

Urban Renewal from the Perspective of Industrial Heritage Protection: Taking the Qiaokou District of Wuhan as an Example

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Abstract—Most of the earliest national industries in Wuhan are located along the Hanjiang River, and Qiaokou is considered to be a gathering place for Dahankou old industrial base. Zongguan Waterworks, Pacific Soap Factory, Fuxin Flour Factory, Nanyang Tobacco Factory and other hundred-year-old factories are located along Hanjiang River in Qiaokou District, especially the Gutian Industrial Zone, which was listed as one of 156 national restoration projects at the beginning of the founding of the People's Republic of China. After decades of development, Qiaokou has become the gathering place of the chemical industry and secondary industry, causing damage to the city and serious pollution, becoming a marginalized area forgotten by the central city. In recent years, with the accelerated pace of urban renewal, Qiaokou has been constantly reforming and innovating, and has begun drastic changes in the transformation of old cities and the development of new districts. These factories have been listed as key reconstruction projects, and a large number of industrial heritage with historical value and full urban memory have been relocated, demolished and reformed, with only a few factory buildings preserved. Through the methods of industrial archaeology, image analysis, typology and field investigation, this paper analyzes and summarizes the spatial characteristics of industrial heritage in Qiaokou District, explores urban renewal from the perspective of industrial heritage protection, and provides design strategies for the regeneration of urban industrial sites and industrial heritage.

Keywords—Industrial heritage, urban renewal, protection, urban memory.

I. INTRODUCTION

QIAOKOU District is a municipal district under the jurisdiction of Wuhan City, Hubei Province. It is one of the seven central urban areas of Wuhan and a core component of Hankou. It is located in the west of Hankou in Wuhan, connected to the Yangtze River in the east, and adjacent to Jiangnan District; the Hanjiang River in the south, across the water in Hanyang District; the west is opposite to the rudder, the forehead bay, and the north to the Zhanggong Dike is bordered by the Dongxihu District. It is one of the birthplaces of Wuhan's modern industry and a gathering place for the old industrial base of "Dahankou". The earliest national industries in Wuhan were laid out along the Hanjiang River, such as the

Jiji Hydropower Plant (now the Zongguan Water Plant), the Fuxin Flour Mill (now the 1919 old Workshop), the Nanyang Tobacco Factory, and the Pacific Soap Factory; all of these 100-year-old factories were born and developed in the Qiaokou. The name of Zongguan is said to be based on the Zongguan Water Plant, especially the Gutian Industrial Zone, which was once the birthplace of the Qiaokou industry. At the beginning of the founding of the country, it was listed as one of the 156 national restoration projects. After decades of development, Gutian and its surrounding areas have gathered about 200 industrial enterprises, and Qiaokou has become a gathering place of the chemical industry and secondary industry. At the same time, it has caused damage and pollution to the city and become a marginalized area forgotten by the central city. However, with the acceleration of the "three old" transformation and the "shifting from labor-intensive industry to service economy" process in Wuhan, Qiaokou is also constantly reforming and innovating, and has begun to drastically carry out the transformation of the old city and the development of the new district, through large-scale demolition and transformation to achieve urban renewal, and to get space reconstruction and quality upgrades, in order to change the inherent image of the smoky and polluted area in the Qiaokou District.



Fig. 1 Location and Regional Map of Qiaokou

II. LITERATURE REVIEWS

A. Review of Foreign Studies

The term "urban renewal" originated in the industrialized countries of Europe and America in the 1950s and 1960s, and the concept was defined authoritatively at the first research conference of urban renewal held in The Hague, Netherlands in

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August 1958 [6]. After the industrial revolution, the rapid development of industry and the expansion of the population led to the deterioration of urban environment. Urban renewal has gradually become the focus of attention of Western governments and the public. Ebenezer Howard's "Garden City", Le Corbusier's "Bright City", Frank Lloyd Wright's "Broadacre City" and Eliel Saarinen's "Theory of Organic Decentralization" are all early discussions of urban renewal. But the real urban renewal was officially kicked off in the West after the Second World War in 1945, marked by the promulgation of the Housing Act of 1949 in the United States [4]. Urban renewal in Western countries is divided into the following stages:

- (1) From the industrial revolution to the early 20th century, it is the embryonic period of urban renewal. At this time, due to lack of planning and guidance from relevant departments, there were many problems in urban construction. At this time, urban renewal aimed at clearing "slums", focusing on residential problems and proposing urban improvement plans on the basis of which, extensive research on urban renewal began at the end of the 19th century. Haussmann began the "Paris Reconstruction Plan" in 1853, and Ebenezer Howard elaborated on the "Garden City" theory in "Tomorrow: A Way to Real Peaceful Reform" in 1898, and further proposed five specific objectives for the construction of garden cities in 1903. However, the "Paris Reconstruction Plan" of the large-scale demolition and construction still has different praises and criticisms. The theory and practice of the "Garden City", though reflecting people's understanding and Reflection on the society at that time, also provided the ideological basis for Raymond Enwin, Berry Parker's "Satellite City Theory" and Iriel Sharinin's "Organic Evacuation Theory", but they were too utopian.
- (2) From the beginning of the 20th century to the end of World War II, it was a stagnation period of urban renewal. At this time, the research on urban development and transformation has not developed much. The focus of urban renewal in the Britain has shifted to the development of industrial cities, evacuating industrial population and balancing industrial development. Germany turned to explore a reasonable model for the combination of urban functions, evacuating the "congestion block" formed in the late 19th century. The United States explores urban expansion by building comprehensive and independent urban units.
- (3) After the 1950s, it was a booming period of urban renewal. At this time, a large number of urban renewal ideas and reform cases emerged, such as "Glorious City" of Corbusier, the "urban beautification" movement in Chicago, and the "functionalism" of the International Association of Modern Architecture, etc. However, practice has shown that these plans which ignore the structure and function of the city itself cannot succeed. Jane Jacobs and her book, "The Death and Life of Great American Cities" put forward some important ideas of "diversity is the nature of the city", "diversity of urban

functions" and "mixture of basic functions", which had certain guiding significance for urban renewal and old city transformation at that time. In the mid-20th century, famous urban theorists and social philosophers emphasized that urban planning should be "people-centered" and "inseparable from cities and regional", which is not only the inheritance of predecessors' thoughts, but also the expansion and innovation of them. The idea of "city-region" has a great guiding significance for the subsequent urban renewal. In 1975, C. Alexander raised the issue of transformation and protection of historical value in urban renewal in the "Oregon Campus Planning Experiment", and then the issue of protection was taken seriously in urban renewal. In 1977, the International Construction Association formulated the "Machu Picchu Charter" on the planning and protection outline for historical sites and monuments in the city. In the 1970s, the Low Cost Housing Research Center at McGill University in Canada proposed the principles of "self-development" and "sustainable development" in the study of slums. In the late 20th century, the idea of sustainable development under the pressure of resource consumption, environmental pollution and population expansion in urban development economy became the main idea of urban renewal [5].

B. Review of Domestic Studies

China's urban renewal work has been carried out late, and up to now, it has only a history of some 60 years. In the early stage, it mainly focused on the residents' living problems. Then, the central government proposed the policy of "changing consumption-oriented cities into production-oriented cities", and the initial urban renewal work was put on. In 1953, the urban renewal was launched again, but blindly drawing lessons from the Western urban renewal that has become increasingly prominent in China's cities after major demolition and construction. Today, China is committed to finding its own "sustainable development" path. The development of urban renewal in China is mainly due to the following stages:

- (1) 1949 -1982 was the germination period of urban renewal in China. After the founding of the People's Republic of China, Chinese cities destroyed by the war, but at this time the country has just been established, its comprehensive strength and practical experience were lacking. Therefore, this stage is mainly focused on improving people's living environment. In the late 1950s, China vigorously developed its economy and built a large number of industrial and ancillary buildings, which caused serious damage to the urban structure and ecological environment. The backward concept of protection made a large number of historical relics not well defended.
- (2) 1983-1994, studying in the West. In 1983, Peter Hall and Deci Zou studied and analyzed the thinkers and major urban planning ideas of early European urban planning. In 1987, Deci Zou reviewed the evolution and background of urban residential forms in the United States [7]. Huijuan Wang analyzed and summarized the urban renewal in

different periods and stages of Britain. She believed that the ideal process of urban renewal should be to reconstruct the city in sections without damaging the overall structure of the city [8]. Xuean Yang gave a detailed explanation of the composition of the relevant management departments of Rotterdam and analyzed the urban renewal policies and actions promulgated by them [9]. In 1990, based on the study of Canada's urban planning legislation, Nan Shi mainly used Ontario as an example to form the four basic elements of the urban planning system — planning organization, planning plan formulation, planning implementation and planning legislation [10]. In 1994, Qizhi Mao studied the experience and lessons accumulated during the rapid development of housing and urban construction in the Federal Republic of Germany under the leadership of the social market economic system for more than 40 years after the war [11].

- (3) 1995-2003, the preliminary exploration period of urban renewal theory. At this time, the relevant experts and scholars in China began to turn their attention to the transformation, countermeasures and reflections of urban renewal. In 1995, Yewei Chen focused on the new dynamic mechanism faced by the overall reconstruction of the old urban renewal in Shanghai, and the use of

diversified financing methods and financing systems in line with international standards to make urban construction funds embark on a virtuous cycle of accumulation of new mechanisms [12]. In 1997, Jian Zhou discusses the establishment of China's urban renewal planning system. He believed that urban renewal needs a perfect index system to ensure the quality of implementation and to promote the sustainable development of economy and society through the implementation of urban renewal planning. The establishment of the indicator system should be studied from three aspects: environment, society and economy [13]. In 2000, Jianqiang Yang believed that how to grasp the main contradictions, basic characteristics and trends of urban renewal, and formulate appropriate urban renewal policies have become an important research topic in China's urban construction and development [14].

- (4) 2004-present, for the booming period. At this time, a large number of planners and architects emerged, taking advantage of the past urban renewal, reflecting on the problems existing in them, taking the road of their own urban renewal in light of their own national conditions, and gradually turning from the overall update to the update strategies of various regions.

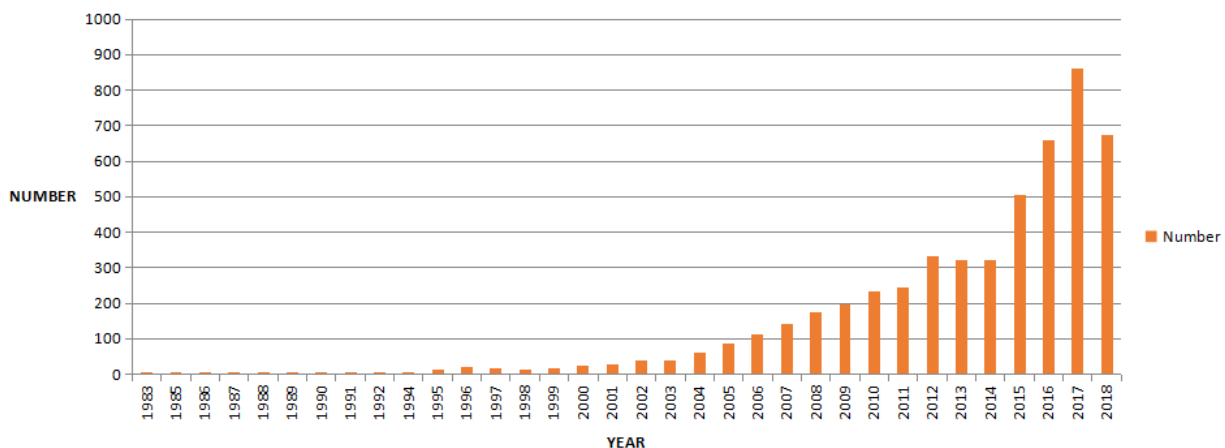


Fig. 2 Location and Regional Map of Qiaokou

III. DEVELOPMENT AND DECLINE OF THE INDUSTRIAL HERITAGE OF QIAOKOU

A. Development of Qiaokou Industry

Qiaokou used to be the birthplace of Hankou's industry and the production base of Hankou's light industry. Its industrial development and recession have gone through more than a century, and its development process is roughly divided into the following stages:

- (1) During the Qing Dynasty, domestic industries were basically hand-made and agricultural and sideline products were distributed, national and foreign industries began to rise in the territory. The initial industry was mainly for the production of metal equipment and the processing and production of oil, wine and other foods. Later, agricultural

and sideline products were distributed in large scale in the region, and the export commodity processing industry gradually formed in the territory. At the end of the Qing Dynasty, Hefeng and Hengfeng Flour Mills started the modern national industry, Large Factory For the Poor opened Hankou government-run industrial enterprises, Deyuan brick and tile factories of German businessmen, Fuhua tobacco company of Japanese businessmen opened Hankou machinery to produce bricks and cigarettes, Jiji Hydropower Company opened Hankou mechanical power generation, and Kangcheng liquor factory of French businessmen opened Hankou machinery liquor, and thus, it can be said that the Qiaokou is the birthplace of Hankou Industry.

- (2) From the beginning of the Republic of China to the pre-war

period, the handicraft industry developed steadily and light industry flourished. The vigorous development of light industries, such as food processing (the largest flour mill in China,) and domestic products (Nanyang Brothers Tobacco Company, the earliest national tobacco industry in Wuhan), has made Qiaokou a production base of light industry in Hankou.

- (3) From the Second Sino-Japanese War to the founding of the People's Republic, the handicraft industry declined. After the fall of Wuhan, raw materials were mostly controlled by the Japanese army, which made the handicraftsman's livelihood difficult. The handicraft industry was difficult to continue, and the handicraft industry gradually declined.
- (4) From the time of the founding of the People's Republic to the 1990s, domestic industry developed rapidly. With the rapid development of new industries in the territory, Gutian Industrial Zone has become a new industrial zone in Wuhan City. A large number of factories and enterprises have been built in the area, and the scattered points are

gradually connected into lines and patches.

- (5) From the 1990s to present, domestic industry has gradually declined. The rise of the chemical industry and secondary industry has caused serious damage and pollution to the cities and environment of Qiaokou District. With the national policy of "Shifting from Labor-Intensive Industry to Service Economy", a large number of factories have begun to undergo extensive renovation, relocation and demolition, and domestic industry has gradually declined.


B. General Survey and Current Situation of Industrial Heritage in Qiaokou

Nowadays, there are only about a dozen industrial enterprises in the Qiaokou area (only Zongguan Water Plants, Nanyang Tobacco Factory and Hubei Prospecting Machinery Factory are still in use) from the peak period of nearly 200 to now [1]. Four of them have been renovated, two of them are idle, and some of them will be demolished after 2015. Details of the specific industrial remains are as follows:

TABLE I
COLLECTIVE TABLE OF INDUSTRIAL REMAINS IN QIAOKU DISTRICT

Summary of on-site investigation data of industrial relics in Qiaokou District		
In Use		
Enterprise name	Completion time and characteristics	Heritage status
Zongguan Water Plant	1909 In 2012, the old pump house was listed as the first-class industrial heritage of Wuhan. Renaissance architecture style, huge building, striking red brick appearance.	
		In 2006, the old pump house was transformed into a water museum
Pacific Soap Factory	1914 In 2012, it was listed as the third-class industrial heritage of Wuhan. Six buildings, all brick and wood structures.	
		Now Wuhan Chemical Plant
Wugang Hankou Rolling Mill	1966 Some concrete walls and some red brick walls. partial pattern brick decoration.	
Hubei Prospecting Machinery Factory	1952 The facade is slightly dilapidated, but the structure is intact.	
Wuhan Guoguang Weaving Factory	1951 Offices, warehouses, and factory buildings are scattered, wood frames, and brick-concrete buildings.	
		Now Yuan Xingda Textile Apparel

Summary of on-site investigation data of industrial relics in Qiaokou District

People's Liberation Army 7218 Factory	1949 The Soviet style of the red brick slope roof, slightly dilapidated, but the structure is intact		Now it is Wuhan Printing Center of People's Daily
Reform			
Wuhan Light Vehicle Manufacturing Plant	1951 East factory: In 2012, the office building was listed as the first-class industrial heritage of Wuhan. Soviet style office building, huge volume, brick red facade, well-structured, the axis of the building is still in use, the rest of the building is in the process of transformation. West factory: Red brick facade, dozens of factories are partially renovated, some are under renovation, and each building facade is affixed with the previous identity brand.		In 2002, it was transformed into a state-level incubator of scientific and technological enterprises.
			In 2013, it was transformed into Jiangcheng No. 1 Cultural Creative Industry Park.
Fifth of Fuxin Flour Mill	1921 In 2012, it was listed as the first-class industrial heritage of Wuhan. The workshop was demolished in 2009, leaving only one reinforced concrete building.		In 2013, it was transformed into Cultural and Creative Park named 1919 Old Workshop.
Wuhan Copper Material Factory	1958 In 2012, it was listed as the second-class industrial heritage of Wuhan. The museum retains the "red" imprint of the red brick walls and roofs of the industrial buildings of the 1950s.		In 2010, it was transformed into the National Industrial Museum of Qiaokou.
Hubei Xinhua Printing Factory	1954 The factory building is basically well preserved; some of it has been rebuilt and some of the original building remains intact.		In 2009, it is now changed to Hubei Xinhua Printing Industrial Park Co., Ltd.
Lay idle			
Nanyang Tobacco Factory	1926 In 2012, it was listed as the second-class industrial heritage of Wuhan. The tobacco factory includes the factory building and office area, red brick red tile, two-story building, glass windows, European classical style.		Want to transform into a cultural and creative industrial park
Wuhan Light Industry Machinery Factory	1950 Relocation in 2009, there are only two relatively complete office buildings, one used as a driving school office building and one idle.		Driving school
Dismantle			

Summary of on-site investigation data of industrial relics in Qiaokou District

Shenxin Branch of Wuhan First Cotton Textile Group	1921 The factory was demolished in 2009, leaving only a few residential buildings with bare-faced concrete facades, which are now in ruins.		There are only a few residential buildings left.
Hubei Transportation Auto Parts Factory	1952 The factory building was demolished, leaving only a pale yellow residential building with a slightly dilapidated facade.		There's only one residential building left.
Wuhan Winery	1952 Only one single-span red lacquer archway remains; all the other factories were demolished in 2014.		Only one archway left
Wuhan Paint Factory	1928		Demolition in 2015
Wuhan Pharmaceutical Factory	1939		Demolition in 2015
Wuhan Machine Tool Plant	1951		Demolition in 2015
Wuhan Inorganic Salt Chemical Plant	1952		Demolition in 2015
Wuhan Organic Synthetic Factory	1953		Demolition in 2017
Hanchang Machinery Factory	1955		Demolition in 2015
Wuhan Bottle Factory	1957		Demolition in 2015
Wuhan Cable Co., Ltd.	1958		Demolition in 2017
Wuhan Public Bus Manufacturing Plant	1963		Demolition in 2015

C. Protection of Industrial Heritage in Qiaokou

Nowadays, under the background of national policy “returning two into three” and “three olds”, Qiaokou is also constantly reforming and innovating. The “dirty, chaotic and poor” factories have been listed as key renovation projects. A large number of industrial heritages with historical value and full of urban memories have been relocated, demolished and transformed, and only a few of them have been retained (as can be seen from Table 1). In the process of protection, the following problems exist:

- (1) Industrial buildings themselves are poor quality and not received properly protected, even some industrial buildings with high value have not been reasonably protected, resulting in a large number of industrial buildings dilapidated and dangerous. In the process of improving the environment and image, a large number of industrial factories are becoming the target of public criticism. As a result, a lot of industrial buildings are gradually lay idle and demolished.
- (2) Only a few industrial heritages with “identity” can be protected, and the “unidentified” industrial heritage remains unprotected. For example, in the first batch of industrial heritage list published in Wuhan in 2012, the first-level industrial heritage with “identity” includes the old pump house of Zongguan Water Plant, the Fuxin Fifth Flour Mill, the office building of Wuhan Light Vehicle Factory, and the second-level industrial heritage Nanyang

Tobacco Factory, Wuhan Copper Material Factory, and the third-level industrial heritage Pacific Soap Factory have been protected to varying degrees, but those that are unidentified such as Wuhan Inorganic Salt Chemical Plant, Wuhan Organic Synthesis Plant and Wuhan Bottle Factory have been dismantled. And because of the lack of attention, their historical data and visual information are limited.

- (3) The difference of ownership and importance of industry leads to the different protection means and strength of industrial heritage. For example, the Zongguan Water Plant and Fuxin Fifth Flour Mill, which are the first-class industrial heritage and historical-cultural protection units in Wuhan, the former has been well maintained and protected as the “Water Museum” for exhibiting water culture; The latter which factory was demolished in 2014, only one office building leaving, and now has been transformed into Cultural and Creative Industry Park named “1919 Old Workshops”.
- (4) Before being certified as industrial heritage, in order to maximize the benefits, the structures should be demolished first. Most of the factories are located in the core area of the city and belong to the private sector. Rapid urban renewal makes the “livable” land in urban areas less, which leads a large number of developers to focus on industrial land. However, once these factories are listed as “literary protection”, they are not allowed to be demolished or rebuilt at random, and so many factory owners will

demolish their factories before their “identity” is confirmed for their own benefit.

IV. RENEWAL OF QIAOKOU

People's perception of Qiaokou is that a large number of rapid development industrial leads to serious pollution and unsuitable for living. Therefore, there is an urgent hope that some measures can be taken to improve their living environment. However, the relevant departments lack the knowledge of the urban memory and the control of the overall functional layout of Qiaokou District. They only hope that the image of Qiaokou District can be improved by eliminating pollution sources and spatial reconstruction, so as to improve people's awareness of the area, and achieve the purpose of improving their living environment.

A. Main Contents of Urban Renewal

Gutian area is the “West Gate” of Wuhan, the core hinterland of Qiaokou, and the strategic hub linking Wuhan's Hankou and Hanyang's economically active areas. Since the 1950s, Gutian area has been a key area for national industrial investment; it is an old industrial base in Wuhan. However, Gutian's impressions have always been of the dilapidated factory buildings, smoky chimneys, bumpy roads and old “10,000-person dormitory”. Long-term industrial development has made it synonymous with “dirty and disorderly”, and known as slums and shantytown. Now the government has

introduced many developers, and is committed to turning Gutian Industrial Zone into an ecological -demonstration zone. In 2002, many industrial-enterprises in Gutian District began to relocate.

The Hanxi area is the link between the Dongxihu Development Zone and the Wuhan Economic and Technological Development Zone. However, people have the impression that it is a large building materials market, distribution center, old industrial base, and a village in the city. The positioning has not been clear. Now the government wants to transform it into a high-end business and trade zone, introduce key commercial projects, enrich the commercial structure, and improve the business format. With its own distribution system, it is expected to become a logistics center, and the government is also committed to develop it into another sub-center of Wuhan [2].

Located at the intersection of the two rivers, Hanzheng Street is the earliest central street in the history of Hankou. Since ancient times, thousands of businessmen have gathered together and the commercial atmosphere is strong. However, in the past 10 years, the hidden dangers of backward business, mixed commercial and residential areas, dense population, traffic congestion and frequent fires are worrying. Now the government committed to making it a central service area that integrates “one-stop” consumer experience such as residence, office, business travel, shopping, leisure, gathering, and social [3].

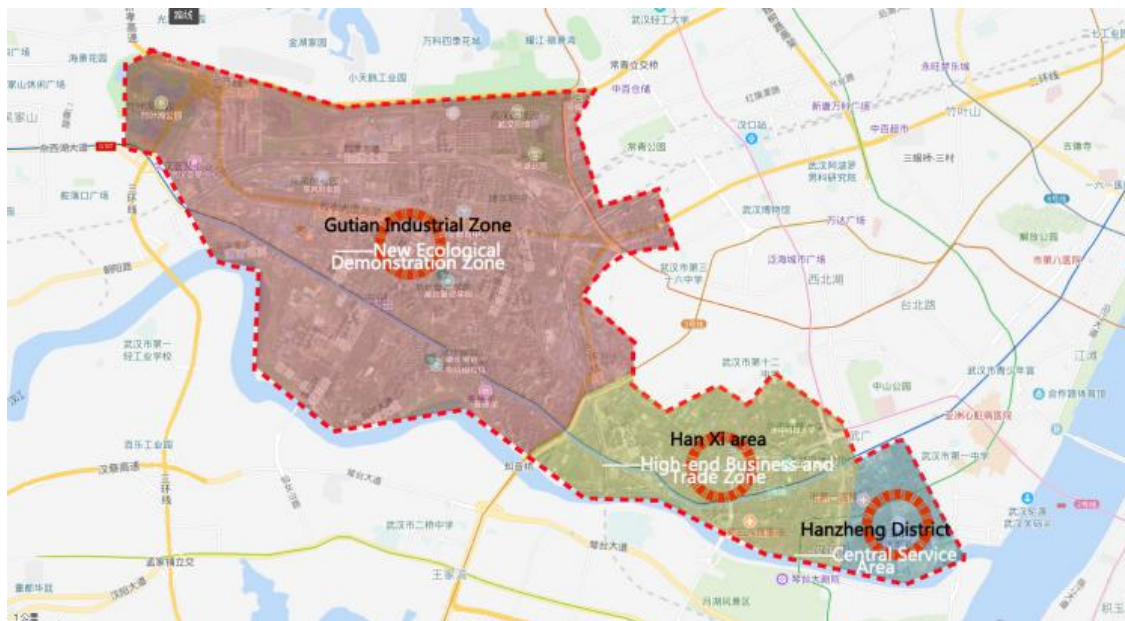


Fig. 3 Mapping nonlinear data to a higher dimensional feature space

B. Advantages and Disadvantages of Urban Renewal in Qiaokou

Urban Renewal can solve some of Qiaokou's problems. However, with the rapid development of the city, the large-scale relocation or demolition of the industrial heritage—the carrier of the memory of Qiaokou, the memory of the city is

gradually declining, and the undifferentiated urban renewal makes Qiaokou become unrecognizable and lose its original characteristics. After the city update, there are the following advantages and disadvantages:

Improvement of ecological environment: A large number of heavily polluted industrial plants have been relocated and

demolished. The reduction of pollution sources and noise has greatly improved the ecological environment of the Qiaokou District.

Improvement of livability: By demolishing industrial buildings, improving transportation systems and transforming infrastructure, the livability of Qiaokou has been dramatically improved, and native inhabitants' living standards have gradually improved.

Revitalizing the stock of land resources: Many industrial zones located in the core area of the city; however, poor management and serious pollution have pushed enterprises to end production or relocate. These immovable buildings are left in place, occupying a large amount of urban resources while being abandoned. Urban renewal can reuse these stocks of land resources.

The loss of regional culture: The altering of the built environment, cultural atmosphere and spatial structure makes the regional culture of Qiaokou change and gradually lose its advantage of Hankou industrial birthplace.

Loss of urban memory: In demolishing industrial buildings full of urban memory, new buildings can only bear new memories from the beginning of construction rather than previous memories, and thus, the greatest characteristic of Qiaokou is lost.

Functional layout confusion and spatial homogenization: Excessive pursuit of effectiveness in the absence of macro-coordination and overall cognition makes the functional layout of the Qiaokou District confusing. The construction of several functionally similar areas in the main urban area has led to serious homogenization of Wuhan space.

C. Comparison of Urban Renewal between Qiaokou District and the Original Concession Area based on the Protection of Industrial Heritage

Comparing the Qiaokou District with the Concession Area, we find that the two places have similarities, for example, both are the birthplace of Dahankou industry and distribute along the water. but the results of urban renewal are different.

Most of the industrial buildings in Qiaokou District were demolished. Even if they were not demolished, they were in a dilapidated state due to their age, creating a sense of decay and desolation and seriously affecting the city's appearance. Industrial buildings in the former concession area have effectively prolonged their lives by means of renovation, management and reuse, and gradually formed their present characteristics while maintaining their original appearance.

Loss and continuation of urban memory. From the above, we can see that the large-scale demolition and construction without paying attention to industrial heritage has greatly changed the urban structure of Qiaokou District, which has lost its urban memory. The protection of the Former Concession has enabled this area maintain the original urban structure, and continuing the urban memory.

Different ways of protection and renewal make the cultural characteristics of the two regions completely different. The industrial buildings in Qiaokou District have gradually declined because they have not been given effective attention and

protection, and the original cultural characteristics of the area have been destroyed by the way of renovation of large-scale demolition and construction. Industrial buildings in the Former Concession continue in another way. Urban renewal not only maintains the original spatial structure and pattern, but also strengthens the construction of public space, landscape sketches and infrastructure. Therefore, the original cultural characteristics of the Former Concession area are continuing in the renewal.

Different status. The difference status in Wuhan makes the two regions with similar geographical locations and environments present the current level difference.

V. CONCLUSION AND QUESTION

In this paper, through summary the characteristics of industrial development in Qiaokou, the present situation and protection measure of industrial heritage s, to explore the urban renewal in this context, and put forward the existing problems in this region. It is believed that urban renewal should respect the characteristics, culture, and individuality of a region, and cannot be blindly carried out to meet the needs of the modern economy. Here, the author has some thoughts:

"Is the protection of industrial heritage correct according to the protection of historical relics? I believe that each industrial heritage has its own characteristics and particularities. Is the protection of industrial heritage correct according to the protection of historical relics? I believe that each industrial heritage has its own characteristics and particularities. If the industrial heritage protected complete copy the charter of historical heritage protection, it will make the industrial buildings lose their original value."

Is the Industrial Heritage Renovation Cultural and Creative Park really suitable for our city? The transformation of industrial heritage into cultural and creative parks is a trend of industrial heritage transformation nowadays. So many industrial heritages with different cultures and cultures have been transformed into the same forms Cultural and Creative Park. However, many Cultural and Creative Parks in Wuhan have not played their due role. So, is it really appropriate to transform industrial heritage into Cultural and Creative Parks?

Which is more important, top-down management or the bottom-up feedback? Nowadays, many urban renewals are planned from top to bottom; however, many of them are too formal to meet the needs of daily lives citizens. It can be seen that the combination of top-down control and bottom-up feedback is the inevitable success of urban renewal.

How to maintain the sense of historicity when neglects the urban renewal of industrial heritage? As the carrier of city memory, industrial heritage bears the memory, emotion and history of generations. Once demolished, how can people recall the gathering place of the old industrial base in Dahankou?

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