



The Urban Change in Modern Shanghai Descript by Urban Maps, 1840s-1930s

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Abstract

The urban change in modern Shanghai is a complex process which fused a lot of reasons in many ways. It is also the most important window to understand the urban modernization in china coastal city. This paper described the process of urban modernization in modern Shanghai according the analysis of the map of modern shanghai urban renewal. It separated to three parts. The first part, from river to sea, new and old existed together. Following the port opening, the old Chengxiang area and the new settlements area dramatic existed together. The second part, from street to the road. The new city views in settlements influenced the old town. The administrative department initiated the original change in Chengxiang area concentrate on building roads. And the influence from old land shape to the settlement's road plan was different in British and French settlement. The third part, port areas and the city. With the city development, the bund function changed. And the relationship of Shiliupu dock and Chengxiang area was intimate. The general city structure, road structure, relations of port and city area, as the marks of city changing which can be seen from the maps published in this period.

Keywords: *Modernization of Shanghai, Map, Road plan, Settlement, Chengxiang, Port*

The urban development in modern Shanghai is complex. Integrating the influences and effects from the various aspects, the urban spatial pattern with a sense of collage is formed. Due to the different backgrounds of designers, the urban maps of Shanghai in this period have different on the drawing styles, spatial scopes, and contents. As the most intuitive and effective pictures for responding a city, the urban maps truly reflect the development of urban space in the modernization of modern Shanghai, and even the gradual formation of its structure layout.

There are many research on the city maps of modern Shanghai, which are not limited to the urban planning history. For example, Chong Zhong discussed issues such as the map drawing level, the development of the printing industry, and the role of maps in social life, etc. From the perspective of planning history, Baihao Li, et al, outlined the several stages of the urban development in Shanghai from 1843 to 1949 from the formation of modern Shanghai and combining with the maps and historical events. Qian Sun discussed the urban construction of the public concession and the French Concession from the perspective of system and norms, as well as the effect of the urban planning by the Shanghai municipal government on its urban form after 1927. There also are some most recent research, such as the "Shanghai City Map Integration" by Xun Sun and Chong Zhong published in August 2017. This book is about a complete and systematic compilation of the Shanghai maps from 1504 to 1949, and some map information in this paper is derived from this book.

In this paper, it selects five types of Shanghai maps from the beginning of the establishment of the concession in Shanghai in 1843 to the enemy-occupation in 1937 as the important evidence for the modernization of Shanghai. 1. In the late Qing dynasty, there were freehand-painted intentional maps that painted with Chinese traditional map-making methods. 2. In the early period of concession, designers designed the practical local mapping maps and the first full actual surveyed maps. 3. At the beginning of the 20th century, during the period of accomplished basic urban construction in the concession, the authorities of the Public Concession and the French Concession make the road planning maps and the cadastral maps for urban development. 4. At the end of the 19th century, influenced by the Western survey maps, the Chinese modern publishing group painted the actual survey map of Shanghai, which was first painted by the Chinese. 5. In the 1920s, after the establishment of the Shanghai special city by the national government, the planning map of roadway system for the Shanghai special city was drawn.

The analysis and comparison of these maps drawn by different groups and representatives of regimes visually illustrate the changes in the urban structure of modern Shanghai. The inner core of the city was constantly moving out of the estuary, from the city developing along the river to the city developing toward the port; the dual compatible urban form was produced due to the coexistence of the traditional feudal towns and the modern cities



in the concessions; the narrow, curved streets and lanes in the traditional towns have slowly transformed into the modern urban street systems suitable for automobile traffic; Relying on the development of the port, in the urban structure, modern Shanghai was transformed from the integration of port and city to the separation of port and city.

1.From the river to the sea, the old and the new exist side by side

Like any other modern port cities, Shanghai is a port city transformed by the modernization of urban planning brought by opening ports and establishing settlement. After Opium War in the late Qing Dynasty, British settlement began to be established in November 1843. By 1849, the United States and France built settlements in the Hongkou region and the old town north adjacent areas respectively. With the colonization development of cities rented by the Western countries, Shanghai has changed from a traditional town to a prosperous modern city. The city center has also been transformed from Chengxiang area with traditional town into a rented Bund-centered area. Changes in the city center has also been identified in the subsequent urban development. Shanghai also formed the situation that the old town and the settlements, the old traditional town and the new modern city exist side by side, respectively governed by Tao-tai, the local administration organization of Qing government and municipal council independently built and organized by settlement. In 1850s and 1860s, it can be seen that the old and the new exists side by side from the map of old urban area and settlements. Administrative division continued until 1945 and the division on the spatial form was still clearly discernible.

It can be seen from the map of Shanghai county authored by Zhao Zhihe made in 1851 Fig.1. The map of old urban area were appeared in the local chronicles in the form of freewill drawing without pursuit of accuracy of the dimensions. It mainly covered the government offices, ancestral halls, public temples, city walls, gates, rivers, bridges, etc. The drawing method of "flange city wall" is adopted. There is no drawings for roads. The description of landmark buildings are in the



Figure 1 :Zhao Zhihe. *The Map of Shanghai County*. 1851 [日.山下和正藏]

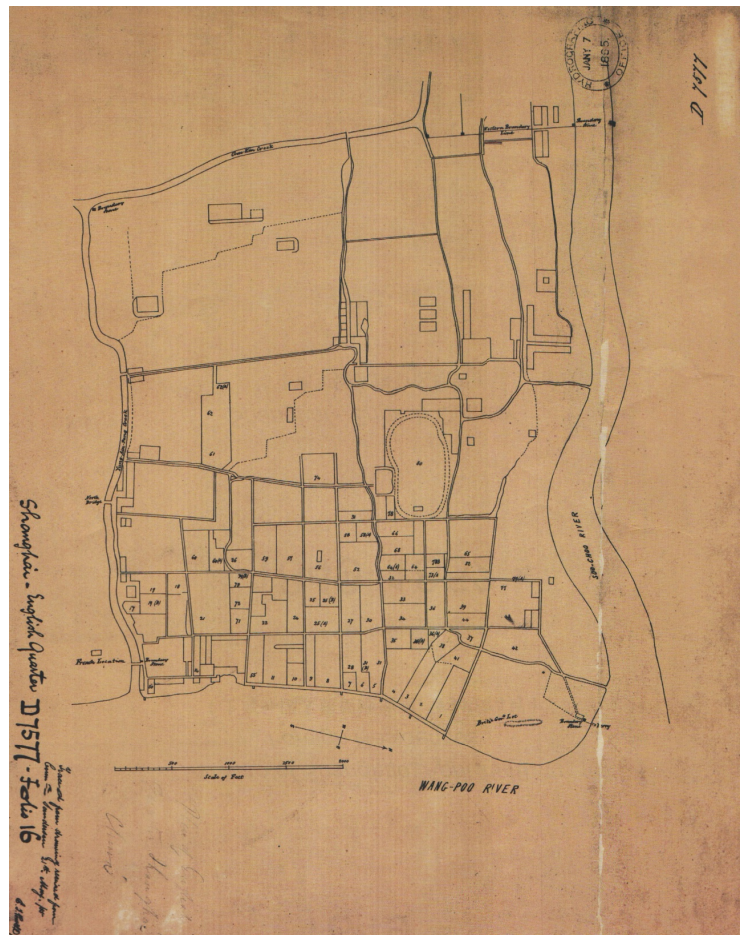


Figure 2: Commander Sanderson. *Shanghai English Quarter*. 1851-1852 [United Kindom Hydrographic Office]



form of symbols and names inside the frame. At the same time, it can be seen from Shanghai-English Quarter made from 1851 to 1852 Fig.2, the full figure of contemporary British settlement in Shanghai has already adopted the method of actual measurement drawing, in which the scale and compass have appeared. The main features of the map are roads, plots and its serial numbers. It is already in the same form as an modern actual measured map.

The situation that old urban area and settlements exist side by side can be seen from the map of City, Settlements and Environs in Shanghai in 1861. Fig.3 This map is considered to be the pioneer Shanghai map fully manifested integral old urban area and leased areas in the existing actual measured Western maps.ⁱ The map are mainly marked with information about roads and waterways, as well as British and French fortifications against the Taiping Heavenly Kingdom. Part of old urban area is surrounded by water and city walls and the internal road structure is influenced by the topography and waterways. The road structure in the settlement is more square and the street blocks are more regular.



Figure 3 :City, Settlement And Environs of Shanghai.1860-1861.[The National Archives, United Kingdom]

2.From street to the road

2.1 British settlement roads controlled by old roads and topography shape

It can be seen from the map of City, Settlements and Environs in Shanghai in 1861, Fig.3 that the road structure in settlements is largely different from the road structure of Chengxiang area with twists and turns, multi-small road and guillotine road. In 1845, British settlement's first consul, George Balfourⁱ agreed with Shanghai Taotai about The Shanghai Land Regulationsⁱⁱ which began to contain provisions on roads. The Shanghai Land Regulations stipulated the network of nine roads. Before Shanghai opened, there were six east-west towards river avenues, three east-west beach roads and two north-south passages between Chengxiang area and Wusong River. The Shanghai Land Regulations in 1845 does not need the expropriation procedure for private lands because of the public attribute of the original road, so the newly stipulated settlement road takes the original road system as the foundation of the road structure. But land regulation

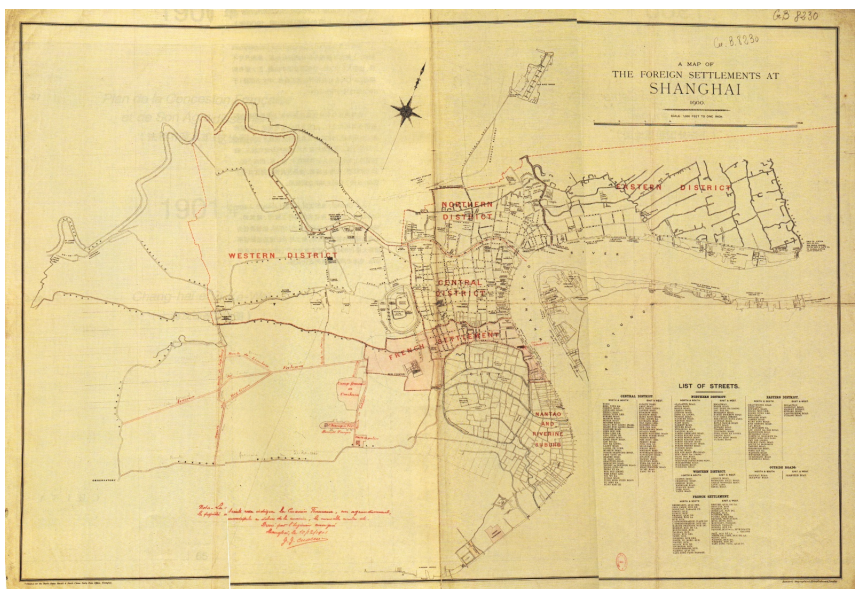


Figure 4:A Map of The Foreign Settlement at Shanghai,1900.[The National Librerarys of France]

ⁱ George Balfour, British settlement's first consul .He arrived in Shanghai on 8 November 1843 aboard the steamer Medusa, and immediately began discussions with the ranking local Chinese official, the Taotai , on the opening of foreign trade and the site of a foreign settlement. He left the post of Shanghai consul in 1846, and was replaced by Rutherford Alcock.

ⁱⁱ The Shanghai Land Regulations,1845,which was the basis of the establishment of british settlement. It stipulates the geographical scope of the settlement and provides the legal basis for establishing the self-governing council.It also make great contribut to the urban plan of Shanghai.



rebuilds the old roads and defines road grades. "The width of the roads along the Huangpu River (now the Zhongshandongyi Road) and the Tasheng Old Road (today's Jiujiang Road) is" 2.5 Zhangs (about 8.33 meters) measured by the Customs". Other converted roads and new roads are all 2 Zhangs(about 6.67 meters).² In addition, the plot of the small road is also divided in accordance with plot edge of the original lands. Because of the dense water network from Chengxiang area to the Wusong River, the settlement continues the old road and the natural form of the land to build roads. But the shape of road is seems about 150-200 meters in grid shape regular and just like the result of top-down road planning.

2.2 Planning awareness for road structure in French settlement

Compared with the road structures in the British and French settlement, the road structure of French settlement presents a more regular feature. Different from the road construction method followed the original road and private land boundary in British settlement, the city management agency of the French settlement has more planning consciousness on the design of the road structure. In particular, it is reflected in the out-of-boundary road plan in the French settlement expansion area after 1900. Tri-junction is an important motif in Baroque city. In the Map of the Foreign Settlements at Shanghai in 1900 Fig4, J.J.Chollotⁱⁱⁱ's mark shows that the straight and wide Pau Brunat Road(today's Huaihai Road) and the intersecting Liou ka Za Road(today's Donghu Road) and Big Grave Road(today's Fenyang Road) formed a three-way junction. In the 1901 map of Chang-hai et Zi-Ka-Wei Fig.5, we can see the comparison between the straight standard planning roads and the original natural, small land division line. There is a difference between the urban form of the three-fork intersection planned in the French settlement expansion area and that of the three-fork junction of the Baroque city. The three-fork intersection in Baroque city is built from a dense building facade into a square of the city. Because of the shortage of the building construction, the restriction of the retreat of the building and the practice of the boulevard, the space form of the city square can not be formed in the three-fork intersection of the French settlement expansion area.

By 1914, the French settlement had expanded to Xujiahui. The council also made a detailed road plan to fill the roads in the expanded area. Adopt the grid of roads to fill the street plots, more suitable for the interests of real estate developers. Further implementation of Baroque road planning at some public road nodes: such as design a triangular urban garden at Boissezon Road(today's Fuxing West Road) and Alfred Road(today's Wulumuqi Road) and Joffre Road(today's Huaihai Road) and the

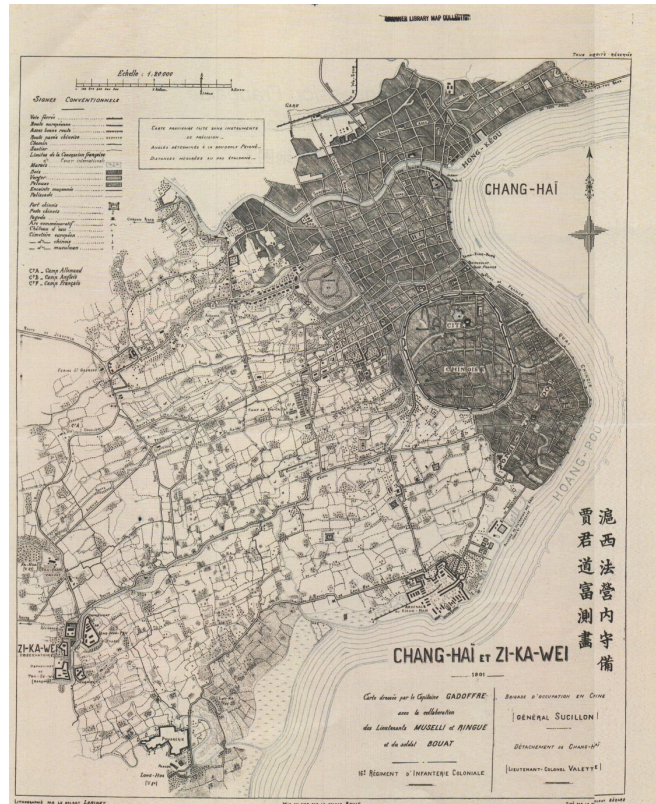


Figure 5:Gadoffre.*Chang-hai et ZI-KA-WEI.1901.*[Earth Science Library and Map Collections,Stanford University]

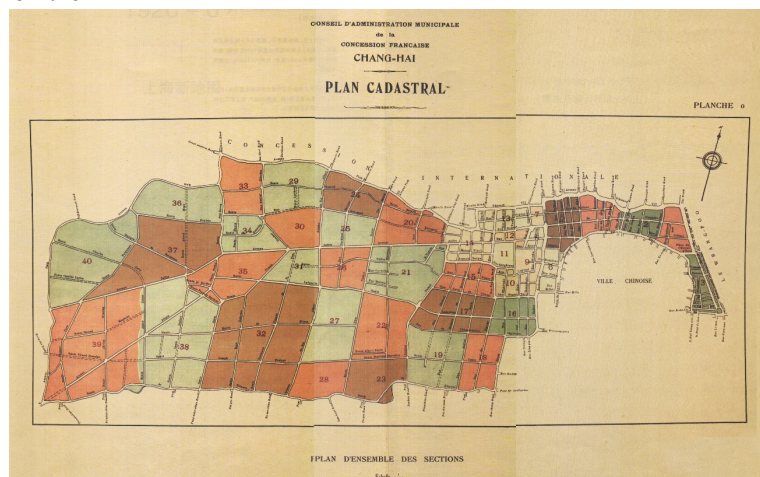


Figure 6: Municiple Administrate Council of French Settlement,*Plan Cadastral.1925*[Shanghai Library]

ⁱⁱⁱ J.J.Chollot,Chief engineer of French Concession municiple bureau from 1893 to 1907.



radiation plaza at three important junctions.³ Fig.6 The urban situation of this road design is still preserved.

2.3 Road reconstruction of streets and alleys in Chengxiang area

After 1850s, influenced by the actual-measured map drawn by westerners in the early modern times, the map drawing in our country also changed greatly and formed a series of actual survey map activities based on the Complete Map in Shanghai Chengxiang Area and Settlements. Fig.7 It lasted until the end of the 19th century and also reflected the road of urban construction in 1895 after the city's earliest municipal organization-the establishment of the Nanshi Road Bureau.

Traditional Chinese cities and towns are characterized by street space, but most of the streets are narrow, unsuitable for automobile traffic and lack of drainage lighting and other infrastructure. In order to transform the present situation, the main task of the Shanghai Nanshi Road Engineering Bureau established in 1895 is to transform the streets and build the roads.⁴ Formed the modern urban reconstruction activities dominated by the demolition of city walls, the filling of rivers, the building of roads, the construction of docks and the construction of bridges.

Comparing Complete Map of Shanghai Chengxiang Area and Settlements painted by Xu Yucang in Qing Dynasty in 1884, Dian Shi Zhai amendment^{iv}, and Chengxiang part in Shanghai Nanshi map in 1914 Fig.8, we can see the change of urban space caused by these urban renovation activities. From 1912 to 1914, the north and south walls were demolished successively and a round-the-city road was built on the original city foundation, namely, Fahuaminguo road (now Renmin Road) and Zhonghua Road. A series of creeks have also been levelled into roads. History in this period is also described in the map of Shanghai Nanshi Area in 1914 Fig.9: "management in Nanshi area pays attention to the gradual reconstruction of traffic roads over the years. It is difficult to record all those expanded roads, and those who build roads with silt creams, such as those who build roads in the Central District, such as the Black Bridge Bang in the Central District, the Fu you Road, the Park Bang, the Ning River Road, the Pavilion Bridge Bang, the Yunliang River Bang, the Penglai Road, the Penglai River Bang, the Pure Land Road, and the Shou Shu Bang are the Shangwen Road"" The northern half of the city has been filled in by

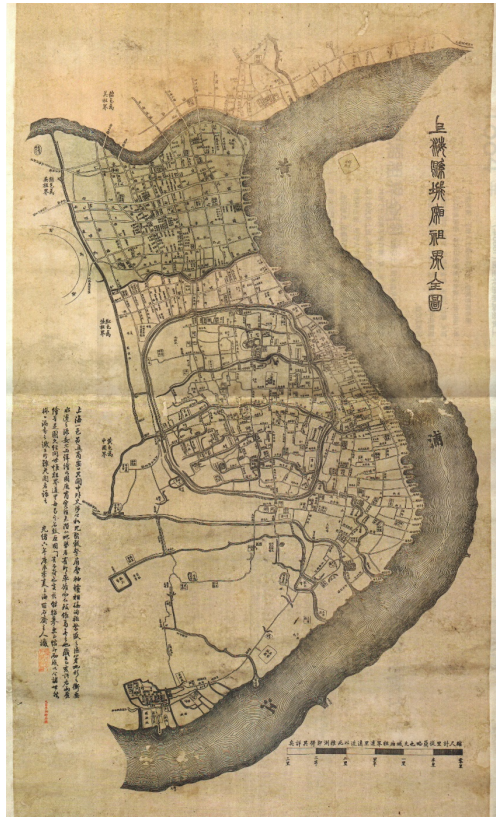


Figure 7: Xu Yucang, Complete Map in Shanghai Chengxiang Area and Settlements. 1880[China National Library]



Figure 8: Chengxiang Part in Complete Map of Shanghai Chengxiang Area and Settlements painted by Xu Yucang, 1884, and in Shanghai Nanshi map, 1914.[Shanghai Normal University]

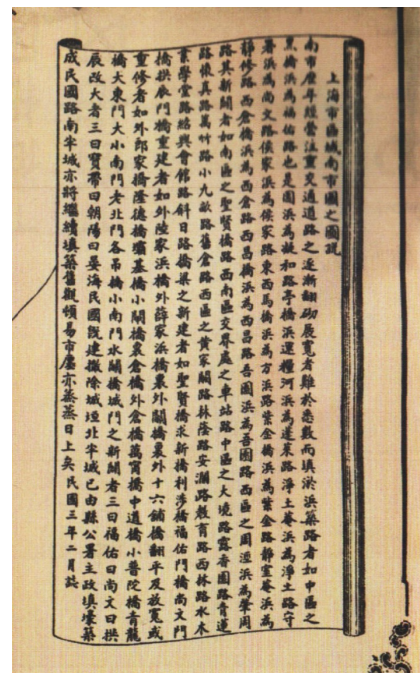


Figure 9: Shanghai Municipality Annals. Explanation of Map of Shanghai Nanshi Area. 1914.[Shanghai Normal University]

^{iv} Dianshizhai is one of the earliest and powerful Lithographic press in China. Ognized by British man Ernest Major in Shanghai 1876.



the county administration, and the southern half of the city will continue to be built. The old city will be rebuilt and city appear to flourish. " ⁵

The spatial form of the traditional towns in Shanghai where houses are built first and then the streets and lanes. The traffic pattern of traditional towns in the south of the Yangtze River are river system. Chengxiang have formed a road-oriented urban structure after the municipal departments have learned the urban development model in settlements building roads before house construction and promoted the modern city development of Shanghai.

2.4 The pioneer road planning in modern Shanghai

Mr. Sun Zhongshan first put forward the "Great Shanghai Construction Plan" in the General Plan of China in 1922, which was targeted to build Shanghai into an international commercial harbor city as the largest port in the East. ⁵ After the establishment of Shanghai Special City in 1927, municipal council of national government proposed the "Great Shanghai Plan". As the Chinese's earliest and most complete urban planning in Shanghai, it was the imitating stage for western urban planning in modern times.

The Great Shanghai Plan incorporated the functional zoning and rapid transit ideas in contemporary western urban theory. In the regional zoning plan of downtown Shanghai, the central district of Shanghai is divided into five functional areas: administrative district, industrial zone, commercial port district, commercial district and residential area. It can be seen from the map of the road system in Shanghai center 1932 Fig.10, central area uses a radial and circular network of main roads and the composition of buildings in the city center, making roads "like starlight, while city downtown occupies the center of the road obtaining the tendency to control the overall situation." ⁶ The road emphasizes the layout of geometry, organized by diagonal lines and small grids to emphasize central axisymmetry. The urban space in the central region demonstrates the mixture of Baroque centralized space and modernism functional partitions. The

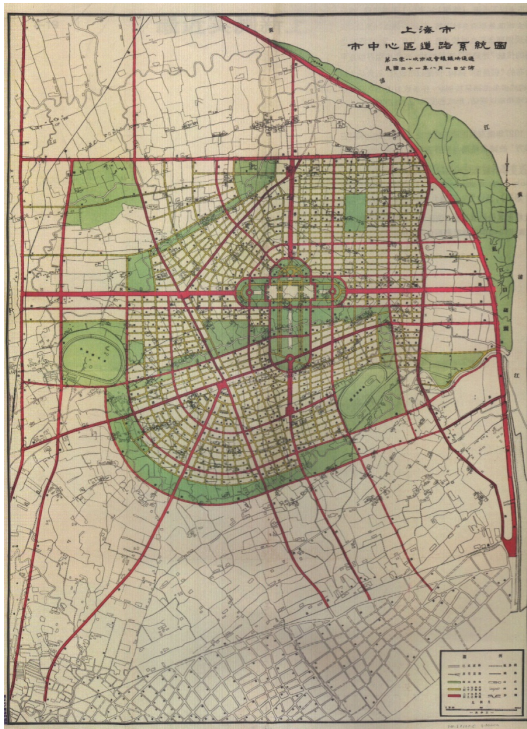


Figure 10: Shanghai Municipality Bureau. *Map of Road System in Shanghai Center, 1932.* [China National Library]

administrative buildings in the central district adopted the Chinese traditional architectural style in Shanghai carrying the meaning of national rejuvenation and transcending the concession as well at that time.

We can see the relationship between the new city center and the city existed before in the map of main road system in Shanghai special city 1929. Fig.11 The National Government hopes to develop a new urban center on the "virgin land" of northeast of the city. Therefore, in order to avoid the restriction of the private ownership of land to the urban development, the national government first relegated the

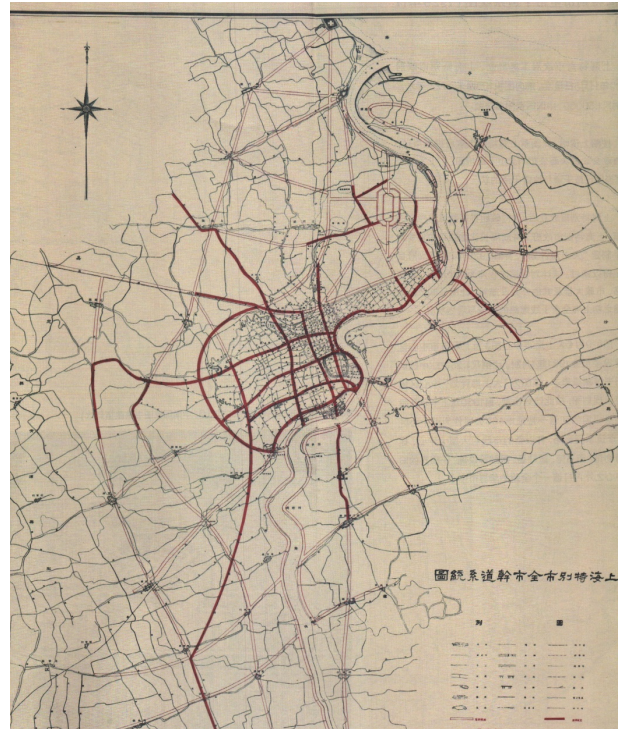


Figure 11: Shanghai Municipality Bureau. *Map of main road system in Shanghai Special City, 1932.* [China National Library]

⁵ Great Shanghai Construction Plan. Carry on the world commercial port plan proposed by Sun Zhongshan, nationalist government put forward Great Shanghai Construction Plan. Construct new city center at Jiangwan. But the construction was broke by japanese army invasion in 1937.



undeveloped land to the public as the reserve land for urban construction. Therefore, the roads of the Great Shanghai Plan can not be affected by the trace of the original land shapes and it is a completely new state which is not subject to any restriction. Due to the Japanese occupation of Shanghai in 1937, the "Great Shanghai Plan" could not continue. However, the construction of road network in the central area has been partially formed and presented in the urban form of Shanghai today.

3. Port areas and cities

3.1 Port area is urban area

During the decades since port opening, the settlement has developed concentrated on the the Bund. The Bund is an undeveloped marsh before port opening. During Qing Dynasty of Kangxi Emperor period in 1683, there was a map depicting the geography of overall Shanghai in Shanghai county annuals. Fig.12 It can be seen that the area near the Huangpu River in the north of Yang Kang Pang area was the location of the Bund," *Along with Huangpu river, there are many old shipyards and wooden shops, followed by rice fields, cotton fields and a small village farther back.* "Most of the ground is wet and uninhabitable." ⁷ But the land is in good condition as a port and easy to load and unload cargo. Therefore, as the representative of the British settlement, Bund has become a specialized port for foreigners because of the prosperity of trade and developed rapidly. Because of their proximity to the port, businessmen were willing to live along with the river and their shops. As a result, their live and business activities were concentrated in the Bund area. In 1853, the map of Shanghai and its suburbs Fig.13 clearly demonstrates the site of foreign port area (Bund) and the local port area at eastern Chengxiang. The main buildings in the British settlement are concentrated in the area near the Bund Pier, to the west part which is becoming rarer and dominated by churchyard、graves and so on.

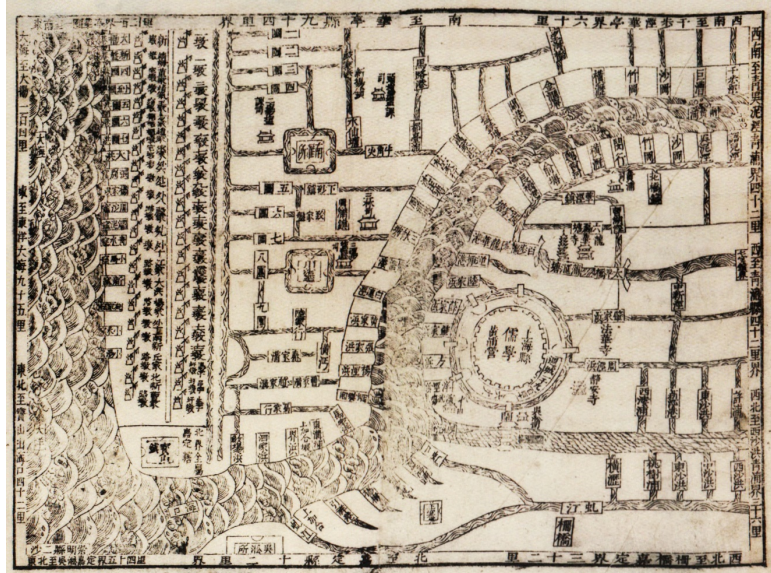


Figure 12:Shanghai County Annals. A Map Depicting the Geography of Overall Shanghai.1683[Shanghai Library]

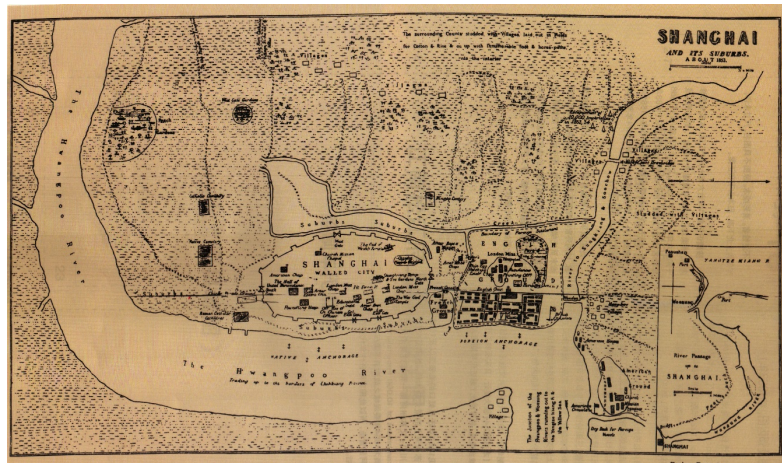


Figure 13:Shanghai and Its Suburbs,About 1853[The History of Shanghai,George Lanning]

At the beginning of the establishment of the Bund, the early road construction of the British settlement also indicated a close relationship with the port. In 1855, Ground Plan of the Foreign Settlement at Shanghai-North of the Yang Kang Pang Canal Fig.14 demonstrates that street block scale of the road near the port side is smaller than that far from the port side and indicated east-west strip pointing to the port in the direction. *"The field becomes fine smooth after governing vehicle and roads. Ports along with Huangpu River, are implanted with large wooden stump, extended through the iron chain to more than ten miles with broad of several Zhang (about 3.3meter). Therefore, the port is exactly*



suitable for the ship..."⁸ The main roads from the south to the north leads to a port at the end, which is convenient for loading and unloading cargo. The shops and business firms are located in the streets near the port, and the prosperity of the port brings the thriving of the city trade mixed with the port area.

3.2 Separation of urban areas in port areas

At the beginning of the port, sailboats were used as merchant ships. After the rising of ships, the silt in Huangpu River made it difficult for large vessels to enter the port. Although the dredging bureau carried out dredging operations, the port conditions on the Bund became more and more severe. The transfer of the port became a matter of course. The Hongkou area north of Wusong River became the American settlement in 1848 and became the northern section of the public settlement after merging of the British and American settlements in 1863. The condition of river in this area is wider and deeper than the Bund and more suitable for ship merchant port. Comparing with the China East Coast, Wusong River, Shanghai Harbor in 1866 and 1889 Fig.15 respectively, there were only a few warehouses and other buildings in Hongkou area in 1866, while the docks, streets and buildings had developed on a large scale by 1889.

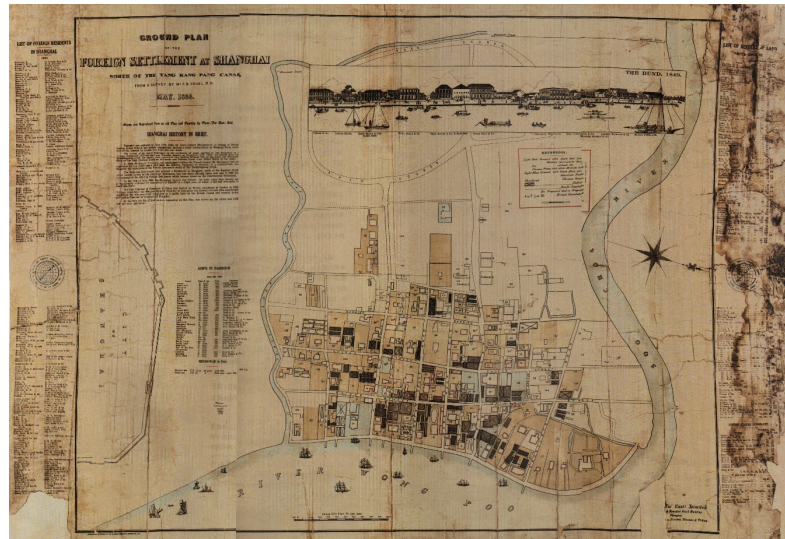


Figure 14: F.B.Youel. *Ground Plan of the Foreign Settlement at Shanghai-North of the Yang Kang Pang Canal. 1855*[Shanghai Library]

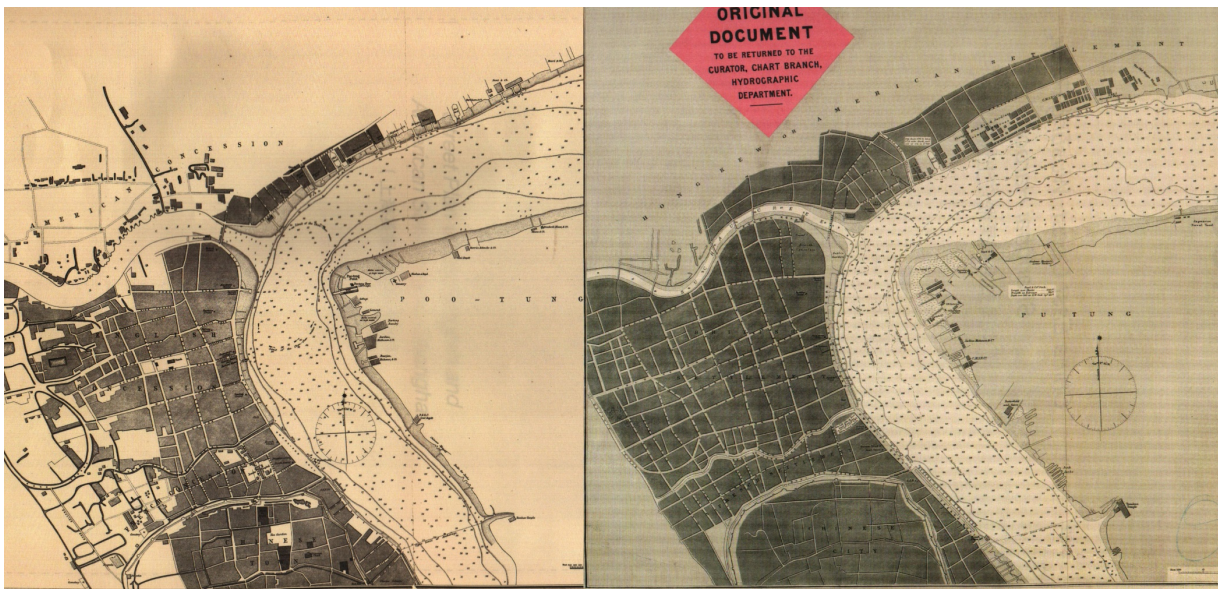


Figure 15: *Comparison of the China East Coast, Wusong River, Shanghai Harbor in 1866 and 1889*[British Hydrographic Bureau]

With the development of transportation and commerce, the land price in the Bund is rising rapidly. The commercial tycoons choosing to live and work here became dissatisfied with the noise and chaos of port area. In 1869, Edward Cunningham,^{vi} the director of municipal council in of British settlement proposed that the port should be developed away from the Bund and put forward that "*the Bund is the only place where residents can absorb fresh air from the Huangpu River when they walk slowly at dusk as well as the only place with an open view in the concession. The Bund of the British concession is the eyes and heart of Shanghai*".⁹ This proposal

^{vi} Edward Cunningham, the director of municipal council in of British settlement from 1868-1869. Proposed the function changing of the bund.



changed the history of the Bund and established the position of developing the Bund as a financial and commercial center, while the port area moved outward.

3.3 Chengxiang area and port area



Figure 16: Qiu Yufu, Xu Yucang. *Part of Map of Settlements and Chengxiang Area. 1875*[China National Library]

Before the opening of the port, Shanghai was China's largest domestic trade port. The Shiliupu docks on the east side of Chengxiang area was very prosperous. But such a historical ancient port lost the opportunity for development in the face of the coexistence of the old and new port areas, and greatly fell behind the development of the settlements area together with Chengxiang. From the overall map of the settlements and Chengxiang area in Shanghai in 1875 **Fig.16**, we can see dense docks on the east side of Chengxiang area along the

bank line of Huangpu river. There were a street to the urban area behind each dock. The street construction here is obviously port orientation.¹⁰ But these docks are small in scale, backward in construction and still traditional wharves, facilities are far behind that of the settlement docks. Moreover, the hinterland between the east wall of Chengxiang area and Huangpu River is too narrow, and the poor street conditions also restrict the development of the port modernization. After the establishment of Nanshi District Road Bureau, efforts were also made to renovate the port area. Fill the trenches, demolish the walls, build roads to expand the hinterland of the port area, and manage and renovate the wharf. However, on account of specific situation of old area and old port mixed and the excessive absorption of business opportunities by settlements, modernization stagnated.

Summary

The urban modernization of Shanghai is a complicated process. It can be roughly divided into three parts: the modernization of the Shanghai county seat, the development of the settlement area and the urban planning and construction of Shanghai after the establishment of the National Government. The development of settlements plays an important role in it. In this period, the map made by various administrative agencies and civil society has become an important image material for studying the modernization of Shanghai city.

Meanwhile, in this paper, it also has some new discoveries in the comparative analysis of Shanghai maps. There was a huge difference in the form of Shanghai maps drawn by the Chinese and by Westerners in middle of the 19th century, while such difference is also reflected in the differences in spatial characteristics of traditional Chinese towns and newly-built concession cities. There were differences between the road shape features of the treatment of the original sites between the public concession and the French Concession, and the differences also affected the road reconstruction in the old city area. By comparing the maps in different periods in the public concession, it can be seen that the port area gradually migrated to the sea in the urban space.

This paper takes the modern urban map of Shanghai as the research object. From several aspects such as the old and new—coexistence of Chengxiang areas and settlement in urban structures, the transformation and road modification of the streets and lanes in Chengxiang area, the formation of the street structure of the British and the French settlement, the road planning of the National Government on the new Shanghai center, changes in the relationship between the port and the urban area in the urban modernization, strive to illustrate the changes in the modern urban spatial structure and the development of modernization in Shanghai.

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Endnotes

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