



The Centennial Course and Artistic Innovation of Tangshan Industrial Heritage A Case Study of Kailuan National Mine Park

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Abstract. This paper analyzes the history of industrial heritage and the present situation of artistic innovation, and takes Kailuan National Mine as an example to explain in detail, so as to provide systematic cognition for scholars in the field of industrial heritage, and provide directions for the follow-up research in this field. In addition, it makes an in-depth analysis of the two research directions of historical research and innovation of industrial heritage, and has an in-depth understanding of the research and development status of industrial heritage and literature of major scholars. On this basis, it puts forward the existing problems and research trends of industrial heritage research, and points out the direction for industrial heritage in the field of historical research and innovation.

Keywords: Mine Park · Industrial heritage · Historical research · Artistic innovation

1 Introduction

Industrial Heritage as Primitive Society and Feudal Society. Since the 18th century, mankind has created a rich industrial civilization. These industrial civilizations have become the industrial heritages with cultural heritage value in the long development. The foreign Industrial heritage Protection Association defines industrial heritage as “industrial cultural relics with historical, sociological, architectural, technological and aesthetic values”. It includes industrial buildings, related smelting and processing sites, industrial equipment and transportation equipment and other material cultural heritage, as well as process records, data, technology and other non-cultural material heritage. The big industrial age has become more and more distant from us, but the struggle and the spirit of independence and self-improvement of that era deeply left in people’s memory. With the strengthening of the world’s attention to environmental protection, and people’s nostalgia and spirit of exploration will enable the development of industrial heritage protection and exhibition sites, which should be the fundamental reason for continuous innovation of industrial heritage.

2 Research Status of Domestic History and Artistic Innovation of Industrial Heritage

Domestic History of Industrial Heritage. China's industrial heritage can be roughly divided into two categories according to the period, modern industry and modern industry. Modern industry originated in 1840, which was the generation stage of Chinese industry. To 1949 is the embryonic period of modern industry, because the socialist stage of new China just started, the industrial boom, opened the wave of industrial Great leap forward. From 1978, China's industrial pattern has been gradually transformed, and a large number of industrial relics have prompted people to start thinking about the integrated development of industrial heritage and modern cities [1].

In our country, because of the late start of industrial age, people need to accept the process of industrial heritage protection. With the pace of urbanization, there are different voices about the industrial legacy. This problem exists widely in every city with industrial history in China. Although some industrial heritages has been included in the scope of protection in recent years, it is far from enough for the huge unprotected industrial heritage [2].

On April 18, 2006, China Industrial Heritage Protection Forum passed the Wuxi Proposal - Pay attention to the Protection of Industrial Heritage in the period of rapid economic Development, which defined industrial heritage as "industrial cultural relics with historical, sociological, architectural, technological and aesthetic values". At the same time, according to the Wuxi Proposal, the construction of modern and modern chemical industry in various stages of China since the Opium War has left a distinctive industrial heritage, witnessing and recording the changes and development of modern and modern Chinese society [3].

The Domestic Theoretical Basis of Industrial Heritage. At present, domestic researches on the protection and utilization of industrial heritage tend to be of a summary nature. Li Hui and Zhou Wuzhong analyzed related concepts of industrial heritage site and proposed the concept of industrial heritage site [4]. This paper summarizes the research on the protection and utilization of industrial heritage sites by domestic scholars in recent years, and points out that there are mainly four research perspectives: urban development strategy and urban planning, architectural protection and utilization of industrial heritage sites, landscape planning and design of industrial heritage sites, and tourism development of industrial heritage sites. In this paper, research progress and the main problems is reviewed, and the future research on the protection and utilization of industrial heritage sites is prospected. Lu Shaoming believes that we need to protect the recognized or unrecognized industrial heritage from a broader perspective and adopt a more flexible way to explore the potential value of industrial heritage and face the civilization in the process of national development [5].

Shao Long, Zhang Lingling and Jiang Naixuan conducted an in-depth analysis on the regeneration practice of industrial heritage in Britain from the perspective of cultural ecology, and summarized the protection and regeneration mode under the concept of cultural ecology, which could be used as a reference for the research on the transformation of urban industrial heritage sites in China [6]. Zhang Yishang and Xia Jian believe that it is the lack of holistic view that leads to the unsustainable protection and utilization

of urban industrial heritage [7]. Only with the overall thinking method of “top-down” and “bottom-up” interactive urban planning, the urban industrial heritage can become a regenerative cell in the city.

In terms of practice and design, some domestic scholars have made attempts. Inspired by the mode of protection and utilization of industrial heritage in western countries, Xie Hongbin and Gao Ling analyzed the conditions of industrial tourism development in Mawei District of Fuzhou [8]. Based on the experience of industrial tourism development at home and abroad, The research method of industrial tourism development suitable for Mawei District of Fuzhou combining traditional and modern industry is put forward. Xie Dixiang, Chen Huiqi and Deng Yawen analyzed the planning of Guangzhou Red Brick Factory Cultural and creative Industrial Park, discussed the reuse, planning and design of cultural and creative industrial Park under the background of industrial heritage reuse, and put forward relevant thoughts and suggestions [9].

3 History and Innovative Development of Kailuan National Mine Park

The Living Fossil of Chinese Industry. Founded in 1878 during the Westernization Movement, Kailuan National Mine Park is a landmark enterprise in the century-old industrial annals of China. As a national enterprise that pioneered modern road and mineral resources in China, Kailuan Group completed the coal production of Kaiping Coal Mine in 1881, the opening of Tang-Xu Railway and the manufacture of steam cars with rocket number in China [10]. After three centuries of change and development, Kailuan Coal Mine not only accumulated a lot of historical culture, but also left a lot of industrial historical sites. Wu Shunfu, Gao Hongqiang, Nan Guijun et al. believe that the construction characteristics of national mine parks in the Beijing-Tianjin-Hebei region are evenly distributed in the southern foot of Yanshan Mountain and the eastern foot of Taihang Mountain, and that they fully integrate the regional natural and cultural landscape, with their unique mining relics and long history [11].

Functional Zoning and Main Business Types of the Park. In 2005, the planning and construction of Kailuan Mine Park began, with a total planning area of nearly 700,000 square meters, divided into two parks. The first is to build “Northern Modern Industry Exposition Park” in Tangshan Mining Area A; the second is to build “Old Tangshan Style Town” on the site of the former Tangshan mine coal storage yard, and the two scenic spots are connected by the railway provided by the mine to form a complete tourism park. The park is composed of three parts: mining culture Exposition area, “National Preservation” site sightseeing area and fashion culture leisure area, including the main hall of Kailuan Museum, underground exploration tour, China’s First Best Mine 1878, Electric Era 1906, steam locomotive Sightseeing Park, China Railway Source Museum and a series of exhibition halls and scenic spots. The museum tells the history of the “Long Black River” with detailed historical materials, abundant exhibits and novel exhibition forms, explains the generation and origin of coal, records the historical remains of the source of China’s road and mining, and reproduces the cultural memory of Tangshan city that is prosperous because of coal.

Transformation Mode and Characteristics of the Park. The buildings in Kailuan National Mine Park mainly adopt the following reconstruction methods: ① Complete reservation. The old factory buildings and abandoned facilities left in the transformation become the original foundation of the mine park. The unique red brick walls, grey doors and Windows, plain concrete building skin retains the atmospheric, simple and heavy northern mine space temperament. At the south entrance of the park, the monument uses the workshop frame to form a virtual space, indicating the nature of the park. The waste equipment parts are cleverly conceived and combined to form landscape sculptures with visual impact. Ma Zhongjun believes that “the industrial heritage memory needs epic grand scene narration, but also needs micro individual life record. Through the landscape sketch to reflect the miners’ work, life scenes, to express deep respect to the coal miners [12]. ② Renovation. The wall bricks are customized according to the size and quality of “Kailuan bricks” to continue the charm. The main monument of “Pursuing Dreams in the Century” in the park selects “China Black” granite, which corresponds to the color of coal, and uses the language of sculpture to show the “special fighting spirit” passed down from generation to generation of miners in Kailuan. ③ Remove and build new. Before the reconstruction, Nanhu in Tangshan was a settlement area formed by coal mining. The subsidence pit accumulated water for many years, the farmland was abandoned, the village was relocated, and the nature and ecology were greatly destroyed. It is a typical urban brownfield. Nanhu Ecological Park construction attempts to go out of the previous “design to solve all problems, design in one step” model, with dynamic, development, change, stage, step by step to solve problems. In 1996, Tangshan implemented ecological environment improvement in the southern mining area and formed Xiaonan Lake Park.

Problems in the Park. ① There is no industrial cluster in the park, and the park lacks vitality. The national mine park should aim at develop into a cultural heritage gathering area, and only when many relevant creative enterprises settle in the park and cooperate and exchange, form specialized division of labor and cooperation, and produce cluster effect. ② The public activity space in Kailuan National Mine Park lacks good planning and design and responds to Tangshan regional culture. Due to the lack of recreational facilities in the park’s public activity areas, and the low interaction between the park and the surrounding areas, there are not many people going to the park on a daily basis.

4 Construction Strategy of Park Development

Attach great importance to the protection and reuse of “immaterial” industrial heritage. Xu Yijian focuses on the feasibility and significance of the reuse of urban industrial heritage in view of the gradual prosperity of the concept of industrial heritage reuse in the world, introduces the operating organizations and practical achievements of the preservation of industrial buildings in foreign countries, and points out the shortcomings of the current domestic aspects [13]. Liu Boying and Li Kuang put forward the preliminary conception of the scope of industrial heritage protection area and the list of the protection and reuse of single buildings, and discussed the classification of protection and reuse and the ways of industrial heritage reuse [14].

Strengthen the public cultural service function of industrial heritage mine park. By summarizing the transformation methods of the main landscape elements, Qiu Ting

integrated various industrial landscape elements such as buildings, structures, roads and water bodies into the urban landscape system to enhance the public cultural service function of the area where the old factory is located [15].

Broaden the mode of thinking, explore new ideas, and innovate the mode of industrial heritage protection and reuse. As the industrial heritage is not very old, its architecture is not exquisite and is regarded as a masterpiece of architectural art. Therefore, the industrial heritage is not suitable for the complete protection of the original functions, and innovative thinking is needed to reuse the old buildings that have lost their vitality to revive them. Therefore, the protection and reuse of industrial heritage should deeply understand, respect and reflect the inherent historical meaning of the site, fully explore various details related to the remains, and give full consideration to the “preservation and removal” of the remains.

5 Conclusion

At present, the history and innovation of the industrial heritage involves various fields. At present, our country is still in the exploration stage of the industrial heritage history and innovation, and does not form a systematic study of the history and art innovation methods. This paper studies the successful industrial heritage projects abroad, analyzes the historical and innovative methods and design values of industrial heritage, and summarizes the ideas and strategies of historical research and innovation of industrial heritage. For the history and innovation of industrial heritage, we still need to carry out in-depth research and discussion, improve the research and exploration of the cultural value, historical values and social value of industrial heritage. As an industrial city, Tangshan has left many industrial heritages with research value. As a state-level project, Kailuan National Mine Park not only carries the heritage of Tangshan as an industrial city, but also provides a new experimental base for industrial heritage innovation. Summarizing the research and design experience of the established mine park is beneficial to provide more reference value for the transformation and innovation of industrial heritage in the future.

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