

# Research on Industrial Heritage Protection and Regeneration Strategy Based on the Concept of "Sharing"

**Lan Mi**

Tongji University College of Architecture and Urban Planning

**Yang Chen**

South China University of Technology

**Lanyue Mei**

Xi'an Jiaotong University

## Abstract

**The modern industry in China started in the middle of the 20th century, producing a large number of industrial area and industrial buildings. However, with the changing of present economic structure, many old industrial areas have become urban dilapidated areas. In order to solve the problem of the protection and renewal of industrial heritage, based on the concept of "Sharing Architecture", this paper expounds the material and spiritual value of industrial heritage and proposes the protection and regeneration strategy of industrial heritage. Taking the urban design of the Xi'an Textile City Area in China as an example, it highlights the commemorative, public, and daily nature of industrial heritage, and explores the application of "shared architecture" on industrial heritage.**

**Keywords: Industrial heritage; Sharing architecture; Xi'an textile city; Protection and regeneration**

## Introduction 01

### *The Era of Shared Architecture 01*

With the application of Internet, the information era has arrived. Big data and information chains become the technical support and guidance for the development of urban public spaces and new urban lifestyle which cause the changing of our perceptions of cities and buildings. Rachel Botsman believes that we are in the process of changing from ownership to use, and put forward the concept of sharing and sharing economy<sup>1</sup>. "Sharing" means the process of common ownership and sharing. It means a process in which a plurality of users share and use one item. Once the concept of sharing

spread, many social practices of the sharing economy model were immediately generated worldwide.

Taking "Sharing City Seoul" as an example, by establishing a shared ecosystem and using it as part of the Seoul economy, the government hopes that a series of urban issues, such as economic slowdown, reduced welfare, environmental pollution, social isolation and mental loss can be alleviated without investing additional resources<sup>2</sup>.

The sharing economy model has changed the urban lifestyle, and it has also brought new requirements and possibilities to the building space. During the Japanese architecture salon themed on Japanese architecture and shared space, Xu Maoyan, Taro Kojiro and some others proposed the impact of sharing on the form and atmosphere of space, and it will be an important trend in the development of architecture, city and society<sup>3</sup>.

### *Regeneration of Industrial Heritage and Space Sharing 02*

From the beginning of the Chinese national industry in the 1960s and 1970s to the establishment of a complete industrial system, the industrial development in China has left a wealth of industrial heritage. At the end of the 20th century, with the economic development, industrial restructuring, and the rapid expansion of urban boundaries, the old factory could not afford the high land prices, environmental pollution pressure, and new production tasks. The industrial zone gradually spread to the urban boundaries and the old industrial site has become a remnant land in the core area of the city. Most industrial plants are vacant and deserted because they have not been properly maintained and reused, which adversely affects urban development and the overall urban style.

In recent years, China has paid more and more attention to the protection of industrial heritage. With the spread and influence of the Nizhny Tagil Charter and the publication of the Wuxi Agreement of China in 2006, Chinese architects have discussed and practiced on the protection and regeneration of industrial heritage in China for nearly two decades.

In the context of the era of common construction and sharing among all people, the transformation and renewal of industrial heritage, as a kind of social common property, has more and more responsibility for urban public space. It should serve as a city shared space that can give back to society and provide cultural, economic and working space. For example, the transformation and renewal of industrial heritage along the Yangpu Riverside, sharing the driving force of urban waterfront space regeneration, makes the Riverside Industrial Heritage an open and green space with the characteristics of the industrial era<sup>4</sup>. The No. 8 Bridge Art Space, located next to Xinzha Bridge in Shanghai, connects industrial buildings with surrounding urban space through a series of corridors, becoming a bond between common residents and the city<sup>5</sup>.

### **Industrial Heritage -- From Heritage Protection to Urban Shared Space 02**

#### *The Value of Industrial Heritage 01*

The value of industrial heritage mainly comes from spiritual and material aspects. The spiritual aspect is mainly reflected in the historical value and commemorative value of industrial heritage, which is the link between historical witness of urban development and residents' self-identity. As stated in the Nizhny Tagil Charter: "Industrial heritage has social value as part of the ordinary people's record of life and provides important identifiable feelings." Industrial heritage buildings, like all historical and ancient architectural heritage, have witnessed the development of urban civilization in different stages, carrying the common memories and experiences of residents in their own cities, and have very high historical value and commemorative significance.

The material aspect is mainly reflected in the technical and economic value of industrial heritage. Industrial buildings, as the material result of social finances, material resources, and human resources, represented the technical level and construction techniques of the time, and

were the concentrated expression of wisdom in the era of human industry. Industrial heritage buildings can provide space for economic and cultural activities to take place in the process of renewal and transformation, providing the possibility of solving employment issues and reuse of space.

### *Sharing Attributes of Industrial Heritage 02*

The publicity of industrial heritage comes from the dual value of industrial heritage. Firstly, as a quasi-public good, although its property rights belong to the enterprise or government, traditional industrial areas often gather a large amount of labor, which produces a series of supporting facilities for living and production in the surrounding area. Therefore, industrial heritage often has an important impact on the local environment and the people. It condenses the collective emotions and memories of a generation, and has a kind of publicity<sup>7</sup>.

Secondly, industrial heritage can provide space for solving urban problems. For example, the reconstruction and renewal of factories in the city can provide social activities, fitness ground and the construction of infrastructure for the elderly. The large-scale space and unique historical background provide a possibility to reshape cultural space, as well as new employment opportunities and business value. The industrial plant area, as a shared space, has enhanced the cultural confidence and local vitality.

### *Industrial Heritage Protection and Regeneration Strategy Based on Concept of "Sharing" 03*

Reinventing Cultural Space -- Monumentality of Industrial Heritage. With the elimination of original function of the industrial zone, people in this area will gradually lose their original sense of belonging and pride. In order to rejuvenate and revitalize this area, firstly, we should reshape the cultural space, continue and carry forward the historical and cultural connotations of industrial heritage buildings, and re-express the historical and cultural marks of the area through space design. Then we can arouse the collective memory of the people in the region and increase cultural self-confidence.

Based on Society -- the Publicity of Industrial Heritage. In addition to improving cultural self-confidence, the renewal of industrial heritage should improve the infrastructure of that region,

renovate and transform road planning, environmental landscape, and public service facilities, and improve the level of public services. At the same time, it should further adjust its industrial structure. In addition to providing non-profit public spaces such as open space, culture and arts, sports and leisure, and education services, it should also include hotel, office, and residential functions to provide certain jobs and living space.

From Heritage to Life -- the Everydayness of Industrial Heritage. Finally, in addition to cultural and artistic activities, in the process of protection and renewal, a living scene closer to ordinary citizens should be involved in to transform industrial heritage into a part of residents' lives. While achieving social sharing, the emotional connection between local residents and industrial heritage should be further strengthened, so that we can increase the local cohesion and vitality<sup>8</sup>.

### Investigation of industrial heritage and surrounding communities in Xi'an Textile City 03

#### *Textile City and Urban Development in Xi'an 01*

Xi'an is the ancient capital of China's thirteen dynasties. It has a thousand years of cultural connotation and historical heritage, and is also the city with the richest industrial heritage resources in the northwest China. Xi'an Textile City was founded in 1952 and is a key project in the first five years. It has a mature industrial chain centered on textiles, printing and dyeing. It is the largest textile industrial base in the Northwest which has made great contributions to the country's economic development. However, since the reform and opening up, with the development of the market economy and the shift of the economic center, problems such as poor management, heavy burdens, and slow innovation of state-owned enterprises have gradually emerged. After a short period of vigorous development, a series of textile printing and dyeing factories have undergone multiple restructurings and reorganizations. Eventually it went bankrupt and the textile city gradually declined<sup>9</sup>.

#### *Status of Industrial Heritage in Textile City 02*

There are seven major industrial plant areas in the textile city industrial area. The entire Textile City Industrial Zone is connected in series by the

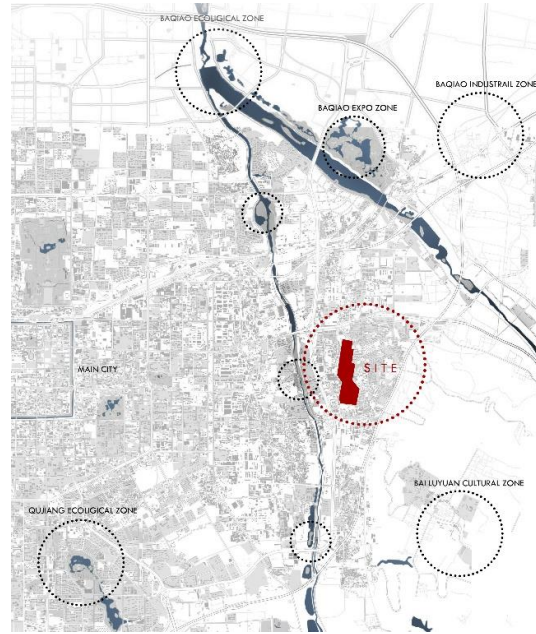


Figure 1. Location.

internal Longhai Railway and is distributed in clusters from north to south along the railway dedicated line. The overall block is organized around industrial clusters. The living areas of the factories are aligned with the factories. The block size is relatively large, mostly 300-500 meters. The distance from the production area to the living area is about 400 meters, and the walking distance is longer.

#### *Research on the Communities around the Textile City 03*

Business, medical care and education facilities in Textile City are relatively complete, while cultural and sports facilities are relatively scarce. Adolescents account for 48% of the resident population, middle-aged people account for only 17%, and the proportion of elderly people reaches 35%. It can be seen that the region has a serious aging phenomenon, and the situation of labor loss among young adults is serious. Most of the permanent residents are local residents, and there are also migrant workers and accompanying families who live as renters here. The overall income level is low, and the consumption capacity and consumption level are not high.

There are 7 unit communities in the Textile City. The residential communities of Textile City are



Figure 2. Status of Communities Around the Textile City.

arranged along the north-south direction, corresponding to their corresponding units, most of which are unit-based communities<sup>10</sup>.

**Problem Interpretation 04**

Due to the Xi'an Textile City was originally planned to be an industrial area, the overall plan and structure mainly serve industrial production rather than resident. Textile City was built as a production and living area in the period of planned economy system, so its living mode and supporting facilities cannot suit for the current population composition, social network, and need of crowds. In addition, the closure of the factory and enterprise caused a series of social problems, which were reflected at this time. The author summarizes the following issues from the aspects of cultural spirit, society and industrial structure, and openness of space.

Lack of cultural self-confidence and historical belonging. In recent years, under the impact of new capital intervention, the entry of foreign populations and the new needs of people, the original social structure of Textile City has been damaged. Compared with the backward and dilapidated cotton mill, the new urbanist building highlights the urgency and necessity of changing the role of Textile City to keep pace with the urban renewal.

Single industrial structure and uneven development of population structure. At present, the tourism and cultural industries are declining, and the development of the tertiary industry in the textile city needs to be further explored.

The space is relatively closed and the external attraction is insufficient. Roads in the Textile City have few connections with the outside city space. The Textile City is surrounded by four expressways, which limit and hinder the development.

Textile City is the epitome of China's industrial development in the past 70 years. Its industrial heritage remains relatively complete. The historical features of the old industry have not changed much and its planning structure is clear. The development of Textile City has been ignored for a long time. Nowadays, the labor force is lost and the population structure has been aging. Textile City urgently needs to be reinvigorated.

**Research on design and protection of industrial heritage in Xi'an Textile City 04**

This design puts the textile city under the large framework of historical background and rethinks how to define this site from the three

aspects of the commemorative, public, and daily of industrial heritage.

*Reinventing Cultural Space -- Monument Valley 01*

The role of history makes Textile City a Monument Valley. Its monumentality is concentrated in the commemorative significance of industrial heritage, such as textile factory buildings, industrial heritage components (such as water towers, chimneys, pipes, etc.), railways, and overall planning patterns and social networks formed in the context of the planned economy.

From the perspective of the existing elements, historical spiritual elements and new elements in the site, the memory elements in the site are extracted, as shown in Table 1. The extracted memory elements are regarded as individual points. These memory points form a lattice system. Interactive memorial nodes are placed uniformly around the first, third, fourth, and fifth factories. Different aspects are the background. In landscape design, memorial pool, memorial fountain and children's paddling area are introduced into site.

*Based on the Society -- Urban Living Room in Textile City 02*

Functionally, four main areas are formed from north to south -- art district, workshop experience, memorial park, community activities, and we-work space. Industrial interaction projects for tourists based on the original cultural are introduced, which help attract tourists through high-quality public space, and also help local residents learn regional history and feel industrial feelings.

*From Heritage to Life -- Resident Community Activity Center 03*

Keep its field sense, retain its building and site scale, and serve the traveling crowd by adding small nodes, such as small green spaces, parks, etc. On the landscape level, three types of outdoor venues are installed to meet the needs of watching railways, factory buildings and outdoor activities.

**Conclusion 05**

In the era of sharing for all, an important question that designers need to think further is how to protect the historical value of the industrial heritage while bringing tangible benefits to the surrounding residents and improving the living environment.

Based on the summary of the two dimensions of industrial heritage value and publicity, this paper proposes a new strategy for sharing-oriented industrial heritage regeneration. Firstly, by protecting its original historical and cultural imprints, it evokes the collective memory and cultural self-confidence of the people in the region, improves self-belonging, and achieves cultural sharing. Secondly, based on society, this paper improves the region's infrastructure and the level of public services in the process of protection and renewal. Through the insertion and adjustment of industrial structure, employment opportunities are increased and economic benefits and income for local residents are created. In this way, it achieves the space sharing. Finally, in addition to museum-like cultural and artistic activities, life scenes that closer to ordinary citizens should be incorporated in the process of protection and renewal to transform industrial heritage into part of residents' lives, so that universal sharing can be achieved.

In general, it is necessary to give full play to the sharing of industrial heritage, so that industrial heritage truly becomes the common wealth of the entire society.

Table 1. Memory Elements.

| Element classification | Name              |                      |                                 |                           |                  |
|------------------------|-------------------|----------------------|---------------------------------|---------------------------|------------------|
| Existing Elements      | Water tower       | Chimney              | Façade                          | Roof shape                | Space atmosphere |
| Historical Elements    | Outdoor venue     | Textile industry     | Workers' life style             | Collective community life | Slogans, quotes  |
| New Elements           | Memorial fountain | Water-friendly space | Remodeling of the outdoor venue | Memorial pool             | Sports space     |



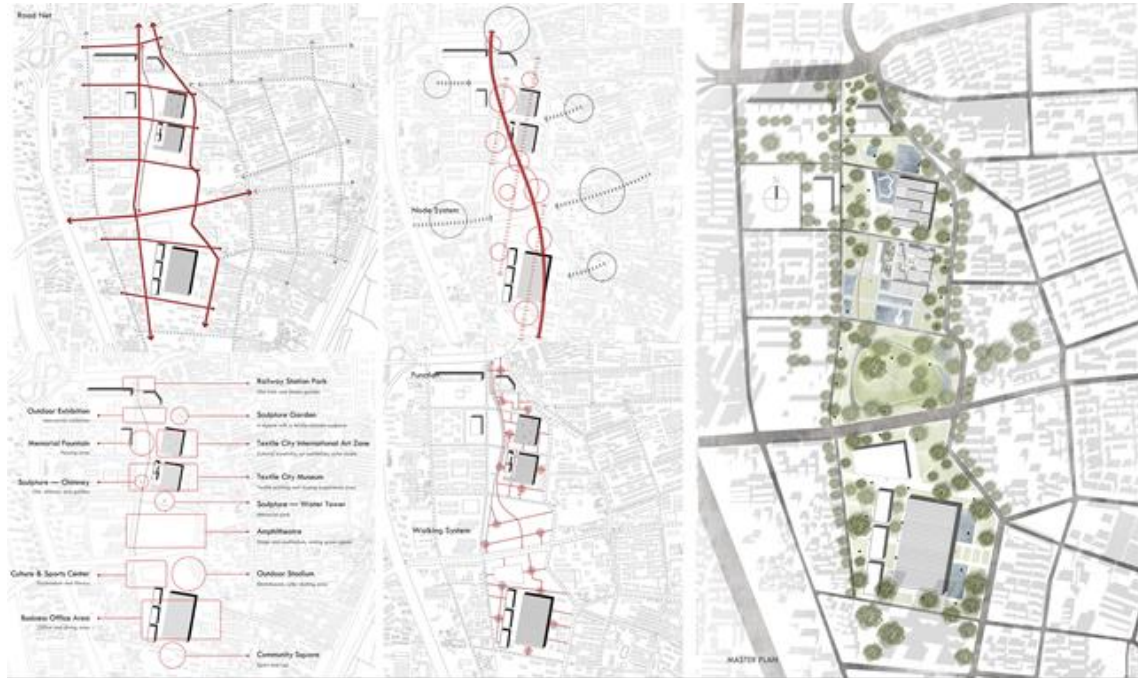


Figure 3. Road, Park Design and Master Plan.



Figure 4. Effect Picture.

## Endnotes

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