STUDY ON MODERN URBAN PLANNING AND CONSTRUCTION MANAGEMENT INSTITUTION IN TIANJIN

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Since the Second Opium War in 1860, Tianjin was opened as a treaty port of China. From 1860 to 1902, nine foreign countries had set up concessions in Tianjin, including UK, France, US, German, Italy, Japan, Russia, Austria and Belgium. Since then, the import of modern urban planning theory and management regime from the western countries had made a profound influence on the urban planning and construction in Tianjin. From several aspects of the organization structure, management principles, government laws and land policy, this paper explores how the western urban construction management system was introduced into concessions, and how it was applied in Tianjin. This paper is based on a wealth of collected information, such as historical archives, historic documents, old postcards, old pictures from Tianjin Municipal Archives and previous research works. This paper reveals the causes and process of transformation of urban construction institution in modern Tianjin. Finally, it reaches a conclusion that all the changes happened in modern Tianjin not only transformed the boundary and spatial structure of this city, but also affected the pattern of development and management in Chinese section. From then on, a new chapter of urban construction for modern Tianjin has been opened.

Keywords

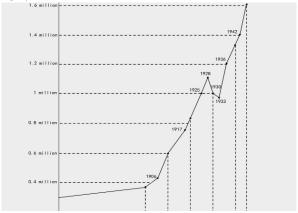
Tianjin, modern construction, Urban Planning and Construction Management Institution, transformation

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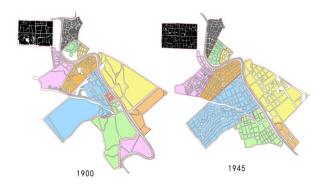
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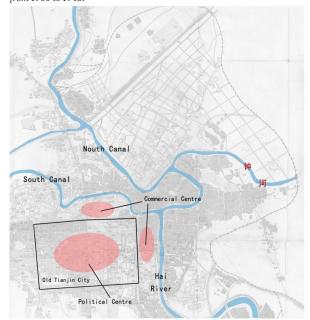
1-1 Expansion of urban area. Urban built-up area of Tianjin expanded slowly from 1404 to 1840. After the Opium war, urban built-up area had expanded rapidly, however

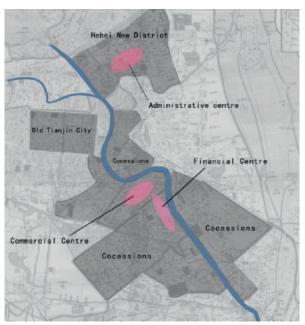


1-2 Urban Population of Tianjin 1840—1945. From 1840 to 1900, the total urban population of Tianjin only increased by more than 10000 people in slow growth. By comparison, it increased by more than 1.2 million people from 1900 to 1945.



1-3 City block in Tianjin.During 1900 to 1945, road network density in concessions and Chinese section increased, and it made a clear division of blocks in urban area





1-4 Urban core zone. Before 1860, political center was inside the old Tianjin city, and commercial centre flourished along the river outside the city. After being opened as a treaty port, commercial centre and financial centre had transferred to concessions, and political center had transferred to Hebei New District.

Tianjin City, was firstly set as a military guard city for protecting Beijing in 1404 (on the second year of Yongle, Ming Dynasty), which was a lower-tiered city for military protection when initially established. However, Tianjin had gotten earth-shaking changes with the shock and influence of western civilization during the 85 years after the Second Opium War. A series of municipal modernization had happened, such as outward expansion of downtown area (Figure 1-1), sharp growth of population (Figure1-2), intensive division of blocks (Figure 1-3), continuous shift of urban center (Figure 1-4), etc. The Modern Urban Planning and Construction Management Institution had played a significant role in the procession of city modernization and well pushed all such efforts forwards.

INTRODUCTION TO TIANJIN FORT CITY IN MING & QING DYNASTIES

As the symbol of the origin of Tianjin, the Tianjin Fort City was located in the west of the Haihe River and the south of the South Canal, which is called "San Cha He Kou" area¹. The city was in an exactly north-south oriented rectangle with side of 1.5kmx1.0km². Following the feudal urban practices by the officers of government, the fort was divided into 4 parts by intercrossed main roads, with a geometric center symbol of Gu Lou (the Drama Tower). It presented a traditional urban structure that government building was in the north part of the fort, the military ones in the west and the civil in the east (Figure 2). (on the second year of Yongle, Ming Dynasty).

The Tianjin Fort City had maintained its structure stable under the strict control of central authority for many years. With the prosperity of canal transport, Tianjin gradually changed from a military town to a "Ji Fu Shou Yi" which was the most important city for protecting the capital as well as the economic and military center of northern China. The city periphery had been getting wider and wider directly due to the booming population, and naturally expands upwards along the river with taking San Cha He Kou as the starting point.

THE PRELIMINARY INTRODUCTION TO MODERN URBAN PLANNING AND CONSTRUCTION MANAGEMENT SYSTEM

Since the Second Opium War, Tianjin was forced to open as a treaty port according to the Convention of Peking in 1860. The British Concession was demarcated at first in December the same year. Then, France, US, German, Italy, Japan, Russia, Austria and Belgium joined in establishing self-contained concessions in Tianjin. It was called "Nine Concessions" (Figure 3).

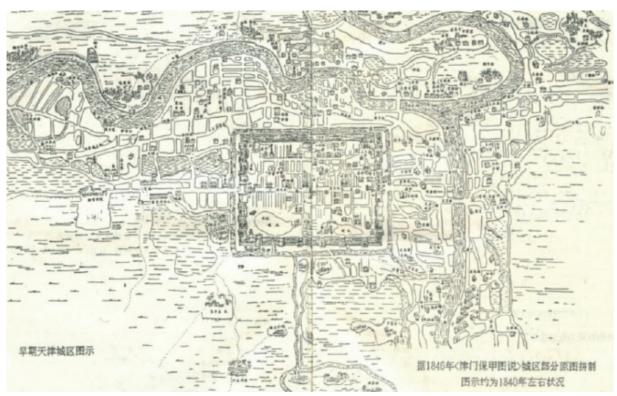


FIGURE 1 Tianjin map in 1846 the 16th year of Daoguang, Ming Dynasty). The rectangle in the centre is old Tianjin city and San Cha He Kou is in the northeast of it.

THE ESTABLISHMENT OF URBAN PLANNING & CONSTRUCTION ADMINISTRATION INSTITUTION IN CONCESSIONS

As each concession got its administrative right by the time it had been settled, a management system of was badly needed to function all the miscellaneous affairs properly. At the beginning, it was supervised and administrated by the consulates attached to each country. Soon after, the "Resident Autonomy" was implemented, with the western city autonomous system firstly being introduced into the construction management system in concessions. In the year of 1862(on the first year of Emperor Tongzhi), British Concession in Tianjin founded Board of Directors as the supreme decision-making body following the British Concession in Shanghai. Later, other five concessions, namely French, American, German, Russian, Italian, Austrian-Hungarian and Belgian Concessions established their similar institutions of which the form resembles to the British one. Moreover, Japanese Concession settled its own Residence Vigilante according to its Residence Vigilante Law. This paper takes the administrative institutes of the firstly established British Concession in Tianjin as an example as the Board of Directors in each concession is similar as the municipal construction institutes.

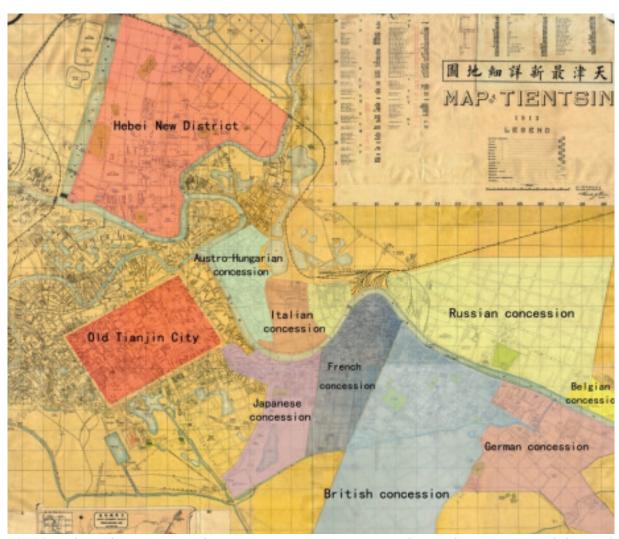


FIGURE 2 Distribution of Concessions in 1913 of Tientsin. Due to US Concession was incorporated into British Concession in 1902, it had presented the situation that eight concessions coexisted.

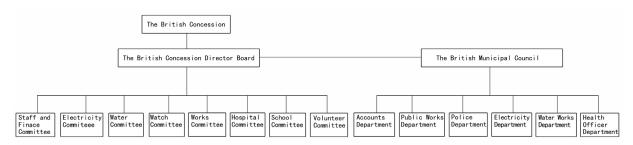


FIGURE 3 Organization Framework of British Concession. The British Concession Director Board is policy-making body, and settles the executive institute named British Municipal Council.

DATE	NAME OF REGULATION	
1898年	British Municipal Area Land Regulations in 1898	
1903年	British Mural Extension Land Regulations in 1903	
1918年	British Concession Land Regulations in 1918	
1919年	Regulations of British Municipal Council in 1919	
1925年	Building Regulations and Health Annex of British Municipal Council, Tientsin	
1928年	Amendment of British Municipal Council in 1918, Tientsin	
1930年	British Mural Extension of British Municipal Council, Tientsin	

ENACTMENT OF THE UNIFORM RULES IN CONCESSIONS

With the establishment of the administrative institute in each concession area, internal management regulations have also emerged. In 1863, the earliest regulation called Land Chater¹ was proposed in the British Concession. Furthermore, British ambassador in China named Alcock presented the British Concession Land Regulation & Tianjin British Consular Area Charter on the November 26, 1866, which elaborated the basic management system of the British Concession. Since then, it promulgated a series of supplementary conditions and amendments to finalize the modern urban management system of the British Concession.

With certain generality, the early land charter focused on basic administration such as voting, taxation and public security. In the following revisions, regulations about concession under the jurisdiction of regional administration, the liability of Municipal Council, the organizing rule of the Board of Directors the provisions of the responsibilities of various departments, and detailed measures on operation of the concession had been added. At the same time, there also appeared some rules on building density, sector division, building distance, light picking and building materials as well as specific provisions of the building activities(Table 1). It shall be noted that in 1928, the British Municipal Council Charter and Amendment in Tianjin in 1918 abolished the unequal treaties for Chinese taxpayers in the British Concession and enabled the Chinese to have the right to participate in the inner affairs of the concession.

THE LAND DEVELOPMENT IN CONCESSIONS

Land development is one of the important methods for promoting municipal construction and yielding massive financial profits. As the earliest concession holding legal title to lands and acquiring the "lease in perpetuity", the British concession began surveying and making preliminary planning in early 1861. After the land of concession was divided into many plots, they started to call for renting in the form of Royal Lease².

Meanwhile, facing numerous ponds or marsh lands in the concession area, the Municipal Council of each country and the Haihe River Conservancy Board signed an agreement, in which they adopted the "land filling" to exploit the territory in the concession. For example, the British Concession had pumped and filled into the land in two phases from the beginning of 1906, approximately 6,651,190m³.

As more lands were available for construction, urban construction was facilitated and roads, waterworks, electricity, gas and other municipal infrastructure were also developed rapidly. Excellent environment attracted residence of a large number of people, making the price of the land in concession skyrocketed sharply. Take the British Concession as an example, the price of acquisition in 1860 was about 30 taels per acre, while reached nearly 15526 taels per acre by 1937, representing an increase of 500 times.⁴

EXPLORATION OF MODERN URBAN PLANNING AND CONSTRUCTION MANAGEMENT SYSTEM IN CHINESE SECTIONS

VARIETIES ON MUNICIPAL INSTITUTE OF CHINESE SECTION IN LATE QING DYNASTY AND EXEMPLARY ROLES OF DUTONG YAMEN IN TIANJIN

While concessions and Chinese section work respectively in terms of urban construction and municipal management, the introduction of modern urban planning and construction management system and the establishment of management institution have exerted an imperceptible influence on the development of Chinese section in Tianjin.

In the late Qing Dynasty, the concession had been driven into a rapid exploitation and construction period, a conspicuous comparison to the status of the Old Tianjin City. Numerous traditional management modes and institutions failed to maintain the normal working of the Chinese section. Initiated by Chou Fu, the Tianjin Customs Taotai was established in 1882, mainly in charge of "digging the roads, widening the streets, finalizing the ditch and sewage, and founding the police patrol department". As the earliest management institution in Chinese section, it stands for the origin of modern urban planning and construction institution in Chinese section, although it attaches to Tianjin Customs Taotai⁵ of Qing Dynasty, rather than an authentic modern management institution.

On July 14, 1900, the Eight-Nation Alliance occupied the Tianjin City, and later established the Provisional Government of the District of Tianjin commonly called Dutong Yamen. It had General-Secretariat, Chinese-Secretariat, and 10 departments (Figure 5). Among them, the Public-Engineering Bureau is in charge of the infrastructure building in the Old Tianjin City. It is the first time that the western urban construction management system has been applied into the Chinese section in Tianjin, laying a solid foundation for the modernization transformation of urban construction and management mode in the Chinese section at later time.

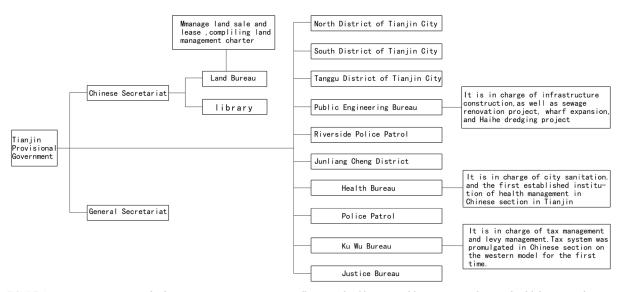


FIGURE 4 Organization Framework of Dutong Yamen in 1902. Among all sectors, land bureau, public engineering bureau, health bureau and Ku Wu bureau take charge of urban construction management in Tianjin.

THE NEW DEAL CREATED BY VICEROY YUAN SHIKAI IN LATE QING DYNASTY AND HEBEI NEW DISTRICT

In the summer of 1902, His Excellency Viceroy Yuan Shikai of Zhi Li took over Tianjin, representing the Qing Dynasty Government. He decided to create a series of New Deal⁶, owing to "undermined territory, foreigners and Chinese living together, Police Department not to be withdrew suddenly, and streets needing to be built". Meanwhile, Mr. Yuan reserved the new type of urban management departments created in Dutong Yamen age, such as Public Engineering Bureau and Health Bureau and restructured them into new urban management departments.

In 1906, Tianjin Engineering Bureau had been incorporated into Tianjin South Police Department Headquarters, in charge of censoring land construction projects, managing land registration, releasing building license and other administrative works, as well as infrastructure construction and municipal works, such as roads, ditches and bridges.

As the premium land was engaged by the Eight-Nation Alliance, there was no room for exploitation in downtown area of Chinese section, so that Mr. Yuan decided to develop the area at the north of Haihe River. On February 23, 1903, Viceroy Yuan Shikai signed the Thirteen Rules of Exploiting Hebei New Area Market, designating the development scope from the north of Viceroy Yamen, to railway in the east, to Bei Canal in the west, to Jin Zhong River in the south, and to Xin Kai Road in the north (Figure 6).

The construction contents of Hebei New Area include:

- 1 land classification⁷;
- 2 laying the radial-pattern roads centering on Da Jing Road (Zhong Shan Road);
- building urban supporting infrastructure, such as an iron bridge that connects between Old Tianjin City and Hebei New Area, a new Central Railway Station(Tianjin North Railway Station) and Hebei Park, etc.

During his tenure, Viceroy Yuan Shikai proposed a preliminary modern urban planning and management system applicable to Chinese urban planning in the exemplary roles of western modern management institution,. It was based on the T.P.G.'s institute in combination with concrete conditions and urban management system of Tianjin. Although the newly-founded Engineering Bureau is not a separate department, it is the first modern urban planning and management institution established by Chinese in modern history of Tianjin, genuinely introducing the western modern urban planning and construction management system into urban planning and construction management practice in China.

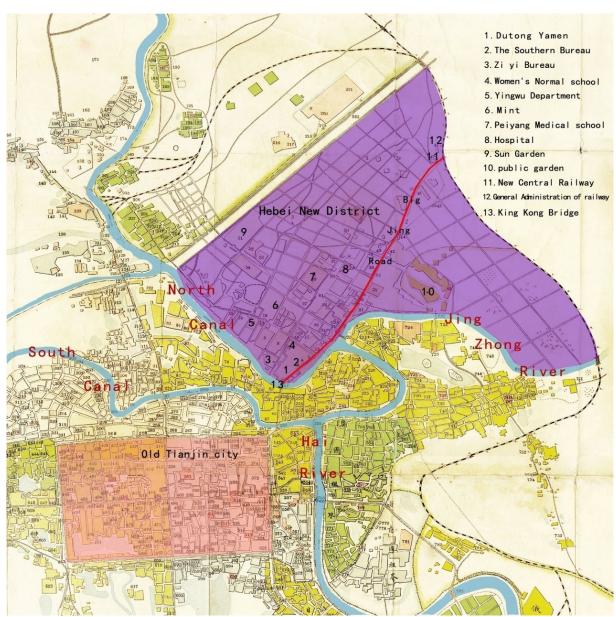


FIGURE 5 Location map of Hebei New District. Hebei New District lies to old Tianjin city in the north, to Bei Yun River in the west, to Jin zhong River in the south, and to Xin Kai Road in the north.

THE ESTABLISHMENT OF MODERN URBAN PLANNING AND CONSTRUCTION MANAGEMENT SYSTEM

From the 1920s, accompanied by the promotion and diffusion of advanced western concepts, a couple of foresighted Chinese had began to write articles and books to discuss the new model of modern urban management. For example, in the book named *New Theories of City System*, Author Zhang Rui proposed the ideal Chinese Municipal Administrative Organizing Framework (Figure 7), suggesting establishing independent institutions to manage the urban planning construction.

THE ESTABLISHMENT OF MODERN URBAN PLANNING AND CONSTRUCTION MANAGEMENT INSTITUTE AND TIANJIN SPECIAL MUNICIPAL CITY CONSTRUCTION PLAN

The Tianjin Special Municipal Government was founded in 1928, and had set the following organizing structure (Figure 8) according to the Special Municipal City Organizing Act and the Tianjin Special Municipal City Organizing Rules⁸. From then on, the Municipal Council has officially become one of the permanent bodies of the Special Municipal Government, and fully plays the function of urban planning and construction administration. It means the formal establishment of modern urban planning and construction institution in Tianjin.

Firstly, the management institution had already commissioned a series of municipal regulations and codes (Tables 2) in order to clarify responsibilities and finalize each rule on building practice, so as to strengthen the law-based control. Remarkably, a series of modern construction and administrative rules were presented, such as registration system for architects, license application for architects, liability of drawing signature and bidding for actual project, indicating the constant improvement of the modernization of management institution.

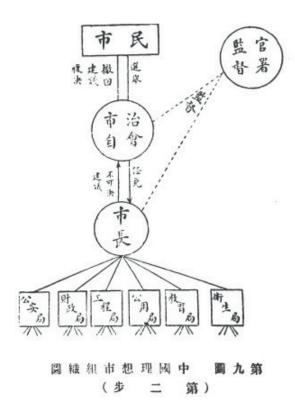


FIGURE 6 Ideal Chinese Municipal Administrative Organizing Framework. The mayor was elected by citizen self-government, and the government was composed of police bureau, finance bureau, engineering bureau, public bureau, education bureau and health bureau.

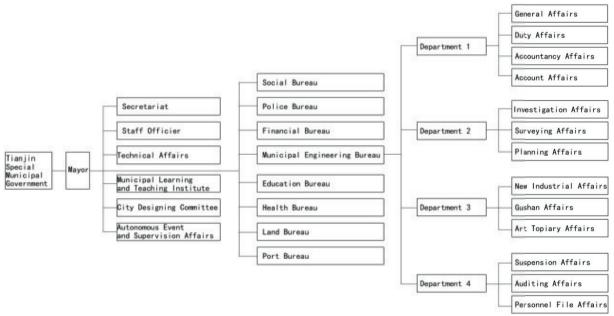


FIGURE 7 Organization Framework of Tianjin Special Municipal Government. Municipal engineering bureau set up department 1-4 to manage urban planning and construction respectively.

DATE	NAME OF BUILDING CODE	ISSUED BY
Feb. 1929	Temporary Codes of Building License	Tianjin Special Municipal City Council
Apr. 4. 1931	Temporary Building Codes of Tianjin	Tianjin Special Municipal City Government
Apr. 1931	Job and Career Codes for Architects and Civil Engineering	Tianjin Municipal City
Dec. 1933	General Rules of Architects Management	Tianjin Special Municipal Government
May. 27. 1936	Temporary Building Codes of Tianjin (remodified)	
Jul. 28. 1936	Building Codes of Tianjin (remodified)	
Nov. 10. 1936	Modified Tianjin Building Codes	······

Secondly, despite more than two years of efforts paid since Tianjin had been put into proper management on urban construction, there still lacked a unanimous long-term development plan to be conducted. In 1930, Tianjin Special Municipal Government put forward a project for recruiting the Tianjin Special Municipal City Material Construction Plan, and Liang Sicheng and Zhang Rui's joint scheme became the final winner, which illustrated the overall urban planning of Tianjin in terms of basic development, road infrastructure, public utilities, sector division, financial planning and so on.

The Tianjin Special Municipal City Material Construction Plan is the first complete modern urban planning scheme of Tianjin, and also represents the first plan compiled by native Chinese. It effectively assisted the government in figuring out modern urban planning management measures and better executing the project, though was at an intuitive and preliminary stage, even had not come into reality eventually.

THE URBAN CONSTRUCTION PLAN DURING PROVISIONAL GOVERNMENT OF REPUBLIC OF CHINA⁹

In 1937, Japanese troops invaded Tianjin. In April 1938, the North China Construction Administration was founded, in charge of the urban planning construction on cities located in northern part of China such as Peiping and Tianjin(Figure 9). It had the actual right to control the urban planning of Tianjin and make final decisions. Despite that the superintendent and director were appointed by Chinese, the right to plan and decide was held in Japanese.

Provisional government of republic of China announced the Tianjin Municipal Planning Scheme and the Tanggu Street Planning within The Tianjin Municipal Planning Scheme respectively in 1939 and 1940,both of which treated Tianjin and Tanggu as a whole to commission the urban planning scheme along the downside of Haihe River. Notably, it was the first time that has introduced the zoning system¹0 that derived from western modern urban planning theory, but it wasn't realized eventually due to the World War II.

During this period, the Puppet Government continued the former urban planning administrative function and reorganized the management system according to current social status. With detailed description and clear job divisions on the components of urban planning and construction departments, it may facilitate the management on urban construction.

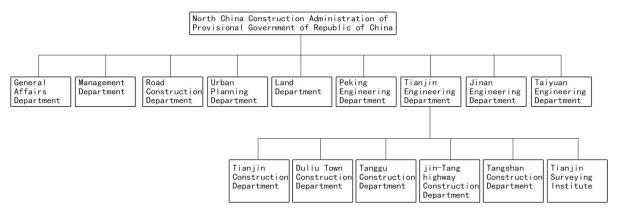


FIGURE 8 Organization Framework of North China Construction Administration of Provisional Government of Republic of China. It set up Tianjin engineering department to with special responsibility for urban construction in Tianjin.

SUMMARY

Initially, Tianjin modern urban planning and construction management institution originated from land development of colonists in concessions. Then, the Dutong Yamen which was established by the Eight-nation Allied Forces had introduced modern western management system to Chinese section in Tianjin. And then, Yuan Shikai inherited and developed the New Deal, so that in the period of Republic of China, the government formally established independent agencies to manage urban planning and construction.

In the eighty-five years, Tianjin has undergone great changes. Thanks to the joint facilitation of the internal and external factors, Tianjin successfully completed the transformation of urban modernization. Meantime, by following the trend of times through adoption of the urban planning and construction management model, a real modern urban planning and construction management was established, thus opening a new chapter in the construction of Tianjin city.

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Image sources

Figure 1-1: Redrawn from

Figure 1-2: Redrawn from Urban History of Modern Tianjin. Peking: China Social Sciences Press, 1993

Figure 1-3: Redrawn from Tianjin Map of 1900 and 1945

Figure 1-4: Redrawn from Tianjin Map of 1908 and 1937

Figure 2: Tianjin City Historical Atlas. Tianjin :Tianjin Ancient Books Publishing House, 2004.12, P47

Figure 3: Redrawn from Tianjin Map of 1913

Figure 4: Redrawn from Annals of Tianjin, Annals of Regime, Government Volume. Tianjin: Tianjin People Press, 1996

Figure 5: Redrawn from Annals of Tianjin, Annals of Regime, Government Volume. Tianjin: Tianjin People Press, 1996

Figure 6: Redrawn from Tianjin Map of 1908

Figure 7: Rui Zhang, New Theories of City System, 1926

Figure 8: Redrawn from Annals of Tianjin, Annals of Regime, Government Volume. Tianjin: Tianjin People Press, 1996

Figure 9: Redrawn from Annals of Tianjin, Annals of Regime, Government Volume. Tianjin: Tianjin People Press, 1996

Table 1: Self-drawn by Author from archives

Table 2: Self-drawn by Author from archives

Funding

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Endnotes

- 1 A special zone named after its position of the interchange of three canals in Tianjin.
- 2 Zhongquan Miu. "Tianjin Urban Planning." Tianjin: Tianjin science and technology press 1989: 15
 "Land charter" is also called "micro constitution". Apart from residents settled in the British Concession restricted by their native law, they also must be subject to the conditions of Land Charter. On October 27, 1863, the British Concession promulgated the first charter Tientsin Port Area Local Regulations and Consular Regulations. On June 1, 1864, deputy consular Denny released Charter of Amendments, but the two charters was abolished shortly as charters of concessions must be issued by ambassador in China according to the British Government's regulation.
- 4 Crown Lease, which British ambassador in Tientsin Consular representing the queen of the United Kingdom signed a 99-year lease contract. The British government became the actual lessor of the concession land. As a matter of fact, British Government pays certain amount of rental fees from Chinese Government by renting the permanent land, then makes the land consolidation in first level, finally rents the land to private clients at several times higher price than original one so as to earn the price difference.
- 5 Land Filling: Build up the dykes higher than the filling leveling the selected area, then dredge out the slit from Hai-Ho channel and pump it into the dyke. Once the slit is precipitated and the water is evaporated, the slit hardens and forms the ground.
- 6 Yi Tang. "Studies on Hai-Ho Conservancy Board's Exploitation and Construction Process on Urban Costal Area of Hai-Ho in Early Modern Tientsin." (Master Thesis, Tianjin University, 2015:41.)
- 7 The Tianjin Customs Taotai: Also known as Customs Tao. During the eighth year of Emperor Xianfeng's reign(1858), Qing Dynasty Government Customs was forced to establish the taxation management system created by foreigners. The Qing Dynasty Government then ordered some officials to supervise the customs, as well as deal with local diplomatic affairs, so that these officials were called Customs Taotai.
- 8 New Deal: includes gathering fund to train the troops, reviving the business, prizing the entrepreneurs, abolishing the Imperial Examination System, culturing humanities and founding schools, reforming the ranking system of imperial official ranking, consolidating officials and so on. The most highlighted feature is the police patrol system first being built by Viceroy Yuan Shih K'ai, forming first police patrol troops in China's history by substituting traditional Bao-Jia System in Tianjin's history.
- 9 According to the content of Thirteen Rules of Exploiting Hebei New Area Market: In this area, they recruit and settle police patrol troops, while exploiting roads and laying lamp post requires numerous of financial support. Besides following the land taxation regulated by Engineering in Chief Bureau, the entire land must be leased within three grades: land that has already been built or filled, or next to the road is ranked into first grade, otherwise is second grade, and the pond is ranked into third grade. The lease is classified as: the first grade land will be collect the duties of 7 taels and 5 maces per mou, second grade is 5 taels, and third grade is 2 taels and 5 maces.
- 10 On July 3, 1927, the National Government announced Special Municipal City Organizing Act and the Tianjin Special Municipal City Organizing Rules, which were also listed into the Chinese dictionary.
- 11 .The Provisional Government of the Republic of China is a Chinese provisional government protected by the Empire of Japan that existed from 1937 to 1940 during the Second Sino-Japanese War.
- 12. Zoning system refers to classifying urban areas into residential district, commercial district, industrial district, etc.