

# Morphogenesis and Segregation of the Agricultural and Industrial Residual in Beijing CBD

by Danning Jiang & Feng Song  
Peking University

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**Abstract:** The study focuses on agricultural and industrial residual features in Beijing CBD in China to discuss issues of segregation and cohabitation in urban areas. The residual mostly refers to farmer houses and working-class dormitories of previous villages and factories, which isolate in the bustling Beijing CBD. The study firstly analyzes the urban construction process of Beijing, including development of CBD and related urban renewal and housing policies, providing historical background for the subsequent analysis. Using urban-morphology method together with the knowledge of human geography and sociology, then the paper focuses on the morphological process together with social process of the residual. Since it is involved with a long history and complicated social structure, urban conflicts such as demolition and relocation take place. Also, spatial and social segregation exist. The study proposes that the solution to these urban problems lies in the morphological and social process of the area. So it's vital for urban regeneration projects of the residual to combine urban morphology methods and sociology theories. Urban planners and designers should identify the morphogenesis first. In the meanwhile, social, economic and cultural background of all periods should be considered.

## 1. Introduction

Urban morphology is the implementation of the evolutionary approach on town landscape. It investigates time-sequence as much as spatial arrangement, particularly where successive changes of different character have affected the same area but with varying results. Morphological analysis mostly focuses on the built environment. The present townscape is the accumulated record of distinct morphological periods (Conzen, 1960). While economic and social background of each period are also considered.

In urban sociology, space is something more than an 'empty container'. It is read as a 'social construct'. It is the outcome of a sequence and set of operations. It is seen as the interpretation of human spatial organization as a social product (Soja, 1989). Social space is what permits fresh actions to occur, while suggesting others and prohibiting yet others (Lefebvre, 1991). Represented by Lefebvre, mental space (the space of the philosophers) and real space (the physical and social spheres in which we all live) are searched to be reconciled.

Despite the term of 'space' has different meaning in these two disciplines, which is even called spatiality in sociology, the paper considers both town landscape and social space since the study mostly focuses on their methodology other than the object. It tries to combine urban morphology and sociology theories and approaches to figure out a way and build a framework to analyze urban problems more comprehensively. In Conzen's theory, an evolutionary approach, tracing existing forms back to the underlying formative processes and interpreting them accordingly (Conzen, 1960), would seem to provide the rational method of townscape analysis. In social-spatial dialectics, the organization and meaning of space is a product of social translation, transformation and experience. Social and spatial relations are dialectically inter-reactive, interdependent (Soja, 1989). Space-forming and space-contingent social relations would seem to provide the rational perspective of social problems. In the construction of community, David Harvey argues that a proper design of things can't solve all the problems in the social process. Community construction projects shouldn't isolate groups from the city as a whole. It should be a process of broader construction of a more universal set of values (Jewson, N., & Macgregor S., 1997), which would seem to provide a holistic view on urban regeneration.

Also, regarding the particular characteristics of urban construction in China, western theories of urban morphology and sociology don't exactly fit in. The social system, property rights, development stage and complexity of the history are all different. In that case, the paper takes an area in Beijing CBD for example to discuss segregation problem in China, which helps explore the applicable use of western methodology in Chinese context.

## 2. Background: Urban construction in Beijing

Beijing is a city with more than 3000-year history. From Yuan Dynasty (1272), it has been built as the imperial city and later the capital of China. After 1949, large-scale urban construction takes place in Beijing, from the old town to the suburb, resulting in a big city with more than 21 million citizens.

Regarding the research area, it developed from the suburb of old Beijing to an industrial area and now the central business district of modern Beijing. The constantly changing urban planning and construction have made the area involved with complicated urban landscape, history and social structure. Therefore, in order to better understand the area and the residual, historical background of urban construction in Beijing needs to be introduced first.

### 2.1. *Before 1950s: the old city of Beijing*

Until the establishment of People's Republic of China, urban construction was almost limited inside the old city wall (the 2<sup>nd</sup> ring road nowadays). Inside the wall was the imperial city while outside the wall were mostly spontaneously formed villages. The research area is outside the city wall. So it was an agricultural suburb with farmers and private land and houses. Besides villages, there were some inns and small restaurants in GuanDongDian. It was called East Suburb in 1930s. Not until 1958 was it called as ChaoYang District and began the urban construction.

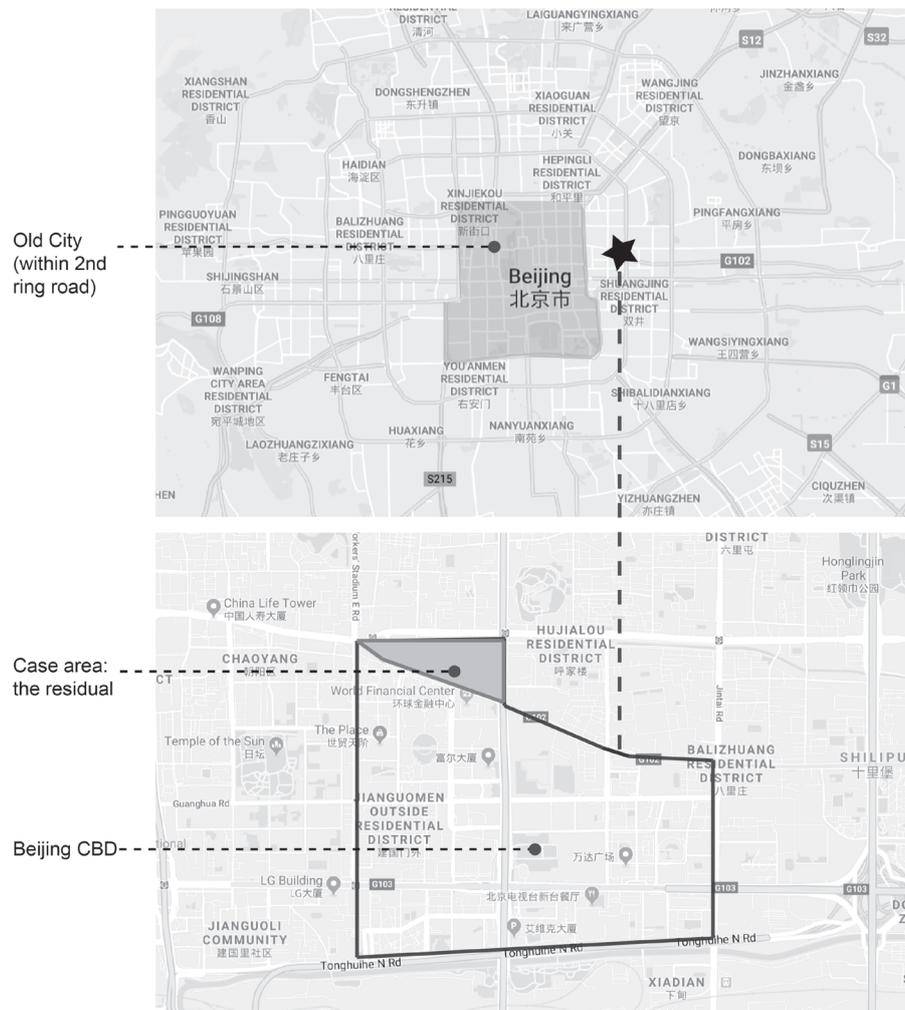


Figure 1. Location of Beijing old city, CBD and the residual.

## 2.2. 1950s-1980s: industrial area

<Key points of reconstruction and expansion of Beijing(draft)> was released in June, 1953. That's when industrial development was first considered in the urban planning of Beijing. According to the draft, administration center lied in the old city. Development of industry, agriculture, modern culture and urban construction were the main goal in the construction process. In 1958, <Master plan of urban construction of Beijing(preliminary)> made it more clear that Beijing should be built as an important industrial and scientific center. As the capital city, Beijing should rely on the base of industrial workers and be turned into the engine of national industry.

The East suburb was planned for the development of light textile and small-scale heavy industry. In the research area, the first Machine Tools Plant and 3501 Military Clothing Factory were built in early 1950s with workers' dormitories. Beijing Car Factory, Knitting Mill and Switch Factory were built in 1956-1958, resulting into new streets and residual areas. In 1960s, Beijing Vacuum Instrument Factory and Machinery Factory also entered the area. Besides, there were also pharmaceutical factory, dyeing factory, electric appliance plant and motorcycle factory. And most of the factories built their dormitories nearby.

### 2.3. 1980s-nowadays: business and cultural district

After the opening-up policy in the late 1970s and industrial development since 1950s, the area has accumulated adequate infrastructure, good economic condition and complete street system. Beijing World Towers was built in 1990. In 1992, <Master Plan of Beijing (1991-2010)> first brought up the idea and strategy of the construction of Beijing CBD. The scope of Beijing CBD was formally defined in 1993 in <Beijing central area detailed planning>. Modern office buildings and skyscrapers began to rise up in 2000s, such as Beijing Financial Center, CCTV Headquarters, Jianwai SOHO, Yintai Center, Jiali Center, etc. Beijing CBD even has been planned to expand to the east with 3km<sup>2</sup> since 2009.

### 2.4. Development of housing and renewal policies

As for the houses, before 1949 they were all privately built. The socialization reform in 1956 began the process of house nationalization and socialistic welfare system establishment for housing distribution. People started to live in public houses and communities. However, public housing system put great pressure on central finance. Therefore, in 1978, housing reform was put forward by the government. In the following years, houses gradually started to be individualized and commercialized. In 1994, the State Council published <the Decision of reinforcing housing reform> in order to improve living condition and fit housing market into the socialist market-oriented economic system. Beside commercial residential buildings, low-rent housing and economically affordable housing for low-income individuals and families were built.

Urban renewal mainly took place in old Beijing city before 1980s. It was more like the emergency treatment on dangerous old buildings. In 1986, private construction of all institutes was forbidden. Together with housing reform, urban renewal projects became more and more prevailing in a larger scale. It started to take urban planning, historical preservation and environmental conservation all into consideration.

## 3. Morphogenesis: The residual in Beijing CBD

The development process of Beijing CBD was mostly pushed by strict urban planning and national development strategies. However, among the high-speed construction there is a specific area left with old landscape features, or as called residual features in urban morphology. It was faced with conflict and under negotiation among different interest groups for years. So it was not as developed as the surrounding area. The residual (the area with residual features) composes of Huashiying (in the northwest), Guandongdian (in the southwest) and Hujialou (in the east). The area as a whole is full of residual features from earlier periods and to some extent appear unaltered in all its essential characteristics (Conzen, 1960). Therefore, it fully exhibits the urban history of the area.

In this part, the paper tries to figure out a way to analyze morphological and social forming process together, which helps to understand current situation of the residual from the perspective of both townscape and social space.

### 3.1. Morphological and social process

Each period leaves its distinctive material residues in the landscape and can be viewed as a morphological period for the purpose of geographical analysis. (Conzen, 1960) There are 4 morphological periods in the residual.

Before 1950s, as introduced above, the residual was a part of the agricultural suburb. There were scattered agricultural land and houses. The houses were all individually owned and built. The locals were mainly farmers. According to the locals, the area was full of fragrant-flowered garlics, green Chinese onions and corns when they were little kids. Also, there were graveyards. Especially when Japanese invaded Beijing in 1930s-1940s, the area became a common grave. So it was called Huashiying before 1960s, meaning the place to burn the dead bodies.

In 1950s, villages in Baijiazhuang in the north was demolished and relocated to the area. The housing authority built lines of one-floor public houses for them in the area. And when 3501 military clothing factory located in the south, it equipped dormitories in the east and northeast of these public houses. There were 7 continuous residual areas for 3501 workers, lying from Hujialou to Baijiazhuang. Among the dormitories were small lodging houses and dining halls built by 3501 Factory. Similarly, No.5 Construction Company built their storied dormitory buildings in the south. Beside residential districts, the area also provided commercial function. In the west, a big market called Dongdaqiao Department Store was built in December, 1954. The residents in the area were partly farmers from Baijiazhuang and partly workers of 3501 factory and construction company. There were also a small percentage of the former local farmers. Those farmers both originally from Huashiying and from Baijiazhuang mostly got employed in the nearby institutes, became urban citizens and no longer did farming. Apart from the residual original farm houses, buildings partly belonged to housing authority and partly to institutes and companies.

In late 1970s and 1980s, storied houses were built by the housing authority around the one-floor-houses area. Most of them were used as settlement for people whose original houses was

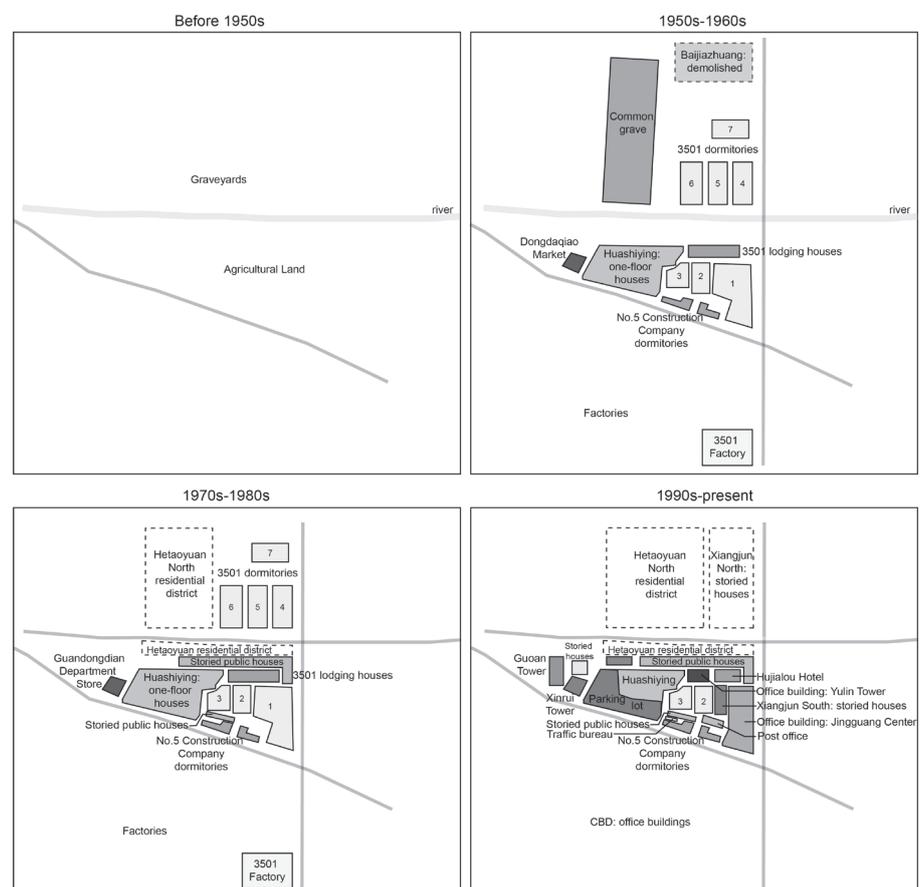


Figure 2. Development process of the area.

demolished somewhere else. Dongdaqiao Department Store was expanded to two floors in 1970s and five floors in 1989 with the new name of Guandongdian Department Store.

In the late 1980s and early 1990s, the residual area was faced with the first large-scale demolition. Dormitories in the southeast were dismantled. A skyscraper called Jingguang Center and three 25-floor residual buildings (Xiangjun South) were built instead in 1990. The lodging houses were changed into Hujialou Hotel and an office building called Yulin Tower later in 2000s. In 1993, some houses in the south in Huashiying were pushed down. It was turned into a parking lot and will be redeveloped in July, 2019. The factories in the region were all gradually demolished, relocated and redeveloped into office buildings. Dormitories in the region were also dismantled to build storied residential buildings. This is the period when more social groups crowded in especially after 2000. Householders have mostly moved away. Tenants and migrants flooded into Beijing and rent rooms in these one-floor houses and storied buildings. Office staffs and clerks began to work in office buildings.

### 3.2. Existing townscape

There are 667 one-floor houses and 14 storied buildings in the residual area, including public houses, individualized houses, individually built houses and properties of different institutes. One-floor public houses built in 1950s were charged by the housing authority. One-floor dormitories built in 1950s were charged by 3501 military clothing factory. The rest of the one-floor houses can be traced back to agricultural period or left by later individual construction. Storied buildings in the north are mainly charged by the housing authority. Others in the south belong to different institutes, such as the 5<sup>th</sup> Construction Company, the post office, traffic team, subsidiary food company and Hujialou Hotel. The storied building in the west belongs to the armed police. And high-rise office buildings were developed by real estate companies.

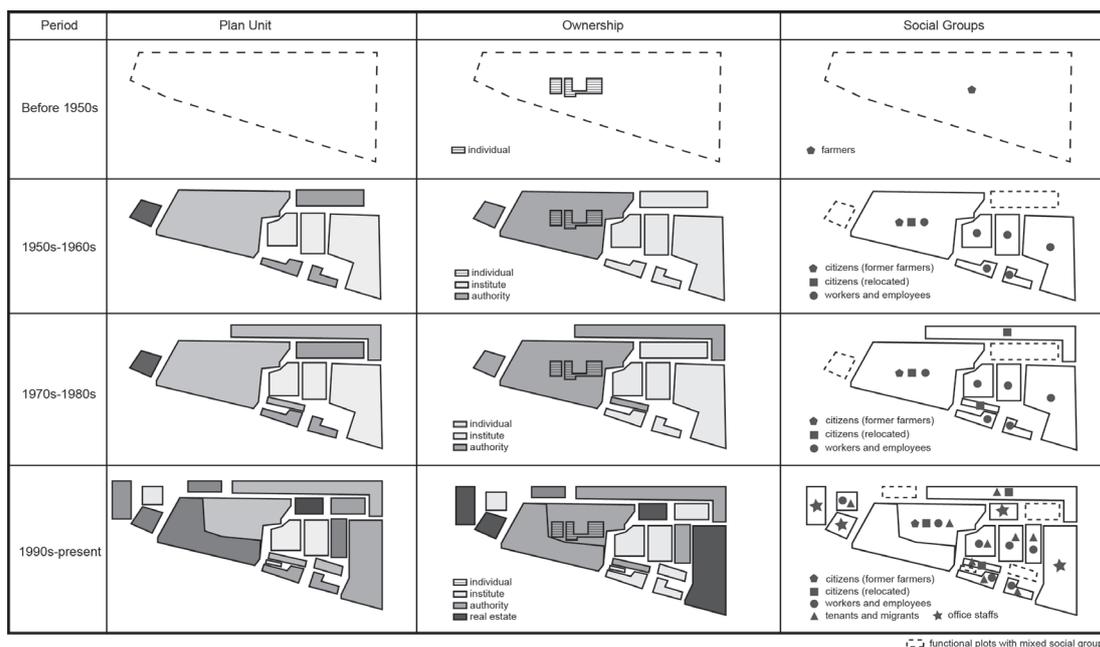


Figure 3. Morphological and social process of the residual.

Since the residual is left with mixed historical characteristics, the area can be divided into different units according to the date, house type, property right and land use, which constitute the complex existing townscape.

Overall, the closer to the center of the residual, the quality of the houses are poorer, the height are lower, and the infrastructure is more inadequate. The one-floor houses are not equipped with toilets. Public restrooms and rubbish stations scatter in the residual. Electric cables are exposed above the rooves. The facades of the old buildings have been repainted these years but there is still disordered construction in the house yards, affecting the appearance of the area.

Besides, the area provides commercial function, especially in Huashiying area. There are all kinds of small shops with street frontage selling groceries, mobile accessories, food, clothes, and providing the service of haircut and laundry. The number of these small commercial facilities has decreased since the government reinforced urban management and environmental improvement. In the past three years, about half of the stores have been closed. But still it constitutes a disordered commercial townscape in the area.

### 3.3. Socioeconomic status

There are approximately 900 people in Guandongdian community, 55% of whom live in one-floor houses. Only 10% of the residents are local people. The rest 90% of them are migrants from other provinces like Henan, Hebei and Anhui. They make a living by delivering meals, stuff, riding pedal tricycle, running small business, recycling and selling waste materials. They rent the one-floor houses together to save living costs. A 30m<sup>2</sup> room can hold 10 people. They only have to pay ¥400-500 each.

The old workers in 3501 dormitories are paid and socially secured by the factory. Though the factory has been reorganized and no longer makes profit by making clothes, it shares the stocks of the office buildings in their former site. The old householders in Huashiying are employed by different companies or self-employed. Their economic condition differs case to case.

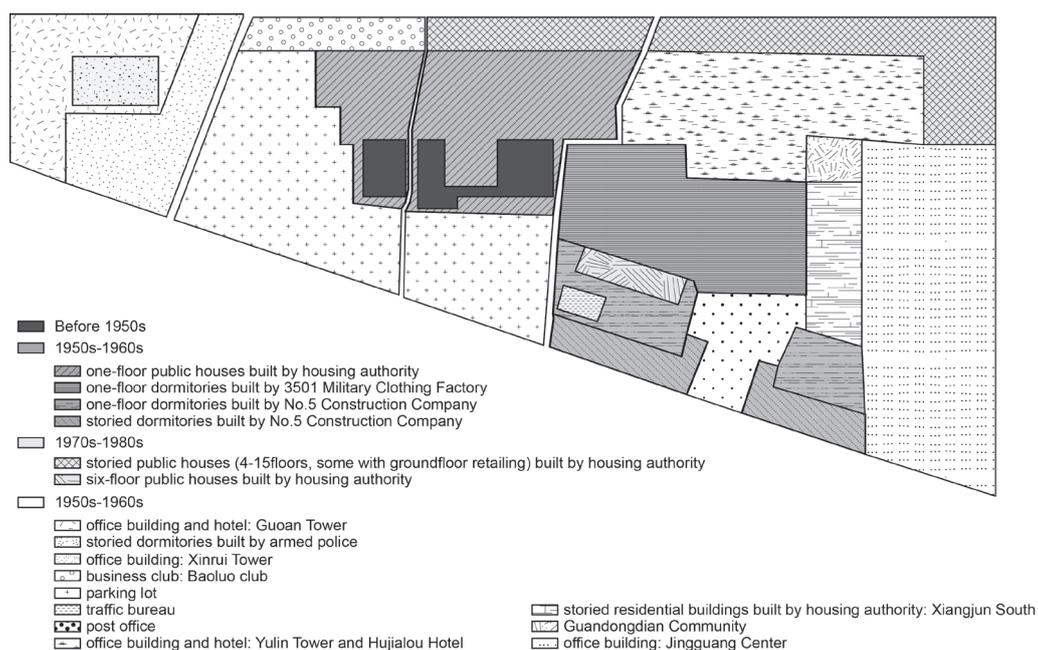


Figure 4. Plan unit of the residual.

The residual is administrated by Guandongdian Community. The community deals with all kinds of affairs related to local residents. Above the community is Hujialou sub-district office. It is in charge of security, environment and retail business of the district. Securities in Huashiying and people responsible for certain alleys are all employed by the sub-district office. Further above, sub-district office is led by government of Chaoyang district. Department of housing, urban management and security of Chaoyang government are all involved in the administration of the residual. In addition, since the residual is about to be dismantled to make it more like a part of CBD, CBD management committee, property management company, housing expropriation office, and land evaluation company are also related to the residual. And for the houses of the institutes, additionally they have their own way of management. For example, 3501 dormitories are managed by the factory and they have their own property management company. When dealing with urban problems of the residual, all these departments will cooperate to achieve better management. For instance, staffs of sub-district office, security office, urban management department, police and community will all participate in the environment inspection.

#### 4. Segregation: Urban problems in the residual

Due to the morphogenesis, social structure is complex in the residual. And visual and social contrast exist between the residual and CBD. All these have caused different kinds of urban problems. Residents are faced with perceived isolation and lack of socialization due to different types of spatial segregation. CBD development plan plans to solve the segregation by dismantling and redeveloping the area. But it causes conflict and disagreement between the locals and the government.

##### 4.1. *Isolation and segregation*

First of all, spatial segregation exists between the residual and the outside. The residual is metaphorically called the well of Beijing CBD. The height and quality of the buildings in the residual show a great contrast to those in the surrounding areas. Even the residents feel a little ashamed of where they live.

It's hard to find another place as dilapidated as we are here. When guests especially international guests look down from the skyscrapers nearby, they will see the rooves covered with shabby bricks and asphalt felt. Certainly it will leave them a bad impression of Beijing". "So the guests are hardly arranged to live in Jinguang Tower which is closely next to us. When the guests have nowhere else but there to live, it will be highly secured and inclosed.

Secondly, social isolation exists both inside the residual and with the outside. Social segregation is the case where people are divided socially by their social status, religions, races and occupations. People with similar social attributes will gather together and create distinct boundaries. Sometimes people in different social groups will even be hostile to or discriminate each other. It can be measured by size of social network, frequency of social interactions, sense of belonging to the place, acquaintance to the people, adequacy of social relationships, engagement in social activities, existence of strong bonds, etc. (Nicholson, 2009).

Inside the residual, social segregation takes place among different social groups.

For the old workers of 3501 Military Clothing Factory, their social network is limited to their

own relatives and neighbors who are also old workers or their descendants. They hardly ever have contact with migrants and tenants in the neighborhood. And they never socialize with people in Huashiying area though they may sometimes hang out there and buy daily necessities. Their daily lives are made up of chatting in the neighborhood, buying groceries in the supermarket, taking a walk in the park, visiting their children and babysitting their grandchildren. Their activities are not limited inside the residual since supermarkets, parks and their children's houses can locate far away. They are highly bonded with the place and have strong sense of belonging. When they were asked about the history of the dormitories, they were very proud to recall their working experience and how the dormitories were best equipped. They think the life here is convenient and cozy. Though it's not well-furnished storied building, they are used to it.

Our factory was a large-scale one with more than 50 branches all over the country. The total number of workers was over 3000". "The quality of the dormitories here was the best in the 7 dormitory areas. Every house cooked with natural gas while most families used coal and coal gas at that time.

For the residents in Huashiying area, the social network is more limited. Because the demographic structure is more complex, people there have weaker psychological bonds with each other. They sometimes chat with their neighbors. Most time they are with their family and do their own business. And since most of the original householders no longer live there, they are not as emotionally related to the place as people in 3501 dormitories do. Some interviewers expressed strong will and expectation to relocation. They would like to live in cleaner and bigger storied buildings in spite of the convenience of one-floor houses.

For the tenants and migrants, they live here for low rent and good location. Whenever demolition was brought up or their business in Huashiying was under strict supervision, they will move to other places. Therefore, they are only temporarily connected to the place without strong social bonds and sense of belonging. Householders and the locals hardly ever have connections with them. They even accused the tenants of disturbing the order and illegal occupation of space.

With the outside, social segregation also takes place.

People working in CBD have little connection with the residual. They sometimes walk by to reach metro stations but ignore what's happening there. And residents in the residual also never go south to CBD area. The parks and supermarkets they are familiar with are all in the north. They are not interested and involved with space and activities in CBD, though it is modern and lively.

#### *4.2. Demolition and relocation*

The segregation shows the necessity of coalescing the residual into the development of Beijing CBD. However, the process of demolition and redevelopment can also be troublesome due to the complexity of the area.

After the large-scale demolition in 1993, there has been little progress on the urban renewal of the residual. The renewal project in 2005 was postponed due to the dissidence on compensation. Not until 2017 was the project brought up again when the government solicited opinions and began to prepare new compensation and relocation proposal. The first-edition proposal was published and posted in the beginning of 2019. Residents have submitted their feedback to the government in March. In May, surveying and mapping work began, preparing for land assessment. In the future, only when the proposal is revised to be approved by the majority of the residents, will the demolition begin. Then the government takes back the land and calls for developers' bids.

The current plan is to demolish the houses in the middle part of the residual. It involves about 300 people in one-floor houses and 50 people in storied buildings. 4 relocation sites were proposed near 4<sup>th</sup> and 5<sup>th</sup> ring road of Beijing. The compensation can be cash or a discount price on buying new houses. It is determined by the value of the original houses, estimated by evaluation authorities. Compensation for indoor furnishing, removal charges, temporary settlement and suspension of business are all included.

After on-site interview with some residents, it turns out that they are not completely satisfied with the proposal. First of all, for the elder used to living beside 2<sup>nd</sup> ring road, the relocation sites are too far for them. Public traffic is not as convenient as it is in CBD. The metro can't reach these sites while Hujialou metro station is within 5-minute walk and there are plenty buses passing by. And there is no medical facility there while Chaoyang Hospital is just within walking distance to the residual. What's more, the amount of compensation doesn't live up to residents' expectation.

However, the community and government hold a different standpoint. In their opinion, the relocation sites can be reached by metro (Line 7 under construction) in the future. The residents are just too accustomed to the life here to move away. The relocation sites and compensation are the result of long-term coordination, negotiation and revision. It will never completely fulfill all kinds of need and opinions of different stake holders.

## 5. Discussion: Regeneration strategy of the residual

The case above on the one hand shows how morphological process leads to social segregation. The forming process intangibly divides the area into parts of different units with different social groups. For the need of support (Paul Knox & Steven Pinch, 2010) and sense of belonging, isolation is created internally. The construction process in the region involved with economic development and mandatory planning of CBD creates spatial and social segregation between the residual and CBD externally. Therefore, it's hard to completely separate social problems from morphological features. Analyzing the social problem should rely on the study of morphogenesis. And urban morphology study should take social and economic problems into consideration.

On the other hand, the case also leads us to reflect on the solution to urban problems. Since they are determined by morphological and social process, the solution can lie in the morphogenesis. Analysis combining the methodology of urban morphology and sociology will help eliminate the existence of segregation and reduce conflict in urban regeneration process.

Urban regeneration includes three stages: clearing slums, rebuilding neighborhood and community regeneration (Guo, 2009). All these three stages rely on deep understanding of historical process and social structure. When clearing slums, it's evitable to negotiate with various social groups with various history. When rebuilding neighborhood, history of the area should be memorized and activated. When regenerating the community, spirit of the old community and the region it lies in should not be completely neglected.

Therefore, urban regeneration is not about simple physical design which will only lead to the destruction of historical and cultural diversity. It's about a comprehensive, historical, dialectical and caring view on the discovery, analysis and solving of urban problems. A deep morphology-oriented and sociology-perspective study should be accomplished before the proposal and implementation of any renewal projects. Analysis of morphological process will help explain the spatial composition and formation of social groups in the case area, making urban conflict and social segregation understandable. Concentration on urban construction process in the re-

gion will help interpret townscape of the case area with historical background, making the case area less isolated from the city after the renewal. Deep investigation on social status will help disentangle social relationships and needs of different stakeholders, making the negotiation in demolition more effective and less conflicting. A dialectical view of relationships between society and space will help understand people's interaction with space, making urban design more realistic and humanistic.

All in all, it's crucial to trace existing townscape back to its morphogenesis when regenerating urban areas. It's also important to understand the interaction between society and space when solving urban problems. The existing chaos and isolation in both spatial and social form can all be explained from the combined perspective of urban morphology and sociology, which should always be the first step to rebuild a problematic area and arise urban vitality.

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