THE DISAPPEARANCE OF REGIONAL INDUSTRIAL HERITAGE IN SHANXI AND THE CURRENT PROTECTIVE MEASURES

Author: Xin Wu

Abstract
From the 1950s through to the early 1970s, the Chinese government set up a large number of new enterprises and moved others from the coastal areas into the central and western regions in the interests of balancing strategic security and regional development considerations. Shaanxi province, in north-western China, was one of the areas particularly affected by these changes playing host to a significant number of new enterprises. During the “First five-year plan” period (1953-1957), there were 156 industrial projects designed and constructed by the former Soviet Union, 25 of which were in Shaanxi. These enterprises made a significant contribution to the development of China’s economy and society.

With the passage of time and the introduction of market economy, some enterprises are running into economic difficulties, or even stopping production, leading to industrial remains constantly disappearing. From 2009 to the present, the government of Shaanxi Province have led 2 surveys of industrial remains. Through the surveys and interviews with local communities, the project found that the rapid development of newer enterprises and the city itself had led, not only to the rapid disappearance of regional industrial remains, but that there were no relevant laws or regulations to prevent this from happening. To this end, making reference to these surveys, this paper analysed the changes and causes of the loss of regional industrial heritage, proposes to strengthening the supervision and management of industrial heritage, calls for the establishment of a dynamic management system, and to encourage the public to actively participate in the protection and other content according to the regional situation, in addition to the proposed giving the same status industrial heritage and ancient cultural heritage, making the regional protection standards, the directory, the regional museums and introducing diversification protection in the former paper to Hanzhoung area. It is hoped that the analysis of the results and protection methods proposed will provide the basis and reference for helping the regional government in creating effective measures to protect the regions precious industrial heritage for future generations.

Keywords: Industrial heritage, Heritage Management, Heritage Protection, China
The national government of China has pursued a policy of building a significant number of large and medium-sized state-owned enterprises in various parts of the country since 1949. As an example, there were 156 national key enterprises constructed with assistance from the former Soviet Union during the 1950s, a period referred to as the "first five-year plan" period (Yimin & Mingchang, 2007). Of the 156 enterprises, 25 of them are located in Shaanxi Province. Though this period was significant, Shaanxi also saw significant industrial development throughout its history. In making a great contribution, the enterprises left large valuable industrial remains, and recorded of the history of the Republic's industrial development truly and objectively. They are the precious material and cultural heritage, and its value cannot be estimated. Due to various reasons, the industrial heritage is disappearing at an alarming rate every year. It is the responsibility and obligation to protect precious industrial heritage for all levels of local governments.

1. The change in typical industrial remains in the region

From 2009 to 2015, a project involving the revisiting of sites found that the status of industrial heritage had changing rapidly within a very short timeframe. Some of the remains had partially or completely disappeared, and the prospects for the remaining sites were not optimistic. The table below collates the current status of a range of typical industrial heritage sites in Shaanxi province:
<table>
<thead>
<tr>
<th>Name of Enterprise</th>
<th>The Change of industrial remains</th>
<th>Remains trend</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yulin blanket factory</strong></td>
<td>Status of remains in 2009: All workshops and part of the equipment still exist, preservation of remains is average</td>
<td>Status of remains in 2010: The majority of the plant and all equipment were removed, left 2 workshops with poor preservation</td>
</tr>
<tr>
<td><strong>Yulin leather factory</strong></td>
<td>5 buildings existing, remains preservation poor</td>
<td>All removed in 2010</td>
</tr>
<tr>
<td><strong>Hanzhong pharmaceutical factory</strong></td>
<td>1 building and some cottage existing, remains preservation poor</td>
<td>All removed in 2011</td>
</tr>
<tr>
<td><strong>Hanzhong Changkong Factory</strong></td>
<td>Status of remains in 2009: Abandoned state, all workshops and a few of old equipment exist, remains preservation ordinarily</td>
<td>Status of remains in 2011: Keeping remains in the abandoned state, few of the buildings become dangerous</td>
</tr>
<tr>
<td><strong>Hanzhoung Dongfang Factory</strong></td>
<td>Abandoned state, all workshops existing, remains preservation ordinarily</td>
<td>Keeping remains in the abandoned state, a few of workshops for farmers</td>
</tr>
<tr>
<td>Five large enterprises located in Weidong town</td>
<td>Others in the abandoned state in addition to a factory, most of workshops existing, remains preservation poor</td>
<td>Keeping the most remains in the abandoned state, only the part of an enterprise is leased, some buildings getting dangerous</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td><strong>Baoji Changling Factory</strong></td>
<td>Status of remains in 2009</td>
<td>Status of remains in 2015</td>
</tr>
<tr>
<td>5 sets of old equipment and 7 old buildings existing, remains preservation in good condition</td>
<td>2 sets of old equipment and 6 old buildings existing, remains preservation ordinarily</td>
<td>3 sets of old equipment and 7 old buildings existing, remains preservation in good condition</td>
</tr>
<tr>
<td><strong>Baoji Baicheng Factory</strong></td>
<td>3 sets of old equipment and 7 old buildings existing, remains preservation in good condition</td>
<td>2 sets of old equipment and 5 old buildings existing, remains preservation in good condition</td>
</tr>
<tr>
<td><strong>Xi'an electric porcelain factory</strong></td>
<td>Status of remains in 2010</td>
<td>Status of remains in 2015</td>
</tr>
<tr>
<td>8 sets of old equipment and 6 old buildings existing, remains preservation in good condition</td>
<td>5 sets of old equipment and 5 old buildings existing, remains preservation in good condition</td>
<td>And old Building basic reservation</td>
</tr>
</tbody>
</table>
In stopping production and most of the assets being sold out, the enterprise industrial remains disappeared completely, such as Yulin blanket factory (Table 1 and Figure 1) and Hanzhong pharmaceutical factory. The original plants have been abandoned for the long time due to the relocation or transfer of enterprises. Some of buildings are becoming dangerous, such as Dongfang factory and Changkong factory (Figure 2). The most typical change, namely the enterprise's old machinery and buildings have gradually been eliminated and removed. It means that the industrial remains are disappearing gradually. Such as the Changling factory, there were 5 (sets) old equipment in 2009, and only 2 (sets) equipment left in 2015. That is to say, 60% of the old equipment disappeared within 6 years. The Xi'an electric porcelain factory had disappeared nearly 38% old equipment from 2009 to 2015. It is a common phenomenon for the rapid disappearing of industrial remains through the whole region. If no measure to be taken, the regional precious remains would fade away finally.
There are several reasons for the disappearance of industrial remains in the region. On the one hand, the enterprises need development and expansion to phase out some old machinery and equipment, and rebuild or dismantle old buildings. On the other hand, it forces some enterprises to transfer to the city periphery gradually, and instead of a variety of modern Commercial buildings for the constant expansion of cities. There is also an important factor, namely the existing industrial heritage has not been valued, and not as a cultural heritage treatment. The prospects of industrial remains are worrying due to removing and dismantling them at random. If such situation cannot be contained, it would appear “part blank” in the history of local industrial development. Some representative industrial relics would not exist in important historical period.

2. The problems of industrial remains protection need to be solved

2.1 Different views and attitudes towards industrial heritage

Awareness of the need to protect industrial heritage must be improved. Compared to the remains of agricultural society, industrial remains are mostly a product of modern times, and therefore are often represented by outdated technology and material evidence. Therefore, people tend to find it difficult to link industrial remains with cultural heritage. The investigation and revisiting of sites found that some of the personnel within both local enterprises and local government even dislike cooperating with the investigation on the lack of knowledge and regulations about industrial remains. This situation has led to both the disappearance of industrial remains and neglect of the remaining sites.

Industrial heritage is an intuitive reflection of the important process of human societal development. It has historical, social, technological, economic and aesthetic value, and it is an indispensable material evidence of social development. Therefore, the protection of industrial heritage is vital to the maintenance of the heritage of human culture. They are witnesses to the profound impact of industrial activities on history and the present day. It is recognized that industrial heritage should be regarded as an integral part of the cultural heritage in the common sense (Jixiang 2006). Conservation policies could be implemented effectively provided that government and the relevant enterprises awareness of the importance of industrial heritage is improved.
The fact that industrial heritage is rapidly disappearing means that there is a real urgency for the need for protection to be recognized. The retention of the material form of industrial remains, not only can promote the industrial cultural spirit, but also leave the true record of engineering, scientific and technological achievements for future generations, and improve the image of the city. It has become an important source of economic development. It can be regarded as the symbol, a very important value and a very special status of the modern China industry (Jinyi & Ruping 2011).

So far, although the region has 415 provincial cultural heritage protection units, some of the existing representative buildings are still not treated as cultural heritage, and some of them have even been “transformed” away. Their status will be more prominent with the development of China’s social and economic development.

A contrasting example to the lack of awareness in Shaanxi province is Taiwan which promulgated of the law on the protection of cultural assets in 1982. The relevant departments of Taiwan began to promote the Taiwan World Heritage Site Assessment in 2000, and selected 18 potential world heritage sites, of which 4 are industrial remains, including Ali Mountain Forest Railway line, etc. (Limei 2013). In order to coordinate the promotion of international cultural heritage, Taiwan has organized a series of activities with the theme of re-using of industrial remains since 2000 (Limei 2013). In contrast to attitudes in Shaanxi ideas around the protection and reuse of industrial heritage have been rapidly developed in Taiwan.
2.2 To make clear the responsibility for local government towards protection

There is a clear need for the local government to form a department with the responsibility of protection industrial heritage. Through organization and coordinating the protection of the remains, ideally the department would be able to effectively exercise the power of protection, and to assume responsibility for the guarding the heritage. Meanwhile, it should also consider the rights of ownership, the user, management and supervision. The aim should be, conducive to enterprise development, as well as the protection and utilization of the industrial remains.

2.3 The standard of regional industrial heritage should be established

There is no unified definition standard of industrial heritage. In the process of urban renewal, the protection of industrial heritage is faced with the embarrassing situation of having "no rules and regulations to follow" (Qizhi et. al 2010). How to identify the category and value of key industrial remains in the region, has become a core issue those seeking to protect of industrial heritage. When the scope of protection and the value of industrial heritage has been identified, it would be far easier to carry out the operation, and protect the industrial heritage more effectively.

Based on the findings of the investigation of regional industrial heritage, a working group should be set up, and the team members should come from different fields. This team would create the directory of industrial remains and set the standards of protection and management measures for the region.

3. Specific measures for the protection of industrial heritage

3.1 Coordination of industrial heritage protection and utilization with urban development planning

In addition to the identification of standards, scope and value, the protection and utilization of industrial heritage must also be coordinated with urban construction, transportation planning, and urban functions. To explore the synergy between urban renewal system and urban economic development system, the protection planning could provide an important theoretical basis for the optimization of urban construction and industrial structure (Ruogu & Suhong 2011).

The Shanghai municipal government issued the "Shanghai outstanding modern architecture protection management approach" (Shanghai Municipal People's Government, 1991 & 1997), which proposed clear protective measures for important buildings constructed from 1840 to 1949. On the protection of industrial heritage, their approach also put forward the protection and rational utilization model of economic development, urban function and ecological environment. It ensures that industrial
heritage is properly protected and allows reasonable use, so that urban culture can be continued. An example of this kind of approach is the South Gate Park of the national Taiwan Museum which was originally built camphor production factory in 1914. The main buildings were protected as cultural relics by Taipei in 2001. The government set up the fund to repair and transform the original factory as a part of the national Taiwan Museum in 2010. After the renovation of the area, the original structure and style of building was retained (Figure 5), and it maintains the coordination between industrial heritage protection and urban overall planning.

![Figure 5: The South Gate Park of the national Taiwan Museum](image)

At present, especially in the process of urbanization, the contradiction between protection and construction often appears due to the lack of a systematic overall regional planning which includes industrial heritage. Therefore, it leads to some valuable industrial remains dismantled during urban road widening and urban transformation. Even promulgating the regulations and the laws related to the protection, the conservation is passive, and is not sustainable if the protection is not a good combination of urban planning and development.

3.2 The establishment of a museum of regional industrial remains

Although it depends on the situation it is desirable for local governments to look to establish regional industrial heritage museums. The local government could use some plants that have been abandoned or face demolition as the site of the regional museum. It is better to select representative, typical buildings and factories. The museum could collect machines and equipment scattered across local factories which suit the characteristics of the time, and devices facing destruction. This is a more comprehensive protection measure in which many of the mobile industrial remains can be collected, protected and displayed in museum context. The establishment of the museum could solve the protection of the mobile industrial remains and increase employment in the region as well as making a contribution to regional culture and economic development.
Shanghai has integrated the Jiangnan manufacturing Bureau, built in the period of the Westernization Movement (1860s), into the Jiangnan Shipbuilding museum. It is the only large-scale museum in Shanghai which displays the history of science, technology and industrial history spanning three centuries. The museum has a large number of precious objects, pictures and models of China's recent history of science and technology, industrial history, shipbuilding, with a high potential for research value and a key role to play in scientific education (Yan, 2013).

Shanghai provides a positive example for many regional governments in China. The local industrial heritage museum can be set up in abandoned or closed factories in order to reduce costs and retain local character. Identified through the survey Ningqiang match factory is one potentially suitable site for the museum due to the buildings and equipment remain intact, and the plant being large enough and very accessible for the whole of the region (Figure 6). After museumification, it, as a museum, would need to communicate characteristics of local themes as a regional museum, such as the paper-cut, straw painting. Through showing the local traditional production process and the intangible cultural heritage, the museum could highlight the unique regional characteristics.

Figure 6: The machinery of the Ningqiang match factory

3.3 A diversified policy towards the protection and utilization of Industrial Relics

From a practical perspective, it is not realistic for all protection functions and funds to be run by the local government in the long run. The local government should actively explore ways to diversify industrial heritage protection funds and their reuse. In addition to the regulatory system that needs to be established, the regional government might explore the use of private power and invite societies to participate in the protection of industrial remains. Promoting the participation of all sectors of society in the protection and utilization of industrial remains, eventually forms a
pattern that allows the government to lead, social participation, and interactivity with the protection of remains protection.

The experience of Taiwan is worth heeding in the context of industrial heritage protection and reuse. Songshan Cultural and Creative Park was constructed within the Japanese Colonial tobacco factory in Taipei, founded in 1937. The factory ceased production in 1998. The main building of the plant was designated as cultural relics by the Taipei city government in 2001, and this began the process of planning protection and reuse. Songshan Cultural and Creative Park officially opened in 2011 (Figure 7). The Park’s aim is to transform an icon of industrial heritage into a creative hub. The Park is managed by the cultural and creative Park authority and the Park will assess the enterprises within the area every year. Enterprises do not meet the requirements of the Park will not renew.

![SongShan cultural and creative park in Taipei](image)

There is much that regional authorities can learn from the example of the Songshan Cultural and Creative Park. Firstly, the relevant department of the government takes on unified planning, which adapts to the demands of regional economic development and the urban planning. Secondly, the government organizes and repairs of the basic facilities of the site, and then authorizes private agencies or organizations to operate the site. Finally, government supervises the operations within the remains and assesses the status of the remains on a regular basis in accordance with relevant laws and regulations. Should problems be identified it would be up to the government to take measures to solve them.

4. Supervision and management of industrial heritage

4.1 Establish a system of supervision and management
The system of supervision and management is a key factor in the protection of industrial heritage. At the same time, it is difficult to be implemented for any regulations and measures to leave effective supervision.

After defining the responsibilities of the regional government to protect the heritage and creating the standards of protection and the protection directory, it is key to establish the supervision and management system in order to ensure efficient execution of heritage protection. Effective supervision and management can help avoid unauthorized removal and other damage from occurring at sites.

The supervision and management system is an institutional arrangement for the conservation of regional industrial heritage. The system is not the only requirement of building legal protection, but also needs to reflect the urgency of the need to protect regional industrial heritage. The establishment of the system, on the one hand, can promote the protection of industrial heritage to related enterprises, as well as curbing the random removal and elimination of abandoned industrial remains. On the other hand, the system would also define the responsibility of different levels of government for the protection of industrial heritage.

4.2 A dynamic supervision and management system for industrial heritage

The dynamic of industrial heritage monitoring. Normally, the government takes on the responsibility of conducting the supervision and evaluation of sites within a specific period of time. The supervision and evaluation can play a role in improving the management of industrial heritage, but the supervision and evaluation reflect only the remains protection and management over a certain period of time, rather than the status of the remains throughout the year. To solve the problem, the regional government should establish a dynamic monitoring system based on the status and characteristics of the remains, and input specific protection projects, their status and other indicators into the directory. This directory would be monitored by the protection team and should help any problems that arise be addressed in a timely manner. It would be necessary, however, to improve and revise the regulations and methods to address new situations and problems (Figure 8). The dynamic monitoring system can reduce the potential harm of various artificial and natural factors to the industrial heritage. To advance the work of prevention and protection, it can reduce the cost of protection and improve the level of supervision and management.
The so-called dynamic regulation undergoes a process of continuous improvement, and constant optimization of the process. In the process of supervision, it needs to find and solve problems, and also to continuously improve the level of management and service.

### 4.3 Encourage public participation

Any protection measures and methods would be distinctly lacking should the active participation and response from the public not be considered. As mentioned earlier, the original building corridor in South Gate Park, as a part of the national Taiwan Museum, has been changed into a cafe and sales area of cultural and creative products. An open square within the park has been transformed into an open ecological vegetable and fruit market. The change provides convenience for the tourists and the public, as well as expanding the potential for employment. Such protection and reuse is both dynamic, and sustainable.

The heritage sites should not only open to the public, but also actively try to attract young audiences to participate with accessible events, such as outdoor concerts, skating, and cycling particularly during the holidays. While industrial remains lie sleeping, they are not only a kind of memory, but also a part of life, it is sustainable for the protection of industrial heritage. It is also one of the best destinations for the protection and utilization of industrial relics due to the public participation and a kind of public supervision and protection.
Through a few years of investigations and visits, we understand that the current prospects for regional industrial heritage are not optimistic. At the same time, we have also been pleased to see that different levels of government are beginning to attach importance to the protection of industrial remains. We know that the protection and utilization of regional industrial heritage still has a long way to go and a lot of things to do. Through raising awareness of industrial heritage alongside creating appropriate standards and a directory of protection, making much clearer the responsibilities of the government, and strengthening the supervision and administration of these sites, the future of regional industrial heritage will be well protected and inherited by future generations.

Xin Wu works for the Shaanxi Institute for the Preservation of Cultural Heritage
Contact: cnwuxin@sohu.com or 957350057@qq.com
No.35 Keji road 1st Xi'an, Shaanxi province P. R. China, 710075
References


Liu, Qizhi, He, Mei, Wang, Yun, and Zhu, Zhibing. 2010. 'Urban Regeneration Planning Practice for old Industrial City of WuHan', *Journal of City Planning Review*, 12(7), pp.39-43.


