Frontiers in Economics and Management Volume 5 Issue 7, 2024
ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

Strategies for the Protection and Reuse of Industrial Heritage in the Context of Urban Renewal

-- Taking Xi'an Film Factory in Xi'an as an Example

Yujie Wang

The Academy of Architecture and Arts of the Southern Federal University, Rostov-on-Don, Russian

Abstract

As China's urbanization progresses, the manner in which land is developed has undergone a significant shift, moving from a focus on incremental growth to a more holistic approach known as "stock development." This shift has led to the emergence of a crucial challenge in urban renewal: the protection and reuse of industrial heritage that has been underutilized. The integration of these resources into the urban fabric, while enhancing their land use efficiency, is a crucial step in ensuring their sustainable development. This integration must be achieved in a manner that is harmonious with the surrounding areas, a challenge that requires careful consideration and planning. The article examines the practice of industrial heritage protection and reuse in China and abroad, presents three major strategies for its functional conversion, open sharing, and cultural protection, and applies these strategies to the case of the Xi'an Film Factory in Xi'an City. The aim is to provide references and lessons for the protection and reuse of industrial heritage.

Keywords

Urban Renewal; Industrial Heritage; Conservation and Reuse; Xi'an Film Factory.

1. Introduction

In response to the ceaseless advancement of urbanization, cities have begun to develop in a different way. In response to the new framework of urban development and increasing demand for high-quality development of the city, the Outline of the 14th Five-Year Plan clearly put forward the new concept. The concept of implementing the "urban renewal" action for the first time was introduced with the objective of performing a functional transformation of the existing urban areas, which were previously characterized by deviated functional requirements, poor utilization efficiency, and low environmental quality. This transformation aimed to change these areas into a new type of space for production and living. The primary objects for urban renewal are the numerous industrial heritage sites with lost functions and unused spaces in the city.This is of great significance in addressing the shortage of urban land resources, promoting the coordinated development of districts, upgrading the urban outlook, and promoting high-quality urban development.

2. A Review of Domestic and International Research

2.1. Urban Renewal

The concept of urban renewal, which originated in the West, is a complex and multi-layered field involving urban development, land use, socio-economics, and environmental protection. In foreign countries, urban renewal research focuses on urban regeneration, sustainable

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

development, and social inclusion. Researchers in European countries have put forward many theories and practical experiences, such as urban regeneration theory, urban renewal planning, and design. Among them, the urban regeneration experience of the United Kingdom has been widely quoted and learned from. One of the primary characteristics of urban regeneration in the United Kingdom is the concept of "regional urban regeneration," which entails the integration of resources and interests across various urban functional areas to achieve a comprehensive citywide development. Additionally, urban renewal research in the United States has placed greater emphasis on market mechanisms and public participation, proposing a range of market-oriented urban renewal models and methodologies that prioritize community involvement and democratic decision-making.

In China, urban renewal research has mainly focused on the transformation of old urban areas, land use redevelopment and the construction of urban renewal policy systems. Since there is currently no uniform definition of urban renewal in China, it can only be defined based on the experience and policies of urban renewal work in many places. In recent years, the Chinese government has increased its policy support for urban renewal and introduced a series of policies and measures to encourage and regulate urban renewal. These include special funds for urban renewal and land use policy adjustment. At the same time, domestic researchers have actively explored the theoretical and practical issues of urban renewal, and put forward a variety of urban renewal models and paths in line with China's national conditions. These include the transformation of "urban villages" and the integrated development of urban renewal and historical and cultural preservation.

2.2. Industrial Heritage

In 1978, the International Committee for the Conservation of Industrial Heritage (TICCIH) was established at the Third International Conference on the Conservation of Industrial Heritage, held in Svenska. This historic event marked a significant turning point in the field of industrial heritage protection. Subsequently, the focus of industrial heritage protection shifted from industrial "monuments" to industrial "heritage," and the search for an iterative renewal of industrial heritage commenced. The concept of industrial heritage was formally proposed in the Nizhniy Tagil Charter, which was adopted in June 2003 and subsequently endorsed in Wuxi in April 2006. The Nizhniy Tagil Charter officially recognized the concept of industrial heritage. The Wuxi Recommendations, which were adopted at the First China Industrial Heritage Preservation Forum held in Wuxi in April 2006, established a Chinese concept of industrial heritage preservation.

In accordance with the definitions of industrial heritage as outlined in the Nizhny Tagil Charter and the Wuxi Recommendations, industrial heritage is defined as the remains of industrial culture that possess historical, social, architectural, scientific, and aesthetic values. The scope of industrial heritage encompasses a multitude of elements, including but not limited to industrial buildings such as factory workshops, mills, and warehouses; mines; related processing and smelting sites; places of energy production and transmission and use; transportation facilities; places of social activities related to industrial production; related industrial equipment; as well as tangible and intangible cultural heritage such as process flows and corporate archives.

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

3. Domestic and International Practices in the Preservation and Reuse of Industrial Heritage

3.1. Industrial Landscape Centered on Industrial Heritage Elements: Hasanpaşa Gas Plant in Istanbul, Turkey

Fig. 1 Part of the transformed skin and interiors of Turkey's industrial heritage (Source: https://www.archdaily.com/973448/hasanpasa-gasworks-park-and-museum-complex-ds-architecture/61b712d81385fc30fb50085f-hasanpasa-gasworks-park-and-museum-complex-ds-architecture-preliminary-project-plans)

Once one of the most important industrial facilities in the region, the plant has been transformed through careful renovation and renewal into a multi-purpose venue for culture, entertainment, and education. In the present era, the derelict industrial complex has been meticulously refurbished and repurposed into a multifunctional venue for cultural, recreational, and educational pursuits. This transformation demonstrates respect for the industrial cultural heritage while simultaneously revitalizing the old building.

The fundamental objective of the transformation of the Hasanpaşa Gas Factory is to safeguard the original industrial facilities and structures in order to reflect the historical and cultural values. The project preserves the plant, gas storage tanks, and other original industrial construction elements while combining them with modern design elements to create unique spaces. The entire project has been optimized from the original site, including the addition of landscaping, recreational areas, walking paths, and green areas, in order to create a rich and varied landscape hierarchy.

In these industrial buildings and spatial nodes, the design team introduced various cultural functions, including art exhibitions, concerts, and educational activities. As a result, Hasanpaşa Gas Factory has become a vibrant cultural center. This transformation not only allows for the preservation and utilization of the industrial heritage, but also provides a multifunctional venue for community activities for the local residents.

The transformed Hasanpaşa Gas Factory serves as a model that illustrates the convergence of industrial history and contemporary culture. Moreover, the project exemplifies the preservation and reuse of industrial heritage, while simultaneously introducing a novel cultural landscape to Istanbul.

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

3.2. The Convergence of Industrial Heritage and Contemporary Art: The PLATO Art Gallery in Ostrava, Czech Republic

Fig. 2 Brick wall Door made of concrete
(Source: https://www.archdaily.cn/cn/1015111/plato-dang-dai-yi-zhu-hua-lang-kwk-promes/
66047b85ac596f1caddce9d5-plato-contemporary-art-gallery-kwk-promes-photo)

Situated in Ostrava, a former slaughterhouse that has undergone a remarkable transformation, the gallery's striking architectural features contribute to its distinctive character.

The walls of the former abattoir were in a severely deteriorated state, with numerous large holes. These marks have been preserved as part of the gallery and bear witness to the history of the building. This design not only preserves the historical traces of the building, but also gives the gallery a unique style.

The main material of the original building was masonry. The design team used mainly old-fashioned bricks recycled from the collapsed part. The new glass is silk-screened in ceramic, giving it a grayish texture that diminishes the light inside the gallery. In order to ensure optimal hygiene standards, the design team applied a lime coating to the interior, which was then insulated with mineral panels. The original dirty brick walls of the building's interior were retained in the atrium and, with the addition of the roof, became the link between all the gallery spaces. The previous wooden roof was covered in dark-colored felt and was worn out. The design team replaced it with a steel structure covered with a lightweight membrane. The roof design generates minimal heat and does not cause a heat island effect in the surrounding area.

The success of this renovation project can be attributed to the transformation of the former disused slaughterhouse into a modern art gallery, effectively combining industrial heritage with contemporary culture. The preservation of the building's original structure and features, such as the sooty brick walls and cut-outs, renders the gallery not only a venue for displaying artwork but also a forum for elucidating the convergence of industrial history and contemporary art.

3.3. Moscow's Stanislavsky Factory - An Innovative Transformation of Industrial Culture and Landscape Integration

The Stanislavsky Factory, located in Moscow, Russia, is a new example of the adaptive use of a historic building. It has been awarded several accolades, including Russia's first RIBA award, and its design has been widely recognized in the industry as innovative. The expansive site encompasses 30,000 square meters of office space, 60 luxury apartments, and a range of amenities, including a hotel and restaurants. The project's overarching objective is the seamless integration of the architectural elements with the surrounding urban landscape. This

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

integration is achieved through a meticulous blending of the physical and visual elements of the site, resulting in an interpenetrating open-plan site. This design represents a radical departure from the conventional development patterns observed in Moscow, which had previously been largely characterized by a lack of connectivity and openness.The renovation project exemplifies a model of sustainability in both its construction and use. The minimization of solar gain and the increase of interior lighting were achieved through the judicious use of natural light, sunlight reflection, and building layout. Furthermore, the lighting system in the landscape employs photovoltaic sensors and a number of experimental wind turbines for renewable energy technologies, all of which are integrated into the landscape and serve to reinforce the project's commitment to sustainability through rainwater recycling and photovoltaic installations.Furthermore, the design incorporates measures to mitigate the harsh Russian winter climate, including the use of highly insulating cladding, roof linings, and high-quality finishes such as triple glazing. Furthermore, a combined heat and power (CHP) district heating system is employed to provide sustainable and efficient heating throughout the site. All ventilation systems are equipped with heat recovery, which maximizes the recovery of waste heat in the exhaust ducts and preheats other ventilation equipment. In addition, the project employed the use of variable speed pumps and fans in order to minimize energy consumption.

The project is currently regarded as a model of innovative renovation work by planners and non-governmental heritage preservation organizations in Moscow. The project has facilitated large-scale, high-quality redevelopment and renovation activities in the old part of Moscow's city center. The Stanislavsky Factory has become a new cultural destination that combines commercial and cultural functions, demonstrating innovative design concepts and best practices in sustainable development as a result of the project.

3.4. Regeneration and Transformation of Urban Cultural Heritage: Nanshan Huazhong Power Plant in Shenzhen,China

The Nanshan Huazhong Power Plant, situated in the northern part of the OCT area in Nanshan District of Shenzhen, has witnessed the course of the booming economic development of the Shenzhen Special Administrative Region. In 1989, due to a shortage of electricity in the urban area, the plant supplied power to the entire OCT area by means of heavy oil power generation. This has become a significant memory for local people and a carrier of collective spirit. As the city's development needs and environmental protection requirements increased, the Huazhong Power Plant was officially retired from the historical stage in 2006. However, as an important historical site in the city, its transformation and renovation has far-reaching significance.

The project is situated at the nexus of urban, natural, and community environments, thereby facilitating the integration of the community into the city. The design redefines the future development of Huazhong Power Plant, establishing it as an artistic community and cultural leader in the OCT area. It aims to become an urban living room and creative highland integrating culture, art, and community. The South Zone was established as an interactive experience area, with a focus on outdoor activities and child-friendly facilities. In contrast, the North Zone was developed as a creative area, with a concentration on multi-functional theater, concerts, and community cultural activities. Original industrial remnants were preserved and integrated into the design to create continuous organic spaces that connect the past, present, and future of the power plant.

The O-Power Center for Culture and Arts represents the primary focus of the project, having previously served as a power generation facility. The renovation has created new shared spaces that reinforce the community atmosphere and facilitate communication between the interior and exterior environments. The design strategy involves the softening of the building boundaries, which allows for the creation of public spaces and the opening up of the building to create a vibrant micro-urban fabric while preserving the original structure. The

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

transformation of the Huazhong Power Plant is intended to facilitate the participation and leadership of industrial heritage in urban development, thereby reshaping the urban space and community spirit.

The transformation of Huazhong Power Plant into the O-Power Culture and Art Center represents a transformation of the industrial heritage from a mere "physical power plant" to a more nuanced and multifaceted "spiritual power plant." The project's design provides the space with a new form, infuses it with new vitality, and enables the industrial building to redefine its role in urban development. The regeneration and transformation of Nanshan Huazhong Power Plant represents not only a continuation of the city's history but also an exploration of the city's future development.

4. Strategies for the Preservation and Reuse of Industrial

4.1. Heritage

This paper proposes strategies for the protection and reuse of industrial heritage from the perspective of urban renewal. These strategies address three aspects: functional transformation, open sharing, and cultural protection. The objective is to achieve the purpose of protecting the historical and cultural heritage of industrial heritage, revitalizing the stock of inefficient land, and achieving the harmonious development of urban space.

4.2. Functional Transformation

The objective of functional transformation is to adapt abandoned industrial buildings to the needs of modern society by transforming them into new types of places. In carrying out functional transformation, it is essential to consider the historical value and cultural connotations of industrial heritage. Furthermore, planning and design must be carried out in accordance with the needs and future trends of urban development.

First and foremost, functional transformation must fully respect the historical characteristics and architectural style of industrial heritage. It is imperative that the original appearance and structure of industrial buildings be preserved, and that new vitality and vigor be imparted to them through repair and renovation. Secondly, functional transformation must prioritize innovation and sustainable development. While maintaining the historical appearance of industrial buildings, modern design concepts and technical means are introduced to enhance their functionality and applicability. One illustrative example is the transformation of abandoned factories into cultural and artistic centers, creative industrial parks, or scientific and technological innovation bases. Finally, it is essential that functional transformation be coordinated with urban development. In carrying out functional transformation, it is essential to consider the overall planning and layout of the surrounding environment and urban landscape. This is to ensure that the transformed functions are coordinated with the surrounding environment and to avoid the problem of mismatch with the surrounding environment.

4.3. Open Sharing

The objective of open sharing is to facilitate public access to industrial heritage and to encourage interaction and collaboration with community residents and city dwellers. Open sharing can effectively stimulate public participation and enhance the sense of identity and conservation of industrial heritage.

Firstly, the establishment of a diverse range of cultural activities is a prerequisite for the implementation of open sharing. The organization of various cultural exhibitions, performances, and art creation activities serves to attract a greater number of members of the public to visit and experience industrial heritage, thereby enhancing its attractiveness and

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

influence. Concurrently, cultural education and participatory activities are conducted with the objective of enabling the public to gain a more profound comprehension of the historical and cultural significance of industrial heritage and to enhance their awareness of its protection and sense of responsibility. Secondly, open sharing necessitates the establishment of a range of diversified service functions. The introduction of various commercial and public service facilities provides the public with convenience and services. Finally, the establishment of a sound management mechanism is required for open sharing. The establishment of specialized management teams and scientific management systems is essential for the daily management and maintenance of industrial heritage, ensuring its safe, orderly, and sustainable operation.

4.4. Cultural Protection

Cultural protection is the process of transmitting and protecting the historical memory and cultural value of industrial heritage. In implementing cultural protection, it is essential to consider the historical characteristics and social impact of industrial heritage in a comprehensive manner. Furthermore, it is crucial to formulate scientific and reasonable protection measures that facilitate the integration of historical inheritance and modern development.

First and foremost, the establishment of a robust protection system is essential for the effective implementation of cultural protection. The formulation of specialized laws and regulations and policy measures is essential for the protection and management of industrial heritage, with the objective of ensuring its safety and integrity. Concurrently, the cultural relics protection and repair work of industrial heritage should be reinforced in order to safeguard its historical architectural style and heritage value. Secondly, industrial heritage is imbued with a wealth of historical information and connotations, which necessitates the implementation of cultural education initiatives to enhance the public's cultural literacy and protection awareness. The organization of cultural education activities on the theme of industrial heritage, such as thematic lectures, workshops, and experiential activities, can facilitate the dissemination of historical and cultural knowledge about industrial heritage to the public. This can enhance the public's understanding and respect for industrial heritage, as well as stimulate enthusiasm and participation in its protection.

5. Xi'an Film Factory Renewal Practice

5.1. Background Overview

Industrial heritage is a witness to industrial civilization, a carrier of industrial culture, and an important part of human cultural heritage. The Xi'an Film Factory was established in 1958 and is situated in close proximity to the renowned Big Wild Goose Pagoda. It covers an area of approximately 800,000 square meters and is the earliest established and largest film production base in the region. Northwest China, from which Chinese films have been exported to the world, and its illustrious history of over six decades reflects the evolution of China's film industry and serves as a microcosm of the development of new Chinese films. The former Xi'an Film Factory is a closed factory that evokes a sense of solemnity and mystery among the public. In October 2018, on the occasion of the 60th anniversary of the founding of Xi'an Film Factory, the Film Circle-Xi'an Film Industry Cluster was officially inaugurated with the objective of carrying out the overall upgrading and transformation of the old factory area of Xi'an Film Factory.

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

Fig. 3 Main gate of Xi'an Film Factory
(Source: https://commons.wikimedia.org/w/index.php?curid=94641727)

The renovation concept of Xi'an Film Factory adheres to the principles of "development without traces" and "repairing the old as the old." It upgrades and renovates the 150 acres of the old factory area, preserving the style of the The architectural complexes of the old office building, the printing and washing workshop, the scenic workshop, the 8.75 workshop, and other old buildings in the old factory area, as well as the precious movie projection equipment, movie props, and other equipment, were constructed in a Soviet-style architectural style. In addition to the aforementioned architectural elements, the West Film Studio also preserves movie projection equipment, movie props, and art archive materials. In addition to adhering to the basic concept of renovation, the West Film Studio is also seeking a breakthrough in renovation, bringing its own advantages and highlights into full play, so as to form a new place of vitality in Xi'an with a distinctive theme and popularity.

Fig. 4 Comparison of before (on the left) and after (on the right) the remodelling
Source: Image from the Internet

5.2. Renewal and Rehabilitation Strategy

5.2.1. Open the Walls and Integrate Art into Life

The most significant advancement in the redevelopment of the Xi'an Film Factory is the opening of the wall, which has resulted in the transformation of the previously isolated factory area into an open-air art zone. This integration of film museums, film-themed catering, offices, commerce, and other businesses has created a unique environment where the public can engage with the art of film in a variety of ways. The wall's opening has facilitated the understanding and

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

appreciation of film through various film-themed posters, classic film scenes, and other elements within the art zone.

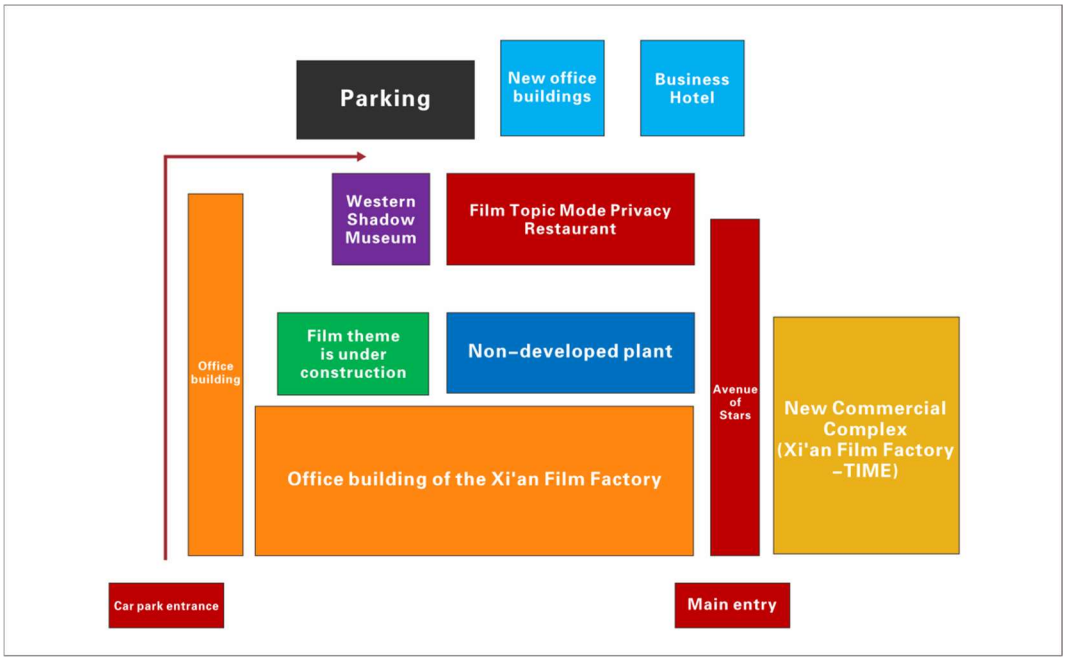

Fig. 5 Floor plan of the Xi'an Film Factory
(Source: Self-painted by the author)

5.2.2. Extract the Characteristics of the Heritage and Transform the Heritage into a Protection Base and a Place for Cultural Dissemination

The West Film Film Industry Museum has been established in the park to preserve more than 10 processes from film processing, light distribution, editing, to copying, film to digital, and so on. It is the most complete film processing, printing, restoration, and digital production line in China. In addition to providing a place to understand the process of film, it also has a high value for historical research.

Fig. 6 props for film and television
(Source: http://www.xasjyl.cn/uploadfiles/638180394317227914634.jpg Left image
http://www.xasjyl.cn/uploadfiles/638180394111521941201.jpg Right image)

The West Film Museum houses a vast array of film-related artifacts, including over 300 sets of the world's largest collection of the most complete film projection equipment, numerous vintage automobiles used in film, thousands of pieces of film-related props, and a

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

comprehensive display of the history of cinema and film art, the history of the development of the film industry, and the achievements of the West Film Film Art. Additionally, the museum features an area dedicated to the popularization of film production technology. Here, visitors can gain insight into the behind-the-scenes processes of filmmaking, including dubbing and green screen techniques.

The renovation of the Xi'an Film Factory did not entail the demolition or reconstruction of a significant portion of the existing structures. Instead, the project made extensive use of the original office building, factory buildings, and native trees on the site, while only partially updating the exterior with modern, aesthetically pleasing materials.

5.2.3. Preservation and Integration of Original Plant and Original Trees

The principal office edifice has been preserved in its original Soviet architectural form, with only the facade undergoing modification. The façade material is comprised of industrial red bricks, the window frames are unified in white, and black titanium metal logos have been added to give the original office building a new look, while still retaining the retro-literary atmosphere of the film studio.

Fig. 7 Xi'an Film Factory Film Art Experience Centre
(Source: https://img.zcool.cn/community/012e5f614f2ee211013e8943a741db.jpg
?x-oss-process=image/auto-orient,1/resize,m_lfit,w_1280,limit_1/sharpen,100)

The Chang'an Aloe Restaurant, which was previously a scenic workshop, has become a popular destination for tourists and citizens alike. The combination of red bricks, red tiled sloping roofs, and native Phacelia trees gives the restaurant an unrecognizable appearance, as though it were a remodeled space imbued with artistic flavor and bearing the mark of the times.

It is commendable that the large cedar, Phacelia, and other native trees in the original factory were preserved during the remodeling process. The ingenious combination of these trees and the red bricks serves to complement each other and imbue the renovation project with a distinctive charm.

5.2.4. Incorporation of Film Art Elements

The art district is replete with references to film, with movie art elements visible throughout. Among these, the most representative is the Avenue of Stars, on both sides of which stand dozens of sculptures themed around movie trophies. These include the Golden Bear, the Golden

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

Unicorn, the Golden Rooster, and so on. These sculptures serve not only as a tribute to the movie industry but also as an enduring testament to the art of cinema. The ground is punctuated by five-pointed star floor lamps, creating a solemn ambience along the entire avenue. Each step is imbued with the light and shadow of cinematic history.

This landscape serves not only to popularize the brilliant achievements of China's film industry to the public, but also to attract tourists who stop to take photographs. Those who visit this site from diverse geographical and cultural backgrounds leave their personal experiences with movies, thereby fostering a more intimate connection with the art of cinema. The Starlight Road has become a site where emotions, memories, and dreams are gathered, imparting a distinctive allure to the entire art zone.

5.2.5. Clever Use of Red Brick Elements

Fig. 8 Modeling a Filming Industry Cluster at the Xi'an Film Factory
(Source: https://newoss.zhulong.com/forum/202005/14/12/094818w0opk306co31ybqh.jpg?x-oss-process=image/resize,w_760)

The Xi'an Film Factory renovation project exemplifies the versatility of red brick elements in architectural design, integrating this traditional building material with contemporary materials to create a distinctive aesthetic appeal.

In the art district, red bricks are employed in a multitude of ways. For instance, the combination of red bricks and metal edges creates a visual effect of antiquity and modernity. Red bricks and glass bricks echo each other, demonstrating a dialogue between classical and modern. Furthermore, red bricks with stainless steel and perforated aluminum panels present a different industrial style.

In terms of red brick modeling, there is a wide variety of changes. In the concave and convex changes of the façade, metal is used locally, thereby adding a sense of hierarchy and modernity to the building. In the changes of masonry, the red bricks are in various shapes, some presenting regular rectangles, while others show curves and staggering, thereby presenting rich spatial tension and aesthetic feelings.

This ingenious incorporation of red brick elements not only preserves the historical and cultural characteristics of the Xi'an Film Factory, but also exemplifies the fashion and allure of contemporary architectural design. The incorporation of red brick, a material with a profound historical legacy, with contemporary materials not only enhances the aesthetic appeal of the edifice but also underscores the essence of cultural continuity and innovation.

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

Fig. 9 Shaped wall with red brick as base material (top left and right)
Red brick + stainless steel + perforated aluminium panels (bottom left)
(Source: Image from the Internet)

5.3. Planning Implementation

On November 30, 2021, the Xi'an Film Factory was included in the fifth national list of industrial heritage sites, as designated by the Ministry of Industry and Information Technology of China.

6. Conclusion

Industrial heritage is not only an important deposit of historical development, but also a distinctive resource in urban development. The protection and reuse of industrial heritage is a significant issue to be considered in urban development. This paper examines the practical experience of industrial heritage protection and reuse in China and abroad, and proposes three major strategies for protection: function conversion, open sharing, and cultural protection.

The paper analyzes the practical experience of industrial heritage protection and reuse at home and abroad, and puts forward three major protection strategies: assessment and analysis, renewal and transformation, and integration and development. The Xi'an Film Factory in Xi'an City, Shaanxi Province, is used as an example to study the renewal and transformation strategy of promoting the protection and reuse of industrial heritage by means of urban renewal. The aim is to provide experience and reference for the transformation of industrial heritage projects.

References

[1] "Turkish Industrial Heritage 'Public Space', Transformed into Park 'Public Space' / İTÜ & DS Architecture" [Hasanpaşa Gasworks Park and Museum Complex / İTÜ & DS Architecture] 24 December 2021.

[2] "Brick Walls Open Concrete Doors, Slaughterhouse Transformed into Contemporary Art Gallery PLATO / KWK PROMES" [PLATO Contemporary Art Gallery / KWK PROMES] 01 April 2024.

ISSN: 2692-7608 DOI: 10.6981/FEM.202407_5(7).0015

[3] Ying Zhang, Qianqian Zheng, Chengcai Tang, Haixia Liu, Minrui Cui,Spatial characteristics and restructuring model of the agro-cultural heritage site in the context of culture and tourism integration,Heliyon,Volume 10, Issue 9,2024,e30227,ISSN 2405-8440.

[4] Mateusz Naramski, Krzysztof Herman, Adam R. Szromek,The Transformation Process of a Former Industrial Plant into an Industrial Heritage Tourist Site as Open Innovation,Journal of Open Innovation: Technology, Market, and Complexity,Volume 8, Issue 2,2022,74,ISSN 2199-8531.

[5] The Nizhny Tagil Charter For The Industrial Heritage / July 2003 Charter – TICCIH.

[6] Wuxi recommendations / Publication by the China Cultural Heritage Protection Forum / 04 November 2011Article page (sinowh.org.cn).