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Inheritance and Innovation of National Industrial Heritage - Taking the Landscape Architecture of Bengbu Baoxing Flour Mill as an Example

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Abstract: *In recent years, people's understanding of the protection and renewal of industrial heritage has become more and more profound. Founded by Yang Shucheng, a national industrialist, Bengbu Baoxing Flour Factory is an important part of the modern national industry in the Huaihe River Basin of China. In the industrial heritage renewal design of the factory area, the design concept of landscape renewal is determined through the study of its historical background and existing industrial heritage. Through the analysis of landscape structure, functional zoning, traffic system, vegetation system, and building facade system, the design methods of landscape renewal and transformation are explained. At the same time as the design and renovation, the exploration and practice of industrial revival and social renewal in the region are introduced. Through these practices, the feasibility of protection and renewal of national industrial heritage is discussed.*

Keywords: *Industrial Heritage, Landscape Architecture, Baoxing Flour Mill, Protection, Innovation*

1. Introduction

With economic transition, a certain number of idle industrial buildings and industrial relics have emerged in China. Therefore, more and more scholars and research institutions have devoted to the study of industrial heritage. Since 2006, industrial heritage research has entered the stage of thematic research, its salient features are the development of the theme "experience", getting rid of the single museum reuse model, moving towards the development of diverse and comprehensive industrial heritage tourism, and generating some refined research directions. Also, there is a trend towards the synergy of multidisciplinary research methods. However, there are still problems in the research, such as single subject composition, uneven spatial and temporal distribution of research objects, and insufficient research on industrial heritage management, especially the embodiment and expression of culture. By sorting out the historical context of the factory, adopting suitable design methods to reconstruct the industrial culture, and reflecting on how the research work could balance the interests of all parties in the context of "urbanization" of excessive commercial replication, so as to provide scientific basis for solving the practical problems of industrial heritage protection and reuse.

2. Background of the Project

2.1 Historical Review of Bengbu Baoxing Flour Mill

Bengbu Baoxing Flour Mill, also known as Baoxing 2nd Flour Mill, was established in 1928 by national capitalist Yang Shucheng with an investment of 600,000 yuan on the east side of Xinchuantang of Bengbu.[1] It is an important enterprise in Bengbu and the national industrial base in the Huaihe River Basin (Figure 1). The flour mill covers an area of 40 mu, using the rich wheat germplasm resources in the Huaihe River Basin as raw materials, and using imported power equipment and mechanical equipment to form an industrial chain of mechanically processed flour. It was officially put into production in 1930, with a daily output of 8,000 bags of flour, and the products were sold to various places on the Jinpu and Longhai lines. As of May 1938, in order to support the Anti-Japanese Front, the flour mills supplied more than 600,000 bags of flour to the Fifth War Zone each year. After that, due to the fall of Xuzhou and Bengbu, the flour mill was forced to stop production. From 1940 to 1943, some mills were repaired successively to maintain production; in February 1946, with the approval of the Military and Political Department of the National Government, Xuzhou and

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Bengbaoxing Flour Mills were officially returned to Yang Shucheng; until August 1948, they were still operating. At the beginning of the liberation of Bengbu, the flour factory was taken over by the Municipal Military Control Commission. On May 22, 1962, a fire broke out in the flour mill building of the flour factory. The building and machinery were all burned down, and the loss amounted to 300,000 yuan. The factory was suspended for two years. In May 1964, the newly built milling building of the flour mill was completed and put into operation. The new technology of air-driven milling was adopted in the production, which was a new milling technology used earlier in Anhui. It was declared nationalized in 1950. In the late 1980s, with the transformation and development of China's economy and the decline of the traditional agricultural product processing industry, Bengbu Baoxing Flour Mill stopped production.

Figure 1: Archway of Baoxing Flour Mill Baoxing Flour Factory Archway

2.2 The Existing Representative Heritage of Bengbu Baoxing Flour Mill

2.2.1 Flour Mill

In 1928, the five-storey flour building of Baoxing Flour Factory was built, which was completed in 1930, with a construction area of 3,108 square meters. It was a relatively large industrial plant in the urban area before liberation. The building adopts clear water exterior walls, which are multi-layer, multi-span brick-wood and brick-concrete structures, which belong to the modern Republic of China architectural style combining Chinese and Western (Figure 2).

Figure 2: Flour Mill

2.2.2 Warehouse Group

According to the production and use requirements of the flour mill, the warehouse was built at the end of 1928 and is located in the middle of the factory area with a T-shaped layout. It is divided into two single-storey buildings facing east-west and north-south, with a total area of nearly 3,000 square meters. The building complex adopts the form of double-pitched roof, the combination of brick and wood structure, and the exterior wall is a fair-faced brick wall (Figure 3).

Figure 3: Warehouse Group

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2.2.3 Office Loft

The loft is located at the northwest corner of the plot, next to the road, covering an area of about 200 square meters. It is one of the more distinctive buildings in Bengbu at the same time. The building consists of two floors, with a square shape and a brick-wood structure. There are double-row dormer windows around the top of the house. It is a typical Chinese-Western mixed style building in the Republic of China (Figure 4).

Figure 4: Office Loft

2.2.4 Transportation Track

The special line for Baoxing Flour Mill was built in the late 1920s. The special line is about 292 meters long. It connects directly from the factory warehouse to the Jinpu Railway near Xinchuantang to ensure the land transportation of raw materials and products (Li & Liu, 2016)[2]. According to the on-site survey and distance measurement, the length of the existing railway tracks is only more than 60 meters (Figure 5).

Figure 5: Transportation Track

2.2.5 Wisteria Trees

The wisteria trees were planted by Yang Shucheng, the founder of the flour mill. It is located on the southeast side of the factory and covers an area of about 30 square meters. They are composed of wooden corridors. So far, the trees are 120 years old with luxuriant foliage. They are third-class ancient trees in Bengbu. Every year in the Grain Rain season, the wisteria blooms, fragrant and brilliant (Figure 6).

Figure 6: Wisteria Trees

2.3 Current Condition of the Site

From the perspective of protecting industrial heritage and inheriting history and culture, combined with the current urban renewal plan of the old districts of Bengbu, after repeated overall research by the Bengbu Planning Bureau, the site design scope was finally determined to include two plots: one is the former Bengbu Baoxing Flour Mill, covering an area of about 1.9hm²; the other is the former warehouse of the Bengbu Grain Bureau on the north side, covering an area of about 0.8hm². Based on

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the factors such as the small area of the former warehouse of the Grain Bureau and the limited development value, the two plots are integrated and coordinated, so that the entire abandoned plot can regain new vitality, and provide new support for the historical culture and site resources of the old city reconstruction of Bengbu.

Through a detailed investigation of the existing buildings and environment of Baoxing Flour Mill, it is found that the current traffic advantages outside the design scope of the site are better. The south side is the city main road Huaihe Road, the west side is the approach bridge part of Chaoyang Road Bridge, and the north side is the Huaihe River embankment and the road along the river. The current situation of the internal plots of the base is messy, the buildings are generally arranged in an east-west direction, and the construction quality is uneven; the internal traffic is not organized, the roads in the factory area are mainly cement roads and gravel roads, and 80% of the road surfaces are damaged to varying degrees. There are only narrow and long east-west corridors in the public space, and there is an open area on each of the east, west, and north sides, and the spatial order is poor. Although the plants in the park are lush, most of them are wild weeds, single plant species, lack of skeleton-type trees and landscape plants, and the landscape effect is poor. It needs to be further sorted out in the update to adapt to the new environment construction requirements. The existing buildings of the Republic of China include 4 workshops, one loft, and other historical relics such as century-old vines and railway tracks are well preserved and have high historical value.

3. Design Concept and Vision

3.1 Reuse - The Integration of Urban Renewal and Site Environment

In view of the significant characteristics of the location of Baoxing Flour Mill, while carrying out the protective renovation plan, it is necessary not only to focus on the existing plots of the factory area, but also to expand to the overall research of the surrounding adjacent sites, taking into account the metabolism and balanced development of the large urban area. The surrounding area of Baoxing Flour Mill is undergoing a large-scale urban renewal. The functions and formats of the surrounding plots focus on commercial, office, and residential types. As a historical industrial relic and a symbol of place memory, Baoxing Flour Mill should focus on cultural characteristics and public open features, and implant a variety of formats based on culture, in order to achieve the goal of urban value intensification and urban function complex.

Due to its long history, function changes, and lack of management, Baoxing Flour Mill is in dilapidated appearance and backward in infrastructure, which is incompatible with the new buildings that have risen from the ground. In the process of urban development, it is necessary to properly handle the relationship between the protection and development of old industrial buildings. Through effective and reasonable design methods, the old buildings in the factory area can be reused and protected during use, which can not only retain the “cultural memory” of the city, but also create considerable economic benefits.

3.2 Inheritance - The Details of Industrial Heritage and Historical Culture

Bengbu Baoxing Flour Mill has witnessed the twists and turns of the national industry in the Huaihe River Basin and has become a cultural symbol of an era. The well-preserved architectural and environmental space, recording the production methods, production processes and craftsmanship in the modern historical period, are cultural relics that cannot be copied. The national industrial spirit of self-reliance and industrial power it represents should not be forgotten. The local people in Bengbu have deep feelings for Baoxing Flour Mill. Many people’s parents and grandparents have participated in and witnessed the glory and pride that Baoxing Flour Mill has brought to the whole city. They retain this precious cultural memory and retain the “root” of Bengbu’s industrial history. Protecting heritage, displaying heritage, and inheriting heritage are the starting points of this landscape design.

3.3 Innovation - The Creation of Industrial Culture and Modern Art

Bengbu has a long history and rich cultural relics, and plays a very important role in the development of ancient Chinese civilization. In modern times, as an important transportation hub and old industrial base in Anhui Province, Bengbu also has a long history of industrial culture. In the early days of the founding of the People’s Republic of China, there were 300 or 400 factories in Bengbu, and

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the total industrial output value ranked first in Anhui Province, especially the developed light industry. According to Bengbu Urban Master Plan (2012-2030), Baoxing Flour Mill is planned and positioned as a municipal industrial heritage protection exhibition area and a cultural and creative industry area. Taking advantage of the resource advantages of Baoxing Flour Mill's spatial environment and industrial culture, the government is going to build a cultural and creative industry park based on local agricultural and sideline products and featuring exhibitions and creative planning. Combined with the universities in Bengbu, Bengbu Baoxing Flour Mill will be transformed into a cultural and creative industry park. The "production, learning and research" integration platform integrating the functions of national industrial heritage protection and publicity, agricultural and sideline product research and development and promotion, and cultural and creative industry operation and management is the vision of this design.

4. Landscape Design

4.1 Landscape Structure and Functional Division

Using the language of landscape design to show the cultural characteristics of Bengbu's "industrial development" and make it have distinct characteristics of the times, has become the core focus of the landscape design of Baoxing Flour Mill. According to the characteristics of site attributes and space environment of the Baoxing Flour Mill project, a public landscape spatial pattern of "four axes, four nodes, and five areas" is formed (Figure 7).

Figure 7: Structure Plan of Design Scheme

Four axes includes two main axes and two secondary axes. The two main axes are a main functional axis created by using the original north-south corridor of the site and an east-west functional axis created along the roadway of the plot. The two secondary landscape axes of Baoxing Flour Mill are two east-west secondary landscape axes created by using the original corridor of the base. One is the characteristic landscape axis of the railway track built along the railway track, and the other is the characteristic landscape axis connecting the main entrance square in the east, the central square and the secondary entrance square in the west. As for four nodes, the three nodes are the main entrance square node on the east side built along Fengyang West Road, the secondary entrance square node built along Chaoyang Road, the park central square and the northern secondary entrance square. The five areas refer to the west entrance landscape area, the north entrance landscape area, the industrial heritage display area, the industrial culture experience area and the cultural square area (Figure 8).

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Figure 8: Floor Plan of Design Scheme

4.1.1 West Entrance Landscape Area

The landscape area at the west entrance, adjacent to the Huaihe Bridge on Chaoyang Road, is the main entrance of the original factory area, and the spatial form is representative (Figure 9). Therefore, based on the principle of "respecting the real historical information of the site", the landscape area at the west entrance is divided into two cultural landscape areas, namely the lagerstroemia promenade area on the south side and the archway display area on the north side (Figure 10).

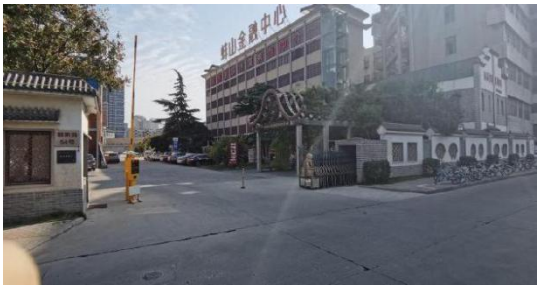

Figure 9: Before Renovatio

Figure 10: After Renovation

The Pai Road display area on the north side mainly focuses on the dynamic space of open cultural exchange space and oriented visual landscape. In terms of design techniques, the focus is on creating the recognizability of the entrance space environment. According to the records and refinements of historical photos, the early archway shape is restored on the open space on the west side of the entrance. The main body adopts a brick wall structure in cool gray tone, and some small scene sculptures with industrial elements are placed in combination with the surrounding plots in order to shape the landmark function of the landscape structure. For better integrating into the surrounding buildings and warehouses, waterscapes and flat bridges are added around it, and abstract elements are used to highlight the Huaihe River culture and enrich its landscape elements and viewpoints.

The Lagerstroemia promenade area on the south side is dominated by static and natural spatial

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forms, which mainly embodies the purpose of protecting historical memory and creating an ecological environment. The main landscape focus in this area is the ancient wisteria tree, which is relatively old and prosperous. The current site and protection structures can no longer meet its growth and development, so it is necessary to redefine the landscape environment of the area where the ancient trees are located through reasonable design and layout. Also, utilizing the existing green space in the surrounding area to expand the greening range of the area, while satisfying the growth of the trees themselves, and taking into account the participation of tourists in natural activities are of great necessity.

4.1.2 North Entrance Landscape Area

The north entrance landscape area, also the secondary entrance planned for the project, is located on the north side of the entire site and belongs to the former warehouse of the Municipal Grain Bureau. According to the multi-party consultation and research decision, the office loft will be relocated here for overall protection in the form of ex-situ reconstruction, and the building layout of this area will be formed with the warehouse group of the Grain Bureau. The warehouse complex will be transformed into a library. The overall style is interspersed between the buildings with transparent and light glass shapes, deconstructing history and dialogue with modernity. Based on the principle of "giving new connotations to historical buildings", the cultural elements of the plot are presented. As the northern end of the north-south functional axis, it is necessary to fully consider the organizational planning of traffic and crowd, to create a new industrial landscape of the main node of the traffic corridor, and to create the cultural atmosphere and historical memory of the area. The main composition of the landscape in this area is mainly hard pavement, combined with tree array squares and public art sculptures to jointly create a new wind vane for industrial and cultural blocks (Figure 11).

Figure 11: After Renovation

4.1.3 Industrial Heritage Display Area

The industrial heritage exhibition area, located in the core protection area of Baoxing Flour Mill, is composed of "T-shaped" warehouse buildings (Figure 12). The area retains the only remaining 60 meters of railway tracks, which are laid between two warehouses. Based on the principle of "reshaping the original production appearance of industrial history", it shows the episodic memory of history. Through the landscape design, the organic space is combined to create an industrial production scene with a rich sense of picture and appeal. According to the concept of the "Rejuvenation Plan" of the factory area, the two warehouse buildings are arranged in groups and are closely connected. The large single-story space is suitable for use as a historical exhibition hall. It will be transformed into the old Bengbu local cultural center. It is divided into two parts: permanent exhibition and temporary exhibition. Among them, the permanent exhibition mainly combines Huaihe culture, Bengbu culture, flour mill history and other themes to review the historical memory of the project site. The temporary exhibition hall can undertake exhibition activities of various social groups and enterprises, and is an important public cultural place at the municipal level (Figure 13).

The external space environment of the factory building, with the help of natural scenes and railway relics, creates an industrial linear park displaying industrial heritage. The slate and concrete bricks laid on the bottom are used to restore the scene characteristics of the transportation passage at that time, and the vertical greening technology is used to set climbing plants on the outer wall of the warehouse to create a natural ecological atmosphere of the whole space. Purchasing and renovating old trains, combining the layout of railway tracks to build a comprehensive outdoor cultural space that integrates coffee shops, book bars, and creative product exhibitions, to meet the cultural needs of the local people,

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and create a cultural landmark with the characteristics of the plant.

Figure 12: Before Renovation

Figure 13: After Renovation

4.1.4 Industrial Culture Experience Area

The industrial culture experience area is the largest outdoor venue in the factory area. It is located in the central area of the entire factory area and is composed of two square blocks in the north and south. According to the layout of the architectural planning and design, the site is surrounded by four groups of buildings: the cultural library group, the old Bengbu local cultural center group, the renovated office group, and the new commercial and cultural and creative space group. As the core node of the factory area, with the fundamental starting point of "promoting people's interaction with each other" and the principle of "meeting the landscape function of space", the concept of moderate design is adopted to build the relationship between people's communication and site space, that is, the basic needs of work and life of different groups of people such as citizens, tourists, and workers in the park (Figure 14). According to the requirements in the superior planning, the landscape plan designs a practical and effective communication space for the outdoor activity needs of the community in the park, focusing on the streamline organization of its space and the functional use of two independent spaces, that is, one is a static space mainly for sitting, watching and talking, which is created through nodes such as music water features, leisure cafes, and rest wooden platforms; the other is a dynamic space mainly based on walking, stopping and carrying out activities, which is expressed through space forms such as Zhiqu World and Cultural Festival Square. By using the combination of plant communities to form a flexible boundary, a place for open-air activities is reserved, so that people can move freely in the venue and provide more open options for the use of space (Figure 15).

Figure 14: After Renovation (1)

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Figure 15: After Renovation (2)

4.1.5 Cultural Square Area

The cultural square area is located at the east end of Baoxing Flour Mill. The plot is triangular and connected to the urban residential area. The landscape of this area is built on the principle of "improving the cultural function of urban space", and it communicates and integrates with the surrounding environment (Figure 16). As a large shopping supermarket in the urban area of Bengbu, Huayun Plaza is only one road away from the project plot, and the daily flow of people is huge. By systematically analyzing and summarizing the shape of the site and the surrounding environment, it is determined to adopt the form of a dry spray art square to attract more urban residents to gather in the Baoxing Flour Mill for exchanges and activities. The dry spray scenic spot will be set up in the center of the art square, combining the expressive power of the waterscape with intelligent technical means, and setting off the cultural and artistic atmosphere of the square by means of hearing, vision and touch. At the same time, in the form of tree array landscaping, the art square is greened and enclosed to solve the traffic problem of mixed traffic of people and vehicles in this area (Figure 17).

Figure 16: After Renovation (1)

Figure 17: After Renovation (2)

4.2 Traffic System

Due to the limitations of the project's own site, there is only one east-west traffic road in the planning and design, with a width of 6 meters. Two garage entrances and exits are set on the roadway, and all other areas are pedestrian roads, so as to minimize the impact of traffic flow on pedestrians. The traffic system of this landscape design is optimized and improved on the basis of the original road system based on the "four axes" layout of the plant. Among them, the north-south traffic axis makes up for the lack of the original site structure, forming a traffic corridor connecting the hinterland of the old city to the Huaihe Riverside landscape belt, creating a positive pedestrian space, and increasing the vitality and commercial value of the site. The east-west traffic axis utilizes the original east-west corridor of the site, combined with its own characteristics and spatial layout, connecting the main entrance plaza, the new commercial office building, the old Bengbu local cultural center, the wisteria trellis, etc (Figure 18).

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Figure 18: Analysis Diagram of Traffic System

After the landscape design and planning, the road traffic in the factory area is mainly walking, with non-motor vehicles as a supplement; the parking spaces for motor vehicles and non-motor vehicles are set in the underground garage. Other traffic roads in the factory area are reorganized and adjusted according to the existing road system, and are designed and selected in terms of pavement material, form and color. For some key landscape node paving, it is necessary to further design and improve in combination with pattern parquet or texture form. Ensure that the width of the main ring road in the plant area is less than 6 meters, and some traffic routes involving fire lanes are optimized in the form of "invisible fire lanes", and partial grass and flower planting are used to reduce the monotony of large-scale hard pavement. Since the new commercial and cultural and creative space group is a multi-storey building type, three fire-fighting climbing sites are configured around it according to the relevant specifications. In order to reduce the impact and damage to the surrounding environment, the three fire elevating sites will be combined with their respective landscape function areas to optimize the design from the ground modeling and temporary sketch facilities. In short, on the premise of satisfying the functional layout, the traffic system should minimize the obvious boundaries or divisions between different landscape spaces in the factory area by roads, so that the traffic system is integrated into the landscape space, and in this way the strong sense of block culture scale and enclosure of the entire site landscape is strengthened.

4.3 Vegetation System

According to the previous on-site investigation and analysis, due to the fact that the original plant has been abandoned for many years, the vegetation greening lacks maintenance and management, and the vegetation is sparse. The century-old vine tree was listed as a protected tree in the early days, so it can grow and maintain naturally; there are few trees in the factory area, only two well-preserved, tall and straight cedars, and a few sparsely growing magnolia trees and cypresses, and maintenance is required. Poor, local tree trunks have withered; the number of shrubs and other plants with viewing function is very small, and most of them are wild weeds.

On the premise of utilizing and protecting the natural environment of the factory area, according to the types and characteristics of native plants in Bengbu, moderate greening and embellishment are carried out in different spaces of the factory area, so as to restore and improve the ecological environment of the entire space to the greatest extent possible. By sorting out and summarizing the natural environment of the site, the design concept of "following the natural features of the factory area and reshaping the industrial landscape ecology" is adopted, and optimization and transformation are carried out on the basis of the original green space available in the factory area. On the whole, the existing green space is divided into several green vegetation groups, plant communities, sunshine lawns and other landscaping forms, and some green spaces are appropriately expanded to meet the needs of growth and landscaping. Focus on creating ancient vine tree landscape nodes, combining flower mirrors and sunny lawns to create a beautiful natural scene. Arbor plants are mainly camphor, oak, hackberry, elm, ginkgo, etc. They are mainly used in areas such as roads, blocks and plant groups to create a green ecological plant frame. Flowering shrubs are mainly arranged and planted with plant types that are evergreen and bloom alternately in four seasons, such as sweet-scented osmanthus,

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cherry blossoms, begonias, plum blossoms, lilacs, red maples, etc. The last thing is to utilize the green space of some building exterior walls, auxiliary walls and structures to plant climbing vines such as creepers, roses, wood fragrant flowers, ivy, and high-flying flowers to enrich the ecological appearance of the building (Figure 19).

Figure 19: Analysis Diagram of Greening System

4.4 Building Facade System

According to the text and picture materials of the Bengbu Museum and Archives, combined with the actual investigation and survey on the site, it is determined that the protection and utilization of the exterior facade of the factory area will be based on three types: historically protected buildings, preserved and renovated buildings, and new buildings (Figure 20).

Figure 20: Building Facade

4.4.1 The Style of Historically Protected Buildings

The basic principle for the maintenance of historically protected buildings is to preserve and restore the original features of the old buildings, that is, to preserve the original basic shape of the building, restore the original surface red bricks and gray tiles, and continue the original door and window specifications. On the premise of not changing the original shape of the building, the local use of glass and steel materials is integrated into the original architectural style, making the historical building more modern and vitality.

4.4.2 The Style of Preserved and Renovated Buildings

The maintenance of the buildings will adopt vertical lines and horizontally according to the classic three-stage proportion. The shape at the central entrance is towering and folded, and the facade is integrated with the facade decoration symbols of the old Bengbu buildings, which is very memorable and has the style of the Republic of China. The main body of the building is made of gray imitation stone material, and high-transparency and low-reflection glass windows are used in the middle to create a sense of history while avoiding the old feeling.

4.4.3 The Style of New Buildings

The new buildings are all small buildings with 2 to 3 floors, which are built with sloping roofs of the Republic of China. The main body is basically in the form of gray bricks and gray tiles, with various combinations of sloping roofs, different changes of gables, local embellishments of arched porches, and local key outlines of imitation stone materials. It presents a unified and varied architectural style.

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5. Baoxing Project

Baoxing Project is a key cultural and creative industry development plan led by the Bengbu Municipal Government and jointly carried out by the Municipal Economic and Information Commission, the Municipal Association for Science and Technology, universities and enterprises in Bengbu to carry out industry-university-research cooperation. It aims to focus on "the regional characteristics of the Huaihe River and the integration of industrial production and research", based on its own advantages, strengthen cultural and creative research and development capabilities, not only enhance the cultural characteristics of the site, but also provide new opportunities for the activation and innovation of local industrial heritage culture. By developing and utilizing the original historical culture and reconstructed building space of Baoxing Flour Mill, focusing on the cultural and creative industries of agricultural and sideline products, combining the resources of colleges and universities in Bengbu, and introducing leading enterprises in the industry, the aim of the project is to build a future-oriented nationally renowned cultural and creative park and a national industrial design center. The factory area plans to use one third of the site space, about 6,000 square meters, as a cultural and creative design center, artist studios, product workshops, cultural education bases and other public service institutions (Figure 21). Through the reconstruction of Baoxing Flour Mill's own value, it can effectively promote the development of related industries such as catering, accommodation, transportation, shopping and culture. Also, it could promote the upgrading of local characteristic cultural industries and the organic renewal of the old city, in order to make the old factory area in the old city rejuvenate with new vitality and appearance. By using the development of related industries to create more employment opportunities, the employment problem of local residents can be alleviated to a certain extent, and a model for the renovation of the old city can be formed with points and areas.

By implementing the Baoxing Project into the factory area, and create a new development model of "industrial culture + activation inheritance + innovative design + industrial integration" with local characteristics, so that the entire site has a new impetus. The architectural space and landscape environment in the factory area can give full play to their functional role and influence, and feed back into the development of the entire factory area through their own material basis advantages, which ensures that Baoxing Flour Mill promotes industrial heritage culture and improves production efficiency to achieve a win-win situation of cultural value and social value.

Figure 21: Aerial View of Baoxing Flour Mill

6. Conclusion

Culture is created by humans on purpose. Cultural value is changeable, relative and rich because of the diversity of subject and judgment standard. Cultural value includes material and immaterial contents that are closely related to people's lives. It also includes the life value related to life, the method value, spiritual value and morphological value of the relationship between man and nature. The cultural value of industrial heritage resources also exists in the spirit of enterprise, enterprise culture and enterprise concept, etc. Features and regional characteristics are important material manifestations of the cultural value of industrial heritage.

The transformation and renewal of national industrial heritage is a challenging task. Industrial heritage, as an unreproducible historical relic, cannot be repaired once it is damaged. If we only talk

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about protection without updating, it lacks practical feasibility, and ultimately protection will become nonsense. The landscape renovation and renewal of Bengbu Baoxing Flour Mill is an attempt to maintain the balance between cultural heritage protection and heritage development as much as possible. Nowadays, the century-old warehouse remains the same; weeds and rusted equipment coexist harmoniously in the green space; personnel in related fields participate in the creation of the old factory building; former workers in the flour mill tell their grandchildren the story of that time next to the equipment they used to operate. It is the responsibility of our generation of designers to respect the national industrial heritage and reasonably renovate it so that the national industrial heritage can always have vitality and be passed on.

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