

Industrial Heritage in Shanghai

- Past, Current Status and Future Direction

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Abstract

Industrial heritage has been given unprecedented attention in the process of urban renewal and development in China's cities, as their urban functions and spatial structures have undergone transformation. This paper provides an overview of the industrial heritage in Shanghai – the distribution and classification of heritage sites, as well as work progress and issues in their preservation and reuse. This paper argues since Chinese cities are still in the initial stages of preservation and reuse of industrial heritage, reuse strategies and models best suited for the unique conditions of industrial heritage in China need be further developed, so as to guide scientific efforts in extending the life, and enable multifaceted use, of heritage sites.

Keywords: Shanghai, Industrial Heritage, Industrial site, Urban Renewal, Reuse, Preservation.

Fran çais

ABSTRAIT

Avec les fortes transformations des fonctions et des structures urbaines de la ville, le patrimoine industriel fait l'objet d'un intérêt sans précédent dans le processus de rénovation urbaine et dans le développement des villes Chinoises. Le document suivant donne un aperçu exhaustif du patrimoine industriel de Shanghai, en termes, de distribution et de classification des sites du patrimoine, de calendrier des chantiers et de leurs préservations et réutilisations. Ce document fait valoir que les villes Chinoises sont au commencement d'une étape de préservation et de réutilisation du patrimoine industriel. Les stratégies de reconversions en Chine méritent d'être développées d'avantage, afin de guider les efforts scientifiques et de valoriser la pérennité des actions de reconversions vers des utilisations multiples et exemplaires du patrimoine industriel Chinois.

Les mots clef : Terrain industriel, Espace industriel, Rénovation urbaine, Désindustrialisation, Reconversion, Réutilisation, Préservation.

Shanghai is located at the mouth of the Yangtze River and bounded to the east by the East China Sea. The city is the birthplace of modern Chinese industry. For more than a century, the industrial development in Shanghai has gone through major tumultuous swings, mirroring the historical changes in city's urban structure and society, affecting not only its urban landscape but also to an extent urban life.

1. Overview of Shanghai's Industrial Heritage

Prior to the mid-19th century, industrial activities in Shanghai were predominantly cotton spinning, weaving and other artisan industries, conducted in workshops and as family businesses. Traditional buildings for such cottage industry were often timber-framed or brick and wood structure houses. Starting from the mid-19th century, an influx of foreign businesses created a large number of foreign-owned modern industrial firms in shipbuilding and repair, silk textile, and printing. The industrial buildings of this era had diverse designs which show distinctive western influences. The factories were better organized and run, and increasingly larger in scale. By the 1930s, the industrial output in Shanghai accounted for half of the national total. Shanghai had become the most important industrial city of China.

After the founding of the People's Republic of China in 1949, metallurgical, chemical, petroleum, electrical and machinery industries in Shanghai underwent rapid growth reaching industrial scales. Residential districts for workers to support these large scale industrial areas, were developed on the outskirts or remote outlying areas of the city. At the same time, inner city community workshops were being organized to ease unemployment and support economic growth. These community workshops grew to a considerable number. These small-scale community workshops and factories exerted a significant impact on urban features and functional pattern and community layout of Shanghai.

Toward the end of the 20th century, a large number of industrial enterprises in the inner city were closed down and relocated outside of the city as the city's functions and spatial structure evolved in accordance with government edicts of sustainable principles for social, economic and environmental development. As a result, a considerable number of industrial remains, including factory buildings dating back to different historical periods and scattered across the city, tracts of industrial land along the harbor front, old railway tracks, and large-scale industrial areas on the outskirts of the city lay vacant and in disuse. Proper utilization of disused industrial sites and buildings became a new challenge in Shanghai's urban renewal and development process. The

most crucial issue was the proper preservation and scientific reuse of industrial heritage sites of certain historic and cultural value.

Shanghai has up until now no government-issued inventory of industrial heritage, with a small number of industrial heritage sites of greater conservation value being listed in directories of cultural relic sites under conservation by various levels of governments. By April 2009, 22 industrial heritage buildings (two of them being relic sites) were listed in cultural relic directories, of which two buildings were designated as national, three municipal and 17 city-district level sites of historical and cultural value. There were also 25 buildings being included in the city-district registries of Immovable Cultural Relics.

Table 1: Industrial heritage sites listed in national or Shanghai municipal directories of protected cultural relic sites

	Site Name	Built in	Address
Major Site Protected for Historical and Cultural Value at the National Level	The General Post Office Building	1924	No. 276, North Suzhou Road, Hongkou District
	Jardine Matheson Building	1925	No. 27, Zhong Shan Dong Yi Road, Huangpu District
Sites Protected for Historical and Cultural Value at the Municipal Level	Yangshupu Waterworks Site	1883	No. 830, Yangshupu Road, Yangpu District
	Sheshan Astronomical Observatory	1901	West Sheshan Hilltop, Songjiang District
	Sihang Warehouse - Resistance War Against Japan Memorial	1921	No. 21, Guangfu Road, Zhabei District



Illustration 1: The General Post Office Building



Illustration 2: Yangshupu Waterworks Site

In 2009, a major investigation of industrial heritage within the city boundaries was conducted in Shanghai as part of the third nationwide survey of cultural relics. A total of more than 200 industrial heritage sites, which have strong historical continuity and are widely distributed, with diverse and unique architectural features were subsequently identified. Some of these sites have extremely important historical, architectural and/or scientific value. In 2010, the Shanghai Cultural Relics Management Committee began its work on standardized, computer-supported documentation of industrial heritage of Shanghai.

2. Geographic Distribution and Types of Industrial Heritage in Shanghai

The geographic distribution of Shanghai's industrial heritage can be characterized as follows:

First, industrial heritage sites along Huangpu River and its tributary Suzhou River, which form a narrow and continuous belt, account for a considerable share of all industrial heritage sites in Shanghai. The early dependence on river transportation and access to water for production created an extensive concentration of waterfront industrial buildings, warehouses and wharf structures along urban sections of the two rivers, of which a considerable number are more than one hundred years old.



Illustration 3: Industrial Heritage along the Huangpu River.

Second, many small-scale traditional workshops and community factories were extensively distributed and scattered in the inland areas of the city. These traditional workshops and community

factory buildings, plus, buildings of heritage from the era of state planned economy which has become part of collective memories of local residents, are wedged among dense residential buildings, creating a mixed pattern of urban functional spaces. These industrial remains are of varying quality and architectural styles. Some have spacious storage grounds and courtyards, while others are squeezed and hidden in narrow streets and alleys, destined to become targets of urban renovation or downtown redevelopment.

Further, there are a number of large-scale state-owned chemical plants on the outskirts or in satellite towns of the city. Industrial areas in the suburbs of Shanghai were first created in 1956, championing industrial restructuring in Shanghai. As a result, the city's first five satellite towns emerged. In the 1970s, the Jinshan Petrochemical Plant and Baosteel complex, each occupying more than ten square kilometers, were built successively in Jinshan and Baoshan counties of Shanghai, turning the city into a center of petrochemical and steel production of the country. At present, a considerable portion of the above-mentioned industrial areas have continuing industrial production. However, given further urbanization and restructuring of the urban economy, these aging industrial zones have become an increasing factor in restricting the city's urban development. It is important to note the complexity of legal issues and administrative responsibilities relating to these large-scale industrial areas, which present enormous complications and challenges for restructuring and redevelopment.



Illustration 4: Jinshan Petrochemical Plant

Beginning in the late 1990s, Shanghai underwent an important readjustment of its industrial structure, shifting its strategic focus from manufacturing centered to service industry centered.

Government intervention through policy and planning measures has resulted in relocation of factories from the urban core to more remote outlying areas. The Lixin Shipyard, for example, was relocated from Pudong riverfront to Chongming County, an island in the Yangtze River estuary, creating a green space of Lujiazui Riverside Promenade and leaving only a giant ship anchor as reminder of the old shipbuilding industry.

The *Nizhny Tagil Charter* defines industrial heritage as remains of industrial culture including buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education. The existing industrial remains in Shanghai encompass almost all these different types of industrial remains, which reflect, from a historical angle, the comprehensive and advanced nature of the industrial structure of the city as China's major industrial center.

3. Preservation and Reuse of Industrial Heritage in Shanghai

Given the large distribution, diversity and quantity of Shanghai's industrial remains, preservation and reuse of industrial heritage in Shanghai, against the background of the entirety of such heritage, still falls short of expectation, in spite of a fair number of successful cases over the recent years. Key issues are the limited scope of use and building types, lack of funding, technical standards and guidelines. There is an urgent need for developing systematic technical support and methodology, in support of sustainable development of the city's economy, culture and urban spaces.

During the 1990s, small and medium-sized industrial enterprises had to reduce or wind down their manufacturing operations in urban districts or moved out given the readjustment of urban functions. A large quantity of factory buildings and warehouses were vacated as a result. These buildings, many in advantageous locations, were first rented out by factories to collect income. Many were converted to furniture centers, home improvement stores or restaurants. They became the first example of commercial reuse of industrial heritage buildings. What caught the most attention was the development of art studios in refitted warehouses along the Suzhou River in the late 1990s. Many artists and designers took up spaces in the old industrial warehouses along the riverfront, creating a phenomenal art warehouse district. The development generated widespread public interest and prompted the local government to become involved with proactive planning.

By the early 21st century, a number of creation industry parks making use of vacant factory

buildings and warehouses were set up with government support. Most of these creative industry parks were located in the urban core of Shanghai. Spaces were rented out to creative design studios and small businesses after comprehensive renovation of old buildings, with renovation costs being shared by leasers. By October 2010, 63 out of a total of 75 creative industrial parks approved by the Shanghai municipal government were housed in renovated factory buildings and old warehouses. Inexpensive rent and spacious dimensions made these factory buildings and warehouses ideal spaces for creative work. Buildings once abandoned and left decaying have thus gained a new lease on life and the adapted industrial sites and buildings have become Shanghai's new landmarks and trendy strips. Yangpu Riverside Creation Park on a 5,000-square-meter ground was such a successful project. Its heritage architect Teng Kun-Yen from Taiwan, one of the pioneers of the Suzhou River Warehouse project a decade earlier, was recognized by UNESCO with an Asia-Pacific Heritage Award for Culture Heritage Conservation.



Illustration 5: Art studios in refitted warehouses along the Suzhou River.

One unique feature of Shanghai's industrial heritage is the large areas of contiguous industrial remains. The large industrial areas along the Huangpu River were rare examples of a small number of remaining riverfront industrial zones around the world. In the 15.5-kilometer stretch of riverfront within Yangpu District, on the downstream portion of the Huangpu River alone, there were rows of densely built docks and industrial warehouses totaling more than one million square meters occupying almost all available riverbank space. A little upstream from this site, the 2010 World Expo grounds on the riverbanks and beyond overlap many strips of former industrial land. Here, one may find old, large-scale industrial buildings of Jiangnan Shipyard, Shanghai No. 3 Steel Works and Port Machinery Plant which have been kept as historical and cultural remains for perpetual preservation,

conserving the heritage base of modern industries in the riverfront landscape of the 21st Century Shanghai. In recent years, surveys and planning for industrial heritage preservation have been organized by local governments of Yangpu and Putuo districts where there have been extensive clusters of industrial land. They indicate increasing government investment and involvement, as well as inclusion of systematic and comprehensive preservation and reuse of industrial heritage in government agendas.



Illustration 6: Qinhuangdao Road Water Gate (East Wharf), Expo 2010 Shanghai.

4. Difficulties and Future Direction

In China, preservation and reuse of industrial heritage has attracted unprecedented attention over the recent years. Shanghai is undoubtedly the most remarkable both in its wealth of industrial heritage assets and progress so far in their preservation and reuse. However, Shanghai's experience also reflects a number of problems, common to the work concerning industrial heritage in Chinese cities, which need to be promptly addressed.

First, due to the lack of comprehensive and systematic research, and in particular, adequate archaeological investigation of industrial remains, there is a gap to be filled by Chinese cities in identifying industrial heritage sites and setting up inventories of sites for preservation, with many industrial remains in neglected marginal state - being discovered and put to reuse without a scientific and systematic preservation strategy. The lack of systematic investigation and documentation, adequate funding and consistent technical standards has contributed to difficulties in preservation and reuse. Some of the industrial remains of conservation value have been left in a state of neglect, damaged or disappeared altogether in urban renewal.

Second, current research and practice have focused primarily on the preservation and adaptation of individual industrial buildings. More consideration is required for shifting from a building based approach to holistic conservation of the overall environment and landscape of

industrial sites, and for adopting a systematic approach to heritage preservation taking into account zoning structure and appropriate use of state land resources.

Third, there is an urgent need for adequate legal and regulatory framework governing redevelopment of disused and contaminated industrial land. As it was stipulated by the State Administration of Environmental Protection in its 2004 *Circular on Effective Measures to Prevent and Control the Environmental Pollution during Relocation of Industrial Enterprises*, all industrial manufacturers of hazardous materials are required to conduct soil evaluation and determine suitable rehabilitation plans when changing land use limitations. The circular also requires specifically the original manufacturer and operator on the land in question be held responsible for cleanup and soil rehabilitation. However, given the fact the circular is not statute law with legal compliance force and the lack of similar requirements in unequivocal terms in any other applicable laws, most of disused industrial land properties have not undergone soil evaluation and rehabilitation prior to adaptation and redevelopment. In fact, there is a lack of established scope, definitions and criteria of soil pollutants for site evaluation and a lack of technical standards for cleaning up contaminated soil in Chinese cities.

Last, preservation and reuse of industrial heritage concerns multiple interested parties. Such work was pioneered by the private sector and after its positive social impact and economic benefits became evident, attracted the attention of city administrators and investment from real estate development companies. Further consideration is required to develop a best enabling policy approach to enhance the role of private and non-government organizations in a market-oriented environment. An approach which encourages innovation, integrates efforts and community needs, and enables the effective use of resources of business, government and private organizations into a multi-faceted support base for conservation of industrial heritage.

Conclusion

The industrial heritage is the inevitable outcome of industrial restructuring and changes in city functions and urban spatial structure. Opportunities and challenges arise at the same time in the re-use of industrial heritage. On the one hand, the adaptable reuse of industrial heritage provides opportunities for upgrading and development. On the other, there is a lack of rational and holistic methodology for the preservation and reuse of industrial heritage. The challenge is to find an effective approach for the revitalization of former industrial sites and preservation of industrial heritage. The efforts by Chinese cities for the preservation and reuse of industrial heritage have

only just begun. There is still much work to be done in establishing comprehensive, systematic and sustainable practices for preserving and extending lifecycles of industrial heritage sites, with a strategy of adaptable reuse, and enhanced multifaceted value.