

# The Process and Method of Reconstruction of the Old Industrial District

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**Abstract:** In the course of the renewal of the Tie xi district, the commercial development pursuit of maximal economic profit, which emerges the fracture of the industrial culture context, legacy of architecture, social problem etc, therefore, we should insist of the sustainable idea, developing circular economy, reusing industrial legacy, improving the facilities construction, strengthening the social assistance and security system, constructing people-oriented human living environment, and using sustainable methods to construct liveable city.

## 1. Introduction

Across the transformation and challenges of urban reconstruction in China, then china entering postindustrial society since the early 2000s. Within the process of globalization and informatization, urban competition is getting more and more tensely. It has become Chinese local authorities' common view that the urban construction plays a key role in the economic development, local authorities made a large share of their income by transferring land use rights to developers and spend the incomes on urban construction to promote their Competitive Force.

This paper mainly introduces the old industrial city Shenyang, Shenyang is an important city in northeast China, and Tie xi district is located in the center of Shenyang city. The old part of Tie xi district is about 40 square kilometers that locates in the east of Tie xi district. "Tie xi" is a famous old industrial area in China, during the planned economy, it was the famous economy center throughout the country for its large and medium-sized state-owned enterprise's concentration. Tie xi was known as China's "industrial cradle". In the period of transition of economic systems, the Shenyang ' condition plummeted, but The Chinese government formulated the strategy of rejuvenating the old northeastern industrial cities since 2002, and provided the preferential policies in politics and economy, economic revival of Tie xi district has made initial achievements.

New economic development zone is the specific area emerging in 2002. Land price was different between old town and new economic development zone, the government proposed the policy that "move the industry to the west new economic development zone and reconstruct the east older section", the reconstruction emphasis on optimizing land-using structure, activating the stock lands, developing the modern service industry, because of the remarkable change, Tiexi district was awarded "THE GLOBAL HUMAN SETTLEMENTS MODEL OF RESIDENTIAL AREA" by the UN-HABITAT in 2008.

At the beginning, this paper introduces the history of Tie xi district, then analyzes the renewal model from 2002 to 2012 from different perspectives. We hope to draw on the past experiences of renewal and analyze the new demands and concerns of the residents after 2012, according to the booming Internet economy in the new era. The local government embark on a series of new policy.

## 2. Background

From 1948 to 2001, Tie xi district of Shenyang was in the society's change stage from

government-oriented model to market-oriented model. The Cultural Revolution period which began in 1966, caused the city to endure a “lost decade” of economic stagnation, then since 1980s the reformation of state-owned enterprises forced thousands of factories to close and almost all their laborers was thrown out of work. The first stage of strategy for revitalization of the old northeastern industrial base of China was formulated by the government in 2002, which brought great opportunities for the regeneration Tie xi district.

### **2.1 1948—2001 a turbulent period of history**

From 1948 to 1977, Tie xi was one famous heavy industrial base in China. Because the world war II had just ended, the country was in the process of reconstruction, with limited funds and resources, and could only choose to make the best use of existing conditions, depended on the Nation funded to support and help city in its economic recovery and reconstruction. Promoting and supporting enterprise of heavy industries was the key objective in 1953, based on the existed industrial zone to adjust and rebuild, 12 million yuan was invested in the construction of settlements for the workers by the government. Tie xi district is separated into two parts by JIANSHE road, all factories located on the north part which is about 19 square km, and communities located on the south part which is about 21 square km. But the rapid productivity growth wad at the expense of environment. The industrial area at the time gave the impression of smokestacks, thick smoke and a pungent smell, and was considered an important symbol of developed economic, the workers took pride in working here.

That changed with the 1978 transition of economic system of Chinese, industrial production began the recovery process, and slowly gone back to normal levels. But “Nothing Gold Can Stay”, Reform of the Chinese Economic System began in 1984, the crucial step of China’s Economic Reform was SOE reform, which has gradually and successfully transformed from government-oriented model to market-oriented model. Large State-owned enterprises couldn’t meet the requirements of the transition, many companies had suspended operation, slashed production, or failure. Many basic life protections for workers were cut off, workers suffered from terrible unemployment every moment. The city is in a depression, the people live in destitution, so its own “northeast phenomenon” had appeared.

The economic depression had prompted a rethink of urban construction, there are much too limitations on the planning of industrial district, for example:

Firstly, Optional location was unreasonable. The selection of Industrial land was based on the first requirement of the colonial needs of the aggressor, transportation convenience was the primary consideration, land closed to railway. This was convenient for transporting of raw material and manufactured goods, but they had not considered the overall urban planning. Urban and industrial areas are segregated, it’s the hidden trouble for the following optimization of transportation system.

Secondly, the function layout was unconscionable. In Tie xi district, all factories located on the north part, and communities located on the south part, and public facilities located on the mid district. Factories’ pollution impact was mainly urban areas downwind of the prevailing wind Shenyang city east, that planned to residential area the main function.

Thirdly, the Eco-environment was seriously damaged. Main layout in industrial area was heavy industry more than 60%, such as Metallurgical, chemical, machinery, textile printing and dyeing industry etc. As a high-pollution industry, because without treatment, that polluted atmosphere and natural water, but also polluted the surroundings, the pollution was very serious, public life was seriously disrupted. Industrial areas were no longer suitable for residential use.

Finally, the quality of the building is uneven. The house for Chinese workers on the south residential Community were extremely poor quality, such as wood and brick house, but the house for colonists were assured of construction quality. Many buildings had limited life spans.

### **2.2 2002-2012 the transformation period**

In 2002, Tie xi district merged with economy & technique development district, that compose new Tie xi district, and try to solve the problems which happened on the transformation of old

Northeast industrial base, such as raising capital of SOE reform, optimizing the industrial layout, solve unemployment and employment problems. The government proposed the policy that "move the industry to the west new economic development zone and reconstruct the east older section". The vast majority of factories had been moved or closed. Because of the replacement of land function that can provide plenty of land for urban development, total operating land use rights was to tender auction listing sold, and to solve the contradiction of financing in the urban construction.

Private developers carried on the housing development, pushing the commercialization and privatization the housing, satisfying the people's demand for housing. The house sales area has grown tenfold in ten years, and the Total Population at the Year-end increased 100,000.

From April 2003 to now, the replacement of land use and the renewal of the old zones of Tie xi district is always carrying out. Firstly, the shanty town and dangerous buildings were almost torn down. The government invested to construct new houses for workers, such as workers' village, Zhong Gong village, and bright village and so on. To 2007, the total investment was 1.375 billion yuan, and provided dwellings for 30,000 workers, the per-capital living space of Tie xi district reached 23 square meters from 12 square meters.

By 2000, the average living space for a Tie xi's residents had been increased to 260 square feet, the residents' living conditions have been improved. Secondly, how to protect the industrial heritage and reconstruct the industrial buildings were the focal point of the government. The industry heritage protection and development planning was made by the local government of Shenyang, and was based on history and economy, the main concept of this planning was put forward from the whole layout and structure of industry heritage planning, It's setting the culture corridor along the JIANSHE road expresses Tie xi's industrial context and history; Shenyang foundry and workers' village were two groups of industrial ruins, they were reconstructed as China industrial museum and Worker's life scene exhibition; The workers' park was converted from zoo into a forest park; Shenyang heavy machinery was demolished to make way for a memorial plaza, that dedicate to the history of industrial development, and one of the original building was transformed into "1905 OCT Loft" in Tie xi.

### **3. The renewal of the Tie xi old industrial district**

#### **3.1 Land use**

In year 1949, China established the multi land ownership featured with the simultaneous existence of Collective land ownership and Public land ownership. Since the end of the 20th century, the central government was acutely aware of the problems of industrial pollution and technological innovation, then made out guiding policies. The local government could come up with specific plans that could really execute central government's policies. Then on the base of Public land ownership, local government of Shenyang proposed functional replacement of land to adjust the function of old district, on the one hand, the enterprise could obtain funds from land-transferring fees, On the other hand, the local government could mop up those polluters, and upgrade urban environment. After 8 years of efforts, governmental agencies had been assisted to relocate 258 enterprises since 2002. And 8.56 square kilometers of Industrial land were vacated. The lands with good location and high value that favored by developers, government made 185 billion shares of their income by selling land to developers for urban construction, to repair roads, to construct infrastructure, to renovate of historical architecture, to reform existing buildings.

However, there is still a lot of industrial land has fallen by the wayside, factories shut down many years. Because of their bad position and complex ownership issues, no private developers willing to invest in reconstruction, and living conditions of their surroundings keep worsening. Governments of Tiexi are intensifying their efforts to improve the city policy and environment, to attract investment to those areas.

#### **3.2 Industry heritage**

The government took the opportunity that a mass of factories moved out from old Tie xi district,

and absorbing funds to improve environment. For the best benefit, these factories that close to the city center were top development priorities. Only several remote and significant buildings were looked as the representative of the urban context, a large amount of the buildings have been razed to the ground, many new residential buildings had been built. Three important industrial sites had been transformed into museum and Pioneer Park. The old railway station had been retrofitted to accommodate the deed of high-speed railway. Industry theme sculpture were set along the JIANSHE road to express the industrial history and spirit.

However, the protected industrial buildings are completely isolated with each other, and they can't fit themselves into the surrounding environment. At the same time, the scattered protected industrial buildings can't entirely represent the industrial history of Tie xi, it is important to select representative samples of urban context, such as foundry industry plant and workers' settlements, which might be useful for the continuation of the industrial historical context.

As the readjustment of industrial structure, most of factories have been moved to new industrial district, but there are still a few remnant industrial lands. The old industrial enterprises released a lot of poisonous and harmful gas, dust, and arbitrarily discharged sewage. The livable environment is poor. Local governments have rolled out policies to restrict factory production, and to reduce pollution. Simultaneously also propose the need for reconstructing.

### **3.3 Social problems**

The relocation and closure of factories caused many social problems.

Firstly, ameliorating the problem of large-scale unemployment. Because of lack good management and upgrade traditional manufacturing industries, new industries need skilled and highly educated industrial workers, traditional workers that could hardly fit the new requests had been laid off. Their life was hard, People felt gloomy about the future, the "northeast phenomenon" as the first appearance of innovative terms used to describe that circumstances. To cope with unemployment, local governments constantly improves and perfects the social security system pointedly. The direct solution was to provide one-time cash compensation for unemployed workers.

Secondly, on the process of the reform of the state-owned enterprises, changed corporate ownership to private, promoted the socialization of endowment, unemployment, medical insurance of workers. With gradual separation of social functions of enterprise from enterprise, enterprises could no longer burdened with social responsibilities, most of the transformation cost in laid-off workers' insurance system could be bear by the government public finance. To 2009, 130,000 workers laid off from SOEs had been orbited into basic living insurance system, including endowment, unemployment, and medical insurance of workers.

Thirdly, helping laid-off workers from SOEs to get the skills and technical training for the new jobs, even to do their own business. Invested 2 million yuan according to the planning, people club Bureau of Tie xi district proposed to establish generalized system of preference (GSP) employment training base that carried out technical training in secondary industry skills for workers, 5,000 people are trained every year. People club Bureau of Tie xi district organized various theme events and communicated directly with the companies and factories to focus on creating jobs. 16,000 jobs have been created, 22,000 people are employed in real-name registration. The registered urban unemployment rate was under 3% in recent years, according to the Shenyang Municipal Human Resources and Social Security Bureau.

Finally, pay off generous sum of domestic debt. Since the mid-1980s, the information era arriving, the old industrial cities declined sharply. The efficiency of the state-owned enterprises' assets was not high, and profitability was poor, and debt ratio of state-owned enterprise was high, only depended on state economic subsidies alive. Since 2002, the state-owned enterprises had owed 3.5 billion yuan. After a series of government reforms, the debt has been fully paid off until 2009.

### **3.4 Open spaces construction**

In the progress of the old industrial district's reconstruction, because of a lack of funding, the government attracted Private-sector to invest urban construction through land use conversion and the

transfer of land use rights. Private developers prefer to do everything possible to improve capacity rate and to refuse to its responsibilities to the public, as they can usually achieve better profit margins.

During the initial development phase of the progress, the government made great concessions with developers, sacrificing our environment in exchange for economic prosperity. More and more new and closed residential quarters of large scale were built, improving its ecological environment. However, leading to the disappearance of public space, green land owned by the owners of the gated community that was enclosed. Per capital public green area of district was 5.9 square meters, far below the national standard of 12 square meters. The only park's remote location off the central city, and land price was lower, but the rates of its usage was lower too.

#### **4. Conclusion**

This paper reviews the renewal of old industrial district in the northeast of china, from 2002 to 2012, that should be a continuous and gradual process. The Chinese government has a short-term five-year plan that formulates national development goals from a macro perspective, local governments set local development goals according to national policies. Local policies can be more targeted, which can better solve the problems in this region. The main problems faced by the old industrial district of “Tiexi” were the same as those faced by other old industrial cities, such as industry upgrading, Pollution, unemployment, transformation, population ageing and so on, but the most important of them was the financing of reconstruction. Therefore, the goal of quality improvement is proposed in the next phase of renewal, to continue to adjust land use functions, to preserve the history of industrial development, to provide more convenient public services, to improve public space and transportation, to provide more perfect security for residents, to adopted widely energy conservation technical in building.

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