



POST-INDUSTRIAL AREA

IN TRANSITION

RENAISSANCE OF A DERELICT INDUSTRIAL AREA IN BEIJING

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Industrial Area in Transition

Renaissance of a Derelict Industrial Area in Beijing

MSc thesis

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MASTER THESIS

Industrial Area in Transition

Renaissance of a Derelict Industrial Area in Beijing

Xiaochen Che

Msc3 Urbanism

Urban Regeneration Graduation Studio

September 2012 - June 2013

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SUMMARY

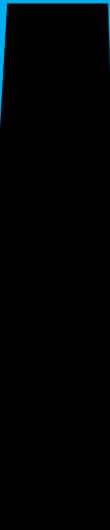
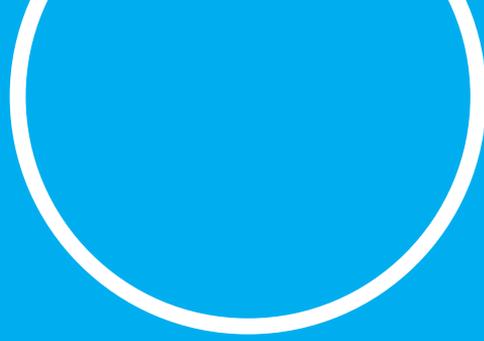
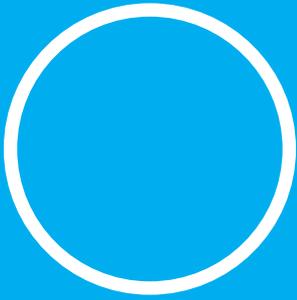
During the industrialization process early in 20th century in most of Chinese cities, heavy industries with contamination were initially located in city periphery when they were founded. But nowadays, these industrial areas gradually became part of urban area due to the rapid and large-scale urbanization and city expansion. Since late in the 20th century, with decline of heavy industries and traditional manufacturing, there has been increasing number of derelict industrial areas with great potentials to be redeveloped and integrated into the city.

As for these industrial dereliction, the typical development mode in China is to demolish and then rebuild to maximize the profit of government and developers. However, this development mode may cause many negative gentrification effects and target only on certain groups of people, while the demands from the general public are being neglected. Therefore, it has been becoming an urgent need to come up with a collection of strategies both on city and local scales to tackle with this issue.

The site chosen for the project is the former Capital Steel Complex, known as the Shougang Group, which was the largest and most important steel production complex in Beijing. It has witnessed the history of heavy industry develop-

ment in China since it was founded in 1919, and enormous contribution to the city development was made by this huge company which has been functioning as the pillar of local economy. Due to city image and environmental concern, the industrial complex has been reducing production until it completely halted in 2010, which indicate the end of a grand age of this steel industrial area, leaving a 8km² industrial dereliction with heritage value and huge potential for redevelopment in a strategic location in western Beijing.

The objective is to develop a collection of strategies for redeveloping this site that will balance the preservation of industrial heritage and implementation of new urban functions in a ecological way, and at the same time meet the emerging demands both from city and local perspectives. This will be realized by creating a new centrality in the site identified as the CRD (Cultural & Recreational District)- expectation from government. The approach is culture-led regeneration in this large brownfield, namely, culture will be catalyst for new development and generate new economy related to culture and creative industries. During the regeneration process, the concept of positive gentrification will be introduced to guarantee the benefit of public, promoting social equality in this decaying area in problematic condition left by post-industrialism.



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I.1 MOTIVATION

GLOBAL CONTEXT_ TREND OF DE-INDUSTRIALIZATION

ECONOMIC RESTRUCTURING_

Since 1970s, the European cities have experienced a radical restructuring of their economic base, therefore resulted in a series of social problems as consequences, including social exclusion and unemployment, etc. Moreover, there has been increasing number of industrial dereliction emerging in inner-city areas (figure 1.1), and physical infrastructure of many cities was becoming obsolete and in need of replacement. Therefore, there has been an urgent need for urban regeneration to revitalize decaying urban environment. As stated by Couch and Franser,

In fact, the industry restructuring occurred in global scale, which has intensified the decline of old industrial areas. As the result, economic growth opportunities have shifted from manufacturing industry to emerging new sectors, which are normally clustered together, for instance, creative industries, service-related and knowledge-based economy. The trend resulted in the transition of these old industrial areas, not only in spatial form, but also in social and economic aspects.

ENVIRONMENTAL CONCERN_

Moreover, in last few decades, there has been an increasing concern on environmental issues during the rapid urbanization and modernization process in most of the developing countries, especially in Chinese cities, the sustainability has been put on the top of the agendas for urban development in the future. Accompanied by the booming land price and the pollution issue arising in those big cities that are still expanding, a number of heavy industries were forced to move out to

periphery or another less developed city. In this way, pollution is mitigated or at least transferred, and the city image will be improved by displacement of those huge production plants.

However, removal of those important industries that have been functioning as economic pillars of the city may intensify the decline of local economy dramatically. Furthermore, some of the old industries with long history have been witnessed and influenced the formation of the city, and they have been growing with the city together and becoming part of the

“These cities are facing a complex array of economic, social, physical, environmental and fiscal problems. Cities have to compete for investment and economic growth at the same time as dealing with the dereliction left by previous generations.”

context which cannot be neglected even after they have moved away.

Therefore, the strategic planning for redevelopment of those derelict industrial areas and integration into the urban environment became an urgent need, not only in spatial transition and

ecological renewal, but also in industrial heritage preservation and economic efficiency point of view. It's not an easy task, and one that has inherent contradictions (PERSY, S. 2003). To seek to a solution, the central focus should be put on the 'environmental enhancement, not only through brownfield cleanup but also through the application of ecological planning principles to all projects from infrastructure improvements to housing developments to the creation of business and technology parks. '(Fox 2001, P. 9.)



Figure 1.1: Abandoned Industrial Buildings at the Former Bethlehem Steel
(Image Source: Tin Can Traveler)

I.1 MOTIVATION

CHINESE CONTEXT_ URBANIZATION & EMERGING TERTIARY INDUSTRIES

GENERAL BACKGROUND_

Urban regeneration process in China has been presented in a different way compared with those of European cities. The globalization has increasing impact on the transformation of Chinese cities since China adopted the open door policy in 1978. Many cities in China have been struggling with the challenges of urban regeneration brought by restructuring of traditional economy and increasing competitions between cities for resources, investment and business (CHEN,Y. 2007).

In the past few decades, there has been an increasing concern on environmental issues during the rapid urbanization process in most of developing countries. Especially in Chinese cities, the sustainability has been put on the top of agendas for urban development in the future. Similar to what happened in developed countries, economic base restructuring resulted in decline and dereliction of traditional manufacturing. For many commentators the urban 'new economy' lies at the heart of inner city restructuring (Scott 2000; Cooke & Lazeretti 2008; Hutton 2010; Van Heur 2010). It was assumed that the replacement of old manufacturing-based industrial activities with emerging tertiary industries has brought those old industrial cities new networks of production and exchange, along with new kinds of workers that transform the industrial system of the inner city (GU, X. 2012).

For those areas which were initially located in suburban when the industries were established, because of large-scale city expansion they have been gradually swallowed by rapid urbanization process and becoming obsolete fragments im-

mersed in the urban environment. In this context, the redevelopment of those derelict industrial quarters brings great opportunities to adapt themselves to new changes in the city, thus creating diverse possibilities for accommodating emerging demands in the city point of view, for instance, the change in regional scheme for future development as well as urban structure; this trend also creates opportunities for urban regeneration in local scale, improving living environment for those who have been suffering from obsolete physical condition as well as decaying economy.



Figure 1.2: Beijing CBD as a highly gentrified urban area
(Image Source: Wikipedia)



BEIJING CONTEXT & CHOICE OF PROJECT LOCATION

As the most politically sensitive city that has experienced incredibly rapid urbanization in China, many urban regeneration projects in Beijing came to be pure gentrification process that improves the city image as a capital city but fails to really respond to the public aspiration (figure 1.2). This trend has been presented in many cases in inner city regeneration as well as city periphery revitalization.

The site chosen for the thesis is a derelict steel producing complex in west periphery of Beijing (figure 1.3). As the largest brownfield regeneration project in a city in urgent need of available land for new developments, it has attracted vast attention from the central government and local municipality. Furthermore, it is more than a simple brownfield rehabilitation project, it is a complexity of various issues concerning industrial heritage, economic transition, social restructuring, environmental renewal, etc. The complex condition may cause the solutions to each problematic issue conflicting to each other, therefore, searching for the balance is needed to create a feasible proposal.

Figure 1.3: Aerial view of project area: Former Capital Steel Complex - Shougang Group
(Image Source: Wenxiao Ma)

I.2 PROBLEM STATEMENT



Figure 1.4: Profit-driven development leads to losing identity.
Image Source: Kevin Lee / Bloomberg

PRESSURE FROM PROFIT-DRIVEN DEVELOPMENT

However, the typical way for urban redevelopment in regard to this kind of area in China is profit-driven, only caring about fast economic returns but neglecting the voice from the public. Furthermore, this mode is often real estate driven approach and starts from large-scale of demolition to make available space for new programs which are often high-density without cultural reference (figure 1.4), showing no respect to the existing value of the site and real demands of the local residents. This is also a key element that pushes the housing price and living costs to increase continuously.

TYPICAL DEVELOPMENT MODE IN CHINA

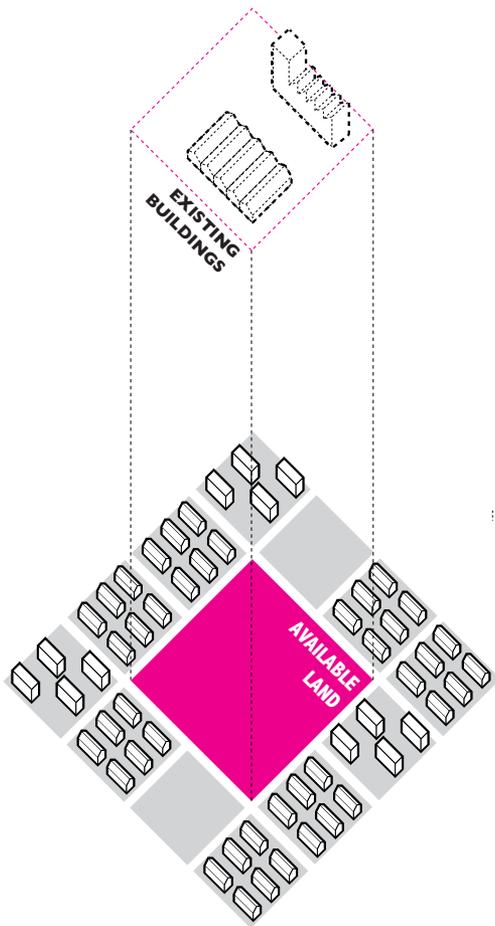
As shown in figure 1.5, there are basically three steps during typical development mode in China.

The first step is clearance, namely, is to completely demolish the buildings on the site, in order to maximize the availability for new construction. Being subject to new development, the existing buildings are usually seen as obstacles. Although demolition can be very expensive, it is a simple way to get a complete vacant plot of land. Normally, the local residents do not have opportunity to be involved in the decision-making process, and the development strategy is often profit-oriented and top-down.

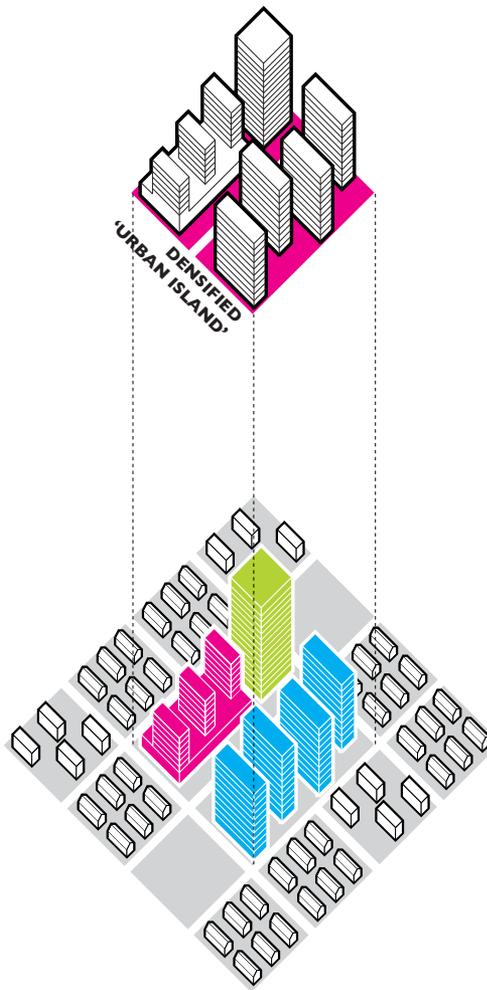
After the clearance of the site, new urban programs will appear in an ‘airborne style’ which is based on the high-density and upscale principles, aiming at attracting high-class groups and adding more value to the price of real estate. The top-down decision-making process contributes to the short planning and construction period. The new development is often mixed by offices, hotels and luxury apartments.

The highly densified and multi-functional development will create a new centrality in the local level, which may intensify the urban pressure including traffic flows and increasing living costs. This trend will make the new developed area like an ‘island’, resulting in the physical condition of surrounding neighborhoods becoming obsolete and in need of displacement or gentrification.

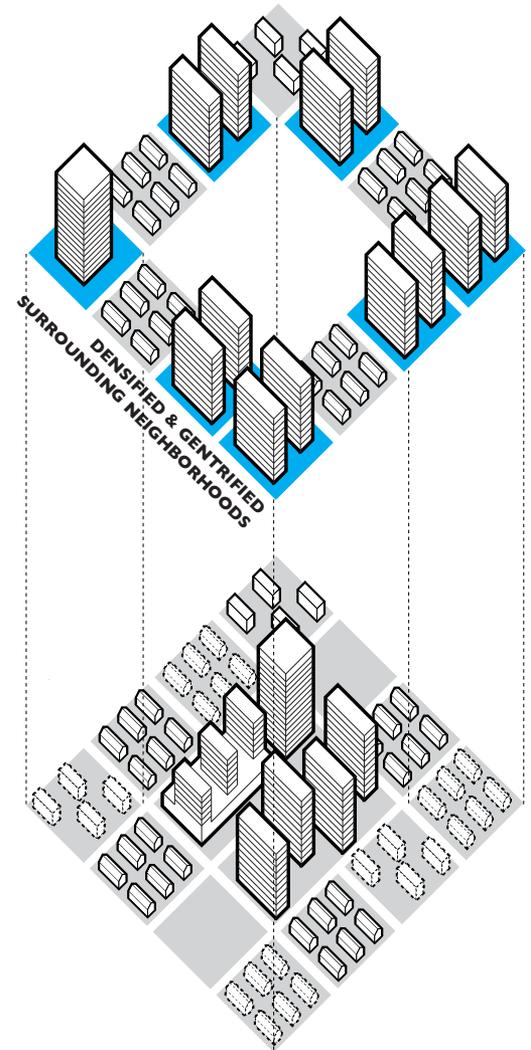
As the result, the physical condition of the urban area is improved, but whether the general public including new migrants and local residents are sharing the equal access to urban benefit remains a question.



STEP 01
LARGE-SCALE DEMOLITION



STEP 02
"AIRBORNE" NEW PROGRAMING



STEP 03
GENTRIFICATION & DISPLACEMENT

Figure 1.5: Three steps of typical development mode in China
(Made by author)

I.2 PROBLEM STATEMENT



Figure 1.6: Demolition and re-construction of real estate programs
(Made by author)

NEGATIVE EFFECTS CAUSED BY THE TYPICAL DEVELOPMENT MODE

It was exactly this development mode that has been playing a dominant role in the urbanization and modernization process in Beijing for the past decades. The result of the typical development mode appears to be highly modernized urban fabrics with improved infrastructure, presenting brand new urban image.

In fact, the local residents actually can not benefit from the new development. Because the physical condition of old surrounding neighborhoods still remains the same, at the same time, increasing amount of migrants attracted by the new development will result in rising housing and renting price, forcing local people to suffer from physical and social segregation. Eventually, driven by potentials and profit from the prosperous real estate market, new developers will take

over the decaying areas from local people and force them to leave and make space for new programs.

This is such a tragedy for a city, especially those with historical and political importance, since there's no public participation through the whole process from decision-making in the beginning to the final implementation. Therefore, the real demands from the propel are neglected, and the new urban programs only target on specific social groups not for public.

As the result, there several side effects caused by this development mode- expensive housing price, losing identity, physical and social segregation, and planning process lack of public participation, etc.

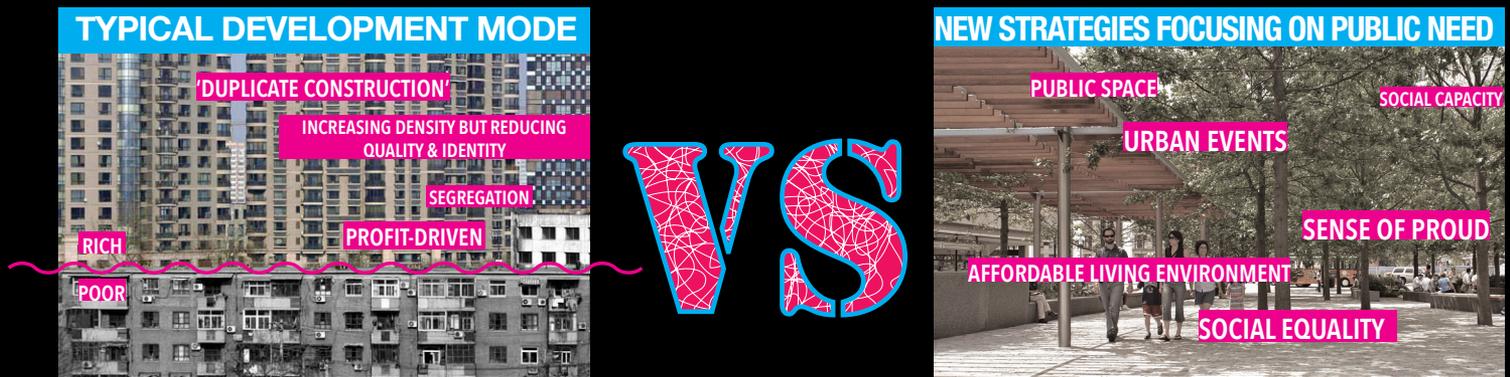


Figure 1.7: Conflicts between typical development mode and public needs
(Made by author)

During the industrialization process early in 20th century in most of Chinese cities, heavy industries with contamination were initially located in city periphery when they were founded. But nowadays, these industrial areas gradually became part of urban area due to the rapid and large-scale urbanization and city expansion. Since late in the 20th century, with decline of heavy industries and traditional manufacturing, there has been increasing number of derelict industrial areas with great potentials to be redeveloped and integrated into the city.

As for these industrial dereliction, the typical development mode mentioned before is adopted in majority of big Chinese cities in order to maximize the profit of government and real

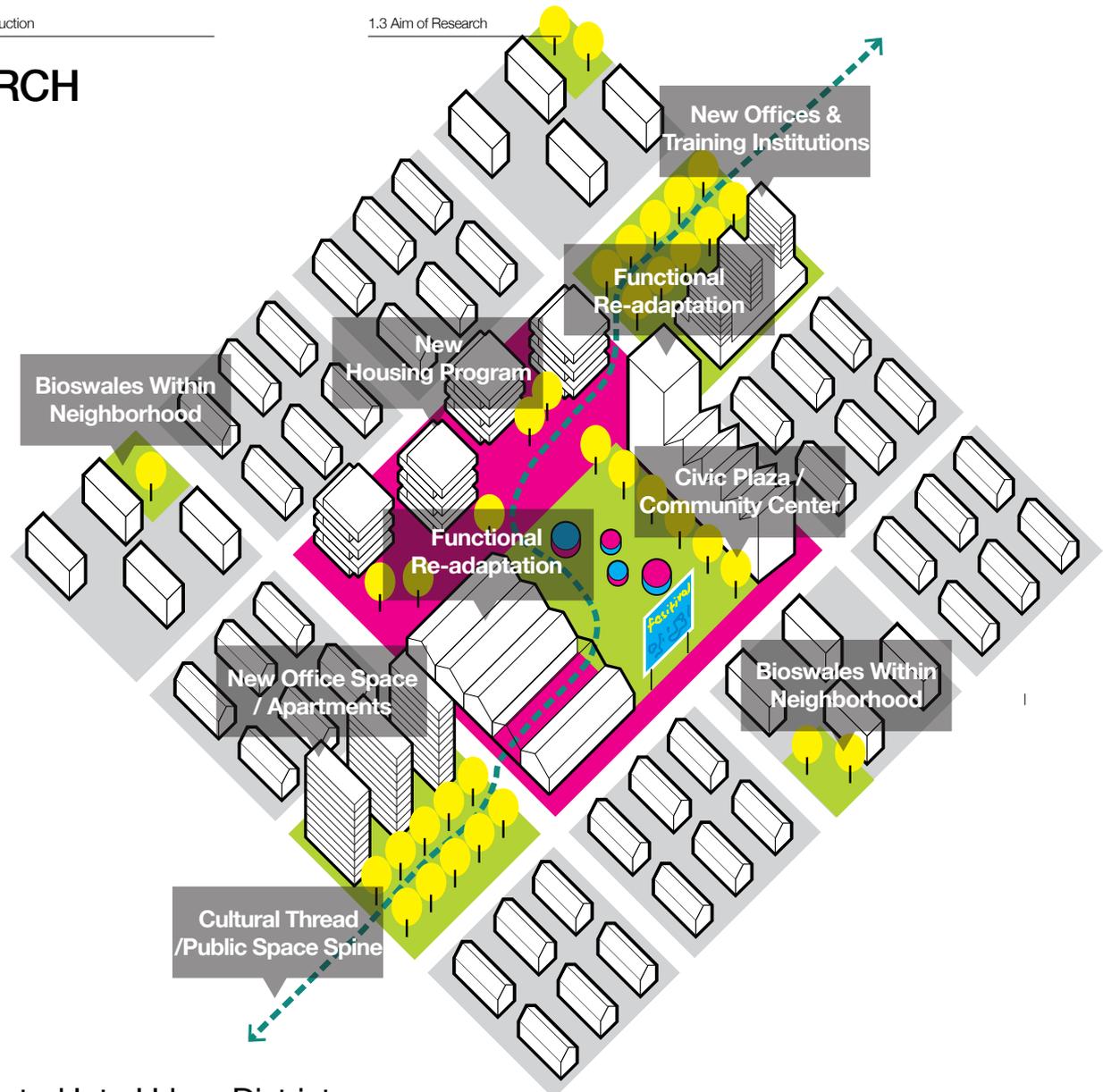
The typical development mode for redeveloping dilapidated industrial sites in urban areas is unable to facilitate the general public.

estate developers. Apparently, this kind of development can promote the attractiveness of the place by introducing new economies and new types of social groups, but the public access to the real benefits is limited, since it often targets only on certain groups of people, while the demands from disadvantaged groups are being neglected.

As the result, the redevelopment is often unable to facilitate the general public, and the negative effects caused by gentrification may even trigger emergence of social inequality and segregation

(figure 1.7). Therefore, it has been becoming an urgent need to come up with a collection of strategies both on city and local scales to tackle with this issue.

I.3 Aim of Research



IDEAL MODEL AS RESEARCH AIM

Former Industrial Area Integrated Into Urban District,
Becoming Mixed Urban District Facilitating Needs of Public

Figure 1.8: Ideal model for redevelopment of abandoned industrial areas
(Made by author)

In order to search for solution to the problem stated before, a ideal model for redevelopment of an abandoned industrial site is formulated as the aim of the research (figure 1.8). What is emphasized in this model is a collective of objectives concerning mainly four aspects, delivering solutions to these issues in social, spatial and economic point of view.

01. AFFORDABLE HOUSING

With the rapid expansion of some big cities, the housing price of some big cities has experienced incredible increase during last decade. This has brought outstanding achievements to the developers and governments, but put majority of people into suffering from the housing price that is a lot far more than low-income even middle-income can afford. There is urgent need for the government to offer subsidies or implement corresponding policies to respond to this miserable issue rising in those first-tier cities in China.

02. SOCIAL CAPACITY & INCLUSION

‘Social capacity is people’s ability to work together to organize public relationships within their communities.’ Whereas unemployment is usually a big issue left by the decaying industries. The re-programing of the derelict industrial areas do provide new jobs, but only for certain groups of people not for those who are less educated and lost their jobs in the former factories. They are not competent for new jobs related to new industries. Therefore, there’s the need of training institutions to building up social capacity. Also, new programs should be proposed to integrate those disadvantaged groups into the new development, providing them equal life chance.

Additionally, new urban development will attract new work

force which mainly consists of high income group and middle class. The aim of the regeneration program is to promote the social inclusion of the old and new residents, and create a harmonious cultural and societal integration instead of displacement.

03. PUBLIC SPACE & URBAN EVENTS

The aim of urban regeneration is not to build a new urban district within the former boundary of the factory, but to eliminate the border and give this area back to the city. Therefore, the creation of structured public spaces will promote the integration in spatial point of view, connecting different urban functions and fragments. Furthermore, the new development with public space will better facilitate the surrounding neighborhoods as well as new migrants, creating place for the general public instead of an isolated ‘urban island’ only for certain groups of people.

04. ECOLOGICAL URBANISM

For those post-industrial sites especially traditional heavy industries, there have been contaminants accumulated for years during producing process. Therefore, ecological renewal is needed to remediate and get the soil ready for new construction. Furthermore, with rapid urbanization process in the city, the living area has been becoming increasingly dense, and the large-scale exploitation of land has resulted in severe damage to ecological system of the city. So the actions concerning ecological urbanism is quite an urgent need. Even small intervention can contribute to the ecological urbanism, such as building more urban catchments and green infrastructure within city.

I.4 RESEARCH QUESTIONS

MAIN RESEARCH QUESTION_

What alternative strategies should be used to redevelop derelict industrial areas in Beijing with value of urban heritage (industrial heritage), balancing the emerging needs from both the city and local residents to tackle with socio-economic decline and to realize spatial and economic transition?

SUB RESEARCH QUESTIONS_

1. What is the value of industrial heritage in historical and cultural aspects?
2. What are the emerging needs from the local residents when there is socio-economic decline left by industrial dereliction?
3. What are the emerging needs from the city of Beijing during the period of industrial decline?
4. What kind of transition is needed based on the existing spatial and architectural condition?

I.5 RELEVANCE

SOCIAL RELEVANCE_

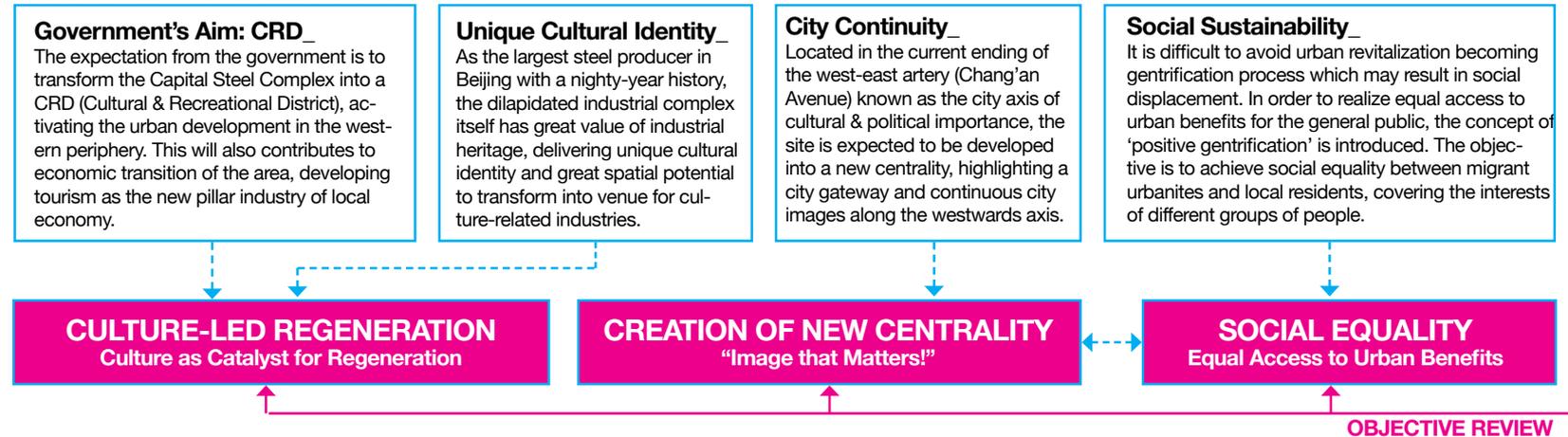
The renaissance of industrial dereliction has been put on the top of agendas for the future development of some old industrial cities. Especially for Beijing, which is described by Li and Zhao (2010) as the pioneer city of the whole country in the field of industrial heritage preservation (ZHAO, B. & LI, K. 2010) for preferable conditions for adaptive re-use. Since both the quantity and building quality of the traditional manufacturing in Beijing helped a lot to contribute to the achievement, creating scale and locality effect. Moreover, to mitigate pollution and ensure a nice city image, a number of heavy industries have been moved out from urban area, leaving available super-sized factory buildings and free land for re-programing. At the same time, under the encouragement from the government for the culture-related economy, the creative and cultural industries developed rapidly, and transformation and re-use of those industrial buildings have found their popularity in those abandoned places where physical remains are still delivering distinct cultural and spatial identity and uniqueness, which is regarded as the perfect habitat for creative class and pioneering artists.

SCIENTIFIC RELEVANCE_

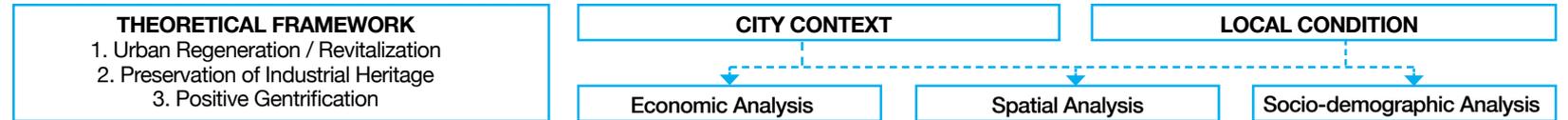
In western countries, the de-industrialization process of some old industrial cities started decades earlier than Chinese cities, there are a number of successful precedents as milestones in the field of industrial heritage preservation, especially in the Ruhr in Germany. While in China, there are some achievements of adaptive re-use of industrial derelictions, such as Beijing 798 Art Zone and 751 Factory D. PARK, however, majority of those cases are nothing more than imitated work of western experiences and approaches. As a matter of fact, ideas and strategies are often born from specific site study, and Chinese cities have completely different urban context and much more complex situation than those of western cities. Therefore, the research focusing on the preservation and re-use of industrial heritage specifically in Beijing context will deliver an ideal model that could be learned for other cities in China, functioning as the ‘weather vane’ in urban transformation and de-industrialization process in the whole China.

I.6 METHODOLOGY & TIME SCHEDULE

PROJECT DEFINITION



RESEARCH & ANALYSIS



STRATEGY & APPROACH

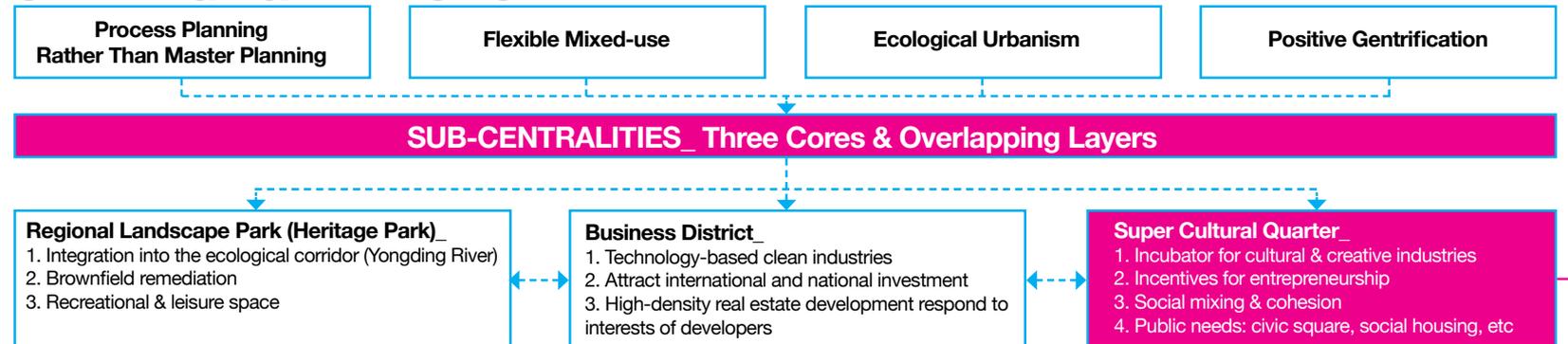
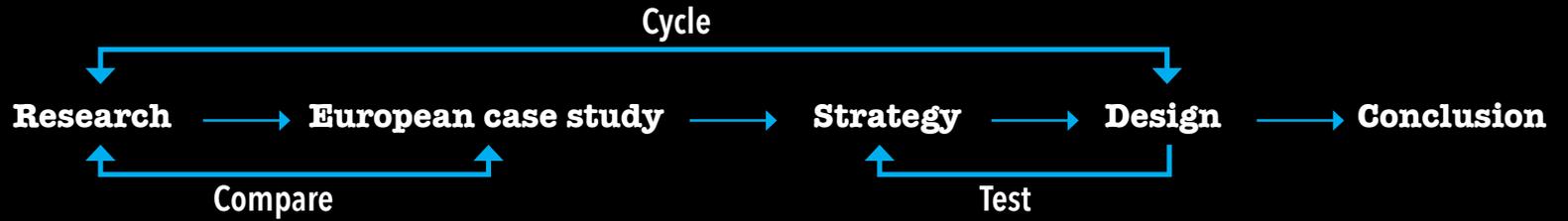
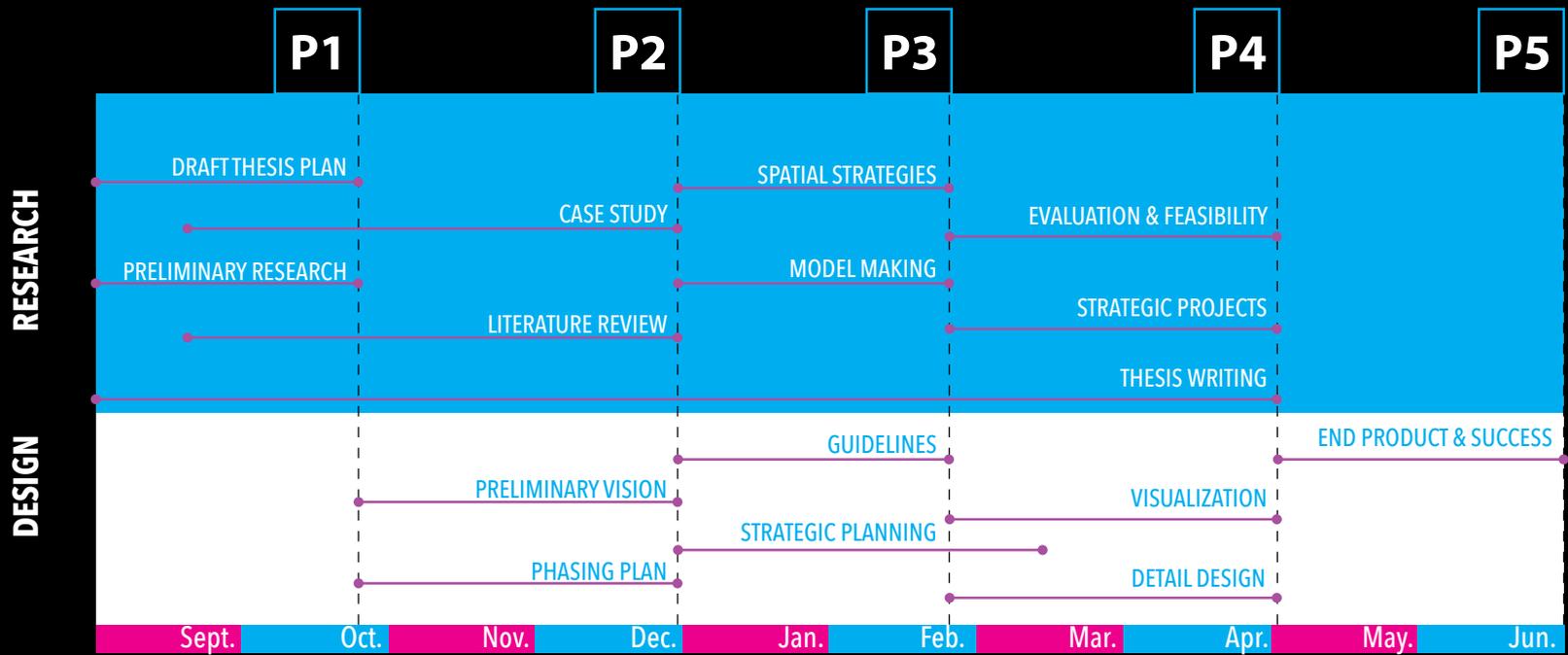


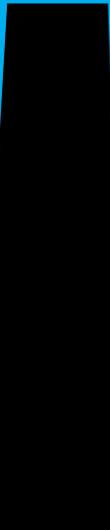
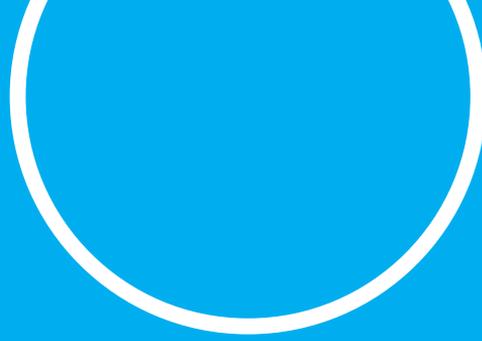
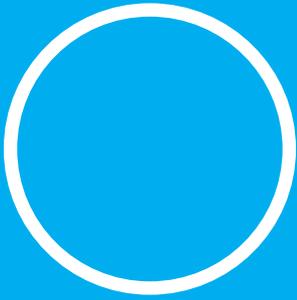
Figure 1.9: Methodology Scheme (Made by author)

RESEARCH & DESIGN PROCESS



TIME SCHEDULE





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PART 02_

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- 2.3 Positive Gentrification
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II.1 URBAN REGENERATION / REVITALIZATION

GLOBAL CONTEXT CITIES IN DECAY CALL FOR REGENERATION & REVITALIZATION

Cities have been experiencing constantly change since the beginning of civilization. In response to economic and social factors they have grown, declined or undergone major restructuring (COUCH, 1990). After WWII, the globalization trend has caused the spread of the capitalist and a dramatic change in the process of urbanization (NOBRE, E. 1994). And the economic base has been shifted from manufacturing towards service sector and knowledge-based industries. In this global context, there has been de-industrialization and subsequent counter-urbanization emerging in developed countries. While in developing countries the consequence has been presented as rapid industrialization process and continuous urban expansion, as well as dynamic economy. As a result, the problems arising from this trend have been of complexity including social, economic and environmental nature (OECD, 1983): physical decay, poor housing condition, spatial and social segregation, lack of public open space, traffic congestion and pollution, the destruction of the historical heritage, dereliction and deprivation (NOBRE, E. 1994). Urban regeneration has been in urgent need to tackle with the decay urban environment.

Urban regeneration is concerned with the regrowth of economic activities where it has been lost; the regeneration of social function where there has been dysfunction, or social inclusion where there has been exclusion; and the restoration of environmental quality or ecological balance where it has been lost (COUCH, C. & FRASER, C. 2003). In UK, the urban renaissance refers to 'the recent period of re-population and regeneration of many British cities after a period of inner city urban decay and suburbanization during the mid-20th century.

Due to the result of economic changes, urban regeneration often takes place in obsolete residential areas and redundant land, such as canals, docks, railway yards, and derelict industrial sites. The strategy that has been implemented is mix of programs including flat buildings, townhouse or offices, public art and high-quality streetscapes.

Figure 2.1: Image of decaying city (Image source: Flickr)

CULTURE-LED REGENERATION_ 'ARTISTIC REBIRTH'

Among different ways of regeneration process, culture-led regeneration is depicted as a high profile approach where culture is the catalyst for regeneration and can be utilized as a development tool, aiming to develop a new economy to deal with decayed urban areas. Culture is referred as “a source of prosperity and cosmopolitanism” as well as “a means of defining a rich, shared identity and thus engenders pride of place” (COMEDIA. 2003). According to Michael Keating and Monika de Frantz, cultural policy can change the city image which is an important consideration in derelict industrial areas. By creating a climate preferably for creativity and individual entrepreneurship, the cultural sector may contribute to the development of small and medium enterprise as a locally bound social capital (BIANCHINI. 1993; ZUKIN. 1995). Therefore culture-led regeneration can tackle with declining local economy efficiently, replacing the derelict industrial base with a booming service sector.

The globalization trend has been reinforcing the popularity of culture-led urban regeneration which already spreads beyond the advanced western cities, and it did not take long for Chinese cities to embrace the trend. Especially in metropolis like Beijing and Shanghai, culture is regarded as a key to bolster economic growth, driving a number of decayed urban areas including dilapidated industrial sites converted into cultural infrastructure. Besides, As Hall (2000) states:

“Cultural is now seen as the magic substitute for all the lost factories and warehouses, as a device that will create a new urban image, making the city more attractive to mobile capital and mobile professional workers.”

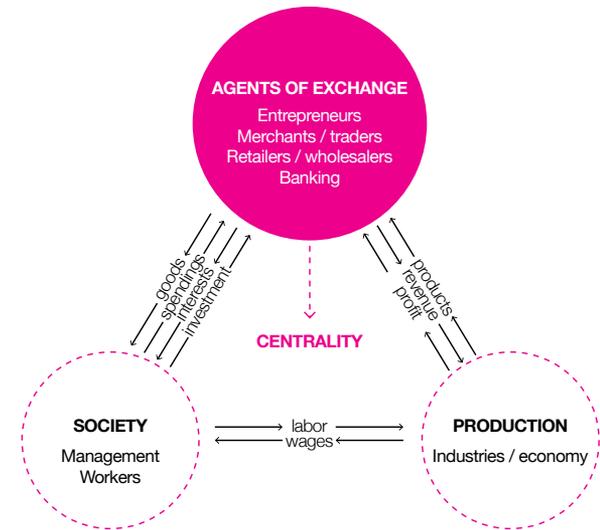


Figure 2.2: Framework of new centrality (Made by author, source: Bonnis Barton. 2005)

CREATION OF NEW CENTRALITY_

In some cases, urban regeneration has been realized by creating a new centrality, as Helbrecht & Dirksmeier state, the core of the urban situation lies in possibility of centrality where the connection and relation between diverse contents

meet in one place. According to Barton, the creation of a new centrality is closely related to the society and the local economy (figure 2.2). New agents of exchange in the centrality will generate new economy and at the same time offer different types of jobs. The more dynamic the centrality is, the more urban benefits there will be. The process of economic restructuring whereby centrality is achieved shows interactions as a series of flows of production and consumption requirements (BARTON, B. 2005)

II.2 PRESERVATION OF INDUSTRIAL HERITAGE

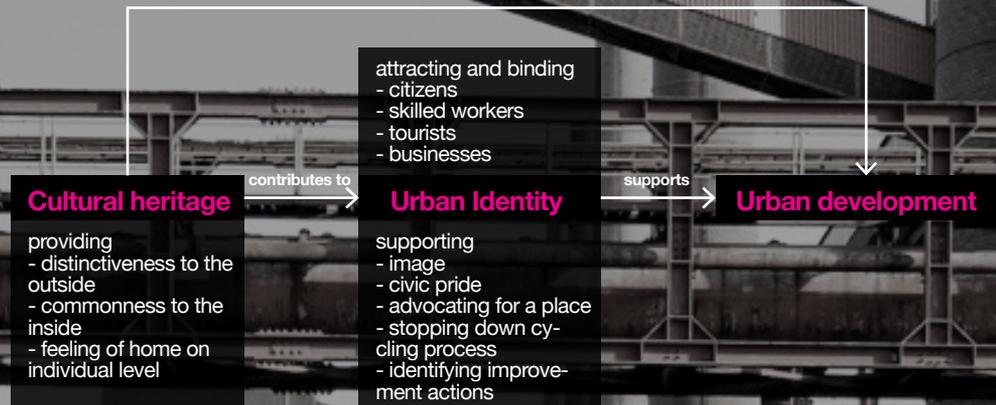


Figure 2.4: Positive effects of cultural heritage (source: Nils Scheffler)

CONTRIBUTION OF PHYSICAL CULTURAL HERITAGE TO IDENTITY

As it is stated in The New Charter of Athens (1998), “the heritage is a key elements which defines culture and the European character in comparison with other regions of the world. For most citizens and visitors, the character of a city is defined by the quality of its buildings and the spaces between them.... actions, together with an appropriate spatial strategy, are essential for the well-being of tomorrow’s city, and the expression of its special character of identity”. The industrial heritage of a region is an aspect of its cultural heritage. In other words, it is all about identity of the place, encompassing machines and buildings in which they were housed as well as the fabrics of the changing society.

Industrial heritage does not just refer to the physical remains of the history of technology and industry, and it also includes

intangible aspects such as industrial history and ideas of people, industrial lifestyles, etc.

Since the early 1950s the research about the historical period of the industrial revolution was growing in most of the old industrialized countries. At the same time scientists and volunteers were starting to appreciate the built heritage of early industrialization period as important and worthwhile to preserve. Especially from the 1990s, this was and is a fast growing development, which one can identify for example by the expanding list of industrial heritage monuments on the UNSECO world heritage list. And in addition industrial heritage is developing quickly as an attractive part of the tourism industry (EBERT, W. 2008).

The rapid urbanization process has promoted the economic transition of Beijing, which aims to change the city image from an industrial city to a modernized metropolis by removing those huge industrial buildings and production facilities emitting off-gas. However, the historical and cultural value of some industrial buildings was neglected in this large-scale demolition revolution. The situation has been intensified since early years in 21st century, when real estate industry developed rapidly and those old industrial areas were found to be profitable for developers because of the preferable location and low demolition cost. As the result, considerable amount of industrial buildings and structures became victims of the ‘modernization process with Chinese characteristics’.

In fact, many of the old factories with long history have witnessed the industrialization process of Beijing and became part of local culture, delivering the value of industrial heritage / urban heritage. The complete demolition has caused irreparable mistakes and the loss of an important cultural element of the city, and also people’s memory about the place. Those old industrial constructions have been swallowed by modernization wave, and the cities compete with each other but imitate the same strategies while losing their unique identities. The subsequent problem, as Neil Cossons has articulated, is that first-hand knowledge and experience of industry which is fast disappearing, and we can no longer assume that the significance of industrialization will remain in public consciousness (COSSONS, N. 2007) Take the old mining industry as an example, it was explained by Patrick Malone, professor at Brown University and past president of the Society for Industrial Archaeology. He states:

“The real treasure is not the mineral wealth still locked in the bed-rock but the rich cultural legacy—a legacy reflected in collective memories...and in the physical remains of the urban industrial experience. The material culture is a bridge to the past, an anchorage for countless memories. The artifacts and man-made features that form this place can be both a source of pride and a tool for understanding its complex, sometimes painful history.”

| | | |
|---|----------------|--|
| 1 | Deprivation | Do nothing, or devalue significance or even surroundings |
| 2 | Preservation | Clean and arrest decay in a short time routine, inventory all information about building |
| 3 | Conservation | Clean and arrest decay in medium and long-term routine, repair medium scale damage |
| 4 | Restoration | Repair large scale damage and rebuild typical components in harmony with aesthetics |
| 5 | Rehabilitation | Re-use structure and fill gaps with whatever possible |
| 6 | Reconstruction | Partially or totally rebuild structure, re-use of services (infrastructure, fabric etc.) |
| 7 | Demolition | Demolish with or without recycling materials, forms components etc. |

Figure 2.5: Possible Interventions & Explanations (Source: Roders. 2007)

As a sort of resource, industrial heritage was not simply discarded or protected, but is being widely involved in modern economic activities and being combined with new economic form (XU, Y & CAO, Y. 2012). The preservation of the industrial heritage constitutes important cultural objectives, not only because it enlarges the sense of community, but also because it constitutes a sustainable approach, once it encourages the positive re-use of redundant buildings that are part of our industrial and commercial heritage (BRANDT et al. 2000, BURLEY & LOURES, 2008). For the matter of how to reuse these buildings is becoming increasingly important on government’s agendas, some see it as a burden while others see it as a possibility, but the main question always is: What possibilities do this kind of buildings have? Roders (2007) presents 7 types of “intervention” when it comes to heritage (figure 2.5)

In practice, the situation of industrial dereliction varies from each other, and usually it would be too simple to choose and approach just one intervention from the category. Since some of the old industrial sites are regarded as the complex system containing different types of buildings constructed in different periods, this determines the final feasible proposal should be a collection of various interventions targeting on specific situation of each building or cluster. Planning and design processes need to be site-specific to ensure that public aspirations are effectively addressed and proposals are thus appropriate for the site and that industrial heritage is safeguarded (LOURES, L & BURLEY, J).

II.2 PRESERVATION OF INDUSTRIAL HERITAGE

PRESERVATION & RE-ADAPTIVE TRANSFORMATION

In China, there are mainly three typical ways of preserving and re-using industrial heritage. The first is to transform monumental buildings with historical value into museums, and the production facilities inside are preserved as exhibits with authenticity, providing visitors perfect opportunities to gain the first-hand knowledge and experience about the industrial history. This approach belongs to the second category in the table mentioned before (figure 2.5).

The second way is so-called 'artistic rebirth', which refers to the combination of emerging creative industries and old factory buildings, bringing new life into those industrial derelictions. Culture is now seen as the magic substitute for all the lost factories and warehouses, as a device that will create a new urban image, making the city more attractive to mobile capital and mobile professional workers (HALL, 2000, p. 640). The preferable location and the transformable super-sized interior space provides diverse possibilities to accommodate emerging economies like creative industries. This is categorized into rehabilitation process.

Last but not least, the industrial heritage park is a good way to give the former industrial land back to the city for absolutely public use. One of the most successful precedent in

Europe is the Duisburg-Nord Park (figure 2.6), and its attraction lies in what Macaulay (1953) referred to as the pleasure of ruins, or the pleasure associated with exploring physical remains of the past. And it not only is a gigantic monument, but also an open-air museum, a free climbing and a scuba diving venue and an illuminated work of art (VOLLMER, M & BERKE, W. 2006, p.60).

Due to innovative transformation of those industrial constructions containing unique spatial characteristics and valuable historical remains, together with the creation of urban events as catalyst for re-development, the transition of former industrial areas in different localities have successfully attracted people's attention. At the same time, introducing new economies helps to generate new jobs, promoting the revitalization of decaying or shrinking cities.

To sum up, no matter which way is chosen, revitalizing industrial estates requires the radical new way of thinking and action, as well as the comprehensive study on the cultural and spatial characteristics as well as the needs of local residents around the site.



Figure 2.6: Landschaftspark Duisburg-Nord (Image source: Flickr)

II.3 POSITIVE GENTRIFICATION

DETRIMENTAL CONSEQUENCES OF GENTRIFICATION

Gentrification is a controversial issue in economically booming cities like the capital city of Beijing. This phenomenon is defined as "...a process involving a change in the population of land-users such that the new users are of a higher socio-economic status than the previous users, together with an associated change in the built environment through a re-investment in fixed capital" (CLARK, 2005). Clark also argues the effects caused by gentrification vary. And the gentrification often occurs along with urban regeneration or urban renewal, which, however, does not bring the neighborhood only improvements that have been aimed for, but also detrimental consequences that cannot be neglected. The international literature about negative consequences of gentrification often focuses on displacement. And Grier & Grier (1978) gave the classical definition of displacement which refers to the forced out-migration of low-income households from gentrifying areas because forces outside the control of the households making living there 'impossible, hazardous, or unaffordable' (cited by Smith & Williams, 1986).

Marcuse (1986) also indicates that there are social and psychological dimensions when it comes to the displacement even if indigenous residents are not displaced from their former residences in gentrifying areas. He assumes that,

"When a family sees the neighborhood around it changing dramatically, when their friends are leaving the neighborhood, when the stores they patronize are liquidating and new stores for other clientele are taking their places, and when changes in public facilities, in transportation patterns, and in support services all clearly are making the area less and less livable, then the pressure of displacement already is severe. Its actuality is only a matter of time. Families living under these circumstances may move as soon as they can, rather than wait for the inevitable; nonetheless they are displaced."



Figure 2.7: Protest against gentrification in West Harlem, New York (Image source: LiberationNews.org)

POSITIVE GENTRIFICATION

Sometimes the main driver of gentrification is public policy, seeking to use 'positive' gentrification as an engine of urban regeneration (CAMERON, S & COAFFEE, J, 2005). Raphael Bostic and Richard Martin (2003), Loretta Lees (2003), Hoang Huu Phe and Patrick Wakely (2000) agree on the statement that the gentrification is not intrinsically designed to displace low income residents as long as people share similar interests in the same area.

According to Atkinson and Bridge (2005), gentrification has many positive effects. The improvement in infrastructure and amenities increases property values, create jobs, improves the quality of public space, preventing a continuing spiral of urban decay. At the same time, the wealthy urbanites who have moved in will make the neighborhood prosperous along with development of new economies, while the city enjoys



Figure 2.8: OCT Loft Renovation: positive gentrification (Image source: Urbanus)



Figure 2.9: Two phases of OCT Loft Renovation (Image source: Urbanus)

much higher tax revenue. The populace including indigent and migration will all benefit from the rehabilitation and regeneration process. This is called by Cameron (2003) as a policy of 'positive gentrification' or 'gentrification as a positive public policy tool' in urban renaissance process.

Therefore, as one of the objectives of this project, what needs to be emphasized is that how to maximize the benefit from gentrification and keep it in a relatively reasonable degree while avoiding detrimental consequences caused by typical market-led gentrification which is often profit-driven. A successful precedent in China is the OCT (Overseas Chinese Town) Loft Renovation in Shenzhen (figure 2.8), which is a trendy mixed-use district transformed from residual factory buildings (warehouse and dormitories). The project was initiated by OCAT which is an influential developer, and catalyzed by the establishment of a famous art museum in one of these vacant warehouses. The planning methodology was to simulate the natural growth of the city instead of making a one-off master plan, encouraging positive gentrification occur in this decaying urban area.

II.3 POSITIVE GENTRIFICATION

STRATEGIES FOR STIMULATING POSITIVE GENTRIFICATION

Based on international literature research and specific case study in China, a collection of strategies and rules concerning positive gentrification is summarized.

01. FLEXIBILITY IN PROGRAM MIXING

A flexible master planning without defining clear boundary or fixed new forms helps to set up a dynamic, interactive and flexible framework, cultivating adaptive ability to uncertainties.

The mix of programs has been becoming a popular strategy when it comes to a urban regeneration project, which promotes the creation of a dynamic and diverse urban environment. However, the change in the degree of mix results in completely different spatial and social consequences, which makes the control on the mix proportion essential to a mixed development. In my project area, the aim is to create social equality by dealing with real demands from the general public and creating equal access to urban benefits. Therefore, the proportion of each program in the mixture should be controlled and regulated to guarantee a minimal proportion of public programs and affordable amenities, as well as the maximal proportion of market-led and profit-driven development. In addition, the mixed-use strategy also responds to the flexibility and resilience of an area, since the proportion is allowed to fluctuate and adapt to the new conditions posed by the vast changes of the city.

02. ZONING STRATEGY

In order to avoid excessive gentrification trend spreading out, compulsory zoning is needed to promote the coexistence between gentrified development and indigenous or non-profit programs. For instance, the OCT indicates specific locations for potential luxury development as well as social housing programs and public amenities. In this way, the basic demands from disadvantaged groups are guaranteed by clearly defined land for public uses, at the same time allowing market-led gentrification occur in specific locations functioning as the engine of regeneration.

03. LONG-TERM PROCESS

The process has been well planned and expected to implement in phases. Namely, the overall development is gradually realized by functional displacement of existing buildings and adding new elements, while showing respect to the land itself and simulating its natural growth with limited interventions, instead of one-off development mode which calls for large amount of money investment and aims at yielding fast economic returns. Therefore, long-term process and logical phasing plan help to avoid risk investment, stimulating exploitation and preservation of the current value of the land.

04. FUNCTIONAL & SOCIAL MIX

One of the key objectives of a gentrification project is to achieve mixed neighborhoods with a balanced composition of the population. It is often a process of de-concentrating poverty by attracting new groups of people and integrating them into the indigenous communities. And mixed-use strategy contributes a lot to the promotion of social cohesion among these old and new groups of people by providing various job opportunities. School (2001) claims that tenurially and socioeconomically mixed neighborhoods are able to support a stronger local economy than areas of concentrated poverty. In addition, the mix of formal and informal sectors is part of this strategy. As part of informal sector, for instance, urban farming and markets provide more opportunities for disadvantaged people including unemployed and elderly, and at the same time fully make use of vacant spaces for contemporary functions. Combined with formal sectors, this will also contribute to better social cohesion of new urbanites and indigenous residents.

05. EMPHASIS ON CREATION OF PUBLIC SPACE

According to Mitchell (2003), neoliberal urban reform resulted in a decrease in the kinds of “civic functions” that public space can perform. Focusing on the diversified use and improved access to public spaces, gentrification can bring far more positive effects by creating more public spaces. In addition, programs focusing on public space and public ame-

nities can help to add value to regeneration projects, which focus on the social and community benefits of public space that may initiate the gentrification process. For instance, the design team of OCT suggests to establish an educational institution related to creativity and culture. Through reuse and renovation of factory buildings as classrooms that spread out the whole area, a creative cluster has emerged, opening up the resources to the general public. Furthermore, the physical linkage of public spaces has been realized by adding elevated or grounded connections, creating place for meeting and exchanging ideas.

06. COMBINATION OF MARKET-LED & STATE-LED GENTRIFICATION

Basically, gentrification is categorized into two types- market led and state-led gentrification (UITERMARK, DUYVENDAK & KLEINHANS, 2007). It is assumed that the former often leads to mass displacement of the indigenous residents from the gentrifying areas whereas the latter results in less displacement. In the specific urban context in China, the strategy of combining both types of gentrification should be adopted during regeneration process. Since state-led gentrification focuses more on social restructuring, creating social mixing by national interventions, while market-led gentrification generates more economic returns. The relation is assumed that, as active stimulus, the state-led gentrification helps to finance and facilitate market gentrification.

II.4 CASE STUDY_ European Precedent

IBA EMSCHER PARK

A holistic ten years (1989 - 1999) top-down initiative
With a grassroots philosophy to re-image the Ruhr in Germany

The Emscher Landschaftspark (Landscape Park) was initiated as part of a ten-year regeneration programme led by the International Building Exhibition Emscher Park (IBA) which is a planning methodology that promotes urban regeneration through culture-led regeneration driven by experimentation and independence in the urban development role (SHAY, A. 2012). It involves working in the social, economic and cultural milieu on the basis of an integral architectural approach that combines intervention on the built and also natural environment (BRUGGEMAN, F & LAVERGNE, F. 2010). The programme addressed the decline of the Ruhr Region in North-Rhine Westphalia, the industrial heartland of north west Germany, stretching across 20 local authorities and including several major urban centres (figure 2.10).

The area was characterized by social deprivation, huge outward migration and economic problems caused by the closure of most of the mines and steel factories. Environment was severely damaged because of decades of heavy industrial pollution. As a result, industrial dereliction and office building vacancy became main problems

in urban areas. Furthermore, decaying urban environment accompanied by the decrease of population, which forced the cities subject to shrinking trend. New city image was in urgent need to create attractiveness for new investment and emerging clean industries.

The regeneration programme focuses on a handful of strategic themes to reverse the urban decline and change the internal and external perceptions of the area. These themes includes 'Industrial monuments' transformed from retention and creative reuse of key industrial heritage. The new Emscher also stresses the regeneration of the river system, carrying ecological intentions and creating sustainable mixed urban areas.

The concept of 'working in the park' indicates provision of new types of employment spaces, while 'living in the park' giving provision of new housing typologies. With outstanding achievements, Zollverein Park (figure 2.11) has become a successful paradigm of the urban development and ecological renewal effort within the IBA Emscher Park.

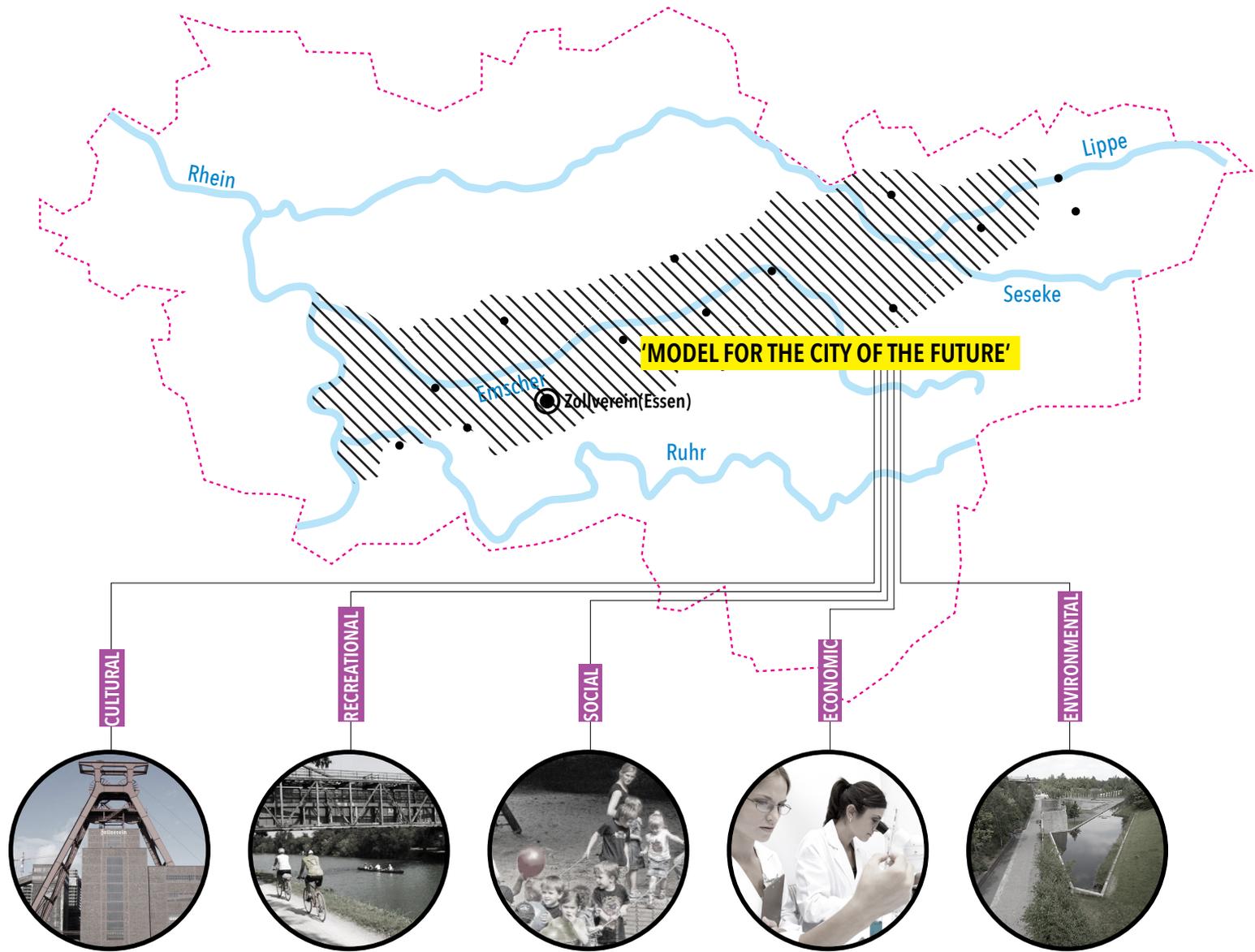


Figure 2.10: Location and multi-purposed planning of IBA Emscher Park (made by author)

II.4 CASE STUDY_ European Precedent

ZOLLVEREIN INDUSTRIAL COMPLEX_

WAS most beautiful coal mine in the world,
IS creative incubator in heart of Emscher Park

The Zollverein industrial complex is located in Essen in the Ruhr region of Germany, and it consists of the complete infrastructure of a historical coal mining and coke manufacture site. A number of industrial buildings in the site are regarded as the exceptional architectural merit, which have given Zollverein the reputation of being the “most beautiful coal mine in the world” (figure 2.11). This unique site has been chronicling both the evolution and decline of the essential coal mining industry of Germany over the past 150 years. Zollverein is the living embodiment of high-power industrialization and simultaneously a symbol of structural transformation in the Ruhr area.

Furthermore, the buildings were constructed in Bauhaus style, and the beautiful Zollverein was inscribed into the United Nations Educational, Scientific and Cultural Organization

(UNESCO) World Heritage Sites in 2001.

After coal and coke production stopped in the late 20th century, the authorities struggled what to do with this post-industrial land for about ten years, and the site were confronted with the threat of demolition. Fortunately, the authorities were wise enough to buy it from the former owners and declared it as part of the industrial heritage of Germany. Then Rem Koolhaas of OMA designed the master plan for Zollverein Park, which is now an area of 1 km² incubator site for design and art (figure 2.12).

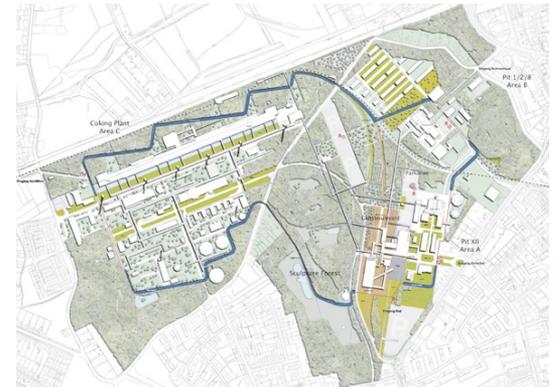


Figure 2.12: Master plan of Zeche Zollverein
(Source: <http://www.planergruppeoberhausen.de>)

Figure 2.11: Main entrance of Zeche Zollverein (photo by author).

II.4 CASE STUDY_ European Precedent

DIVERSE PROGRAMS_

As part of the preliminary research process for graduation project, I visited the site for field study to have first-hand knowledge about this place and experience the result of both spatial and economic transition of the site. New roads and the extension of an existing highway through a tunnel servicing the site promote the accessibility. The rail tracks inside the site have been maintained and filled with pavements to create pedestrian walkways, functioning as the public space. For those industrial buildings, the simple Bauhaus facade is equally suitable for housing concerts, dance and theatre shows, not to speak of congresses, conferences and trade fairs. Therefore, it is being developed into an innovative meeting point for design and art. Today many of the buildings have been realized adaptive re-use, some converted into contemporary art museums, conference halls, cinemas, restaurants, and even a casino. Functional re-adaptation has brought new life to this industrial dereliction (figure 2.13 & figure 2.14).

By focusing on the reveal of the value of natural assets such as landscape and waterways, and the creative re-use of industrial heritage buildings, the development of Zollverein has inspired a new identity for the area that captured its industrial history and its importance to local people. And it will become home to companies from the fields of design, architecture, exhibition construction, advertising, marketing and communication. Design competence will be concentrated here and make a positive economic contribution to the economy of Germany (Zollverein Official Website).



Figure 2.13: Summer activities in Zeche Zollverein
(photo by Stefan Ziese)



Figure 2.14: Winter activities in Zeche Zollverein
(photo by Stefan Ziese)



Figure 2.15: Red Dot Industrial Design Museum in Zollverein: Building Facade in Bauhaus Style (photo by author)

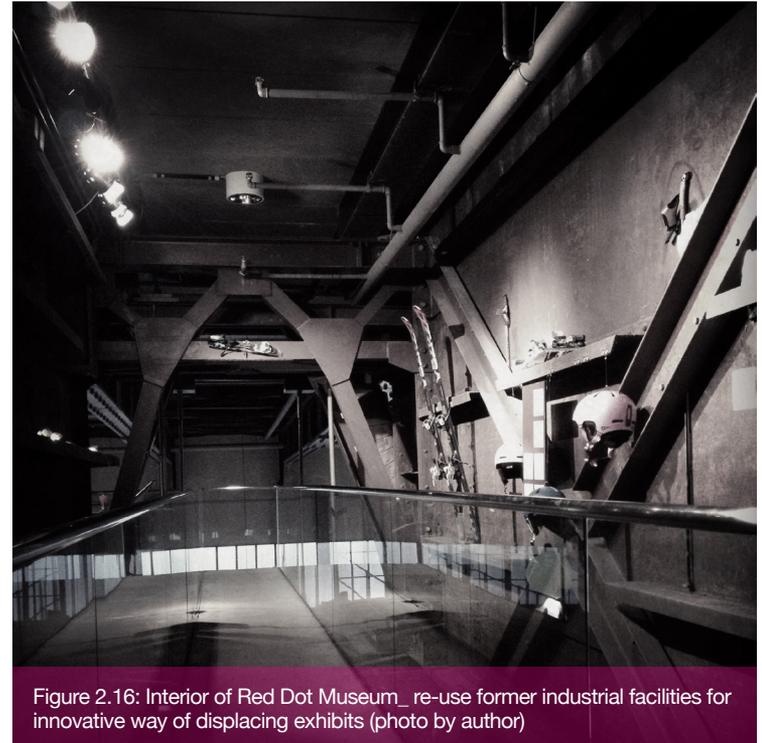


Figure 2.16: Interior of Red Dot Museum_ re-use former industrial facilities for innovative way of displaying exhibits (photo by author)

II.4 CASE STUDY_ Chinese Precedent

DIVERSE PROGRAMS_

Pioneering Experimental Base of Avant-guard & Modern Art

In Beijing, there are several precedents of derelict industrial areas that were subject to reprogramming partially or even in full-scale of transformation. Generally, the culture-related industries are regarded as the best replacement of former industrial land, resulted in the strategy of introducing creative industry becoming increasingly popular in China recently. One of the cultural landmarks of Beijing is the contemporary artists' district Dashanzi, where the 798 Art Zone is located and has international reputation as one of Beijing's ten designated cultural creative clusters (KEANE, M. 2008).

The area occupied by Beijing 798 Art Zone was once the place for Beijing North China wireless joint equipment factory (namely, 718 Joint Factory), which was designed in the Bauhaus style (figure 2.20) by East German architect in 1952. And

the 718 Joint Factory was disbanded and then six sub-factories took their own lives, including the 798 factory. With the decline of the manufacturing, the factory was shut down and taken over by a group of artists, who turned parts of it into lofts, studios and art galleries. Being the place to house a number of exhibitions of modern and experimental art, the attractiveness of the place was promoted, the site then filled up with shops, cafe and restaurants, becoming an exhibition place featuring China's avant-garde (KEANE, M. 2008) and a perfect combination of creative cluster as new economy and industrial remains with historical memories. Nowadays, the site is becoming an artists' colony, by launching the annual event '798 International Art Festival' since 2006, the former military compound is now placed on the international art circuit.



Figure 2.17: Exhibition Hall: spacious interior & abundant skylight make the place perfect for arranging exhibition flexibly (image source: Flickr)

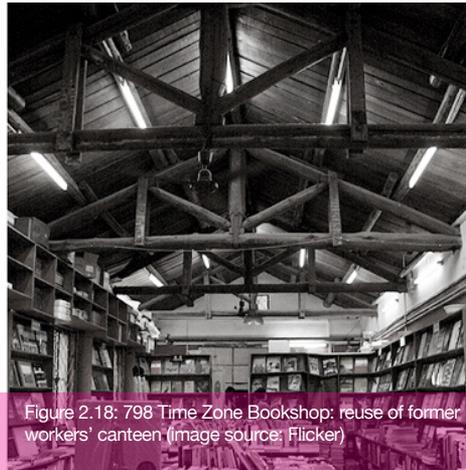


Figure 2.18: 798 Time Zone Bookshop: reuse of former workers' canteen (image source: Flickr)



Figure 2.19: 798 Plaza: sculptures and outdoor art installations in 798 Creative Plaza (photo by Bridget O'Donnell)

Culture is referred as “a source of prosperity and cosmopolitanism” as well as “a means of defining a rich, shared identity and thus engenders pride of place”.

COMEDIA. 2003

Figure 2.20: 798 industrial building in Bauhaus style (image source: Flickr)

II.4 CASE STUDY_ Conclusion

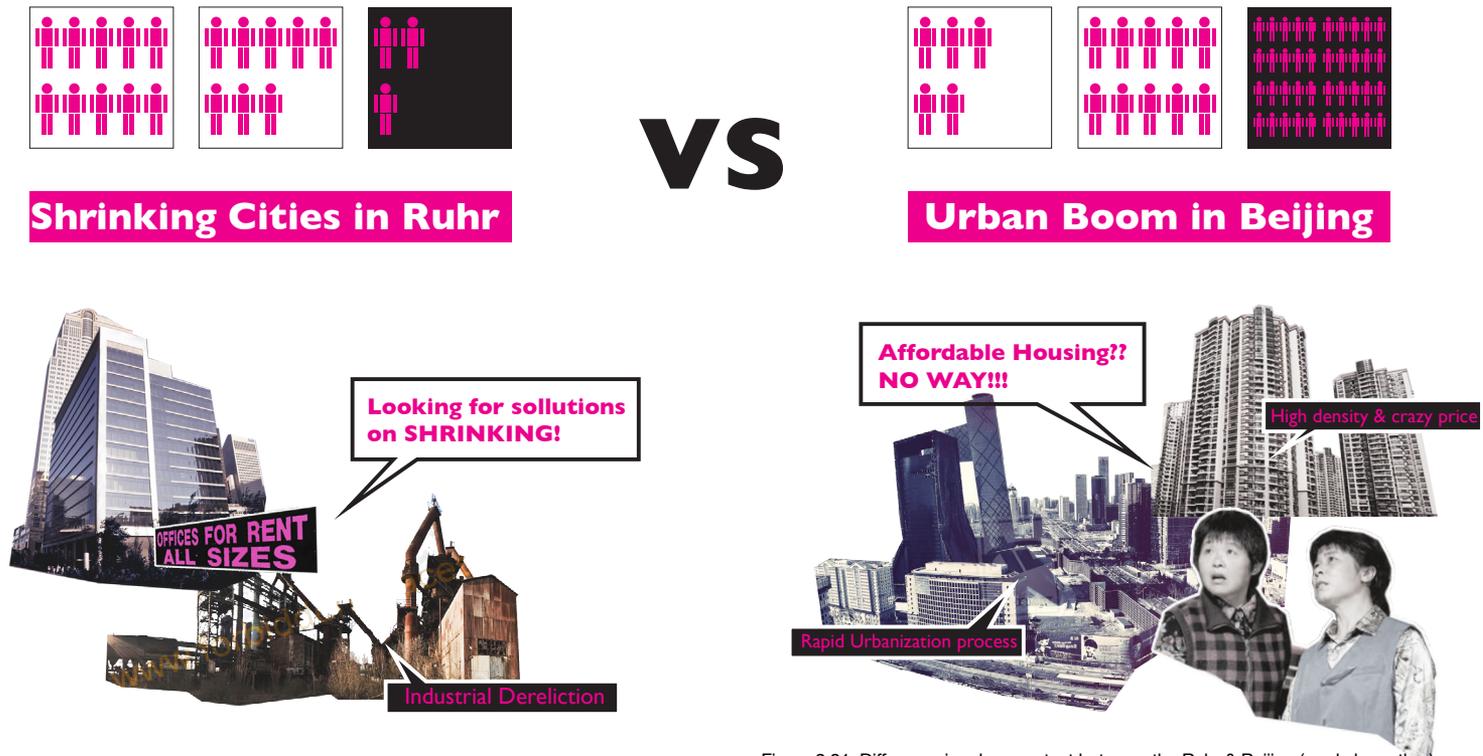


Figure 2.21: Difference in urban context between the Ruhr & Beijing (made by author)

IBA EMSCHER PARK IN RUHR_

The decline of heavy industries intensified the economic decay of those old industrial cities in Ruhr region. Increasing amount of manufactures and companies shut down or moved away since 1970s. Industrial dereliction and office building vacancy became main problems in urban area. Furthermore, urban environment decayed accompanied by the decrease of population, which resulted the cities being shrinking. New city image was needed to create attractiveness for new investment and emerging clean industries.

CAPITAL CITY OF BEIJING_

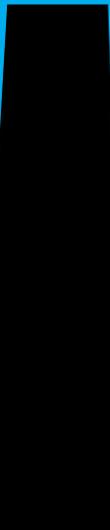
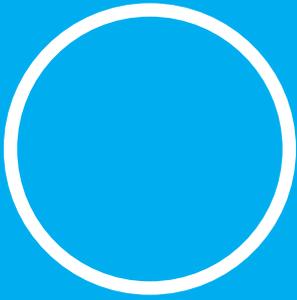
Most of big Chinese cities have been experiencing extremely rapid urbanization and modernization process in the past decades. As a result, significant amount of immigrants have been flowing into those advanced cities for a better career. Complexity of factors intensified the rampant urban growth, increasingly high density and whopping land price. Meanwhile, those former industrial areas have been swallowed by enormous urbanization wave, in need of transition to integrate into the city.

LESSON LEARNED FROM IBA_

1. Involvement of various stakeholders;
2. Having a regional-level strategy as the guiding principle;
3. Industrial heritage is regarded as a valid focus for celebration and can anchor new development in the continuing history of a place;
4. The use of the IBA as a political tool — limiting the IBA to 10 years — gave confidence to the politicians and investors that there was enough time to effect significant change, but there was a definite end point in sight;
5. Long-term process that requires socio-economic revitalization effort;
6. The IBA encouraged temporary uses of land and buildings awaiting development that stimulated interest in the short term, and investor confidence in the longer term;
7. The use of marketing and the media, which is vital in challenging negative perceptions of the area.
8. A multi-purposed development concerning almost every aspects of urban issues, including cultural, recreational, social, economic and environmental.

LESSON LEARNED FROM 798_

1. Initial bottom-up development;
2. Clustered economy - cultural and creative cluster, and development of art district;
3. The use of annual event '798 International Art Festival' to attract attention from abroad and gain reputation in international level;
4. Combination of heritage buildings with avant-garde art and creative industry which have enormous attractiveness for both populace and visitors from abroad;
5. Close connection with related education institutions (Chinese Academy of Fine Art)



01_
INTRODUCTION



02_
THEORY RESEARCH



03_
BEIJING CONTEXT



04_
SITE CONTEXT

PART 03_

THREE PHASES OF URBAN DEVELOPMENT IN BEIJING

- 3.1 Introduction
- 3.2 Phase 1: Comprehensive Industrialization
- 3.3 Phase 2: Stagnant Development
- 3.4 Phase 3: Transition & De-industrialization

05_
URGENT NEEDS

06_
SCALE 'L'

07_
SCALE 'M'

08_
SCALE 'S'

09_
CONCLUSION



Figure 3.1: Highly urbanized city_ Beijing CBD (Image source: CSA Travels)

III.1 INTRODUCTION

Designated function of city refers to the summary of city strategies. Once it is defined, it will bring about long-term and profound influences to the city's development (CAO, X. 2008). Since the establishment of People's Republic of China in 1949, there were three different phases in the strategic planning of Beijing that had influenced the urbanization process, and enormous change has been presented in last decades.



THREE PHASES INFLUENCING INDUSTRIALIZATION PROCESS IN STRATEGIC PLANNING OF BEIJING

1949 - 1958: designated function of Beijing is defined as the production base & industrial city;
1958 - 1980: “Great Leap Forward”(1958 - 1961); “Cultural Revolution” (1966 - 1976);
1980 - now: designated function of Beijing modified as the cultural and political center of China.

III.2 PHASE 1: COMPREHENSIVE INDUSTRIALIZATION



Figure 3.2: Oil painting of China's National Day ceremony (Image source: Xiwen Dong)

Founding Ceremony of People's Republic of China in 1949

FIRST PHASE_ 1949 - 1958

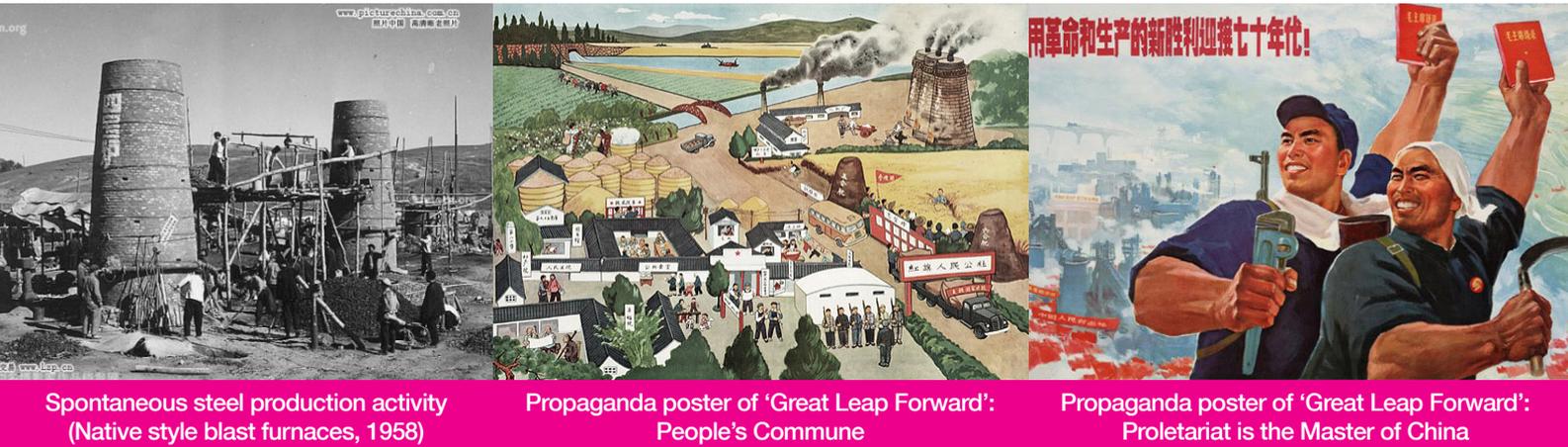
Designated Function of Beijing is Defined as the Production Base & Industrial City

The first phase started from 1949, when chairman Mao proclaimed the founding of the people's republic of China (PRC), witnessed by crowds of people from all over the nation gathering in Tian'an Men Square. This was followed by the land reform in the national scale, majority of the land was nationalized and completely under the control of the central government. In this period, Mao's first objective was to bring forth economic improvement to this country which had been severely damaged by years of war. At the same time researchers and urbanists from local and abroad gathered together to discuss about the possible development directions of the capital city of Beijing in the future, and came to the consensus that Beijing should be a complexity of politics, culture and technology, as well as a large industrial city. Therefore, the designated function of the capital city of Beijing was defined as the most important production base in this period.

To respond to this principle, six industrial districts were planned by the municipal government, which counted 23.1% of total urban land of Beijing (one of the districts is called Shijingshan in the western part, where the thesis project is located). Afterwards, a number of basic industries necessary for comprehensive industrialization process were established. Since 1953, enormous amount of manufactures and heavy industries have been founded, and amazing achievements were made during the "First Five-Year Plan" period from 1953 to 1957, and the rising industrial production brought the first economic prosperity to Beijing after the WWII, the city finally could recover from the damages of wars.



III.3 PHASE 2: STAGNANT DEVELOPMENT



Spontaneous steel production activity
(Native style blast furnaces, 1958)

Propaganda poster of 'Great Leap Forward':
People's Commune

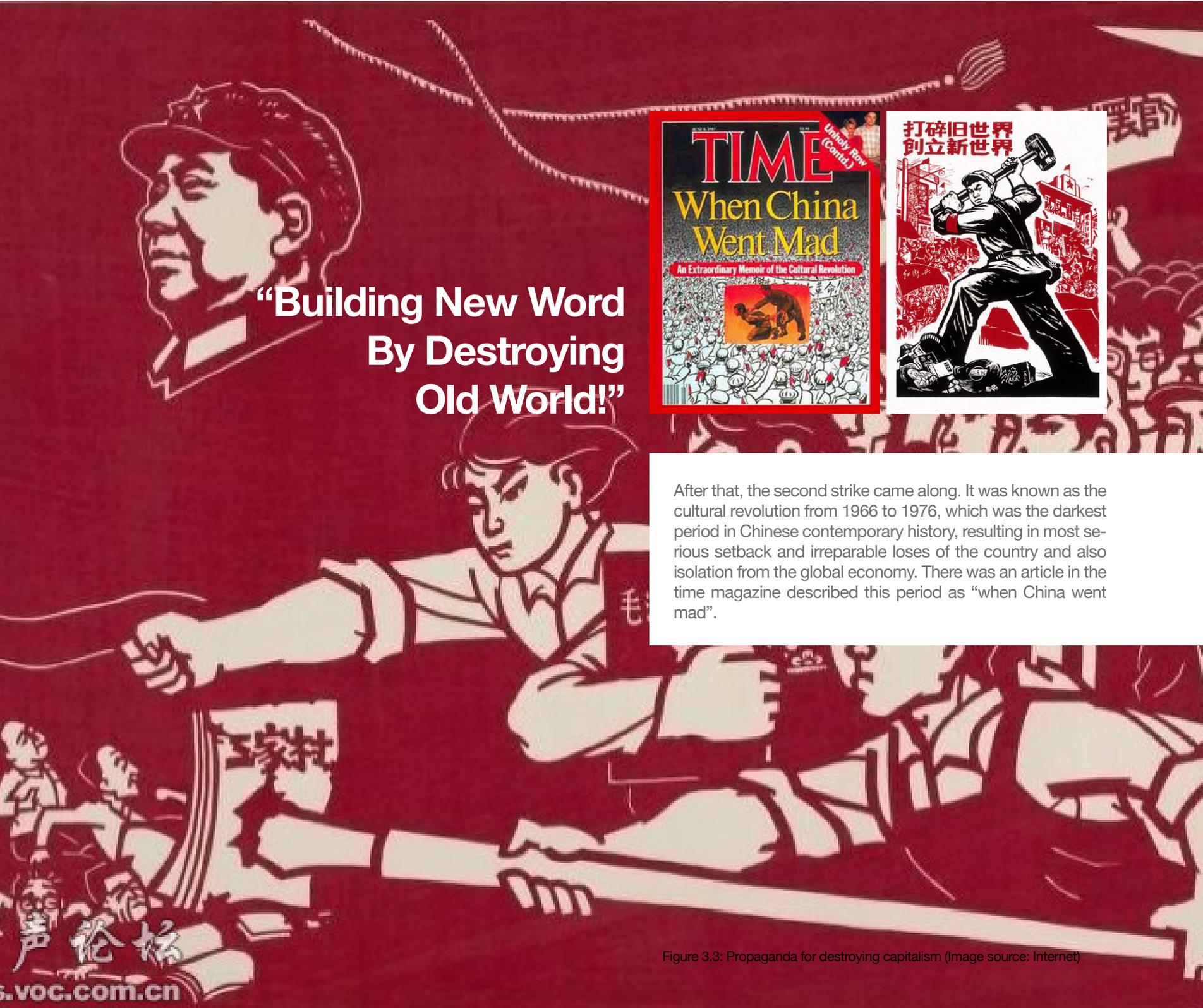
Propaganda poster of 'Great Leap Forward':
Proletariat is the Master of China

SECOND PHASE_ 1958 - 1980

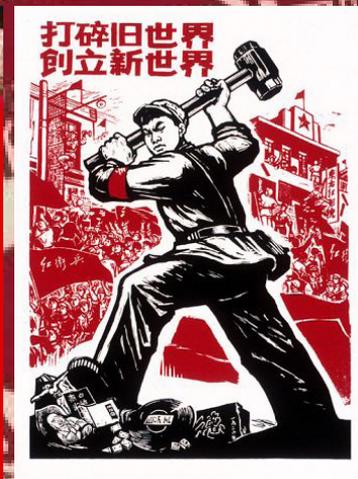
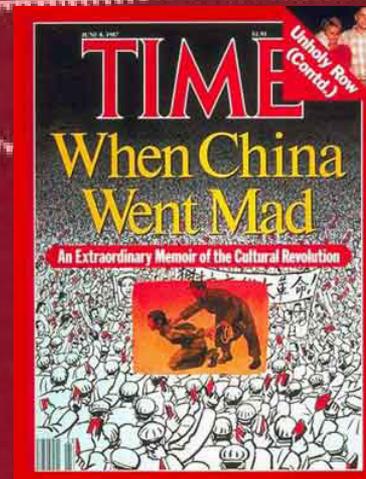
Stagnant Development Due to Wrong City Strategies & Political Reason

The 10 years from 1957 to 1966 was the period in which China started large-scale of socialist construction with the famous 'Great Leap Forward' as the kick-off. In 1958, steel production has been put on the top of agendas for the economic development in the national scale, since there was a notion that the large amount of steel production could be the symbol of a highly modernized society, which was proved to be wrong and brought huge damage to the natural and urban environment. To respond to this guiding principle, the Capital Steel was expanded enormously and a number of affiliated industries have been spawned in Beijing, formulating a steel and iron production base. Apart from those large-scale industrial areas in city periphery planned by the government, there has been increasing number of small factories emerg-

ing from the local neighborhoods in a very bottom-up way. Over 100,000 unemployed housewives spontaneously transformed their houses and communal courtyards into small workshops, attempting to produce steel from their household iron items and contribute to the social trend. However, it was an Utopian plan to catch up with the developed capitalist countries. The 'Great Leap Forward' (1958-1961) intensified the conflicts between industrial development and the urbanization process of Beijing. Since most of the small workshops were located in urban area and even deep in neighborhoods like acupuncture, large energy consumption and pollution including contaminants and noise put the residents into great suffering. Therefore, the wrong city strategy has caused irreparable mistakes in the city development at that period.



“Building New Word
By Destroying
Old World!”



After that, the second strike came along. It was known as the cultural revolution from 1966 to 1976, which was the darkest period in Chinese contemporary history, resulting in most serious setback and irreparable loses of the country and also isolation from the global economy. There was an article in the time magazine described this period as “when China went mad”.

Figure 3.3: Propaganda for destroying capitalism (Image source: Internet)

III.4 PHASE 3: TRANSITION & DE-INDUSTRIALIZATION

THIRD PHASE_ 1980 - NOW

Urban Regeneration with Chinese Characteristics

A new phase of urban transformation followed during the 1980s, the designated function of the capital city of Beijing has been modified. It was decided that Beijing should be the political and cultural centre of China instead of being a productive city, and the development of traditional industries should comply with the main function of the city. To put it in a simple way, there was urgent need for a transition of economic base from traditional manufacturing towards knowledge and technology-related industries. To respond to this decision by the central government, a number of traditional industries and contaminated factories were forced to be closed or move out to city periphery since 1984, leaving available land for new urban programs including housing, hotel and public facilities, which gained both social and environmental benefit.

In the past few decades, there has been an increasing concern on environmental issues during the rapid urbanization process in most of developing countries. As the cultural and political center of China, the sustainable development of Beijing is of great importance, this trend leads to decline and dereliction of some traditional industrial areas in inner city. For many commentators the urban 'new economy' lies at the heart of inner city restructuring (Scott 2000; Cooke & Lazer-

etti 2008; Hutton 2010; Van Heur 2010). It was assumed that the process of replacing old manufacturing-based industrial activities with new knowledge-based industries have brought those old industrial cities new networks of production and exchange, along with new kinds of workers that transform the industrial system of the inner city (GU, X. 2012). For those areas which were initially located in suburban when the industries were established, because of large-scale city expansion they have been gradually swallowed by urbanization waves and becoming fragments immersed in the inner city urban environment. In this context, the redevelopment of those derelict industrial quarters became great opportunities to accommodate emerging demands from modernization process in the city point of view and to promote urban regeneration in the local point of view.

However, during the urban regeneration process, large amount of urban fabrics with heritage value have been demolished, showing no respect to the cultural identity of the city. To be replacement, high-rise buildings have been spawned, yielding fast economic returns, this was presented as speculation in land which enriches developers and at the same time pleases politicians by increasing local GDP.

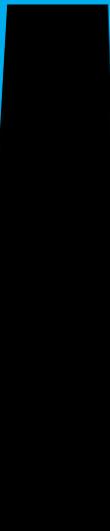
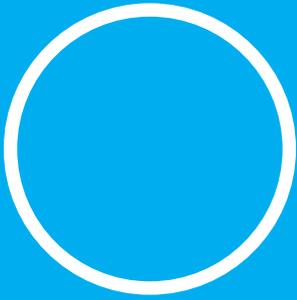


Figure 3.4: Dilapidated factory with reusable steel truss and interior space
(image source: Flickr)



Figure 3.5: Demolition for creating 'available land' for new development
(Image source: Getty Image)

What has been demolished is not only physical remains but also CULTURAL IDENTITY that cannot be repaired or reconstructed.



01_
INTRODUCTION

02_
THEORY RESEARCH

03_
BEIJING CONTEXT

04_
SITE CONTEXT

PART 04_

RESEARCH & ANALYSIS OF SITE

- 4.1 Introduction of Location
- 4.2 Value of the Site
- 4.3 Local Condition
- 4.4 Current Role in the City
- 4.5 Criticizing Government's plan

05_
URGENT NEEDS

06_
SCALE 'L'

07_
SCALE 'M'

08_
SCALE 'S'

09_
CONCLUSION

IV.1 INTRODUCTION OF LOCATION



Figure 4.1: Aerial view of former cooling pond
(image source: Flickr)



Figure 4.2: Interior of super-sized factory building
(image source: Flickr)



Figure 4.3: Cooling tower and factory buildings
(photo by author)

LOSS OF A PILLAR INDUSTRY OPPORTUNITY FOR TRANSITION

The site chosen for the project is the former Capital Steel Complex, known as Shougang Group- the largest and most important steel production industrial complex in Beijing, which has witnessed the history of heavy industry development in China since it was founded in 1919. Enormous contribution to the city development was made by this huge company which has been functioning as the pillar of local economy. In the last two decades, there has been a recognition during urbanization process in China that the environmental issue should be put on the top of the list, and the old industries with contaminant were seen as tumors for the urban environment and the potential threat to the sustainability in urban development.

In 2004, the government decided to move the Capital Steel Complex to another city close by, in order to ensure a good air quality and a “green” city image to welcome the 2008 Olympic Games. Then the factory has been reducing the production until it completely halted in 2010, which indicates the end of a grand age of this steel industrial area.

Therefore, how to develop the derelict industrial land with such an unique historical and cultural value has become a hot issue. A strategic planning balancing preservation of the industrial heritage and implementation of new urban functions in an ecological way has become an urgent need.





Figure 4.4: Aerial view of project area: Former Capital Steel Complex - Shougang Group
(Image Source: Wenxiao Ma)

IV.1 INTRODUCTION OF LOCATION

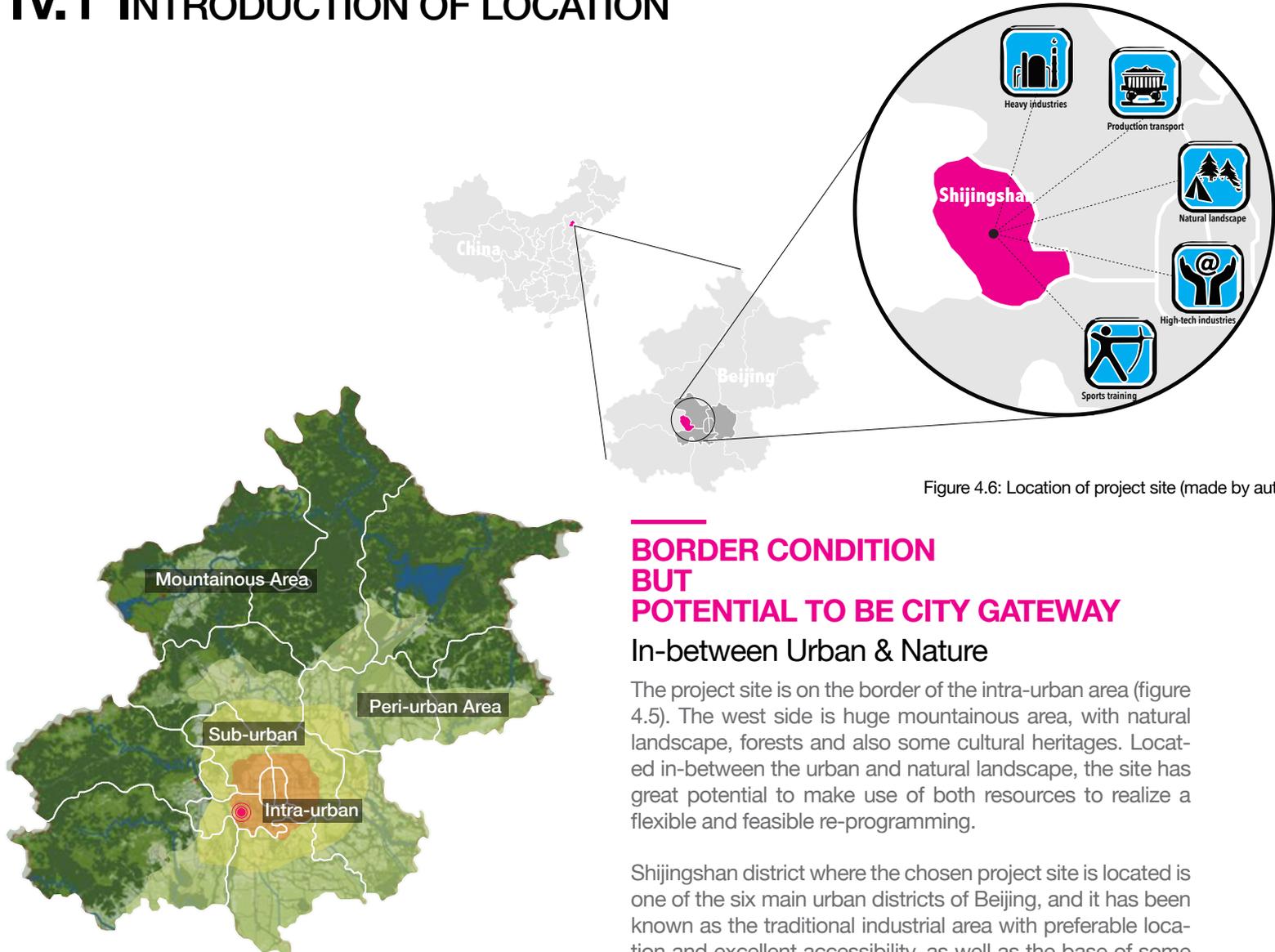


Figure 4.6: Location of project site (made by author)

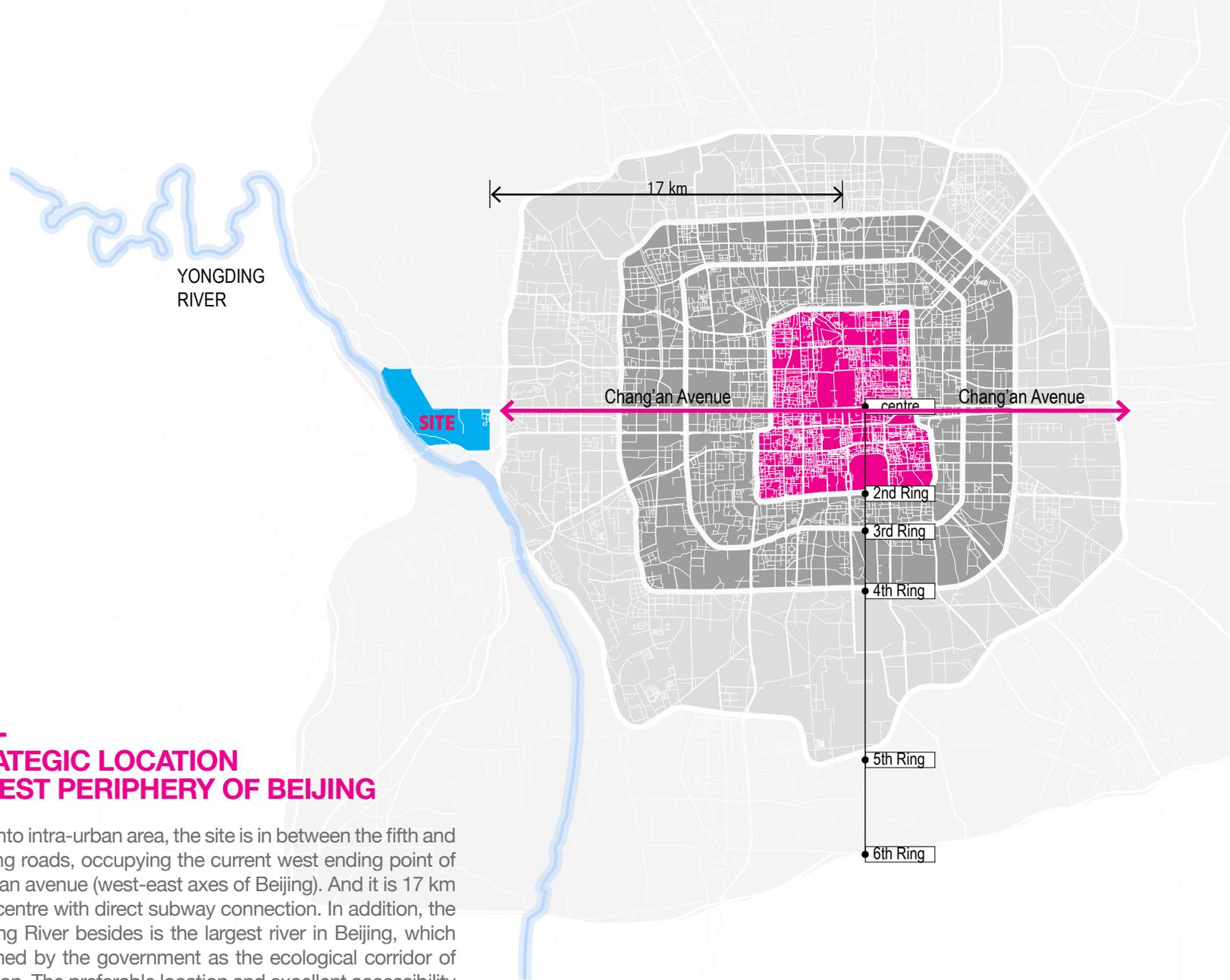
BORDER CONDITION BUT POTENTIAL TO BE CITY GATEWAY

In-between Urban & Nature

The project site is on the border of the intra-urban area (figure 4.5). The west side is huge mountainous area, with natural landscape, forests and also some cultural heritages. Located in-between the urban and natural landscape, the site has great potential to make use of both resources to realize a flexible and feasible re-programming.

Shijingshan district where the chosen project site is located is one of the six main urban districts of Beijing, and it has been known as the traditional industrial area with preferable location and excellent accessibility, as well as the base of some technology industries and sports facilities (figure 4.6).

Figure 4.5: Geographic location and district municipality division (made by author)



STRATEGIC LOCATION IN WEST PERIPHERY OF BEIJING

Zoom into intra-urban area, the site is in between the fifth and sixth ring roads, occupying the current west ending point of Chang'an Avenue (west-east axes of Beijing). And it is 17 km to city centre with direct subway connection. In addition, the Yongding River besides is the largest river in Beijing, which is planned by the government as the ecological corridor of the region. The preferable location and excellent accessibility make this place extremely strategic for the development of the west part of the city.

Figure 4.7: Strategic location in the west ending of Chang'an Avenue (made by author)

IV.1 INTRODUCTION OF LOCATION



Figure 4.8: Comparison of the size between project site and Amsterdam Center (made by author)

COMPARISON AREA AMSTERDAM CENTER = SITE = 8 KM²

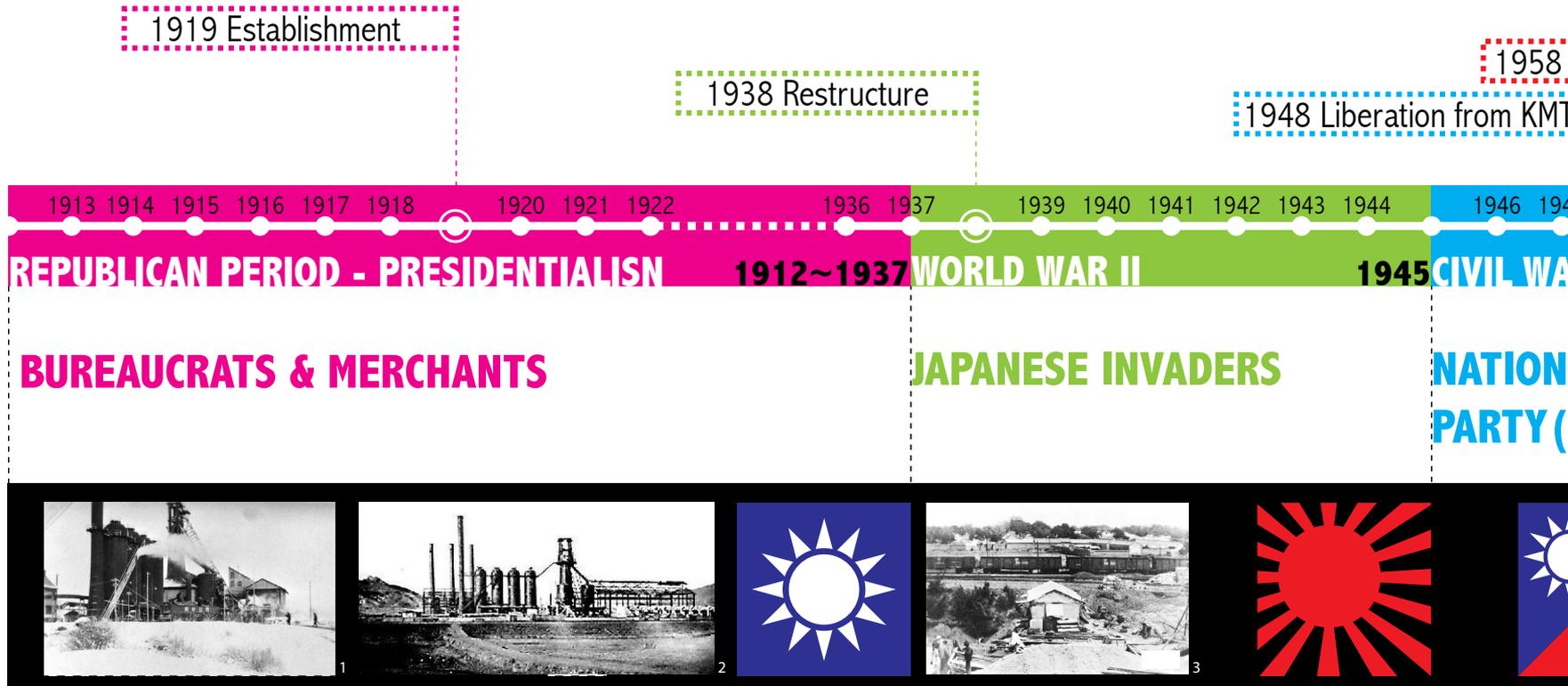
A comparative diagram (figure 4.8) shows that the area of the project site is approximately equal to Amsterdam Centrum, giving a better impression about this huge-sized industrial dereliction and also architectural scale.



Size: 8.55 km²
Condition: derelict industrial land
Existing construction area: 9,020,000 m²

Figure 4.9: Aerial view and border of the industrial site (made by author)

IV.2 VALUE OF THE SITE_ History of the Site



HISTORY IMAGES

- 1: 1921
- 2: 1928
- 3: 1939
- 4: 1st furnace production
- 5: 1st coke oven
- 6: 2nd coke oven
- 7: site plan rolling steel factory in 1969
- 8: 1970
- 9: 2008

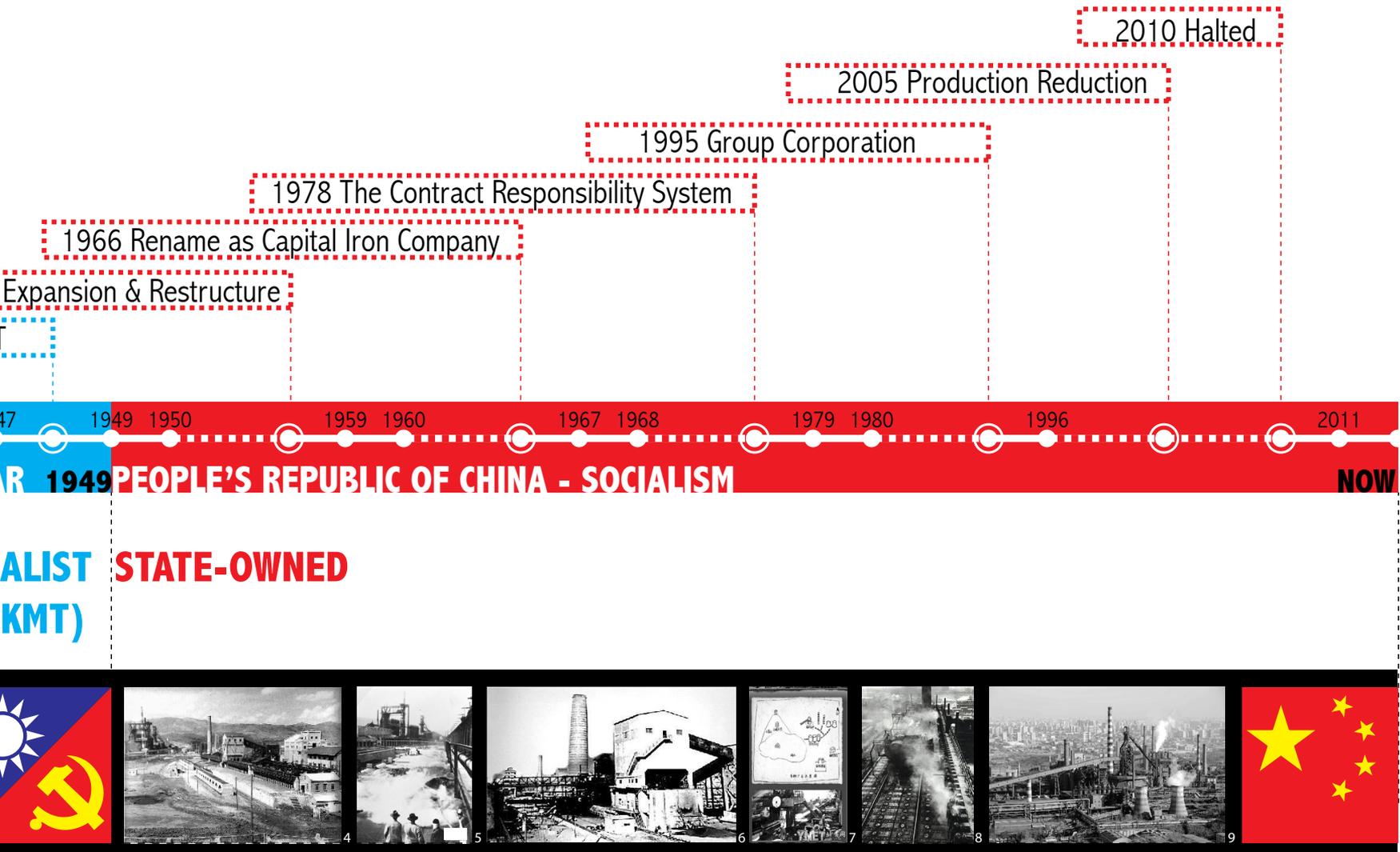


Figure 4.10: Developing history of Capital Steel (made by author)

IV.2 VALUE OF THE SITE_ History of the Site

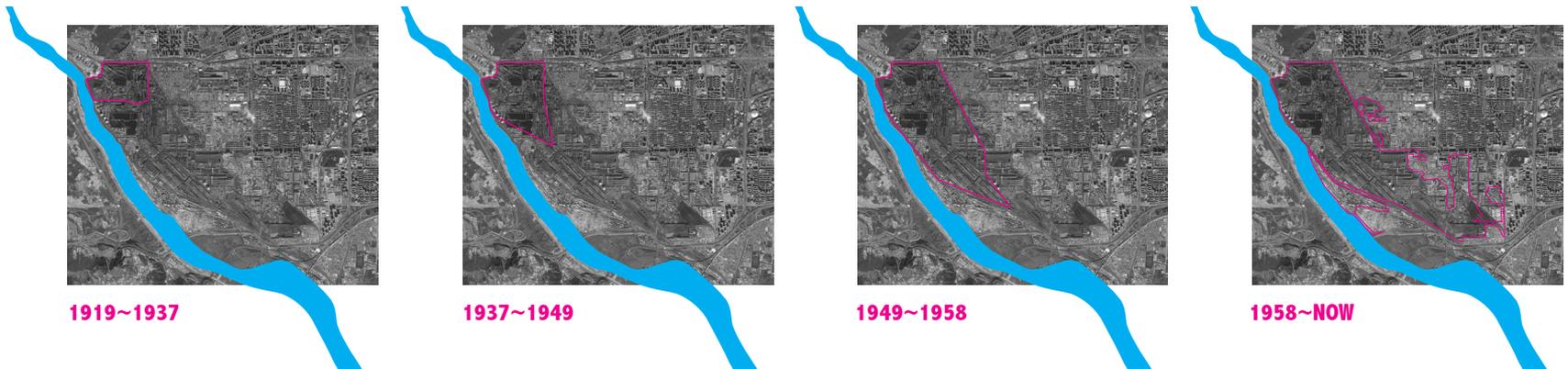


Figure 4.11: Land expansion of Capital Steel (made by author)

GROWTH PROCESS

1919~1937: The factory was only a small plot of land beside the hill when it was founded, and the smaller cooling pond was dug in the very early time.

1937~1949: During the World War II, the factory was taken over by Japanese invaders, and the size was expanded and some advanced production facilities were introduced from abroad. Unfortunately, most of them were destroyed by Japanese army when they retreated after failing the war.

Post 1949: The land of the factory was rapidly expanded to east direction along with industrialization and urbanization

process of Beijing. Until now, the sub-factories of Capital Steel are interweaving with surrounding residential areas, since the place once was distant city periphery but now part of the intra-urban area due to rapid urban expansion.

The factory grew along the river towards southeast direction. The river has been providing water to support the iron and steel production, and the contaminants from the factory has intensified the deterioration of ecosystem of the river which has been designated as the ecological corridor of the city. This is the main factor that forces the industry to close and move.

INFLUENTIAL PHASES FOR THE CAPITAL STEEL SITE IN POST-1949 ERA

PHASE I 1949~1980

CHARACTER: modernization and comprehensive development of heavy & chemical industry
CONSEQUENCE: emergence of huge amount of heavy industries in urban area of Beijing
SITE: large scale expansion

PHASE II 1981~1994

CHARACTER: highlight the capital function as cultural and political centre, and strictly limit the development of contaminated industries in intra-urban area
CONSEQUENCE: emphasize the development of technology-intensive industries, and rapid development of heavy industries in periphery
SITE: technological innovation, improvement of productivity, and development towards group of companies in multi-fields

PHASE III 1995~2004

CHARACTER: stress the knowledge-based economy and sustainable development
CONSEQUENCE: rapid development of technology industries and service sectors, transition from traditional manufacturing towards technological parks and real estate
SITE: conflict between heavy industry production and restrictions of urban development, iron & steel industry disappeared from the context of industrial development of Beijing since 2004 when Shougang was forced to move the production section away

IV.2 VALUE OF THE SITE_ Cultural Entity

4.2 Value of the Site

Chapter 04 / 09

“Quality is the essence of life, and the efficiency is our objective!”

-Slogan inside the factory

Figure 4.12: Slogan hang inside the factory building (image source: Flickr)



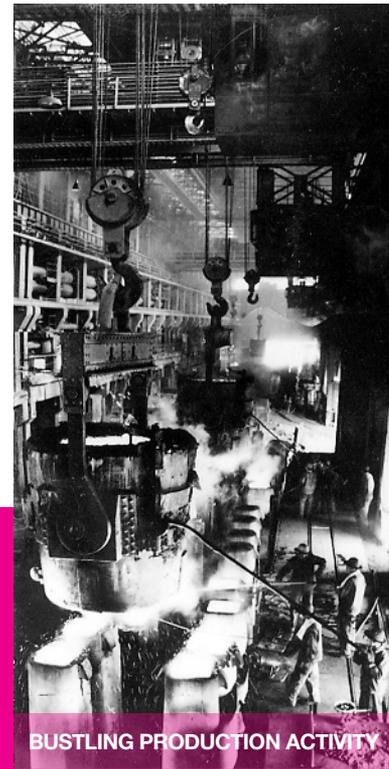
“I have been working in Shougang for more than 40 years, with 2000 pictures published to record its glorious history. But now it has been retired just like those former workers.”

- 1st Photographer of Shougang



CARRYING MEMORY OF WORKING CLASS

With such a long history, this area has become part of local cultural identity. Although it moved away, still it exists in people's memory. And the former corporate culture and propagandas like posters and slogans give this area intangible value in need of preservation.



BUSTLING PRODUCTION ACTIVITY



PROPAGANDA BOOK



WORKERS' PHOTO (1965)



POSTER (1972)

Figure 4.13: Capital Steel as the cultural identity (image source: Internet)

IV.2 VALUE OF THE SITE

BUILDINGS WITH HISTORICAL VALUE

Within the site, there are large amount of constructions built in the very early year, they are carrying historical value that needs to be preserved. They are mainly located near the Shijingshan Mountain, where the factory was initially established.

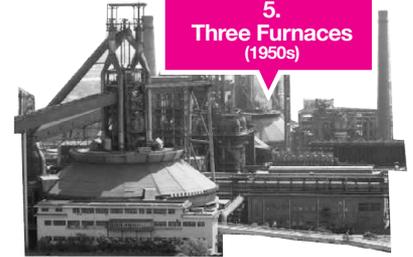
1.
WWII Fort (WWII)



3.
Ancient Well (Qing Dynasty)



5.
Three Furnaces (1950s)



2.
Cultural Relics Complex (Qing Dynasty)



4.
Exhibition House (1919)



6.
Furnace Base (WWII)

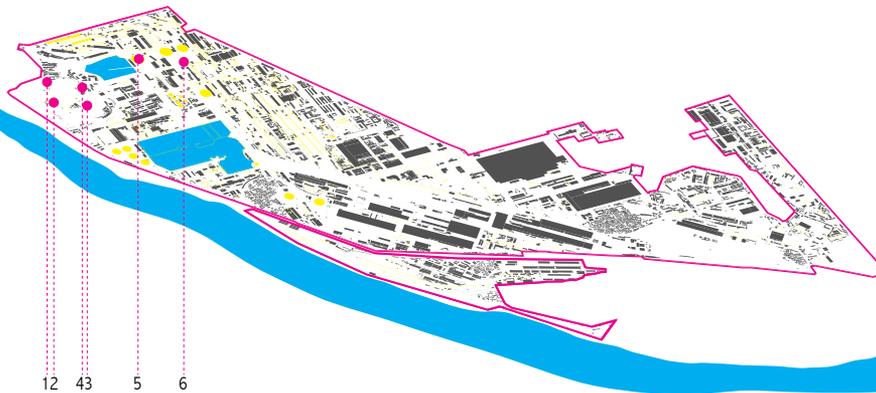


Figure 4.14: Typical buildings with historical value (made by author)

BUILDINGS WITH INDUSTRIAL IDENTITY

As the largest steel producer in Beijing, the capital has enormous amount of industrial buildings and facilities. They have distinct identity that recalls memory of people who used to work here, presenting unique physical remains of its industrial past. Some of the buildings are of great importance as milestones in the industrialization process of China, being authentic exhibits representing its evolving history.

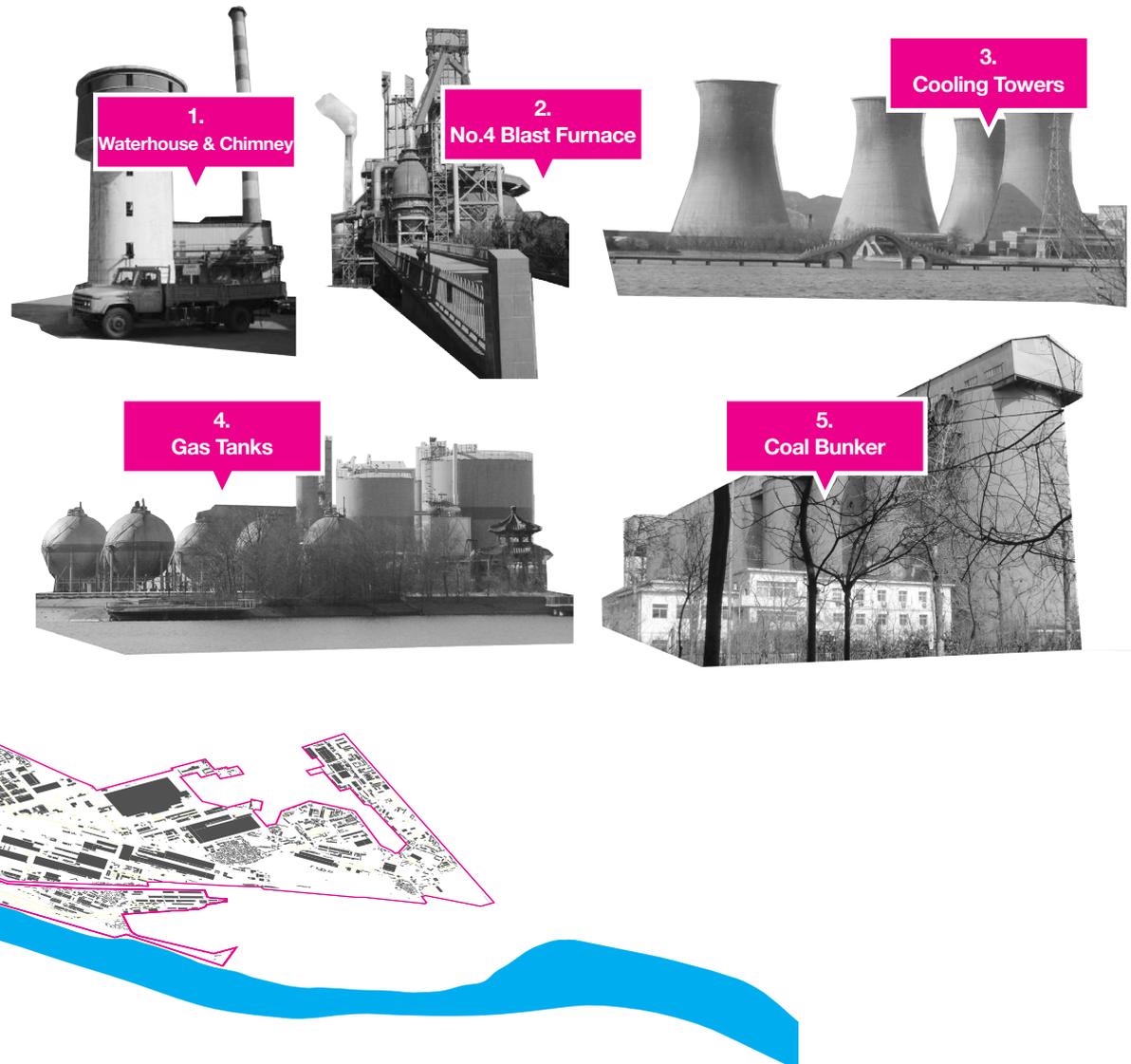


Figure 4.15: Typical buildings with instinct characteristics of steel industry (made by author)

IV.2 VALUE OF THE SITE

BUILDINGS WITH SPACIOUS INTERIOR

Due to massive steel production, there are large amount of super-sized factory buildings for steel-making or storage. These buildings have huge potential for adaptive reuse because of their spacious interior which offers flexibility and diverse possibilities for functional transition.

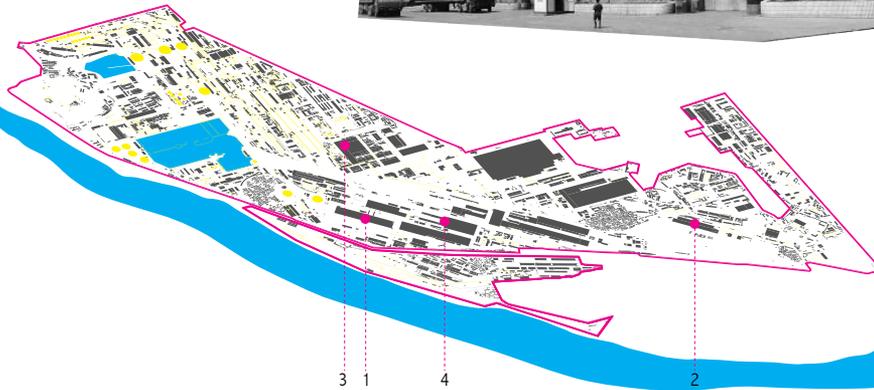


Figure 4.16: Typical buildings with re-usable value (made by author)



Figure 4.17: Blast furnace as industrial heritage
(Image Source: Flickr)

IV.3 LOCAL CONDITION

ZONING BASED ON FUNCTIONALITY & MORPHOLOGY

ZONE I_ Good Landscape Quality

Zone I is characterized by the unique natural landscape with a 184m high mountain and two cooling ponds. A number of historic relics on the mountain and buildings of traditional Chinese style give this area distinct culture identity.

ZONE II_ Industrial Heritage

Zone II has the most distinct characteristics of steel industry due to a concentration of main production facilities. It was the core of the factory and has the value of industrial heritage.

ZONE III_ Re-usable Buildings

Zone III is identified by a number of super-sized factory buildings connected by elevated conveyor belts. Those building with large-scale steel truss can be functional transformed to adapt to new programmes inside the spacious interior.

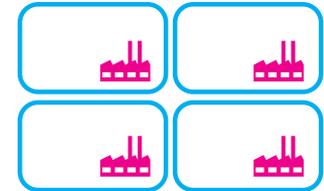
ZONE IV_ BH Area

Zone IV is the BH (Behind House) area with logistics and some accessory facilities. Without distinct characteristics, it's possible to demolish and redevelop the whole area.

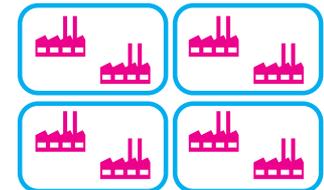
DENSITY



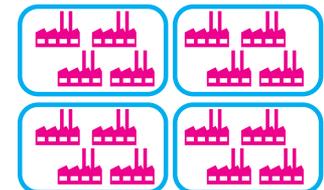
ZONE I



ZONE II



ZONE III



ZONE IV

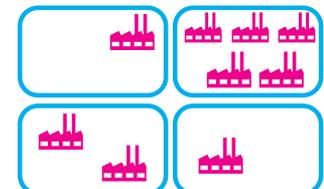


Figure 4.18: Characteristics of each zone (made by author)

BUILDING TYPE

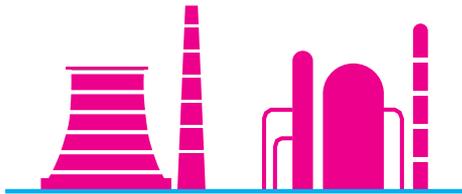


Figure 4-19: Zoning plan based on spatial quality (made by author)

IV.3 LOCAL CONDITION_ Infrastructure Analysis

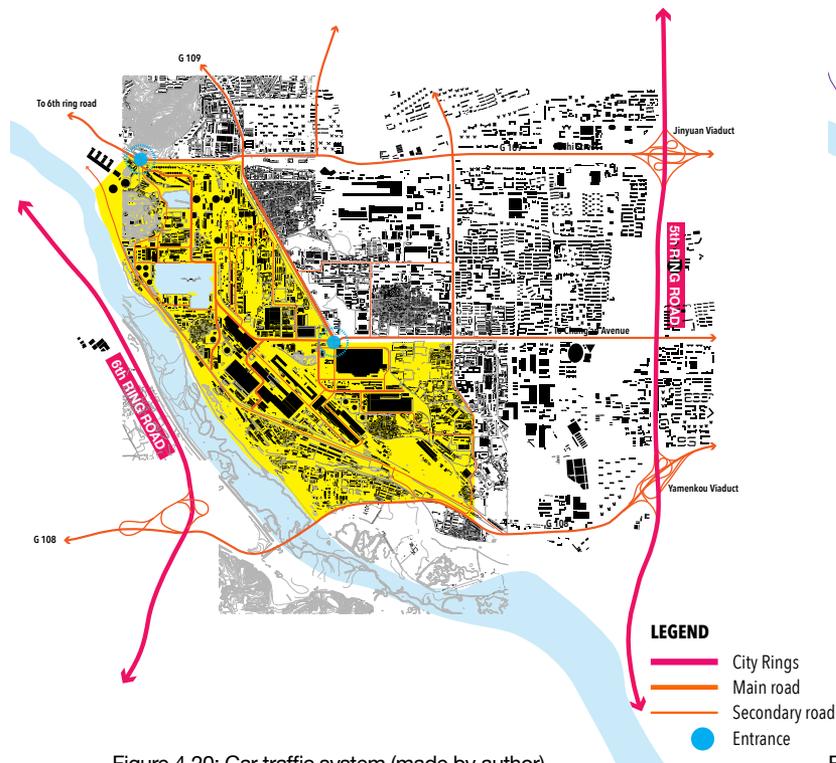


Figure 4.20: Car traffic system (made by author)

ENCLOSED BORDER_ POOR CONNECTIVITY

The site is close to the exit ramps of both 5th and 6th Ring Roads (figure 4.20), and at the same time the Metro Line 1 reaches the east part of the site (figure 4.21), making this place easily accessible by public transport. However, zoom into the local scale, there are only two main entrances, so the area is in fact very enclosed and bounded due to former production activities, and the connectivity to surroundings is in need of improvement.

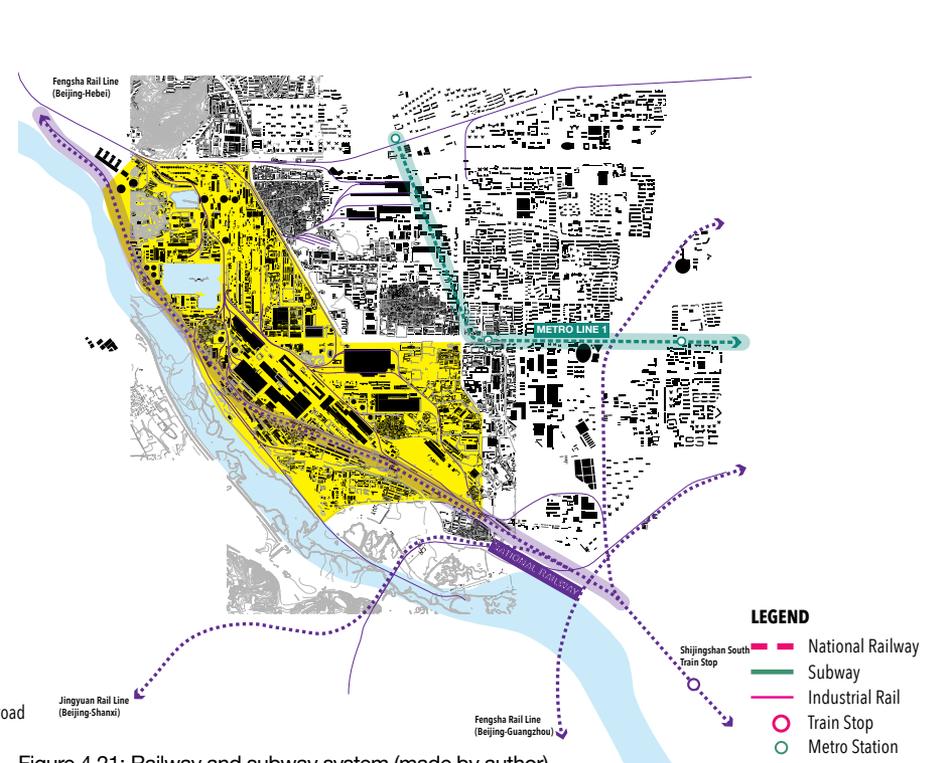


Figure 4.21: Railway and subway system (made by author)

RAILWAY ALONG WEST BORDER_ POOR ACCESS TO THE RIVER

As shown in figure 4.21, there is also intercity train connection which is the national railway going along the west border of the site. But the train stop is not so close and has no link with metro system. Furthermore, the railway tracks are acting as the barrier that blocks the access to the river. There are also a number of industrial transportation railways passing through the site that connect each apparatus, presenting the production flow in the past time.

CURRENT CONDITION

CAR TRAFFIC

RAILWAY

ZONING

PRODUCTION FACILITIES

BUILDINGS

AERIAL VIEW

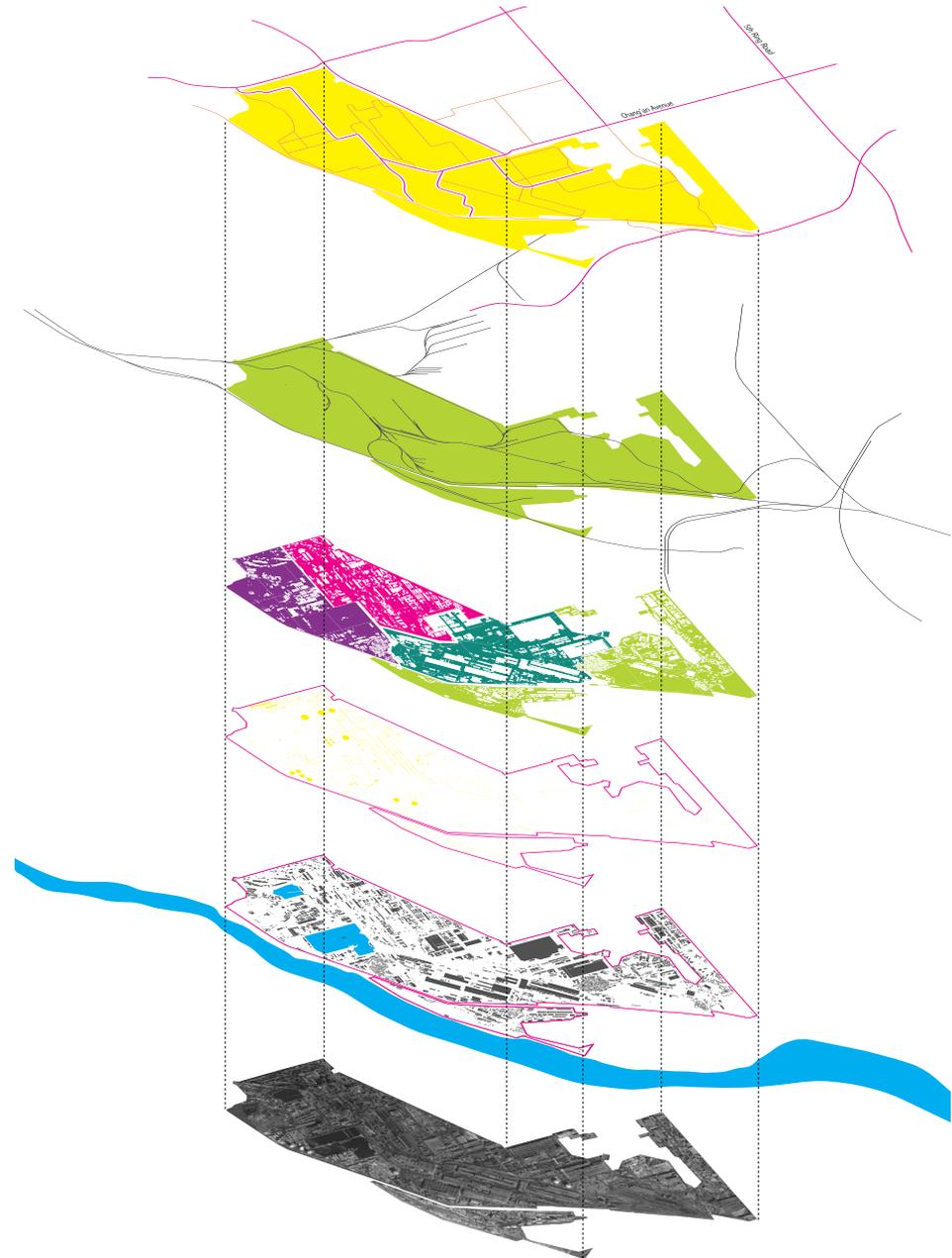


Figure 4.22: Layer analysis of the site (made by author)

IV.3 LOCAL CONDITION_ Architectural Quality

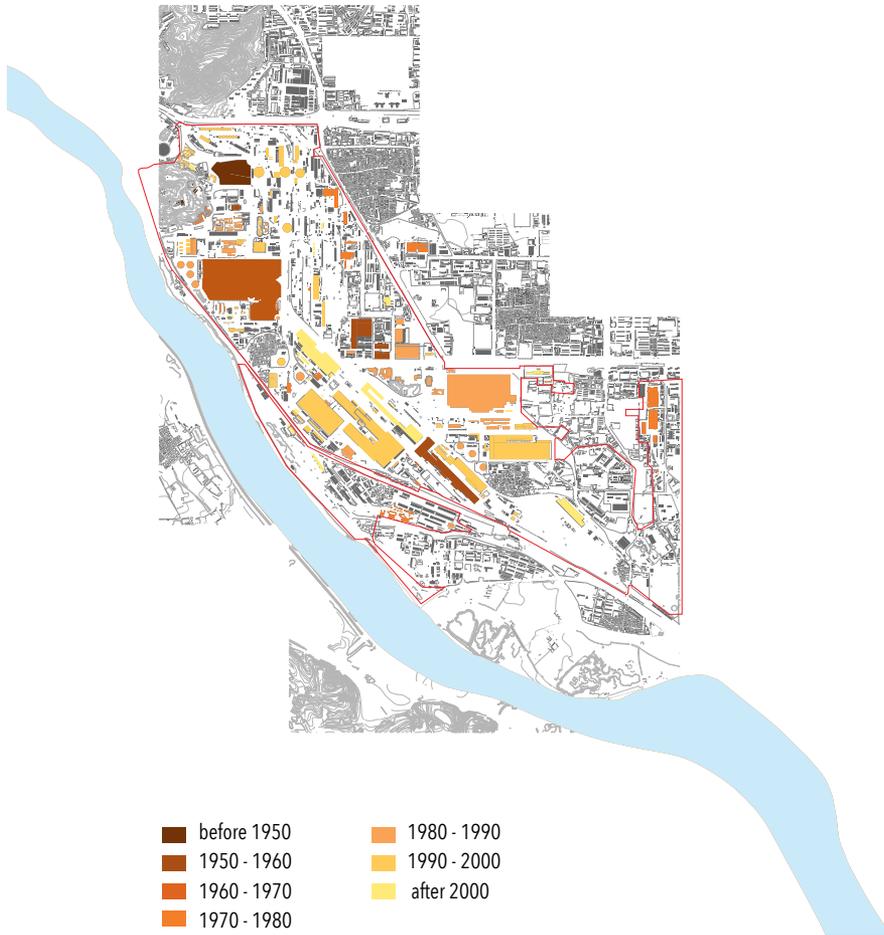


Figure 4.23: Construction year (made by author)

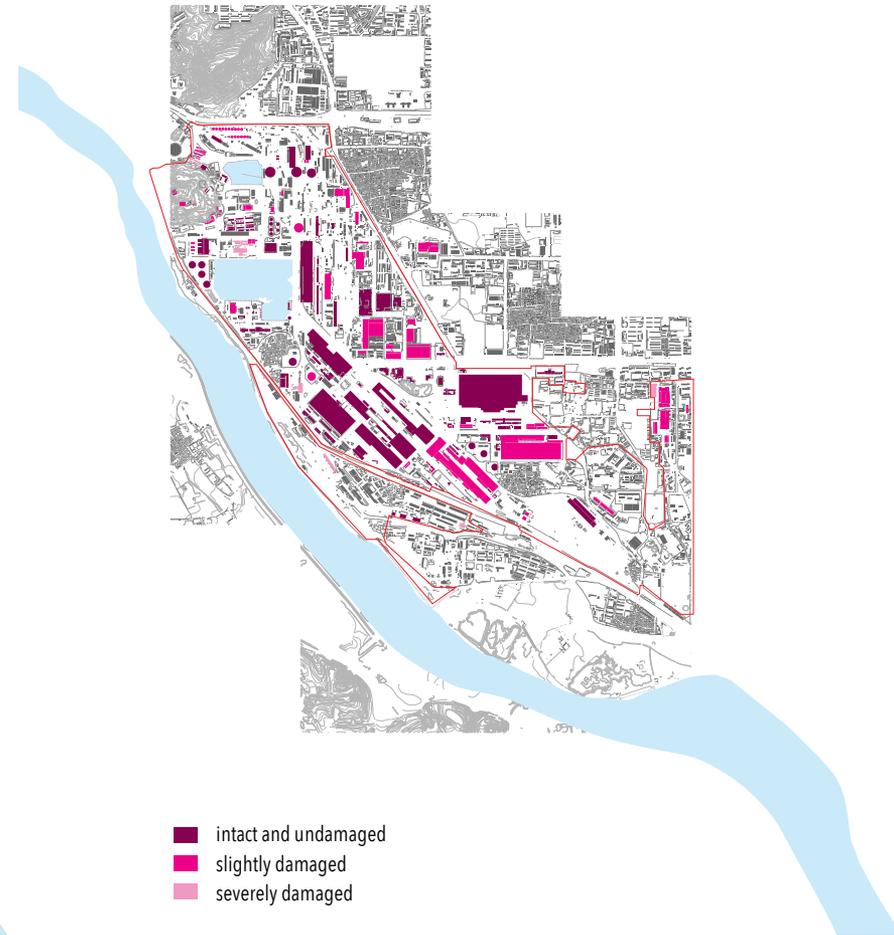
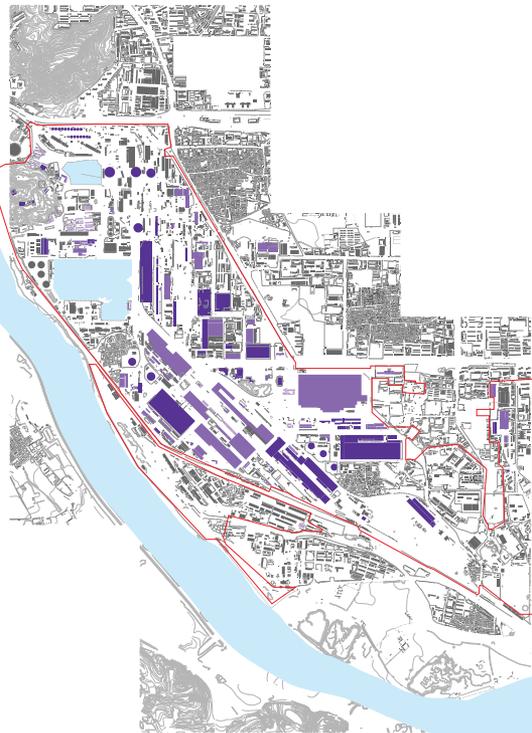
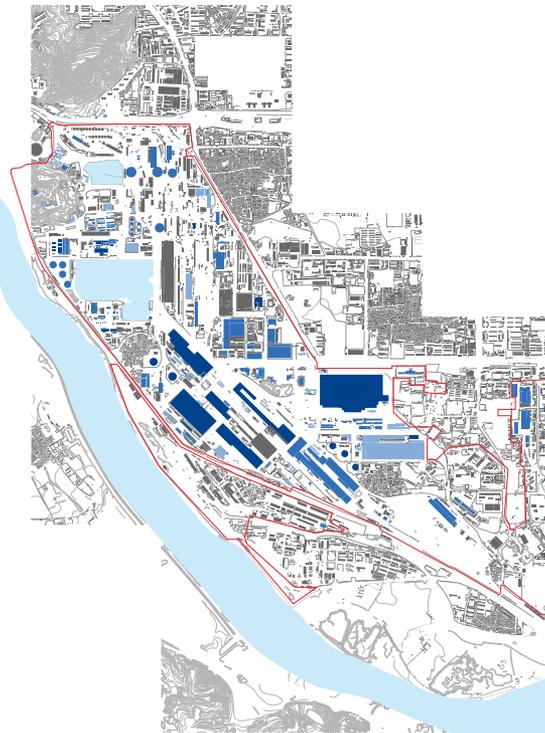


Figure 4.24: Building quality (made by author)



- building with strong identity
- building with identity
- building without instinct identity

Figure 4.25: Building style (made by author)



- steel structure
- reinforced concrete structure
- brick structure (or brick concrete)

Figure 4.26: Building type (made by author)

IV.4 CURRENT ROLE IN THE CITY

DISTRIBUTION OF CENTRALITIES

The distribution of capital in the city is not balanced as shown in figure 4.27. There has been a concentration of resources and capitals in the north and east part of the city, whilst in the west and south the development remains a laggard where the project site is located. Therefore, the redevelopment of the site has the potential to stimulate the mobile capital to flow into the west and help to promote the de-centralization of resources in Beijing.

INFRASTRUCTURE NETWORK

The site currently is the west ending of the metro line 1 and has potential to be the transfer point for further metro extension to the west. Vicinity to ring roads and the intercity railway passing through make the site accessible in a regional scale. However, there is no passenger terminal of multi-mode public transport near this place.

ECOLOGICAL SYSTEM

The Yongding River besides the site is planned by the government as the ecological corridor of this metropolitan region, which will be the catalyst for redevelopment of the riverside areas. Moreover, there are two green belts surrounding the inner city area: one is the fragmented unbuilt areas separating the ten satellite clusters around the inner city, and the other is outer green belt between the 6th ring road and those clusters. As shown in the figure 4.29, with the strategic location in-between the two belts and accompanied by the ecological corridor planning, this place should undergo ecological renewal, in order to integrate into the ecological system of the city.

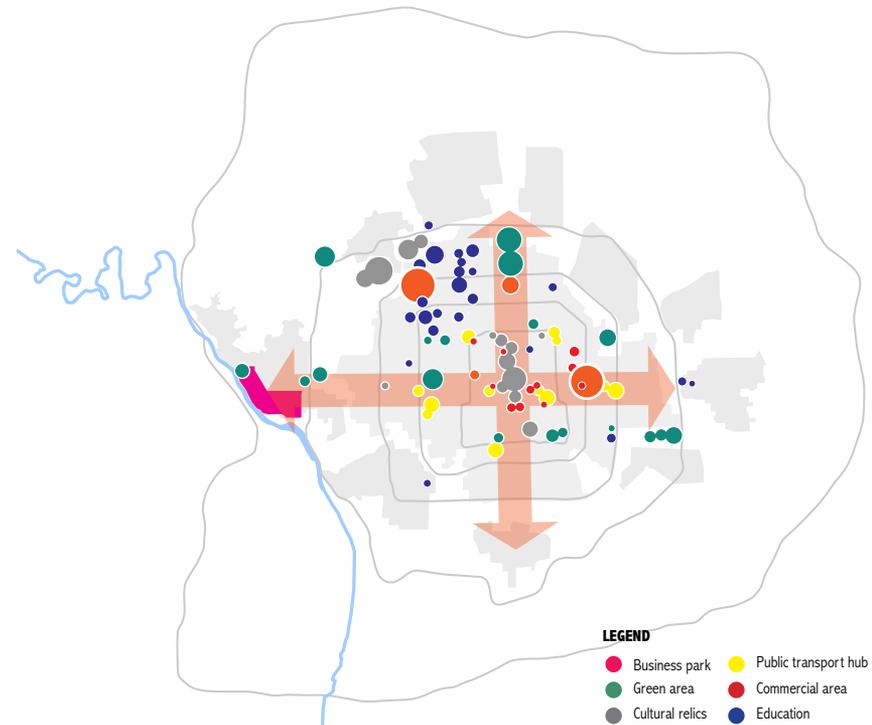


Figure 4.27: Distribution of centralities (made by author)

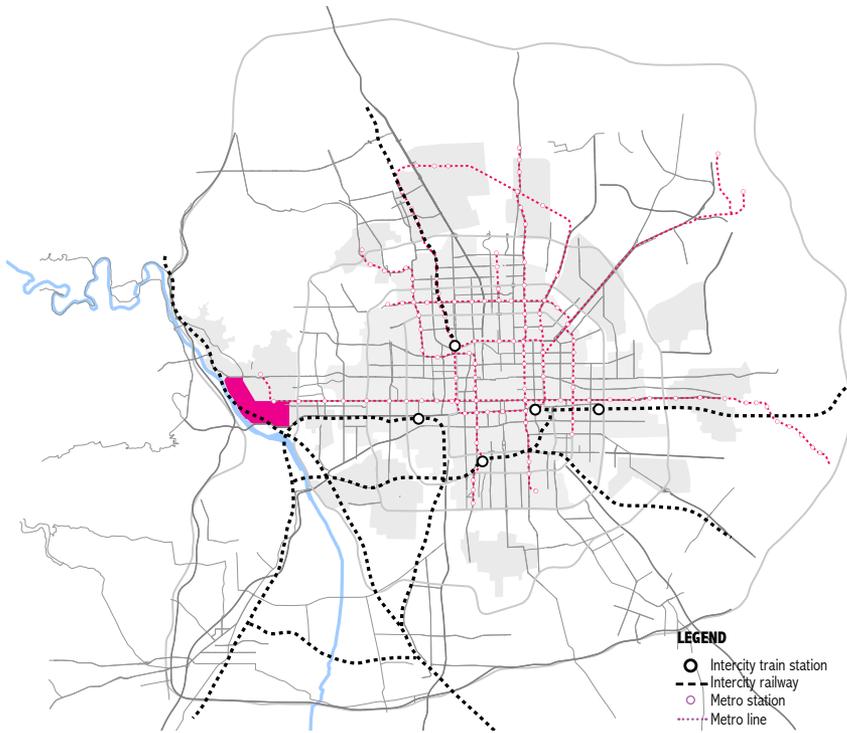


Figure 4.28: Infrastructure network of urban area (made by author)

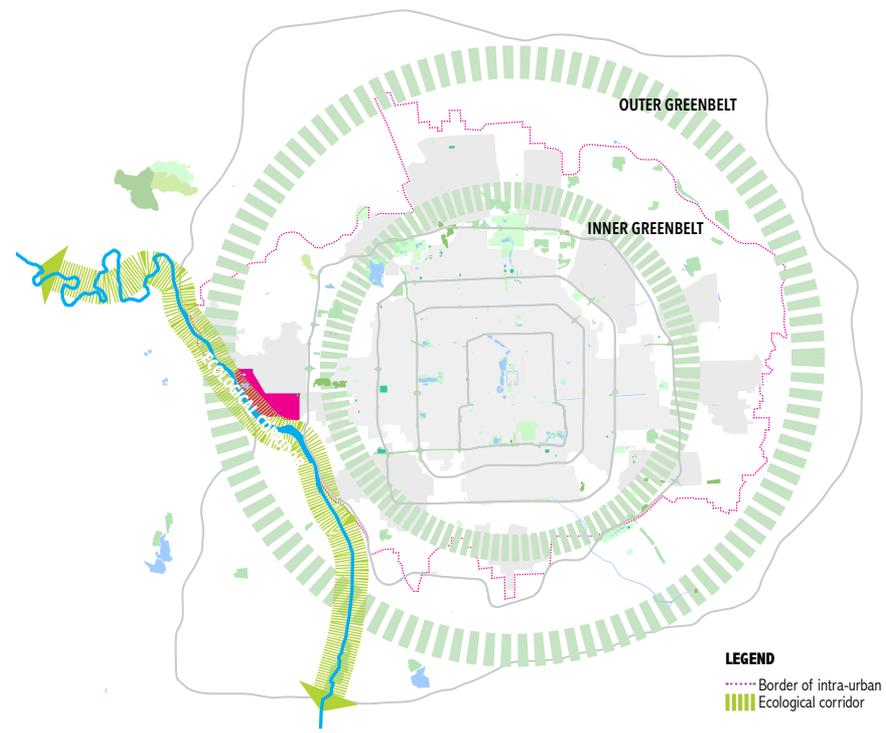


Figure 4.29: Ecological system of urban area (made by author)

**THE REHABILITATION OF THE SITE WILL BE STRATEGIC FOR THE DEVELOPMENT OF WESTERN BEIJING.
HOWEVER, ...**

IV.5 GOVERNMENT'S PLAN

AIM_CRD CULTURAL & RECREATIONAL DISTRICT

The official planning version from the government only delivers the vision that is to develop this area into a cultural and recreational district in the west. And in the proposal, only three blast furnaces will be preserved while majority of industrial buildings are subject to completely demolition. Moreover, the plan still follows the trend of profit-driven real-estate development without concerning the real needs emerging from the city.

PROBLEMS:

- Only keep three blast furnaces
- Demolish large amount reusable buildings
- No phasing plan
- Profit-driven real-estate development
- Ignore real needs emerging from the city

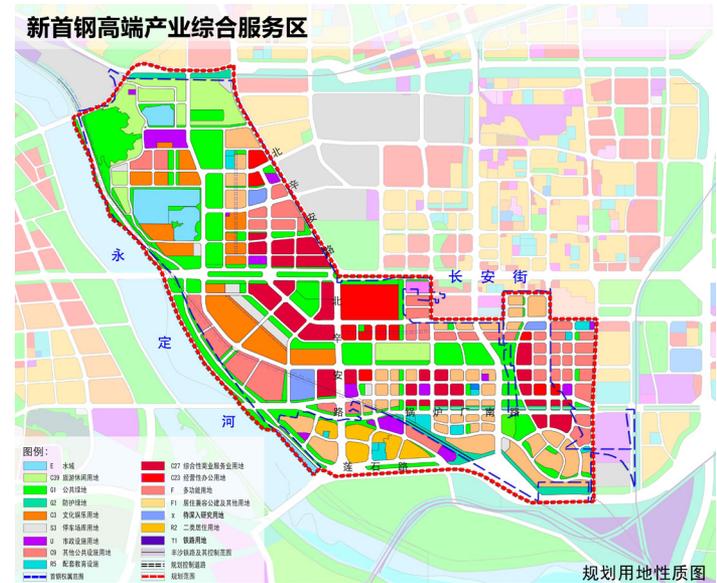
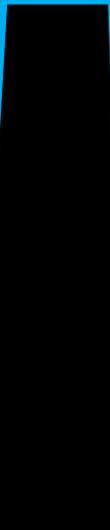
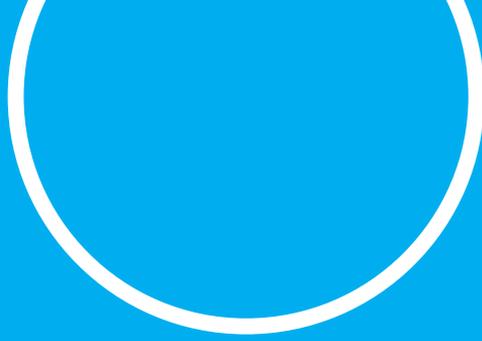
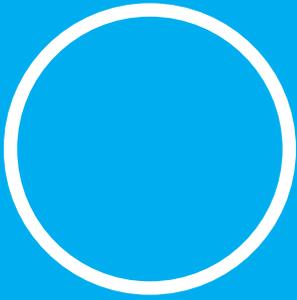


Figure 4.30: Land Use (image source: government website)



Figure 4.31: Zoning Plan (image source: government website)



01_
INTRODUCTION

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THEORY RESEARCH

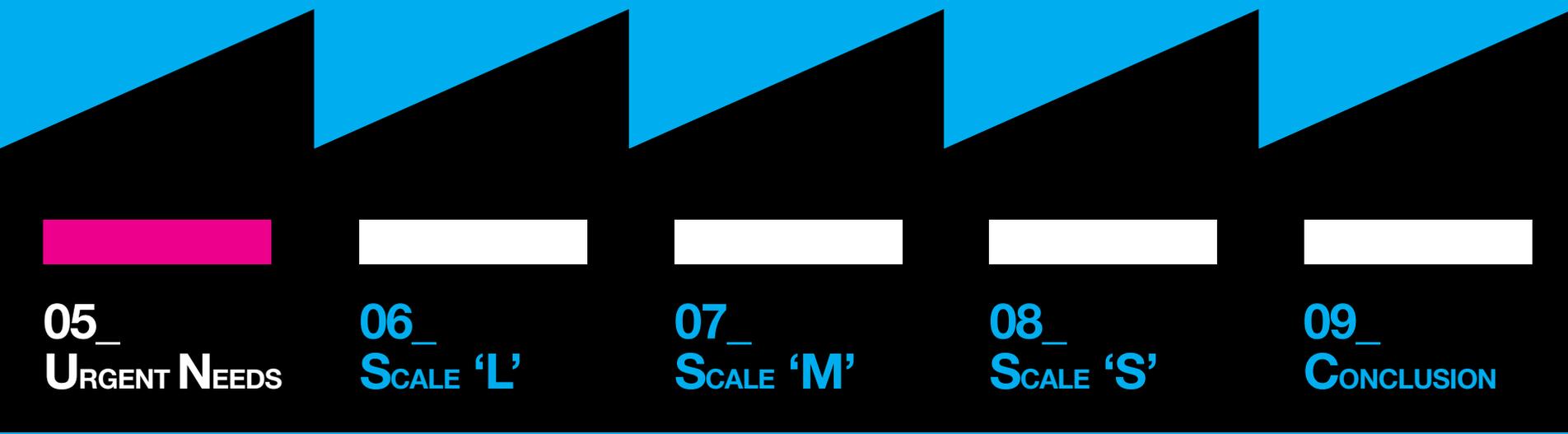
03_
BEIJING CONTEXT

04_
SITE CONTEXT

PART 05_

RECOGNIZING URGENT NEEDS

- 5.1 Emerging Demands from the City Perspective
- 5.2 Emerging Demands from the Local Perspective
- 5.3 Research on Westwards Axis_ Urban Images



05_
URGENT NEEDS

06_
SCALE 'L'

07_
SCALE 'M'

08_
SCALE 'S'

09_
CONCLUSION

V.1 CITY PERSPECTIVE

STRATEGIC LOCATION IN LARGER CONTEXT

Intersection of Cultural Axis & Ecological Belt

Based on the official planning for the regional structure of Beijing from the central government, the future development of the city outskirts will follow two development belts which are ecological belt in the west and the urban development belt in the east. The project site is located on the intersection of the Chang'an Avenue extension and the west ecological belt, where a strategic planning addressing both ecological concern and urbanization tendency is expected (figure 5.1).

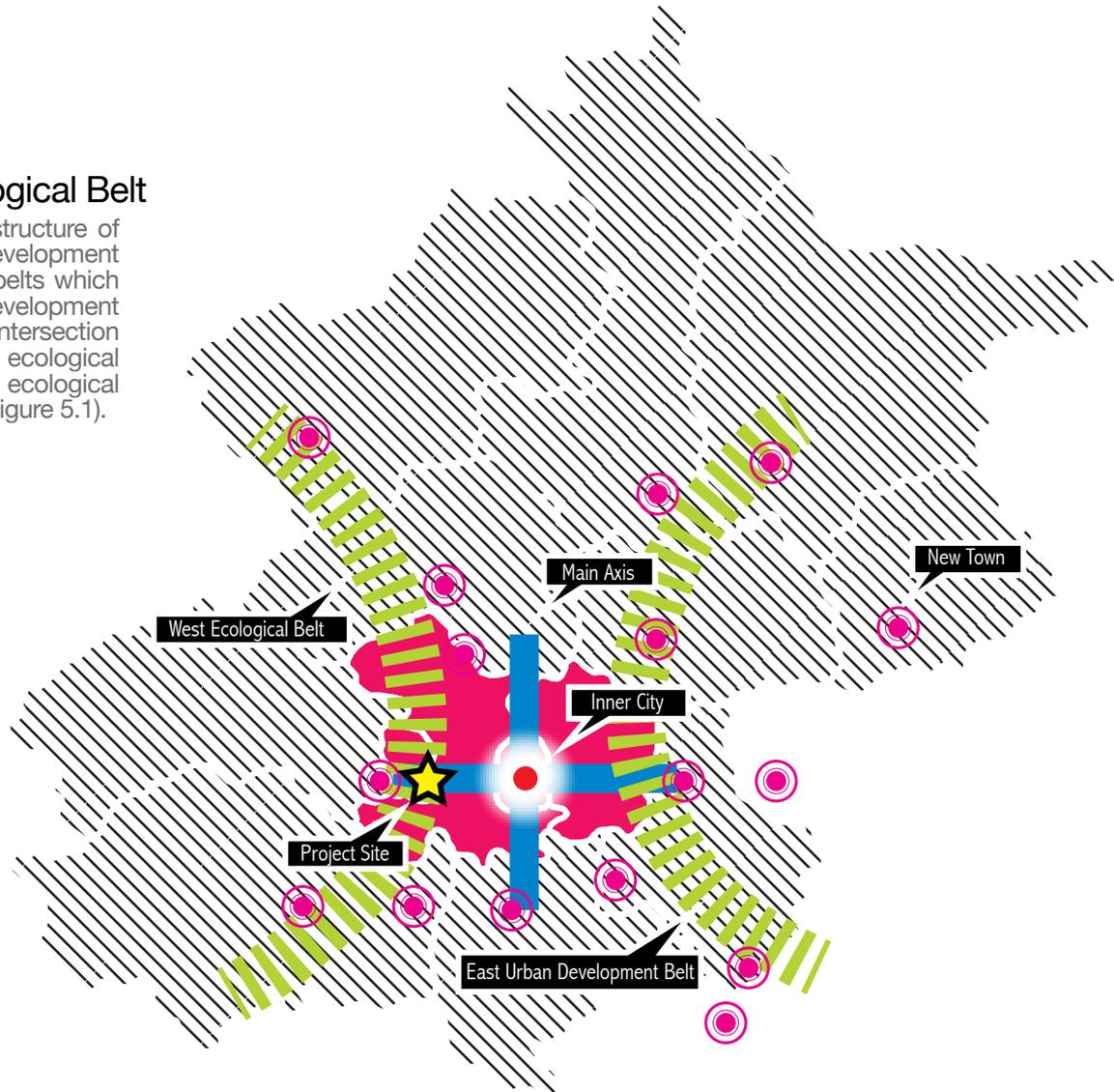


Figure 5.1: Regional structure planning of Beijing (made by author, source from government website)

STRATEGY FOR DEVELOPING CITY PERIPHERY

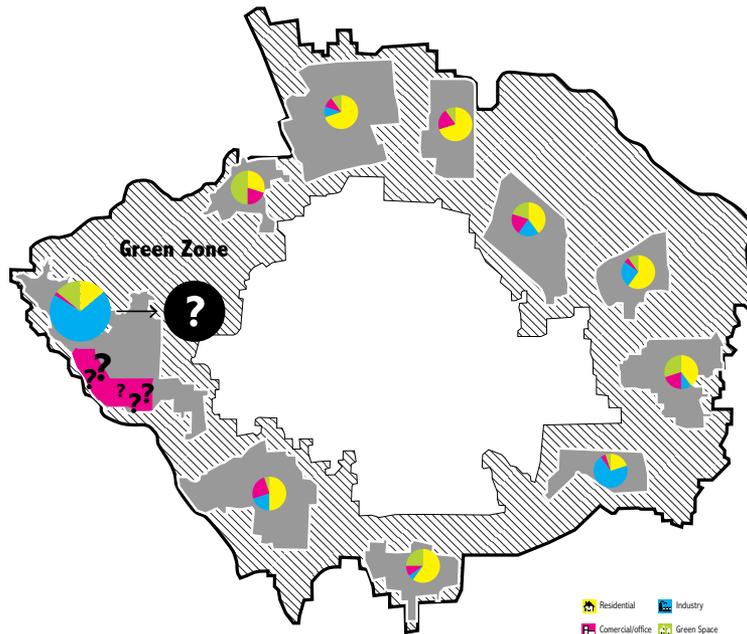


Figure 5.2: Functions of satellite clusters in city periphery (made by author)

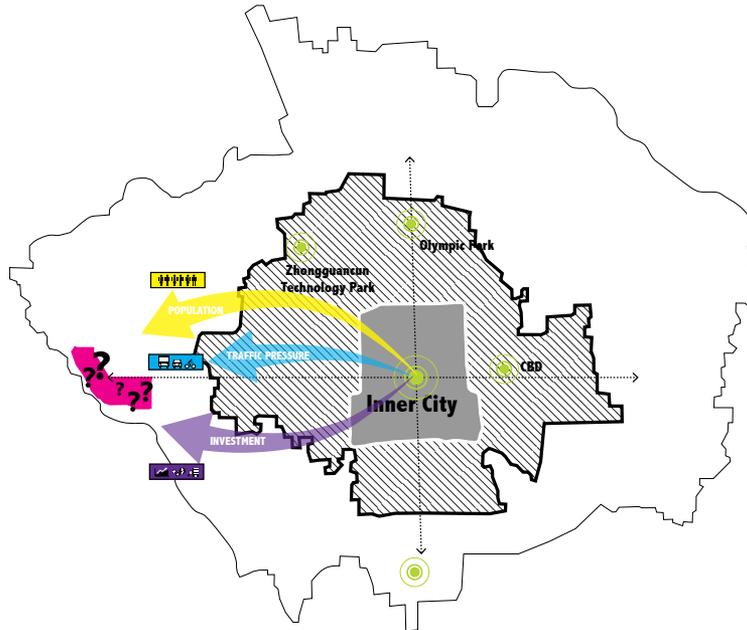


Figure 5.3: Divergence to reduce urban pressure in center (made by author)

According to the expectation of the overall city planning of Beijing government, on the premise of controlling the scale of intra-urban area, the population of the inner city will be dispersed to outskirts gradually, in order to achieve a balanced population distribution in the whole city. The realization of this planning objective calls for development of the city outskirts areas which refers to the satellite clusters surrounding the central city. They are at a distance from one another by the wedge green areas that consist the green belt zone (inner green belt as shown in figure 4.20) surrounding the intra-urban. Figure 5.2 shows the main functions of each cluster. For majority of the clusters, the dominant function is residential that provides cheaper housing than inner city area, whilst generating maximized profit for real estate developers as well as the local government. Since selling the land to private real estate industries is regarded as the shortcut for increasing local GDP, and the typical development mode (figure 1.5) has been becoming popular for profit-driven developments.

As to the project site, it is also confronted with the huge pressure from the typical development trend because of its preferable location. To go against the trend, a combination of smart city strategy and planning logic is in need, delivering persuasive statement for the politics and populace to come to the consensus.

In addition, with rapid urbanization and modernization process, the increase of urban pressure in the downtown area of Beijing has become inevitable and a hard nut for future planning. Therefore, the expectation of the government is that by redeveloping the west part of city the urban pressure from influx of immigrants and increasing traffic volume will be diverged, and at the same time forge a preferable air to attract investment at both local and international level. And the rehabilitation of the dereliction left by the steel industry will be a catalyst for the development of the western part of the city and helpful to the decentralization of capital and urban pressure, formulating a new centrality that activates the west part of Beijing, thus achieving balanced development as a whole.

V.1 CITY PERSPECTIVE

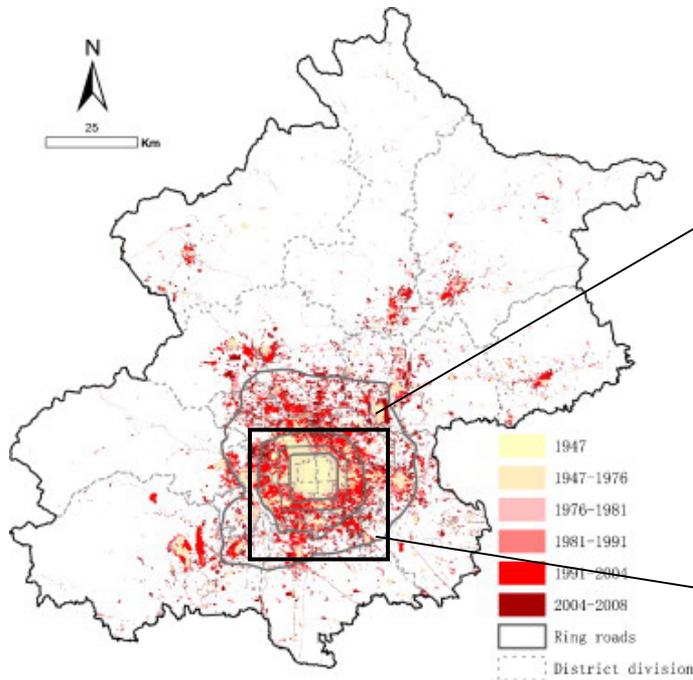


Figure 5.4: Urbanization Process- Urban Sprawl

(Image Source: Wenjie Wu, "Determinant Of Residential Location Choice In A Traditional Housing Market")

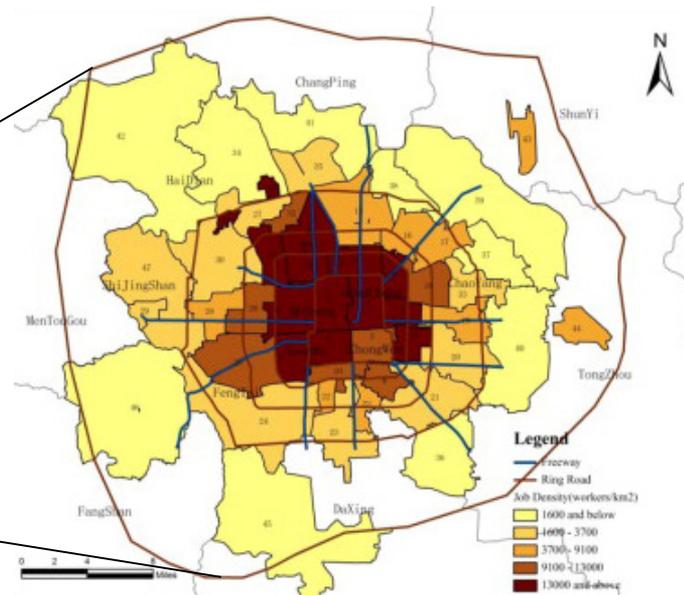


Figure 5.5: Distribution of Job Density- Mono-centricity

UNBALANCED DEVELOPMENT

What is presented in figure 5.4 is that the city has been keeping sprawling with rapid urbanization speed in Beijing. Especially after 1990s, the built urban area has been expanding from the inner city to periphery enormously, forcing the emergence of Ring Roads one after another to facilitate the city. By now, there are already six rings as the main infrastructure to help to structure the dispersion of the increasingly huge amount of traffic flows caused by limitless urban expansion and constant flux of migrants. The main reason for this trend is that there is no enough space for development in inner city, and the available land is scarce and increasingly expensive.

**City Has Been Keeping Sprawling
BUT City Structure Is Mono-Centric,
Calling For Balanced Resource Distribution.**

However, the distribution of the employment is still quite mono-centric with all important facilities concentrated within and around inner city area, which also indicates the disparity of urban development between city center and periphery as well as the huge traffic and passenger flows caused by commuting to the center.

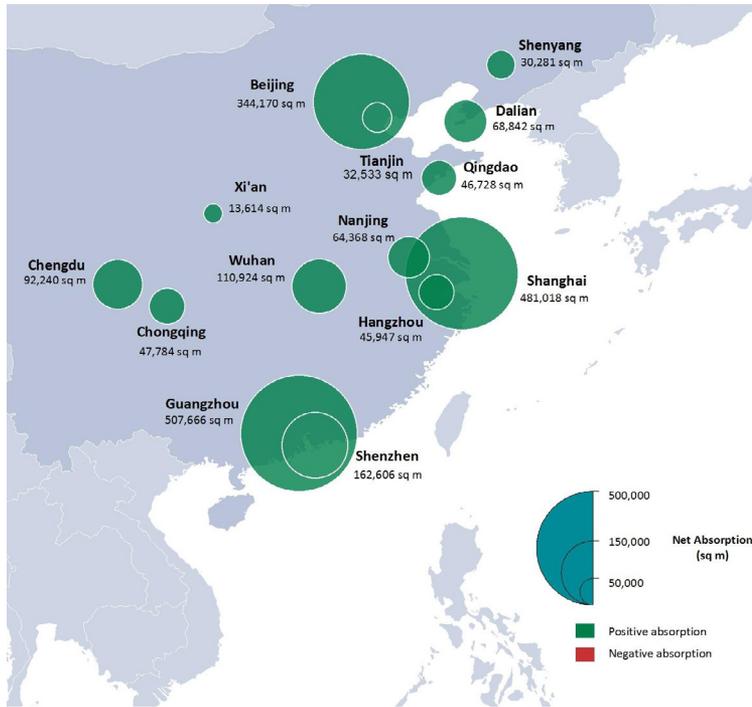


Figure 5.6: China's Overall Office Net Absorption, 2012

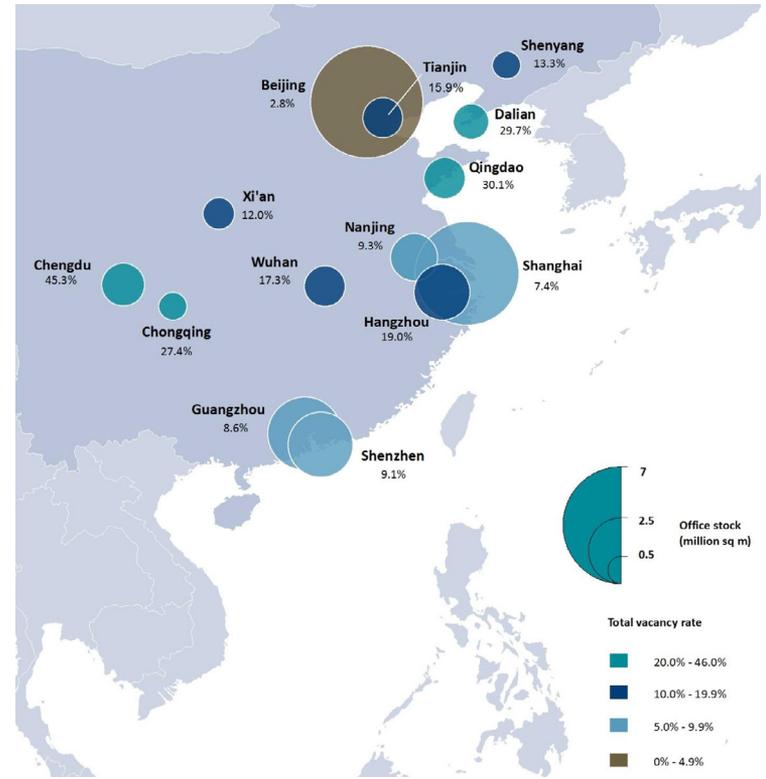


Figure 5.7: China's Overall Office Stock & Vacancy Ratio, 2012
(Image Source: DTZ Research)

One Of Three Largest Business Agglomerations In China, BUT Lowest Office Vacancy Ratio, Calling For More Office Spaces.

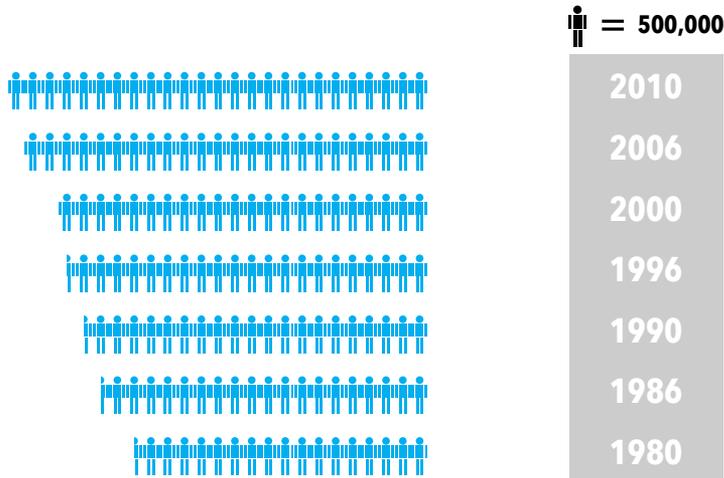
SHORTAGE OF OFFICE SPACE

As one of the three biggest metropolitan regions in China (figure 5.6), Beijing has large amount of office spaces to house national and international business clusters, however, only Beijing has the lowest vacancy ratio compared with Shanghai and Shenzhen Metropolises (figure 5.7), which means the city is still in need of more office space.

V.1 CITY PERSPECTIVE_ Shortage of Affordable Housing

PERMANANT RESIDENTS POPULATION

Living in the capital with a *Hukou*



MIGRANTS POPULATION

Who have been living in the city for more than half a year

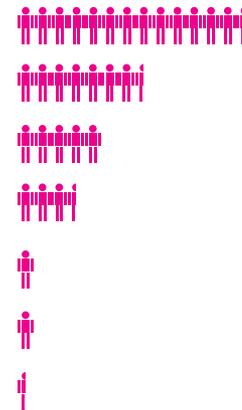


Figure 5.8: Increase of population in Beijing (made by author)

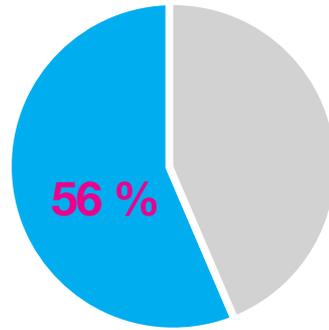
INCREASINGLY ENLARGED POPULATION BUT CRAZILY RISING HOUSING PRICE

There has been rapid boost in migrant population in Beijing since more and more people are flowing into this city for better opportunities and facilities, together with the growth of local population, results in the increasing demands for more housing. However, in recent years, the housing price in Beijing has been keeping rising so fast that people in average income can no longer afford. Therefore, the city is calling for affordable housing programs.

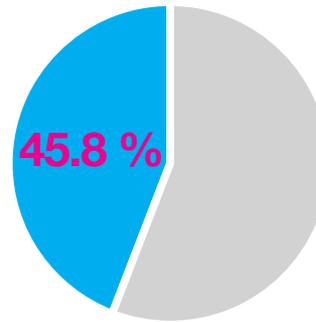


Increasingly Enlarged Population, Especially Migrants Population, But Crazy Rising Housing Price, Calling For Affordable Housing Programs.

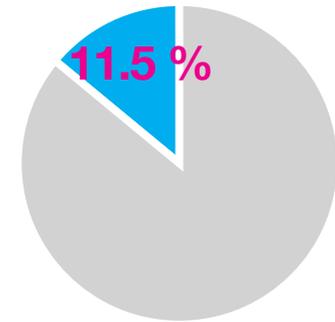
V.2 LOCAL PERSPECTIVE_ Economic Transition



2008
STEEL PRODUCTION
AS THE LOCAL PILLAR INDUSTRY



2010
CAPITAL STEEL STARTED
REDUCING STEEL PRODUCTION



2011
CAPITAL STEEL
COMPLETELY HALTED

Figure 5.9: Shrinking ratio of steel production in local revenue (made by author)



LOSS OF PILLAR INDUSTRY IN LOCAL ECONOMY

Before Capital Steel halted production in the end of 2010, it has been functioning as the pillar industry of local economy for years, occupying largest proportion of gross industrial output value of local municipality. These pie charts above show that there has been dramatic change of the economic structure in Shijingshan Municipality due to the removal of Capital Steel. With such a huge loss, it is urgent to introduce new types of industries to realize economic transition in this district characterized by traditional heavy industrial production.

UNEMPLOYMENT

As one of the largest group company in Beijing, Capital Steel had 84,000 employees before it moved to Tangshan. However, the relocation could only cover approximately 64,000, leaving 20,000 unemployed. And most of them are former workers with low level of education, so it will be necessary to provide vocational training to make those disadvantaged become competent for new jobs.

V.2 LOCAL PERSPECTIVE_ Spatial Transition

SURROUNDINGS_ MONO-FUNCTIONALITY & LOW-QUALITY LIVING ENVIRONMENT

Not only is the economy in need of transition, but also does the spatial and physical environment call for transformation. This map shows programs in the neighboring areas of the project site. In the west, it's open landscape with farmland and mountainous area, and in the east, the dominant program is housing which indicates that the urban area is mono-functional and tends to be the so-called dormitory city (figure 5.10). Moreover, there are fragmented urban villages with poor physical condition (figure 5.11) that needs to be improved or replaced, and this will result in social issues concerning relocating the residents.

LOCAL URGENCIES_

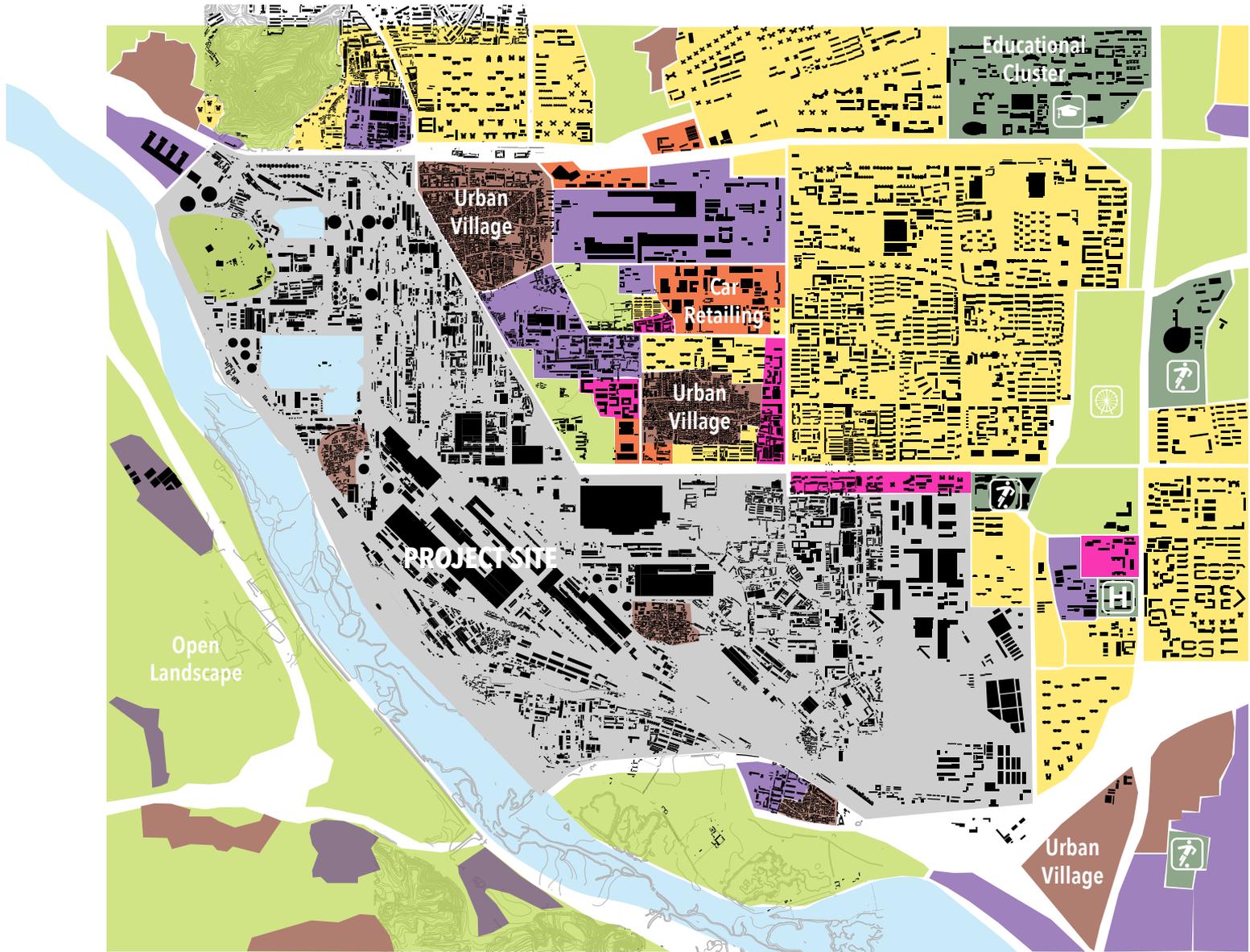
- Pressure from the profit-driven real estate development trend
- Lack of affordable housing & public services
- Poor public spaces & connectivity
- Economic decline & unemployment left by de-industrialization



Figure 5.10: Trend of real estate development trend in surrounding (photo by author)



Figure 5.11: Poor condition in urban villages (image source: Sina News)



LEGEND

- | | | | |
|---|--|---|---|
| Residential | Civic facilities | Industrial areas | Retailing |
| Urban village | Green space | Office & business | |

Figure 5.12: Programs in surrounding of the site (made by author)

V.3 RESEARCH ON CHANG'AN AVENUE_ Function as the Traffic Artery

REDUCING TRAFFIC FLOW BUT A VISUAL EXTENSION OF CITY AXIS

As the programs on both sides of Chang'an Avenue are changing, along with divergence of traffic flows by city rings and urban streets, the traffic volume are reducing all the way from city center westwards to the site area. This indicates that the Chang'an Avenue is gradually integrated into the urban road network instead of being a 12-lane artery in front of Tian'an Men Square (figure 5.14), yet it is still an important visual extension of the city's cultural axis.

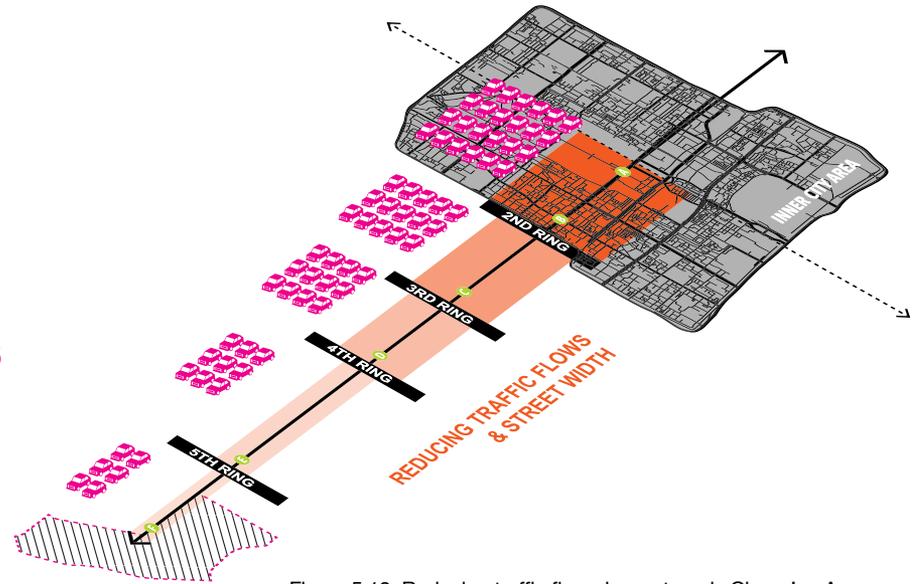


Figure 5.13: Reducing traffic flows in westwards Chang'an Avenue (made by author)

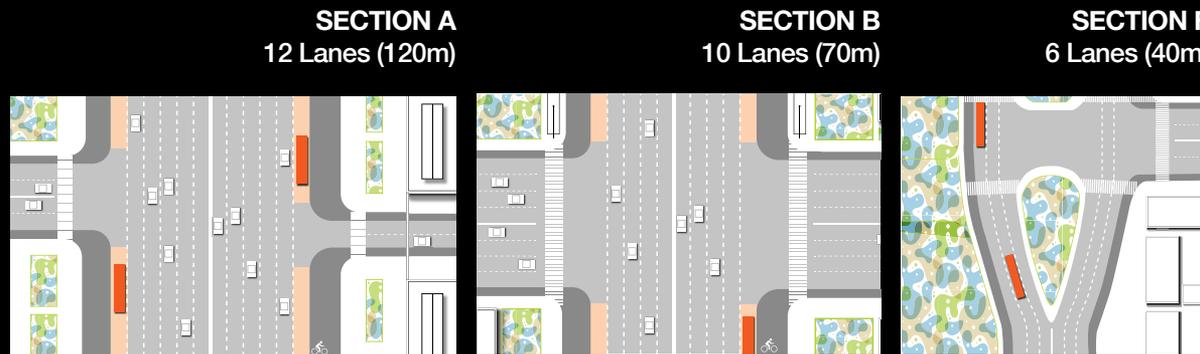


Figure 5.14: Plans of selected nodes along Chang'an Avenue (made by author)



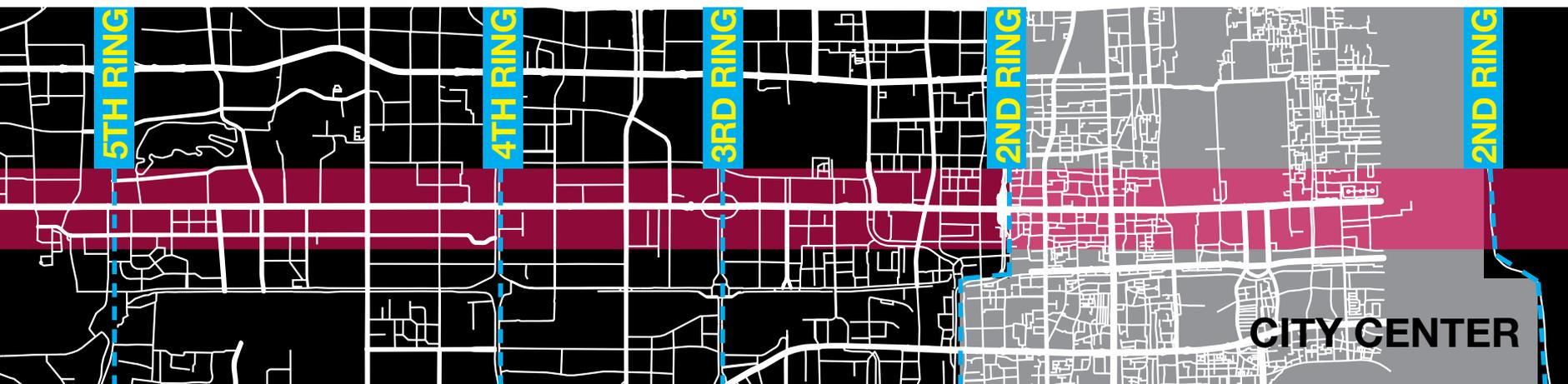
V.3 RESEARCH ON CHANG'AN AVENUE

WHAT IS THE CURRENT CONDITION ALONG THE WESTWARDS CITY AXIS



The city axis which refers to the west extension of Chang'an Avenue, is the most important infrastructure spine of Beijing in the west-east direction. But influenced by the mono-centric city structure and the varying programs on both sides of the Avenue, the traffic volume is gradually shrinking from center to the west. But, still, it is the unique axis with cultural and political significance. Therefore, research on the city images presented along the axis is necessary.

Figure 5.15: Urban continuity formulated by highly urbanized areas along Chang'an Avenue (made by author)



V.3 RESEARCH ON CHANG'AN AVENUE_ Changing City Images



POLITICAL CENTRALITY_ SPACIOUS VOID & SYMMETRY

Tian'an Men Square in the heart of China represents the undeniable power of Communist Party and Chinese central government, being the designated place to host urban events with political significance (figure 5.16). The building height is regulated below 30 meters to protect the skyline of historical heritage in the Forbidden City. The space is featured by spacious void and strict symmetry, and the idea behind it is to present the tiny people and significant power of government.

Figure 5.16: Tian'an Men Square as the political centrality of China
(made by author)

CULTURAL CENTRALITY MEGA CONSTRUCTIONS

On the west side of Tian'an Men Square, the mega footprint and alien appearance make those construction become remarkable landmarks along Chang'an Avenue (figure 5.18), providing space for national conferences and cultural performances, especially for those with political importance (figure 5.17).

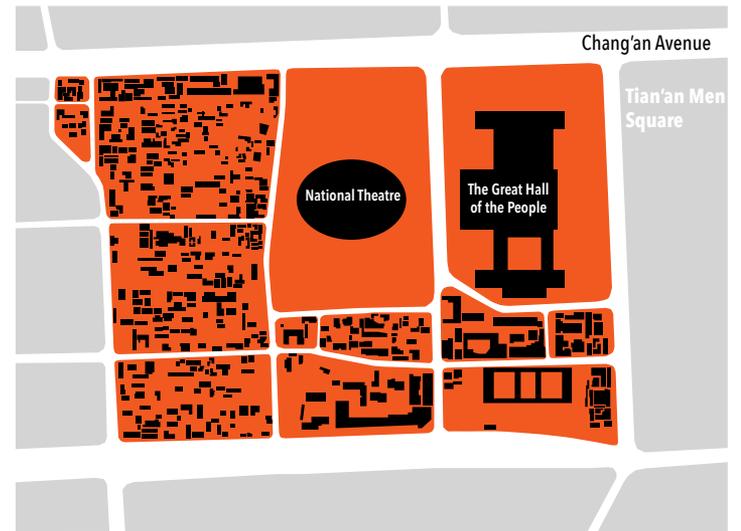


Figure 5.18: Site plan of west side of Tian'an Men square (made by author)



Figure 5.17: Agglomeration of cultural facilities
(made by author)



CHANG'AN AVENUE

V.3 RESEARCH ON CHANG'AN AVENUE_ Changing City Images

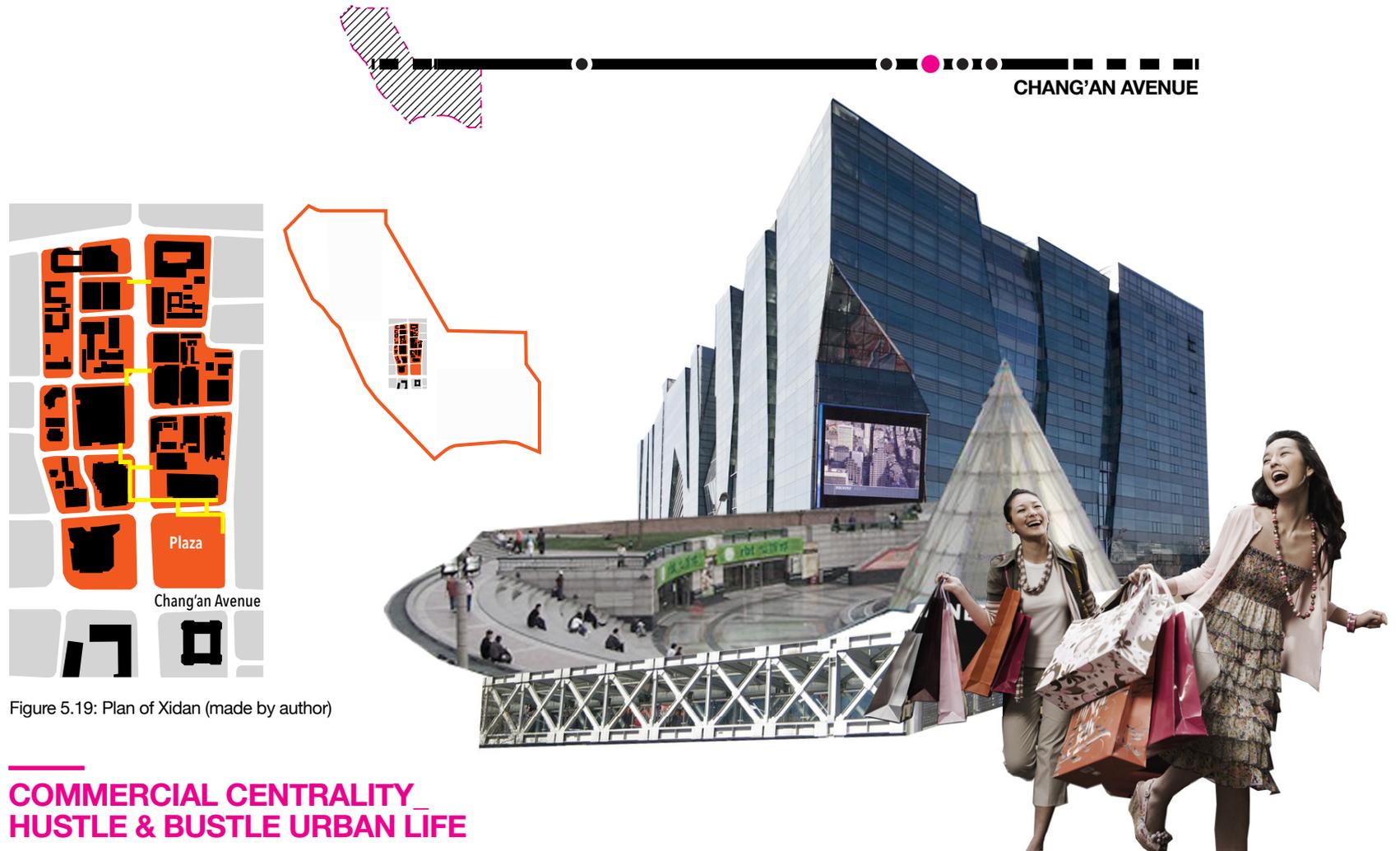


Figure 5.19: Plan of Xidan (made by author)

COMMERCIAL CENTRALITY_ HUSTLE & BUSTLE URBAN LIFE

Xidan is the largest agglomeration of retailing and commercial activities in the inner-city area with shopping malls targeting in different groups of people. This area stays active day and night, flooded by hustle and bustle traffic and visitor flows (figure 5.20).

Figure 5.20: Bustling urban life in Xidan commercial center (made by author)

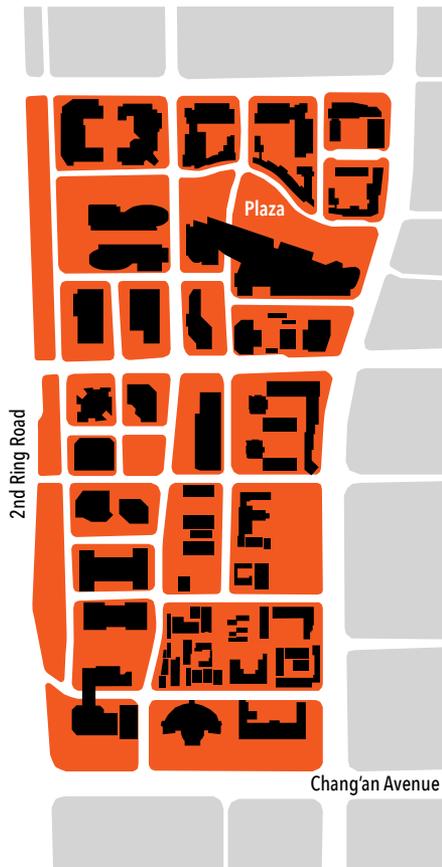


Figure 5.21: Plan of Financial District (made by author)



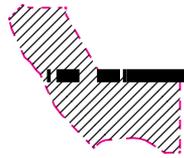
Figure 5.22: High-rise buildings and high-quality public space in Financial District (made by author)



BUSINESS CENTRALITY_ SKYSCRAPER FOREST

Financial street is besides 2nd Ring Road, and the image here is created as a mixed upscale business park with skyscrapers and high-quality of open space. The public space is well scaled for casual relaxation, with the thin and high-rise buildings that hold the street edge and encourage pedestrian activities, keeping the area staying active day and night both in workdays and weekends.

V.3 RESEARCH ON CHANG'AN AVENUE_ Changing City Images



CHANG'AN AVENUE

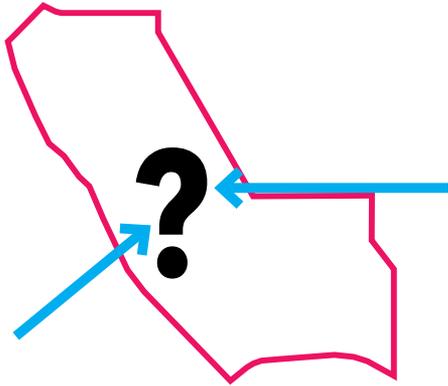


DORMITORY CITY_ MONO-FUNCTIONAL & PROFIT DRIVEN DEVELOPMENT

From the 3rd Ring till the city periphery, the city image is becoming homogeneous with residential programs as dominant element in urban fabrics. Large scale of residential developments in last decades have built up the urban environment as “dormitory city” where the majority of land has been occupied by residential buildings without any identities, especially in city periphery (figure 5.23). Yet the housing typology is quite monotonous, mainly slab or tower apartments, in order to get higher density and more profit. Additionally, the low degree of program mixing makes the urban area mono-functional, so the public is suffering from lacking of high-quality public space and leisure amenities, which also intensifies the negative effects of mono-centric city structure due to large and continuous flows into the central area.

Figure 5.23: Sprawling trend of “dormitory city” (made by author)

V.3 RESEARCH ON CHANG'AN AVENUE_ Conclusion

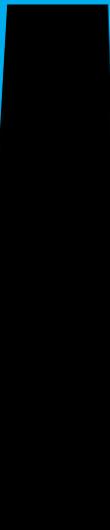
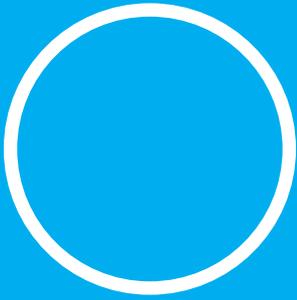


WHAT KIND
OF
CITY IMAGE
SHOULD BE CREATED



1. CORRESPONDING TO THE **URBAN CONTINUITY** ALONG CHANG'AN BY CREATING A **NEW CENTRALITY** IN WEST PERIPHERY,
2. BEING A PROPER **ENDPOINT** OF CITY AXIS, A **CITY GATEWAY** FROM THE WEST.

"Cities are no longer just built, they are imaged."
- Lawrence J. Vale & Jr., Sam Bass Warner. 2001



01_
INTRODUCTION



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PART 06_

SCALE L_ CITY STRATEGIES

- 6.1 Objectives in City Scale
- 6.2 The Concept of Overlapping Layers
- 6.3 Identifying Three Layers
- 6.4 Improved Public Transport Network
- 6.5 Impact on the City Structure



05_
URGENT NEEDS



06_
SCALE 'L'



07_
SCALE 'M'



08_
SCALE 'S'



09_
CONCLUSION

PLANNING & DESIGN FROM “L” TO “S”

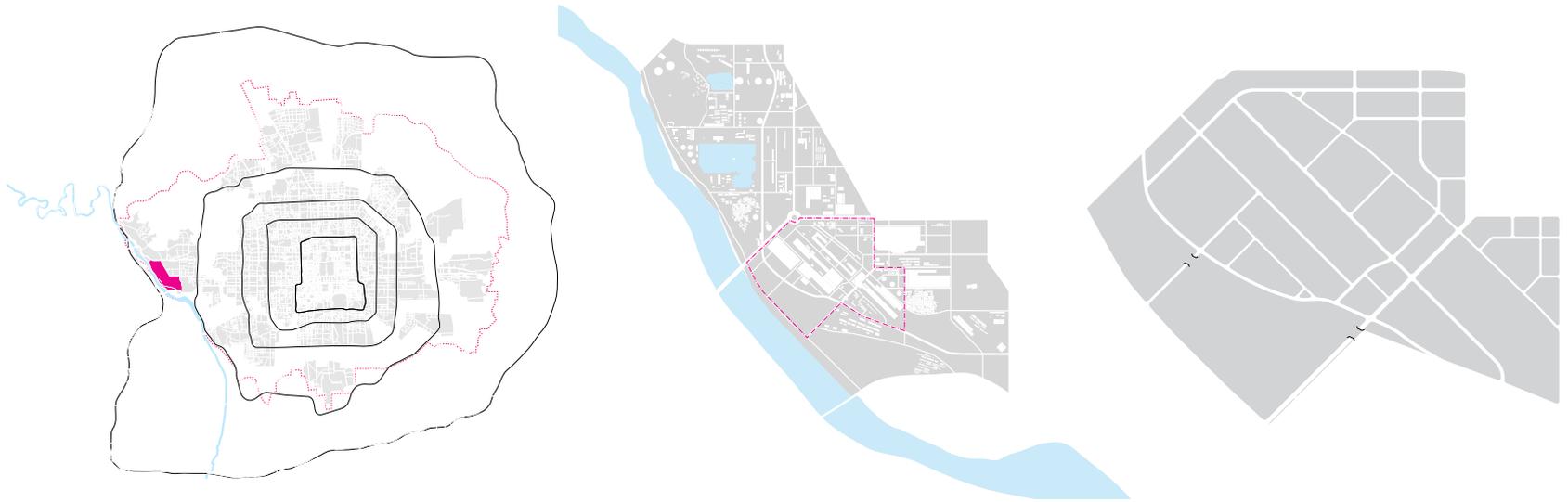


Figure 6.1: Three scales involved in planning and design process (made by author)

SCALE L
CITY STRATEGIES
To Orient The Planning

SCALE M
SITE PLANNING
To Plan Development Sequence

SCALE S
ELABORATE DESIGN
To Materialize the Design

VI.1 OBJECTIVES IN CITY SCALE

ECOLOGICAL RENEWAL

The riverfront redevelopment is the crucial part of the project. A brand new attraction for future investment will be created by the ecological renewal of the Yongding waterfront. The strategy is to use green project to re-image this post-industrial area, at the same time to create connection between two green belts, integrating this area into the whole ecological network of the city. And in the long term, the green connection will be extended to the inner city area, and create green connections to different directions and integrate this area into the ecological network of the city.

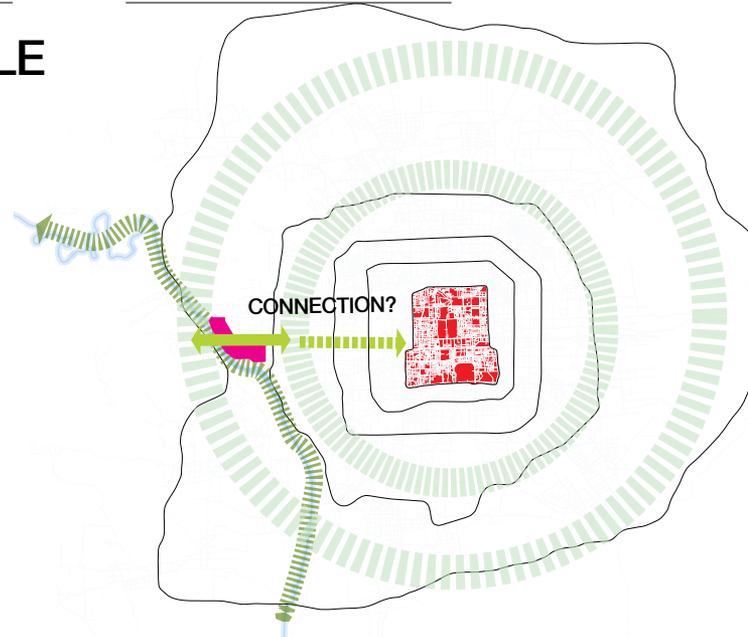


Figure 6.2: Objective_ ecological renewal (made by author)

VIBRANT ECONOMY

There has been a long time that Capital Steel acting as the pillar industry of local economy, even for the whole capital city. After it moved, this area has to experience the transition from heavy industry with contaminants towards clean and newly emerging industries, for instance high-tech sectors, knowledge-based industries, and creative industry. The Shijingshan District in which the site is located is known as the traditional industrial area with preferable location and excellent accessibility, and the government is planning the Shijingshan District as the first CRD (the Capital Recreational District) in Beijing, and along with the Zhongguancun Technology Park it will help to improve the de-centralization and balance distribution of mobile capitals in the city, forging a vibrant economic environment for new economies.

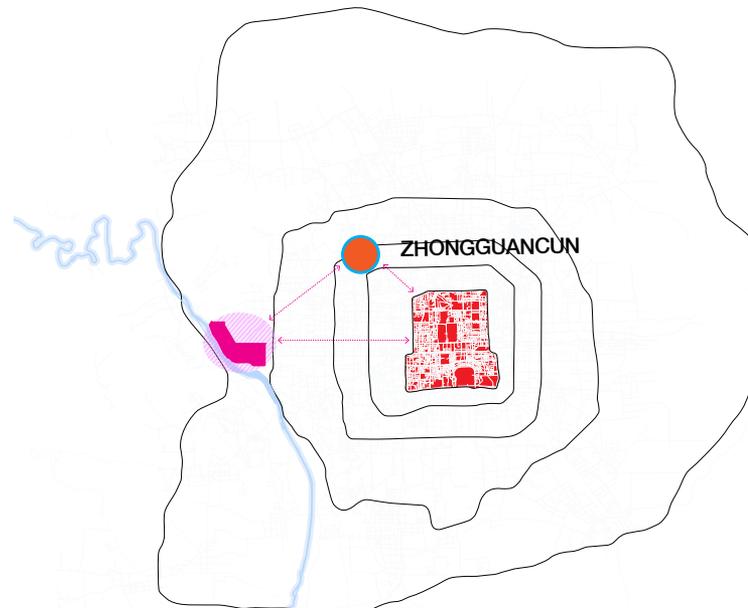


Figure 6.3: Objective_ vibrant economy (made by author)

CULTURAL IDENTITY

The former Capital Steel has witnessed the development of Beijing for 93 years since it was founded. Given by the profound impact on the urbanization process of Beijing, the existence of the steelworks site has become an industrial heritage and also a cultural cluster itself. Therefore, finding a innovative way to preserve its both tangible and intangible identities is essential to redevelopment of this area. In this way, the unique identities will gain this place regional and even international attention.

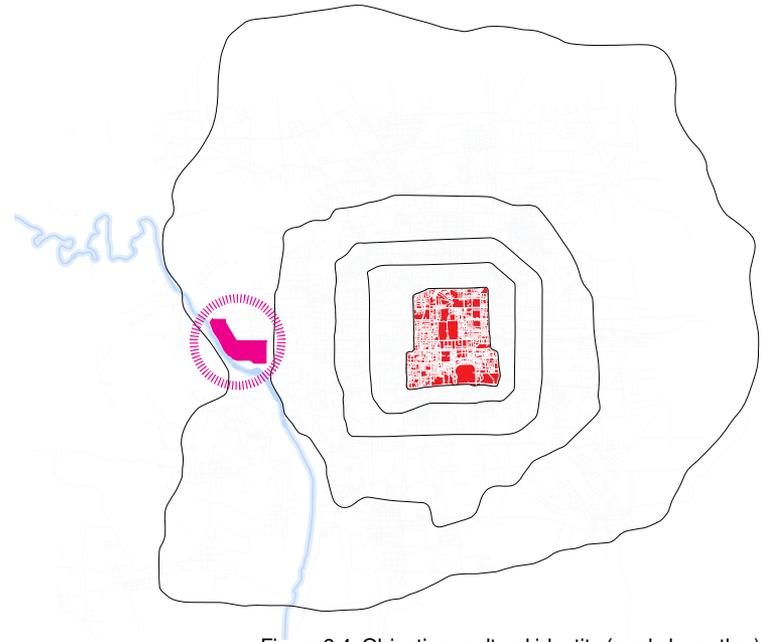


Figure 6.4: Objective_ cultural identity (made by author)

SPATIAL TRANSITION

This 8 km² dilapidated land has great potential to be transformed into a mixed area with new urban functions and therefore integrated into the surrounding urban fabrics. A number of vacant industrial buildings can be converted, and realize functional re-adaptation. Moreover, the spatial quality outside buildings is also valuable and has instinct characteristic that should be preserved and adaptively transformed for new functions such as leisure and outdoor exhibition.

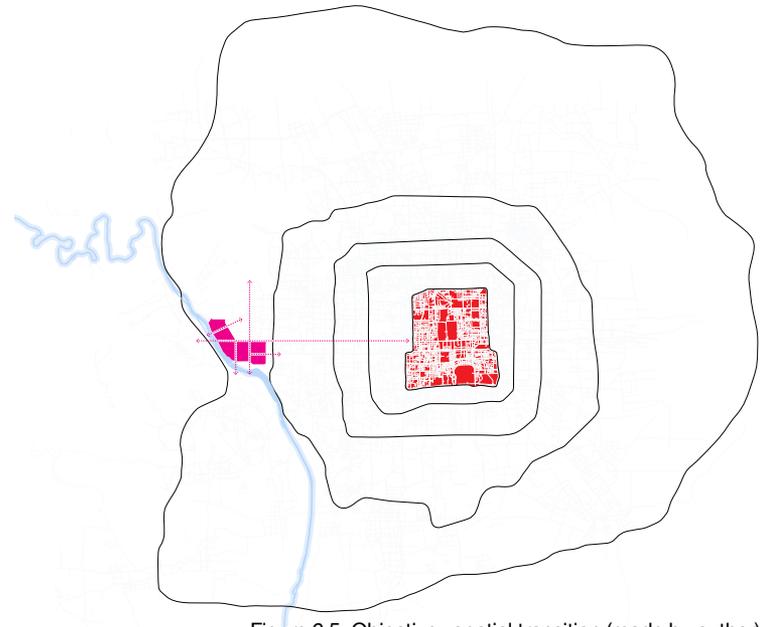


Figure 6.5: Objective_ spatial transition (made by author)

VI.2 CONCEPT OF OVERLAPPING LAYERS



Figure 6.6: Three layers and corresponding issues (made by author)

$$\text{VISION} = \text{CITY STRATEGY} + \text{CITY SCALE INTERVENTION} + \text{LOCAL ACTIONS}$$

LAYER I

Culture-led urban regeneration with creation of a new agglomeration for creative class and visual art related industries.

Without related industries nearby to rely on, the unique identities of the place will be the key dynamic for the re-programing project, including tangible and intangible aspects. In addition, urban events would be a smart kick-off to attract attention at local even international level, also provide opportunity to ally with other well-developed creative clusters.

- Incentives or subsidy to attract creative class
- Spontaneous development
- Low cost and adaptive reuse
- "Lighthouse" & no-build projects
- Establishment of related education institutions

LAYER II

Development of technology & knowledge-based industries as the driving force, being dominant in the economic transition of this area

Make use of nearby technology industry clusters, such as the Industrial Design Base and three branch technology parks of Zhongguancun, and create new connection (subway extension) to forge a development belt of knowledge-based industries in the northwest of the city.

- Top-down planning for the business park
- Partly demolition
- Training institutions for unemployed workers from former steel factory

LAYER III

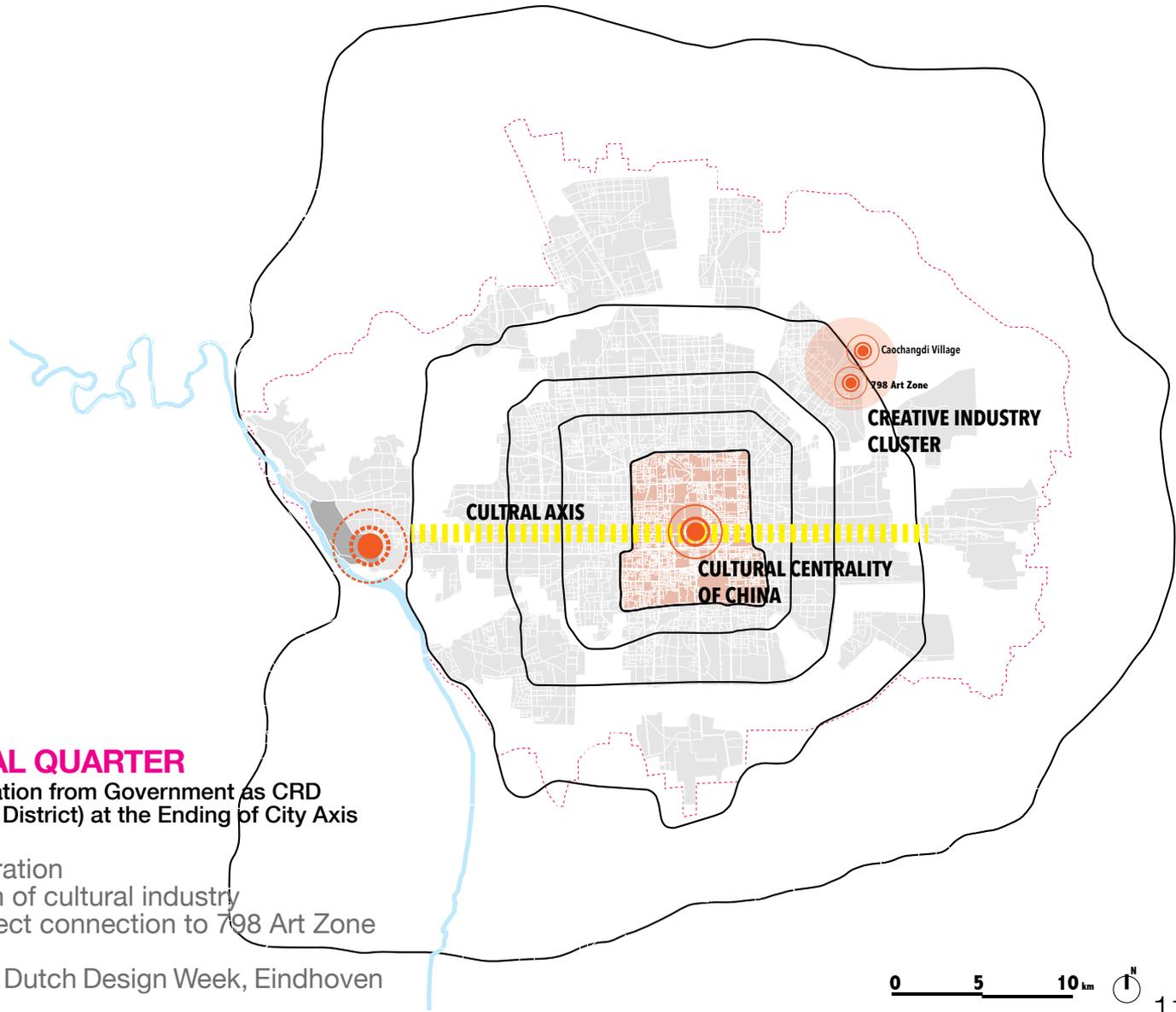
Regional park as entertainment-led regeneration along with ecological concern provides an enormous green space in the dense urban area, transforming the former polluter into a green lung of the city

By planning a huge park on the site, the green connection from the ecological corridor on the city border to the intra-urban area will be created, at the same time linking the two green belts.

- Repair and preserve all heritage buildings to keep the authenticity of the history
- Adding small installations and interventions for leisure and entertainment
- Adding more green
- Bicycle park path

Figure 6.7: Description of three layers (made by author)

VI.3 IDENTIFYING THREE LAYERS_ Super Cultural Quarter



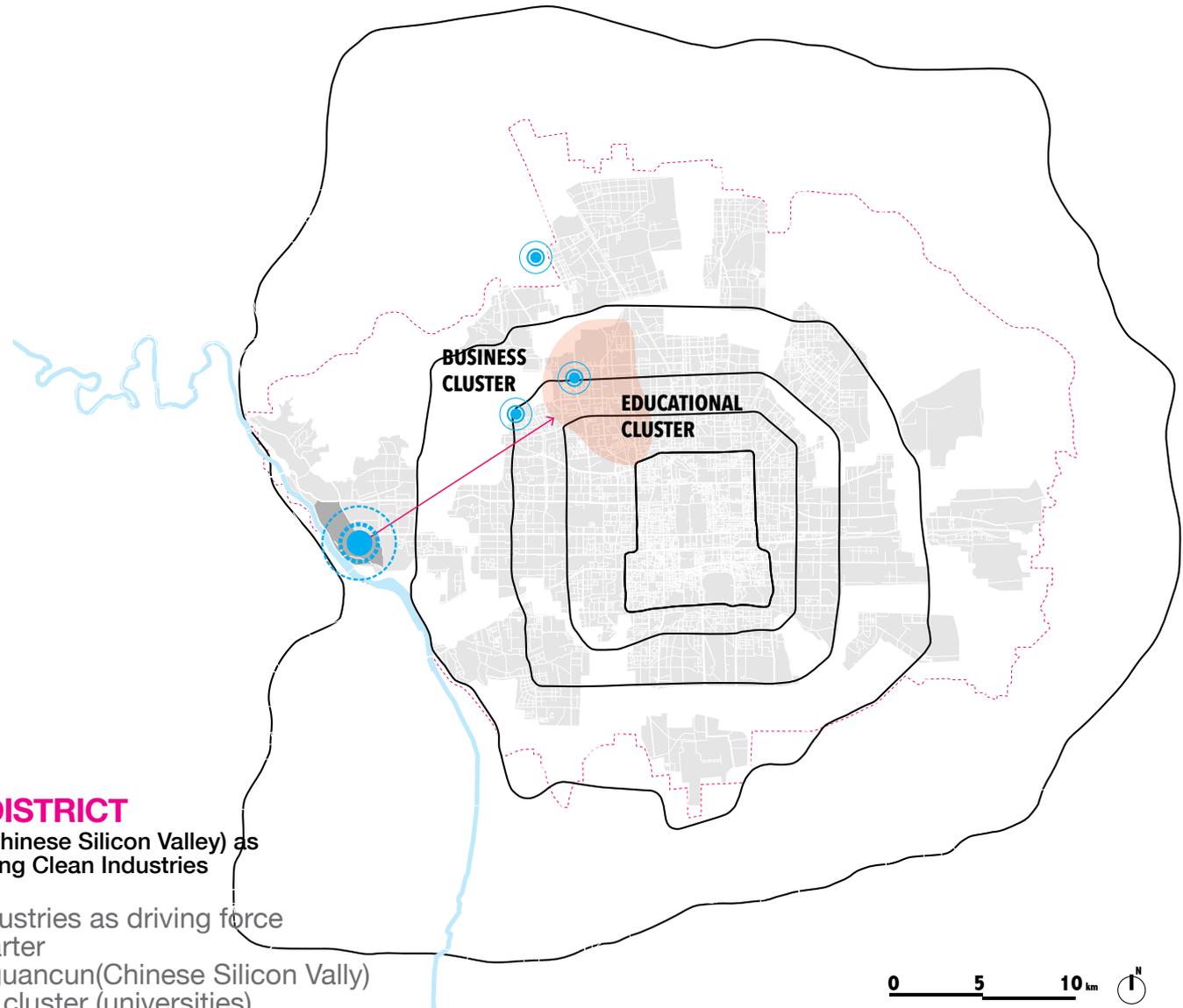
LAYER I_ SUPER CULTURAL QUARTER

Respond to the Expectation from Government as CRD (Cultural & Recreational District) at the Ending of City Axis

- Culture-led regeneration
- New agglomeration of cultural industry
- Isolated and no direct connection to 798 Art Zone
- Urban events
- Smart city strategy: Dutch Design Week, Eindhoven

Figure 6.8: Layer I_ Super Cultural Quarter (made by author)

VI.3 IDENTIFYING THREE LAYERS_ Technological / Clean Industry Cluster



LAYER II_ MIXED BUSINESS DISTRICT

Vicinity to Zhongguancun(Chinese Silicon Valley) as Huge Potential for Developing Clean Industries

- Technology-based industries as driving force
- Capital Steel Headquarter
- Connection to Zhongguancun(Chinese Silicon Vally)
- Vicinity to educational cluster (universities)

Figure 6.9: Layer II_ Mixed Business District and its relation to Zhongguancun (made by author)

VI.3 IDENTIFYING THREE LAYERS_ Super Cultural Quarter

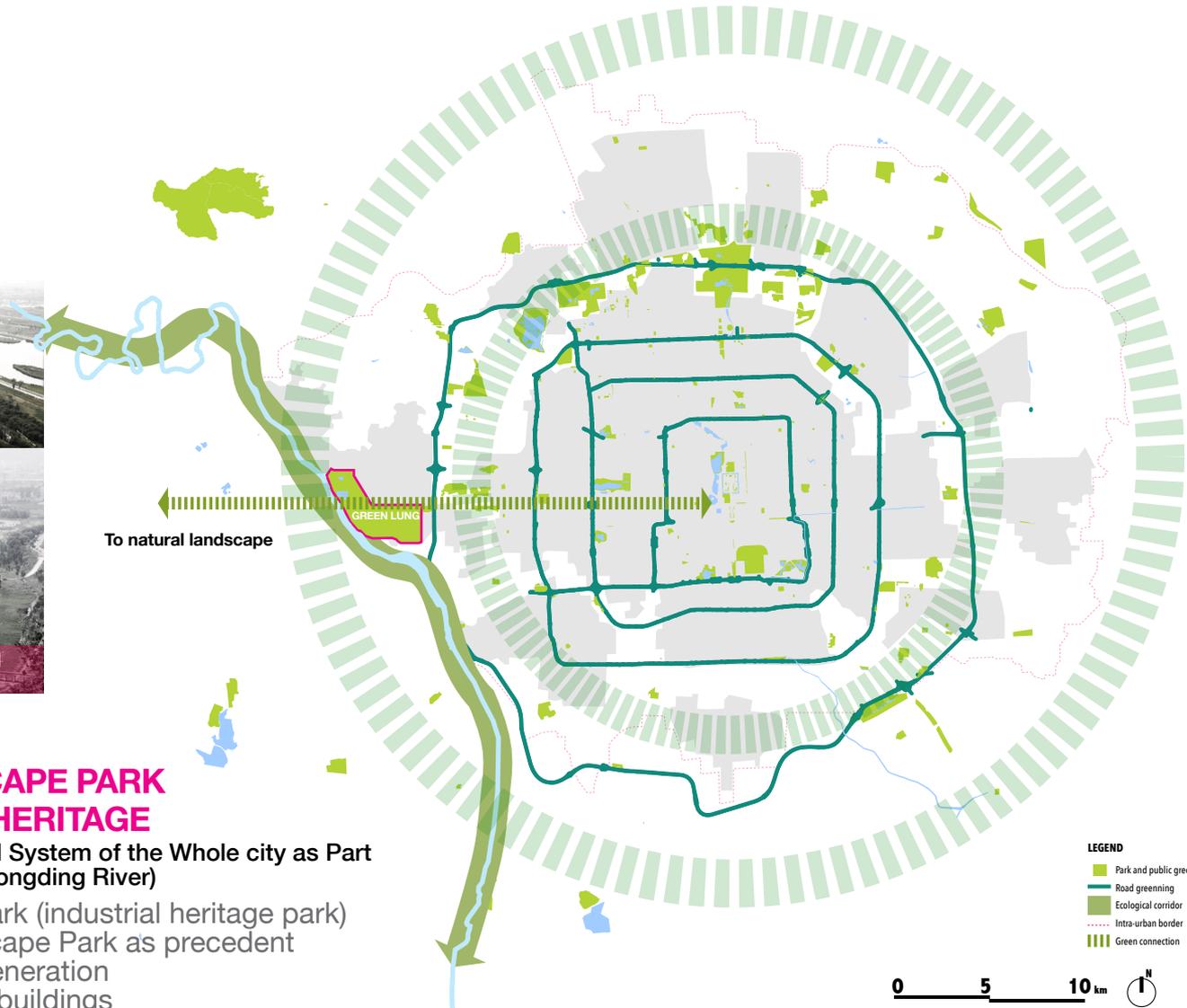


Figure 6.11: Yongding River_wetland (photo by author)

LAYER III_ REGIONAL LANDSCAPE PARK WITH INDUSTRIAL HERITAGE

Integrate into the Ecological System of the Whole city as Part of the Ecological Corridor(Yongding River)

- Regional landscape park (industrial heritage park)
- Duisburg-Nord Landscape Park as precedent
- Entertainment-led regeneration
- Emphasis on heritage buildings
- From polluter to a green lung



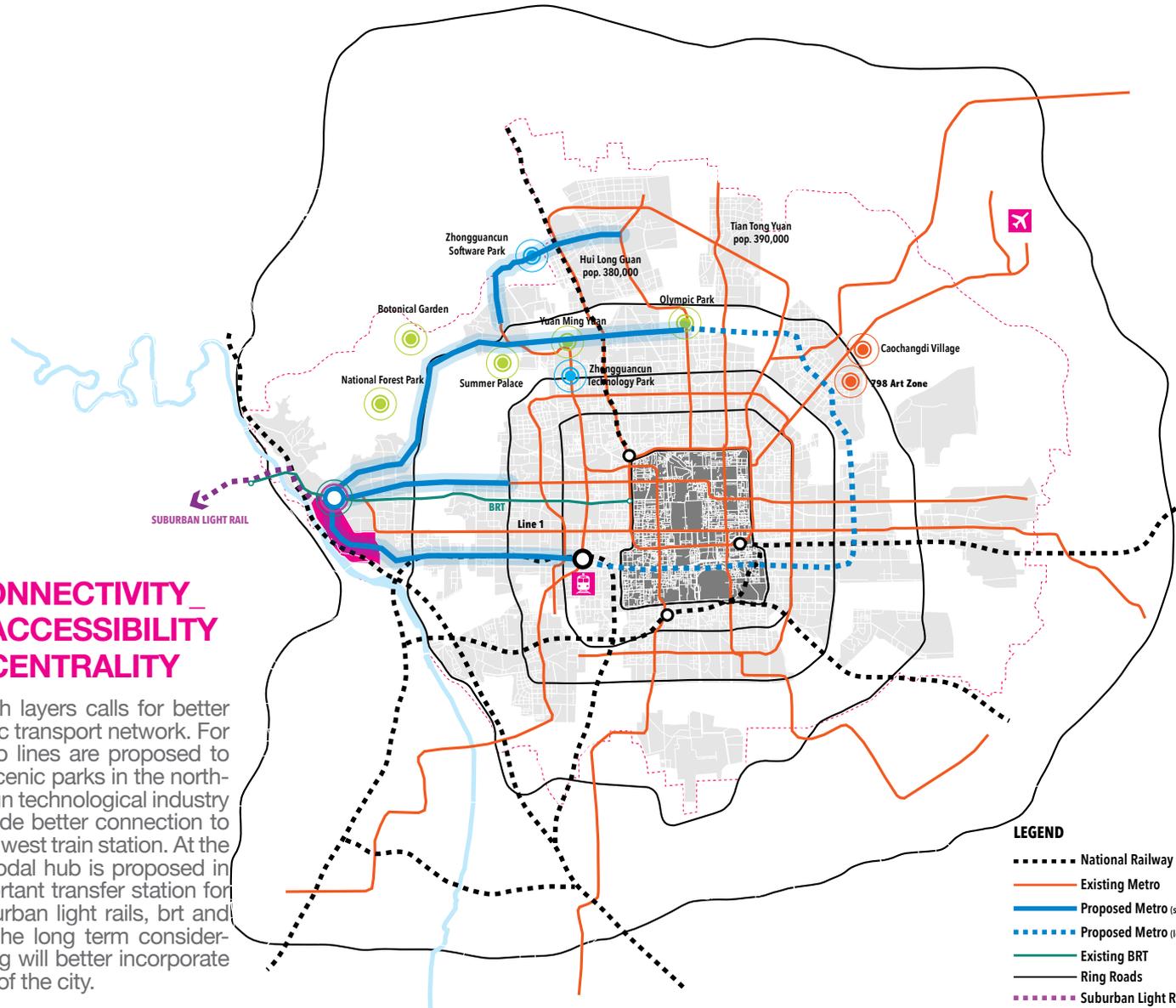
LEGEND

- Park and public green area
- Road greening
- Ecological corridor
- Intra-urban border
- Green connection

0 5 10 km

Figure 6.10: Layer III_ Regional Landscape Park and its relation with ecological system (made by author) 113

VI.4 IMPROVED PUBLIC TRANSPORT NETWORK



IMPROVED CONNECTIVITY_ GUARANTEE ACCESSIBILITY OF THE NEW CENTRALITY

The realization of each layers calls for better accessibility and public transport network. For short term, new metro lines are proposed to connect this area to scenic parks in the north-west, to Zhongguancun technological industry cluster, and also provide better connection to the city center and the west train station. At the same time, a multi-modal hub is proposed in the site to be an important transfer station for new metro lines, suburban light rails, brt and also city buses. For the long term consideration, a new metro ring will better incorporate the site to other parts of the city.

Figure 6.12: Proposed public transport network (made by author)

VI.5 EFFECT ON CITY STRUCTURE

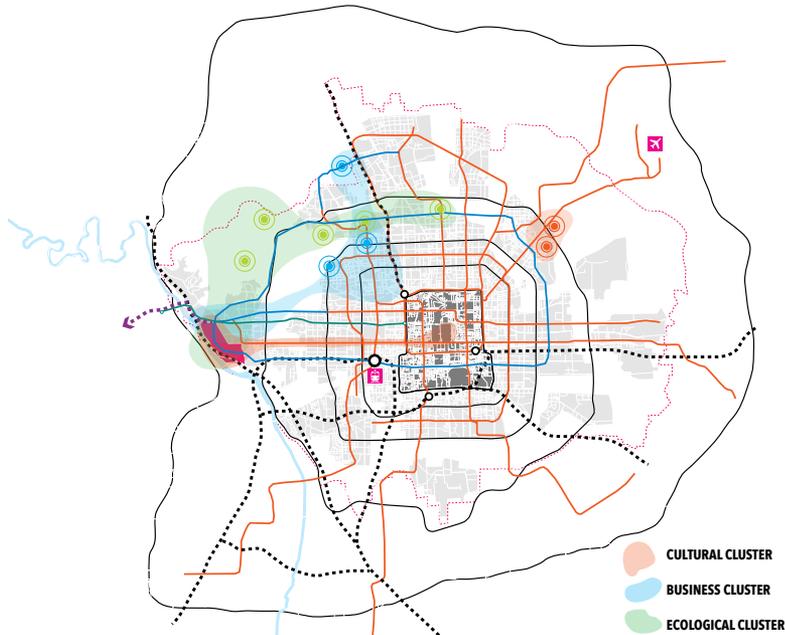


Figure 6.13: Short-term proposal (made by author)

SHORT-TERM_
Formulate
Overlapping Clusters

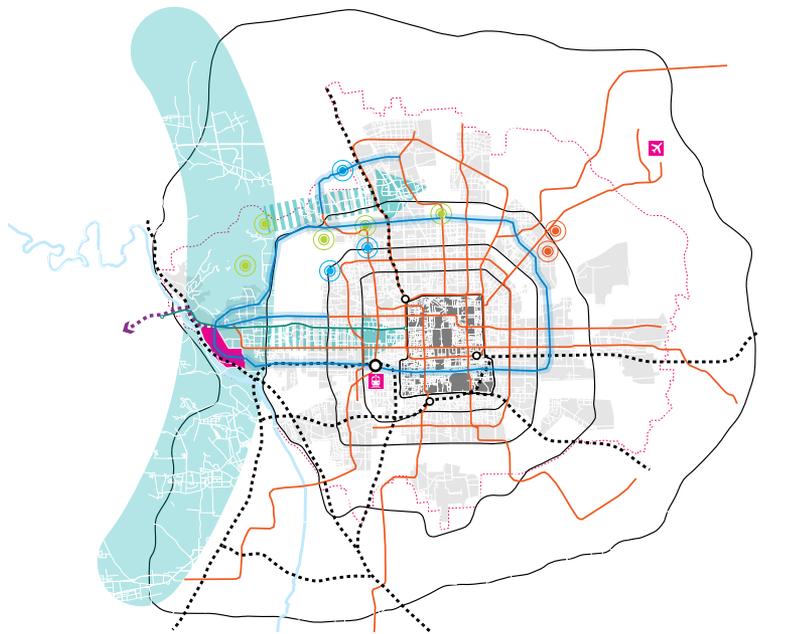
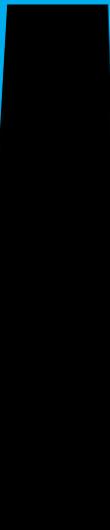
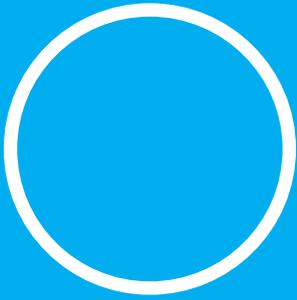


Figure 6.14: Long-term proposal (made by author)

0 5 10m

LONG-TERM_
Integrate West Ecological Belt
Into Urban Network

The interventions on the public transport system will help to formulate the three overlapping clusters in short term, and also to integrate the west ecological belt into urban network in the long-term proposal. In this way, the area will be a part of the ecological corridor that is easily accessible by public transport, and better facilitate the general public.



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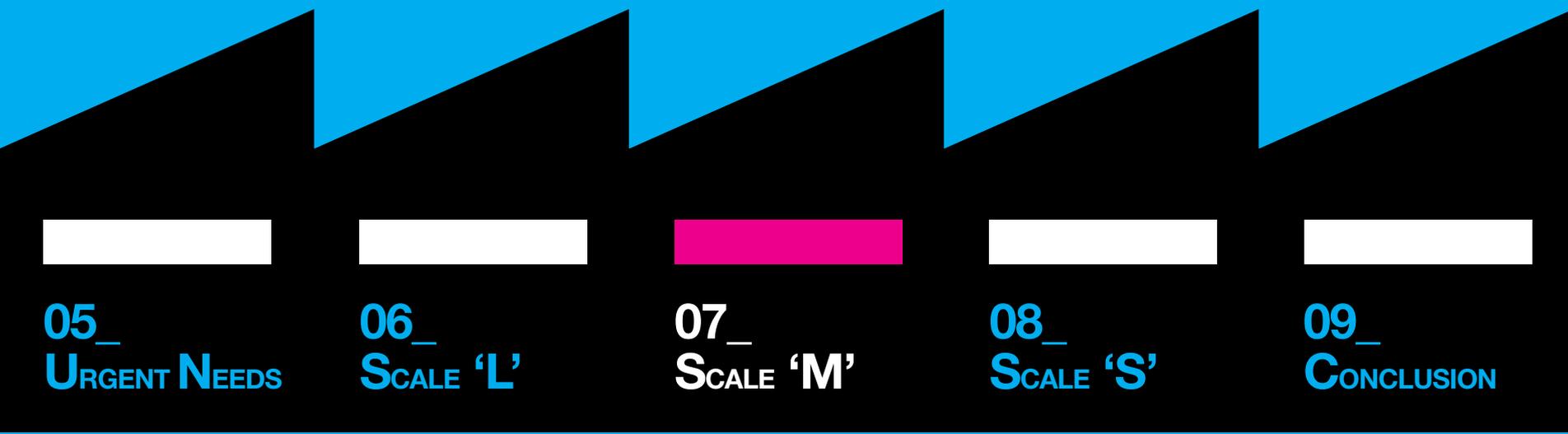
03_
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PART 07_

SCALE M_ SITE PLANNING

- 7.1 Objectives in Site Planning
- 7.2 Development Sequences
- 7.3 Local Connectivity
- 7.4 Mixed Urban Programs



05_
URGENT NEEDS

06_
SCALE 'L'

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SCALE 'M'

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CONCLUSION

VII.1 OBJECTIVES OF SITE PLANNING

- ▶ From **BOUNDED GROWTH** towards **OPEN NETWORK**
 - Integration with neighboring areas
 - Social cohesion
 - Connectivity & accessibility

- ▶ From **URBAN BORDER** towards **ICONIC GATEWAY**
 - City axis extension westwards
 - "Image that matters!"

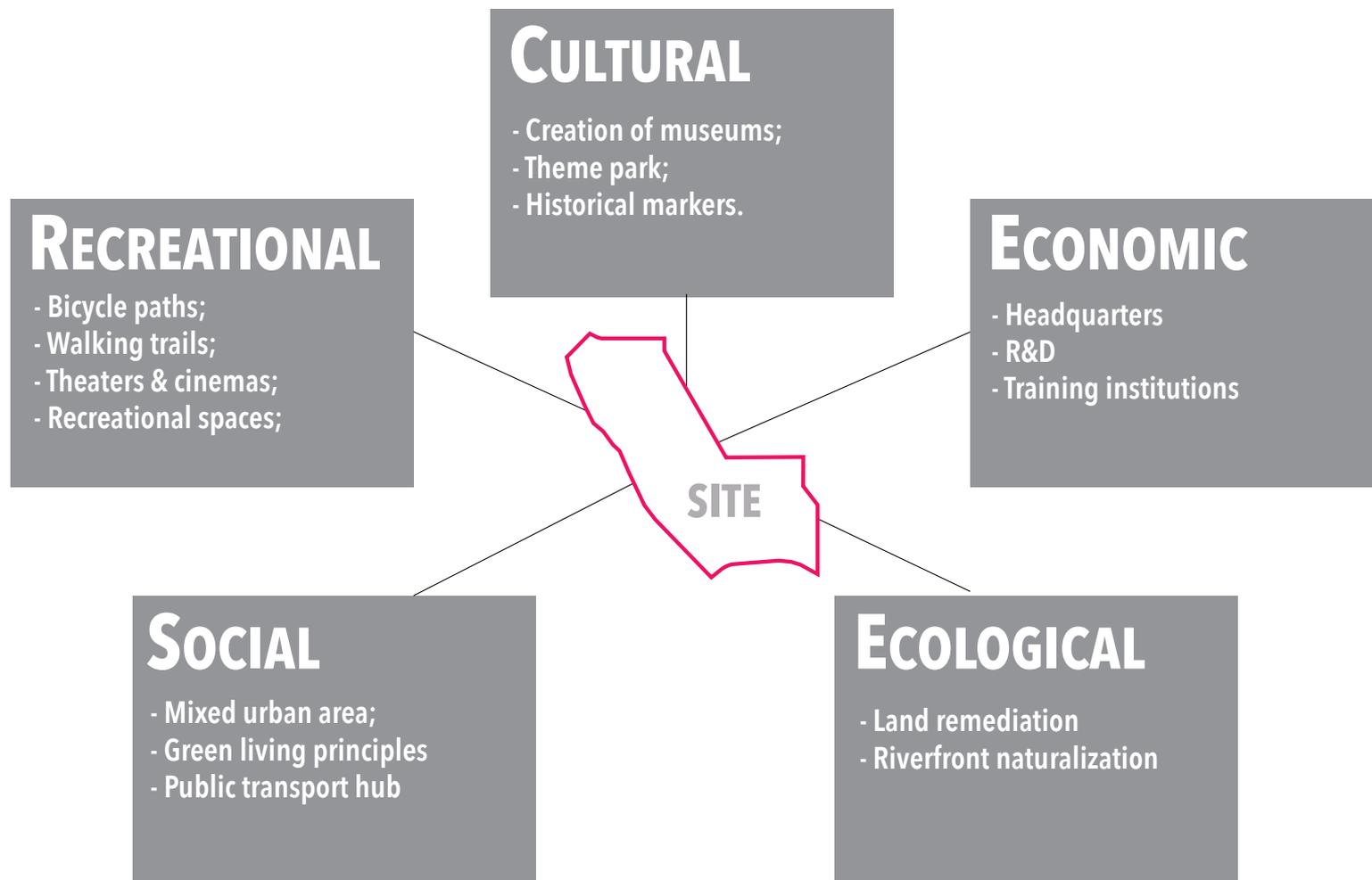
- ▶ From **ECONOMIC INANITION** towards **JOB GENERATOR**
 - Training institutions
 - New types of employment

- ▶ From **DERELICTION** towards **IDENTITY**
 - Heritage preservation
 - Adaptive re-use
 - New centrality in the west

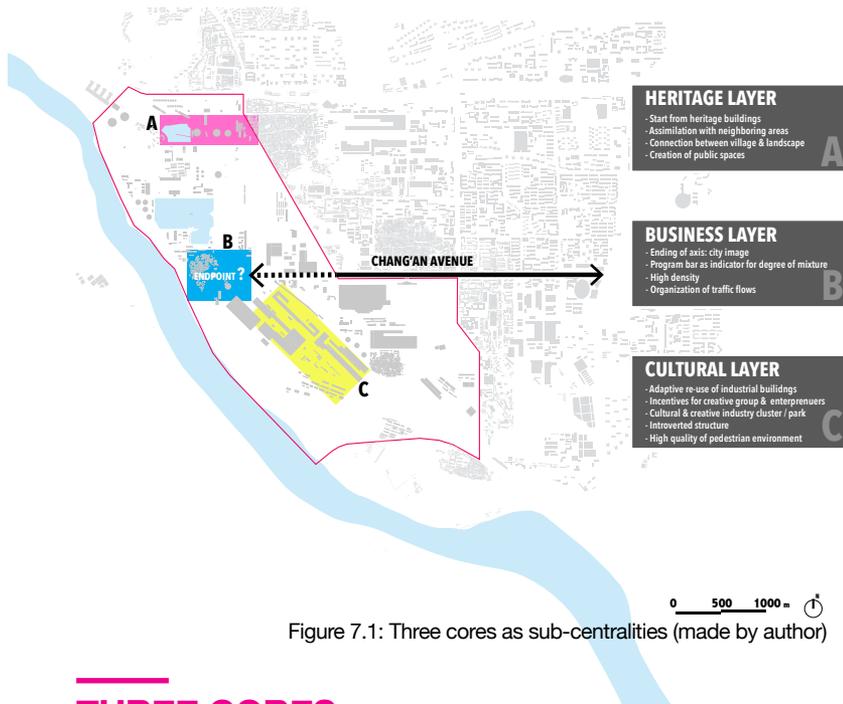
- ▶ From **CITY POLLUTER** towards **GREEN LUNG**
 - Ecological renewal
 - Creation of

MULTI-PURPOSED PROGRAMS

The objective of this scale is to create a multi-purposed project, carrying intentions concerning cultural, recreational, social, economic and ecological aspects.

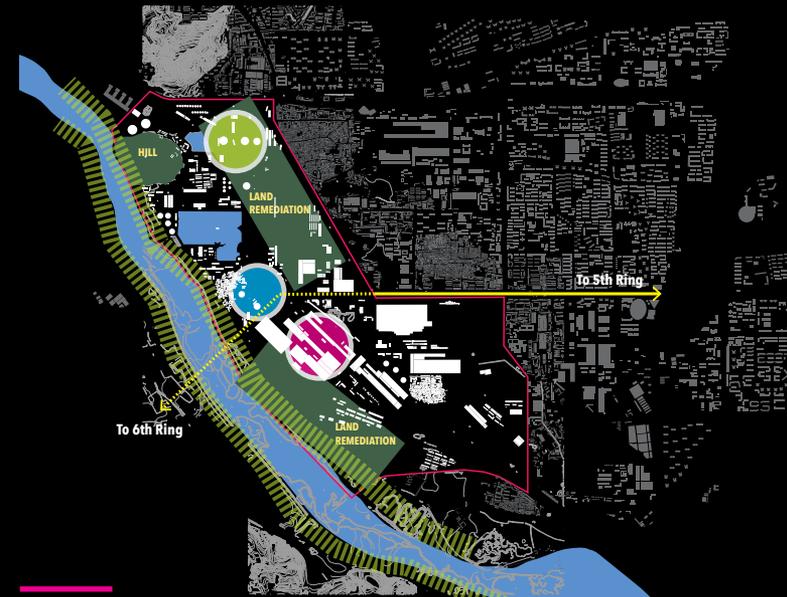


VII.2 DEVELOPMENT SEQUENCE



THREE CORES SUB-CENTRALITIES

The strategic planning of the site starts from three cores that will undergo transformation firstly (figure 7.1). In city scale, the objective is to create a centrality identified as the CRD, while in the site scale, there are actually three sub-centralities within the site. And they are also related to the corresponding strategies covering the three layers of the city vision, which are heritage park, business district and cultural cluster. This strategy allows flexibility and resilience between each sub-center as a network, they will flexibly adapt to uncertainties in the future, together formulating a new urban centrality in a larger context.



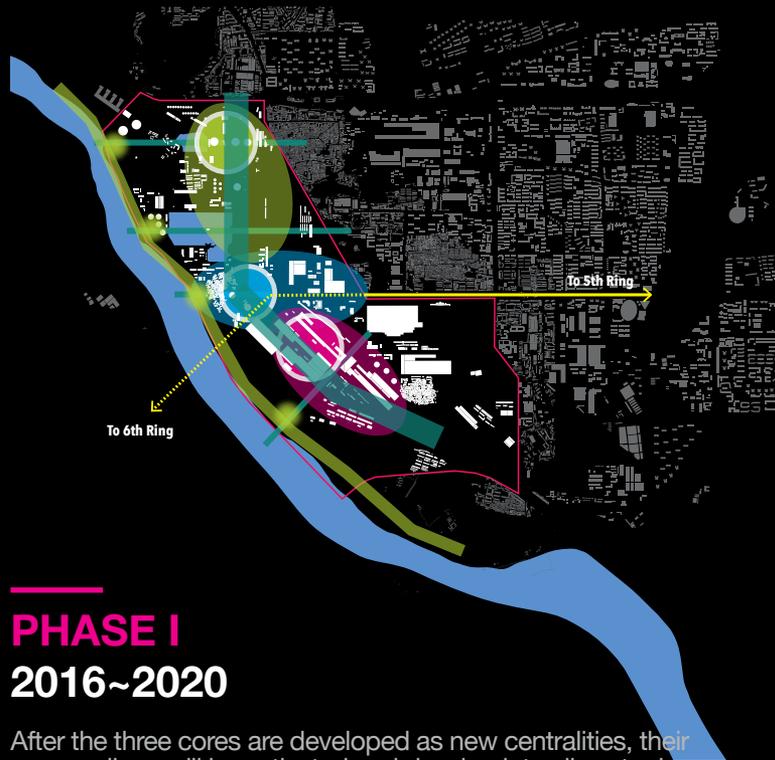
PHASE I 2013~2016

The axis extension is the most important and influential element. Although the strong image of grand Chang'an Avenue is fading and integrating into the urban road network gradually, it is still the city spine with cultural and political significance. Instead of keeping it stretching westwards endlessly, the new plan is to make a turn to the southwest to preserve the village, leaving an area free of bustling traffic flows to be the endpoint of the axis.

Three strategic locations are selected to be developed in the first step along with the riverfront, functioning as catalysts and "testing beds" that will lead to the development of the whole area.

At the same time, the land remediation will be processed in the most polluted area by adding plantation, improving environmental quality in the northern as land preparation for the creation of the heritage park in following phases.

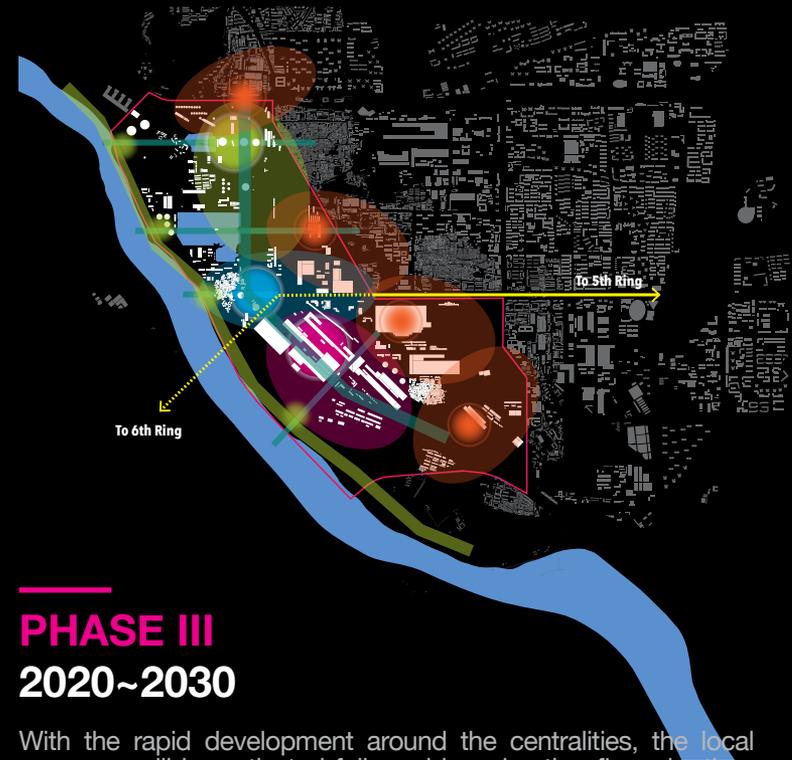
Figure 7.2: Development sequences of site scale (made by author)



PHASE I 2016~2020

After the three cores are developed as new centralities, their surroundings will be activated and develop into vibrant urban areas with mixed functions. The idea is to achieve resilience and flexibility among three layers, being adaptable to uncertainties in the future.

A spine of public spaces stringing these three areas will be created, and at the same time, west-east connections growing from the spine will stretch out into surroundings and lead to the emergence of new nodes along the riverfront where people can stay and enjoy the waterscape.



PHASE III 2020~2030

With the rapid development around the centralities, the local economy will be activated followed by migration flows in, then there will be need for more housing and public facilities. Therefore, a following wave of urban regeneration will start from the creation of new civic centers which can benefit both new development and old neighboring areas, also help to promote the social coherence of new migrants and local residents.

In the end, the whole site will realize transition and revitalization, becoming really integrated into neighboring urban areas, both in spatial and social perspectives.

VII.3 LOCAL CONNECTIVITY

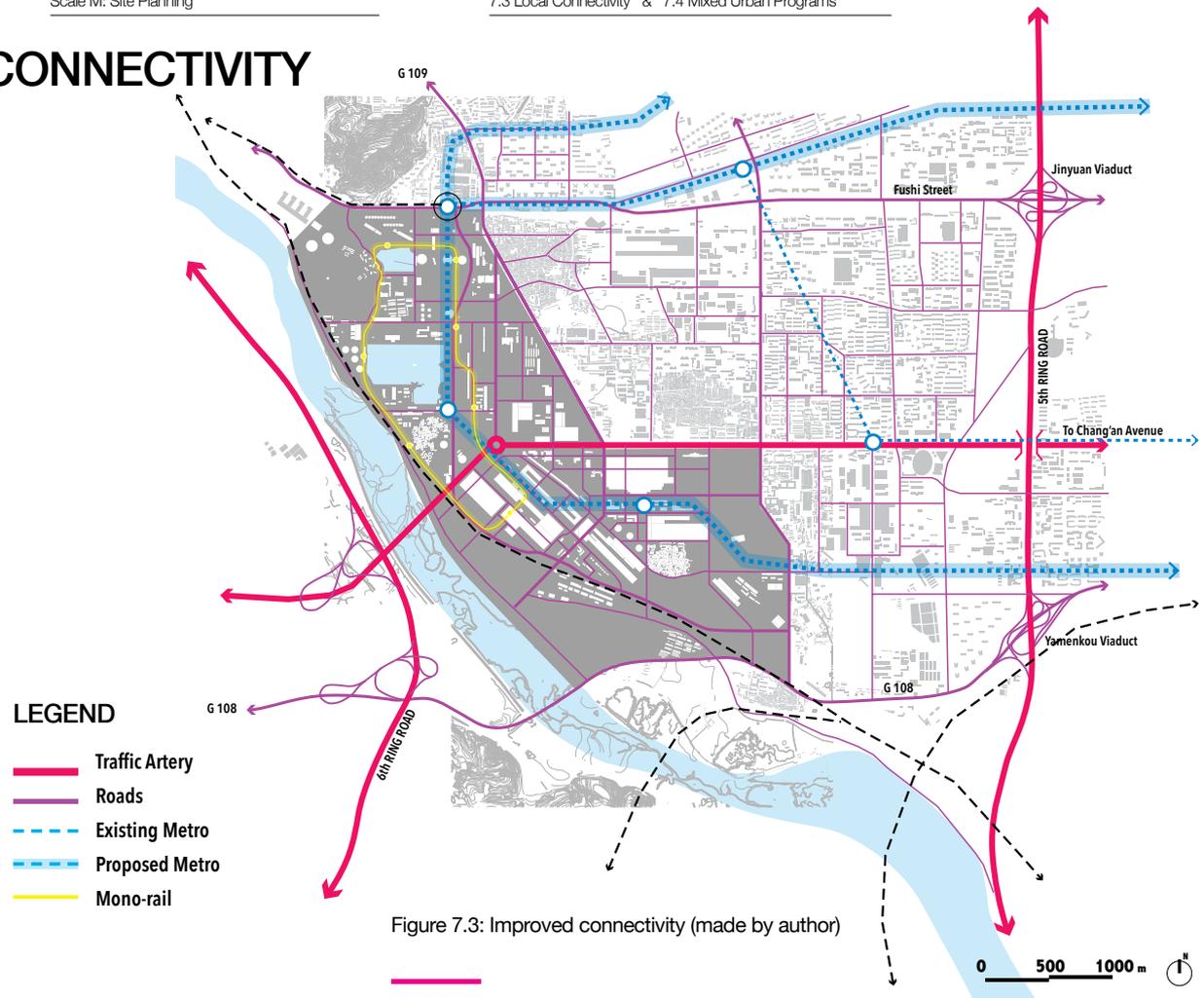


Figure 7.3: Improved connectivity (made by author)

INTEGRATED ROAD NETWORK

This image shows the new road network and the proposed public transport system. The new roads within the area will follow the logic of existing urban fabrics, assimilating into adjacent network. And the west-east connections will break former boundary, realizing integration into the neighboring areas.

IMPROVED PUBLIC TRANSPORT SYSTEM

New metro lines will go through the whole area, and in the north, a multi-modal hub will emerge for public transport transfer to the west suburban area by BRT and light rail. Besides, a mono-rail track is proposed facilitate tourists and visitors, connecting attractive nodes within the area.

VII.4 MIXED URBAN PROGRAMS_ Comparative Study of Urban Mixture

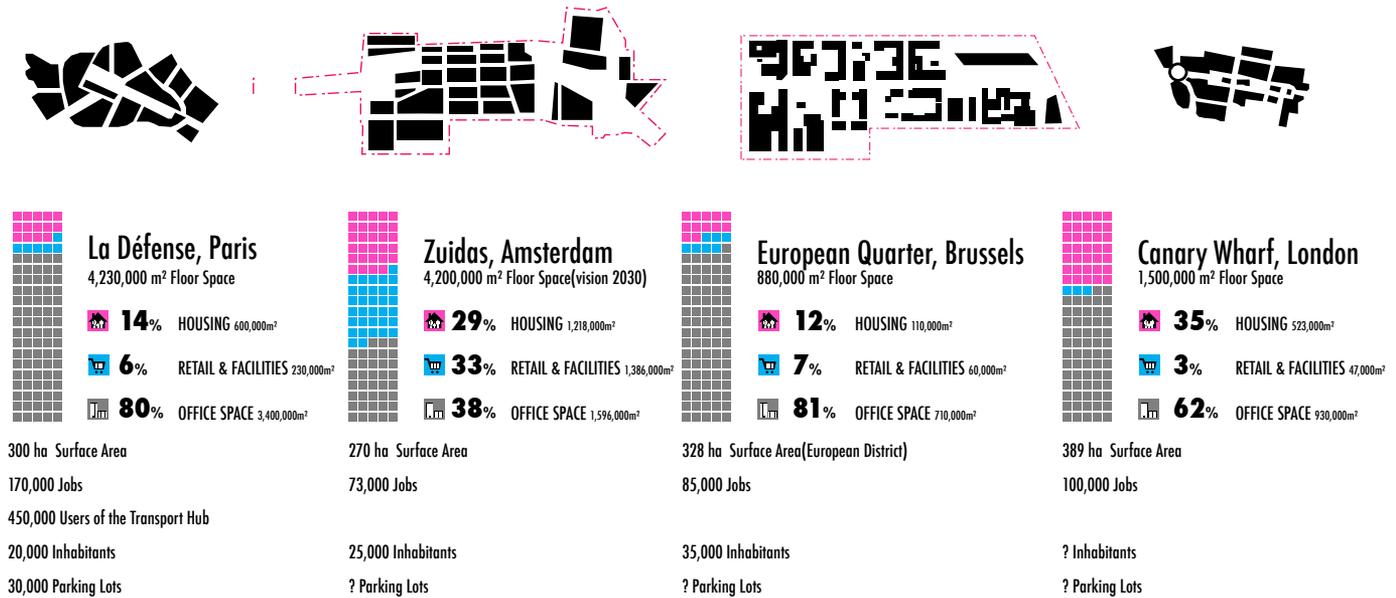


Figure 7.4: Proportion of programs in four mixed urban districts (made by author)



DEGREE OF MIX INDICATES DIFFERENT URBAN IMAGES

PROGRAM BAR AS CONTROLLING TOOL

Residential Usage: Between **25% and 50%**

Flexibility: allowing alternative uses in the future

Vital Plinth: Houses various public functions, providing a clear visual and perceptual relationship with the neighboring areas.

Complementariness in relation to the inner city of Beijing.

Search for the **right mix**: includes social diversity, mix of functions, type of jobs, etc.

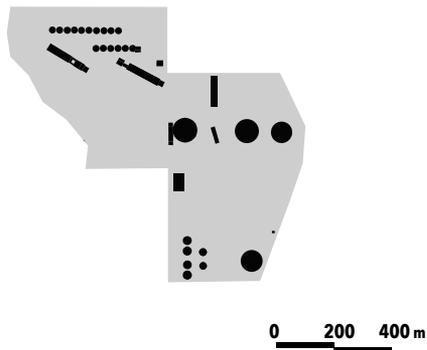
In order to get an idea about the proper degree of program mixing, the comparative study is approached among four urban districts with mixed programs. The conclusion is presented by these program bars (figure 7.4) which indicate completely different proportion of each program.

The lessons learned from the case study is that the degree of mixture indicates different urban images, and the percentage of residential usage is essential, which should be larger than 25 percentage but smaller than 50 percentage.

VII.4 MIXED URBAN PROGRAMS_ Programs Mixing of Three Sub-centralities

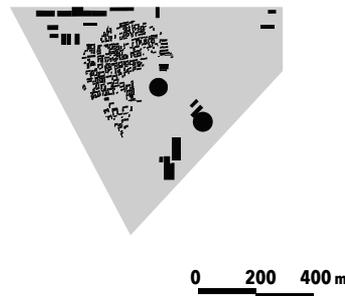
LOCATION I

Main Actors:
Municipality
Private developers
Local residents



LOCATION II

Main Actors:
Capital Steel Headquarter
Clean Industries
New urbanites



LOCATION III

Main Actors:
Municipality
Entrepreneurs
Creative Class
Local residents

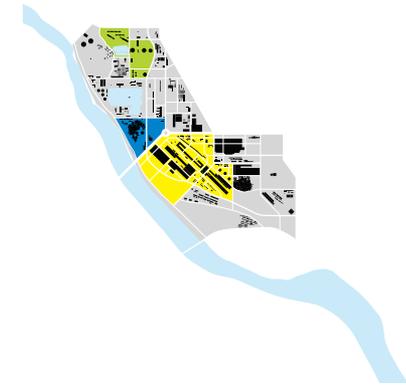
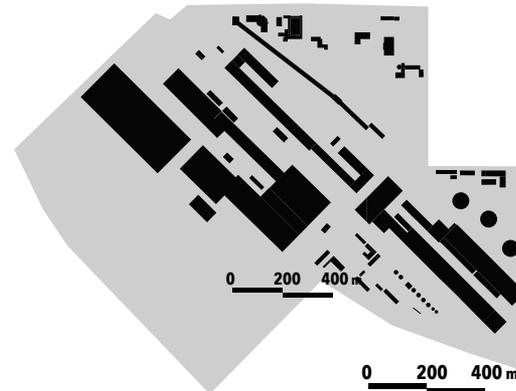


Figure 7.5: Three sub-centralities (made by author)

Preservation Of Heritage
Open Space / Greenery
Connection To Neighboring Village

Endpoint Of Axis(landmark)
High Density Development
Mix-Used Urban Area

Adaptive Reuse Of Industrial Buildings
Cultural Cluster
Creation Of High Quality Public Space
Incentives For Entrepreneurs

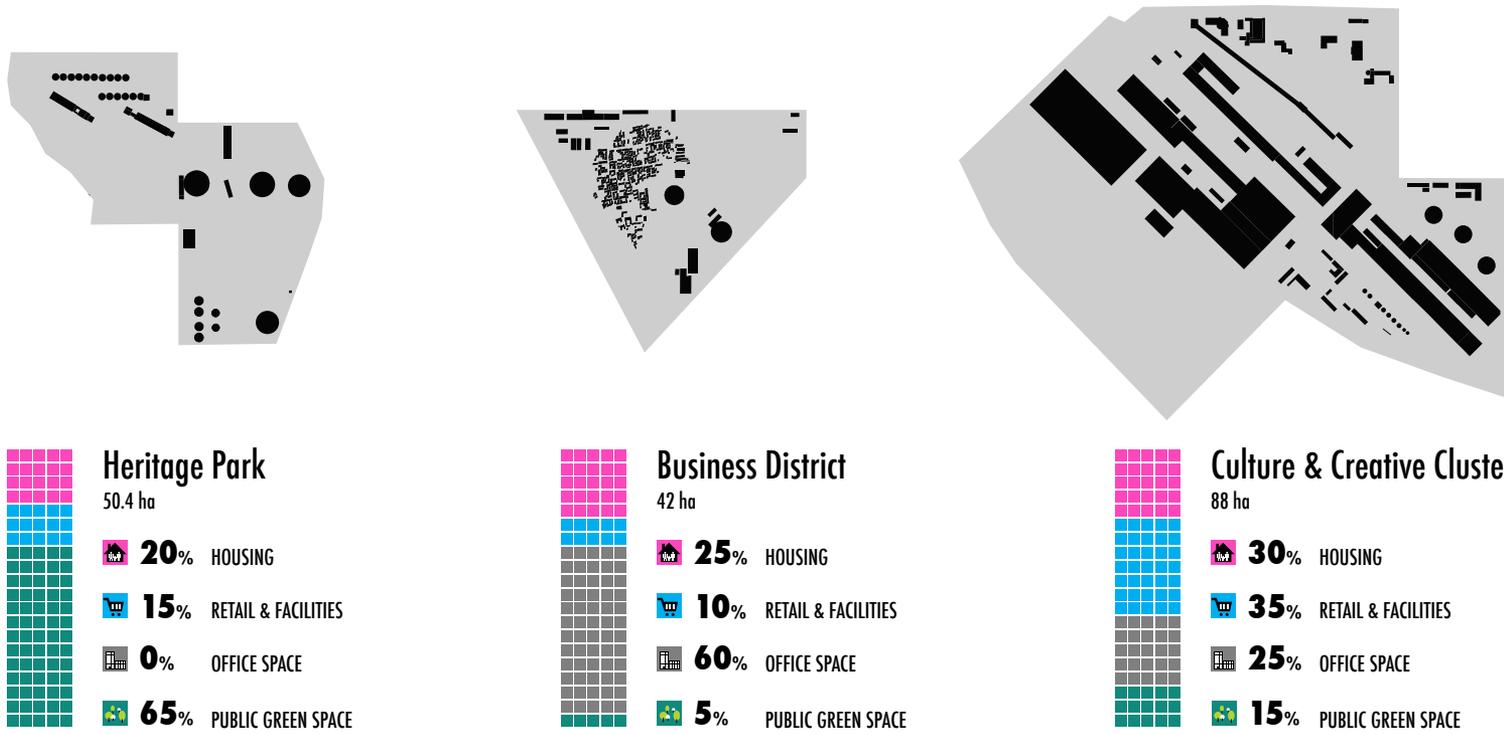
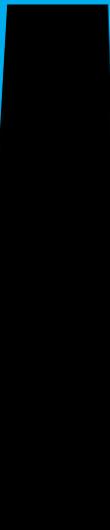
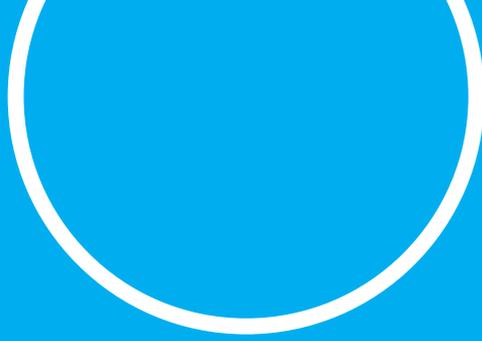
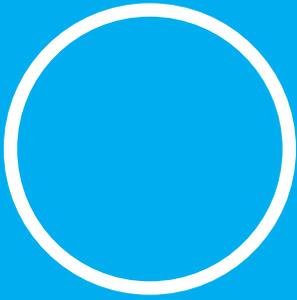


Figure 7.6: Program bar for three sub-centralities (made by author)



PROGRAM BAR VARIES

The program bars for the three locations in the project site are proposed, and the degree of program mixing varies in three core locations, which can indicate the functionality of each sub-centrality that constitutes the new urban centrality, also delivering an idea about different urban atmosphere that will be created.



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SCALE S_ ELABORATE DESIGN

- 8.1 Choice of Sub-centrality
- 8.2 Current Condition
- 8.3 Design Principles & Objectives
- 8.4 Collective of Strategies
- 8.5 Master Plan
- 8.6 Key Interventions
- 8.7 Flexibility of Master Plan
- 8.8 Phasing Plan

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VIII.1 CHOICE OF SUB-CENTRALITY_

WHY THIS AREA?

Among the three sub-centralities, one is selected for elaborate design in the small scale. This area features a concentration of mega factory buildings with value of adaptive re-use. It will develop into the cultural quarter bounded by extended Chang'an Avenue and the ecological zone (figure 8.2).

FACTS

AREA: 150 Ha

CONDITION: Mega Industrial Buildings

OBJECTIVE: Stimulate the emergence of a cluster with cultural & creative industries, and a relatively introverted open space with high quality pedestrian environment.

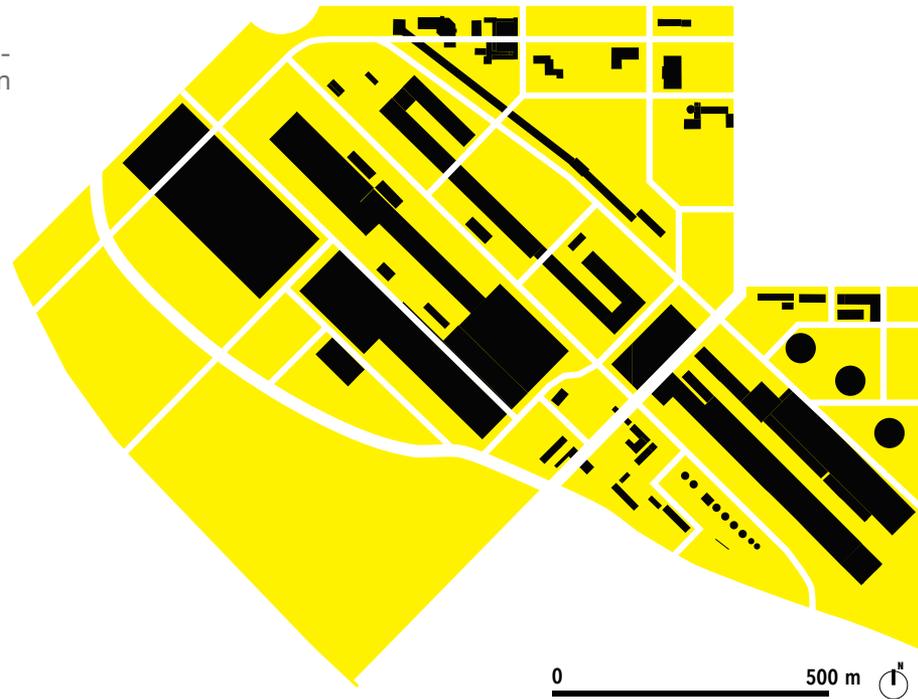
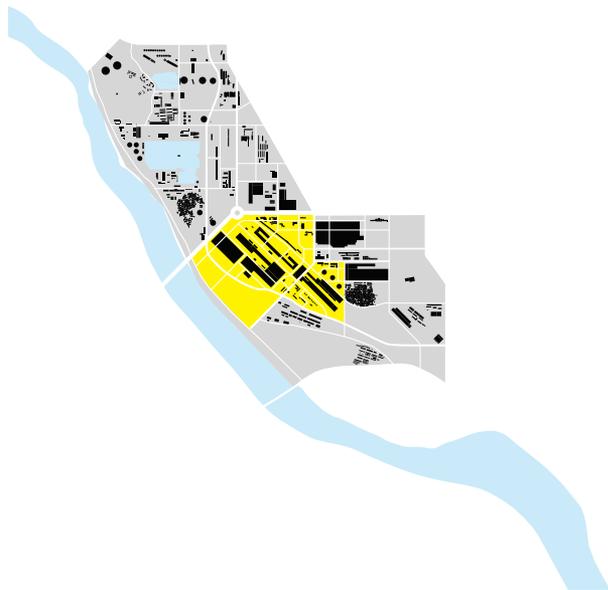
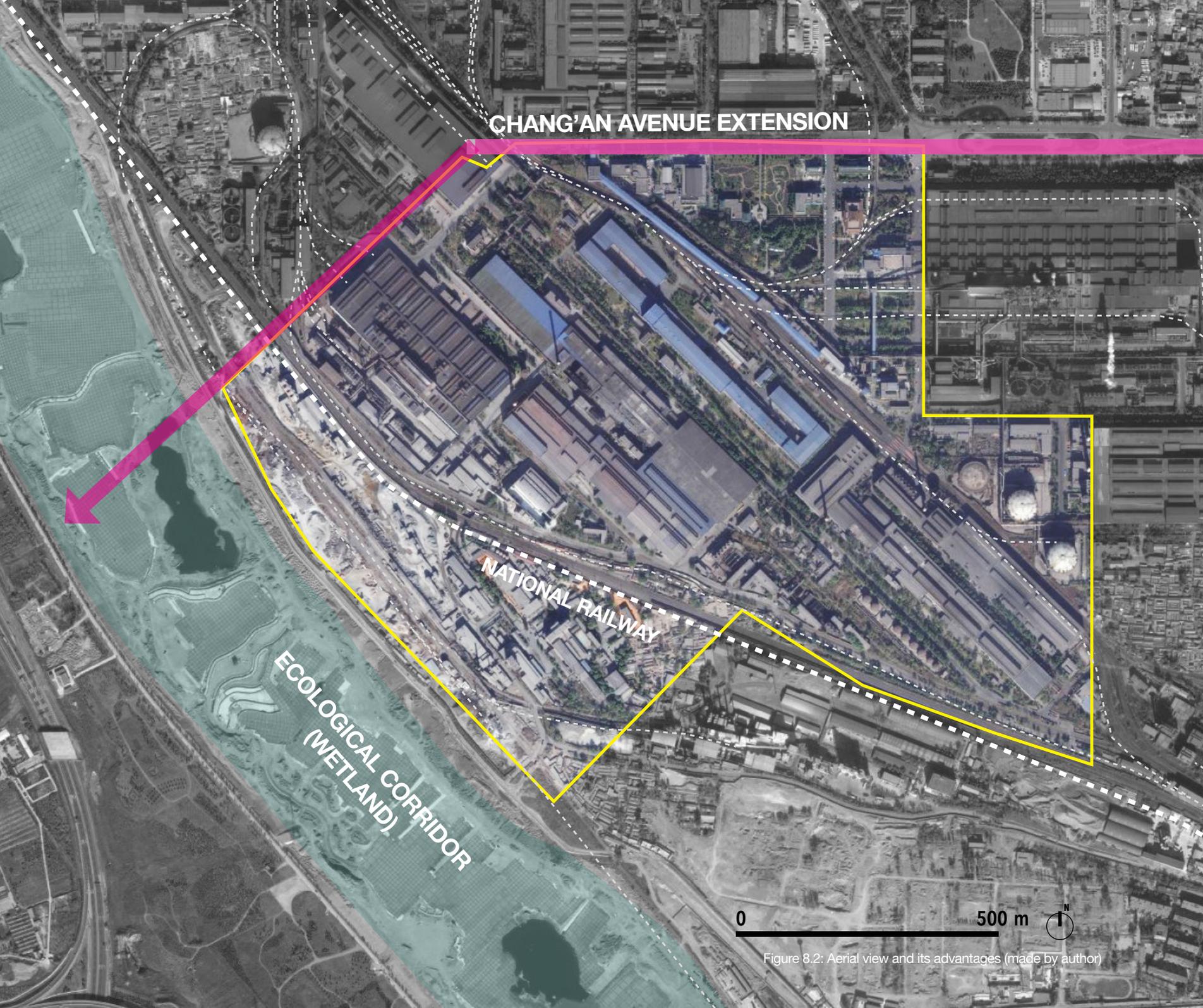


Figure 8.1: Choice of sub-centrality for elaborate design (made by author)



CHANG'AN AVENUE EXTENSION

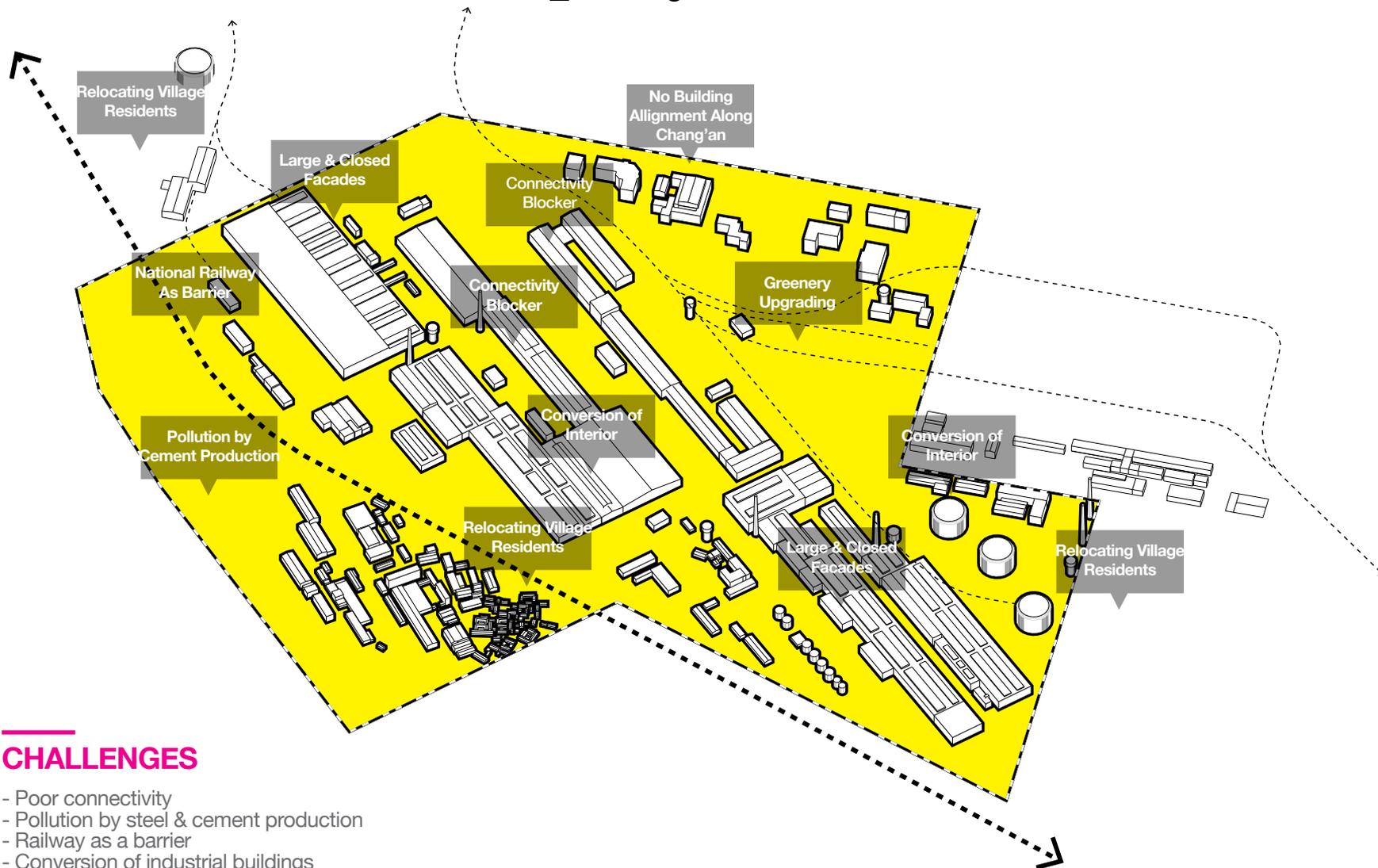
NATIONAL RAILWAY

ECOLOGICAL CORRIDOR
(WETLAND)

0 500 m N

Figure 8.2: Aerial view and its advantages (made by author)

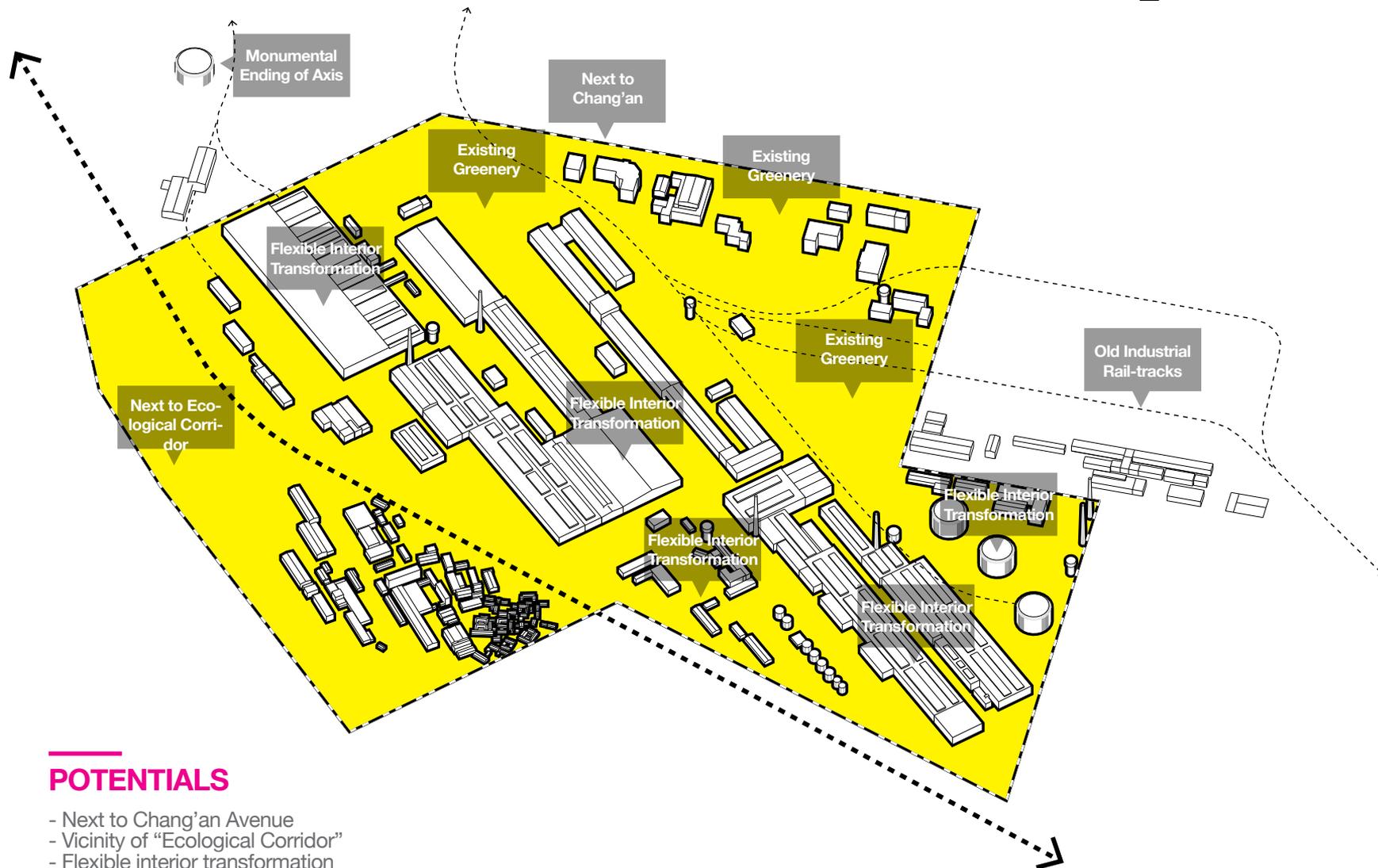
VIII.2 CURRENT CONDITION_Challenges



CHALLENGES

- Poor connectivity
- Pollution by steel & cement production
- Railway as a barrier
- Conversion of industrial buildings
- Large & enclosed facades
- Relocating village residents
- Development along extended Chang'an Avenue

VIII.2 CURRENT CONDITION_Potentials



POTENTIALS

- Next to Chang'an Avenue
- Vicinity of "Ecological Corridor"
- Flexible interior transformation
- Former industrial rail tracks as identity
- Existing greenery
- Close to the monumental ending point of Chang'an axis

Figure 8.4: Potentials and advantages (made by author)

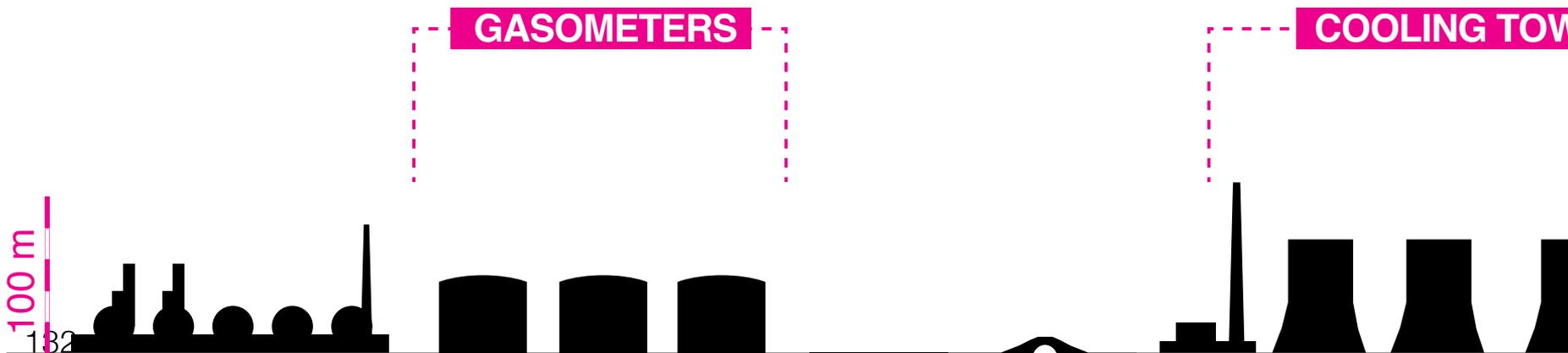
VIII.3 DESIGN PRINCIPLES & OBJECTIVES

PRINCIPLES

1. Emphasize Land Remediation
2. Mixed Programs
3. Introduce New Industries
4. Highlight Adaptive Reuse
5. Building Height Control
6. Maximize Public Space
7. Focus on Public Needs
8. Consider Phasing
9. Incorporate Interests Of Stakeholders

OBJECTIVES

1. Preservation Of Industrial Identity
2. Creation of A New Centrality
3. Integration into the City Network
4. Positive Gentrification
5. Social Diversity
6. High-Quality Public Spaces
7. Lively Urban District
8. Carrying Ecological Intentions
9. Flexibility During Development Process
10. Stimulation For Entrepreneurship



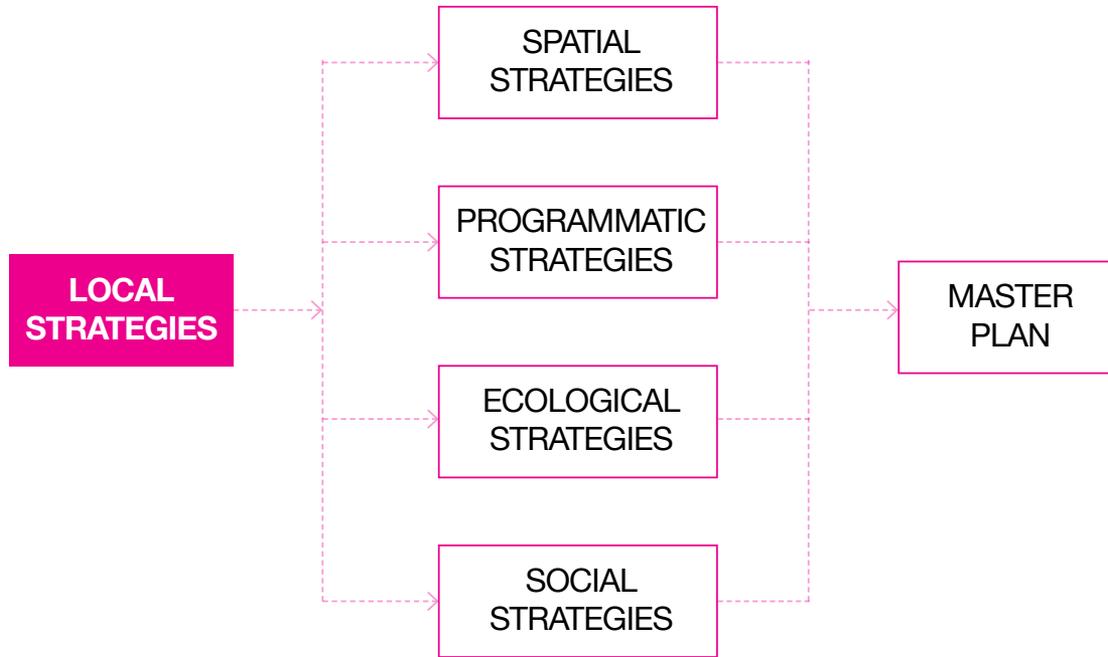


Figure 8.6: Collective of strategies leads to the master plan (made by author)

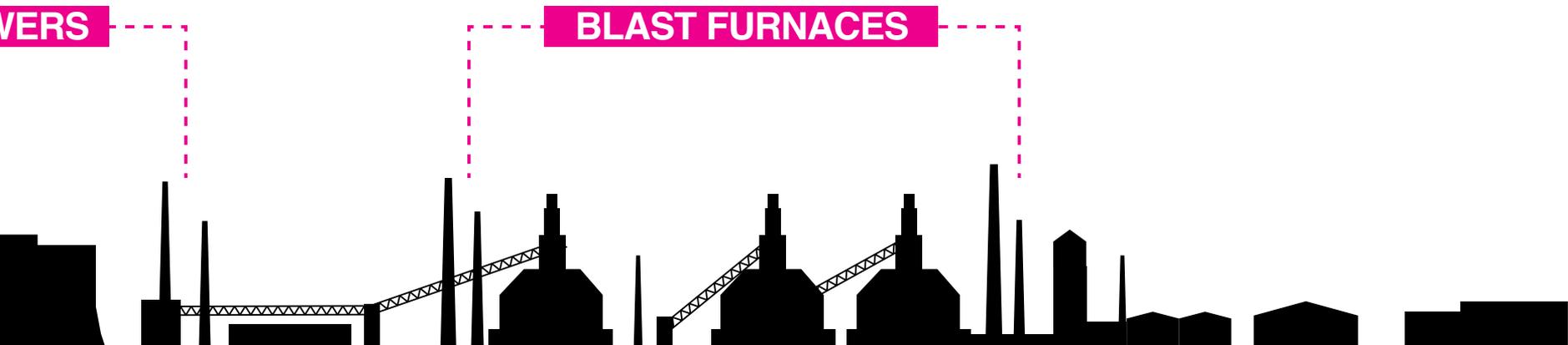


Figure 8.5: Abstract skyline (made by author)

VIII.4 STRATEGIES_ Spatial Strategies

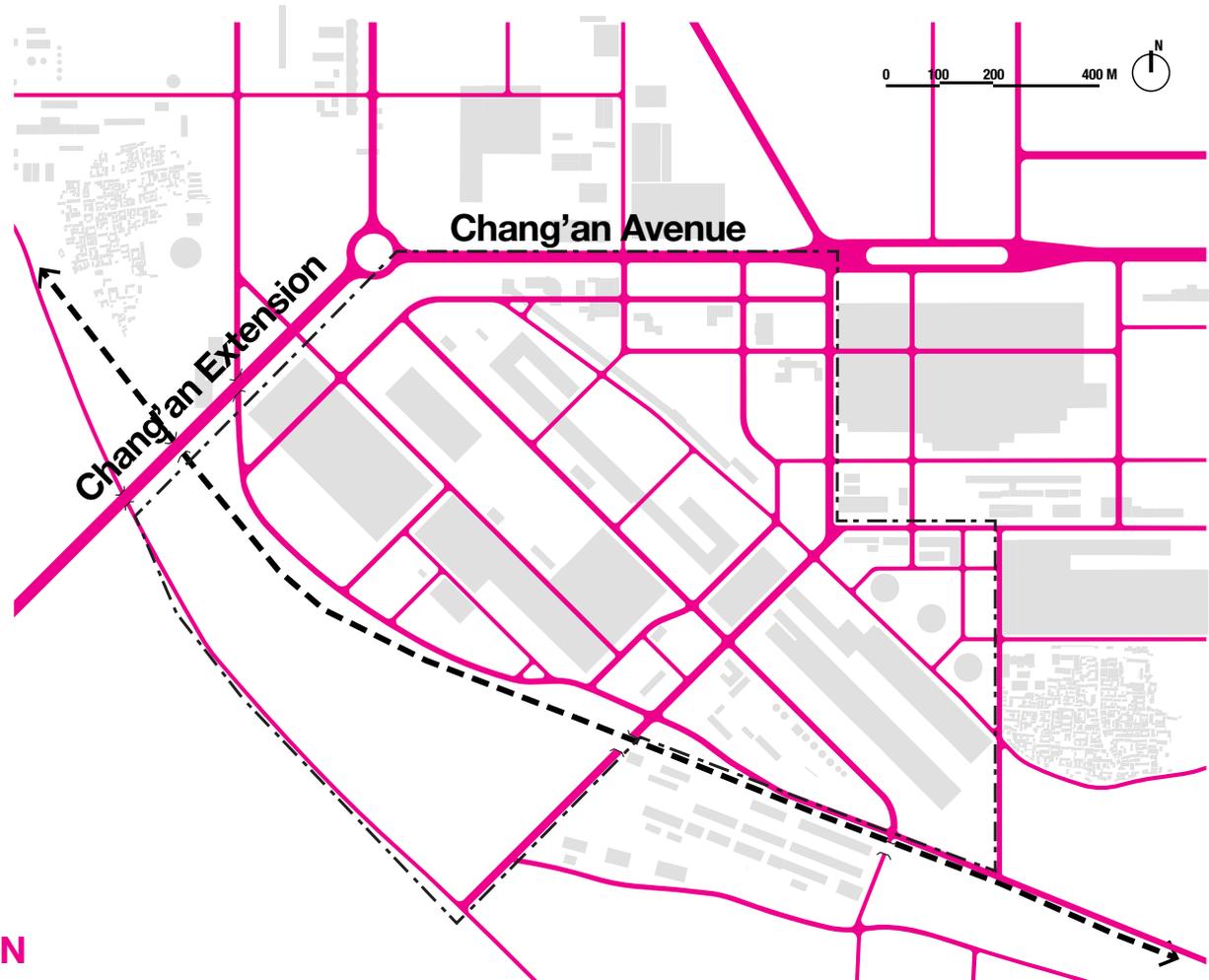


Figure 8.7: Road network (made by author)

ROAD NETWORK_ LAND PARCELLATION

The proposed roads still follow the logic of existing fabrics, integrated into the network connecting neighboring areas. Although the roads are dividing land into smaller plots, the programs and public spaces are well connected closely related to each other.

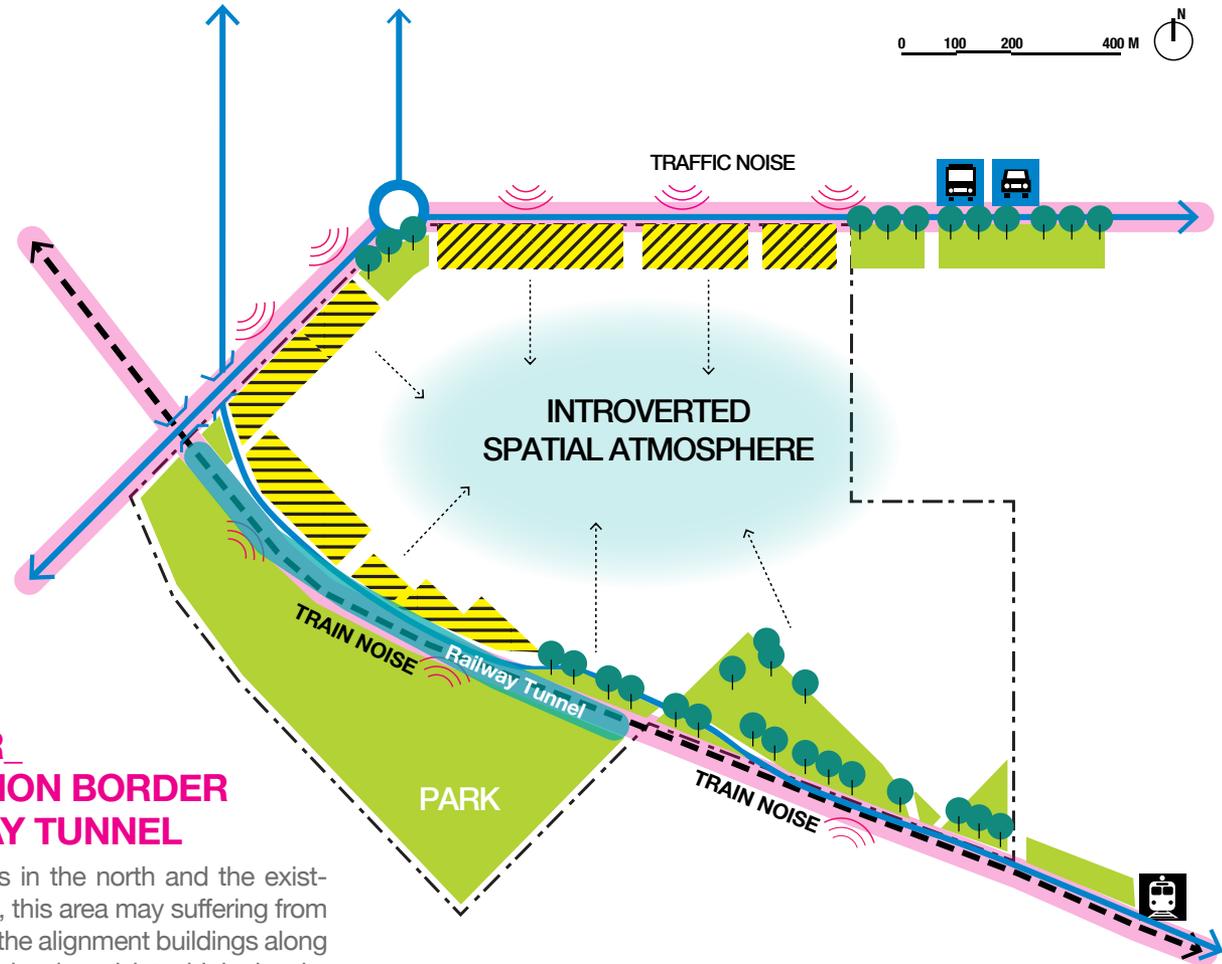


PUBLIC REALM STRATEGY CONNECTED PROGRAMS

The open space is created with pedestrian priority as dominant principle, including greenery, parks, passages and squares. The system is also linking to the monument in the endpoint of Chang'an as well as to the ecological zone with spacious green and wetland in the south. And the network enables public access to the river zone.

Figure 8.8: Connected public spaces (made by author)

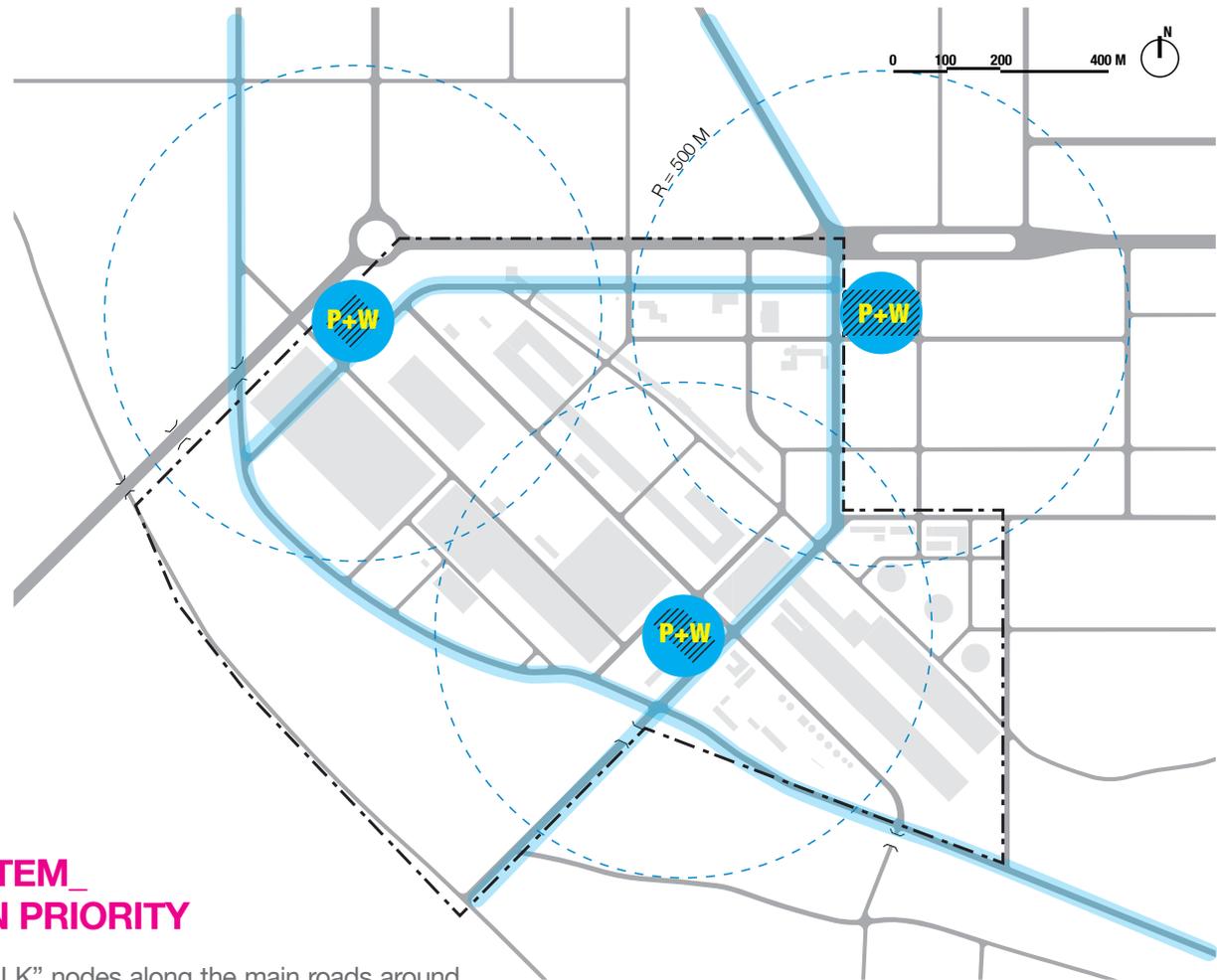
VIII.4 STRATEGIES_ Spatial Strategies



ACOUSTIC BARRIER_ BUILDING, VEGETATION BORDER & COVERED RAILWAY TUNNEL

Due to the future traffic arteries in the north and the existing national railway in the south, this area may suffer from noise day and night. Therefore, the alignment buildings along the north and west edge will be developed into high-density offices with continuous base, functioning as the protective screen blocking the noise. Combined with vegetation and covered railway tunnel, the strategy will contribute to the creation of a relatively introverted spatial atmosphere free from bustling outside.

Figure 8.9: Introverted space surrounded by acoustic barriers (made by author)

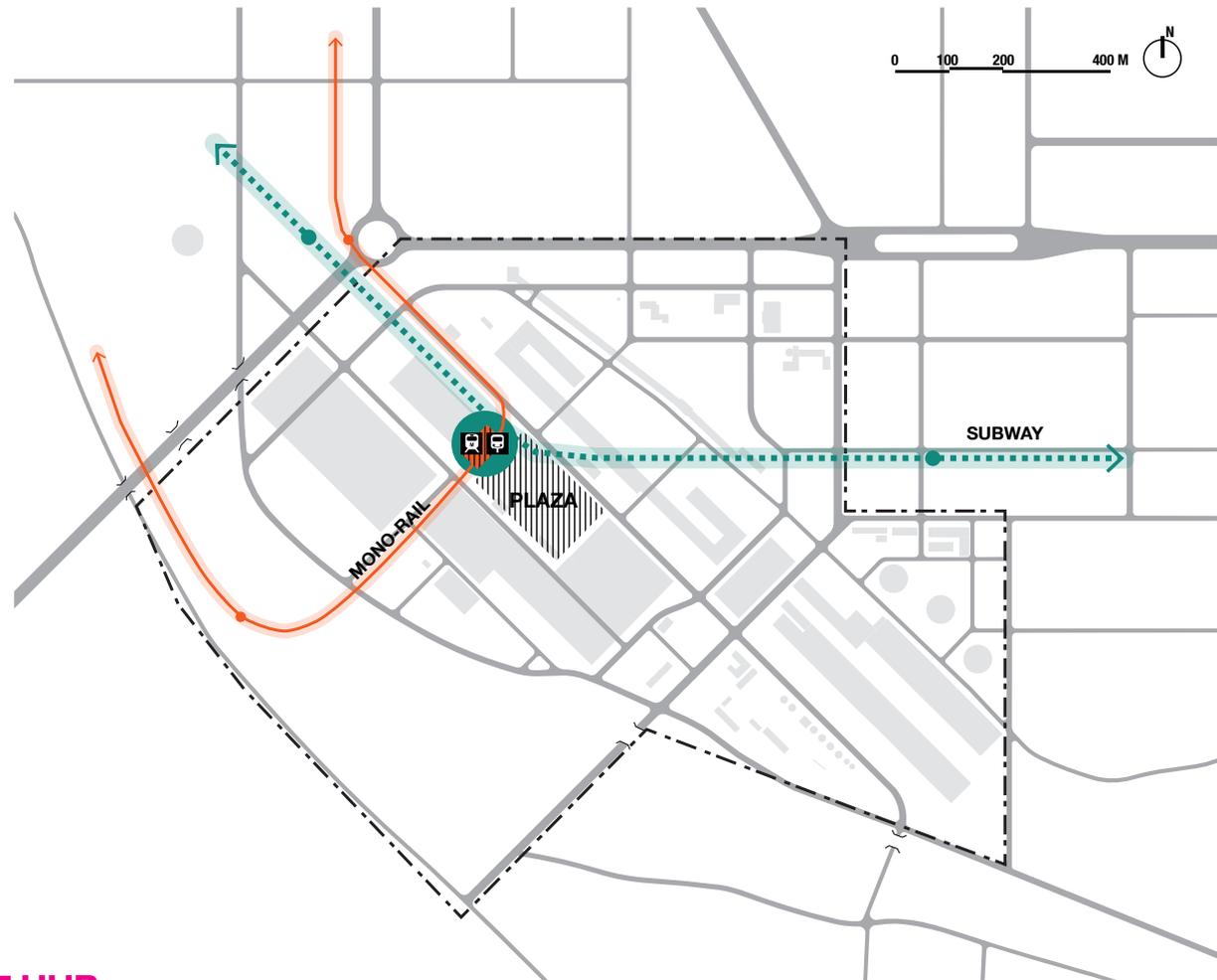


“P + W” SYSTEM_ PEDESTRIAN PRIORITY

Three “PARK & WALK” nodes along the main roads around the area will help to reduce the automobile amount with the area. This is realized by the walking-friendly distance (500m) covering the whole area along with parking charge incentives to encourage people park their cars in the collective parking node and enjoy the high-quality pedestrian.

Figure 8.10: Park & Walk nodes along main entrance roads (made by author)

VIII.4 STRATEGIES_ Spatial Strategies



PUBLIC TRANSPORT HUB

Combined with the “P+W” system, a multi-modal public transport hub is proposed in the heart of the area, next to the Central Plaza. Visitors can easily transfer from public transport system (metro) to the monorail with tourism purpose.

Figure 8.11: Public transport node (made by author)

VIII.4 STRATEGIES_ Programmatic Strategies

CLUSTERED DEVELOPMENT_ AIR FOR ENTREPRENEURSHIP & CULTURAL INDUSTRIES

Inside the area, the future development features with clustered programs that are complementary and interweaving into each other. The emergence of these clusters is forced by the local needs and the architectural potentials of those factory buildings. Furthermore, what has been highlighted in the proposal is the culture-led regeneration as one of the main principles, therefore, these clustered developments should relate to cultural or creative industries, thus creating a centrality featuring with cultural identity. For instance, an art-related vocational school is proposed to comply with the emergence of a cultural centrality, breathing the area with energetic and creative air. These new developments will become job generator, reversing socio-economic decline.

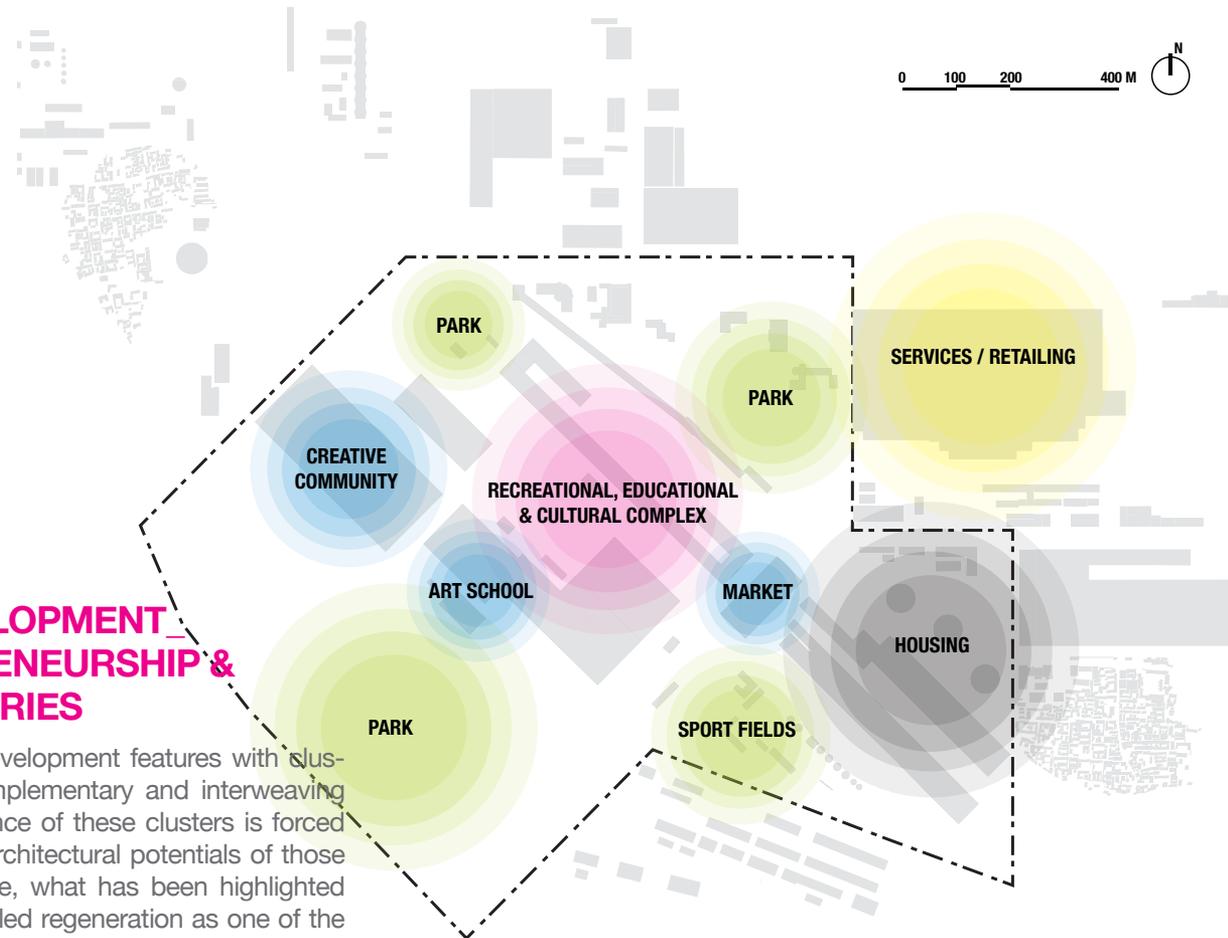
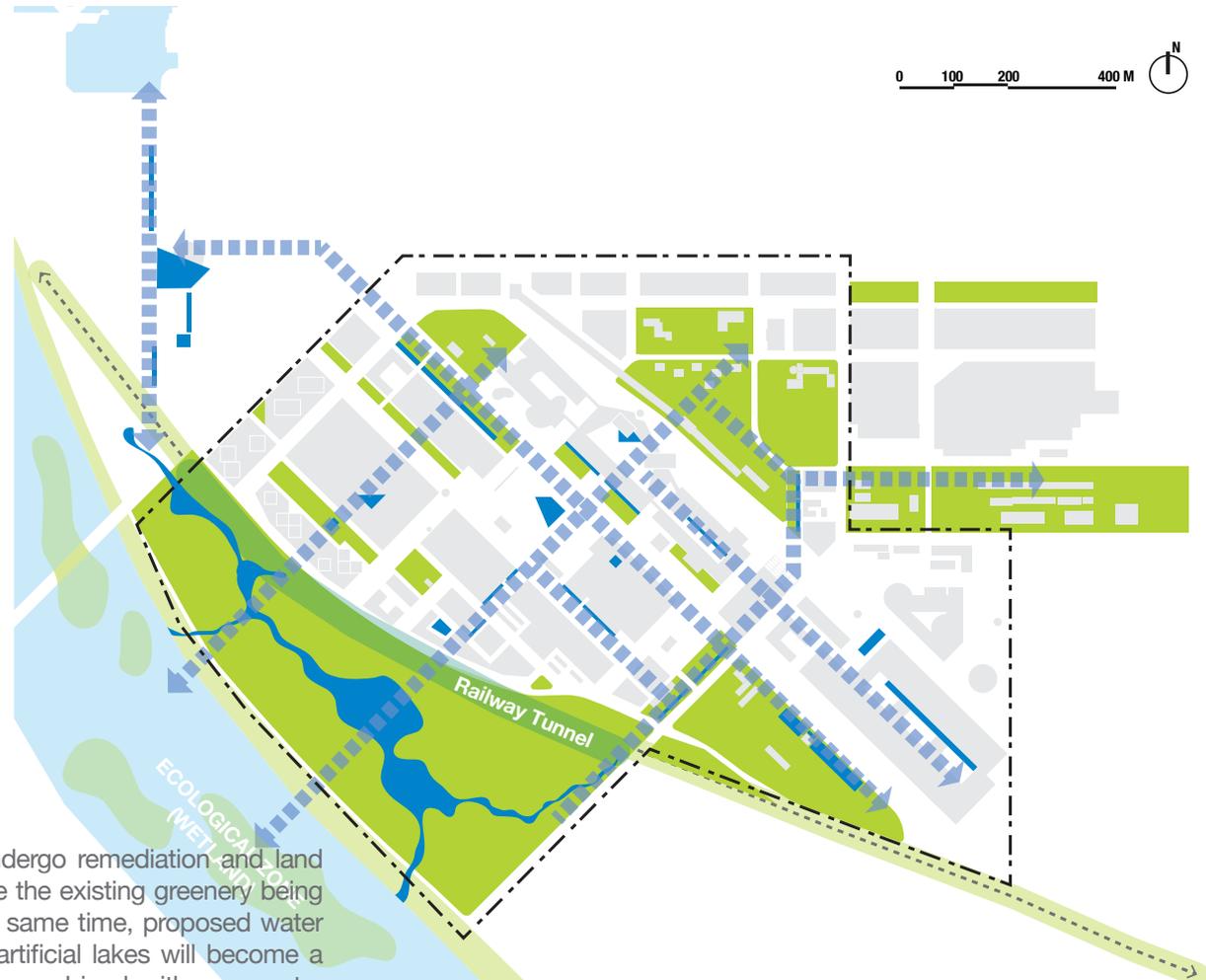


Figure 8.12: Clustered developments (made by author)

VIII.4 STRATEGIES_ Ecological Strategies



INTEGRATION INTO ECOLOGICAL ZONE

The polluted areas have to undergo remediation and land recovery in the first place, while the existing greenery being improved as a network. At the same time, proposed water features including canals and artificial lakes will become an inter-connected system that is combined with grey water recycling and run-off management, also improving landscape quality of the area. The proposed green and blue infrastructures will incorporate with each other, formulating an eco-system that is integrated into the ecological zone in the southwest.

Figure 8.13: Green and blue infrastructure as ecological system (made by author)

ECOLOGICAL APPROACH

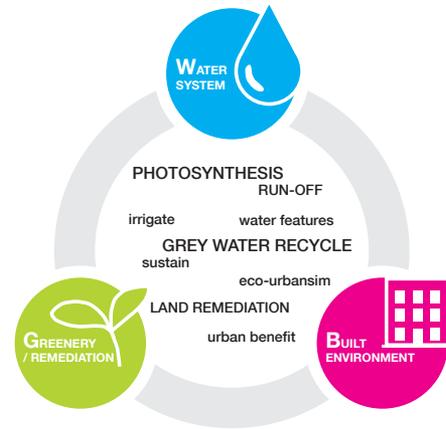


Figure 8.14: Loop of urban ecology (made by author)



ACCESSIBILITY

Pedestrian connections (grounded & elevated corridors) between public space and greenery, improving accessibility of the ecological zone



URBAN FARMING

Encourage involvement of unemployed and incorporate with urban ecology, turning urban waste (greywater & organic wastes) into productive resource



INFILTRATION

Vegetation & semi-paved surface reduce stormwater run-off, creating porous urban environment



WATER SAVING

Low flow fixtures and rainwater capture system reducing potable water use, positive for micro-climate (temperature, humidity)



GREY WATER RECYCLING

Reduce potable water use by separating grey water for flushing & irrigation use (combined with urban farming or green roof)



LAND REMEDIATION

Land remediation by removing contaminants and natural recovery, prepare land for new programs, while encouraging temporary use and informal activities

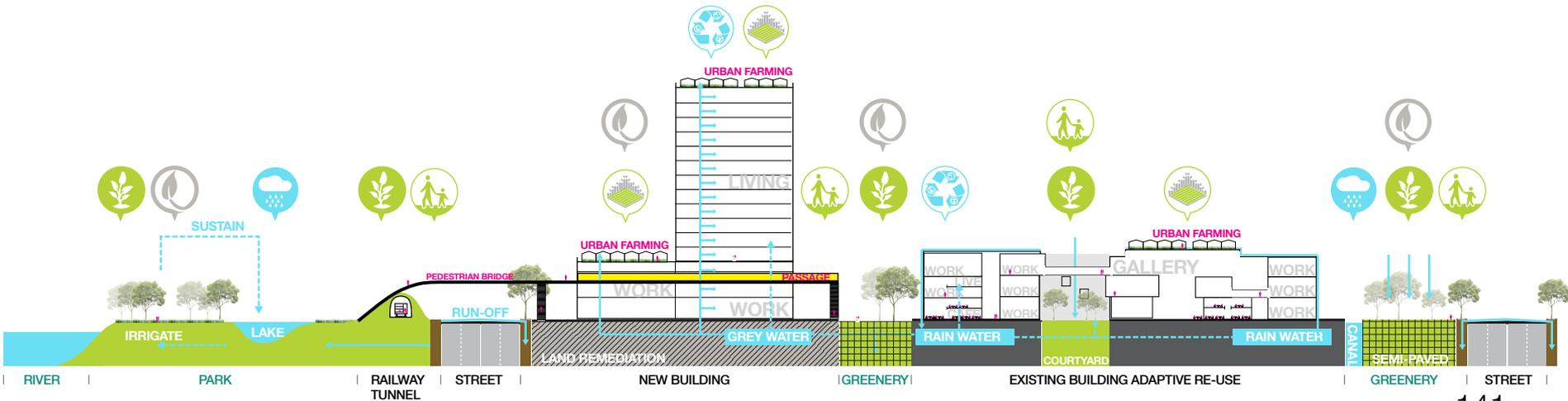
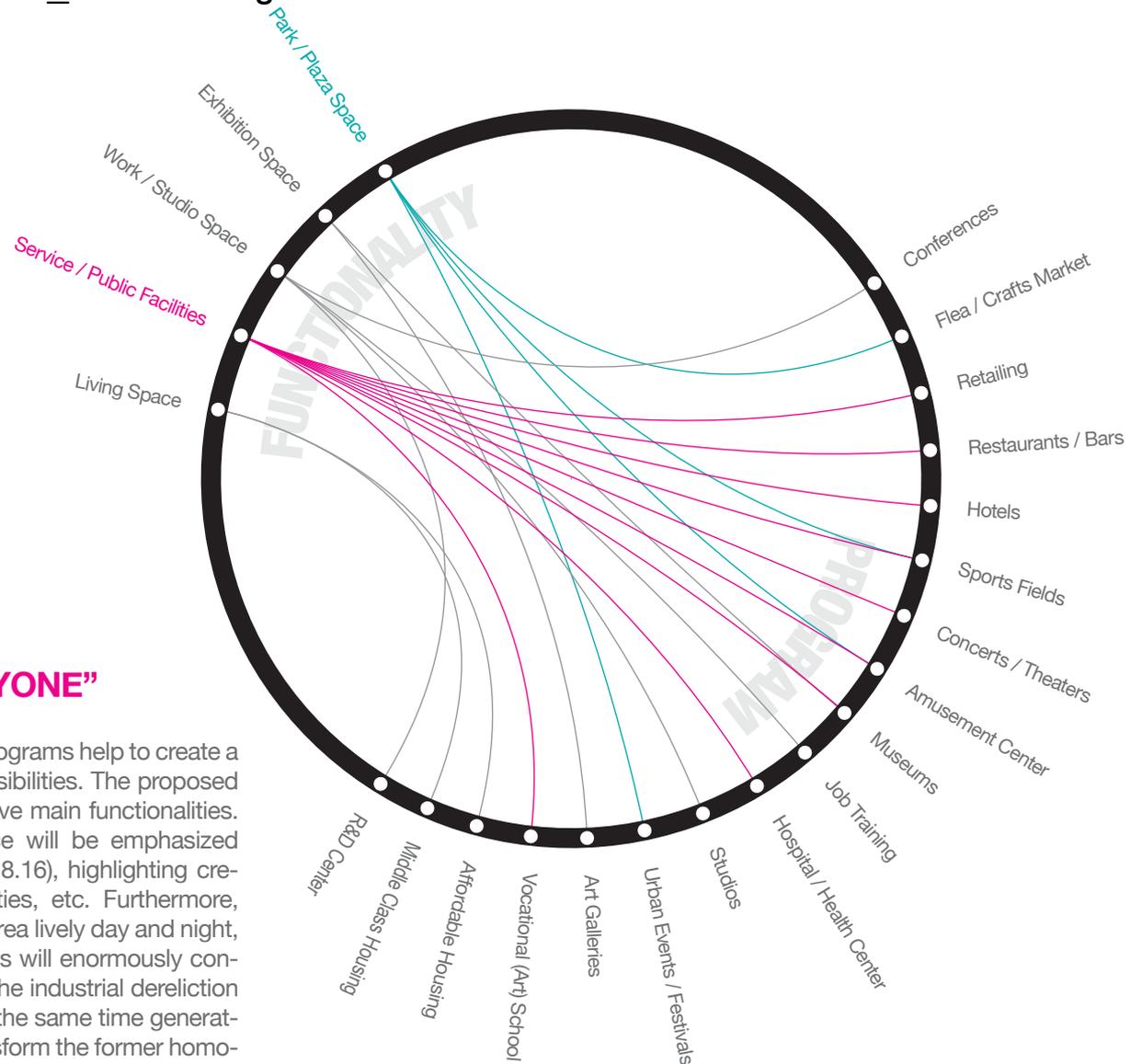


Figure 8.15: Section (made by author)

VIII.4 STRATEGIES_ Social Strategies



MIXED PROGRAMS_ "EVERYTHING TO EVERYONE"

As one of the key principles, mixed programs help to create a dynamic urban area with a lot of possibilities. The proposed new programs are categorized into five main functionalities. And the importance of public space will be emphasized throughout the whole project (figure 8.16), highlighting creation of parks, services, civic facilities, etc. Furthermore, multi-functionality helps to keep the area lively day and night, both in workdays and weekends. This will enormously contribute to the economic transition of the industrial dereliction by introducing new industries and at the same time generating new types of jobs, effectively transform the former homogeneous and obsolete industrial complex.

Figure 8.16: Relation between functionality and programs (made by author)

FOCUSED GROUPS_ DISADVANTAGED & ENTREPRENEURS

What is presented in this graph (figure 8.17) is the relation between programs and corresponding users. The main objective of the project is to make effort to meet the emerging demands from general public while realizing the redevelopment of industrial dereliction. Therefore the focus will be put on those disadvantaged people emerged during the transition process in this post-industrial area, including local residents, young entrepreneurs, migrants seeking for a new life chance, and former steel workers of whom are mostly unemployed. Therefore, the idea is to create a dynamic and affordable platform for those disadvantaged groups being integrated and able to position themselves into the newly created urban centrality. And mixed-use strategy also contributes to the promotion of social cohesion and diversity by providing various job opportunities, delivering equal life chance for different groups of people, which is urgently needed in this gradually gentrified city.

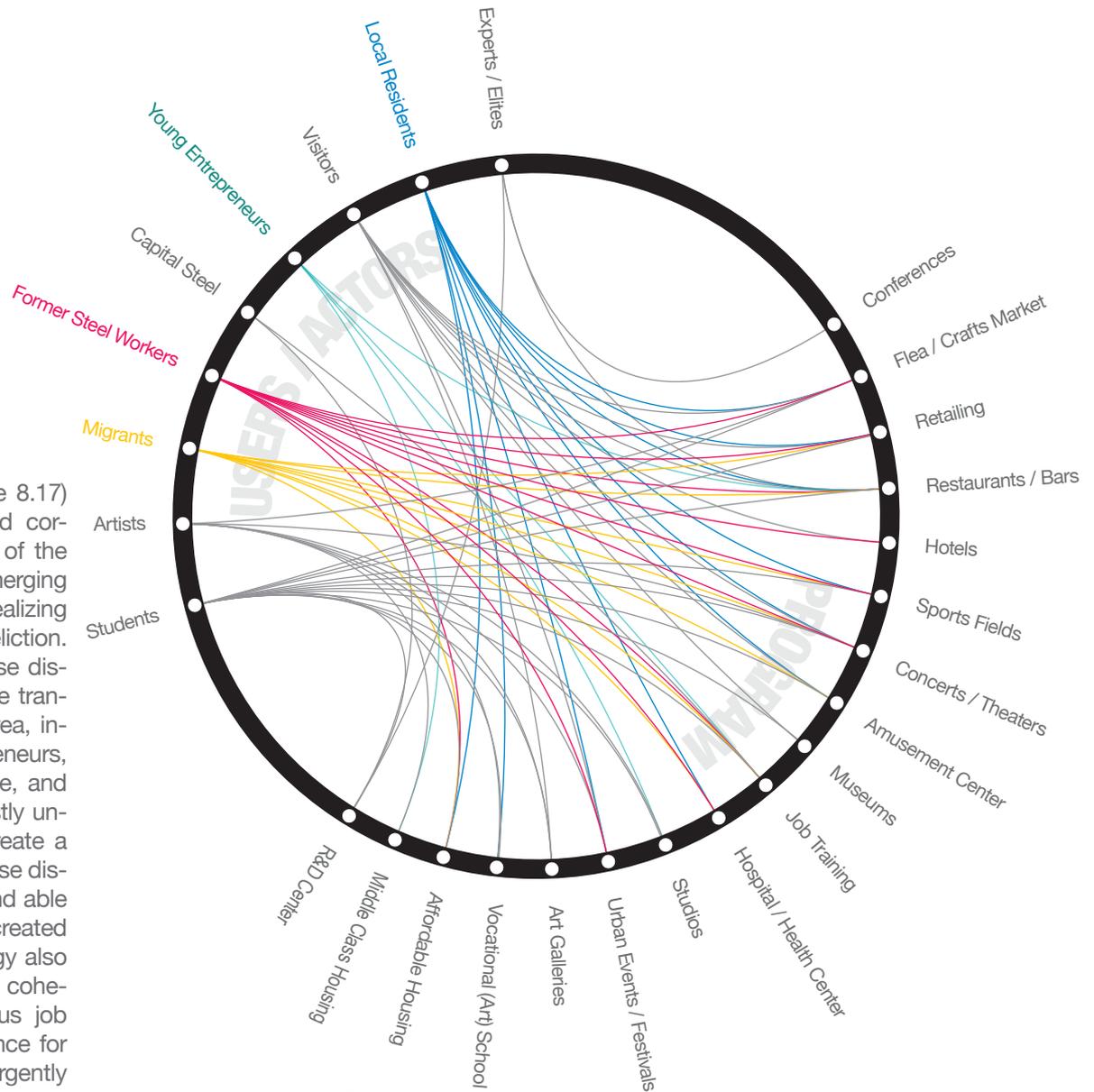
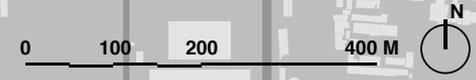


Figure 8.17: Relation between users and programs (made by author)

VIII.5 MASTER PLAN



LEGEND

- Existing building
- Added building
- Greenery / park
- Surrounding building
- Existing national railway
- Former industrial railway



Figure 8.18: Master plan of super cultural quarter (made by author)

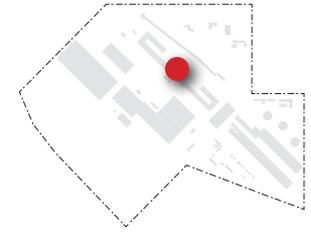
LOCATION_ FIVE KEY INTERVENTIONS



Figure 8.19: Location of key interventions (made by author)

Based on all the strategies introduced before, the master plan of the super cultural quarter is made (figure 8.18). And there are mainly five key interventions which have been further elaborated in this plan, while rest will develop flexibly as long as aligning principles and strategies set for the whole area, being able to change and adapt to uncertainties.

VIII.6 KEY INTERVENTIONS_ Museum Quarter



01. MUSEUM QUARTER_ COLLECTIVE OF EXHIBITION SPACE

The Museum Quarter is the core program, which is a connected complex of old factory buildings and alien new elements. Along with the central plaza, it will be initiated in the first phase. Being the flagship project for the redevelopment of the whole area, it is expected to promote attraction of this place and carry the intention of culture-oriented regeneration.

Rather than demolishing and rebuilding new architectural statements, the old elongated factory buildings (figure 8.20) have shown amazing potential for public and exhibition activities. Therefore, by adding new attachments to these buildings (figure 8.22), three connected complexes are unified and connected as a whole but with different elements to each other. They will house various museums and galleries that target on different groups of people (figure 8.23).



Figure 8.20: Aerial view of current building (image source: Google Map)

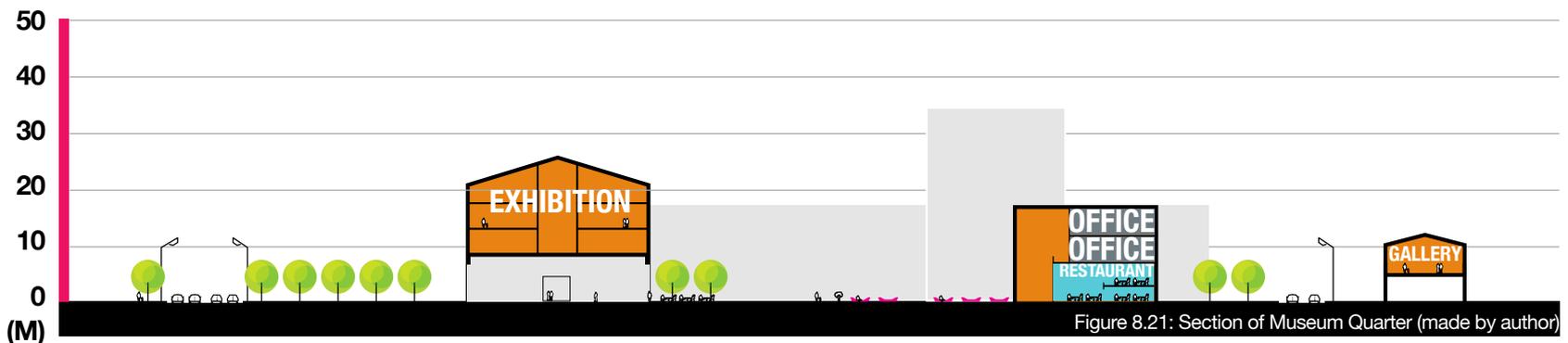




Figure 8.22: Current and new buildings (made by author)

ENCLOSED PUBLIC SPACE

The courtyard in the middle of the complex creates an enclosed public open space that people can come to lounge and relax on large sculptural chaises that differ now and then (figure 8.24)

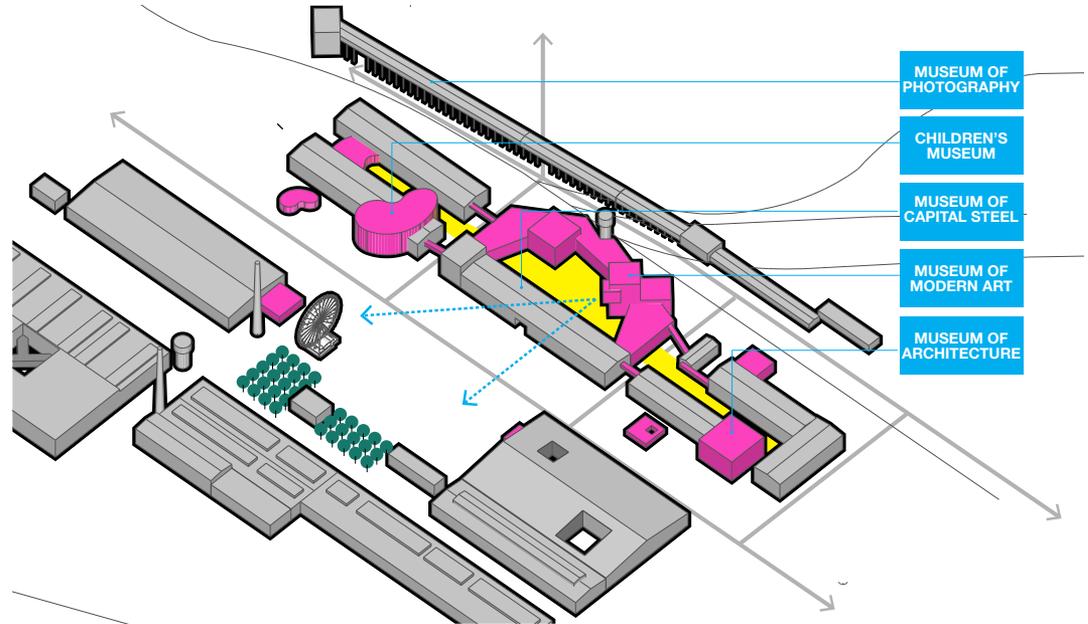
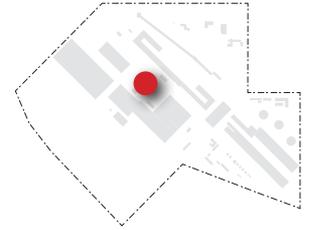


Figure 8.23: Programs in Museum Quarter and visual lines (made by author)



Figure 8.24: Reference images for the courtyard (photo by author)

VIII.6 KEY INTERVENTIONS_ Central Plaza



02. CENTRAL PLAZA_ URBAN "CARNIVAL"

As the key feature of the proposal and an early action item, the central plaza at the heart of the area contains a variety of programs and design elements including a giant Ferris wheel, water feature, cafes. Collaborated with the creative city and the art school, it will provide meeting place for students and visitors, housing various urban events related to innovation and recreation, fostering creativity and exchange of ideas throughout all season. This will be a civic center in the heart of the new centrality

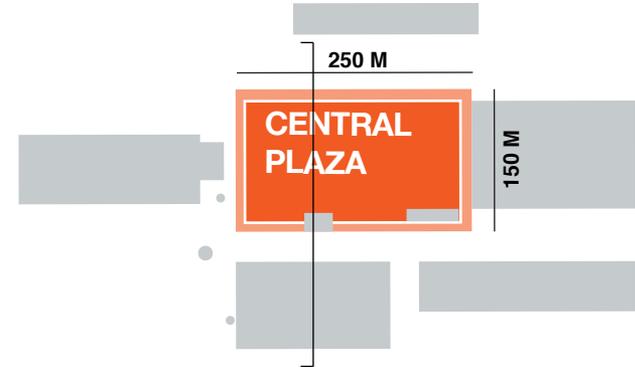


Figure 8.27: Site plan of central plaza (made by author)



Figure 8.25: Gorky park, Moscow



Figure 8.26: Strip Roof Pavilion

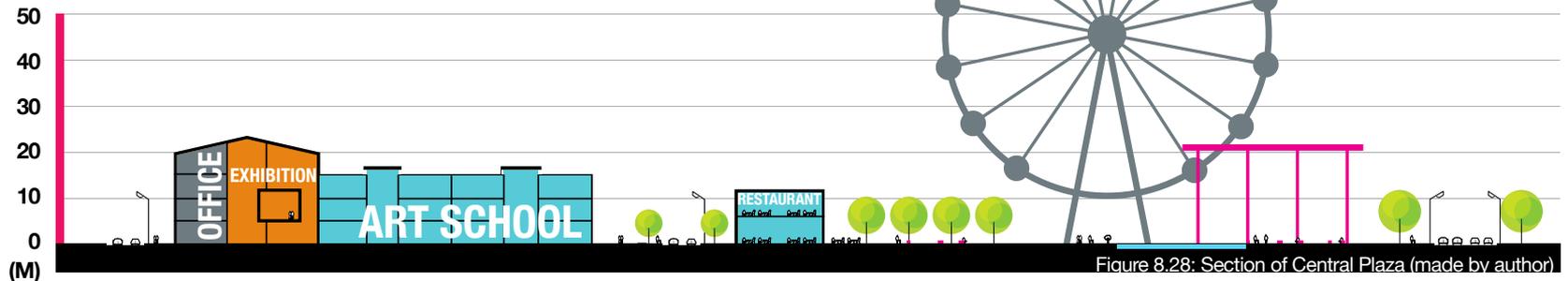


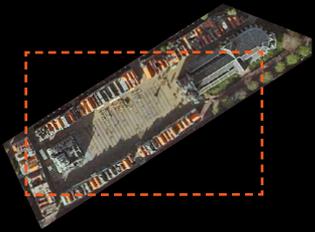
Figure 8.28: Section of Central Plaza (made by author)



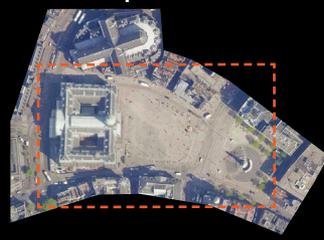
URBAN "CARNIVAL"

Figure 8.29: Bustling urban life in Central Plaza (made by author)

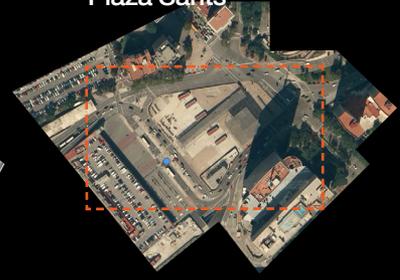
DELFT
New Church Plaza



AMSTERDAM
Dam Square



BARCELONA
Plaza Sants



MONTAGE SCALE COMPARISON

VIII.6 KEY INTERVENTIONS_ Creative City

03. CREATIVE CITY_ INCUBATOR FOR CREATIVITY & ART



Figure 8.30: Aerial view of current building (image source: Google Map)

The concept of Creative City is introduced into the largest factory building (figure 8.30) within the area which was former steel-making plant. Small part of the building is demolished to give space to the new road. The idea is to preserve the steel truss and create a city-like environment within the building by inserting separate boxes as individual studios or galleries and even homes of the creative class who have just started their career (figure 8.32). Two passages across the building, breaking the enclosed facade for public access. Besides, related incentives will be provided by government or the land owner to encourage entrepreneurship, creating a preferable air that is attractive to all class for investment.

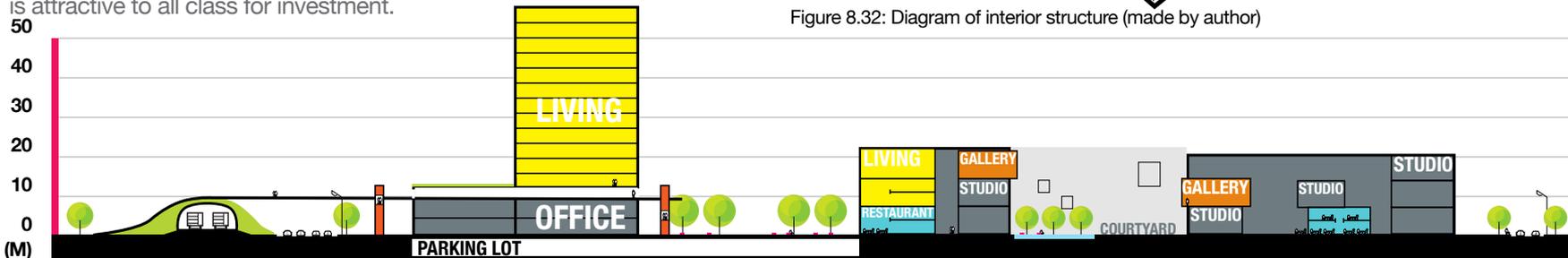


Figure 8.31: Section of Creative City (made by author)

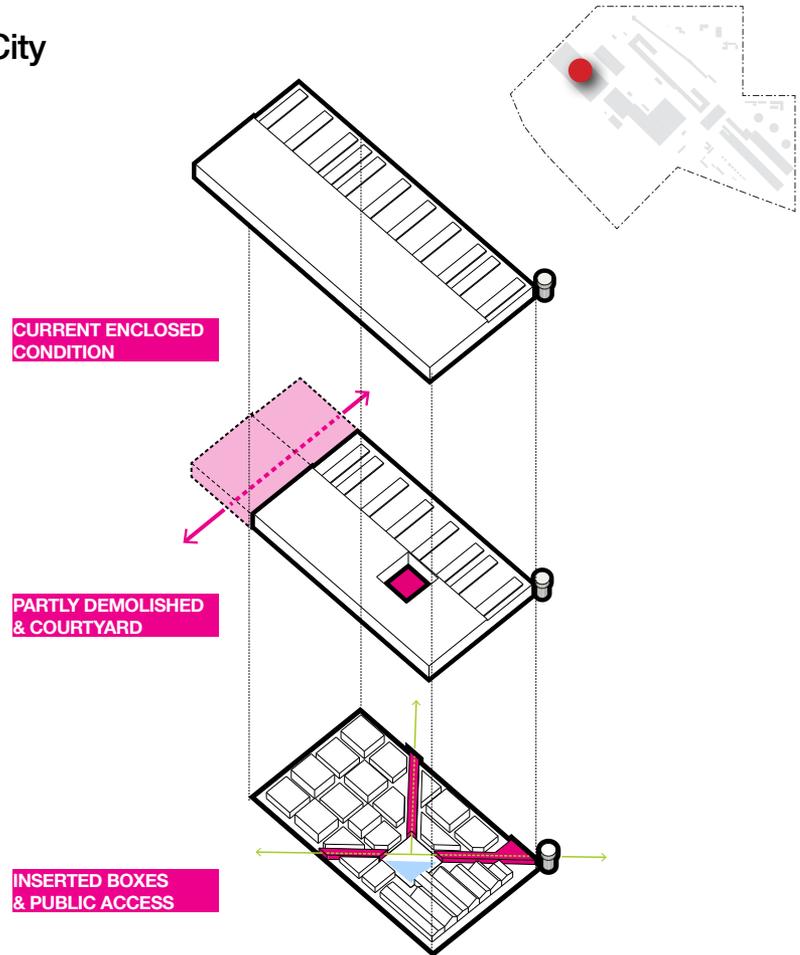


Figure 8.32: Diagram of interior structure (made by author)



Figure 8.33: Interior of Creative City (made by author)



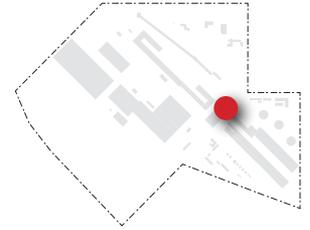
Figure 8.34: Reference of NDSM Werf
(image source: NDSM website)



Figure 8.35: Reference of RDM Campus
(image source: Energienieuws)

CREATIVE CITY_ INCUBATOR FOR CREATIVE CLUSTER & ENTREPRENEURSHIP

VIII.6 KEY INTERVENTIONS_ Market Hall



04. MARKET HALL_ EXCHANGE OF CREATIVITY

The market place is converted from enclosed factory building (figure 8.36). With proposed passages through the building and added new architectural elements that recall memory about the old structure (figure 8.37), this place will be a bustling market place, facilitating daily needs of local residents, also providing place for exchanging creative handiworks by artists. And the former industrial railway in front of the market hall will be partly maintained and semi-paved to transform into pedestrian and sidewalks, integrated into the whole public space network of this area (figure 8.38).



Figure 8.36: Current condition (photo by author)

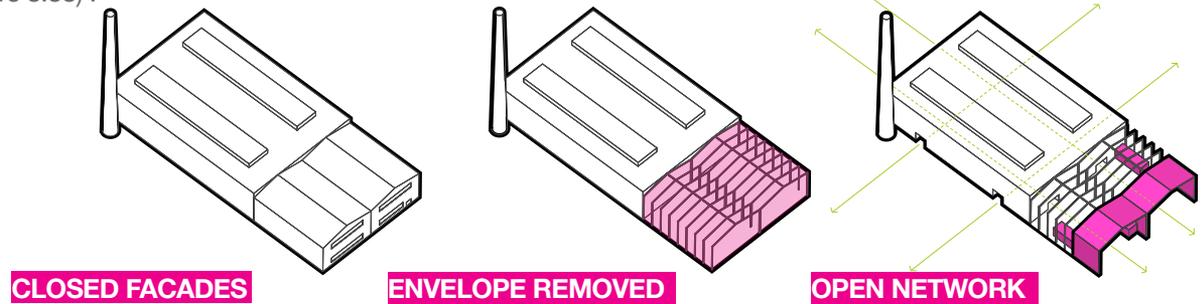


Figure 8.37: Transformation process of market hall (made by author)

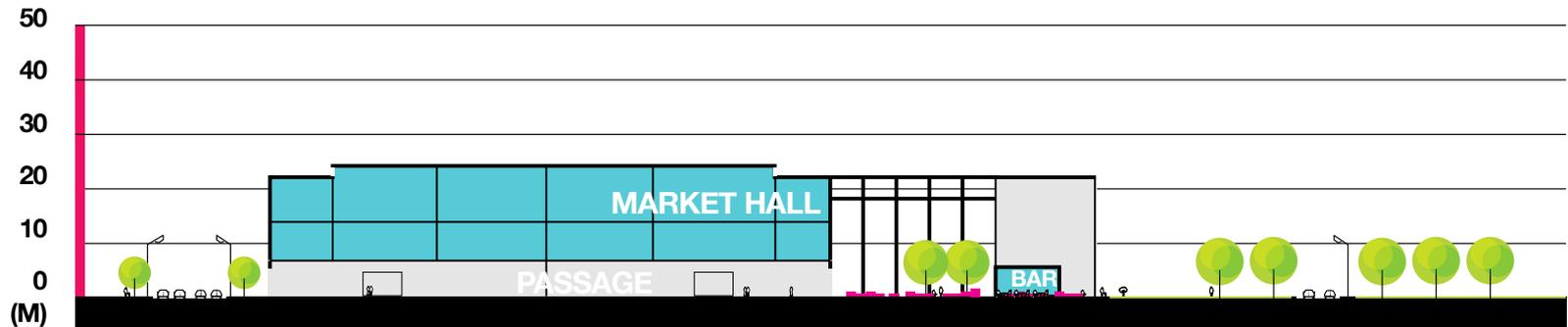


Figure 8.38: Section of Market Hall (made by author)



Figure 8.39: Lively urban atmosphere outside market hall (made by author)



Figure 8.40: Museum Park, Tangshan
(image source: Urbanus)

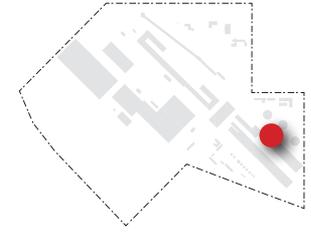


Figure 8.41: Lafayette College
(image source: Archdaily)



Figure 8.42: Harold Park Tramshed
(image source: MIRVAC)

VIII.6 KEY INTERVENTIONS_ Gasometer Community



05. GASOMETER COMMUNITY_ NEW HOUSING TYPOLOGY

In the planning for the development sequence for the site (figure 7.2), the second phase of the brownfield redevelopment will include demolition and relocating those residents of urban villages. There are three gasometers within the site, and they are next to an urban village that is in obsolete physical condition. So in the proposal, two of the gasometers will be transformed into social housing programs, and connected by a large base. The idea is to make use of the walled physical condition of gasometer to preserve and assimilate the former sense of community in urban villages, the residents will share their own enclosed communal space for community activities, while still being integrated to soundings through the large base which will be mainly for retailing.

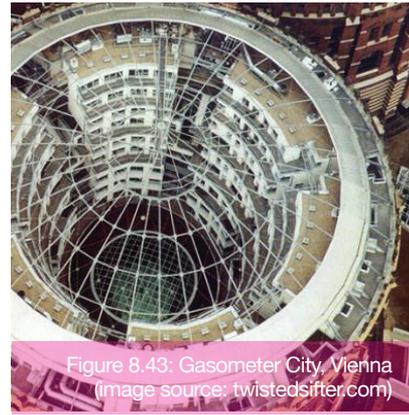


Figure 8.43: Gasometer City, Vienna
(image source: twistedstiffer.com)



Figure 8.44: Proposal for silos re-use
(image source: Archdaily)



Figure 8.45: Section of Gasometer Community (made by author)

VIII.7 FLEXIBILITY OF MASTER PLAN

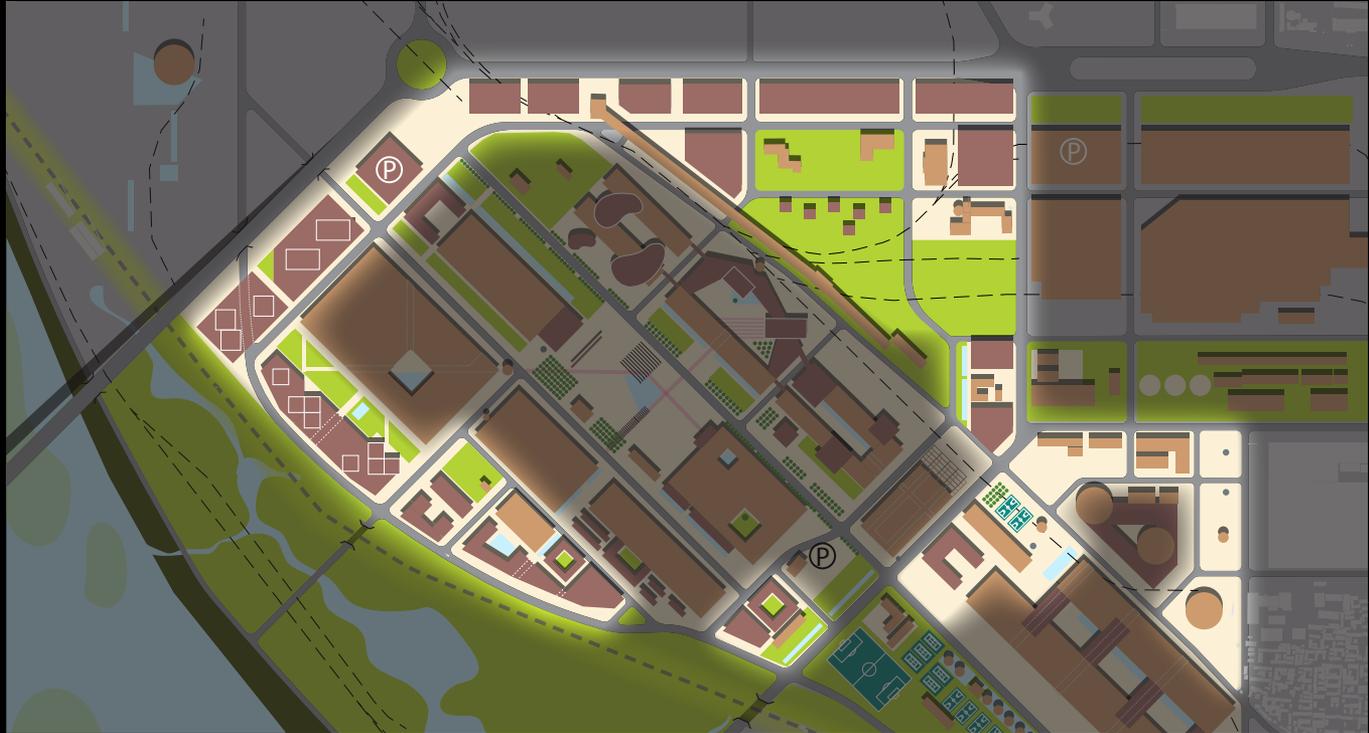


Figure 8.46: Flexible areas in master plan (made by author)



Figure 8.47: Flexible program mixing (made by author)

MINIMUM & MAXIMUM OF PROGRAM PROPORTION

Except the five key intervention locations, rest areas in the master plan can be flexible changed (figure 8.46). The range of the program mixing proportion is proposed as shown in the program bar (figure 8.47). In this way, the degree of mix will be kept reasonable, guaranteeing the minimum proportion of programs to meet public and social needs as well as maximum proportion for profit-driven developments. The strategy of flexibility also contributes to positive gentrification.

VIII.8 PHASING PLAN

PHASING PLAN_ LONG-TERM REGENERATION PROCESS

PHASE 1_

The first phase starts from the development of alignment buildings along the extended Chang'an Avenue and the museum quarter as well as the central plaza. These developments will attract large amount of visitors. At the same time, the gasometer community will undergo transformation into social housing for relocating low-income groups since two urban villages will be demolished in the second phase. In the south, large amount of land will be remediated, during the land recovery period, informal and contemporary uses like urban farming or fairs in some of the vacant factory buildings are encouraged, and this kind of activities help to incorporate local disadvantaged groups incorporated into the regeneration process. In addition, a new metro line is proposed to improve the accessibility by public transport.

PHASE 2_

The second phase focuses on development along the national railway, and a railway tunnel will be constructed to partly cover the rail tracks with turf slope. In the south, part of the remediated land and former greenery will develop into large area of parks that incorporate with the river ecological zone. Moreover, a mono-rail is proposed for tourism purpose, connected to the metro system.

PHASE 3_

In the last phase, there will be re-programming in leftover areas and part of the green areas for flexible development. Since too many green is not necessary and it cost money to maintain.

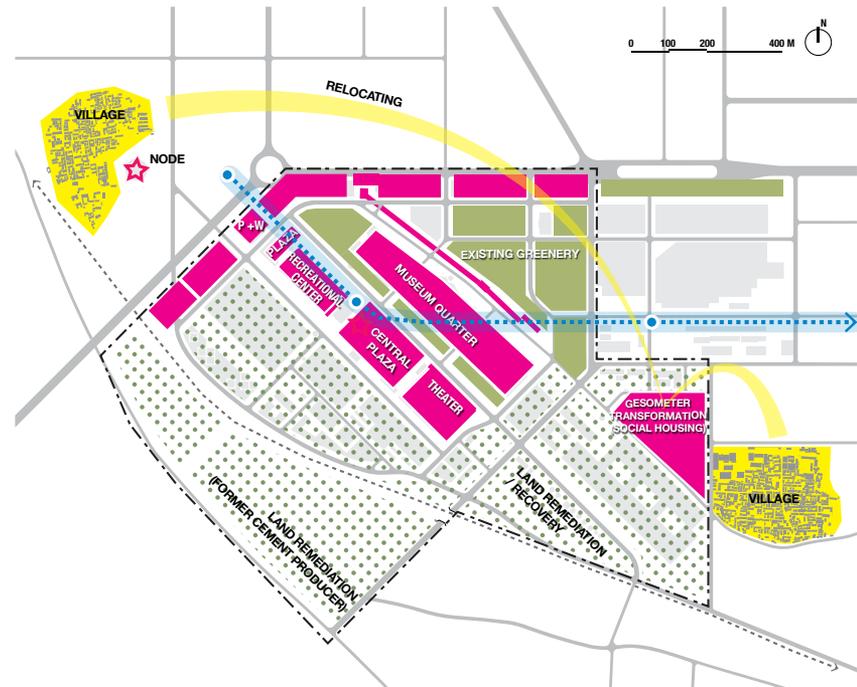


Figure 8.48: Developments in Phase 1 (made by author)

PHASE 1_ (2013 - 2018)

- Development along the Chang'an Extension
- Museum Quarter & Central Plaza
- Gasometer City_ Affordable Housing
- Land Remediation
- New Metro Line



Figure 8.49: Developments in Phase 2 (made by author)



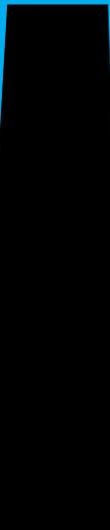
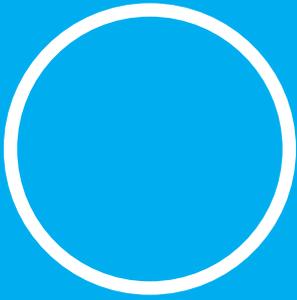
Figure 8.50: Developments in Phase 3 (made by author)

PHASE 2_
(2018 - 2020)

- Development along the Railway
- Railway tunnel
- Creative City
- Market Hall
- Housing Programs & Parks
- Mono-rail & multi-modal transport hub

PHASE 3_
(2020 - 2025)

- Development of leftover areas
- Greenery will be partly converted to new constructions



01_
INTRODUCTION



02_
THEORY RESEARCH



03_
BEIJING CONTEXT



04_
SITE CONTEXT

PART 09_ CONCLUSION

9.1 Answering Research Questions

9.2 Synthesis

9.3 Reflection



05_
URGENT NEEDS

06_
SCALE 'L'

07_
SCALE 'M'

08_
SCALE 'S'

09_
CONCLUSION

IX.1 ANSWERING RESEARCH QUESTIONS

In the beginning, the main problem that I stated is the conflict between the typical development (profit-driven) mode in China and the real urgent needs from the general public when it comes to an urban regeneration project in a post-industrial site with heritage value. In China, the values of urban heritage (industrial heritage included) have been neglected, and at the same time the term “urban regeneration” has been often interpreted as two extremes—demolition or gentrification, without concerning the public needs, especially in Beijing which is the convergence of culture, politics and huge urban pressure from extremely rapid urbanization process. Therefore, it is important to develop strategies to solve this problem as I stated in the main research question:

“What alternative strategies should be used to redevelop derelict industrial areas in Beijing with value of urban heritage (industrial heritage), balancing the emerging needs from both the city and local residents to tackle with socio-economic decline and to realize spatial and economic transition?”

In order to help me to find answer to the main research question, four sub-questions have been raised in the beginning, and trying to answer the questions have been functioning as my objectives through the whole thesis process. In the end, through comprehensive research as well as designing process, I have finally developed answers.

1. What is the value of industrial heritage in historical and cultural aspects?

The value of industrial heritage lies in its profound influence to the city. The physical remains of a historical industrial site can represent the evolutionary history of corresponding technologies. It is often interpreted as a continuously changing process, mirroring the development of city in history. Besides,

industrial heritage is not only physical remains, but also memory load of working-class. For instance, as the largest and oldest steel producer, Capital Steel has been becoming part of local culture. And the social significance lies in its association with identity. It is fundamental in helping individuals and communities define who they are both to themselves and to outsiders, forming sense of belonging.

2. What are the emerging needs from the local residents when there is socio-economic decline left by industrial dereliction?

In general, industrial dereliction may result in complexity of negative issues including pollution, unemployment, physical decay and economic decline, etc. However, it also can be interpreted as potentials that provide available land for re-development. Therefore, the industrial dereliction is in need of economic as well as physical transition to meet local needs. First of all, physical renewal is needed to provide residents more public space with high quality, and the connectivity should be improved to guarantee the accessibility and attractiveness. Secondly, new industries should be introduced to generate new jobs, and it is fundamental for those unemployed to get trained to be competent again. Last but not least, local residents should benefit from the redevelopment instead of being forced to move out because of the gentrification caused by the regeneration process gradually.

3. What are the emerging needs from the city of Beijing during the period of industrial decline?

Through literature research and analysis on the city of Beijing, the emerging needs are summarized in mainly three aspects. Firstly, it has been a urgent need for developing city periphery to disperse the increasing pressure in the inner city area. And the city has been expanding dramatically in the past few

years, but city structure is still mono-centric, and most of the important facilities are concentrated in the central area, therefore, new centralities should be created to deal with this issue. Secondly, as the capital city of China, Beijing is one of the three largest business clusters (Shanghai and Shenzhen) housing national and international companies, however, the vacancy rate of office space in Beijing is the lowest among these three. This indicates that there is still need for more office space. Lastly, the industrial decline does not slow the speed of migrants flowing into Beijing due to the emerging service sectors. With limitless increasing housing price, people in average income can no longer afford a home, general public is suffering from high living cost while disparity between rich and poor has been becoming sever. Therefore, the public calls for affordable housing as well as social equality in this gradually gentrified city.

4. What kind of transition is needed based on the existing spatial and architectural condition?

In spatial and architectural point of view, the abandoned factory buildings have spacious interior that can be adaptively transformed for functional re-programing. In addition, the unique spatial characteristics give the place great potential for developing culture-related industries and recreational amenities. Since the area itself has been becoming a cultural entity that integrated into local context, and the innovative transformation has diverse possibilities, stimulating creativity, and reusing the old buildings while following the logic of existing fabrics that recalls the memory the history of the place. Therefore, the site is in need of spatial transition for reversing the image of declining dereliction, at the same time calls for economic transition to displace the contaminated steel industry with emerging tertiary economy.

Overall, back to the main research question, collective of strategies has been delivered to tackle with specific problems in different scales. In the city scale, the strategy is to develop the former steel complex into a new urban centrality in the west periphery identified as the CRD to promote the transition from heavy industry with contaminants into a high-profile and culture-related attraction for city branding and tourism purpose. Three overlapping layers are proposed to give the orientation for the whole planning and design process. The city strategy is implemented in the site by developing three core locations as sub-centralities supporting three layers of the big urban centrality (figure 9.1).

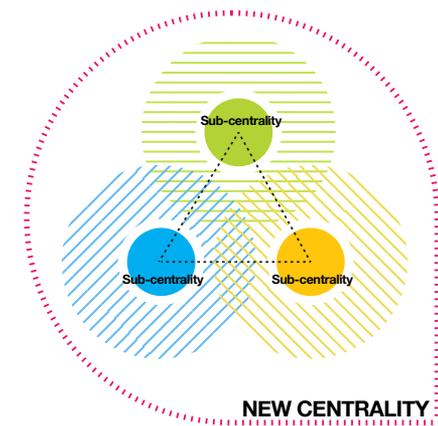


Figure 9.1: Centrality & sub-centralities (made by author)

Social issues are also emphasized throughout the project. The dominant principle is to avoid negative effects caused by gentrification, therefore the concept of “positive gentrification” is introduced to guarantee everyone’s access to urban benefits from the regeneration process. In this way, social equality will be achieved in this socio-economically declined area.

IX.2 SYNTHESIS

UNIQUENESS OF THE PROJECT

The uniqueness of the project lies in not only the condition of the site itself but also its complex urban context of the capital city of Beijing.

1. STRATEGIC LOCATION

First of all, its strategic location in western periphery where the urban area is suffering from socio-economic decline due to the loss of the former pillar industry (Capital Steel) determines the importance for re-developing the site. What has been left by post-industrialism is a complexity of issues concerning economic and social aspects. Large amount of former steel workers lost their jobs, becoming disadvantaged groups gradually excluded from the main stream the society.

The urban development in Beijing is uneven, which can be presented in the distribution of main centralities and public amenities. Currently, there is disparity of capital resource between northeast and southwest part of Beijing, namely, the development in the west is much more stagnant than the east and north. This situation is caused by various factors. For instance, development in the west periphery has been bounded by the mountainous region, where accessibility and connectivity are less developed than other parts of the city.

Chang'an is also an essential element in this project, which attracts vast attention due to the importance the city axis. The project site is currently located in the ending point of Chang'an Avenue, between fifth and sixth ring roads. As cultural and political axis of the capital city, there are centralities with various functionalities emerging along the artery, and the urban images are constantly changing from the old city center westwards to the site. With rapid urban expansion, government decided to extend the artery further to the west to improve connectivity of new towns emerging outside sixth ring roads. Therefore, urban continuity along the city axis and the image as the gateway entering city from the west have become the key issues that need to be highlighted.

Environmental concern was the main reason that have forced the Capital Steel to halt and move. The Yongding River beside the site has been designated as the ecological corridor in western periphery of Beijing, therefore, re-development of the industrial dereliction should carry certain degree of ecological intention, making the new development integrated into the ecological corridor.

2. COMPLEX CONTEXT OF BEIJING

As the capital city of China, Beijing has experienced rapid urbanization process in last decades. The population has been increasing while the city is keeping sprawling, large area of land like the project site available for re-programing in the urban area is a rare opportunity.

Due to the shortage of the land, large amount of developments are profit-driven, aiming at yielding fast economic returns. Both developer and the government share interests from this kind of land speculation, while the general public is suffering from the increasing living costs and housing price in Beijing. Therefore, the real aspirations from the public have been ignored for a long time, which leads to the emergence of negative effects on society from this kind of development, like disparity between rich and poor, social inequality, etc.

The designated function of Beijing has been defined as the cultural and politic center of China, therefore, the cultural identity is essential for the city for branding new urban image during urban regeneration and revitalization process. However, as I mentioned before, a lot of developments are

profit-driven, neglecting the real value of the place, this has caused irreparable damage to the urban identity and the emergence of so-called “dormitory city”.

3. LOCAL CONDITION

The current condition of the site also contributes to the uniqueness of the project. As the largest steel producer in Beijing with a 93-year history, the site has been growing with the city together and integrated into the local urban context. So what is left here by post-industrialism is not only about industrial heritage but also part of urban heritage. And currently it is an agglomeration of incredible amount of super-sized factory buildings available for adaptive re-use and re-programing, which is unprecedented in Beijing.

IX.2 SYNTHESIS

GENERALIZATION OF THE PROJECT APPROACH

As a typical urban regeneration project of post-industrial site, it also has several features that is common in any other similar projects in different localities.

1. POSITIVE GENTRIFICATION

Gentrification cannot be completely avoid during an urban regeneration project, and it often leads to a number of negative effects including social displacement. The typical example is the Beijing 798 Art Zone, which was initiated spontaneously by a group of artists, but nowadays has experienced radical gentrification that forced those initiators displaced by high-class groups of people. Another example is the Xintiandi in Shanghai, the whole area was regenerated as a completely fake traditional building complex, infilled with luxury retailing, clubs and top-class apartments. It only targets on certain groups of people instead of a healthy mixing of social groups.

In my project, the approach is to highlight the concept of positive gentrification and guarantee everyone's equal access to the urban benefits brought by the urban regeneration process. And a collective of strategies has been developed, including flexibility in program mixing, social inclusion and mixing, long-term process instead of one-off planning, zoning, etc. In this way, the physical condition and infrastructure will be improved while the aspirations from the general public being fully taken into consideration.

2. CULTURE-LED REGENERATION

Culture-led regeneration is depicted as a high-profile of regeneration where culture is the catalyst for development. This approach is common in those post-industrial area re-de-

velopment projects in China. The principles and strategies that have been developed in this project for re-developing an industrial dereliction also can be referred to other different localities, as long as the issues concern preservation of industrial heritage, ecological renewal of brownfield, spatial and economic transition, adaptive re-use of factory buildings, etc.

3. NEW CENTRALITY & SOCIAL EQUALITY

One of the objectives of the project is the creation of new centrality. This is realized by creation of sub-centralities with different functionalities supporting the emergence of larger urban centrality which will attract new investments to activate the transition of the industrial dereliction, both in spatial and economic point of view. At the same time, creation of the new centrality multi-purposed, bringing new possibilities to the society. For instance, it helps to generate new jobs around innovation as well as service sector, in this way, disadvantaged groups including unemployed or low-educated people will be able to be inclusive and integrated into the new development. Furthermore, the urbanites attracted by the new centrality will bring healthier social mixing into the local communities, as long as they share equal access to urban benefits. Therefore social equality also can be referred to other project as the main principle of urban regeneration.

To sum up, what I'm trying to work out from this project is a collective of strategies concerning revitalizing a dilapidated industrial site in a Chinese city which is confronted with challenges in different aspects, and also emphasize the balance between preservation of industrial heritage and transition in physical and economic point of views to meet emerging public demands. Therefore, the result can be referred to other re-development of post-industrial areas.

IX.3 REFLECTION

The Relationship Between Research & Design_

The research process of the thesis mainly consists of three parts. In the beginning, the literature research made me capable of defining the topic and identifying the problems. With two case studies, I got to understand the different approaches on the issue of post-industrial site re-development concerning European and Chinese contexts. Furthermore, I gained necessary knowledge through the research on the city development history of Beijing, which helps me to think in a larger city context, and recognize the emerging needs from the city during rapid urbanization process. And this was followed by the analysis on the chosen site, so I could identify the problems and potentials in the site. This comprehensive research is premise of starting design process.

Besides, once I have started to design, I always needed to do related research when necessary, to find theoretical underpinning to my design approaches. Therefore, research and design co-existed through all my thesis process.

Theme of the Studio & My Subject_

The theme of the studio that I chose is Urban Regeneration. It used to only focus on European Context, but this year I was informed that it is also possible to choose a project site outside Europe. Therefore, as a Chinese student, I would love to choose a Chinese site to do comparative study and research on the topic of redeveloping post-industrial land. The project location I chose is in Beijing, where I have spent five years studying and working. My topic is post-industrial land in transition which focuses on the re-development of a derelict industrial site left by Beijing Capital Steel. This is exactly an urban regeneration project on a brownfield land calls for renewal in economic, social, spatial and ecological aspects.

The Relationship between the Methodical Line of Approach of the Studio & My Methodology_

The method introduced in the studio is to do comprehensive literature research about urban regeneration precedents in European cities to have brief idea about this urban issue, and come up with strategies for a specific location based on the conclusion of theoretical research and analysis on the site. And my methodology is to put it into a larger context to analyze the urgencies in the city of which can be tackled in the project site. The conclusion from the theoretical research and site analysis is summarized as the key definitions of the project. Firstly, culture-led regeneration approach comes from the expectation of government that to develop a CRD (Cultural & Recreational District) in the west city periphery, and also comes from its existing cultural identity and spatial potential for developing culture-related industries. Secondly, the objective is to create a new centrality to activate local economy as well as contributes to the de-centralization of capitals and resources in inner city area. Last but not least, negative social effects may be caused by the regeneration process, for instance, social displacement. To really target on reversing the socio-economic decline the post-industrial area, emphasis should be put on the creation of social equality contributed by positive gentrification, in order to revitalize the industrial site in spatial and social aspects. These three themes have been acting as guiding lines throughout the whole research and design process.

BIBLIOGRAPHY

- ATKINSON, R. 2004. *The Evidence On The Impact Of Gentrification: New Lessons For The Urban Renaissance?* European Journal of Housing Policy
- BARTON, B. 2005. *The Creation of Centrality*. Annals of the Association of American Geographers
- BRUGGEMAN, F & LAVERGNE, F. 2010. *European Restructuring Toolbox, PROGRESS Program (2007-2013) of the European Commission*
- CAMERON, S. 2003. *Gentrification, Housing Redifferentiation & Urban Regeneration: 'Going for Growth' in Newcastle Upon Tyne*. In: Urban Studies 40(12)
- CAMPBELL, S. *Green Cities, Growing Cities, Just Cities? Urban Planning & Contradictions of Sustainable Development*. Journal of the American Planning Association
- CAO, X. 2008. *Beijing City Planning and Construction Review Journal, Vol. 2*, Beijing, Beijing Municipal Institute of City Planning & Design
- CHEN, Y. 2007. *Regeneration and Sustainable Development in China's Transformation*
- CLARK, E. 2005. *The Order & Simplicity of Gentrification- A Political Challenge*, Routledge, London
- COSSONS, N. 2007. *Industrial Archaeology: The Challenge of Evidence, the Antiquaries Journal, Vol. 87*. Cambridge, Cambridge University Press
- COUCH, C. FRASER, C. & PERCY, S. 2003. *Urban Regeneration in Europe*. Oxford, Blackwell Science Ltd
- EBERT, W. 2008. *Industrial Heritage: Premises and Practices for the 21st Century (Workshop Notes)*, Industrial Archaeology Program at Michigan Technological University
- FOX, K. 2001. *Marketing and Urban Regeneration in Germany*. London, South Bank University
- FRIEDMAN, J. 2005. *China's Urban Transition*. Minneapolis, MN: University of Minnesota Press
- GRIER, G & GRIER, E. 1978. *Urban Displacement: A Reconnaissance*. US Department of Housing & Urban Development (HUD). Washington DC
- GU, X. 2012. *The Art of Re-industrialization in Shanghai, Cultural Unbound, Vol. 4*, Linköping University Electronic Press
- HALL, P. 2000. *Creative Cities and Economic Development, Urban Studies 37(4)*.
- HOLLANDER, J & KIRKWOOD, N & GOLD, J. 2010. *Principles of Brownfield Regeneration: Cleanup, Design, and Reuse of Derelict Land*, Washington, Island Press
- KEANE, M. 2008. *The capital complex: Beijing's new creative clusters*. In Kong, Lily & O'Connor, Justin (Eds.) *Creative Economies, Creative Cities: Asia-European Perspectives*. New York

LIU, B. & LI, K. 2006. *Study on Preservation and Re-usage of Industrial Heritage Resource in Capital Steel Industrial District*

LOURES, L. & BURLEY, J. 2012. *Post-industrial Land Transformation- An Approach to Sociocultural Aspects as Catalyst for Urban Redevelopment. Advances in Spatial Planning*, Jaroslav Burian (Eds.), ISBN: 978-953-51-0377-6

MARCUSE, P. 1986. *Abandonment, Gentrification & Displacement: the Linkage in New York City*. In: SMITH & WILLIAMS (Eds.). *Gentrification of the City*. Allen & Unwin. London

MCCARTHY, L.. 2001. *Brownfield Redevelopment: A Resource Guide for Toledo and Other Ohio Governments, Developers, and Communities*

MITCHELL, D. 2003. *The Right to the City: Social Justice & the Fight for Public Space*. Guilford. New York

RODERS, A. 2007. *Re-architecture: Lifespan Rehabilitation of Built Heritage*. Eindhoven, Technische Universiteit

SCHOON, N. 2001. *The Chosen City*. Spon Press. London

SHAY, A. 2012. *The Contemporary International Building Exhibition (IBA): Innovative Regeneration Strategies in Germany*, Massacuserres Institute of Technology

STOUTEN, P. 2010. *Changing Context in Urban Regeneration: 30 Years of Modernization in Rotterdam*

TANG, Y. & KUNZMANN, K. R. 2008. *The Evolution of Spatial Planning for Beijing*

UITERMARK, J & J. W. DUUVENDAK. 2008. Civilizing the City: Populism & Revanchist Urbanism in Rotterdam. In: *Urban Studies* 45(7)

VISSER, R. 2004. *Space of Disappearance; Media and Commercial Cultural*. Cambridge. MA: Harvard University Press

VOLLMER, M & BERKE, W. 2006. *Bilderbuch Ruhrgebiet. Sonderausgabe: Faszination Industriekultur - Neues Leben in alten Buden / Industrial Heritage: New Life in Old Buildings*, The Ruhr, Klartext-Verlagsges

XU, Y. & CAO, Y. 2012. *Cultural Industrialization: A Value Realizing Path for Industrial Heritage*. China, University of Jinan

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