

A Brief Analysis of the Renewal of Industrial Architectural Heritage

-- Taking Chongqing E'ling No.2 Factory as an Example

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Abstract. This paper takes Chongqing E'ling No.2 Factory (TESTBED2) as the research object, analyzes the design concept and design method of Chongqing E'ling No.2 Factory through field investigation and data collection. It combines the application of deconstruction in architectural design theory and looks for the mixture, interweaving, superposition, and deconstruction in the industrial history of architecture, decomposition, intersection, and combination, which are inherently related. It explores the enlightenment of the transformation of urban industrial historical heritage.

Keywords: deconstruction, industrial historical architecture, activation.

1. Current Situation of Urban Industrial Heritage

The historic building is a symbol of the development of national civilization, the landscape of a city, and a memory card for people's lives. General Secretary Xi Jinping pointed out in Fuzhou that many cities have destroyed many ancient buildings in the course of development and it has introduced many foreign architectural styles, and the urban buildings have lost their individuality.... in the urban development, we should pay attention to...a large number of historic buildings need to be protected, expanded or reused.

The city is made up of countless parts, and each part also shows infinite diversification. [1] The Nizhny Tagil Charter points out that industrial heritage consists of historical value, technical value, social value, architectural, or scientific research value. It includes buildings, and machinery, workshops, mills, factories, mines and related processing and refining sites, warehouses and shops, places for production, transmission and energy usage, transportation infrastructure, housing supply, religious worship or education, and so on. [2] For culture, the representative historical buildings, their splices, and coexistence enriches and extends the city; for the residents, the integration of new and old brings the richness of experience; For the economy, different building groups generate function blending, which is conducive to accommodating all forms and activating the city; for the city, industrial historical heritage is important and an evidence of urban development, which is helpful to the cultural identity and sense of belonging of residents .

With the 19th National People's Congress held, it has become the contradiction between the growing material and cultural and spiritual needs of the people and the backward productivity for their need for a better life. This structural change has greatly reduced the proportion of state-owned industry and the vitality of the traditional manufacturing industry. At present, the old industrial bases in many cities fail to adapt to the needs of modern society, resulting in industry recession and anti-industrialization, which have lost their original value and been abandoned. In recent years, people have gradually realized the importance of industrial heritage. There has been a movement of 'old building transformation' domestically and internationally. Scholars have tried to explore the reuse model of industrial buildings.

"Museum exhibition" is the representative of Shenyang Foundry Museum, "Art Park" is the representative of Beijing 798 Art District, "green space in the park" is the representative of Zhongshan Qishan Park, and there are "business model" of Shanghai International Fashion Center, "residence" of Wuhan Bairuijing and "campus" of Xi'an University of architecture and technology of Huaqing College. But at the same time, there are also imperfect legislation and models that are inconsistent in the local place.

2. The Connection between Deconstruction and Industrial, Architectural Heritage

It has experienced the great innovation of technology and the impact of Western thinking in the 21st century. In terms of ideology, people's ideology has changed from the dualism of yes or no to the pluralism of inclusiveness. People agree that the world is made up of a variety of independent entities, which coincides with Derridard Philosophy. Each city has its historical industrialization, and the traditional industry which does not meet the needs of modern times disintegrates. The industrial historical building revival lies in its function recombination.

From an aesthetic point of view, Venturi said in the book "The Complexity and Contradiction of Architecture", "I like the mixture of architectural elements, rather than 'purity'; I prefer to cook in one pot, not to be refreshing; I like it to be twisted rather than being 'straightforward'; I like it to be uncertain rather than being organized, arrogant, inhuman, boring, and so-called 'fun'; I would rather have something that has been passed down from generation to generation, not something to be 'designed'; I would rather have it to be easy-going and inclusive, rather than exclusive; I would rather have it to be over-rich, rather than simplistic, underdeveloped and reform-oriented; I would rather have it to be self-contradictory, ambiguous, but not straightforward; I appreciate it to be messy and active rather than the clear and unified." [3] In respect of the original pattern, it deconstructs, through superposition, combination, collage, in a diversified way to achieve renewal, creating a variety of coexisting forms such as juxtaposition, separation, and blending of historical time and space. It is connected to the concept of deconstruction in this random, noisy, and complicated external performance.

3. Analysis of the Republic of China Banknote Printing Factory- Chongqing E'ling No.2 Factory Cultural and Creative Park

The Chongqing E'ling No.2 Factory is located at No. 1 E'ling Main Street, Chongqing City. It was built in the 1940s and 1950s. It was once the banknote printing factory of the Central Bank of the Republic of China. From 1940 to 1970, all the tickets used in Chongqing People's life came from here, it can be said that it is the historical memory of the older generation of Chongqing people, and it is also the glory of Chongqing. As time goes by, the old industrial buildings cannot adapt to the new changes, the No. 2 printing factory gradually declined, in 2012, the whole factory was relocated and left unused. In 2014, the government of Yuzhong District issued a new strategy, decided to take the No.2 factory as the cultural and creative base. It invited the team of all design architectural design firms to design and carry out a TESTBED 2 experimental transformation.

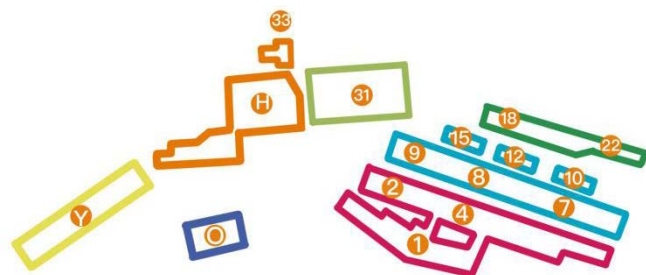
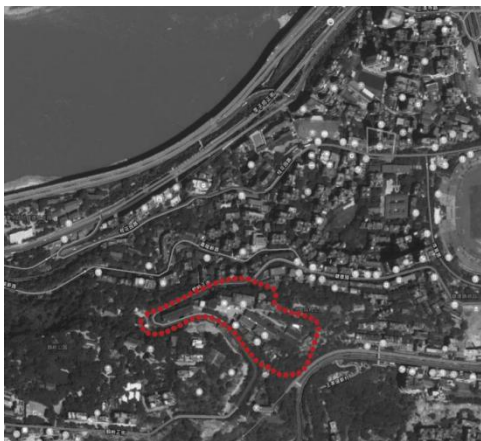


Fig. 1,2 The location of TESTBED 2

Tab. 1 Functional partition diagram of TESTBED 2

Name	Function
Y	Hotel
H	Test Market
31	Art
O	Office
1,2,4	Design
7,8,9	“Chaotic Planet,” Hot Pot, Former Site of TESTBED2
15,12,10	Bed and Breakfast, TESTBED2 Museum, Restaurant
18,22	Tea House, Design Studio

3.1 Deconstruction- "Sandwich," "Theme Print."

In the early stage of design, the designer will also come back to dissect the workshop, analyzed the location of the No.2 factory, found that the park, residence, market, hospital, and other supporting facilities were complete. He quickly concluded that the No.2 factory had the historical traces of "tagging" of printing factory, memory, ceramic tile, and existing works in the Republic of China.

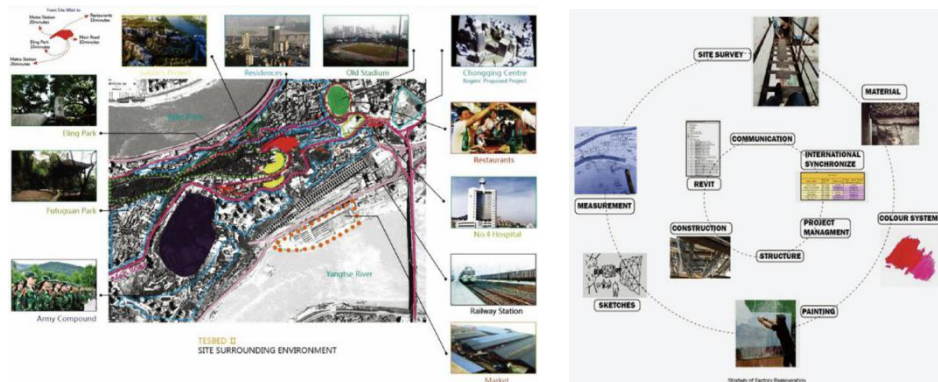


Fig.3,4 The location analysis and brainstorming of Testbed 2

It summarizes the unique characteristics of the Chongqing factory with its aerial landscape. The following strategies have been proposed:

(1) Climb on the roof of E'ling No.2 factory; you can see the Jialing River in the north and the Yangtze River in the south. Whether it is day or night, it is the best viewing platform for Chongqing. The designer has found the rooftop landscape, which is the core of the E'ling No.2 factory.

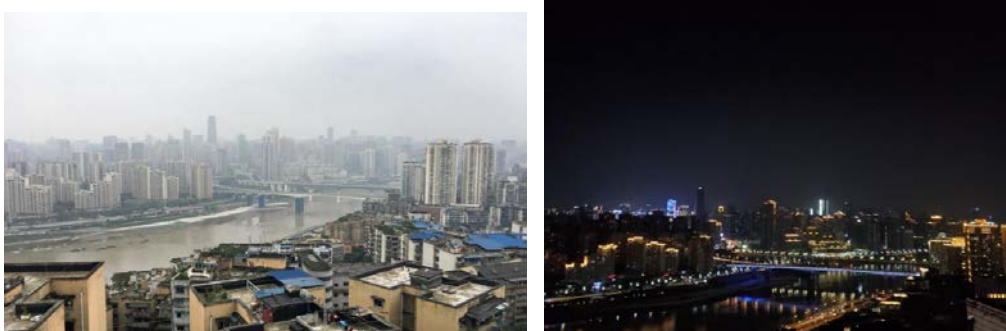


Fig.5,6 The scenery of Testbed 2 from the roof

He put forward the idea of "the sandwich" model. Based on the original site, the vertical distribution of functions is advocated. Because the original site only meets the printing needs at that time, the exterior is enclosed by a wall, which hinders the vision.

The designer aims to build the first floor as the commercial and public leisure space, increase the mobility and interaction of people, focuses on the value of top-level commercial leisure, and provides a green viewing platform public space.

The roof of each building that can be used is connected to form an aerial landscape footpath.

The key to "sandwiches" lies in the "fillings." In the past, the "fillings" of cultural and creative parks were artists.

In fact, art is interlinked and should not be limited to its professional restrictions.

Now it is the ideological collision of artists, writers, scientists, painters, singers, and other professions to create a more open cultural and creative atmosphere.

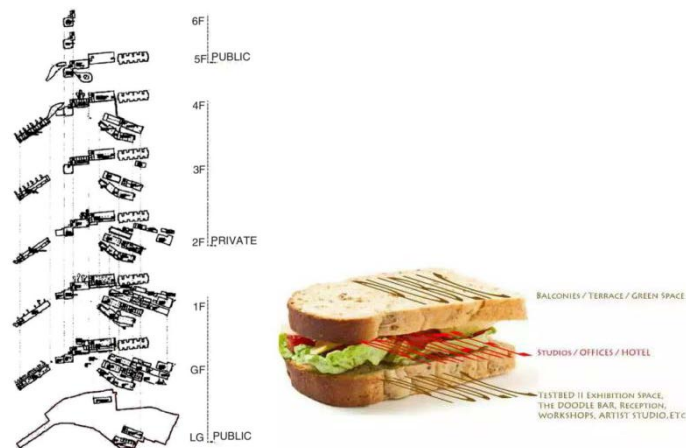


Fig.7 The "sandwiches"

(2) According to the original characteristics of the No.2 factory, it puts forward three ideas of streets with the theme of "printing." First, the printing of natural streets, with the theme of natural elements, the running water, whistling winds, swaying tree traces, are all "printed." Second, the printing of the streets of human activities, adding public facilities, highlighting people's "gathering printing." Third, the printing of the future streets, focusing on the newly added buildings and displaying the characteristics of the shops on the facade buildings.



Fig.8, 9,10 The kind of "printing"

(3) Gaps, for sidewalks along the street, it opens the partial secondary entrance and picks out the platform. It should keep the dark traffic passage, and use artistic techniques, such as the author's investigation, through the alley and "mirror encounter," the reflection of the mirror attribute expands the space, to bring surprise to the old factory.



Fig.11,12,13 The "mirror encounter"

3.2 Construction-scattered Spatiotemporal Narration

According to the history and current situation of the original building, the scattered spatiotemporal narration is adopted. It has different nodes, such as interface fragment collage, information media intervention, Mobius circular fusion, etc. each building reflects the designer's understanding of printing, future conception, and past narration.

The scattered composition is a unique visual space in traditional Chinese painting. It is not limited by space, time, and image. It changes with the sight and achieves rich content, messy but beautiful with the unlimited association. Through the break-up and reorganization of space, the memory fragments of space express the perception of a place on an infinite time axis. It takes time as the axis and space as the body, giving the viewer a resonance and beauty transmission. [4] In the same time and space, the splicing, separation, alternation, and insertion of memory fragments make the space change from static to dynamic, presenting fragments and moments of different dimensions to realize the gathering of time of the history.

(1) According to the contour line, mountain walks, architectural outlines, etc, are printed on the steel column. The new pattern and the original concrete are collaged, and the traces of history are seen through the hollow.

(2) The abandoned No. 7 factory building uses the "education" intervention - Chaos planet. It is based on the 11 spans continuous vault along the river, and the entrance is added. The entrance adopts modern reinforced concrete and glass box as the main materials, and the three individual blocks take time as the sequence, forming the dialogue between the present and the past.



Fig.14 The "Chaotic Planet"

(3) The biggest focus is on the No. 31 building. It can be used to knock out the tiles with potential safety hazards, or naturally fall off, and reinforce the tiles without problems, showing the residual feeling of seam repair, not always, infinitely circulating, with Mobius ring, keeping reviewing the history.



Fig.15,16 The contrast of old and new TESTBED 2

3.3 Reconstruction-combination of Spatial Streamline and the New and the Old Contrast

From the perspective of deconstruction, it is necessary to add new buildings to highlight the individuality. According to the actual needs of the site, the strong contrast between old and new has activated the old factory.

It is often built on the mountain after the special terrain of Chongqing is taken into account. The mountains and rivers are connected by bridges, which is one of the characteristics of Chongqing. The designer connected the original closed single building with the bridge between Building 1 and Building 2 and Building 4, and the streamline changed from a single entrance to a multi-layer entrance ring type. It reorganizes the spatial streamline and increases the use of public space and the compound function of commerce. According to different surroundings, there are three types of bridges: I-shaped bridge, tree-shaped bridge, boat-shaped bridge, with light and high-strength materials, which makes the visually unstressed. The original single function, after combination, provides the possibility of viewing and photographing. Under the light and shadow, the hollowed-out steel plate interacts with nature. The unclear symbols of the hollowed out steel plate are fascinating and interesting.

4. Summary

4.1 Analysis, Looking for Characteristics

Zhouzhuang, Tongli, Wuzhen, Luzhi, Nanxun, and Xitang are all water towns in the south of the Yangtze River, but each place has its characteristics. The water house in Wuzhen: “when you come to Gusu, you can see every family lives by the river”, the water lane in Zhouzhuang: “you can see the boats berthing in front of the house, and every family lives by water”, the corridor shed in Xitang: “the whole town is connected by corridors” Tongli's rivers and lakes, Luzhi's lady boat, Nanxun's Chinese and Western combination. [5] It is the most important to retain the characteristics of the city to build historical buildings.

4.2 Diversified Construction and Eclecticism

The industrial historical building is confused. It is an integration of historical, public, social, and various intersections. Now the design begins to transform, from tangible design to intangible design, from product design to service design, from real design to virtual design, from art design to cross-border integration of art and science. The trends indicate that a diversified design era has emerged. It should be developed in coordination with other subjects. We should pay attention to the integration of all aspects, preserve the content, nature, and needs of different natures, and integrate with the times, to stimulate the vitality of historical buildings.

4.3 Multidimensional Reconstruction, Reviving the History

With the globalization of culture, our thinking can not be limited to a single development. The renewal of industrial historical heritage is a complex and multi-field project. Without legal

provisions, technical support, the people, and the evaluation system in the later stage of the works, industrial buildings cannot be truly revived.

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