Zhang Jian and City Planning in Nantong, 1895–1926

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Abstract
Thus far, research on modern city planning in China has focused on international cities such as Shanghai (上海) and colonial cities such as Tsingtao (青岛). Such urban areas have been considered as representing the highest level of modern Chinese city planning; however, they were simply mirroring cities in the West. Researchers are now noticing that some other cities such as Nantong (南通) and Tianshui (天水) have taken a more domestic approach to city planning; however, they have not conducted systematic studies.

Zhang Jian (張謇) was responsible for the great achievements that were made in city planning in modern Nantong from 1895 to 1926. This paper analyzes the city planning history of modern Nantong, summarizes Zhang's city planning thoughts, and examines how it has inspired contemporary city planning by investigating historical remains, interviewing experts in Zhang research, and reviewing Zhang's writings.

Zhang's success demonstrates that it is feasible to develop advanced theory and define local city planning characteristics. The formation of Zhang's city planning thoughts serves as an appropriate example for the development of a contemporary Chinese city planning system in academia.

Keywords: modern Nantong (近代南通); city planning and construction; Zhang Jian; city planning thoughts; traditional theory and new-method learning (本旧学・参新法)

1. Introduction
1.1 Nantong
Tongzhou (通州, named Nantong county南通県 after 1911, and later, Nantong City南通市), or Nantong (南通), is located on the north bank of the Yangtze and the west coast of the Yellow Sea (Fig.1.). The soil is sandy and rich in humus, which are both favorable conditions for cotton growth. Before the Ming dynasty, Tongzhou enjoyed nationwide fame for its cotton, which contributed to the region's traditional handicraft weaving industry for centuries (Shao, 2004, pp.13–14). The high quality cotton and handicraft weaving industries led to the founding of Dasheng Cotton Mill (大生紗場) in 1895 by Zhang Jian, who initiated the transformation of Nantong into a modern city.

The city wall was built in 958 AD and a new town (新城) was attached to the south of the old town in 1598. Prior to 1895, Tongzhou was a traditional Chinese feudal city (Fig.2.). Modern city planning in Nantong is discussed in this paper in two segments.

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(Received April 8, 2008; accepted August 6, 2008)
Zhang Jian (1853–1926)

Zhang became the Zhuang Yuan (状元) of the Qing dynasty in 1894, and accordingly became an officer in the central government. Less than one year later, he abandoned his government post due to his disappointment in the state system and returned to his hometown, Nantong, in Jiangsu (江苏) province. There, he conducted a large range of city development projects, inspired by the concept of "self-governance," including city construction. Almost every bit of progress in Nantong, even the tiniest achievement, was achieved under Zhang's direction. It was believed that his accomplishments were because of Nantong and that modern Nantong's success depended on his direction (Uetsuka, Tsukasa, 1925, p. 47).

1.3 Nantong City Construction Led by Zhang

Modern Nantong is unique compared to international cities (such as Shanghai) and colonial cities (such as Tsingtao) because it was planned and constructed entirely by the Chinese.

Zhang founded the modern industrial, agricultural, commercial, and educational systems in Nantong and the Tonghai region, and transformed Nantong into a modern city with the help of those around him (his students, friends, and colleagues). Thus, Nantong was referred to as "model county" (模范县) by the Chinese media in 1914 for its comprehensive construction in terms of city infrastructure and social system, which further motivated Zhang to continue pursuing city development in Nantong.

After becoming a model county, under Zhang's direction, from 1895 to 1926, Nantong became a "model city," consisting of a new downtown with an array of modern institutions, western style buildings, paved roads, and public parks. This showcased it as an advanced modern city.

Modern Nantong comprises one city and three towns (see Fig.6.), and these four parts, connected by four arteries, form Nantong County. Nantong's spatial development was not limited to the city area; it occurred in the rural Tonghai region as well. The broad planning of the Lianghuai saltern and cultivation areas (两淮塩垦区) benefited regional spatial development by forming a new town network, stimulating population growth, and constructing the regional infrastructure system.

1.4 Previous Research

To conduct this research, the authors consulted the abundant literature that exists on Zhang and Nantong during his time in the fields of history, politics, economics, and culture, etc. Furthermore, literature written by Zhang himself can be found in the Collected Edition of Zhang Jian, Nine Collections of Zhang Jian, Chronicle of Zhang Jian's Life, Zhang Jian Diary, etc. These papers, memorials to the throne, and drafts of speeches and letters provide firsthand information on what inspired Zhang and how he managed to achieve what he did. Hanmolin Publishing House was founded by Zhang to print textbooks for Nantong's schools. Moreover, it was responsible for the publication of many books and reports that introduced Nantong to the rest of the country during that era. These are rare works that provide insight into the history of the construction of modern Nantong.

Some Japanese researchers (Komai, 1923; Tsurumi, 1925; and Uetsuka, 1925) traveled to Nantong to investigate the development that was underway and conduct interviews with Zhang. Their reports combined with documents such as the Report from Shanghai Customs demonstrate the evaluations of Zhang and Nantong from the viewpoint of foreigners at that time. Moreover, biographies of Zhang that also examine his enterprise have been published. The works of Zhang Xiaoruo (Zhang's son) and Zhang Kaiyuan (historian on Zhang Jian) are based on the plentiful historical data; Song Xishang and Liu Housheng's
works are based on their personal experiences of working with Zhang.

Some dissertations on Zhang's thoughts on economics, law, and education bestow valuable information as well. In brief, most of the research that has been conducted on Zhang has focused on two aspects: his efforts in national politics (the focal point of Chinese and Japanese historians), and the economic achievements and reasons for the decline of Dasheng Cotton Mill, wherein researchers name Zhang as an industrialist, educationist, etc., on the basis of different aspects of the progress of Nantong's modernization.

From the perspective of city planning and construction, there exist three main works. Focusing primarily on architectural analysis, Chen Bochong (Chen, 1989) profiles the buildings and city development of Nantong from 1840 to 1947. Zheng Hongyi suggests that Zhang's city planning thoughts emerged three years before E. Howard's Garden City theory; therefore, it should occupy an outstanding position in the history of world city planning. Wu Liangyong (Wu, 2003) presents the viewpoint of modern Nantong as "the pioneering city of modern China." Zheng and Wu's papers operate both from a strategically advantageous position and a lack of detailed reviewing of the practical process of the Nantong case; therefore, their conclusions require either further discussion or the provision of additional evidence.

2. Purpose and Approaches of the Research

2.1 Purpose

Considering the non-existence of publications in English that focus on the history of modern city planning and construction in Nantong, the aim of this paper is to conduct an analysis through a chronological historical review and clarification of the following aspects: (1) the evolution of modern Nantong city planning and construction; (2) the evolution and characteristics of Zhang's city planning thoughts; and (3) the inspirations for the development of Nantong.

2.2 Approaches

The authors' analyses are conducted by investigating historical remains, interviewing experts in Zhang research, and reviewing Zhang's writings. To analyze the city planning development process in modern Nantong, a chronological table was first composed according to the multitudinous literature. Secondly, figures to tally the items constructed in nine types according to the chronological table are presented. The authors then proffer four phases of city planning and sketch the basic characteristics of Nantong's modern construction. Finally, Zhang's city planning thoughts and his inspirations are investigated.

3. Basic Data Analysis

In order to analyze the stages of the development of city planning in modern Nantong, a chronological table is created based on the institutions constructed (Yu, 2005). The majority of these are related to education (31 items) and business (industry: 18 items; agriculture: 22 items; commerce: 24 items), which reflects Zhang's belief that "education is the father and industry is the mother (父教育，母実業)."(Cao Congpo et al. Ed., 1994, Vol. 4, 74) There are 25 items related to traffic, which might reflect Zhang's efforts to build a perfect regional town system. Meanwhile, the multifarious types of constructions depict a scene of comprehensive construction (Fig.4.).

Fig.4. Nine Types of Constructions (According to the Chronological Table)

Fig.5. Construction Items in the Four Phases (According to the Chronological Table)

4. Four Phases

In this paper, the authors divide the period of modern city planning in Nantong into four phases according to the analysis of the chronological table, the political and social backgrounds, the rise and decline of the Dasheng Corporation, the refinement of Zhang's social planning thoughts, and some main events such as his visit to Japan in 1903. Each phase has unique characteristics, all of which are consequential.

Fig.5. first illustrates that the numerous constructions in every phase differ significantly. From the first period to the third period, this construction increased rapidly. The third period constitutes the peak, while the forth period is characterized by a decline in construction. This coincides with a decline in the status of Dasheng Corporation's management. Secondly, every phase has its own emphasis: in phase 1, the fundamental industrial, agricultural, and educational institutions
were established; in phase 2, education and traffic were the primary focus; in phase 3, education and commerce took precedence. At the same time, agriculture, especially the saltern and cultivation companies (塩墾公司), realized significant development; and in phase 4, the beneficence and landscape architecture suggest a modern city with a more rational and perfect function and structure.

4.1 Phase 1, 1895–1903: Industry and Education / Single Institution Planning

(1) Establishment of Industrial and Educational Institutions

This marks the initial period of modern construction in Nantong. A series of single institutions were constructed, including Dasheng Cotton Mill, Tongzhou Normal School, and Tonghai Cultivation Company (通海墾牧公司), which were Nantong's first industrial, educational, and agricultural institutions. They are the bases of modern Nantong city planning. Many different types of institutions appeared during this period, which illuminates the comprehensiveness of modern city planning in Nantong.

(2) Planning Method for Single Institutions

1) In this period, the idea that "agriculture, industry, and commerce should develop harmoniously" guided the construction.

2) The single institution planning method of investigation and proposal → mapping → planning on the basis of the map → implementation → adjustment was formed preliminarily. This method of planning ran through all aspects of Zhang's city planning, from single institution planning to city and regional planning.

(3) The Structure of "One City and Three Towns"

The sites of these institutions (Dasheng Cotton Mill at Tangzha; Tongzhou Normal School at the new town) were carefully selected to fulfill their functional needs and to coincide with the nature of the location. For example, Dasheng Cotton Mill was located in Tangzha, the industry town, because of its convenient water transportation and traditional handicraft weaving industry base. The Tongyang Canal connects Tangzha to Tiansheng Port, the transportation town, which enables the convenient transportation of products along the Yangtze River, from Dasheng Cotton Mill in Nantong to Shanghai. In fact, the site selection of Dasheng Cotton Mill actually determined the structure of "one city and three towns" (Fig.6.). Langshan, located to the southeast of the city zone, is a leisure town. Thus, the structure of one city and three towns was formed at the onset of the initial period of modern city construction in Nantong.

(4) Achievements in Construction

The main achievements of this period can be summarized as follows: (1) numerous institutions (especially industrial institutions), mostly located in the Tangzha area; (2) the institutions built in the city zone were mainly in the field of education; (3) for transportation, within the Tonghai region, the Dada Inner River Steamboat Company was established to enable communication between regional towns and in terms of communicating with the outside world, the Dasheng Steamboat Company was established to facilitate communication between Nantong and Shanghai; (4) the aspect of spatial development, which focused primarily on single institution planning, site selection, and construction in Tangzha, Tiansheng Port, and the city zone.

4.2 Phase 2, 1904–1911: Comprehensive Exploration / Institutional Management

(1) Comprehensive Exploration under the Concept of Self-Governance

Systematic development in social construction can be observed in this period. First, the institutions constructed increased rapidly in number and type, including educational and traffic items; further, new types of constructions appeared, such as those for civic and charitable organizations. Different constructions have internal relationships and influence each other. For example, the industries that were built surrounding Dasheng Cotton Mill, and Dasheng Corporation have their own system (the second factory of Dasheng Cotton Mill and a large plan of eight factories). Second, the constructions were extended across the Tonghai region. For example, the systematic education plan was to construct schools throughout the Tonghai region, including primary schools and technological academies. Using a detailed map, the distribution of schools in the Tonghai region was planned according to distance from home and number of students.

(2) Institutional Management

Meanwhile, many institutions were established to manage the city construction, such as Education Union (教育会), Chamber of Commerce (総商会), Mapping Bureau (測繪局), Water Conservancy
Union (水利会), Collapse Prevention Union (保坍会), and companies such as Zesheng Water Conservancy Corporation (沢生水利公司). This was the result of both the influence of traditional Chinese culture and Shanghai's experience. Institutional management ensures that a city is systematically planned and built and that all institutions receive broad social understanding and support.

With respect to spatial arrangement, educational institutions were mainly confined to the city zone, while industrial institutions were located primarily in Tangzha. However, many other institutions including commercial and educational facilities were established in Tangzha to create the identity of a multifunctional corporation town.

(3) System and Regional Approaches

First, from both the viewpoint of comprehensive social planning and the specific fields of industry, agriculture, commerce, or education, etc., Nantong experienced periods of systematic development. Secondly, all of the following projects were considered from a regional perspective: branch factories of Dasheng Cotton Mill, the construction of agriculture facilities such as the Dayoujin Company, education planning for the whole county, and the surveying and drawing of the county map.

(4) Achievements in Construction

The main achievements of this period can be summarized as follows: (1) in the city zone, the constructions mainly centered on education and were located in and south of the old town, the latter of which constituted the remnants of the old outer town (in this way, Zhang and his colleagues could reduce costs); (2) Tangzha remained the key area for construction in this period. Moreover, the main institutions were industrial. However, the educational and civic institutions were increasing, which transformed Tangzha into a comprehensive company town that could accommodate both work and housing. From the aspect of spatial planning, a division of elementary functions appeared in Tangzha. The industrial area was located to the west of Tongyang Canal, while educational and charitable institutions were built east of the canal.

4.3 Phase 3, 1912–1921:
Regional Construction / Social Planning

The economy of Nantong grew quickly during this period. The number of institutions grew rapidly and extended to all aspects of social life, which can be expressed as a kind of comprehensive systematic social planning that spread throughout the Tonghai region.

(1) Regional Construction

With respect to the industrial system, Dasheng Cotton Mill's development was constituted by a grand plan to build eight factories. Further, all the other factories and companies were constructed around Dasheng Cotton Mill.

In terms of the agricultural system, a broad plan for the Lianghuai salt works and cultivation areas (両淮塩垦区) was implemented, which benefited regional spatial planning in several ways.

First, a new town network was developed with the establishment of salt works and cultivation companies. Almost 23 cultivation and herding corporations were established in this region from 1901 to 1925, and there is at least one town in every corporation area. Figure 7 depicts the convenient water way in the area that connects the towns and farms. Fig.8. provides an image of Haifu Town, which is under the jurisdiction of the Tonghai Cultivation and Herding Corporation. These new towns typically have a self-governance chamber, schools, a public park, a police office, a kind of traditional folk bank in China, shops, etc. At present, about 33 towns have a direct relationship with a Cultivation and Herding Corporation (Shan, Ed., 1987).

Second, the population grew rapidly, which accelerated traffic, communication, weather...
forecasting, education, commerce, public security, etc. in the area. Third, the construction of an infrastructure system connected the area to a unified region of cities, towns, and counties. Fourth, a series of planning methods in the salt works and cultivation areas was concluded. Zhang highlighted this in one of his papers, "Announcement on the History and Planning of Reed Marshes in Jue Port (1916)" (Cao Congpo et al. Ed., 1994, Vol. 3, 797–8). His three basic achievements in the planning of these areas were digging canals, building dykes, and constructing roads.

An education system was also established in the Tonghai region. First, it included a system plan of multifarious schools, from nursery schools to primary schools to middle schools to universities, and from basic education to vocational education. Secondly, it included a system site plan for primary schools in the Tonghai region that was drawn according to the electorate.

(2) Social Planning

Around 1914, Nantong became a model county in China for its comprehensive city infrastructure and social system. Its success in the economic field also impacted social development. The constructions of the city infrastructure, cultural and educational facilities, charities, parks, etc. were increasing rapidly. This shows that modern city planning in Nantong is not just an example of physical planning, but a kind of overall social planning.

(3) Achievements in Construction

From 1907, there was a tide in construction in Nantong. From the spatial aspect, buildings with different functions were constructed on both sides of the Hao River in the city zone. In the Tangzha area, industrial institutions grew comparatively slower than domestic, service, and entertainment buildings. In Tiansheng Port, the Dasheng Electric Power Plant was prepared for construction. More buildings were constructed during this period in the Wushan area. The Lianghuai saltern and cultivation areas were also part of this building wave around 1919.

4.4 Phase 4, 1922–1926: Construction Decline / Maturation of Thoughts

The decline of modern construction in Nantong can be seen in this period. Around 1922, Zhang Xiaoruo, Zhang's son and chairman of Nantong's Self-Government Union, proffered a blueprint of "City Planning," which marked the first use of the phrase city planning. However, the plan was not realized completely due to the economic decline.

4.5 Characteristics and Inspirations

(1) Characteristics

The modern city construction of Nantong resulted in the rapid extension of the built-up area and an increase in the population. Its characteristics can be summarized as follows.

1) City Planning: The basic form of "one city and three towns" was shaped and has continued its expansion until the present. Each of the four parts of Nantong has its specific function and they are all connected as one complex city. The city zone is the center of modern commerce, finance, education, and culture; Tangzha is primarily an industrial city with many enterprises; Tiansheng Port, the transportation center and later, the city's power zone; and Wushan, the renowned scenic Buddha area where some small houses and schools were constructed to make it a public place for leisure.

2) Regional Planning: First, industry, agriculture, and commerce developed and expanded through the whole Tonghai region. Second, the systematic development of the economy drove the construction of the regional infrastructure in a uniform manner, which led to the modern forms of Nantong and the Tonghai region.

3) Social System: Modern city planning in Nantong is not only a form of physical planning, but also an overall social planning inspired by the concept of self-governance. Its achievements also lie in the rapid development and progress of the whole society.

4) Planning Methods: First, during its evolutionary periods, several institutions were established to guide and manage the planning of modern Nantong. Second, a set of planning methods was summarized based on experience: planning → mapping → planning on the basis of the map → implementation → adjustment.

(2) Inspirations

The achievements of modern city planning and construction in Nantong demonstrate that besides the models of international and colonial cities, there exists another method of modern Chinese city development, which is directed by the Chinese and is based on the traditional Chinese cultural system combined with new western technologies.

5. Zhang's City Planning Thoughts

5.1 Evolution

(1) Phase 1: The Initial Period

In this phase, Zhang first presented his city planning thoughts in Comment on Political Reform (1901) (Cao Congpo et al. Ed., 1994, Vol. 1, 48–77). This was the origin of his social thinking. He borrowed foreign experiences and techniques to adjust and supply his thought system, which was inspired by traditional Chinese beliefs.

(2) Phase 2: The Derivative Period

In Phase 2, Zhang's city planning thoughts entered its preeminent development period. After visiting Japan in 1903, Zhang formed his own local self-government thoughts, which led to his social planning thoughts. In his paper, "Shun" was an Industrial Politician (1904) (Zhang Xiaoruo. Ed., 1991, Vol. 2, 5), Zhang proffered his regional planning ideas, "to be a village, to be a state, and then, to be a capital," which were employed in the planning of the Tonghai region in many ways, such as in the regional traffic system, education system, and agricultural, industrial, and commercial development. Institutional management also reflects his thoughts, which were rooted in traditional Chinese
culture.

**5.2 Contents**

Zhang's city planning thoughts was based on a combination of traditional Chinese culture and some new technologies and experiences from the West and was developed during the time of his practical experience of modern city construction in Nantong and the management of other social planning projects such as the political plan to establish a province in Xuzhou; the self-governance planning of Jiangsu and latterly of the nation; the water control planning of the Huai River, the Grant Canal, and the Yangtze River; and the commercial port planning of Wusong. The main points of Zhang's city planning thoughts can be summarized as follows.

**5.3 Characteristics**

Zhang's city planning thoughts constitutes a kind of systematic social planning thoughts that is accumulated from various practices. It directed the planning of Nantong city and the whole Tonghai region. Therefore, its characteristics can be summarized as follows.

**(1) Sociality**

This characteristic is a result of the sociality and entirety of traditional Chinese culture. Zhang did not specifically study "city planning" as a discipline; he merely followed the Confucianism of Zheng De, Li Yong, and Hou Sheng (正德利用厚生) to develop the city with the intention of improving living conditions and social progress.

**(2) Systematicness**

This is derived from the systematic and interdisciplinary nature of Chinese philosophy. From the point of view of social development, Zhang's thoughts possess the characteristics of comprehensive planning in industry, agriculture, commerce, education, culture, and beneficence, while from the point of view of space, they focus on harmony within the region.

**(3) Practicality**

First, Zhang's city planning thoughts was the result of his practical experiences in the construction of Nantong city, national water conservancy planning, and the correspondence between industry, agriculture, and commerce.

Secondly, his planning was always based on on-the-spot investigation; thus, it could break down the bondage of the old rules and achieve harmony with

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Table 1. Summary of Modern City Planning and Construction in Nantong/Zhang Jian City Planning Thoughts

| Characteristics | Construction Phases | Literature or Thoughts |
|-----------------|---------------------|------------------------|
| **Construction** | Phases (1895–1903) | Industry and Education/ Single Institution Planning |
|                 | Phases (1904–1911) | Comprehensive Exploration/ Institutional Management |
|                 | Phases (1912–1921) | Regional Construction/Social Planning |
|                 | Phases (1922–1926) | Construction Decline/ Maturation of Thoughts |
| **Characteristics** | - Regional Planning: City planning and construction cover the entire region of Tonghai |
|                 | - Social System: From industrial, agricultural, and commercial planning to cultural and educational planning, the entire society is under comprehensive planning |
|                 | - Planning Methods: planning → mapping → planning on the basis of the map → implementation → adjustment |

| Thoughts Phases | Initial | Derivative | Developing | Maturation |
|-----------------|---------|------------|------------|------------|
| **Literatures or Thoughts** | Comment on Political Reform | Self-Governance | 1) County Road Planning and Apply to Implement in Time; 2) The Accession Proclamation of Directing Wusong Commercial Port Open Planning |
| **Characteristics** | - Sociality/Systematicalness/Practicality |
|                 | - Traditional theory and new-method learning |
local conditions. For example, he chose Tangzha and Tiansheng Port as the new construction sites for three reasons: (1) he could escape potential political conflict; (2) it was more economical; and (3) there was a potential to improve the deteriorating environment of Nantong's south town.

(4) Traditional theory and new-method learning

To sum up, Zhang's city planning thoughts was developed directly from the traditional Chinese cultural system, and was rooted in traditional theory. These thoughts were inspired by knowledge of new western technologies and ideas such as using instruments to draw exact maps before planning, hiring foreign engineers and teachers, and learning new ideas and methods of self-governance both from the West and Japan.

5.4 Inspirations

The main inspiration that may be obtained from Zhang's theory is the benefit of learning from the outside world without abandoning the conventions of the traditional cultural system. After all, the purpose of learning is to perfect ourselves.

Traditional culture offers us a profound understanding of local history, geography, and the people's native character, which may help us handle local issues. Advanced technologies provide opportunities to improve our capacity to face the changing new world and invigorate our own culture.

It was Zhang's brilliant city planning thoughts that distinguished modern Nantong among all the city planning and construction efforts that have been made in modern China.

6. Conclusions

Table 1. summarizes the four phases of the history of city planning and construction in Nantong and the evolution and characteristics of Zhang's city planning thoughts.

1) The four phases of the history of city planning and construction in Nantong present a case for the process of modern city planning and construction in China that is directed primarily by the Chinese. The development of modern Nantong reveals that there are ways to develop Chinese cities in the modern era that are more suitable for China than copying foreign cities.

2) Zhang's city planning thoughts was mainly based on his practical experiences in Nantong and the influence of traditional Chinese culture. Several documents suggest that its evolution possesses the characteristics of sociality, uniformity, and practicality, and is formed by traditional theory and new-method learning.

Therefore, we argue that Zhang's brilliant urban planning thoughts makes Nantong unique, and that this philosophy distinguishes Nantong's evolution from all the city planning and construction efforts that have been made in modern China.

Acknowledgement

This research is supported by JSPS program of Postdoctoral Fellowships for Foreign Researchers.

Notes

1) Da Sheng Cotton Mill (大生紗場) was set up by Zhang Jian in 1895. After that, a serious of factories were set up around it; consequences, such as the Second, the Third Cotton Mill of Da Sheng; Guang Sheng Oil Mill, etc. All these factories belong to the Da Sheng Corporation.

2) This new town is the area that Zhang set as business and cultural area in later city planning, which called the city zone (城区).

3) Zhuang Yuan, the Number One Scholar, was the Champion in imperial examinations. Usually a Zhuang Yuan would be given a position as Hanlin Academician (翰林學士) in central government at first (as Zhang did), and his ideal would be prime minister. Such as Zhang's teacher, Weng Tonghe (翁同龢, 1830-1904), he became the Grand Minister of State (軍機大臣) at last. So it was difficult for Zhang to give up his position in government and back hometown to be a business man. Political factors were the main reason.

4) Fortunately Zhang wrote down almost everything he did (Zhang, 1991; 1994; etc.) and at that time there was a publish company in Nantong, which is named Haminoli Publishing House and published series of books on Nantong city construction (Nantong Zizhihui, 1915; 1938; etc.). These literatures record the reasons, the methods and the process and the results of Nantong city construction items led by Zhang. Other literatures include Zhang's biographies, record and comments on Nantong or Zhang by persons lived in that time. Still some new ones came from nowadays research from 1980 to 2005.

5) Shun(舜), the name of a legendary monarch in ancient China.

6) (1) 正道 to keep one's self upright in a righteous manner for the governance and management of the people (2) 信用 to explore things fully in use for demands of the human being (3) 厚生 to keep life in nature with co-existence.

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