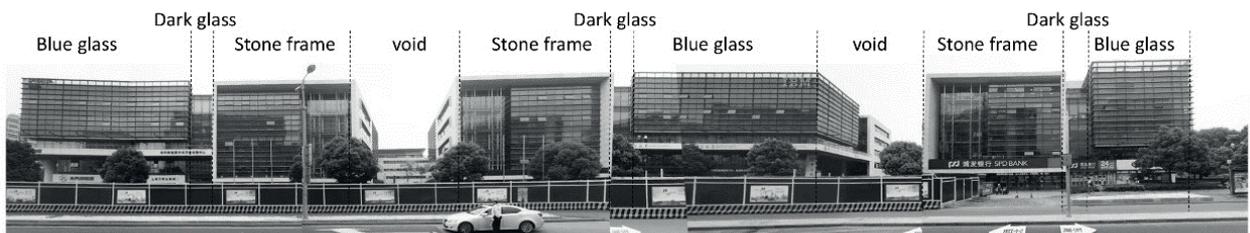


Figure 3. *Collage of Interface along Songhu Road.*

meters, while the façade of Stadium is 180 meters away from the road, creating a contrast in space, causing people's eyes to jump and fall onto the main facade of the stadium.

3.3. Sunken Plaza

KIC Plaza adopts the totally sinking method, which is mainly limited by the elevation of historical protected buildings. The sunken plaza can improve the building capacity and improve the building economic efficiency.

Setting broad steps in front of great architecture can highlight its greatness, such as Michelangelo's Roman Town Hall Plaza. The elevation of Songhu Road is slightly higher than the stadium ground elevation, and the stadium is far away from Songhu Road. After planting the sidewalk trees, the visibility of the stadium facade on Songhu Road is not good. Only the plaza sinks can have space to build stairs and create a more open space for viewing. However, only sinking the square will lead to the fragmentation of the spatial relationship between the buildings and the square. The surrounding buildings all co-operate around the square, and can be entered from the elevation of the ground and the base of the sunken square at the same time, so that buildings and squares together to form a whole plaza.

Sunken plaza also has a positive effect on the psychology and behavior of users. In order not to obstruct the visibility of the stadium main façade on the Songhu Road, the plaza can only generate three-side enclosure, and the open side faces the urban express traffic road. The heavy traffic and noise will inevitably generate huge influence. The plaza, which is five meters deep, gives a feeling of enclosure and psychological insecurity experientially and isolates noise and pollution caused by high-speed traffic. With the promotion of underground connectivity project in Wujiaochang, a large number of people will come from Jiangwan Stadium subway station and underground passageway in the future. So sinking the plaza to the elevation of the subway station exit can lead the flow of people more directly and efficiently.

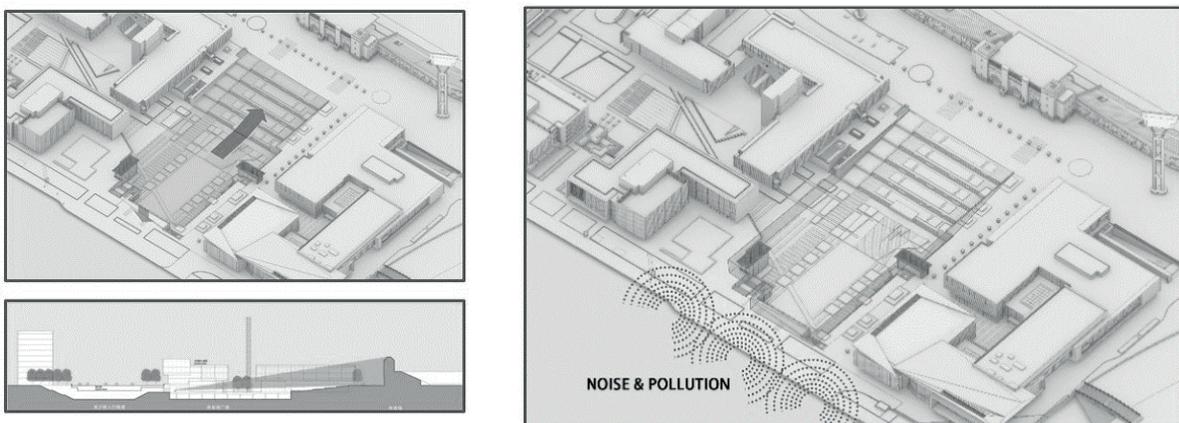


Figure 4. Steps in front of the Façade & Enclosed Plaza to Block Influence.

4. Design Adjustments in the Historical Dimension

4.1. *Unfinished Tower Landmark*

Comparison of design and implementation status, one of the most significant adjustments is that the high tower landmark in the plaza is unbuilt. KIC is composed of two rectangular plazas, and the axes of the Main Plaza and Tech Plaza are in an orthographic relationship. From the point of view of the axis layout, the relationship of KIC is similar to that of Augustus Square and Trajan's Square, which are perpendicular to each other in the ancient Roman Empire Plaza complex. The Axis of Augustus ends with the main façade of the Mars basilica, look through the colonnaded porch and the Arc de Triumph on the west side of the plaza, the horse-riding bronze figures can be seen vaguely in Trajan's Plaza as the first hint of axis transformation. After entering Trajan's Plaza, you can see the tall spire of Trajan's Column of Power as the second hint of axis transformation, emphasizing that the visitors are already on the axis of Trajan's Plaza and the space behind the Temple of Trajan serves as an ending point.

In SOM's design, the stadium façade serves as an ending of the Main Plaza. Looking to the tower in the Main Plaza, its middle part is blocked by the overhanging body volume above the entrance of Tech Plaza, suggesting the relationship of Main Plaza and Tech Plaza. After entering the Tech Plaza, the whole tower displays and commands the Tech Plaza which is ended at a "frame-like" conference center. The space element of "tower" should have played a role of activating an inward-looking plaza, but was canceled due to the height limitation requirement. In the field research, it was also found that although the landscape and scale of Tech Plaza is superior to the Main Plaza, but people's activities are obviously less than those in the Main Plaza.

4.2. *Weakened Axial of Technology Plaza*

Initially, the KIC Plaza was dominated by the axis of Tech Plaza. The landscape ran through the Main Plaza with emphasis on the connections between the buildings at both sides. There were playground, staircases and equipment spaces near the landscape axis. The scale of big steps in front of the stadium also were reduced by beveling. Designers thought this is a meeting place for the public to provide diverse sports, commercial and cultural activities, giving a cordial and relaxed atmosphere. In the implemented program, the half area of the Main Plaza was paved, and all the public sports facilities were shrunk and moved aside. The axial direction of Tech Plaza was cut off at the entrance. The passageway facing the stadium facade, strengthened the main axis, forming a memorial plaza space. The relevance of the Tech Plaza to the Main Plaza diminished, and the building links on both sides were fragmented.

The paved way with a 30 degree angle to the Songhu Road re-established the relationship between these two plazas. This axis guided line of sight through the overhanging body above, directly accessed to Tech Plaza, forming a "view corridor". As a result, the continuity of the main axis of the stadium was visually emphasized in the design. "Greenery in the Stadium – the West Gate facade of the stadium – view frame on Songhu Road – two high-rise office buildings opposite the road – University Road", this 1.1km long main axis highlighted the important historical position of Jiangwan Stadium. While, as for the experience of users, using alignment of corridors on the sunken interface to emphasize the link of buildings on both sides.

5. Summary

The Jiangwan area is a witness to the modern history of our country, it has complex and vivid urban contexts. The evolution of urban contexts in Jiangwan area shows distinct stages: the rising of ethnic capitals started the process of early urbanization; the implementation of “the Greater Shanghai Plan” greatly accelerated the expansion of urban contexts; the war turned the urban areas to military function; after the liberation, it gradually declined due to the shift of city center.

This process has left a wealth of historical resources, they provide the reference for the design and update and bring the technical and methodological challenges. The design of KIC Plaza respects history, makes reasonable repairs and utilization of Jiangwan Stadium. It reflects the value of old buildings and provides them with broad landscape space in the contexts. As for the design of new buildings, it does not avoid the historical protected buildings but responds to history actively. It integrates traditional and modern science, technology and culture. The design of KIC Plaza is forward-looking, providing convenience for connecting with underground space in traffic, and guiding the follow-up design and construction by using clear axial control in development.

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