



REGENERATION FOR YOUNG GENERATION

PROMOTE LIVABILITY FOR YOUNG GRADUATES THROUGH URBAN REGENERATION IN SHENZHEN

Colophon

P5 report graduation thesis

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Figure 0.1: Picture of urban view in Shenzhen
Source: Google Images

Abstract

Young graduates are facing housing difficulties in the Chinese metropolis. The Chinese government published new policies to encourage regeneration of the land stock resources as affordable rental housing targeting young people. This study aims to explore how urban regeneration can benefit young graduates' livability. Specifically, it investigates the possibility to regenerate urban villages as affordable rental housing provisions. In this context, affordable rental housing tackles spatial inequities and should be located in opportunity-rich areas.

To test the assumption that urban villages can be regenerated as affordable rental housing, spatial analysis on multiple scales was conducted and four well-located urban villages were chosen as cases to study. The villages were evaluated based on the indicators from young graduates' demand analysis, and different governance models were analyzed to explore the possibilities for regeneration. The results shows that the conflict between the private interest in densification and public interest in open space is the main challenge for regeneration, and not only the spatial intervention but also the operation mechanism need to be proposed.

These results suggest that encouraging spontaneous regeneration by combining top-down and bottom-up strategies may be an approach for future regeneration as well as a chance to legalize the informal village settlement. This requires not only the efforts of the village collective but also the support and active participation of the public sector. By improving the public space network and doing some experiments on strategic projects, the regeneration strategy can be tested and applied to other well-located urban villages in Shenzhen, providing more affordable housing options for young graduates.

Keywords:

urban regeneration, livability, affordable housing, urban village, young graduates, Shenzhen

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Figure 0.2: Cartoon of lay-flat generation
Source: <https://www.scmp.com/economy/china-economy/article/3153362/what-lying-flat-and-why-are-chinese-officials-standing-it>

Motivation

Young people in China are facing severe housing difficulties, and the sky-high property prices have become obstacles for young people to move to big cities. In Shenzhen, the city with the most intensive urbanization and economic growth in China, housing prices are rapidly rising along with GDP.

Many young people are becoming the 'lay-flat' generation. Even if they are highly educated, graduate from prestigious universities, when they move to big cities, they easily find that the convenience of the urban resources cannot offset the pressure brought by sky-high property prices. No matter how hard they try, the salary growth cannot keep up with the rising housing prices. Without support from family, it is impossible to own a house in the big cities. Frustrated with the metropolitan life, they chose to 'lay-flat'.

However, the development of the city cannot be achieved without the contribution of the young generation, and the fruits of urban development should not be shared by only a few citizens. Young people also have the right to share in the resources and opportunities brought by economic prosperity. Therefore, how to improve the livability of young people and ease the housing pressure in big cities has become the motivation of this thesis.

01 PROBLEM FIELD

Intro of Shenzhen

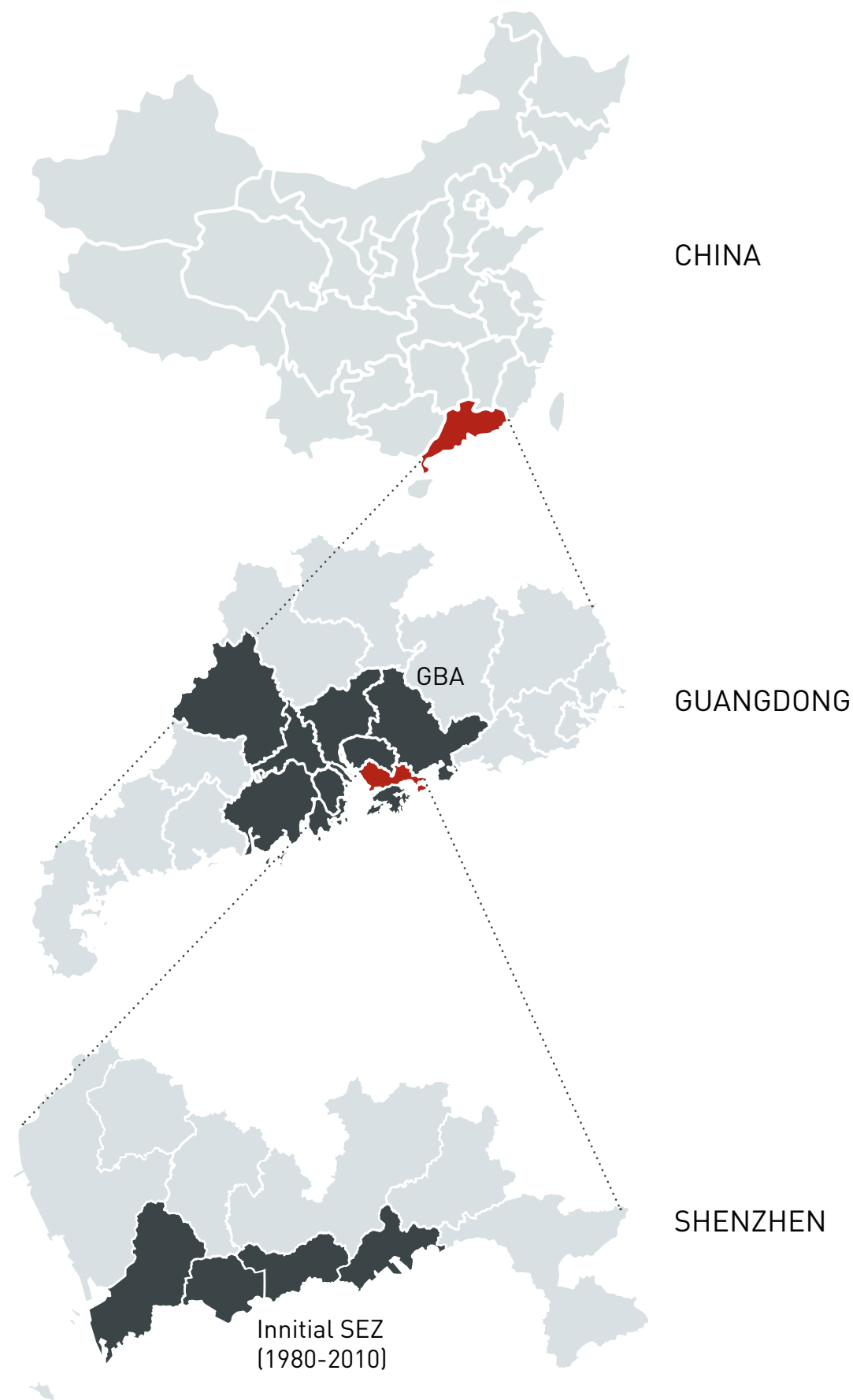


Figure 1.1: Mapping the location of Shenzhen (Made by author)

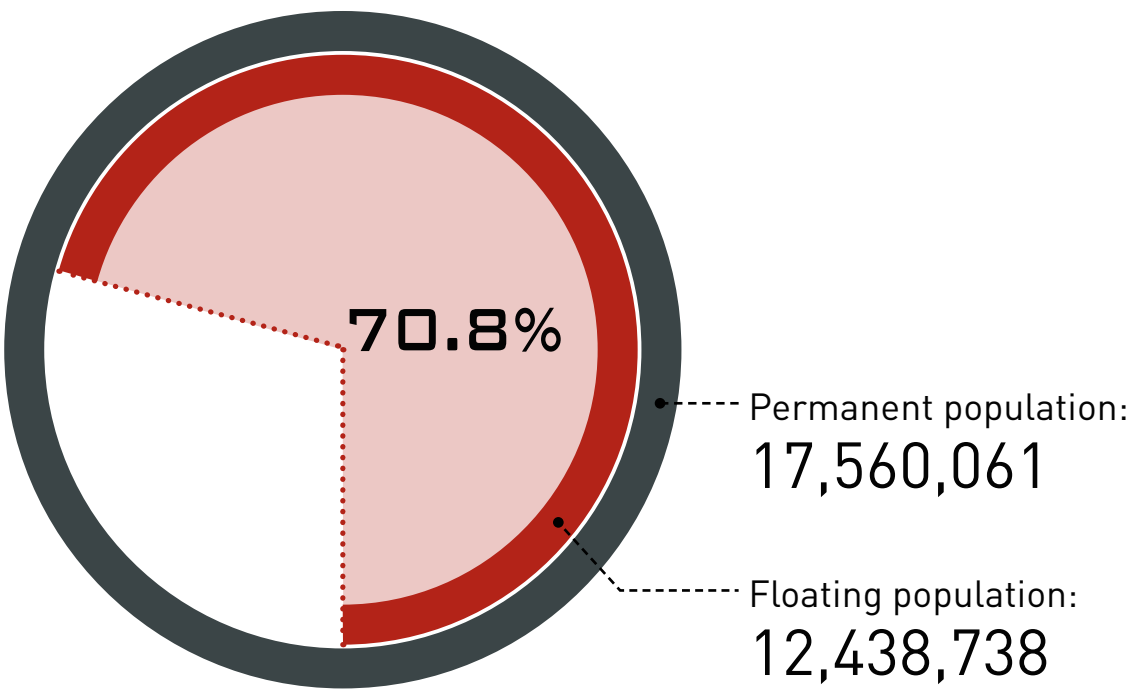


Figure 1.2: Demographic structure in Shenzhen (Made by author)
Reference: Shenzhen seventh national census bulletin, 2021

Located in southern China, adjacent to Hong Kong, Shenzhen is one of the largest cities in China and an important part of the Guangdong-Hong Kong-Macao Greater Bay Area.

Shenzhen was established in 1979, becoming the first Special Economic Zone (SEZ) of China in 1980. Due to the reform and opening-up policy, Shenzhen witnessed a rapid development, transforming from a small village into a metropolis. ("Shenzhen," 2022) With the process of the rapid urbanization, a large number of migrants flocked to Shenzhen to seek opportunities, making Shenzhen an immigration city. According to the Shenzhen seventh national census bulletin, more than 70 percent of the permanent population are floating population without a household registration in Shenzhen municipality. (Statistics Bureau of Shenzhen Municipality, 2021a, 2021b)

Young Graduates

The changes of professionals' degree in Shenzhen

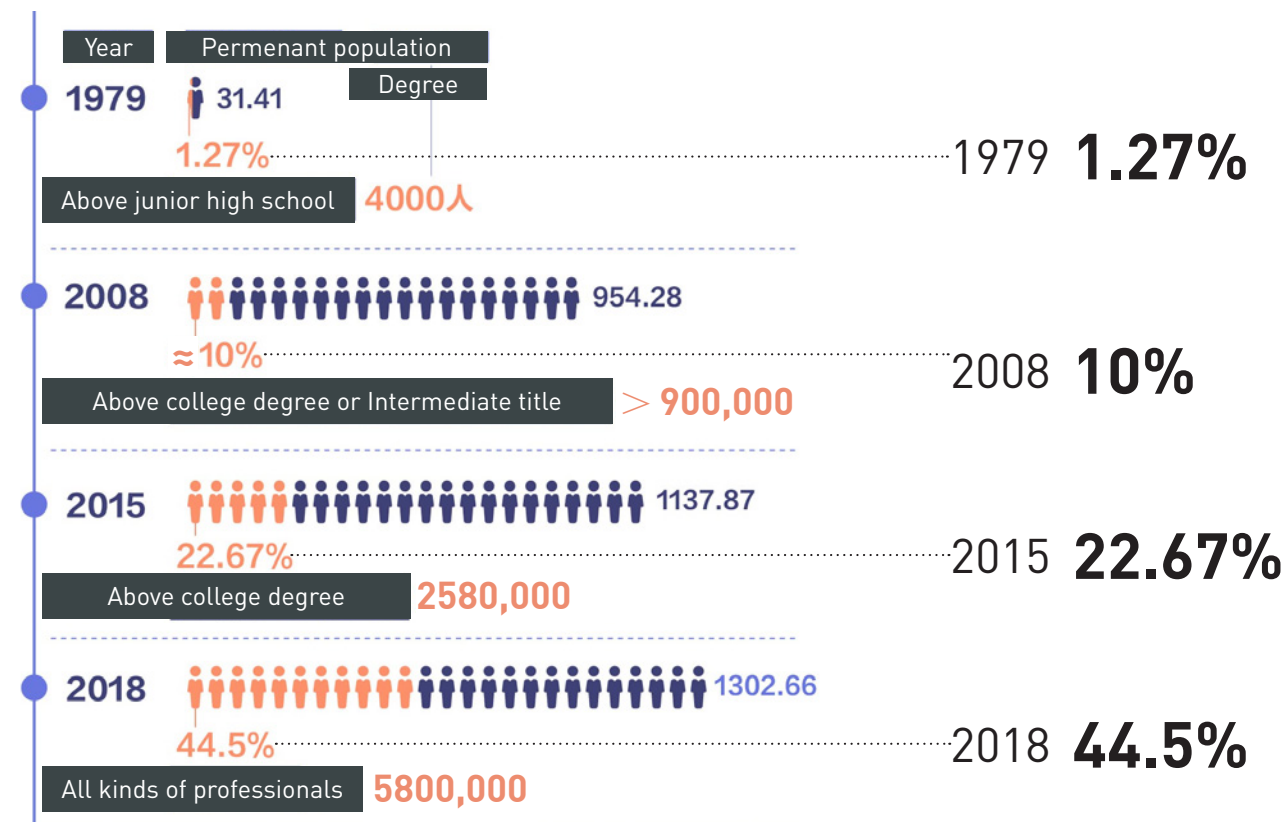


Figure 1.3: Demographic change in Shenzhen (Modified by author)
Source: https://m.21jingji.com/article/20200826/herald/8c62b38c7feb9c425a39494e3f348bfb_zaker.html

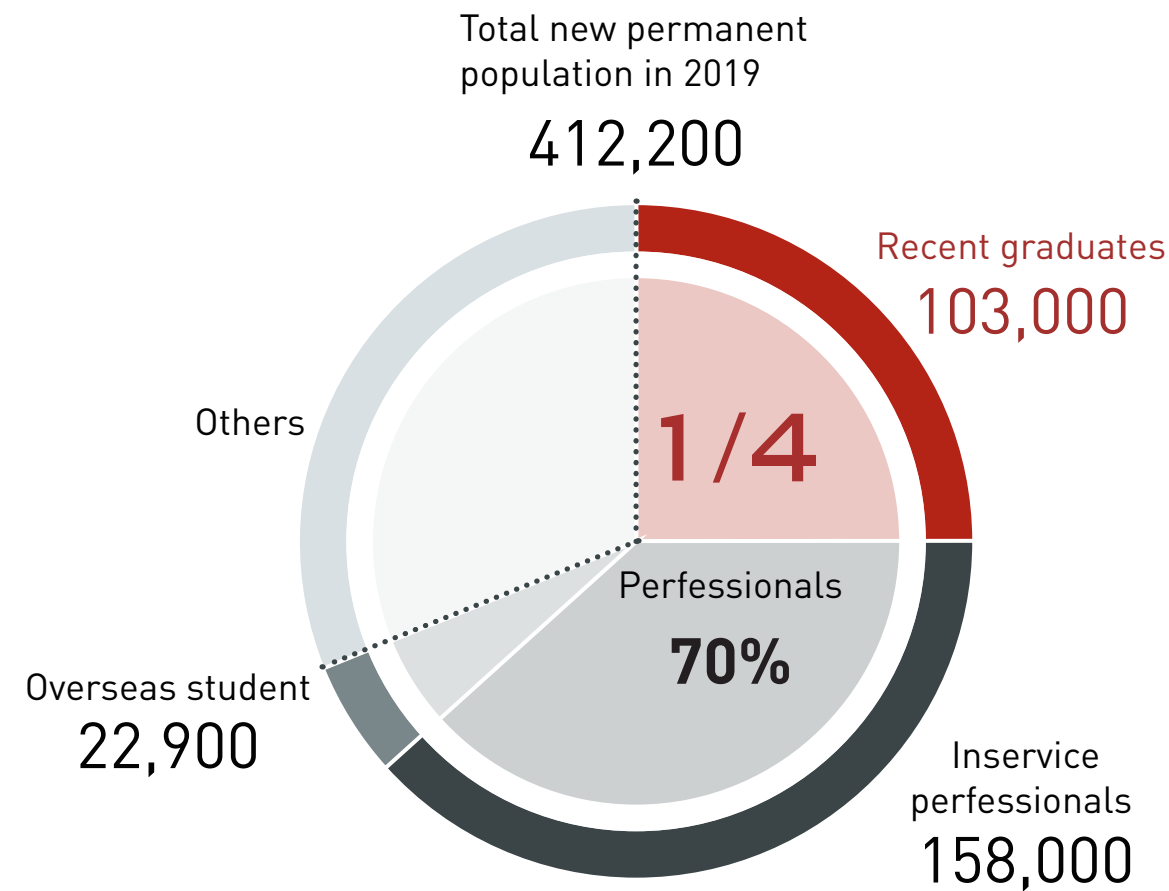
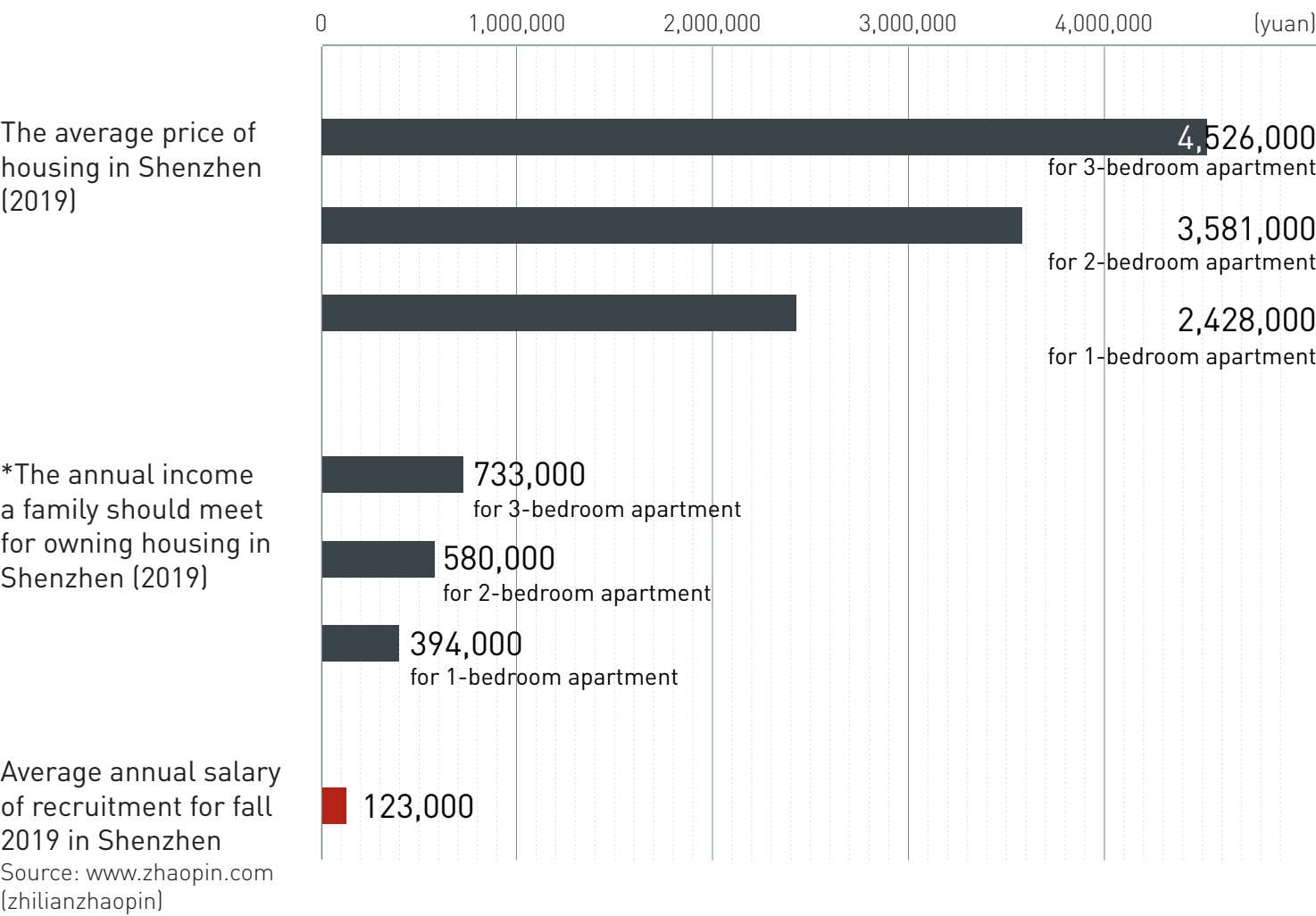


Figure 1.4: Demographic structure of new immigrants to Shenzhen in 2019 (Made by author)
Reference: Shenzhen 2019 National Economic and Social Development Statistical Bulletin, 2020

In recent years, Shenzhen has been undergoing industrial transformation and upgrading, along with demographic changes in migrant workers. More and more young professionals are coming to Shenzhen. According to the Shenzhen 2019 National Economic and Social Development Statistical Bulletin, among the 400,000 new permanent residents in the city, around 70% are professionals with higher education, and more than 100,000 are young recent graduates, which means that one out of every four new immigrants to Shenzhen is a young graduate. (Statistics Bureau of Shenzhen Municipality, 2020)

Housing Difficulties



*Calculation of the required household annual income: based on the average housing price in 2019, consider the loan for 25 years with the rate (4.9%), and assume that 30% of household income goes on monthly payments.

Figure 1.5: Comparison of housing prices, required annual income, and annual salary in 2019 (Made by author)
Reference: Report of Young People Residential Consumption Trend in China, 2020

Homeownership

However, these new citizens and young people are facing housing difficulties. They cannot afford to buy their own house as the housing price is sky-high in Shenzhen. According to the Report of Young People Residential Consumption Trend in China 2020, the average price of a one-bedroom apartment in Shenzhen was over 2 million yuan in 2019, which requires an annual income of nearly 400,000 yuan for a family to afford the monthly mortgage. (DTCJ & Lianjia, 2020) However, the average salary of recruitment for fall 2019 in Shenzhen was around 10,276 per month, which was equal to 123,000 per year (Zhaopin, 2020), accounting only one third of the required annual income.

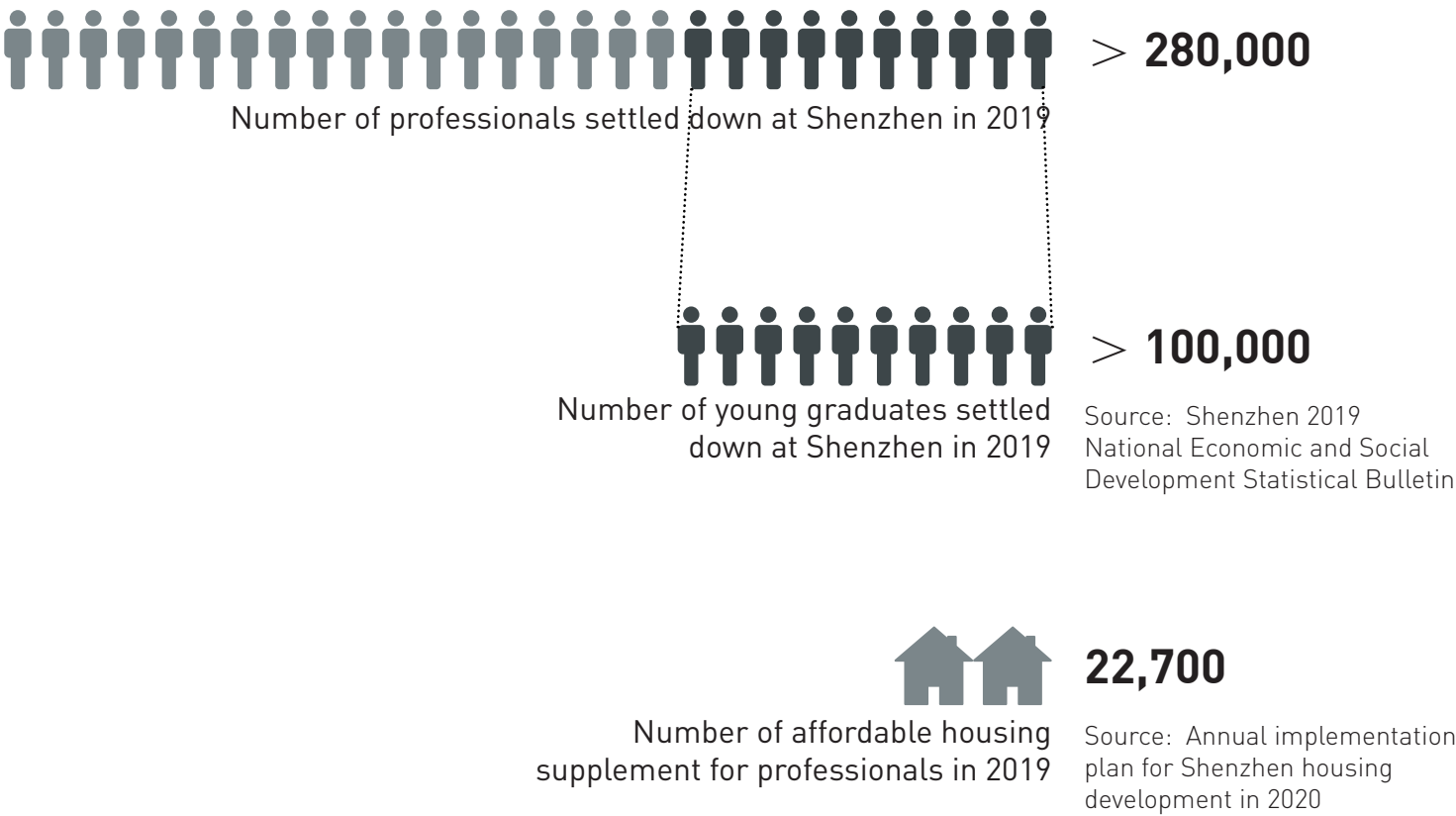


Figure 1.6: Gap between affordable housing demand and provision (Made by author)
Reference: mentioned on the above figure

Public housing

The allocation of the existing public rental housing for professionals (the Rencai Apartment) requires household registration in Shenzhen municipality, which is not practical for new citizens. Additionally, there is a huge gap between the demand and the provision of the public rental housing. More than 200,000 professionals came to Shenzhen (Statistics Bureau of Shenzhen Municipality, 2020), while only 22,700 Rencai apartments were added in 2019. (Housing and Construction Bureau of Shenzhen Municipality, 2020)

Housing Difficulties

Renting

Most of the young graduates have to rent a room for living. But this is not a pleasant choice for them. According to the Report of Rental Market in Graduation Season 2021, young graduates in Shenzhen were paying more than 40% of their income on the smallest average rental area for a shared room (12.3 m²) over the country. (Beike Research Institute, 2021)

Besides affordability problem, they are also facing other troubles, like the unregulated rental market, lack of security of tenure, unsatisfying living quality, and so on.

Take the case of the Danke Apartment as an example. Launched in 2015, Danke Apartment was an instant hit as it provided relatively affordable housing to young people in big cities. However, during the coronavirus pandemic, the rental market cooled, and the company could not afford to pay landlords the rent, which they had collected from tenants in advance, leading to the eviction of the tenants. (Wang, 2021)

Danke Apartment: The 'broken eggshell' that left young Chinese homeless

By Waiyee Yip and Fan Wang
BBC News

12 January

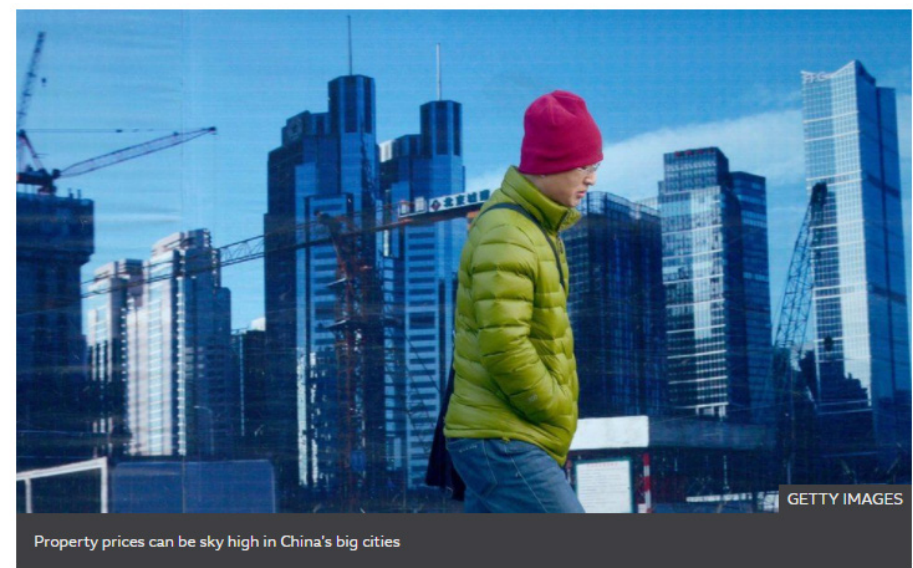


Figure 1.7: News screenshots of the Danke Apartment incident
Source: <https://www.bbc.com/news/world-asia-china-55571813>

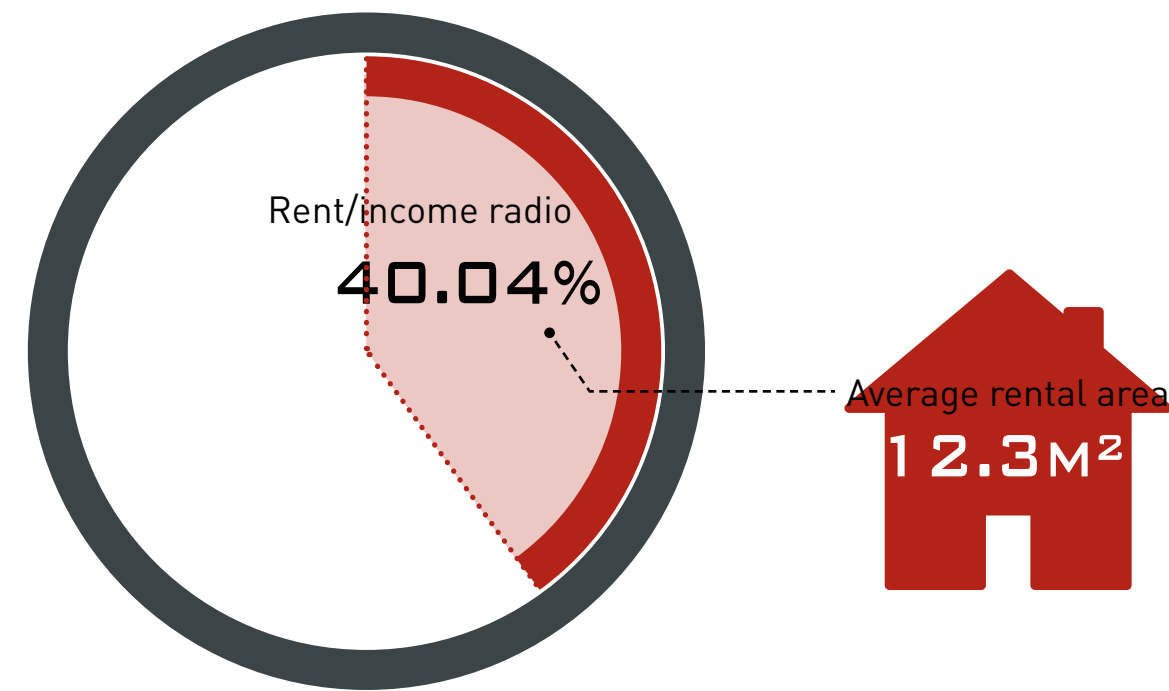


Figure 1.8: Average rent/income ratio in 2021 graduation season in Shenzhen (Made by author)
Reference: Report of Rental Market in Graduation Season, 2021

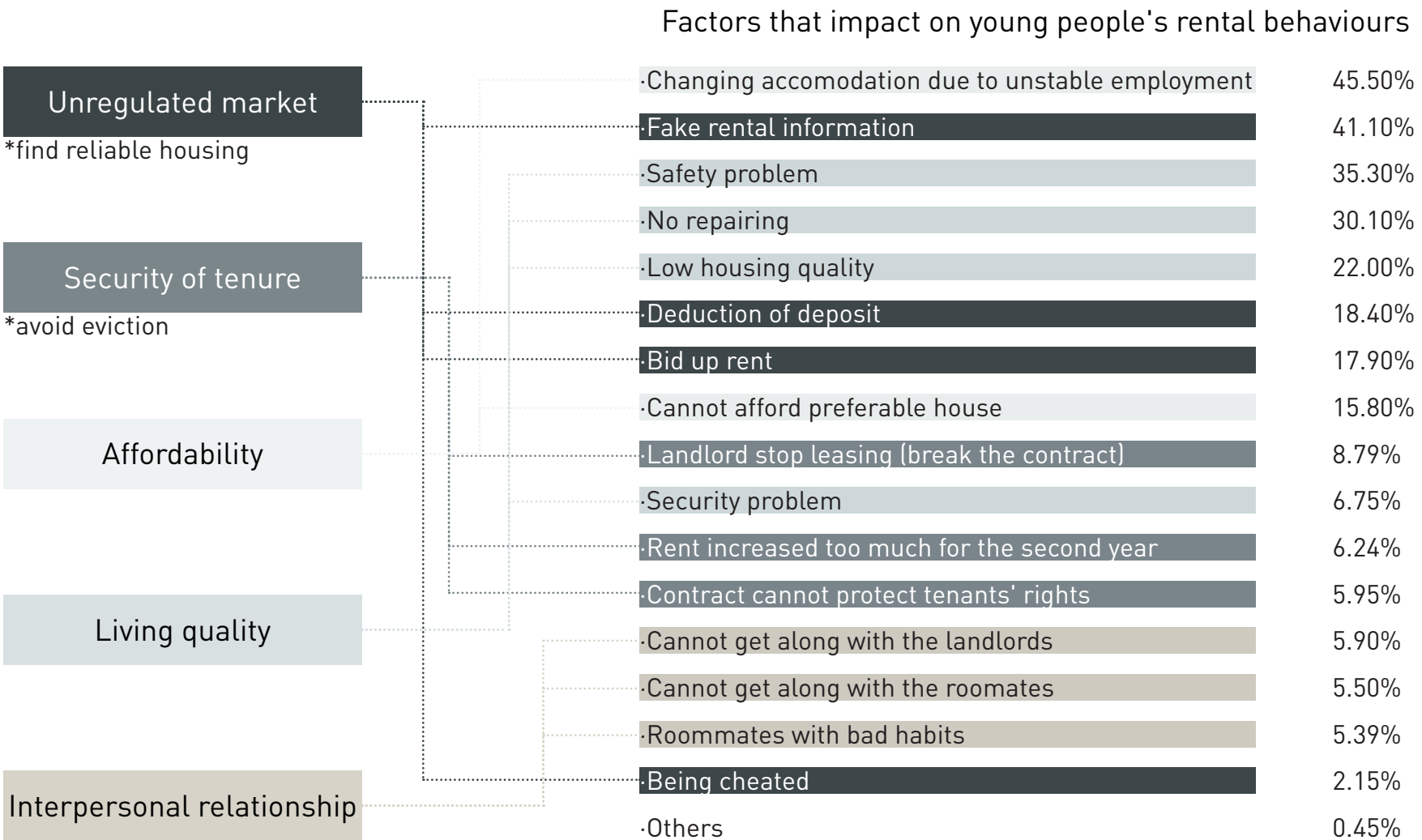


Figure 1.9: Factors that impact on young people's rental behaviours (Modified by author)
Source: Report of Young People Residential Consumption, 2021

Affordable rental housing plan targeting young people

In order to ease the pressure brought by the housing problems in metropolitan area, the national government came up with new policy to encourage multiple investors, especially the private sector, to make use of the land stock resources for the development of affordable rental housing targeting young people. (Xinhua, 2020; Zhao, 2021) Unlike most public housing built far from the city center, affordable rental housing "should be located in downtown areas with convenient transportation." Meanwhile, urban regeneration will be the main tool for the development (Zhao, 2021), because in the highly-built city center there is almost no left-over space for new construction, and urban regeneration will be an opportunity to transform the decaying urban area, making it adaptable to the new demands and functions.



Figure 1.10: News screenshots of the newly published policy
Source: http://english.www.gov.cn/news/pressbriefings/202107/09/content_WS60e7a382c6d0df57f98dca52.html

"A new guideline aimed at accelerating the **development of affordable rental housing** is poised to ease the pressure on **new urban residents and young people**,"

"The new guideline underscores the need for multiple investors and channels for the supply of affordable rental housing and encourages them to use the **stock of land resources**,"

"Different from cheap public rental housing provided for low-income tenants, which is mainly located on city outskirts, ...the housing should be **located in downtown areas with convenient transportation**."

——China Daily

Problem definition

Spatial problem

The existing spatial condition cannot meet young graduates' demands and expectation for both housing type and living environment. How to transform the existing urban environment to meet the demands of young people will be a major challenge in spatial design. Take urban village, one of the main bodies of urban regeneration, as an example, the high-density built environment and the incomplete infrastructure will bring many difficulties to the regeneration.



Figure 1.11 (upper): Dense urban village
Figure 1.12: Poor living quality inside urban village
Source: Google Images

Governance problem

The existing governance model cannot balance the interests among different stakeholders.

Urban regeneration projects usually face complicated property ownership, which gets many stakeholders involved and brings great challenge to governance. As different stakeholders have different interests and expectation, urban regeneration project has become a complicated and long process, which is often accompanied by capital turnover problems in the development and management process.

For example, the "One-Thousand Village" project, focusing on transforming the urban villages to long-term rental apartments, which was operated by Vanke, one of the most influential developers in China, has been announced that it is no longer feasible. One of the reasons for the failure was that the villagers (houseowners) were not cooperating, as they did not want to give their property to developers, and they believed that leasing their own property by themselves would be more profitable.

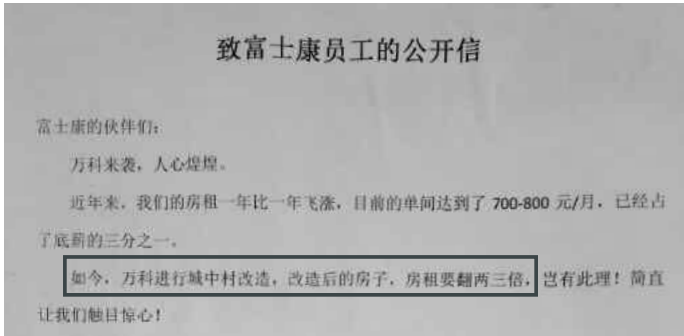
"我们不想给万科改造"
"We don't need the renewal from Vanke"



Figure 1.13: The "One-Thousand Village" project by Vanke
Source: <http://dsrmth.com/wealth/201811-195705.html>



Figure 1.14: Vulnerable group living in the urban villages
Source: Google Images



"Now, Vanke is going to renew the urban village, and the rent of the renewed housing will **double or triple.**"

——A letter to Foxconn employees

Figure 1.15: A letter to Foxconn employees
Source: <https://www.cls.cn/detail/248916>

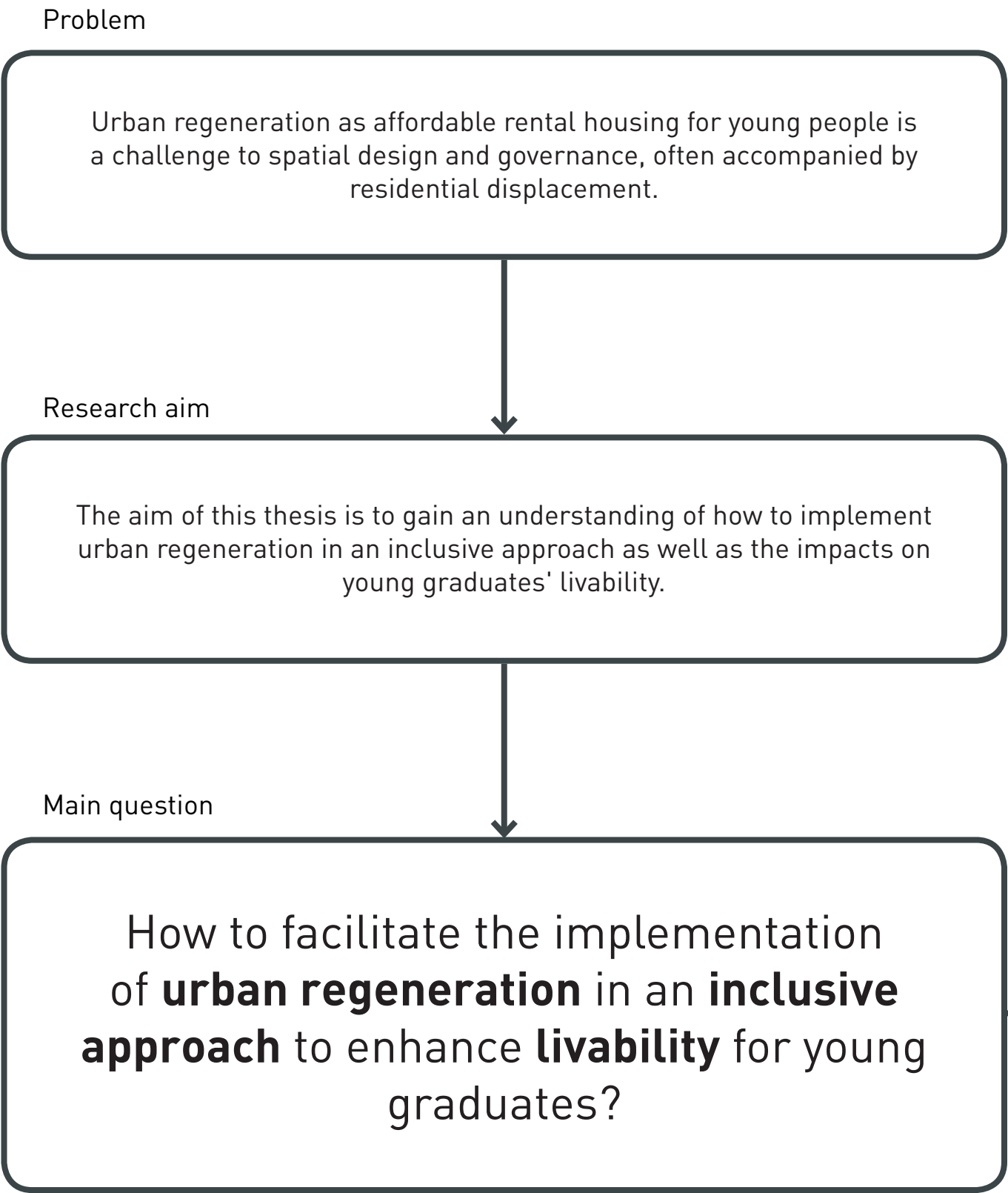
Social problem

Urban regeneration may also cause considerable rent rises as well as displacement of the existing tenants. These decaying urban areas used to be, and still are, the consist of the "Arrival City" for immigrants. How to make the process more inclusive is also a challenge that urban regeneration is facing.

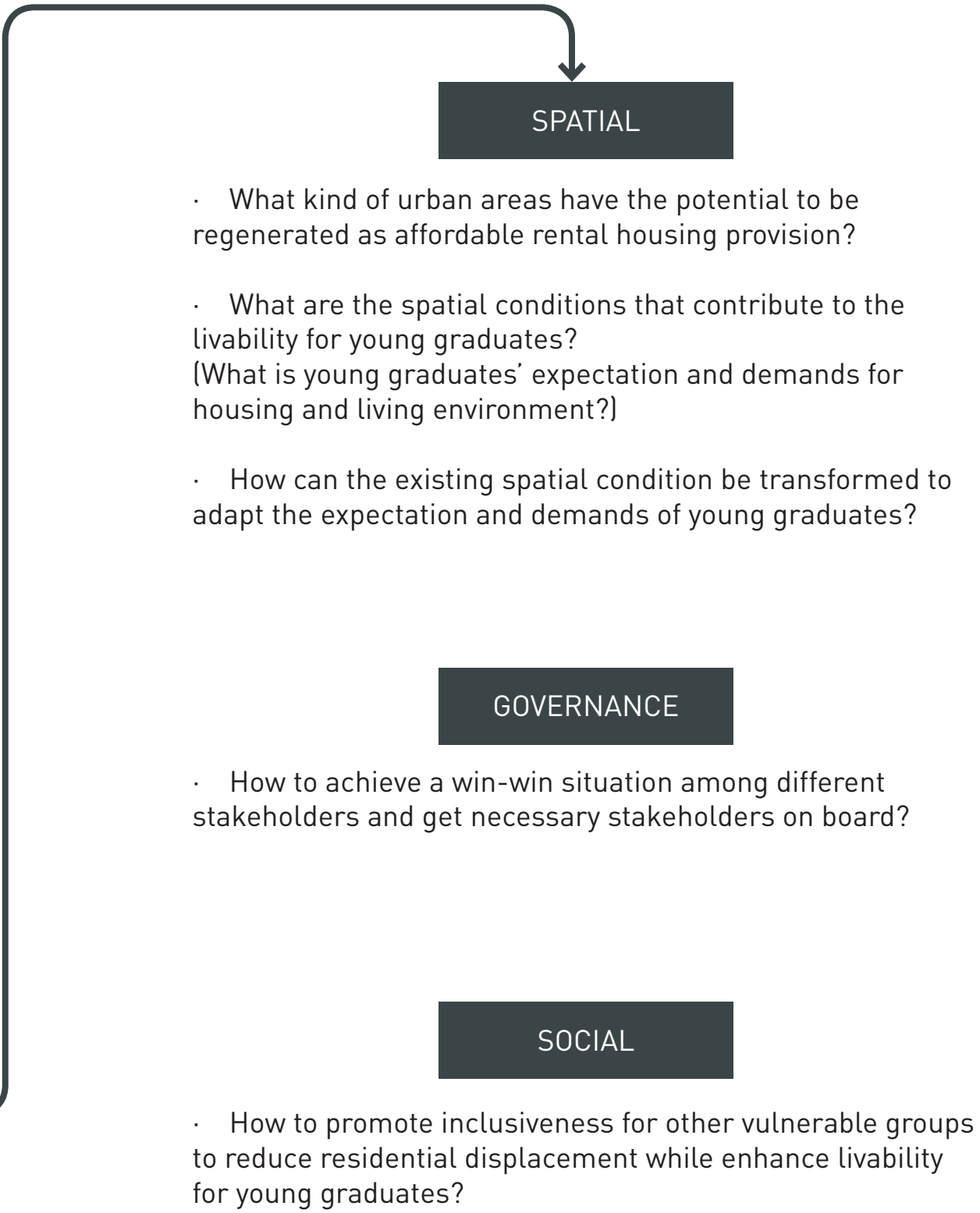
Problem statement (Conclusion)

To conclude, young graduates are facing housing difficulties in big cities. In order to ease the pressure, a new guideline was published by Chinese government to encourage urban regeneration as a provision for affordable rental housing. However, it is a challenge to spatial design and governance, as the existing built environment cannot meet the changing demands and expectations, and the current governance model cannot balance the interests among different stakeholders. Moreover, the urban regeneration projects are often accompanied by social problems such as residential displacement.

Research Questions

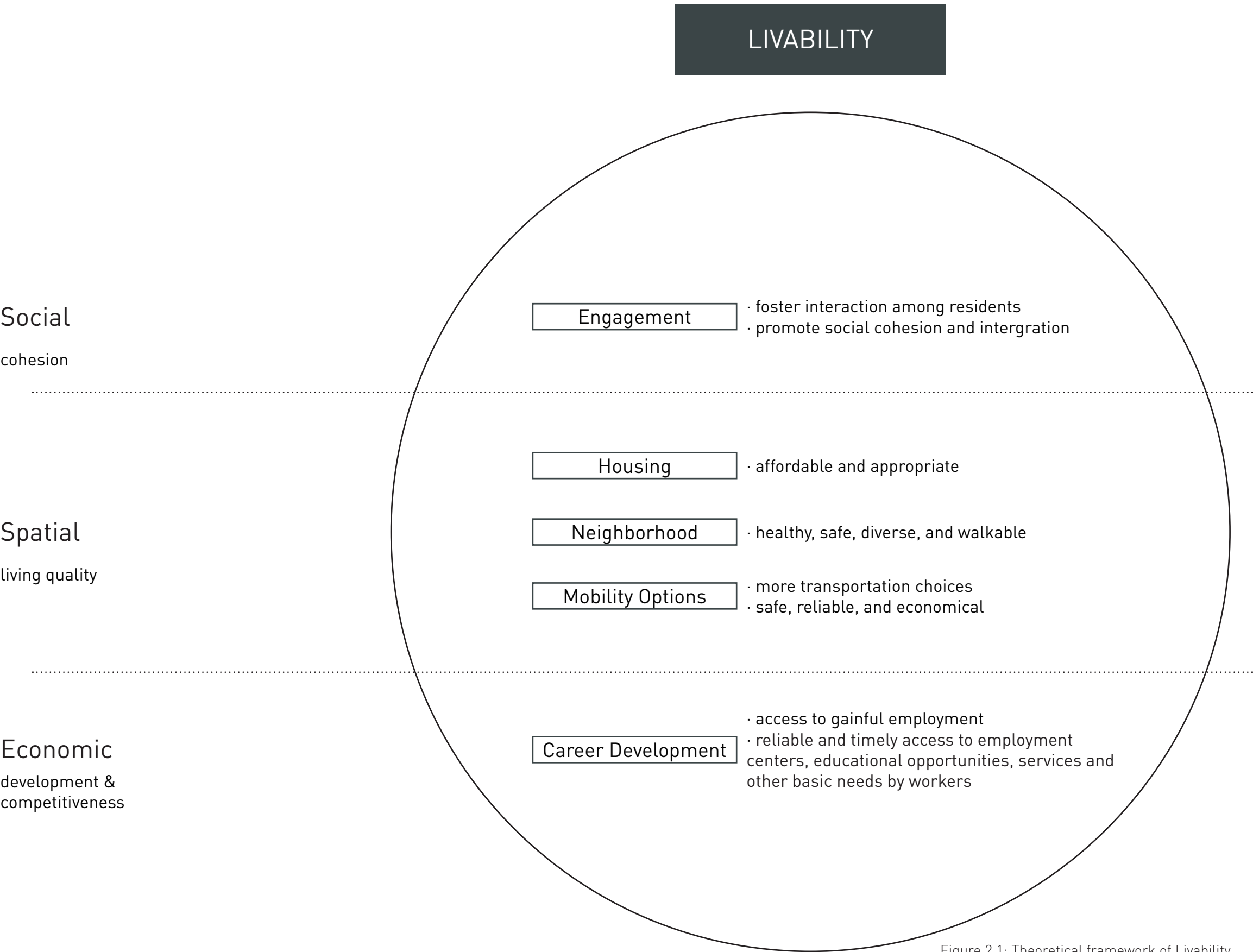


Sub questions



02 THEORETICAL FRAMEWORK

Theoretical Research



Partners for Livable Communities (n.d.) defined livability as “the sum of the factors that contribute to community’s quality of life”. In this thesis, the chosen relevant livability indicators are divided into three categories: social, spatial, and economic.

In the social aspect, livability is related to the extent of people’s desire to enhance their community. (Partners for Livable Communities, n.d.) Therefore, engagement will be an important indicator to foster the interaction among residents and promote social cohesion and integration. (AARP, 2018)

In the spatial aspect, which is related to the living quality, housing is a core indicator mentioned in most relevant research, which should be affordable and appropriate. (AARP, 2018; Young & Hermanson, 2013) Neighborhood is another indicator, which should be healthy, safe, walkable, and can provide diverse facilities and services, so that the unique characteristic of communities can be enhanced. (AARP, 2018; Young & Hermanson, 2013) Spatial livability also requires adequate mobility options, which should be safe, reliable, and economical. (AARP, 2018; Partners for Livable Communities, n.d.; Young & Hermanson, 2013)

Livability can also be represented by economic development and competitiveness, which is related to accessibility to gainful employment and other needs by workers. (Partners for Livable Communities, n.d.; Young & Hermanson, 2013)

Figure 2.1: Theoretical framework of Livability
(Made by author)

Theoretical Research

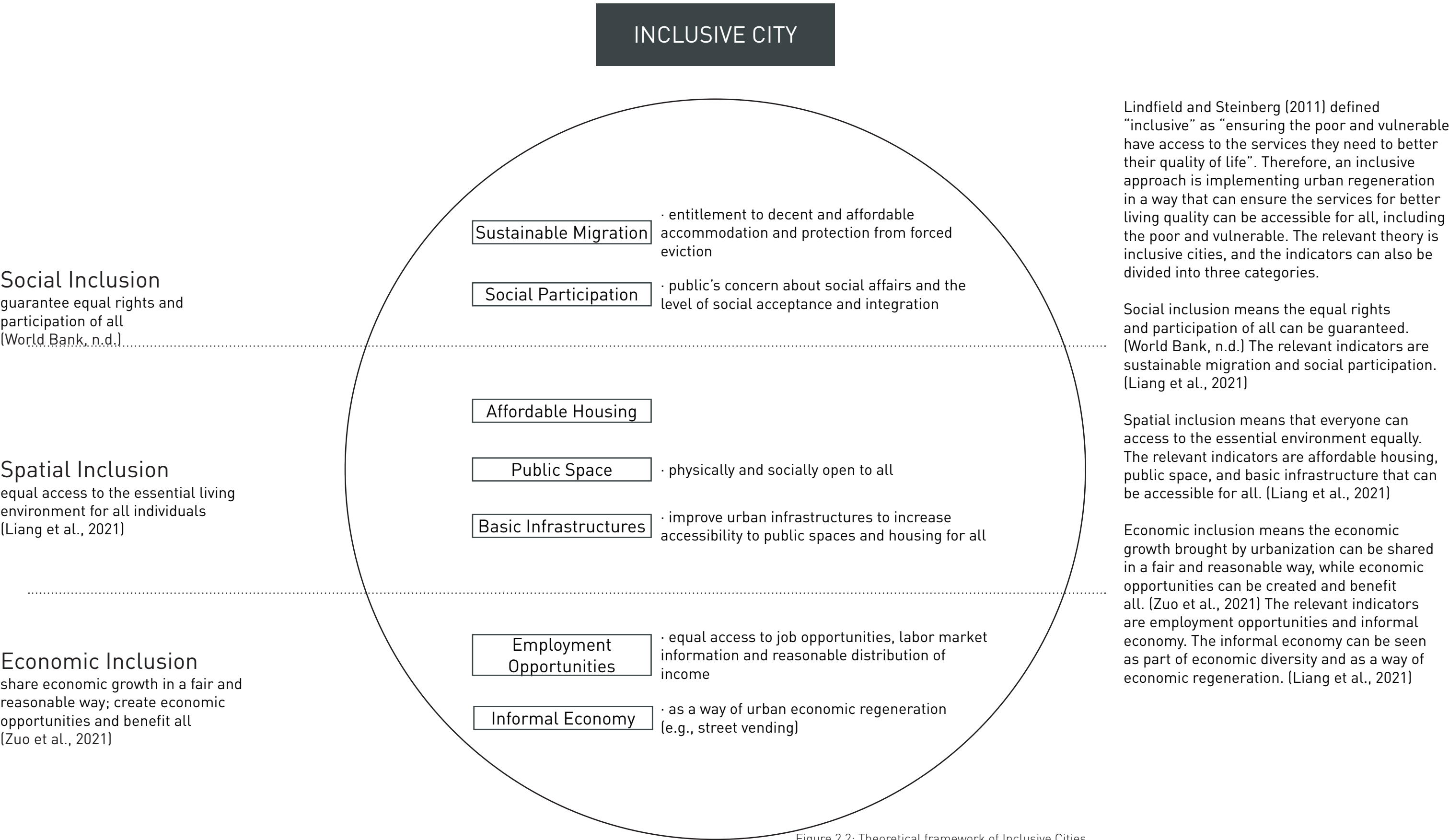
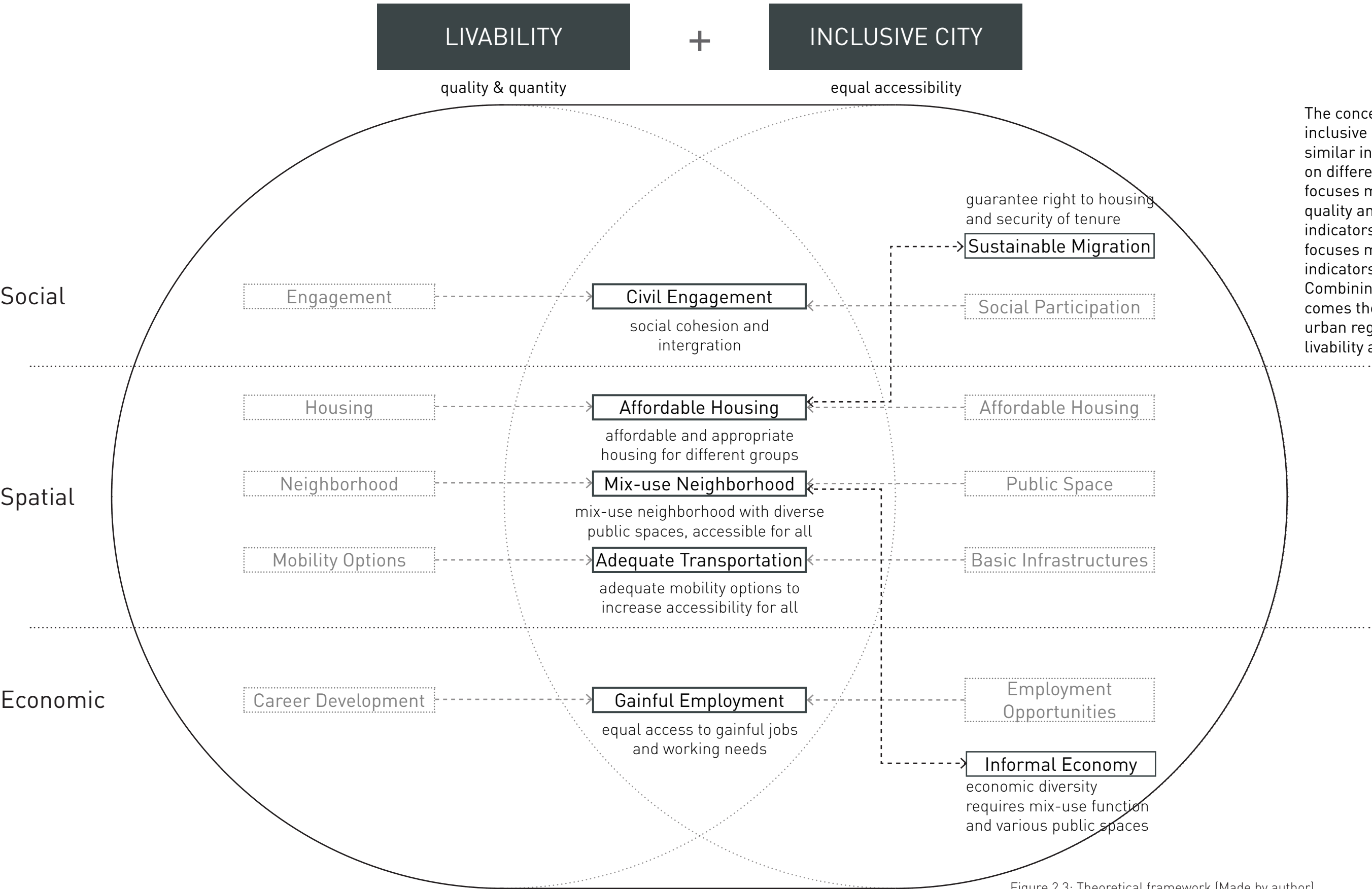


Figure 2.2: Theoretical framework of Inclusive Cities
(Made by author)

Theoretical Research



The concept of livability and inclusive cities share a lot of similar indicators, but focus on different aspects. Livability focuses more on improving quality and quantity of the indicators, while Inclusive Cities focuses more on whether the indicators are accessible for all. Combining the different focuses comes the goals for the ideal urban regeneration, promoting livability and inclusiveness.

Figure 2.3: Theoretical framework (Made by author)

Theoretical Research

AFFORDABLE HOUSING

Affordable rental housing is an instrument to alleviate the **housing affordability** problem for new citizens and young generation in metropolitan areas. (State Council General Office, 2021)

The concept of **housing affordability** in the context of intensive urbanization focuses on the **spatial inequities** in access to urban resources; not only the affordability problem of the poor, but also the low and middle-income as well as the young generation. (Haffner & Hulse, 2019)

Among the inclusive-livable indicators, affordable housing is the core. The concept of housing affordability in the context of intensive urbanization focuses on the spatial inequities in access to urban resources; not only the affordability problem of the poor, but also the low and middle-income as well as the young generation. (Haffner & Hulse, 2019) In that case, affordable housing is not only about controlling the housing expenditure, but also should deal with the spatial inequities, which are the 'mismatch between accessibility and affordability' and 'spatial lock-in'. (Haffner & Hulse, 2019)

Affordability

Housing expenditure

30% as a red line

UN-Habitat (2020) calculates unaffordability as a net monthly expenditure on housing cost that exceeds 30% of the total monthly income of the household

Spatial inequities

Mismatch between accessibility and affordability

lack of affordability in opportunity-rich areas: seperation of home and workplace; long commuting time

'Spatial lock-in'

lack of residential mobility: not be able to move with the change in employment or family circustances

Ideal performance

monthly housing expenditure ≤ 30% of the total household income

increase housing affordability in opportunity-rich areas

adding different affordable housing typologies to adapt to changing demands

Composit affordability measures

Traditiational measures

focus on **consumer demand:** housing expenditure

Advanced measures

focus on **supply, availability and adequacy;** measure the supply of housing available to households on different incomes as well as living quality

Indicator

Affordability index

Opportunity accessibility

Density

Housing diversity

spatial indicators

Description

Housing expenditure costs no more than 30% of the family income (UN-Habitat, 2020)

proximity to employment, living facilities, and public transportation (Walter & Wang, 2016)

related to both housing supply and quality. Higher density can bring an increase in supply, but a fall in quality (Fingleton, 2008)

related to availability to households on different incomes

When measuring affordability, besides the traditional measurement, some advanced measurements should be taken into account, which are supply, availability, and adequacy. (Haffner & Hulse, 2019) The indicators for affordability are concluded and listed below.

- Affordable index: housing expenditure/ income radio, should not exceed 30%. (UN-Habitat, 2020)
- Opportunity accessibility: proximity to employment, living facilities, and public transportation (Walter & Wang, 2016), Measuring whether the location is opportunity-rich.
- Density: related to both housing supply and adequacy. Higher density can bring an increase in supply, but a fall in quality (Fingleton, 2008)
- Housing diversity: related to availability to households on different incomes, and residential mobility for changing demands

Conceptual Framework

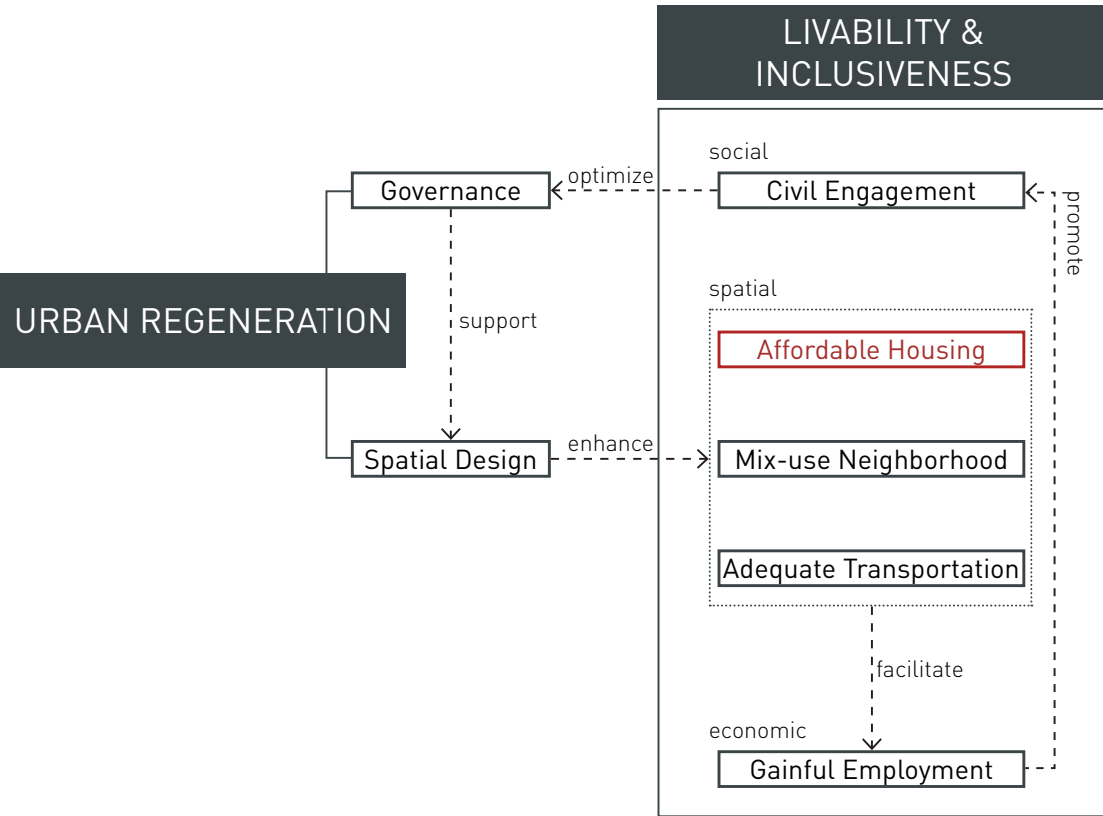


Figure 2.4: Conceptual framework part 1
(Made by author)

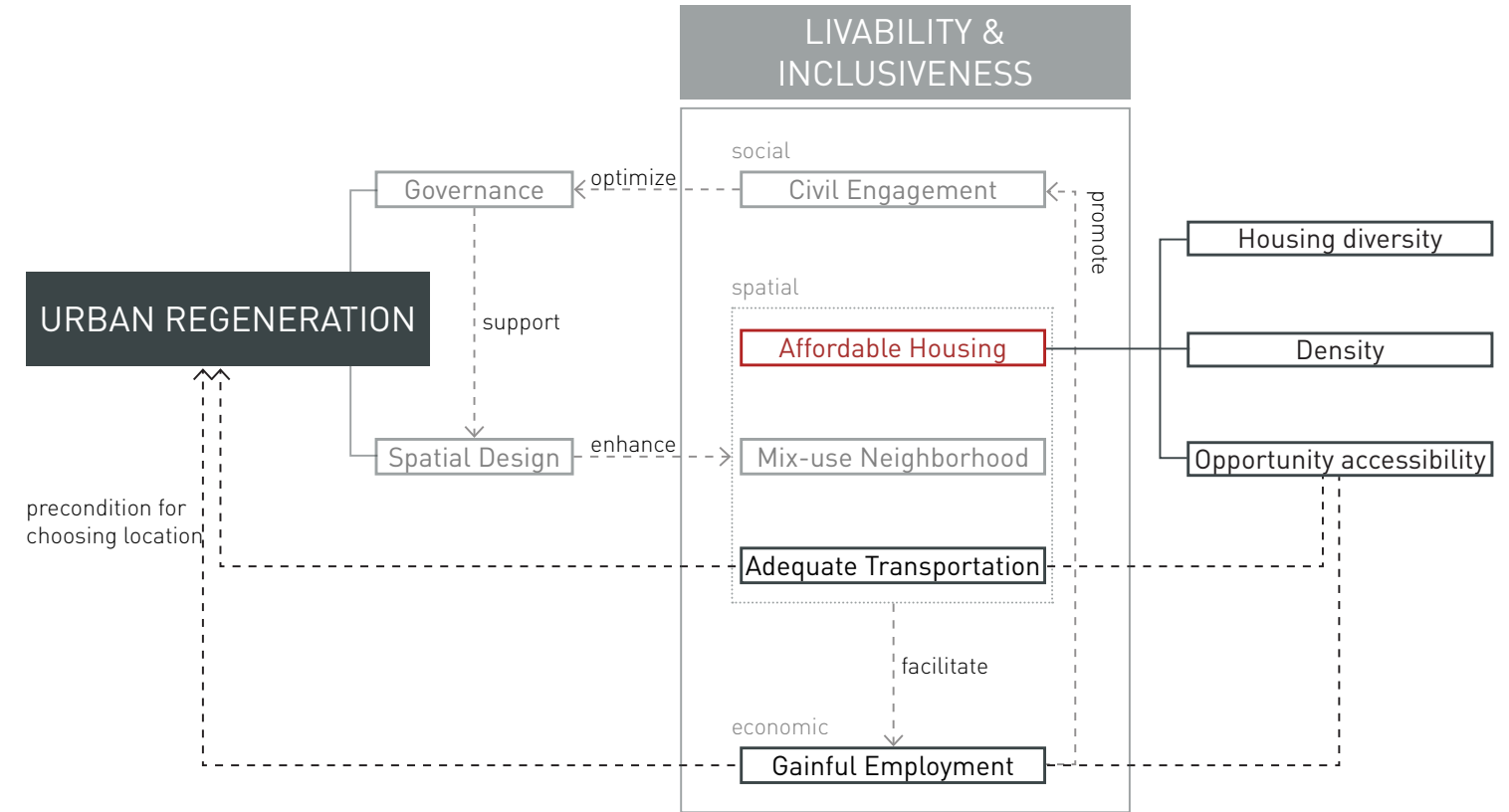


Figure 2.5: Conceptual framework part 2
(Made by author)

The relationship between conceptual notions

Based on the above theoretical research, the goal of the project can be set as 'livability and inclusiveness', and the means to be used is 'urban regeneration'. 'Livability and inclusiveness' can be divided into three aspects, social, spatial, and economic, while 'urban regeneration' consists of two parts, governance, and spatial design.

Urban regeneration governance can support the implementation of spatial design, which can enhance the spatial aspect of livability and inclusiveness. Mix-use neighborhoods and adequate transportation can improve the accessibility to gainful employment. With the ability to get gainful employment, and other advantages brought by the improvement of space quality, people's sense of place can be aroused, leading to a desire to participate in the civil engagement, (Partners for Livable Communities, n.d.) which will be an opportunity to optimize the existing governance model.

Opportunity-rich areas as the precondition

As housing affordability is being discussed in the metropolitan context, affordable housing built in the opportunity-rich area becomes the precondition for choosing the site. Therefore, opportunity accessibility, which is related to adequate transportation and gainful employment, will be the factor for filtering the potential site(s), rather than a goal for the project to achieve.

Conceptual Framework

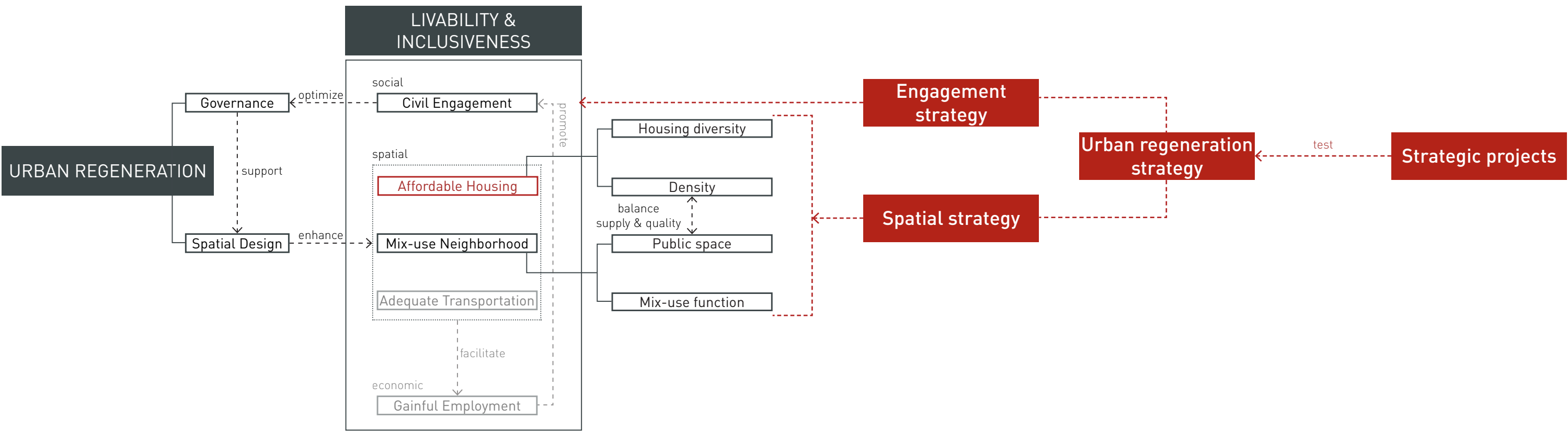


Figure 2.6: Conceptual framework part 3
(Made by author)

Focus of the project

The project will mainly focus on affordable housing, mix-use neighborhoods, and an optimized governance model supported by civil engagement. For affordable housing, based on the above research, the focuses will be housing diversity and density. For mix-use neighborhoods, the focuses will be mix-use function and public spaces. In research from Fingleton (2008), density is a two-sided factor, which can bring an increase in quantity but a decrease in quality. In this case, the consideration of public spaces could be compensation for the decrease of living quality brought by density, which can balance the housing supply and the quality.

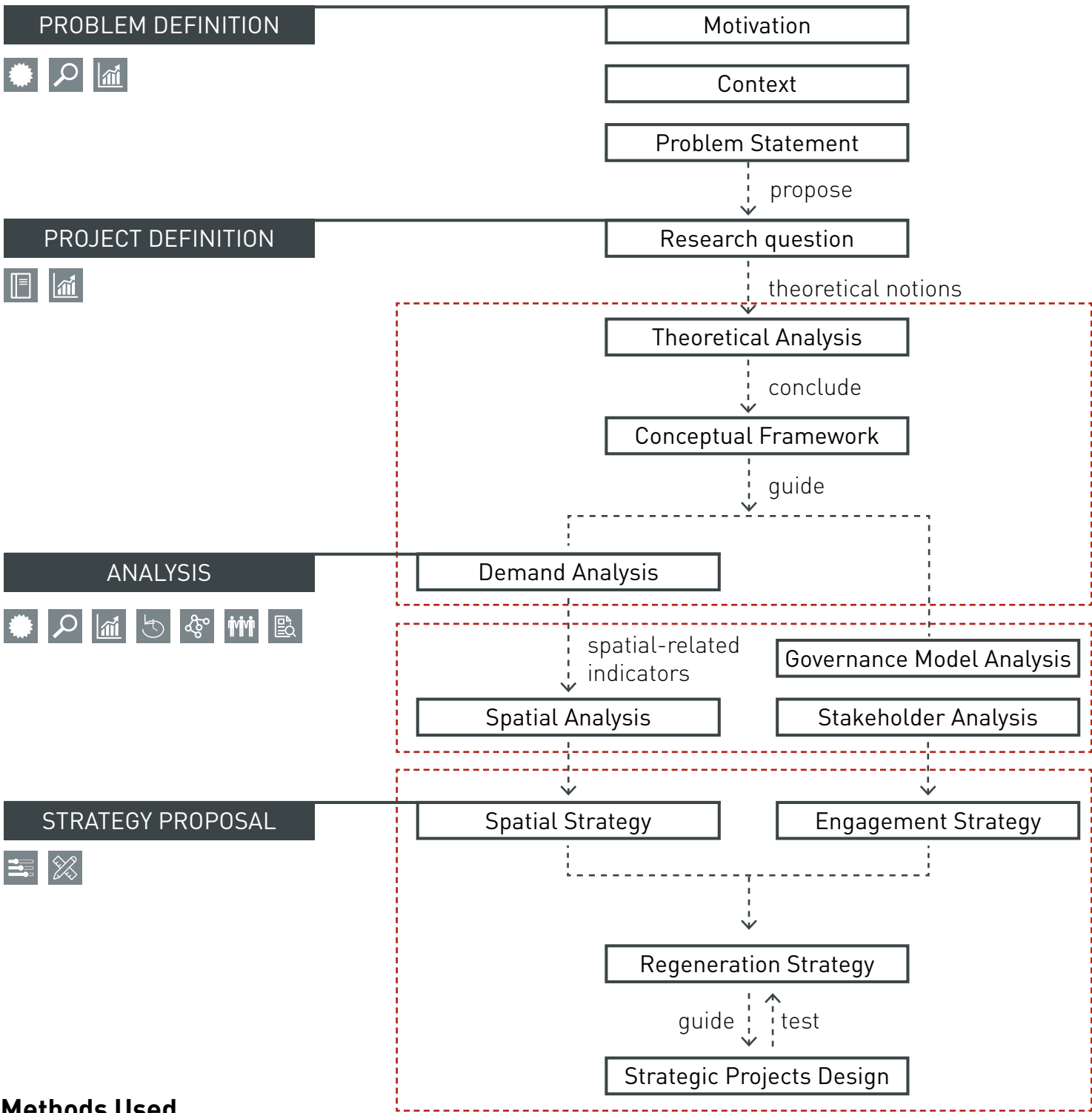
Intended Outcome

The ideal performance of the project is that **young graduates will be able to access to affordable accommodation which meets their demands in opportunity-rich areas.** The intended outcome consists of the urban regeneration strategy and some strategic projects on the neighborhood scale, testing the implementation of the strategy.

The urban regeneration strategy consists of an engagement strategy and a spatial strategy, which is the exploration of planning and design intervention.

03 METHODOLOGY

Methodology



Methods Used

- Literature Review
- Case study
- Mapping
- Reference Review
- Stakeholder Analysis
- Design
- Data Collection
- Historical Review
- Scenario Building
- Data Analysis

Envision the preferable future
What is the goal?
What are the demands and expectations?

Evaluate the current situation
What should to be reserved/ transformed?

Mend the gap between current situation & preferable future
How to regenerate?

The road map shows the methodology used for the thesis. The key part of the methodology can be concluded into three steps: 1. Envision the preferable future; 2. Evaluate the current situation; 3. Make use of planning and design to mend the gap between the preferable future and the current situation.

To envision the preferable future is to understand the key theoretical notions and analyze young graduates' demands and expectations. Then, these demands and expectations need to be translated into spatial representation, which can be listed as indicators.

To evaluate the current situation is to use the indicators to explore and filter the potential areas, and then evaluate the spatial conditions to understand which indicator can meet the demands and which needs to be improved.

Making use of design and planning is to ask 'how' questions. Based on the understanding of the current situation, the strategy can be proposed based on the principle that the preferable spatial quality can be saved while the deficiencies need to be improved. With some strategic projects design, the strategy can be tested to see whether the preferable future can be achieved.

Figure 3.1: Methodology road map (Made by author)

Methodology

Aspect	Questions	Outcome	Method	Purpose	End product
Spatial	What kind of urban areas have the potential to be regenerated as affordable housing provision?	mapping: filtering the opportunity-rich area	literature review	understand the concept of affordable housing	spatial adaptation strategy pilot project
			policy document review	understand the criteria for choosing the potential regeneration area	
			demographic analysis	explore where young graduates gather	
			mapping	highlight the critical area	
	What are the spatial conditions that contribute to the livability for young graduates?	understand the spatial quality that contribute to young graduates' livability	policy document review	understand the regulation for affordable housing construction	
			literature review	understand the concept of livability for young graduates	
			rental market report review	understand young graduates' demand and expectation for rental housing	
	How can the existing spatial condition be transformed to adapt the expectation and demands of young graduates?	explore the relative elements; save the desirable quality and improve the deficiencies	multi-scale mapping	map the elements that formulate the spatial quality on different scales	
			historical review	understand the historical development of the area; explore the opportunities for adaptation and transformation	
			scenario building	explore different possibilities	
			case study	refer to the design and planning interventions in other projects	
			design	test different scenarios; evaluate the performance of the strategy	
Governance	How to balance the interests among different stakeholders and get necessary stakeholders on board?	new governance model (engagement strategy)	stakeholder analysis	understand the relationship among different stakeholders; their capacity and interest; understand the existing governance model	engagement strategy
			comparative case study	learn from good practice; the pros and cons of other governance model; get knowledge for optimize the existing governance model	
Social	How to promote inclusiveness for other vulnerable groups to reduce residential displacement while enhance livability for young graduates?	complement the spatial and governance outcome	literature review	understand the concept of inclusiveness	
			stakeholder analysis	understand the roles they play in the process	

Figure 3.2: Table of methodology (Made by author)

Method Description

Literature Review

Literature review means looking up the academic paper to gain an understanding of the theoretical notions. In this project, this method is mainly used to understand the notion of ‘livability’, ‘inclusiveness’, and ‘affordable housing’. By reading the relative academic paper, the indicators of different notions are collected and compared.

Policy Document Review

Policy document review is looking up policy documents to understand the relative regulation and the criteria for assessment, which could become the reference for the project. In the project, this method is used to understand the criteria for exploring potential regeneration areas and the regulation for affordable housing construction. The purposes are 1. To get the reference for choosing site(s); 2. To see to what extent can the project challenge the existing regulations.

Rental Market Report Review

Rental market report review is to understand young graduates’ demands and expectations for rental housing and living environment through collecting and analyzing the data from reports and surveys conducted by China’s mainstream rental companies. As the field trip and face-to-face interviews are unavailable during the coronavirus pandemic, reviewing the rental market report is an efficient and helpful alternative.

Demographic Data Analysis

Demographic data analysis is to collect the demographic data and link it with the spatial object, so as to see the distribution of the specific group. In this project, the data is from the 7th national census of Shenzhen, and QGIS is used to visualize the data on the map of the city.

(Comparative) Case Study

The case study is used to get references for the project. The comparative case study is to compare the pros and cons of different cases, as well as the similarities and differences between the cases and the precondition of the project, so that to understand which parts of the different cases are worth referring to for the project.

(Multi-scale) Mapping

Mapping is to highlight the spatial distribution of the relative elements. By synthesizing different layers of elements, the critical area can be shown on the mapping. Multi-scale mapping is to zoom in to a smaller scale after mapping the critical area on the bigger scale, which can ensure that on every scale the site(s) is strategically chosen and can be related to the other scales, so that the intervention on the smaller scale can reflect and be applied to the bigger scale.

Historical Review

A historical review is to understand the historical development of the site(s). First of all, the key points of the development timeline need to be identified. Then, by mapping the same elements in different time periods, we can understand what has been changed and what remains all the time. Using this method, we can identify what should be kept, what can be adaptable to new demands, and what should be transformed into a new form or function.

Scenario Building

Scenario building is a method to explore the different future possibilities. The method will be used to show different ideas and to explore suitable interventions.

Design

Design is a tool to test the performance of the scenarios. Using different spatial interventions, it is possible to test whether the preferable future can be achieved.

Stakeholder Analysis

Stakeholder analysis is to understand the existing governance model by analyzing the relationship between different stakeholders and their power-interest-attitude. Based on the analysis, it is possible to see how the governance model can be optimized and which stakeholders need to be engaged.

Scheme

The schematic diagram shows the timeline and the different phases of the project. Before P2, it is the project definition stage. The post-P2 process mainly focus on the analysis phase, and the planning and design phase begins near the end. Between P3 to P4, the focus is planning and design, while reflection takes place after P4.

The purpose of demand analysis is to provide a list of indicators for the project, which is significant as it is the criteria for choosing site(s) and the spatial evaluation. It should be reflected many times during the whole process to ensure that it is appropriate and the project is in the correct direction.

The end products are the urban regeneration strategy, which consists of spatial strategy and engagement strategy, as well as strategic project(s) design, which can test the implementation of the strategy.

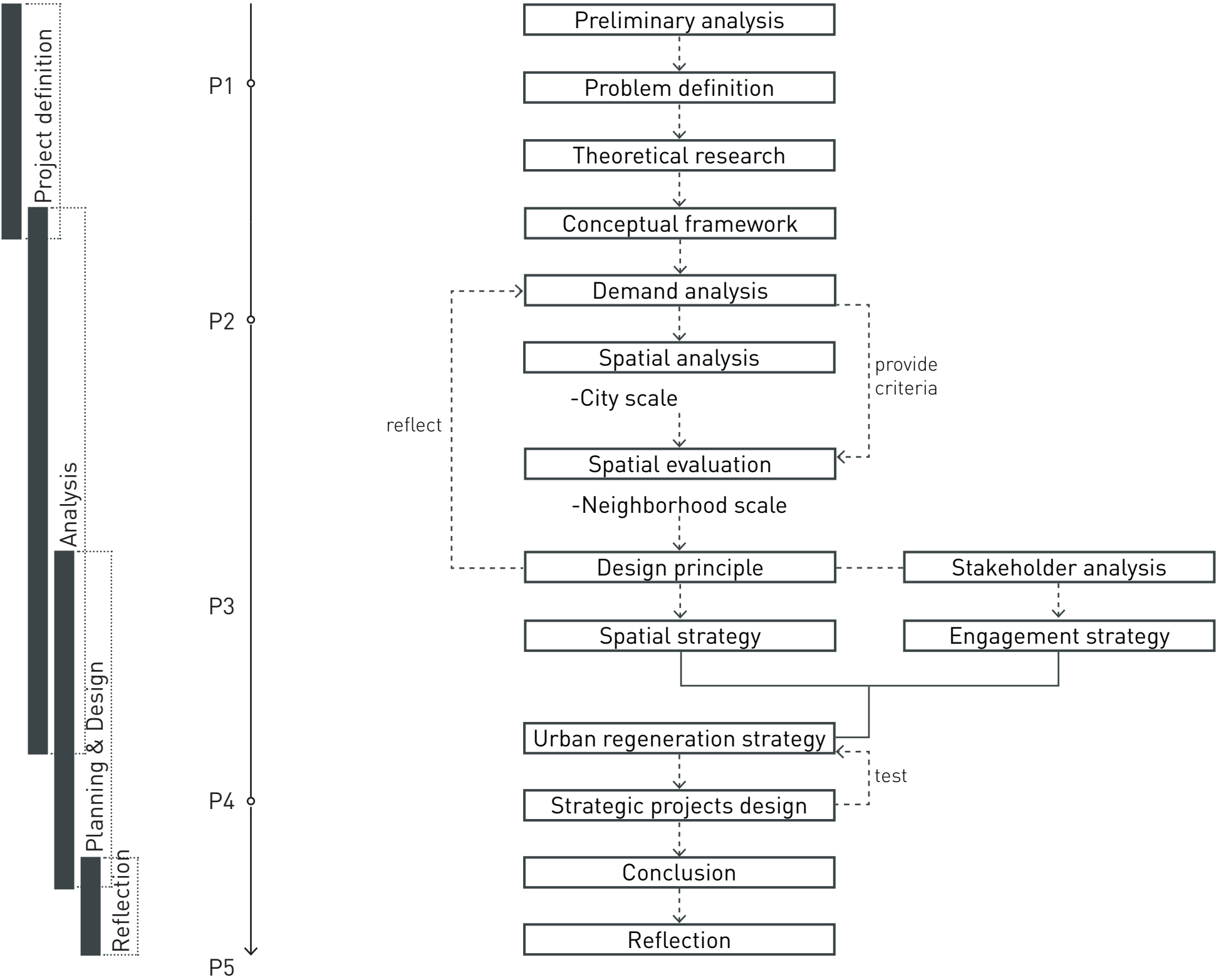


Figure 3.3: Diagram of scheme (Made by author)

04 ANALYSIS

Shenzhen City: Mapping Critical Area

The first step of the spatial analysis is to explore the opportunity-rich areas. According to the theoretical research and conceptual framework, transportation and job opportunities would be two key elements for exploring opportunity-rich areas. There are also two extra elements. The first one is the required proportion of affordable housing in urban regeneration projects, which can show areas where the demand for affordable housing is more urgent. The other one is the demographic distribution, which can show areas where young graduates gather.

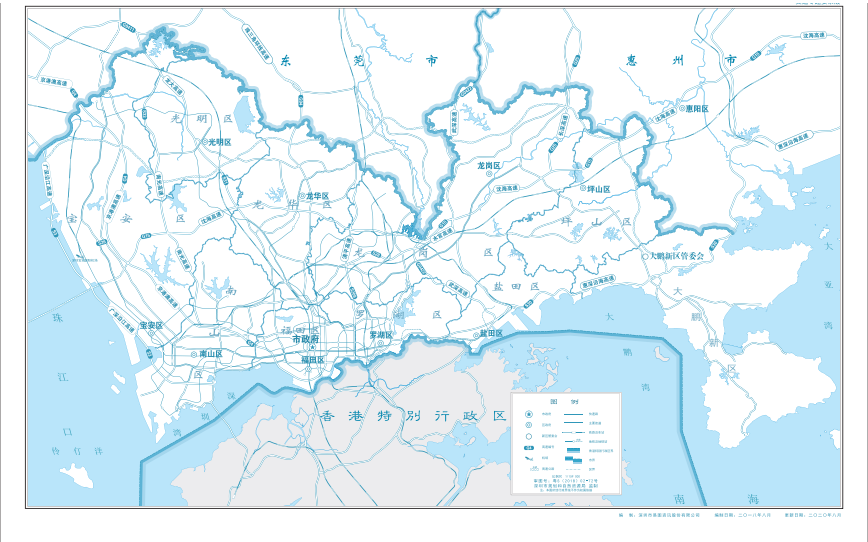


Figure 4.1.1: Map of mobility network
Source: <https://guangdong.tianditu.gov.cn/shenzhen/bzmap>

Mobility network

The map of the mobility network shows the distribution of the infrastructure. The denser the mobility network is, the more convenient the transportation will be.

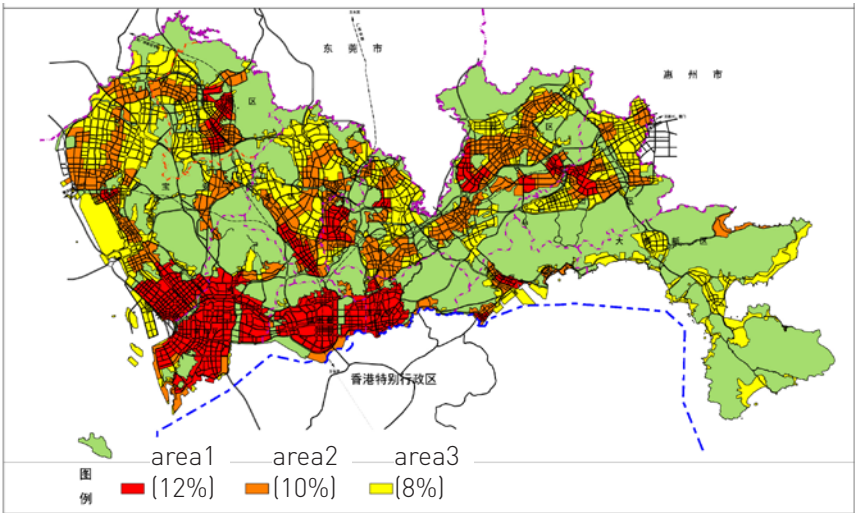


Figure 4.1.3: Map of required proportion of affordable housing in urban regeneration projects
Source: http://pnr.sz.gov.cn/xxgk/zcwj/zcjd/content/post_5839235.html

Strategic area for building affordable housing

Refer to the Provision on Affordable Housing Allotment of Urban Regeneration Project in Shenzhen, area 1, where is close to the city centers with the better infrastructure, needs to meet the highest proportion (12%) of affordable housing. Therefore, these areas will be more strategic for the project.

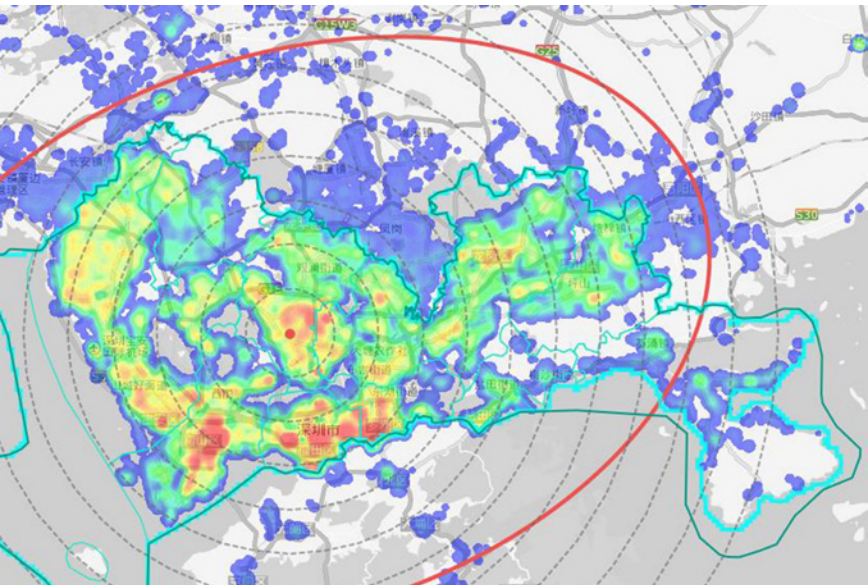


Figure 4.1.2: Map of employment intensive area
Source: Report on commuting in major Chinese cities in 2020

Employment intensive area

The heat map of the distribution of the working population shows the employment-intensive area. The redder area shows a higher concentration of employed population, indicating that employment is more intensive in the area.

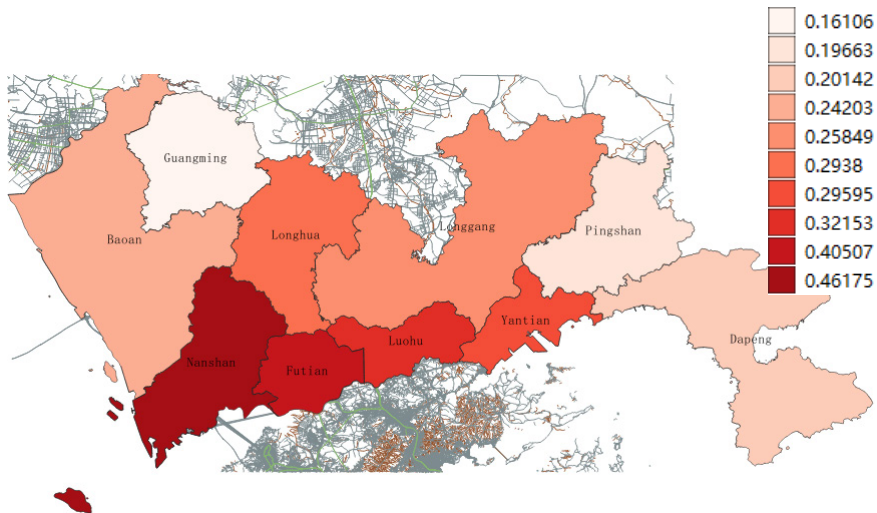


Figure 4.1.4: Map of percentage of residents with college education
Source: The 7th national census of Shenzhen, 2021

Demographic distribution

The map shows the distribution of residents with higher education levels. Due to the lack of age distribution data, further synthesis of a more accurate distribution of young graduates cannot be done. Therefore, the map of the percentage of residents with an above college degree is used to represent the distribution of the target group.

Shenzhen City: Mapping Critical Area

By synthesizing the above layers, the critical area can be shown on the mapping. As Nanshan is a district with the highest proportion of the population with higher education, where both transportation and employment are intensive, and the demand for affordable housing is urgent, it is chosen to zoom in for spatial analysis on a smaller scale.

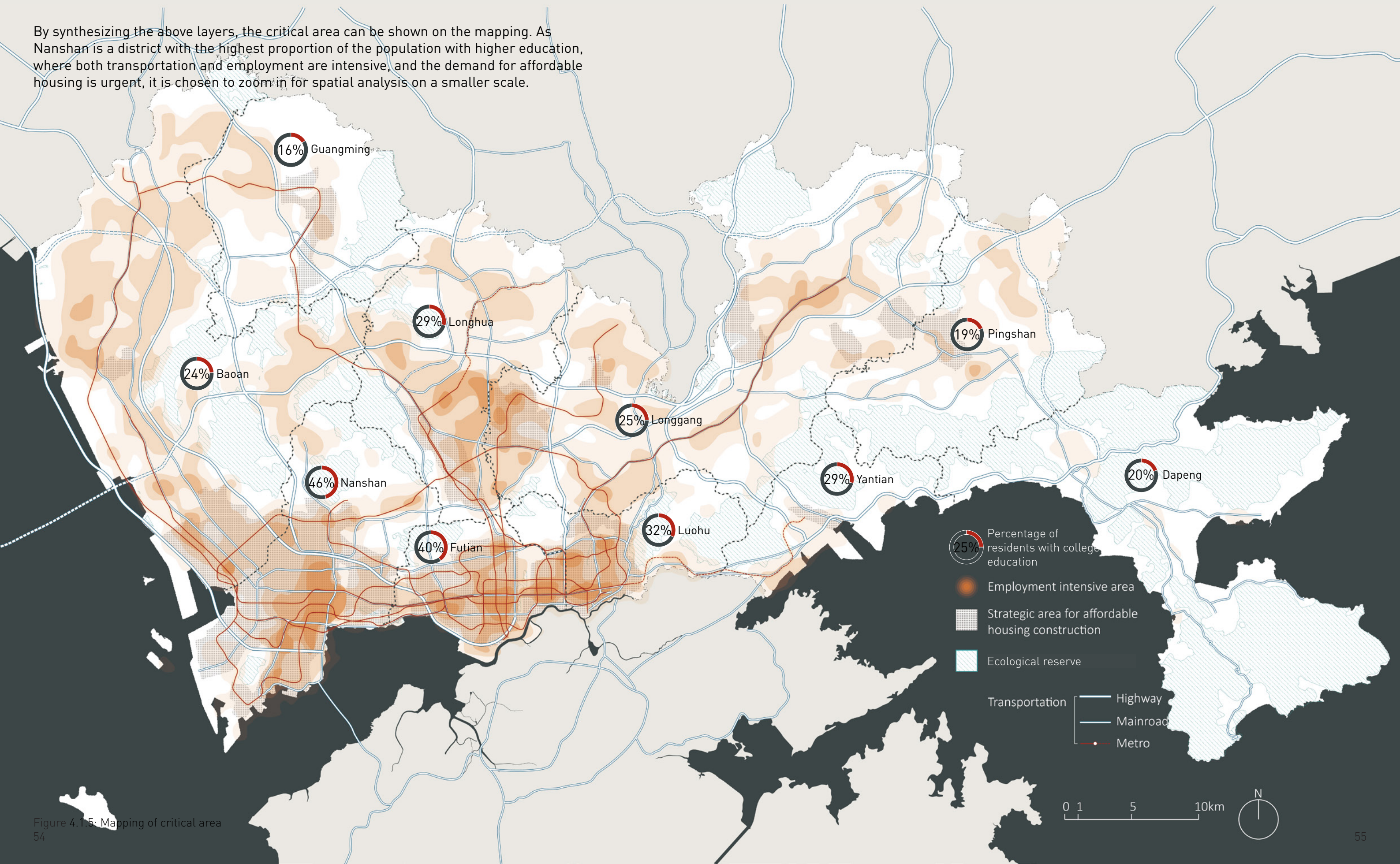


Figure 4.1.5: Mapping of critical area

Nanshan District: Opportunity-rich Areas

The map shows the mobility network in Nanshan district as well as the distribution of the employment-intensive areas.

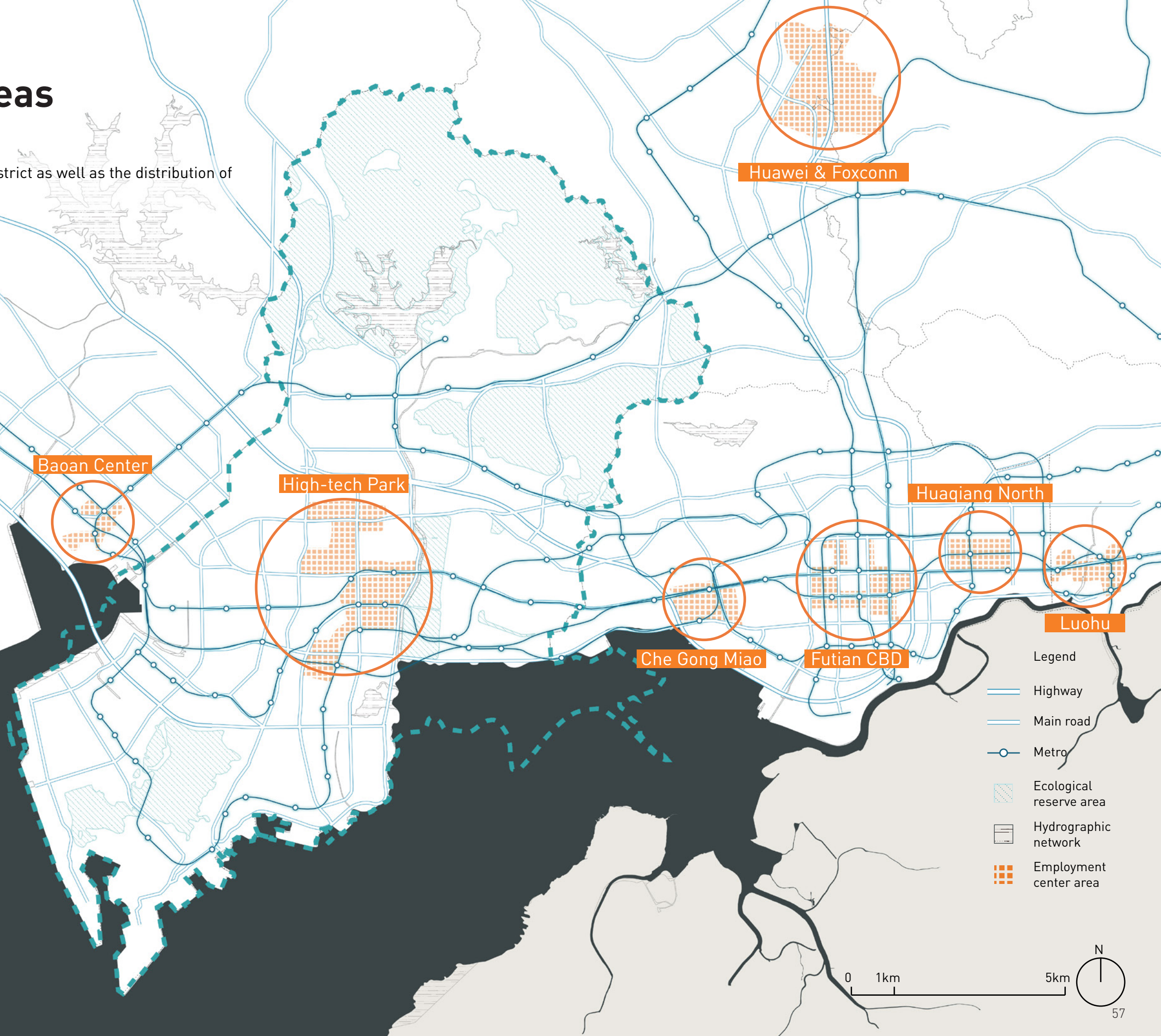


Figure 4.1.6: Mapping of opportunity-rich area

Nanshan District: Potential Regeneration Areas

Referring to the 13th Five-Year Plan of Nanshan District Urban Regeneration, there are four types of potential regeneration areas: urban village, post-industrial area, historical area, and decaying commercial area. The distribution of the areas is shown on the mapping.

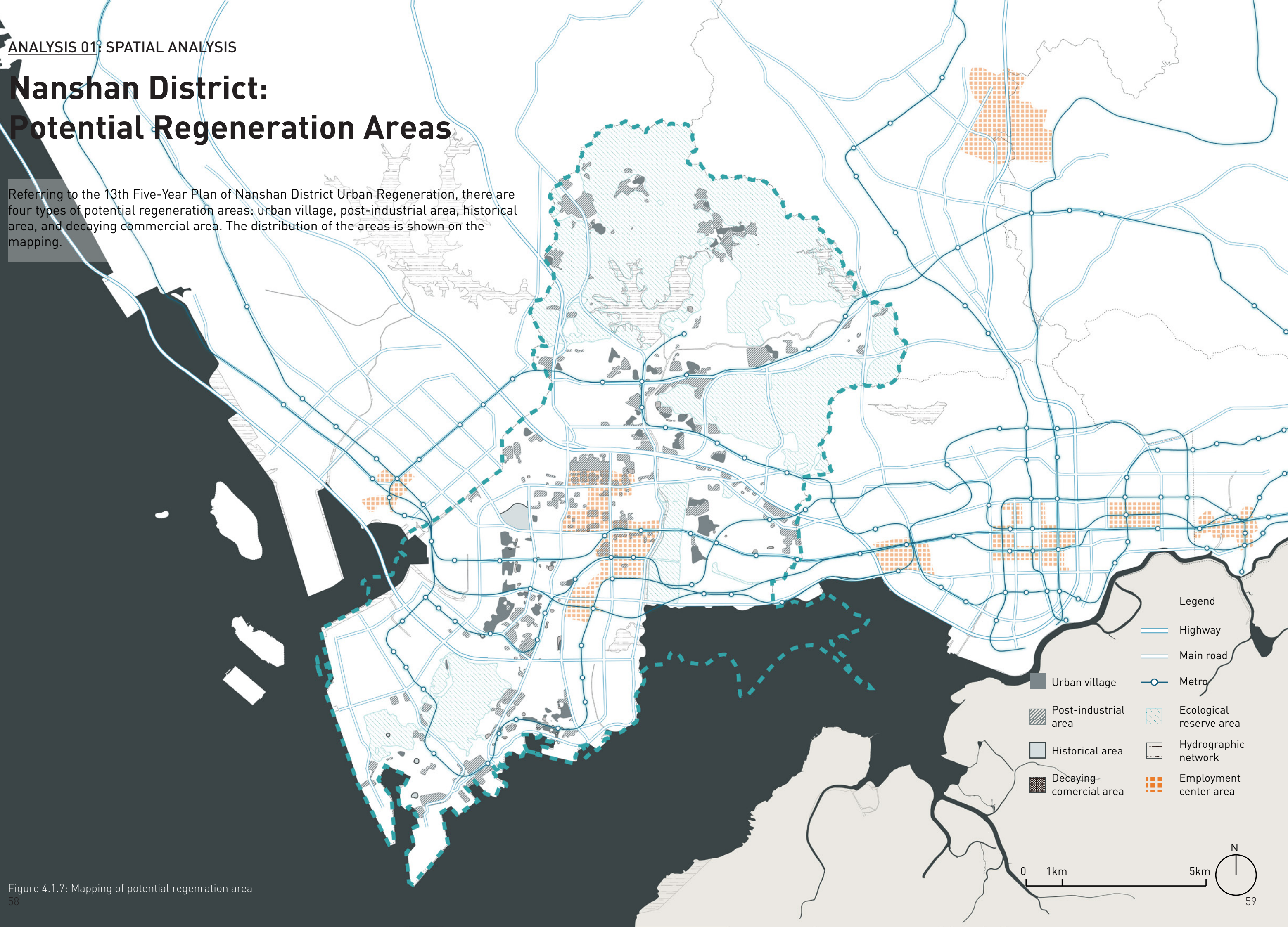


Figure 4.1.7: Mapping of potential regeneration area

Nanshan District: Potential Regeneration Area

The following table is made in order to understand the criteria for the municipality to choose the potential areas and the intended outcome for the regeneration of different types of areas. To draw a conclusion, the urban village is a preferable type of area for the project, because it can provide a relatively larger amount of housing. Moreover, the original function and the intended outcome for regeneration are similar to the expectation of the thesis.

	Distribution	Existing Functions	Category	Intended Outcome of Regeneration
Urban Village	Concentrated (mostly)	Mix of residential and commercial functions	Located inside the original SEZ; newly-built urban villages with relatively high quality	Comprehensive improvement; enhance the quality of the environment
			Located within the 500m radiu circle from the metro station	Appropriate demolition and reconstruction; increase the proportion of affordable housing
			Located inside the industrial park	Comprehensive improvement; provide housing and supporting facilities for the industry
			Urban villages with aging buildings and potential safety hazard	Encourage demolition and reconstruction
Post-Industrial Area	Concentrated (mostly)	Low-end industry		Encourage demolition and reconstruction; support industrial upgrading and innovation; provide a certain proportion of housing and supportive facilities
Historical Area	Concentrated and scattered	Historic preservation		Demolition is forbidden; preserve and revitalize the historic area
Decaying Commercial Area	Scattered	Commercial function		Can be retrofitted as an add-on object

Figure 4.1.8: Table of criteria for choosing regeneration potential area (Made by author)
Reference: Mid-term adjustment of the 13th Five-Year Plan of urban regeneration in Shenzhen, 2019

Nanshan District: Potential Regeneration Area

Based on the analysis of the above table, this mapping tends to show the distribution of urban villages, and the 500m radius circle from the metro station, which is mentioned above that the construction of affordable housing will be more suitable for the area. **The red circles highlight where the urban villages are covered by the 500m circle**, which means that these areas will be more strategic.

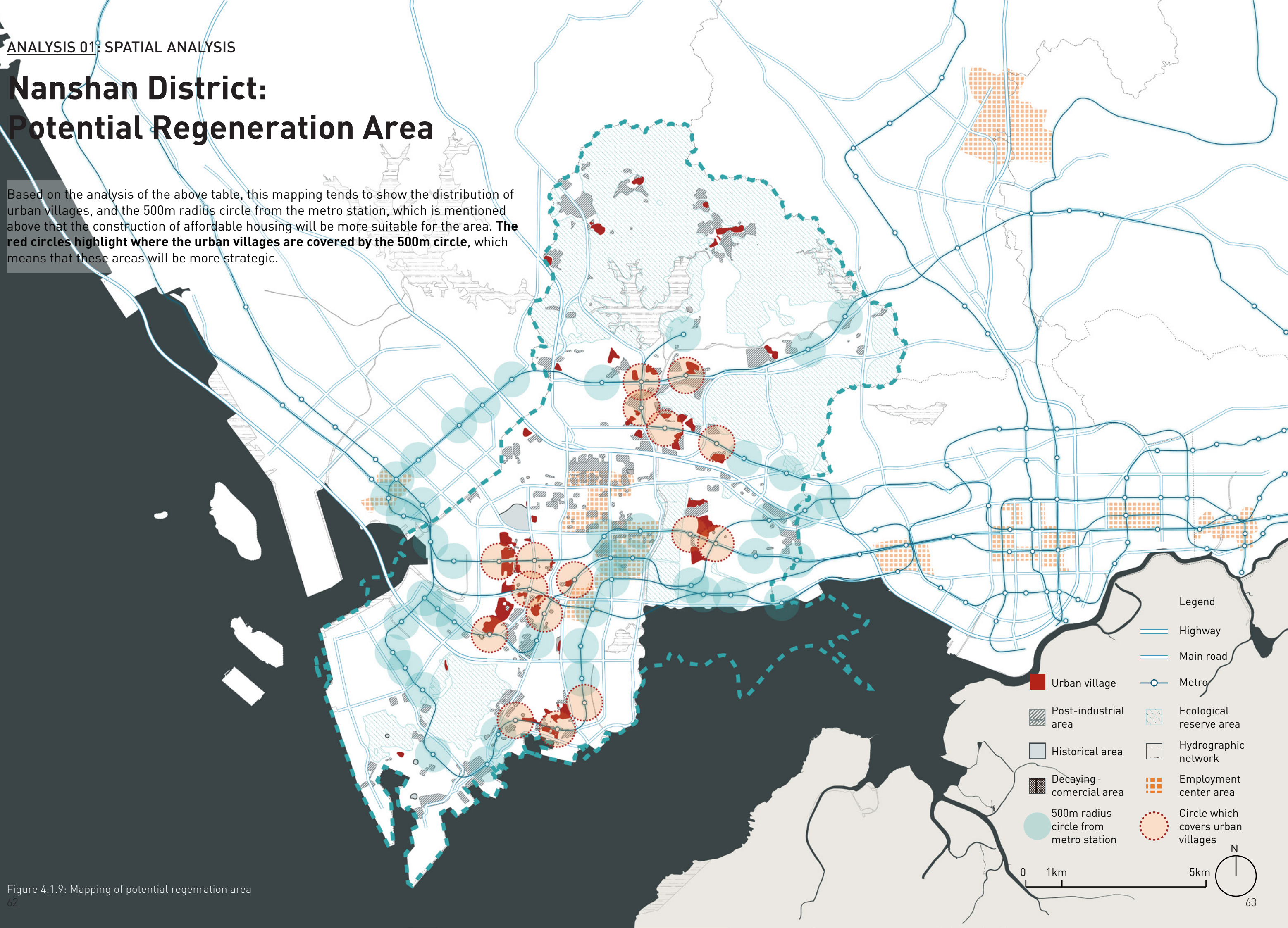


Figure 4.1.9: Mapping of potential regeneration area

Nanshan District: Demolition Area

Referring to the 13th Five-Year Plan of Nanshan District Urban Regeneration, the mapping shows the areas where demolition is prioritized. According to the previous analysis, the demolition areas are mainly the aging urban villages and the low-end industrial areas. When choosing the site(s) for the thesis, these demolition areas will be avoided because the thesis focuses on how the existing situation can be transformed so that be adaptable to future demand. Those areas that are under less demolishing pressure will be preferred to be the chosen sites.

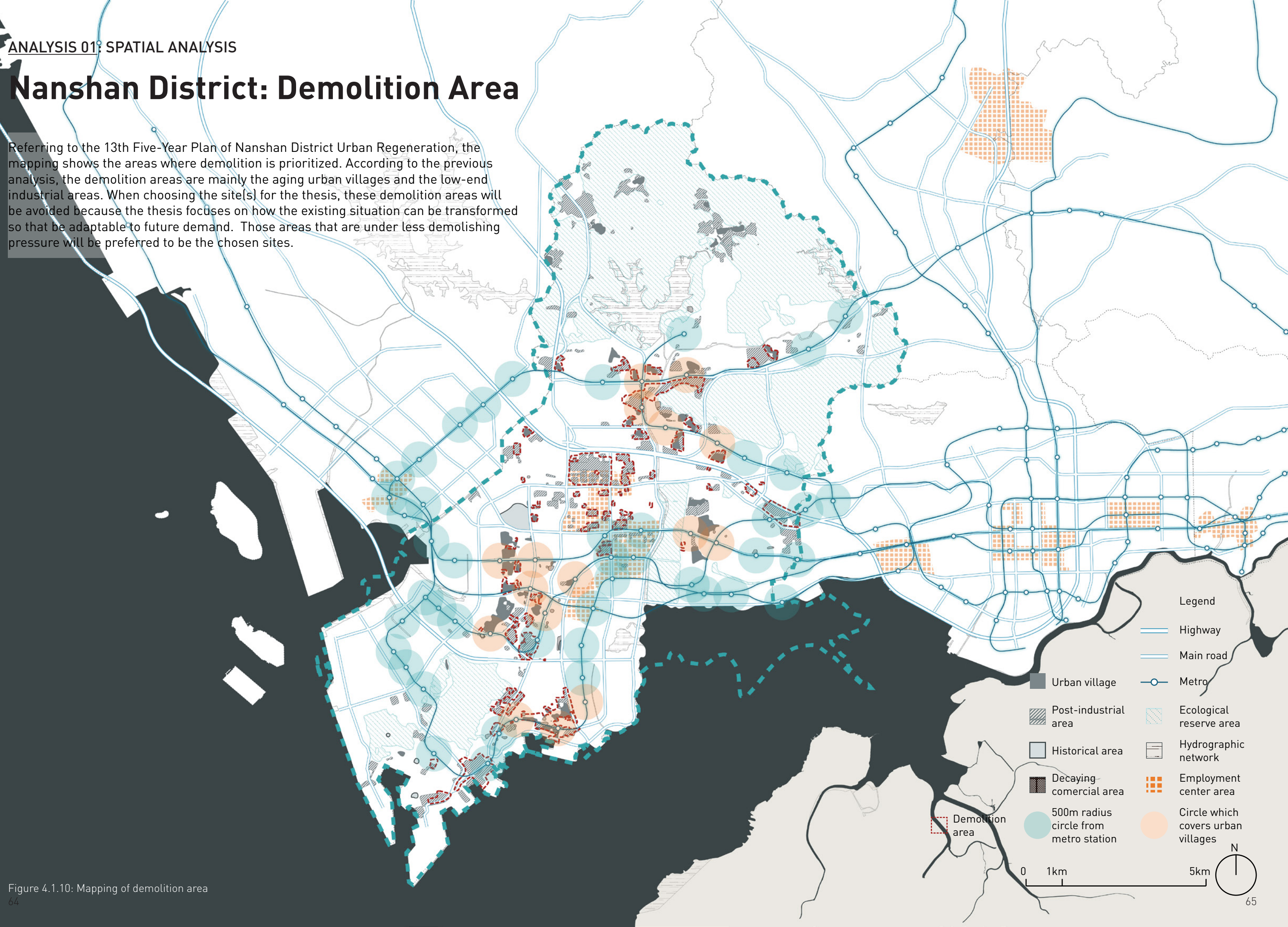


Figure 4.1.10: Mapping of demolition area

Nanshan District: Chosen Sites

This mapping is a synthesis of the previous analysis. The chosen sites are relatively large urban villages that are close to the metro station (within 500m), and the demolition areas are avoided.

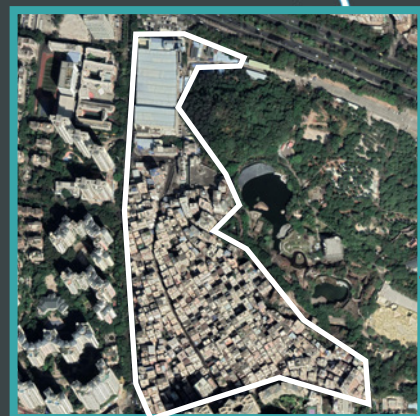
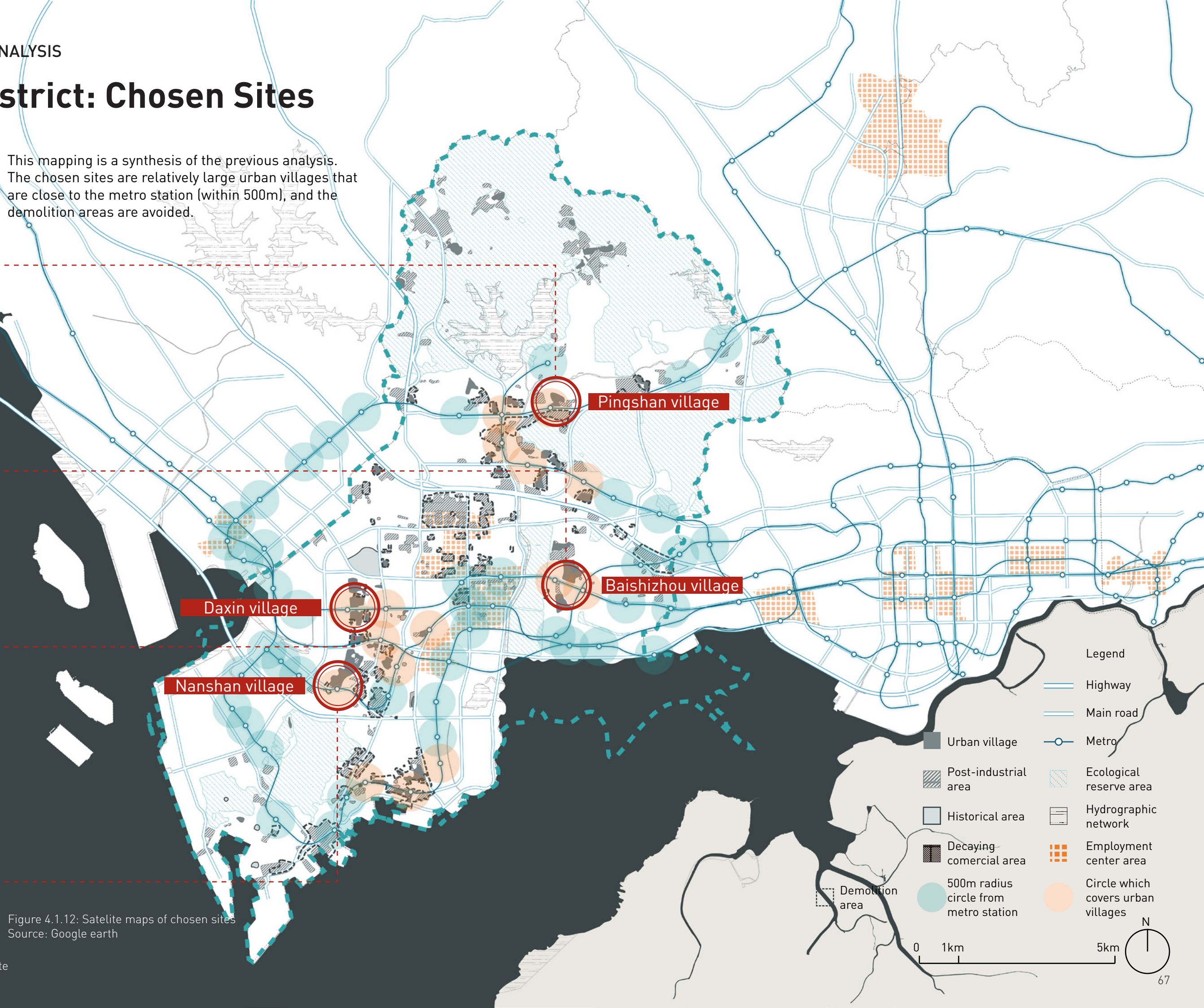


Figure 4.1.12: Satellite maps of chosen sites
Source: Google earth

Figure 4.1.11: Mapping of chosen site



Historical development

Urban village is a product of the special period, and it has already provided affordable well-located housing for migrant workers.

Before the establishment of SEZ, Shenzhen was a rural area where 18% of the total area was covered by farmland (Hao et al., 2011). The government expropriated the rural land from villagers, who were peasants during that period, to develop urban construction. Villagers lost their lands, which affected their long-term livelihood. Meanwhile, migrant workers started to flow into Shenzhen as many factories were built and the industry needed labor forces, so the villagers started to densify and rent extra rooms for migrant workers to make a profit. During that period, the government has neither enough money to build the infrastructure nor the ability to provide jobs for the villagers who lost their land, so the government acquiesced in the villagers' actions (Hao et al., 2011; Li, 2018).

With the further development of urbanization, more and more agricultural land was converted into urban land, and the village settlement inside SEZ was gradually surrounded by the newly built city center. The rental business became the main source of income for the villagers, so they continued to densify their property to make a greater profit. As the property price kept going high in the surrounding urban area, these informally constructed, well-located urban villages became the last affordable housing for migrant workers in the city center.



Figure 4.2.1: Historical photo of Shenzhen before 1980

Source: https://www.sohu.com/a/230394490_355757



Figure 4.2.2: Historical photo of Luohu, Shenzhen, 1996

Source: https://www.sohu.com/a/230394490_355757



Figure 4.2.3: Village surrounded by urban area

Source: <https://read01.com/mEKEAoB.html#.Ykq8MejP2Uk>

Historical development

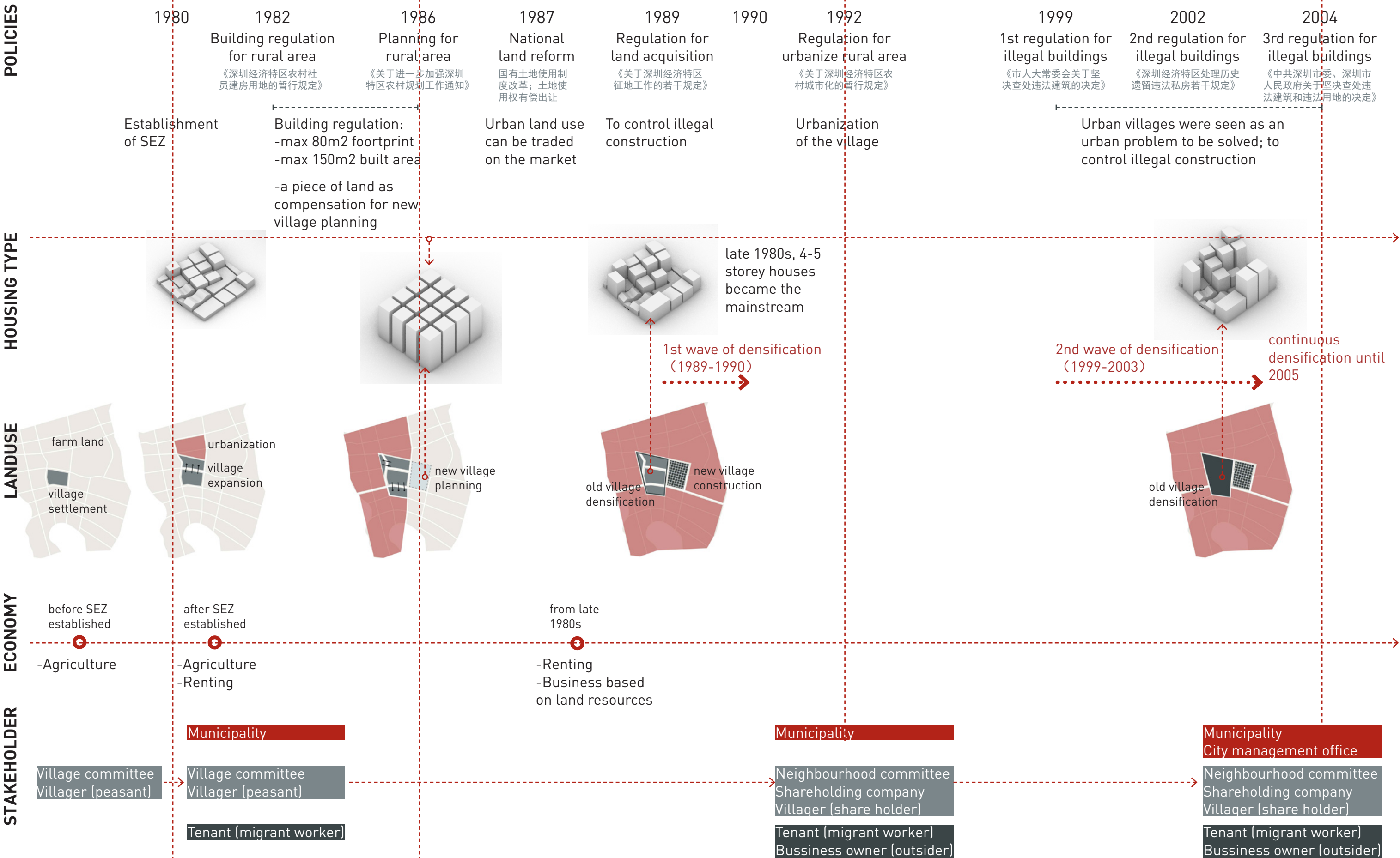


Figure 4.2.4: Historical development timeline of urban village (Made by author)

Demand analysis



Figure 4.3.1: Report of Rental Market in Graduation Season
Source: <https://www.meadin.com/yj/230513.html>



Figure 4.3.2: New Youth Ideal Housing Survey Report
Source: <https://research.ke.com/121/ArticleDetail?id=457>

From theory	From report	Conclude: spatial element	
transportation	metro station	metro station	Distance to job and transportation
employment	(distance to) work place	office buildings	
housing	construction year	housing typology	Building form
	distance between buildings		
	building quality		
neighborhood	surrounding environment	play ground	Surrounding environment
		green space	
		park	
	commercial area	food street	commercial street inside the village
		supermarket	
		salon	shopping mall
		commercial center	
		entertainment center	
		gymnasium	
		cinema	
	educational institution	kingdagarten	kingdagarten
	Others		school
		parking lot	parking lot
		bank and post office	bank and post office
		hospital	hospital

Figure 4.3.3: Table of young graduates' housing demands (Made by author)

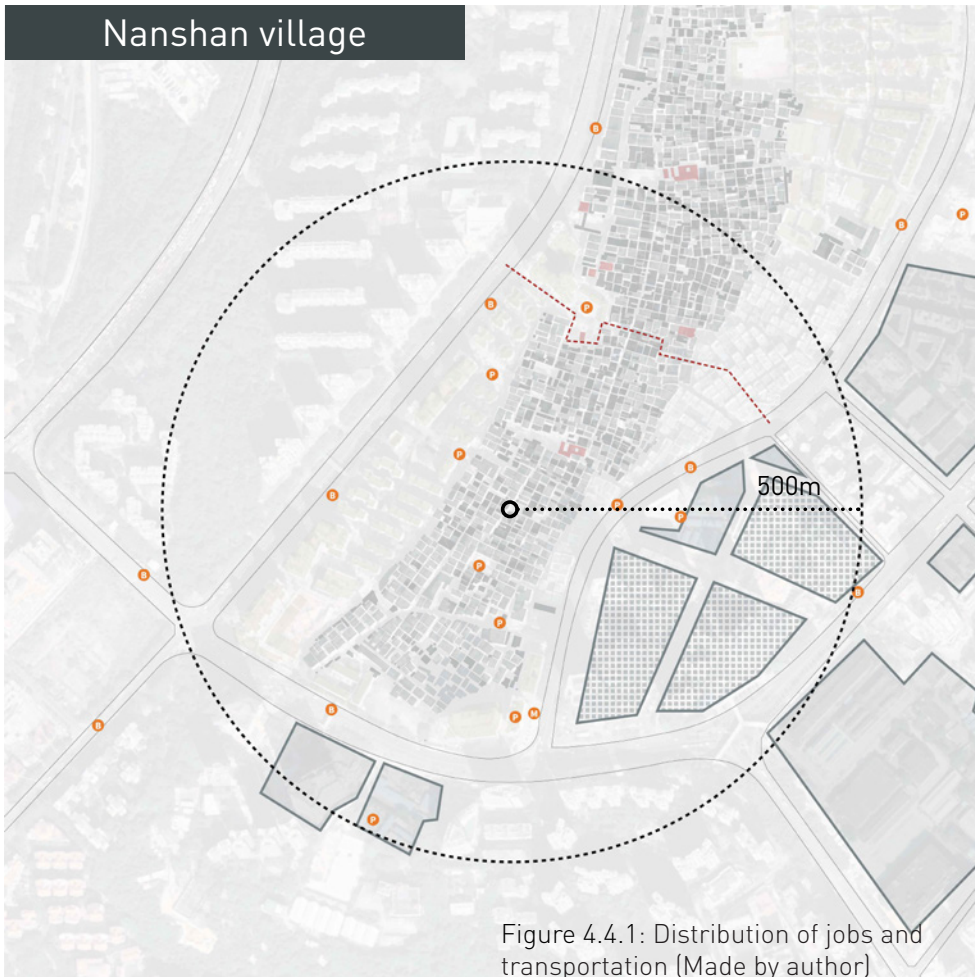
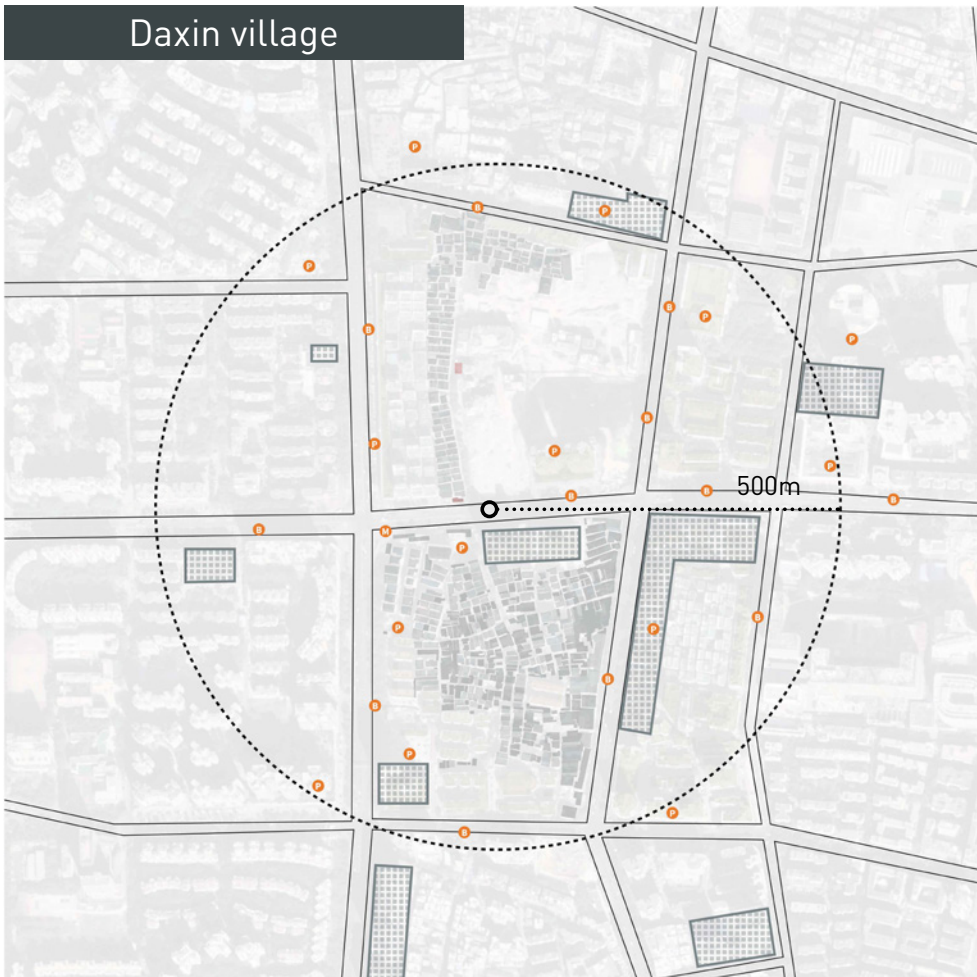
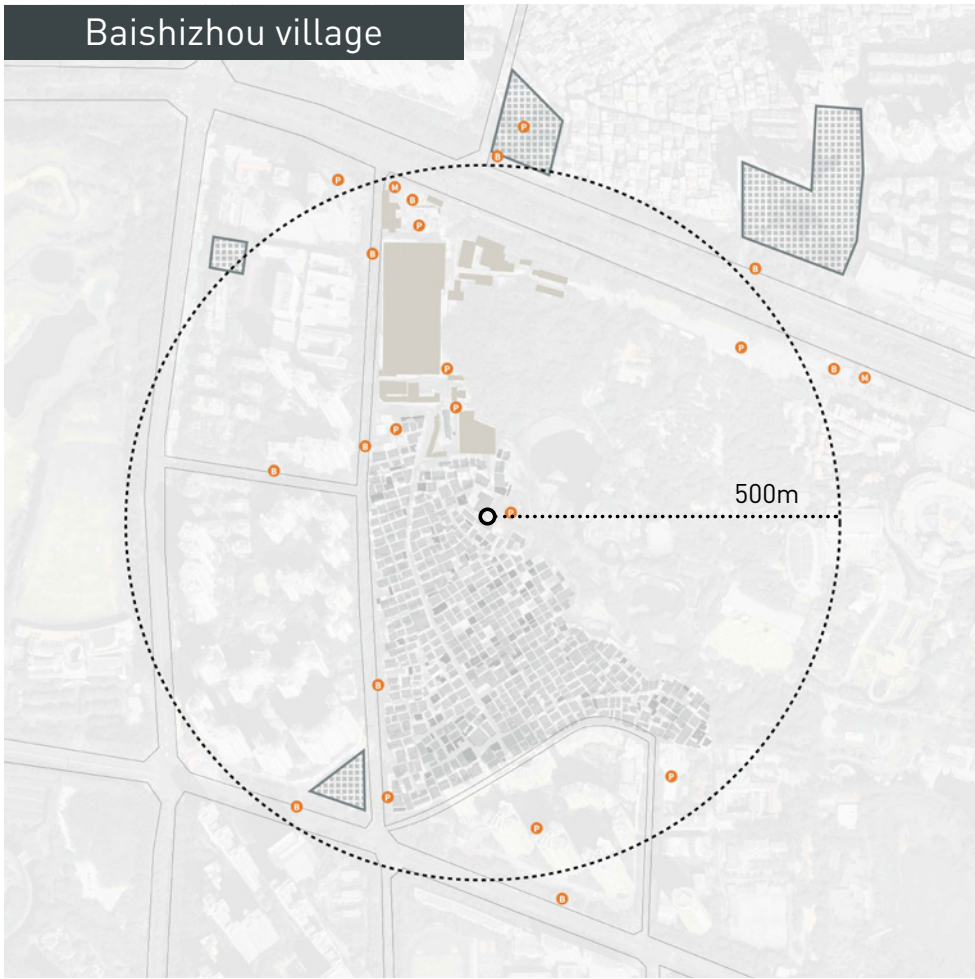
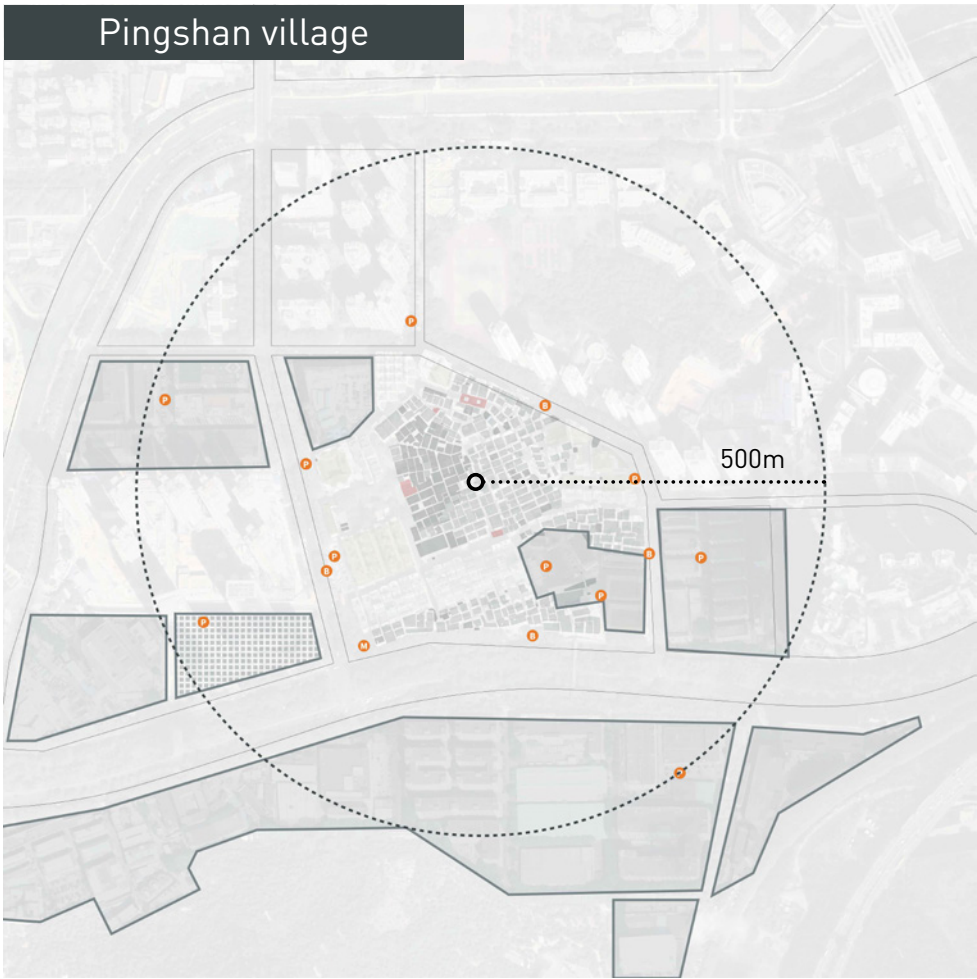
Demand Analysis

Although the urban village has provided affordable well-located housing, it may not satisfy young graduates' demands and expectations.

KE Holdings (贝壳网), one of the most influential platforms for housing services in China, conducted several online research to analyze the housing demands of young people. From the Report of Rental Market in Graduation Season (Beike Research Institute, 2021) and the New Youth Ideal Housing Survey Report (Beike Research Institute, 2021), young people's housing demands can be summarized as distance to jobs and transportation, building form, surrounding environment, and living facilities (see Figure 4.3.3). These will be the indicators guiding that spatial analysis on the local scale.

Distance to jobs and transportation

As infrastructure-intensive and employment-intensive areas are the precondition for choosing the site, the selected villages are all close to work place or public transportation.



- transportation
- M

 metro station
- B

 bus station
- P

 parking lot
- workspace
- industrial area
- office building area

Figure 4.4.1: Distribution of jobs and transportation (Made by author)

Building Form

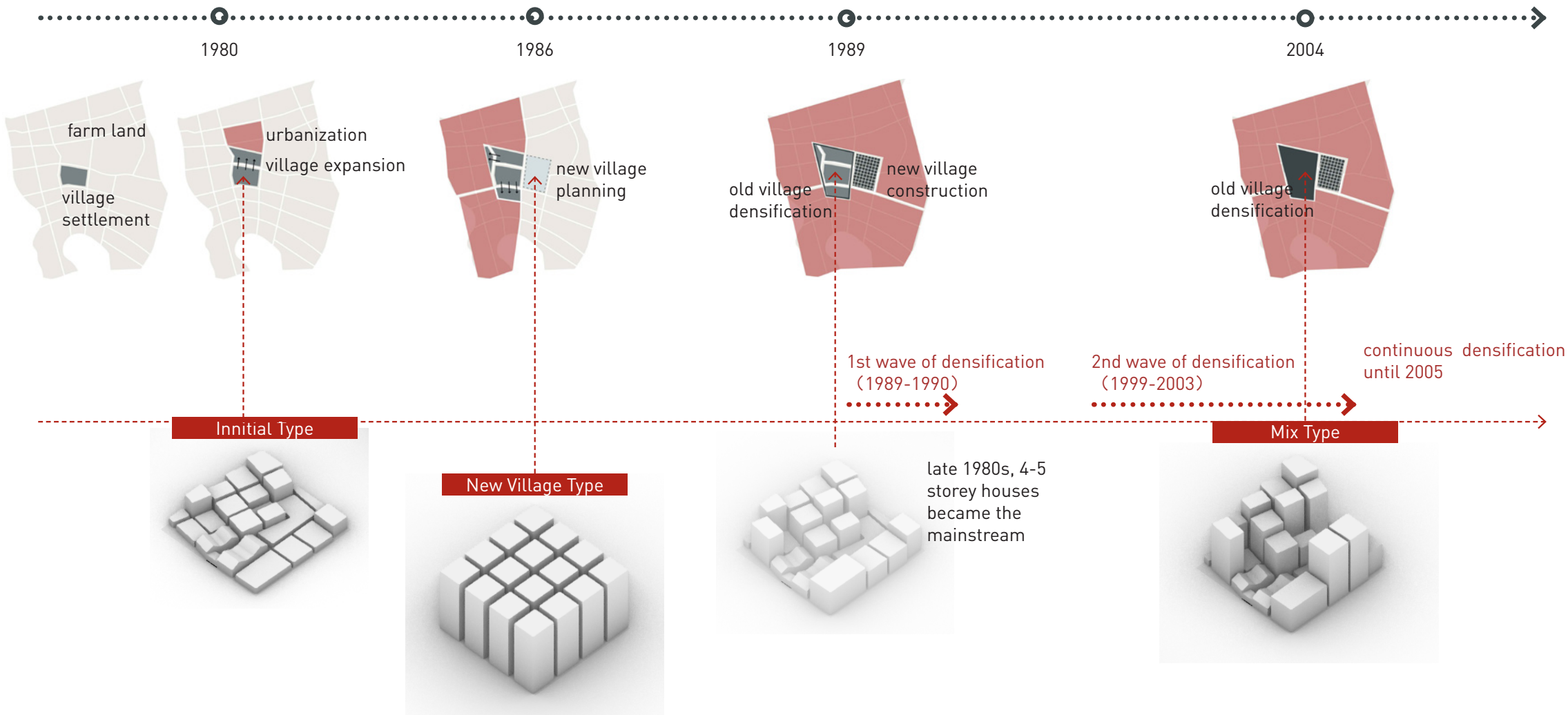


Figure 4.4.2: Historical timeline of building form development (Made by author)

There are three main building forms in the well-located urban village.

Initial type

The first one is the initial type, which was constructed before or during the early 1980s. The initial type of buildings is in low density, which is mostly no more than 3 storeys. Generally, on the ground floor, there will be a store on the street side and a living space at the back. The upper floors are usually for residential use.

Not all urban villages have this building form. It is more likely to appear in urban villages with less urbanization pressure and it is often located at the center of the village, as it was the basis for the village to expand.

Among the four villages studied in the research, a number of initial type buildings can be seen in Pingshan village and Daxin village, while in Nanshan village there are a few scattered initial type buildings, and in Baishizhou village there is almost no initial type.



Figure 4.4.3: Initial type buildings

Source: Study on the Spontaneous Transformation of the RoadwaySpace in Pingshan Village, Shenzhen, Sun, 2019

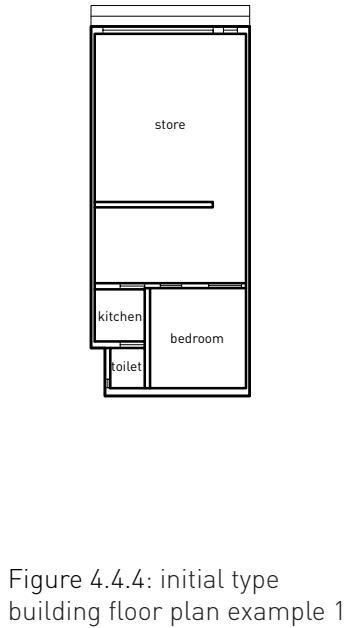


Figure 4.4.4: initial type building floor plan example 1



Figure 4.4.5: initial type building floor plan example 2

Building Form



Figure 4.4.6: New village type buildings

Source: Baidu street view

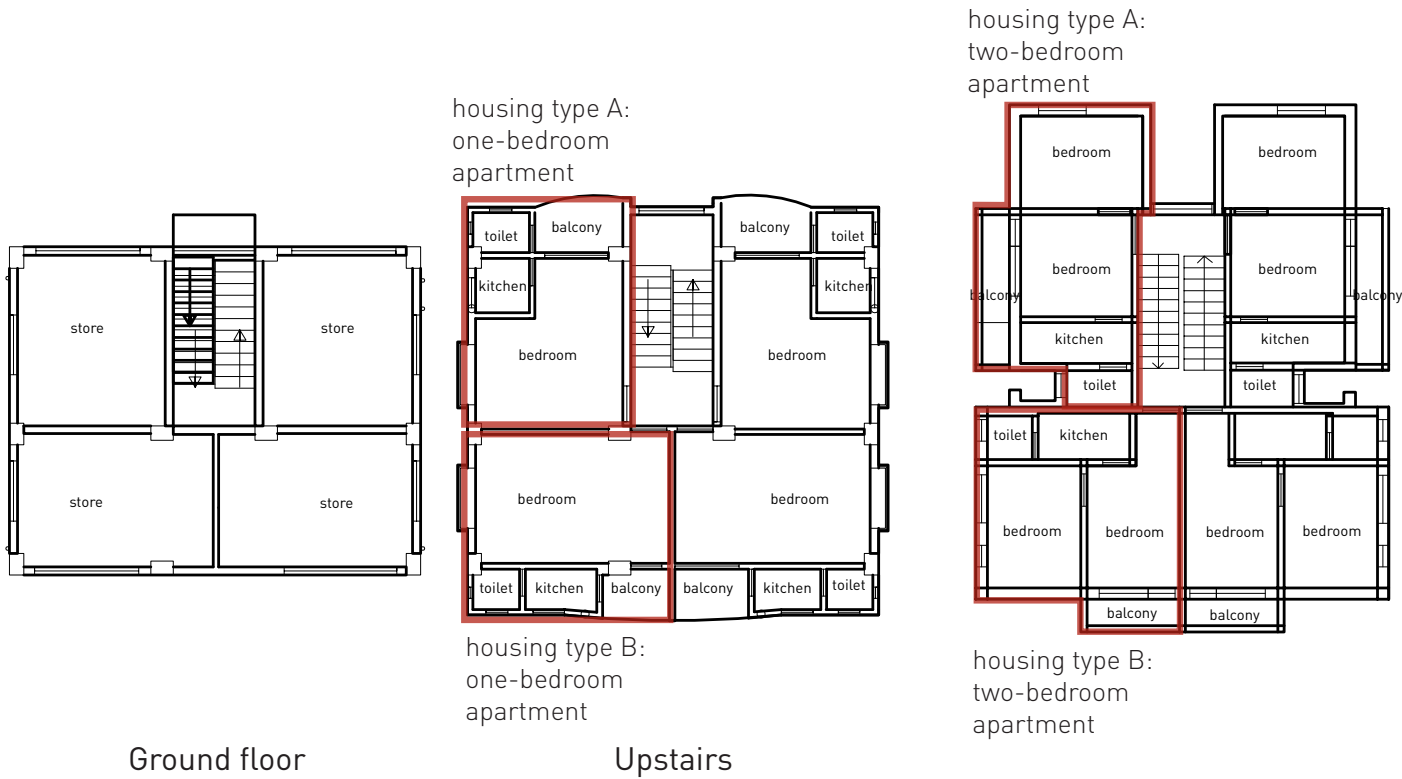


Figure 4.4.7: New village type building floor plan example 1

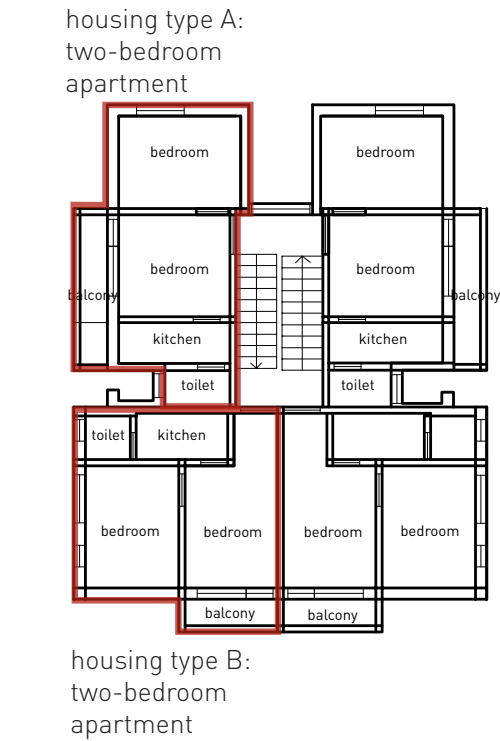


Figure 4.4.8: New village type building floor plan example 2

New village type

The new village type was constructed in the late 1980s. During that time the village got a piece of land from the government as compensation for land expropriation, and the new village was planned and developed on the land (Li, 2018).

During that period, villagers had started to make a profit from leasing their property to migrant workers. Most of the new village type buildings were built not for self-occupation, but for rental business. Therefore, villagers built as many as they could (8-9 storeys). The ground floor was often for commercial function and the housing types were mostly one or two-bedroom apartments for small households.

Not every village has this kind of building, for example, it cannot be seen in Baishizhou village, and they are often located on the outskirts of the village.



Figure 4.4.9: Mix type buildings

Source: <https://www.jianshu.com/p/c7529f8ffecb>



Figure 4.4.10: Mix type building floor plan example 1

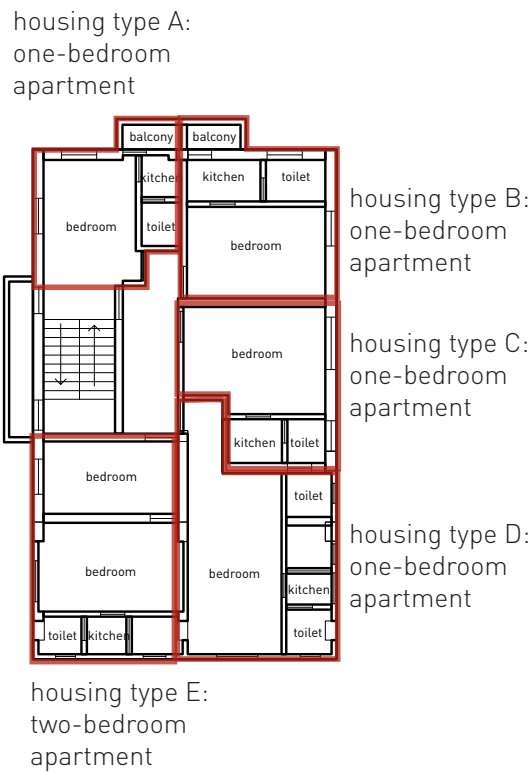


Figure 4.4.11: Mix type building floor plan example 2

Mix type

The third type is the mix type, which was formed by continuous densification from the initial type. In the late 1980s, four to five-storey buildings replaced the initial type and became the mainstream in the villages (Li, 2018). By 2005, before illegal construction was largely brought under control, buildings of more than ten storeys had appeared in urban villages.

The buildings and housing types are very diverse in the mix type building form. Both decaying low-density buildings and newly-built buildings can be seen, and from the one-bedroom apartment for a single household to four-bedroom housing for a whole family are possible to be found in the village.

The mix type is very common and can be seen in almost every urban village.

Building Form



Figure 4.4.12: Satellite map of post-industrial building

Source: Google earth

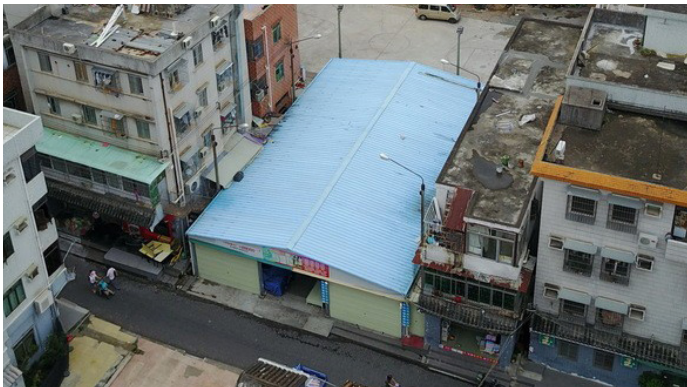


Figure 4.4.13: Post-industrial buildings

Source: <http://www.archcollege.com/archcollege/2018/8/41304.html>

Other buildings

There are also some other buildings that can be seen in the urban village.

Post-industrial building

At the dawn of the reform and opening-up process, many villages built factories nearby the village settlement to develop processing and manufacturing industries. Compared to the buildings inside the village settlement, the post-industrial buildings have the characteristic of large volume and low density.



Figure 4.4.14: Satellite map of old residential neighborhood

Source: Google earth



Figure 4.4.15: Old residential neighborhood

Source: Baidu street view

Old residential neighborhood

Some old residential neighborhoods can be seen in some of the urban villages. Different from the self-constructed village housing, they were planned to be built with more reasonable building forms. Generally, they are the early residential community or dormitories for employees of state-owned companies.



Figure 4.4.16: Satellite map of commercial complex

Source: Google earth



Figure 4.4.17: Commercial complex

Source: Baidu street view

Commercial complex

Some commercial complexes can be seen on the main streets where urban villages meet urban land. They were developed from the original village settlement or industrial area. They have similar characteristics to other commercial complexes in the urban areas.

Building Form- Distribution

- initial type (≤3 storeys)
- mix type
- new village type
- other building
- historical building

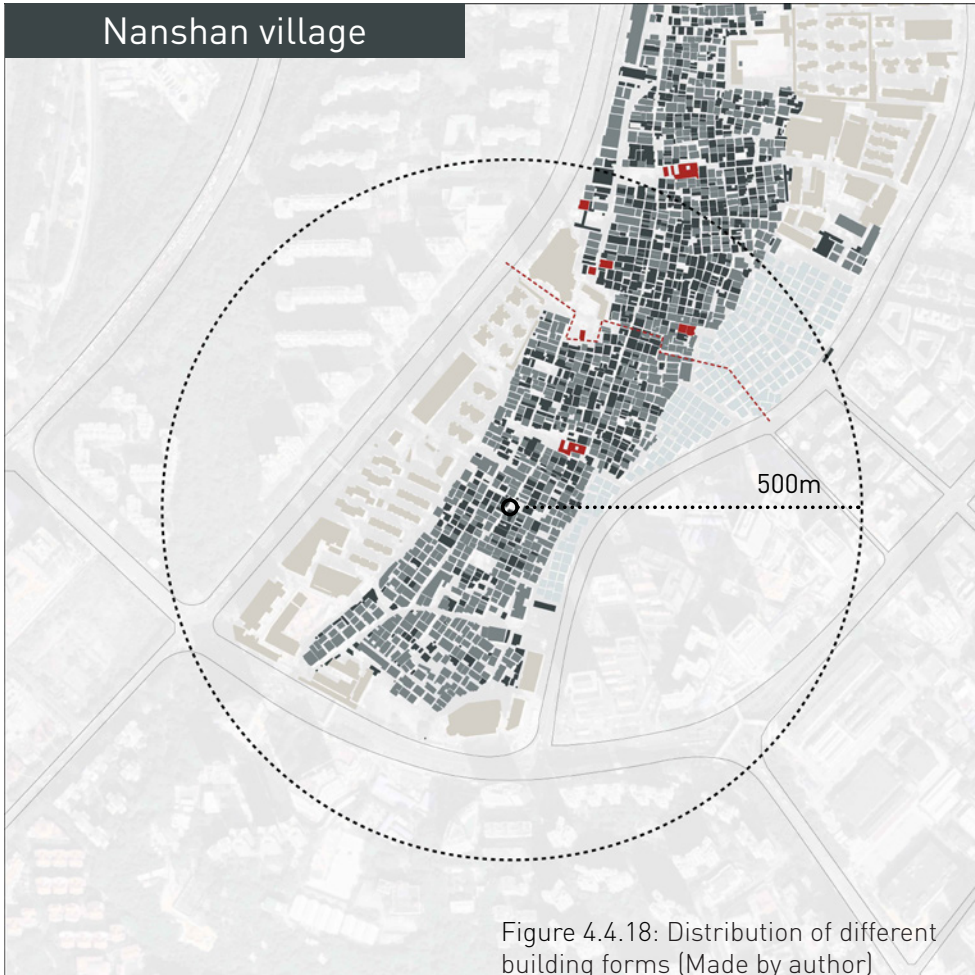
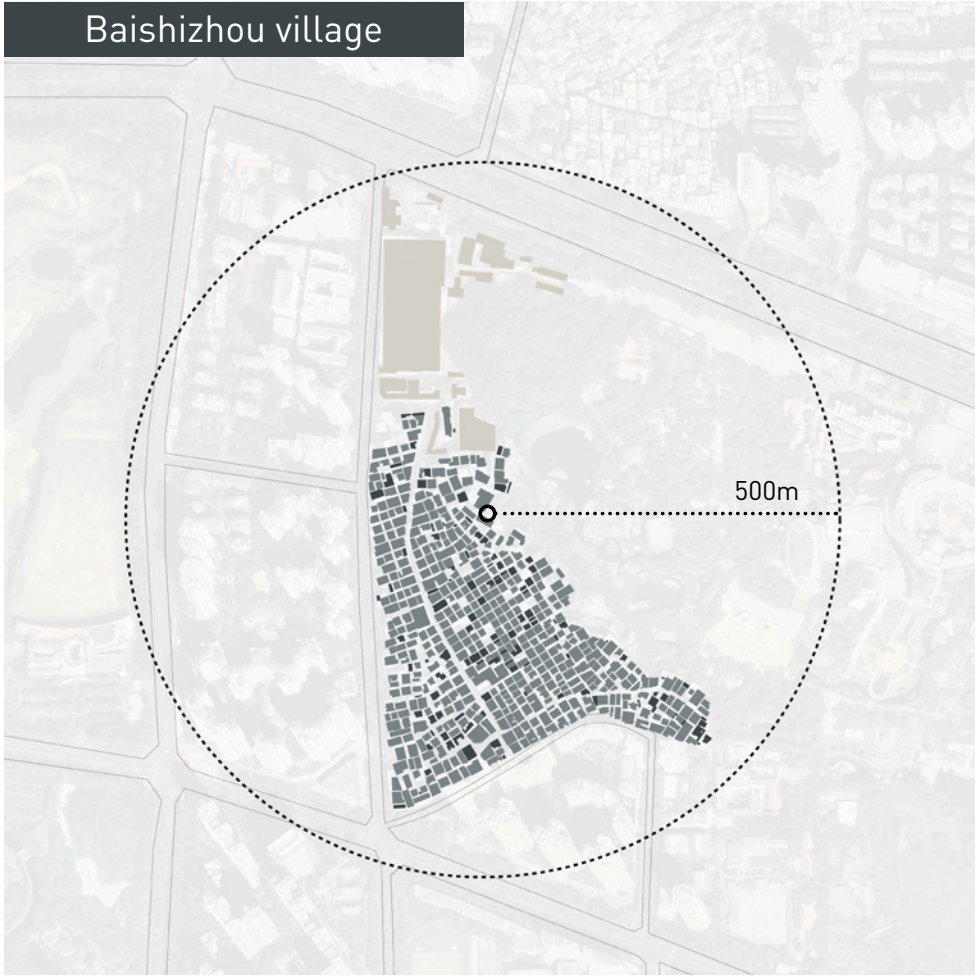
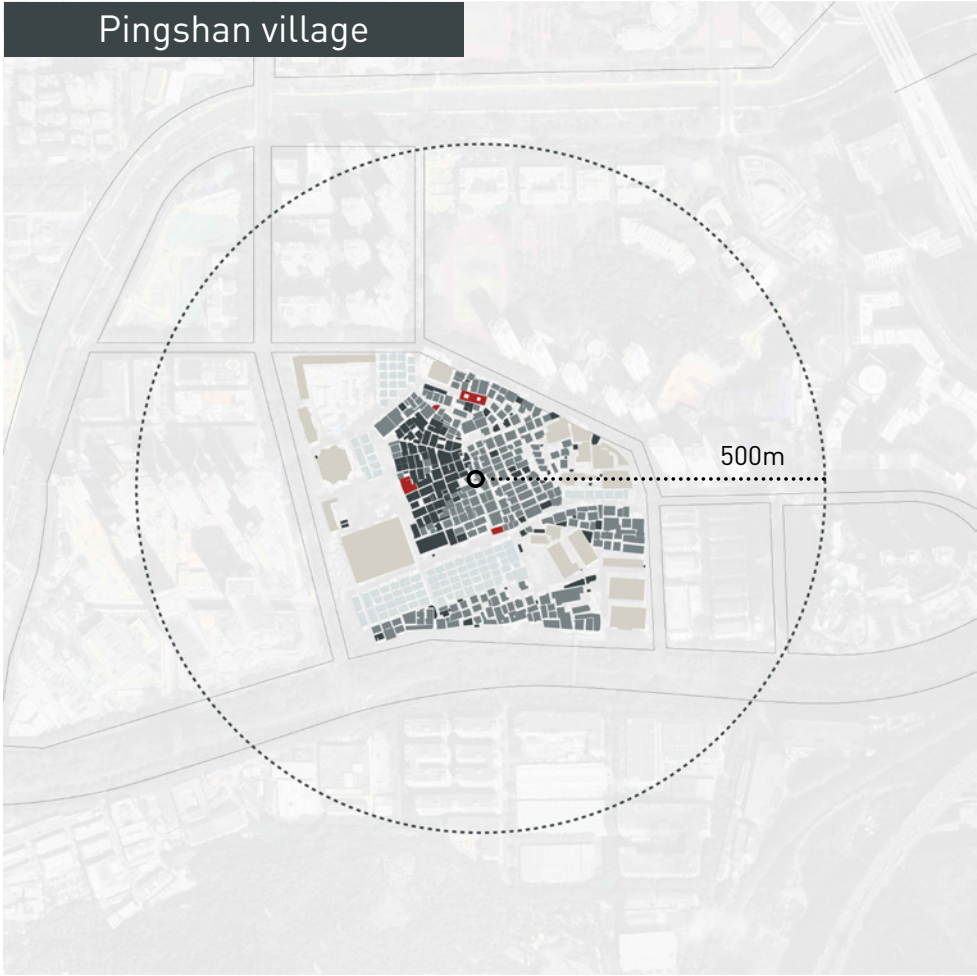


Figure 4.4.18: Distribution of different building forms (Made by author)

Surrounding environment

The surrounding environment focuses on open space and green space, which are actually contradictory to the driving force of the urban village development. As villagers tend to build as many as possible, there is almost no open space inside many urban villages.

In many villages, residents often occupy some vacant land and the street to fulfill their daily and social needs for public space. For example, in Pingshan village, clothes were hung along the streets; furniture was put outdoor and residents sited, chatted, and picked vegetables along the streets (Sun, 2019).



Figure 4.4.20: Streets occupied by residents
source: Study on the Spontaneous Transformation of the RoadwaySpace in Pingshan Village, Shenzhen, Sun, 2019
84

- green space
- park
- playground
- open space

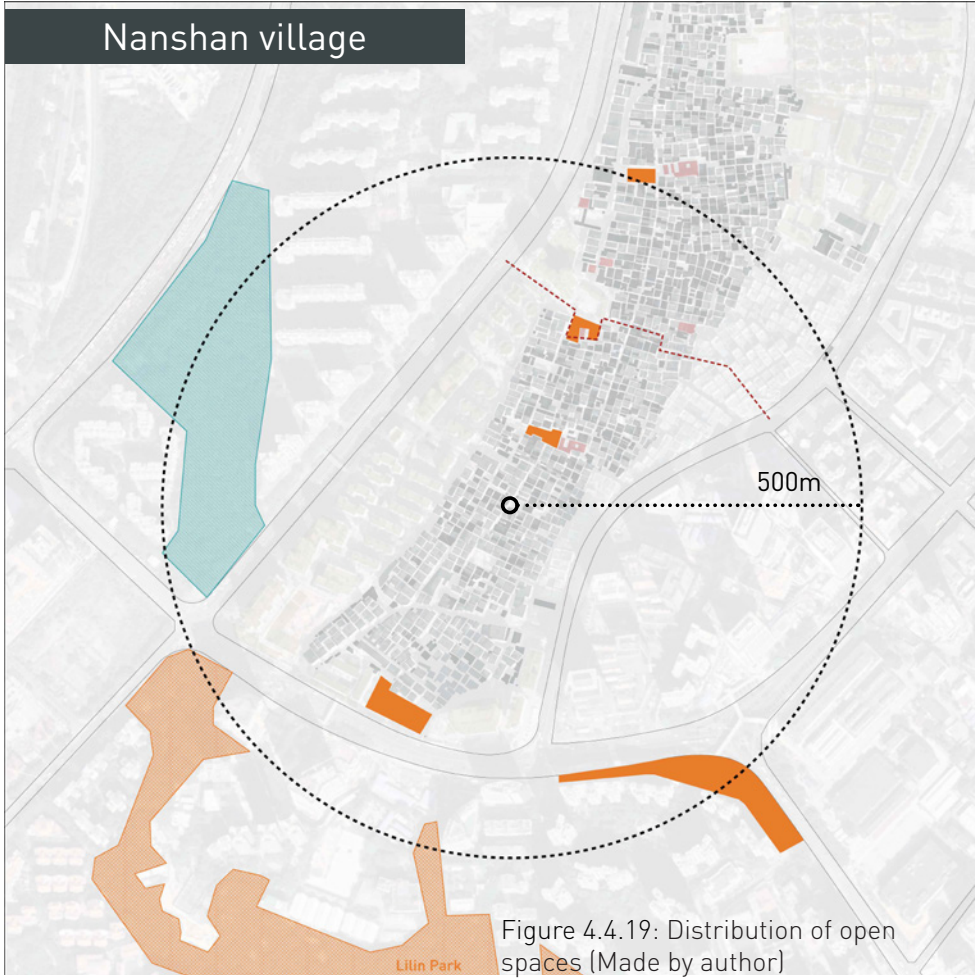
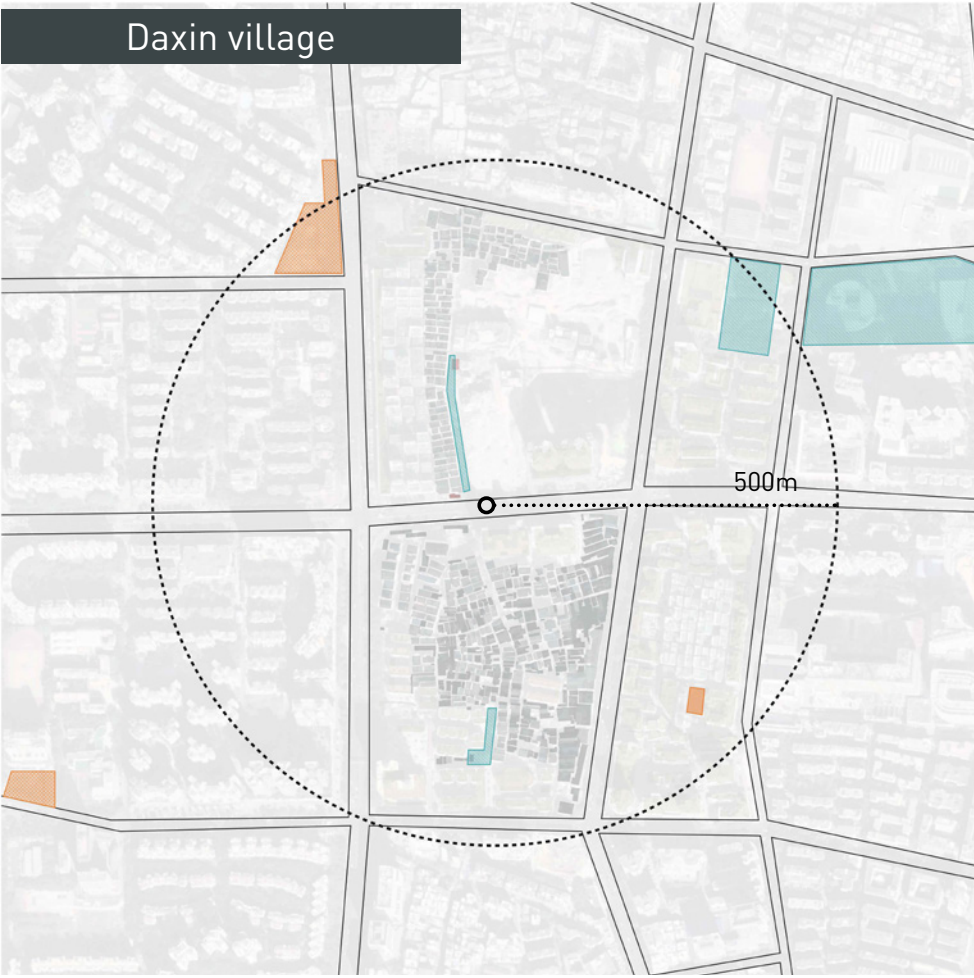
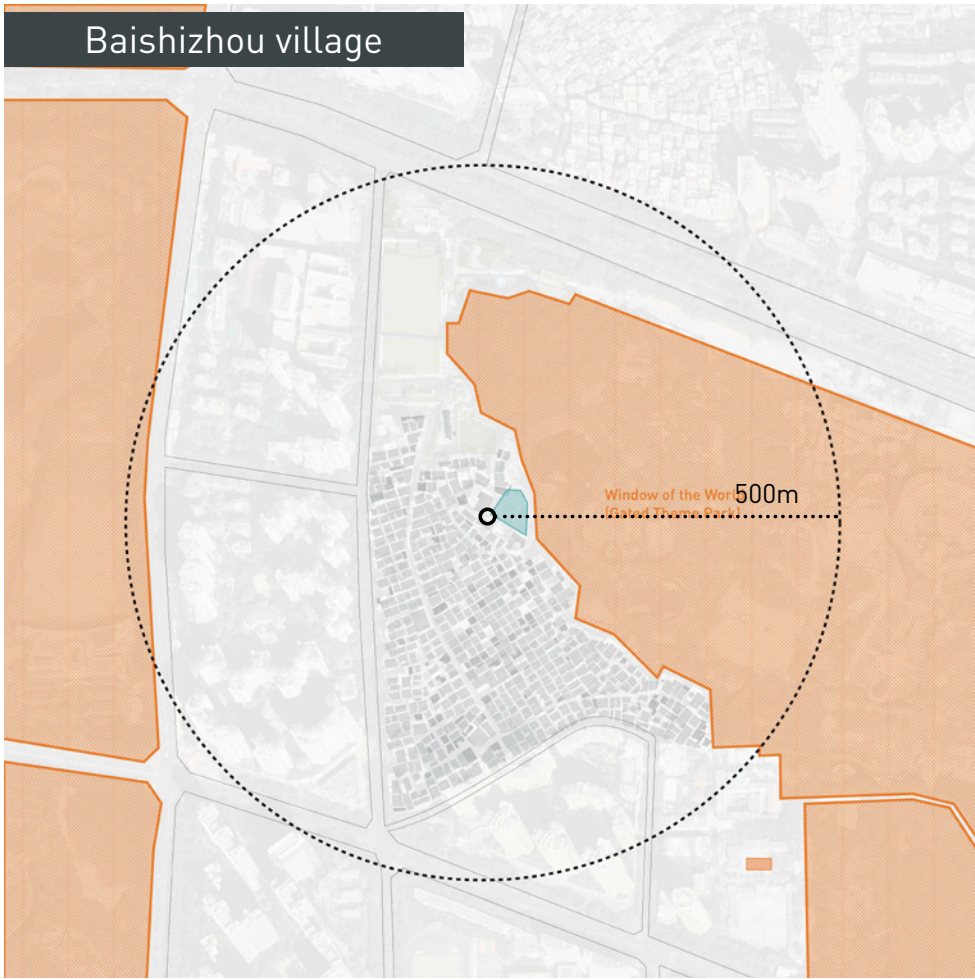
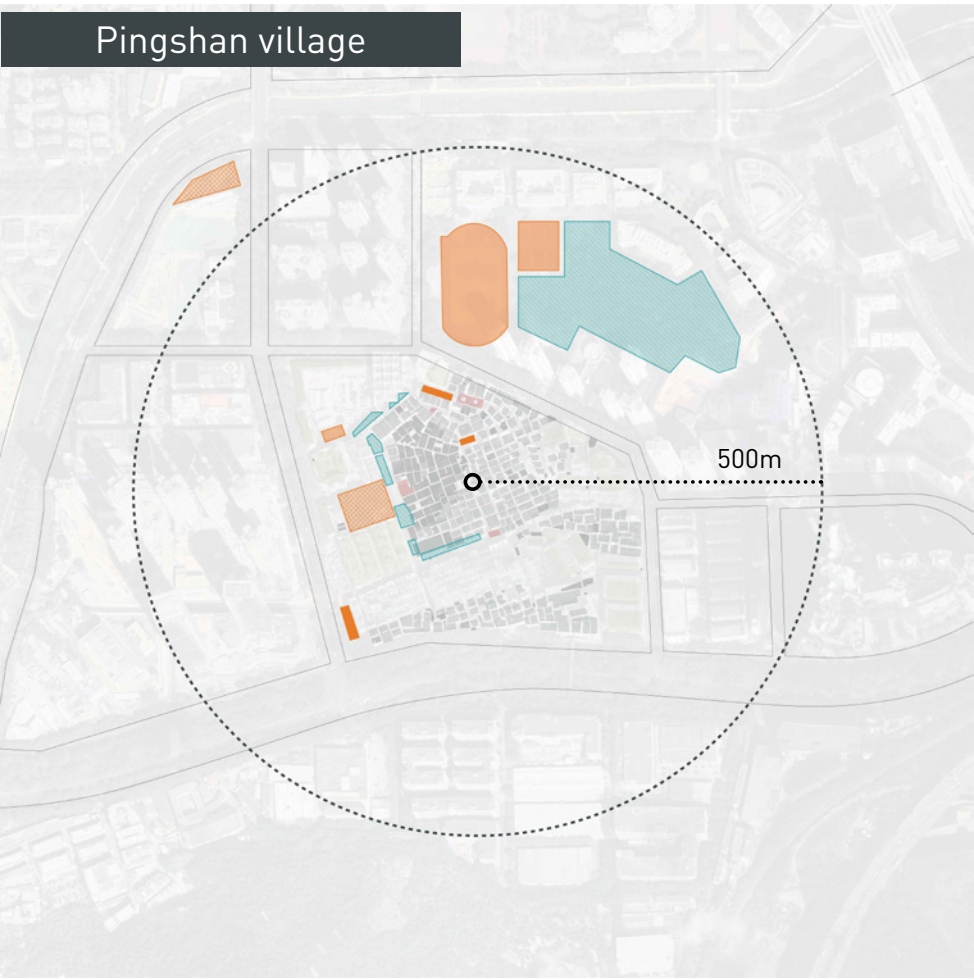
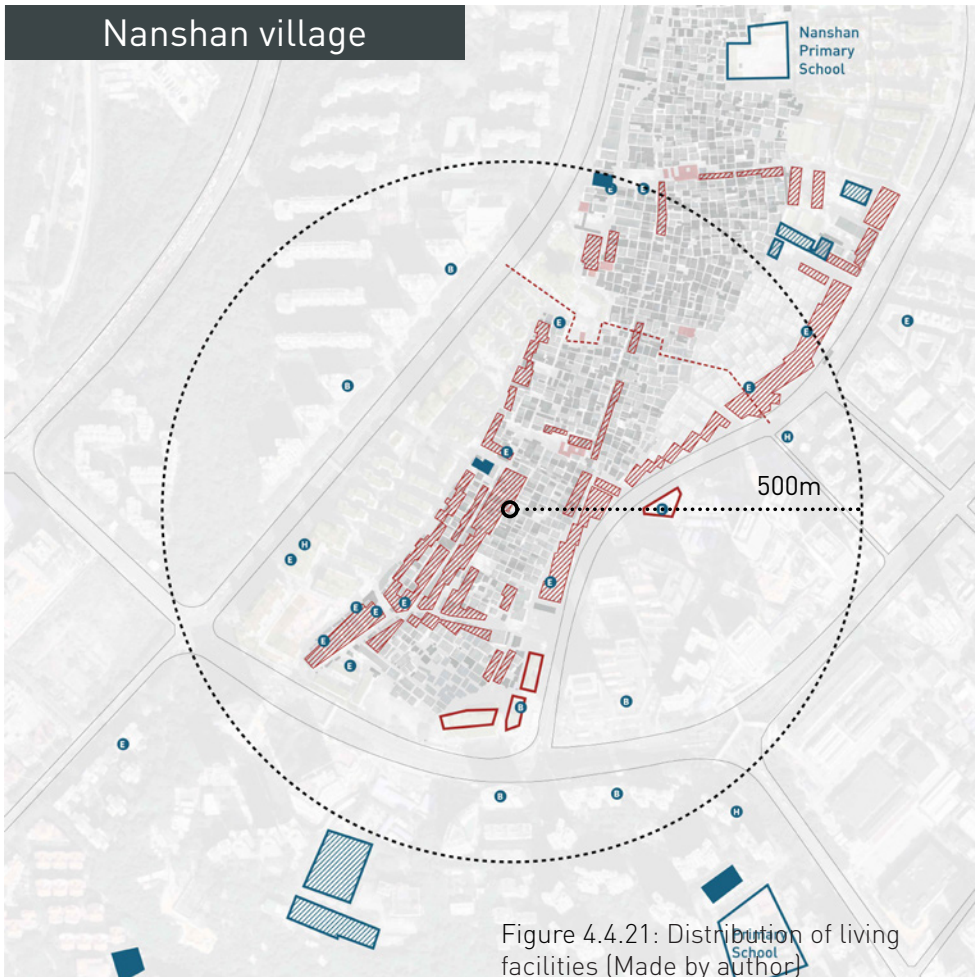
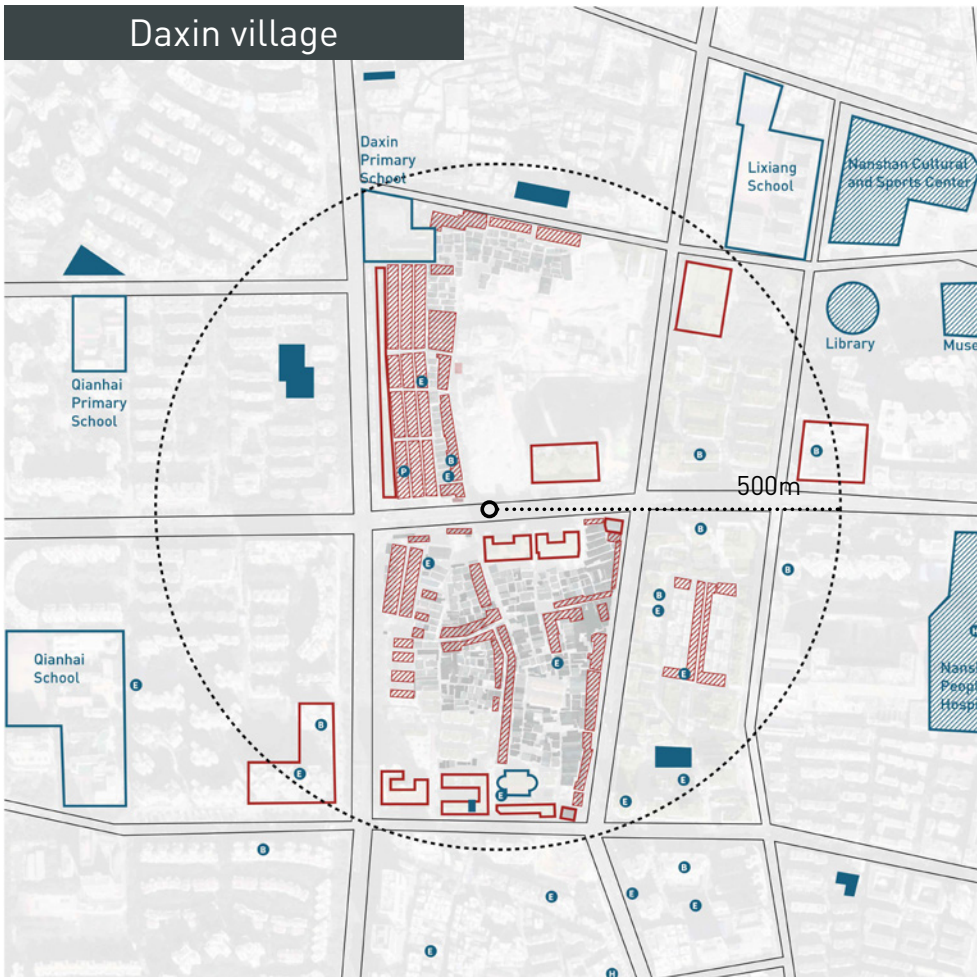
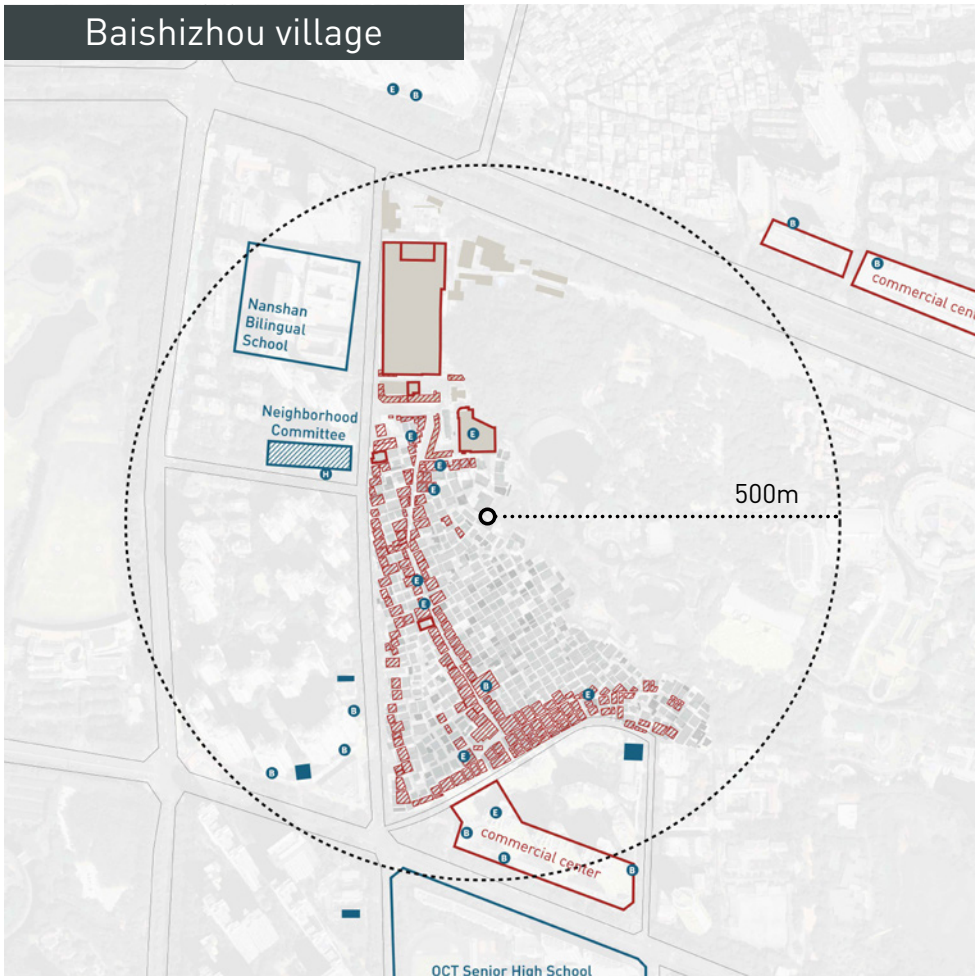
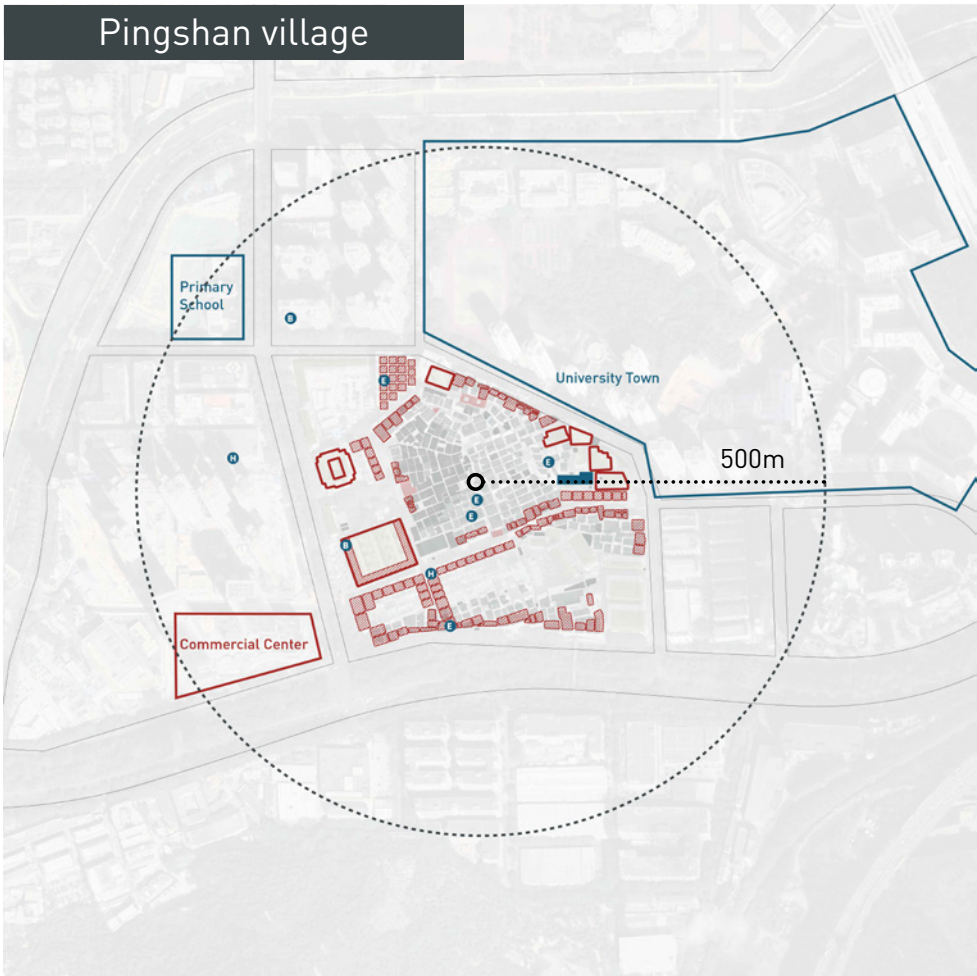


Figure 4.4.19: Distribution of open spaces (Made by author)

Living facilities

The previous analysis has showed that most of the buildings inside the village are mix-used: commercial function on the ground floor and residential area on the upstairs. Therefore, the living facilities can satisfy most of young graduates' demands. Moreover, because the villages are well-located, residents can get access to public facilities like big commercial centers easily by foot and public transportation.



- | | | | |
|-------------|----------------------------|--------|-------------|
| commercial | commercial on ground floor | others | hospital |
| | centralized commercial | | bank |
| educational | education institution | | express |
| | kindergarten | | post office |
| | culture and sport facility | | |

Figure 4.4.21: Distribution of living facilities (Made by author)

Conclusion

To conclude, the common characteristics of the well-located urban villages are:

- Dense built environment;
- Limited open space;
- Footpath connection that being occupied;
- Convenient living facilities

The main principle for regeneration should be to balance density and public space, to increase living environment to fulfill young graduates' demands.

Certainly, there are different situations in different villages.

Pingshan village: rely on the development of university towns; has more open space and is relatively well-structured;

Baishizhou village: surrounded by multiple opportunity-rich areas; with a prosperous main commercial street; almost has no open space; only has mix type building form;

Daxin village: divided into several parts by the roads; does not have a main commercial street;

Nanshan village: has many historical buildings with a square; no clear boundary with other adjacent villages.

Generally speaking, the common characteristics of the urban villages are quite obvious, which can be the base for the strategy proposal. When it comes to concrete design, the different situations in different villages should be taken into account.

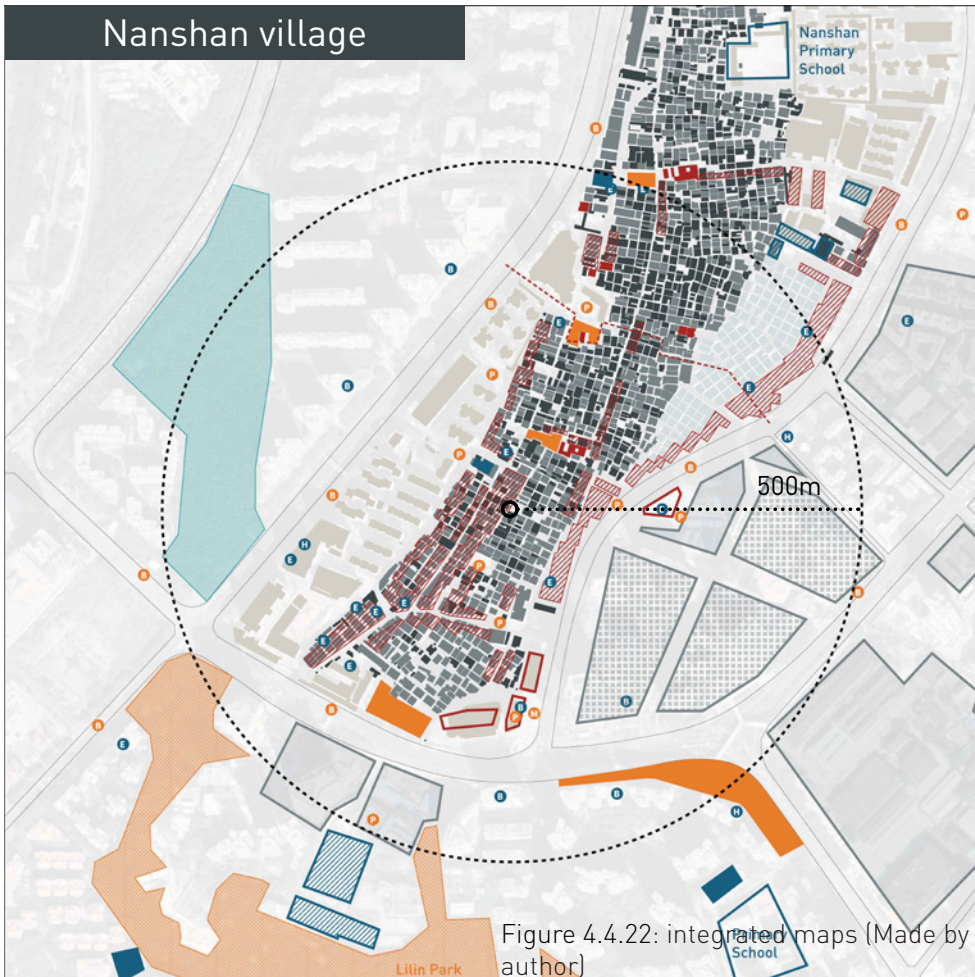
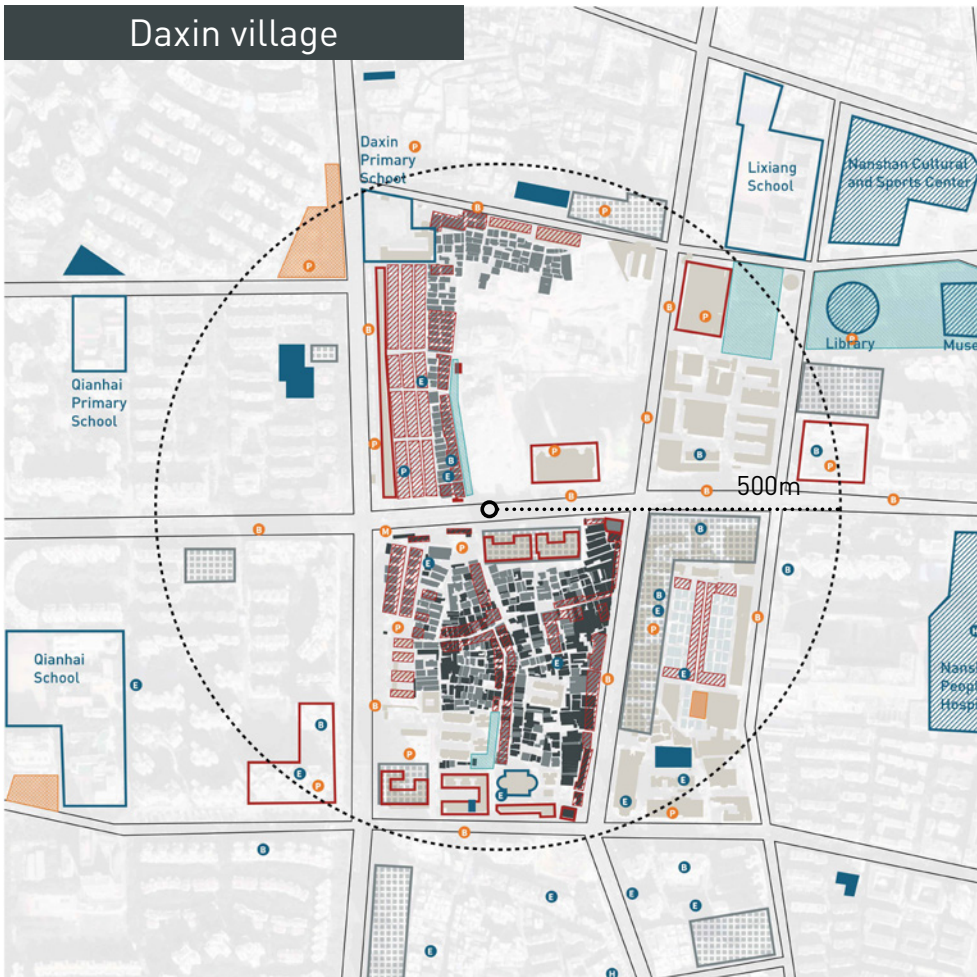
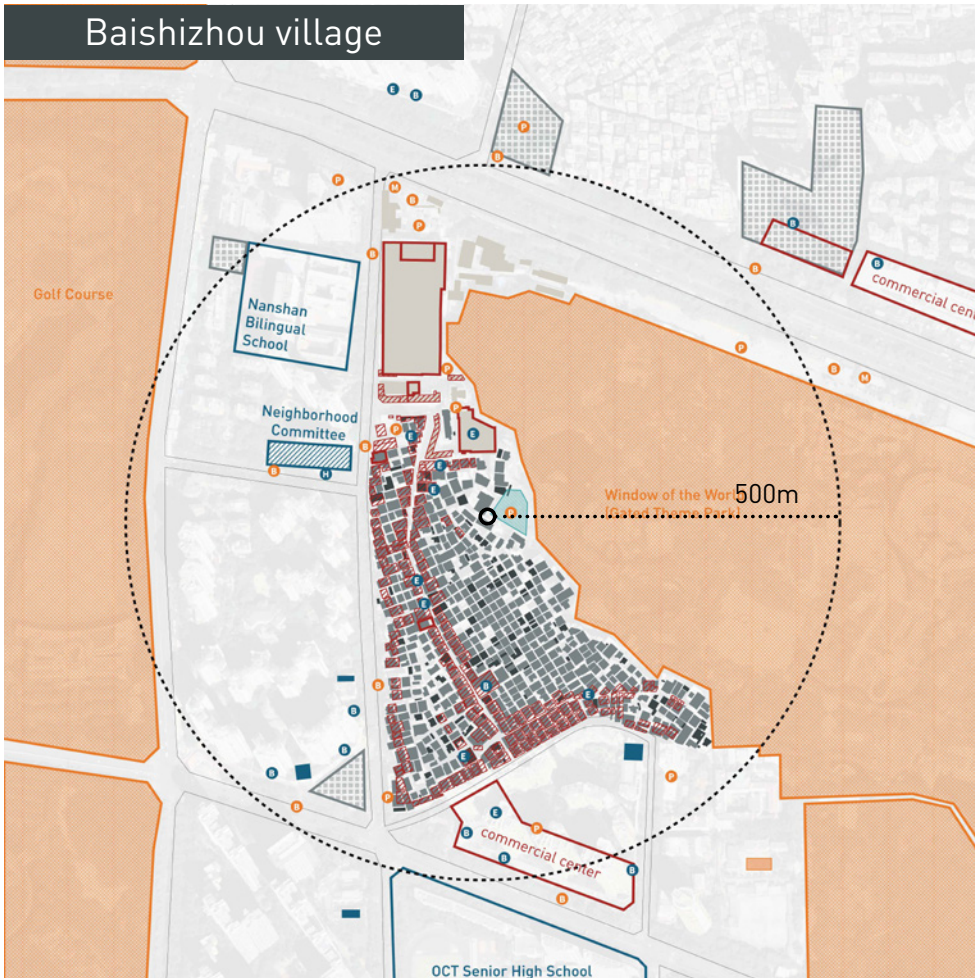
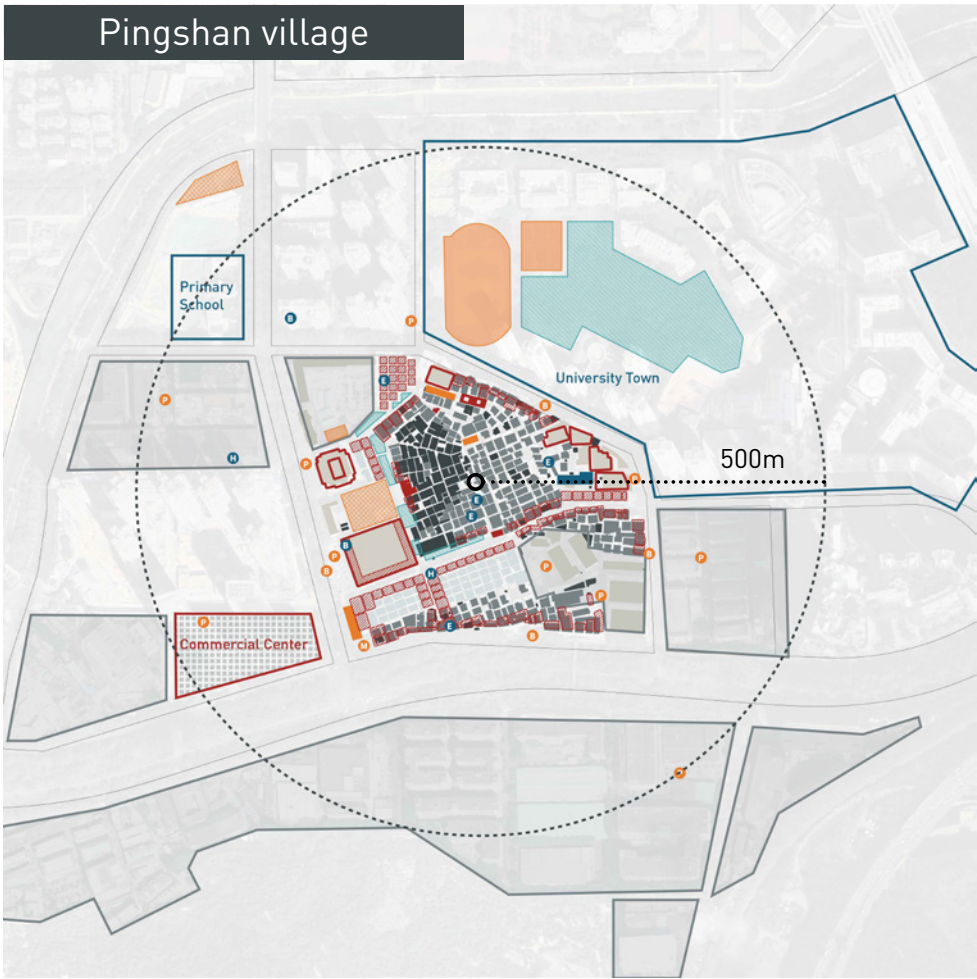


Figure 4.4.22: integrated maps (Made by author)

Stakeholder analysis

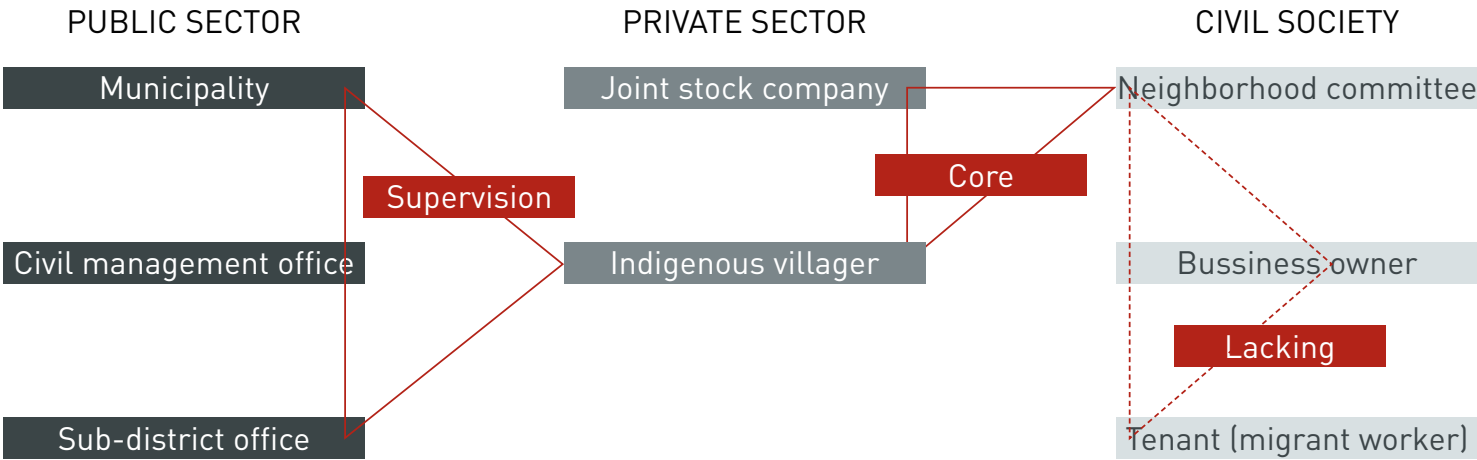


Figure 4.5.1: Stakeholders involved in the daily operation (Made by author)

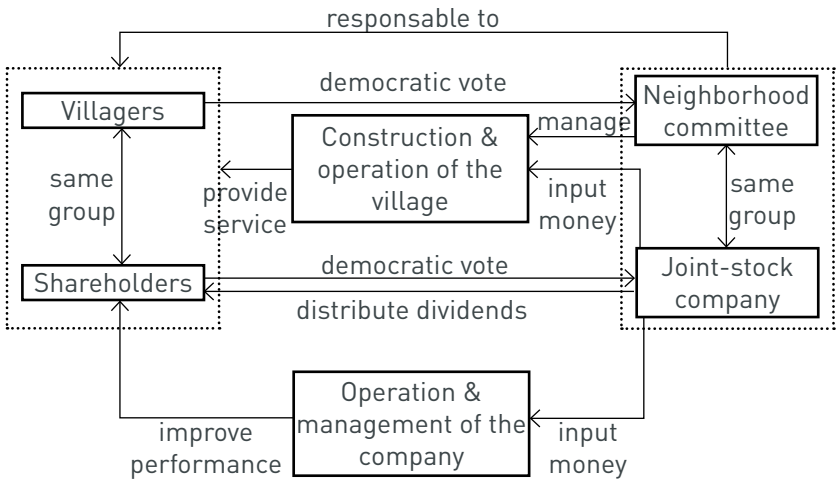


Figure 4.5.2: The relationship of village based on the collective economy
Source: The Reframing Ligament at the End of Villages: Collective Economy——A Case Study on the Urban- Villages in Shenzhen, Zhou & Yan, 2009

Stakeholders involved in the daily operation of the village can be divided into three sectors: public sector, private sector, and civil society.

Private sector

The private sector includes the joint-stock company and the indigenous villager. They are the core stakeholders in the village.

The joint-stock company was established in 1992 when the government decided to include the urban village in the urban management system. The original village committee was replaced by a neighborhood committee (which is a stakeholder in the civil society) and a joint-stock company. The neighborhood committee is the basic unit of self-governance in the urban area, and the joint-stock company takes the responsibility of the original village committee, including operating the

collective property, investing in the infrastructure, managing the daily affair, and distributing the social welfare for the indigenous villagers. Villagers are not only the landlords who own the land use right, but also shareholders who can get dividends from the joint-stock company. (Hao et al., 2011; Zhou & Yan, 2009)

Public sector

Although the land of the urban village is state-owned in the law, the public sector does not have much power in the village. The infrastructure inside the village was invested by the joint-stock company, and it is also the company that pays for the daily affair of the village. The municipality only gives some guidance for the management process and supervises the illegal construction to avoid large-scale densification to happen again.

Civil society

The civil society, which includes business owners and tenants, is the most vulnerable group. In other urban areas, the neighborhood committee is responsible for protecting residents' rights. However, in the urban village, the neighborhood committee is so dependent on the joint-stock company in the financial aspect that it only considers villagers' right but ignore the tenants. Therefore, the business owners and tenants, who are the main user of the village, actually have little power and their voice cannot be heard.

Stakeholders in redevelopment project

The main stakeholders involved in the redevelopment project are government, landlords (the village), and developers. The existing tenants are hardly ever taken into account.

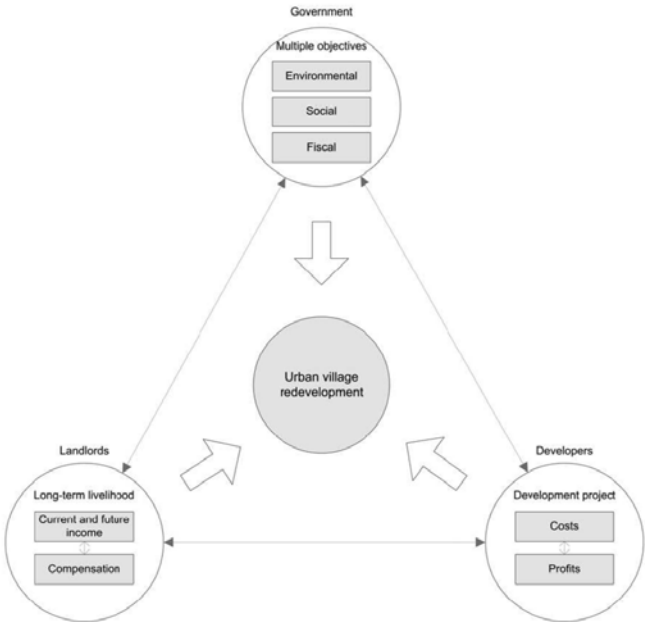


Figure 4.5.3: The interplay between the main actors in urban village redevelopment
Source: The development and redevelopment of urban villages in Shenzhen, Hao, P., Sliuzas, R., & Geertman, S., 2011

Demolition and reconstruction

Dachong Village

Construction year: 2011
Location: Nanshan district
(inside original SEZ)
Area: 685,000m²

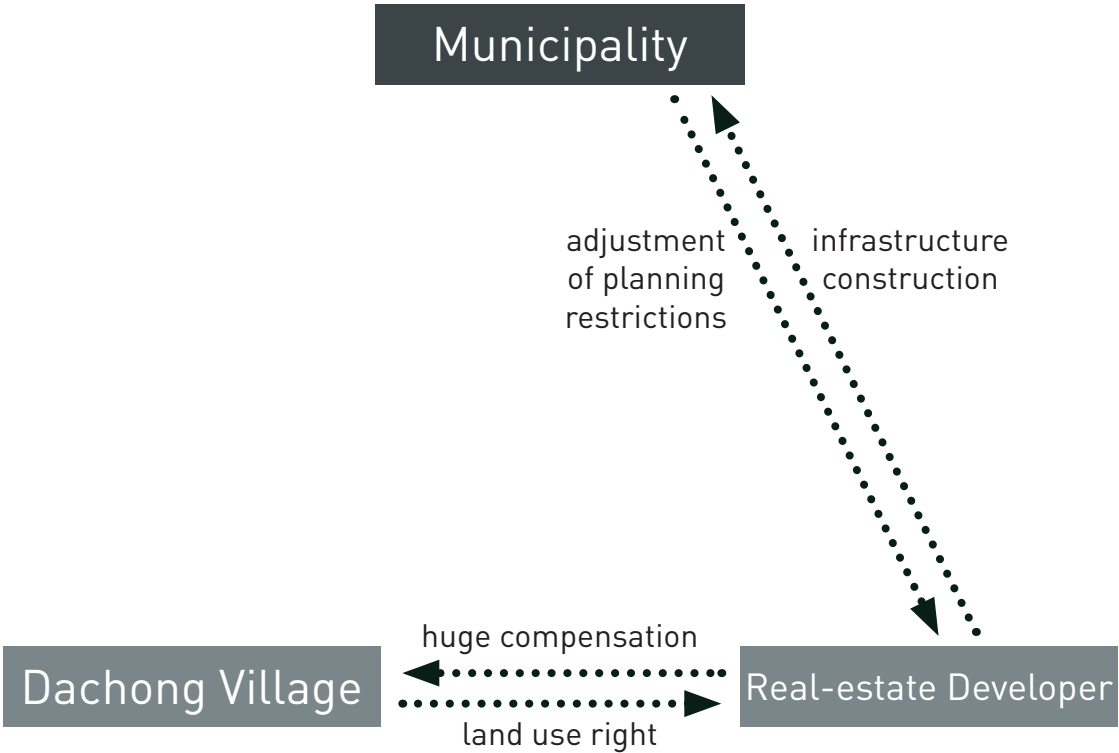
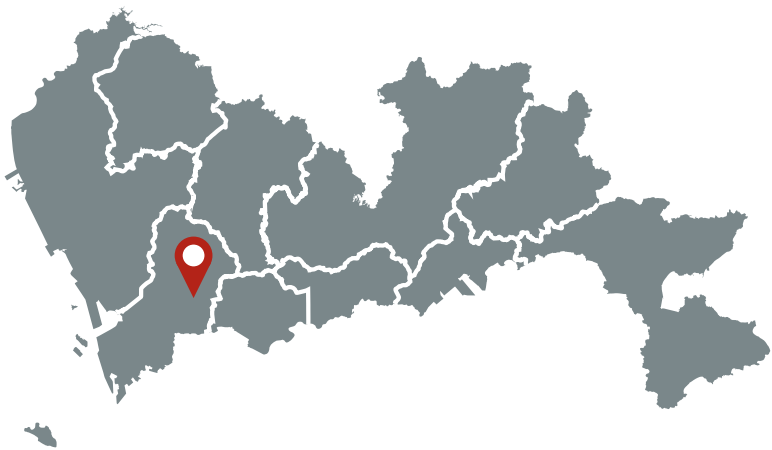
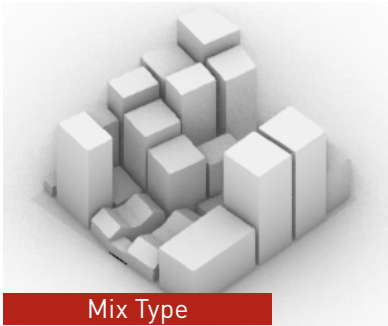


Figure 4.5.6: Governance model of redevelopment of Dachong village
(Made by author)

Demolition and reconstruction used to be the mainstream for redevelopment. One of the most representative cases is the redevelopment of Dachong village. The urban village was demolished and be turned into luxury housing and fancy shopping malls.

The main stakeholders involved are the village and the real estate developer. The government just played the role as a guide. Both the villagers and the developer have a high interest in this kind of project because villagers can get huge compensation while developers can get great profit.

It is obvious that this governance model will lead to gentrification. The original tenants, who were mainly low-income migrant workers, lost their place in the city center.

Rent and regenerate as a whole

Shuiwei Village

Construction year: 2017
Location: Futian district
(inside original SEZ)
Area: 8,000m²

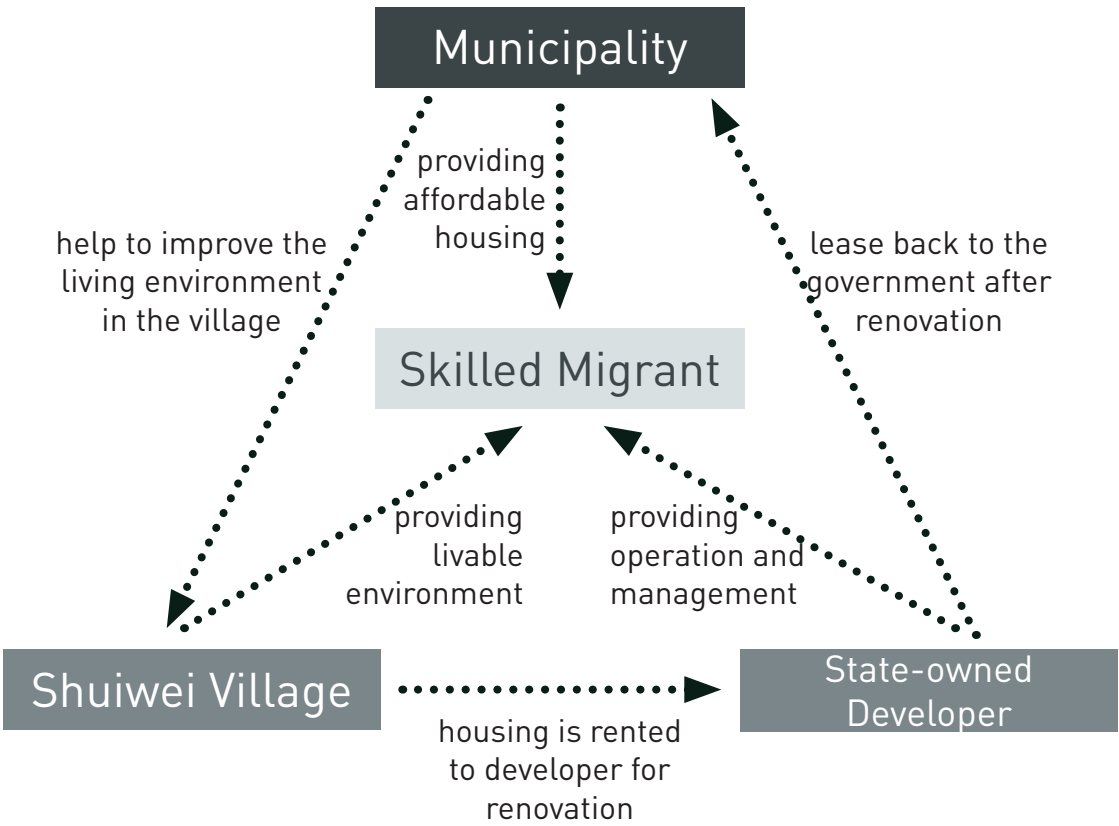


Figure 4.5.9: Governance model of regeneration of Shuiwei village
(Made by author)

Reference: Shenzhen Futian District Shuiwei Ningmeng Talent apartment construction project application report, 2018

Shenzhen municipality also tried on other approaches for regeneration. One of the successful cases is the regeneration of Shuiwei village. This new village type urban village was rented by the government, and was transformed by the state-owned developer into more than 500 affordable housing for young people.

The project cannot be successful without the leadership and support from the government. It took years for the joint-stock company to convince the villagers to participate. Moreover, although it benefits young people, this governance model still leads to resident displacement of the original tenants.

Regeneration based on public event

Nantou Village

Construction year: 2016
Location: Nanshan district
(inside original SEZ)
Area: 34,070m²

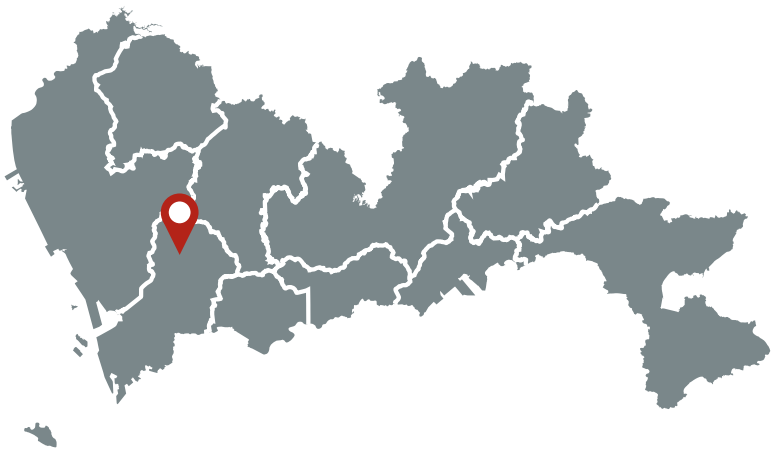
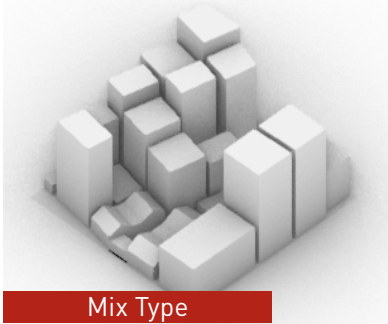


Figure 4.5.10: Nantou village before regeneration
Source: <http://www.archcollege.com/archcollege>



Figure 4.5.12: Nantou village after regeneration
2018/8/41304.html

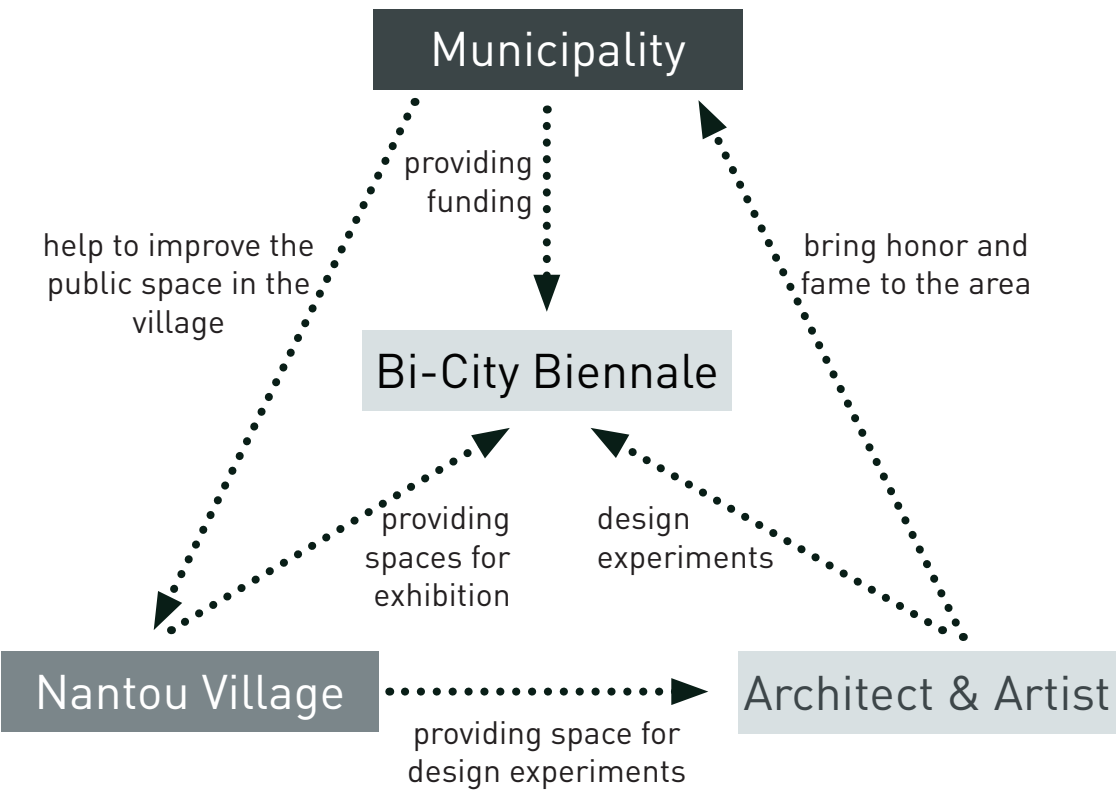


Figure 4.5.13: Governance model of regeneration of Nantou village
(Made by author)

The regeneration of Nantou village was motivated by the Bi-City Biennale of Urbanism/Architecture in 2017. It is an urban village with a long history and many valuable historical buildings, so Shenzhen municipality selected the village to be the exhibition area, and cooperated with professional architects to regenerate the public space.

The first round of regeneration has brought a lot of fame and attention to the village, but did not tackle the private space much, so the residents and the function of the private space in the village were not affected much. In 2019, the government started the second round of the regeneration, and wanted to copy the model to rent and regenerate the village as a whole. As the negotiation among government, village, and developer is still undergoing, it is unclear now whether this will result in resident replacement like Shuiwei village.

Spontaneous regeneration

Jiaochangwei Village

Construction year: start from 2013
Location: Dapeng district
(outside original SEZ)
Area: 470,000m²

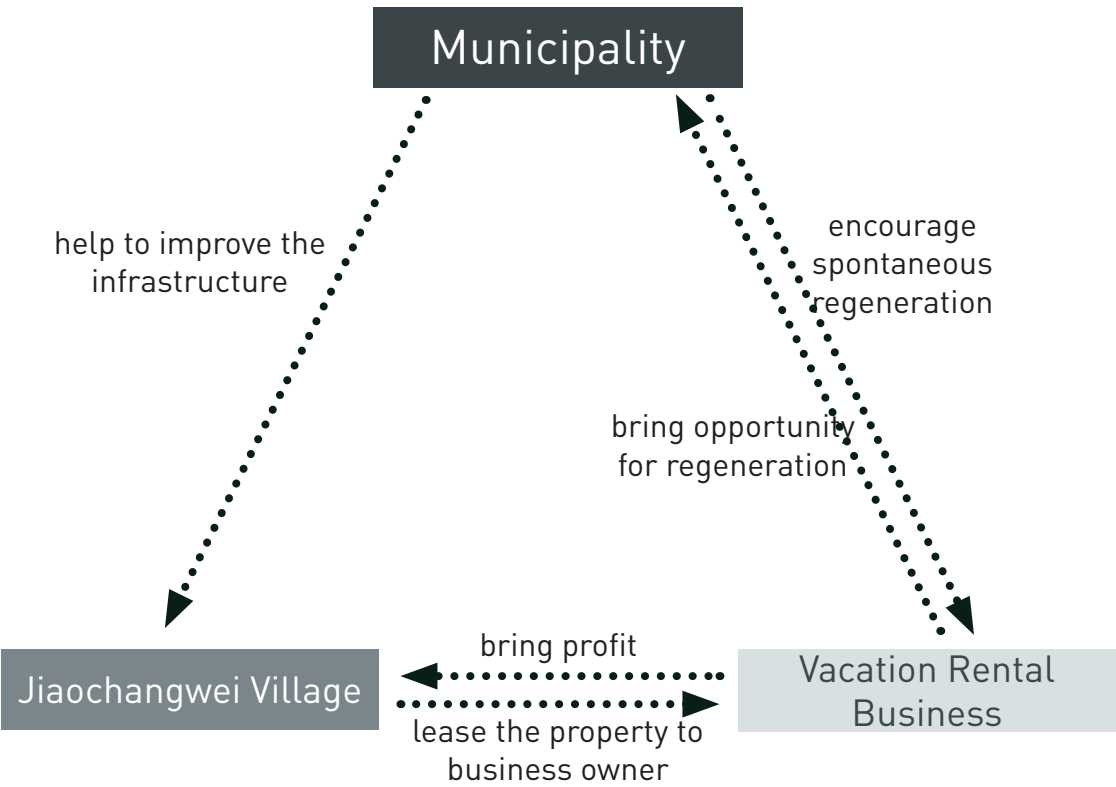
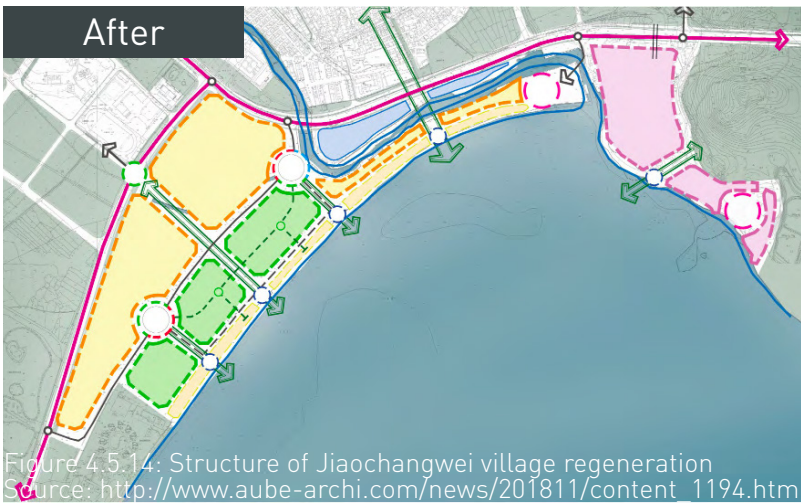
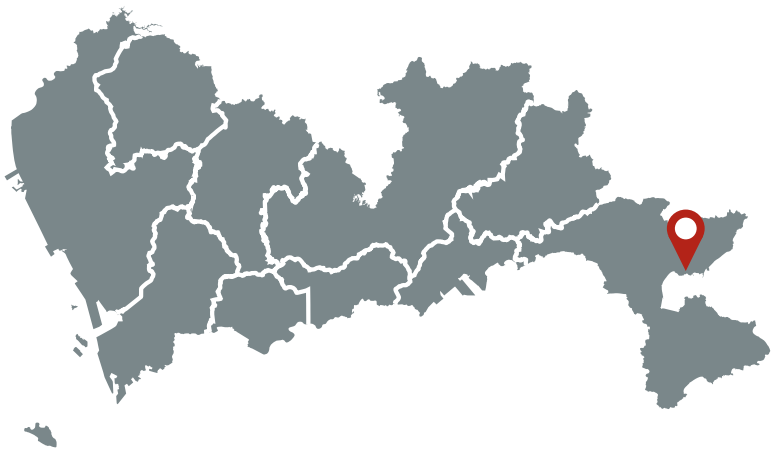
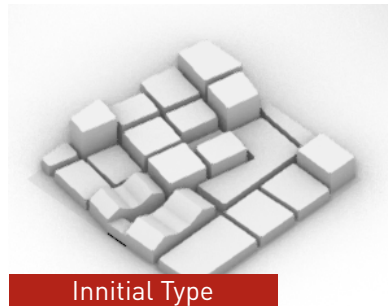


Figure 4.5.17: Governance model of regeneration of Jiaochangwei village
(Made by author)

The regeneration of Jiaochangwei village is an exploration of spontaneous regeneration.

Jiaochangwei village is different from the above cases. It is located at the seaside, far away from the city center, and under less urbanization pressure. Tourists came for the beach and promoted the development of the vacation rental business. But the unplanned development brought chaos to the village and the environment. The government decided to regenerate the village.

Instead of transforming the village into luxury hotels, the government chose to encourage villagers and business owners to invest and regenerate their property. The government funded the upgrading of infrastructure and public facilities, as well as organized some design competitions to encourage spontaneous regeneration.

The process is still going on. Although the function and structure of the village did not change a lot, the living environment and infrastructure have been already improved.

05 REGENERATION STRATEGY

Goal



Figure 5.1.1: Transformation of pillar industry in Shenzhen
Source: Google earth & google picture

Looking back to history, the formulation of the urban villages shows their adaptation to the changing demands of the surrounding environment. The pillar industry in Shenzhen was transformed from agriculture to the processing industry after the establishment of SEZ, and the residents of the village changed from peasants to migrant workers. Urban villages spontaneously adapted to the transformation and flexibly met the new demands during that period.

Currently, Shenzhen is undergoing industrial upgrading. In the future, the innovative industry will gradually replace the processing industry, and the high-tech industrial parks will replace the low-end factories. It is foreseeable that more and more highly-educated young graduates will move to the city center, while some low-income migrant workers will leave as factories move.

Therefore,

instead of regenerating the urban villages from a top-down perspective, **guiding the villagers to regenerate their property spontaneously** so that the village can **adapt to the changing demand** may be an approach for future regeneration.

Stakeholder analysis

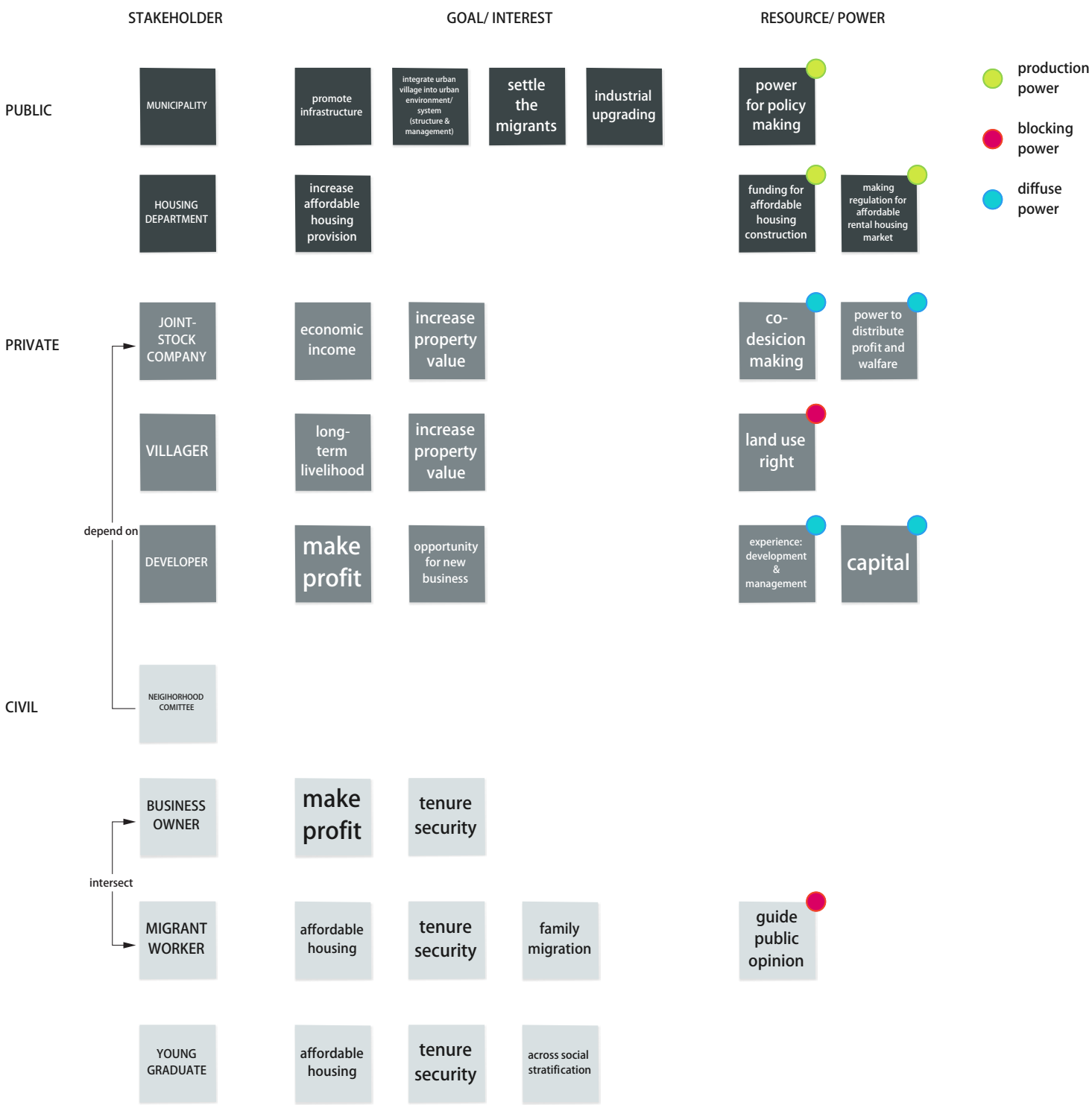


Figure 5.2.1: Power/ interest analysis (Made by author)

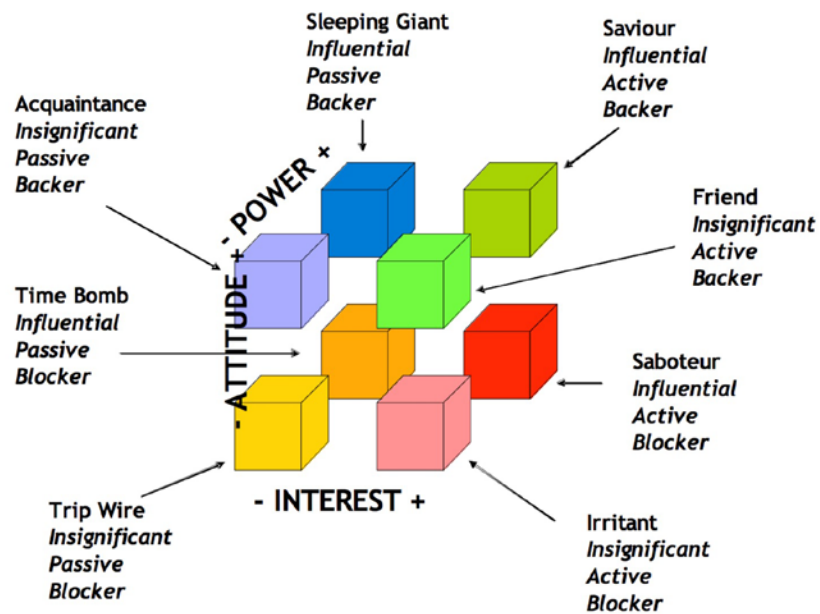


Figure 5.2.2: Power-interest-attitude matrix of Murray-Webster and Simon

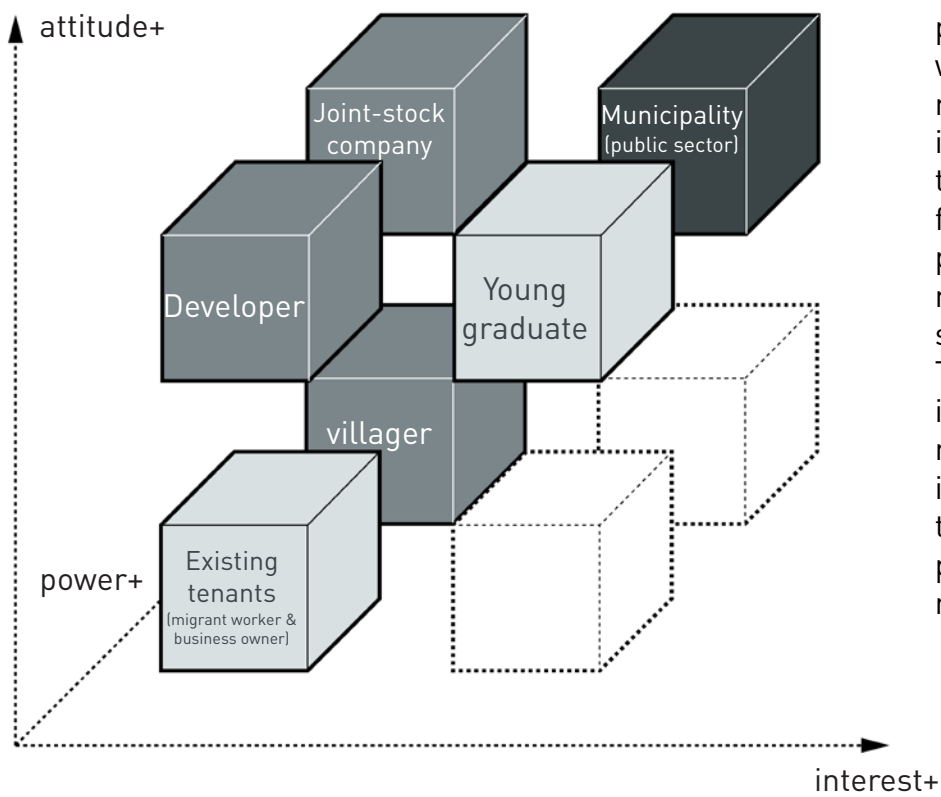


Figure 5.2.3: Power-interest-attitude matrix of involved stakeholders (Made by author)

Power-interest-attitude

In order to motivate the villagers to take part in the spontaneous regeneration, the power-interest-attitude matrix was used to analyze the involved stakeholders.

The stakeholders that need the most attention in the matrix are the joint-stock company and the indigenous villager. They own the land use right of the village, which means that they have a lot of power. However, they may not have much interest to regenerate their properties as affordable rental housing because they focus more on financial income. The regeneration will definitely promote the living environment, which will increase the property value, but for the villagers who only own the limited property rights, they cannot trade the housing in the market or get a mortgage from the bank. Leasing is the main way for them to make a profit from their properties, while leasing as affordable rental housing will not bring a significant increase to their profit. Therefore, in addition to the rental income, regenerated as affordable rental housing should bring extra incentives to the villagers: legalizing their housing and giving them more property rights after regeneration may be an attractive option.

Stakeholder analysis



Figure 5.2.4: Buildings with full property rights
Source: Google picture



Figure 5.2.5: Buildings with limited property rights
Source: Google picture

Type of property right	Land ownership	Payment of fee	Certificate issued by	Right for commercial activities (mortgage etc.)	Housing type	Tenure of use
full property rights	state-owned	land transfer fees	state government housing department	yes (different for different housing type: affordable housing/ social housing may also have limited rights)	commercial housing; affordable housing; capped-price housing etc.	70 years for residential use
limited property rights	collective-owned	none	village government	no	regular housing	no specific time; can be terminated at any time

Figure 5.2.6: Table of different property rights
Source: Baidu baike

Property right

The table below shows different types of property rights in the Chinese context. In 1992, the Shenzhen government published a regulation to convert all land in SEZ into state-owned land. However, during the process, the land was only nominally converted into state ownership, while the land use right still belongs to the indigenous villagers. The informal construction they built in the village settlement did not get registered. (National School of Development, Peking University, 2013) Therefore, different from the general condition, although their properties are built on state-owned land, the villagers still only own limited property rights.

Mechanism design

The regeneration can be an approach to legalize the informal construction that is of good quality, making urban villages a source of affordable housing with increased living quality. The mechanism for the legalization process needs to be designed.













This mechanism can be concluded into three stages.

Stage 1 is start-up. The public sector will cooperate with the joint-stock company to set the rules, regenerate as pioneer, and mobilize the villagers to take part.

Stage 2 is the spontaneous regeneration. Villagers will cooperate with the developers, following the instruction from stage 1, to develop and manage the affordable rental housing.

Stage 3 is legalization. After contributing as affordable rental housing for certain years, their property can be legalized and included into affordable housing system. They can choose to maintain as affordable rental housing or sell it on capped price. The original tenants will get the pre-emptive rights to buy it.

Planning tools applied

	PROCEDURAL	SUBSTANTIVE
NODALITY	<div> Public hearing</div> <div>introduce the related policies</div>	<div> Vision plan</div> <div>show the vision to the stakeholders</div>
AUTHORITY	<div> Legalization framework</div> <div>introduce the legalization process</div> <div> Simplified approval process</div> <div>make it more efficient to apply for permission</div>	<div> Design principles</div> <div>guide the construction</div> <div> Rental regulation</div> <div>regulate and supervise the affordable rental market</div>
TREASURE	<div> Tax incentives</div> <div>encourage developers to participate</div> <div> Concessional loan</div> <div>encourage villagers to participate</div>	<div> Development subsidies</div> <div>help the villagers to start the regeneration</div> <div> Rental subsidies</div> <div>compensate the rental income</div>
ORGANI-SATION	<div> Pilot project</div> <div>show a sample</div>	<div> Spatial intervention</div> <div>improve the living environment</div>

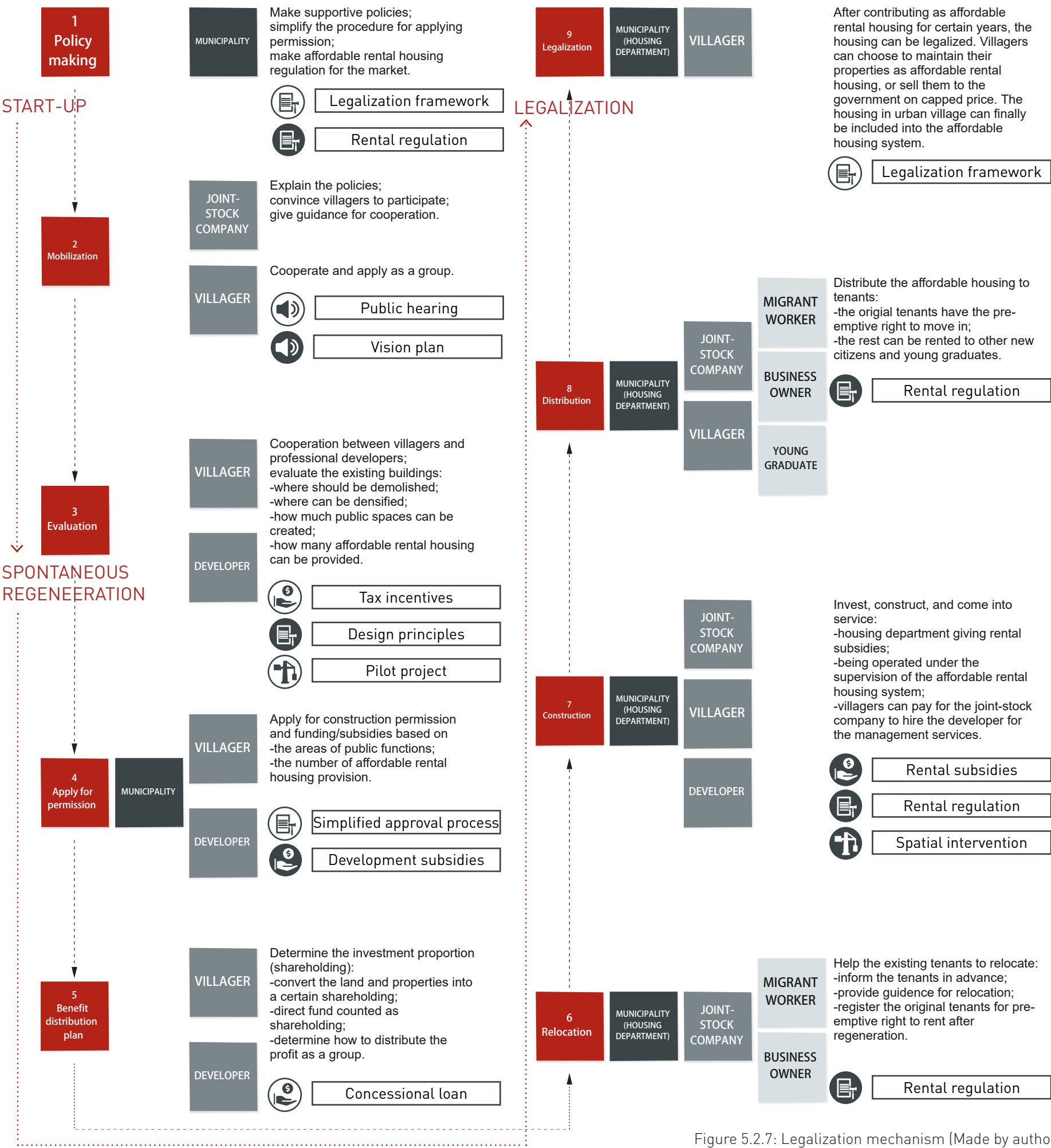


Figure 5.2.7: Legalization mechanism (Made by author)

Governance model

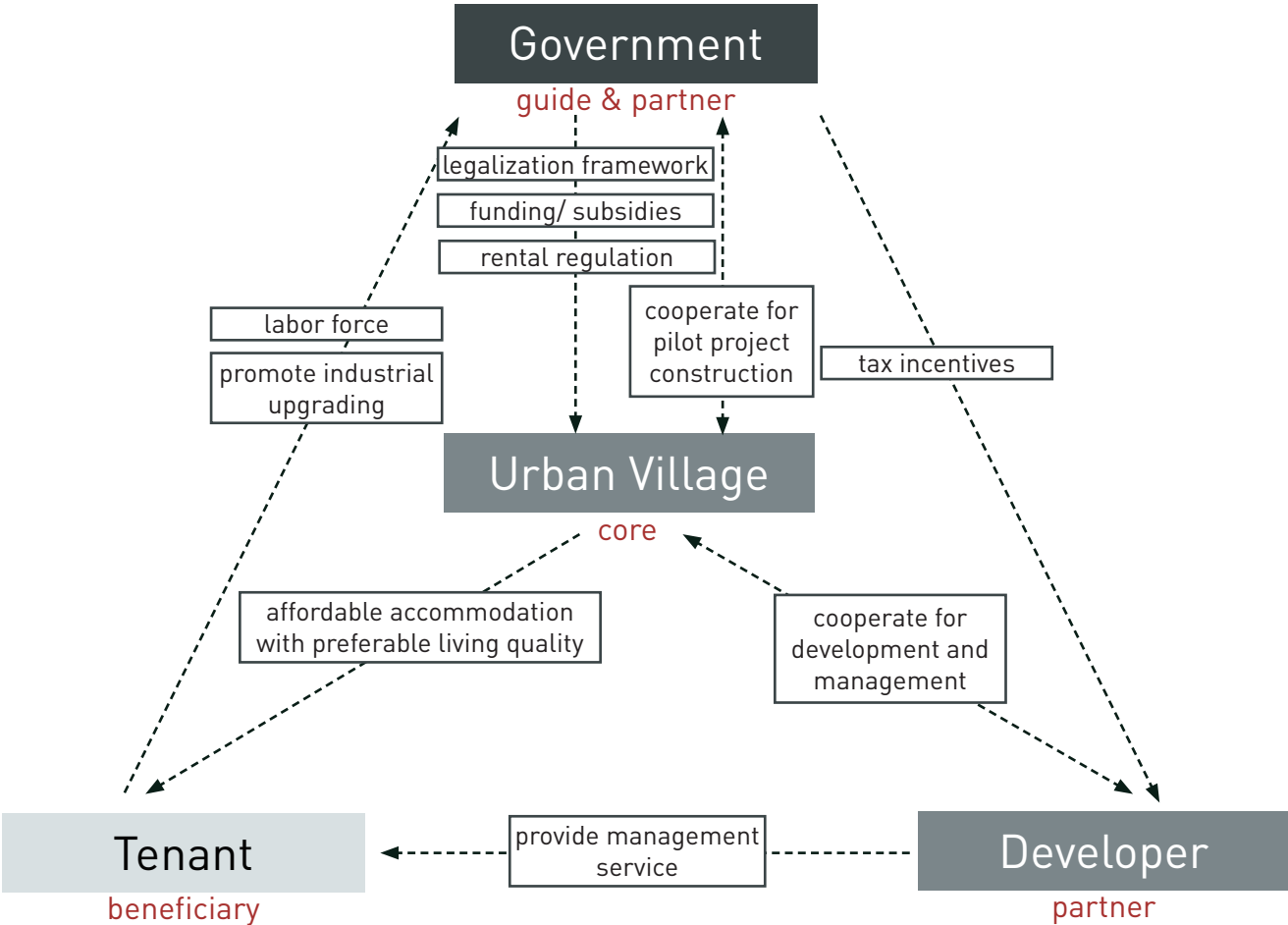


Figure 5.2.8: Governance model of spontaneous regeneration
(Made by author)

An updated governance model for spontaneous regeneration can be proposed.

The government will act as the 'guide' and the 'partner', making a legalization framework to guide the whole process, giving funding, subsidies, and tax incentives to engage other stakeholders, publishing regulations for the affordable rental housing market, as well as participate directly into the construction.

The urban village, including the joint-stock company and the indigenous villagers, will be the 'core' of the model. They will cooperate with the 'partner', the developer, to regenerate the urban village as affordable accommodation with preferable living quality and provide management service to the tenants.

The tenants, consisting of migrant workers and young graduates, will be the 'beneficiary'. In short term, they can access affordable rental housing; in long term, when the housing in the urban village is legalized and can be traded at a capped price, it will be their opportunity to own the first property in the city. Tenants may have less power and interest to participate at present, but when they gradually find that it is possible to settle down in the regenerated urban village, they will be more willing to participate.

From mechanism to strategy

PHASE	STAKEHOLDERS	GOALS	STRATEGIC ACTIONS	SPATIAL STRATEGIES
Start-up	<div>Urban renew department</div> <div>Housing department</div> <div>+</div> <div>Joint stock company</div>	Negotiation between public sector and the village collective for consensus -Tasks for regeneration -Incentives and support -Regulation and supervision	<div>Vision plan</div> <div>Funding and subsidies</div> <div>Demolition compensation</div> <div>Rental regulation</div>	
Start-up (Demonstration)	<div>Urban renew department</div> <div>+</div> <div>Joint stock company</div> <div>Developer</div>	Upgrading of the infrastructure and public space network inside the village; integration of the village and the surrounding urban area	<div>Infrastructure upgrading</div> <div>Public space construction</div>	
	<div>Housing department</div> <div>+</div> <div>Joint stock company</div> <div>Indigenous villager</div> <div>Developer</div>	Example for regeneration and management of affordable rental housing	<div>Pilot project construction</div>	
Spontaneous regeneration	<div>Housing department</div> <div>+</div> <div>Indigenous villager</div> <div>Developer</div>	Following self-organized regeneration to provide affordable rental housing and improve living quality	<div>Design principles</div> <div>Regeneration projects</div>	
Legalization	<div>Housing department</div> <div>+</div> <div>Indigenous villager</div>	Integrate the housing stock of the regenerated urban village into the affordable housing system	<div>Property registration</div>	

The table on the left shows the main involved stakeholders and the goals of the different phases of the mechanism. To achieve the goals, some strategic actions will be taken, among which the space-related actions are extracted and become the spatial strategies.

In response to the mechanism, the spatial strategies will also be a combination of top-down and bottom-up strategies.

The top-down strategies, which will mainly be led by the public sectors and the joint-stock company, contain vision map making, infrastructure upgrading, public space construction, and pilot project construction. These will be a signal to the villagers that the large-scale demolition will not take place in the village, as well as set a model for the following spontaneous regeneration.

The bottom-up strategies are some design principles to guide the regeneration projects led by the villagers. Encouraged by the pilot projects, villagers will be motivated to collaborate and regenerate their property as a group.

Although the structure and the function of the urban village may not change much, there will be a better connection with the city, improved living quality and infrastructure, and the village can be developed in a more orderly approach and will be able to adapt to new demands flexibly.

Figure 5.3.1: Diagram for spatial strategy
(Made by author)

Design principles

There are three main elements that need to be concerned for the design principles: street, block, and building.

The main principle for the regeneration of buildings and blocks is to liberate public spaces while maintaining the density, which means that there will be more open space in the block and there will be more public functions in the building.

Principles for the regeneration of the streets are different for the three types of streets. For the main street of the village, the principle is to integrate it with the city network; for the secondary street, the principle is to insert more public functions to enrich social activities in the village; for the alley, the principle is to improve infrastructure to enhance accessibility and bring pedestrians a sense of safety.

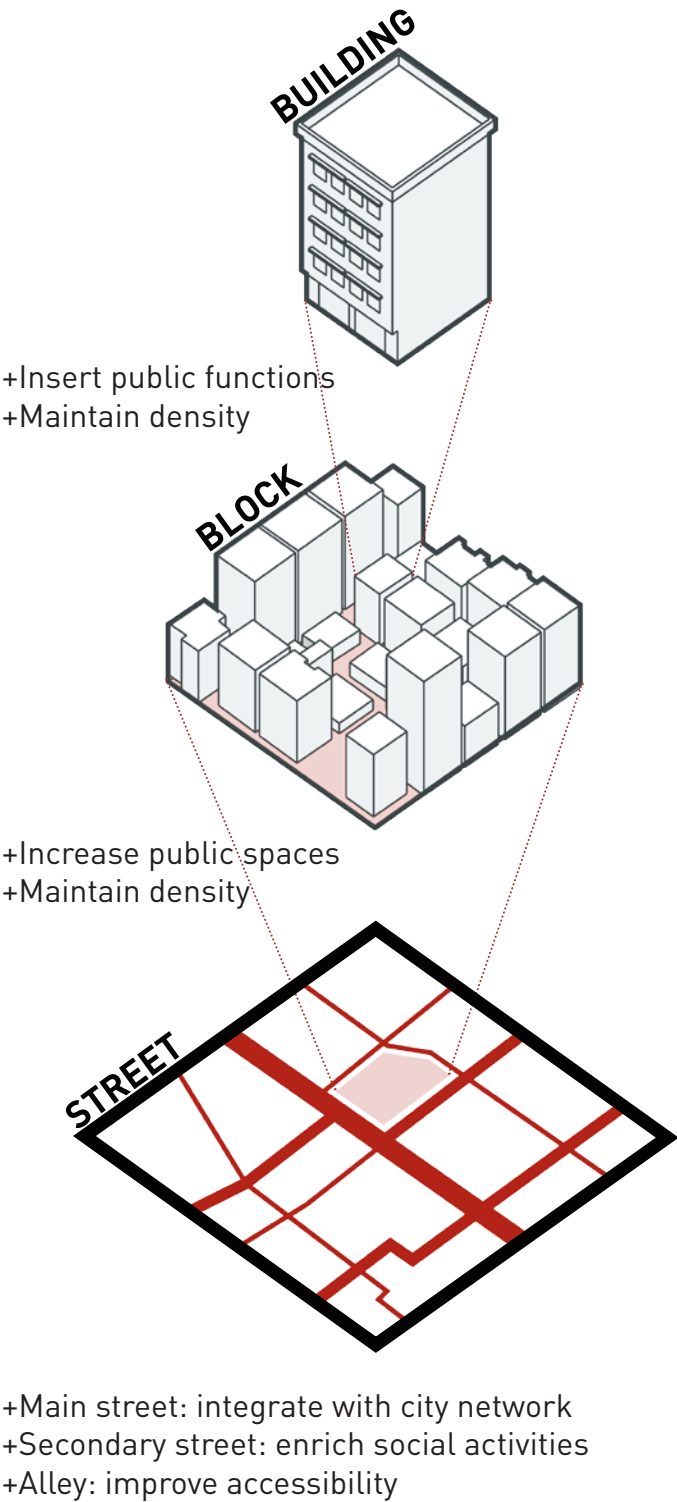


Figure 5.3.2: Category for design principles (Made by author)

Main street: integrate with city network

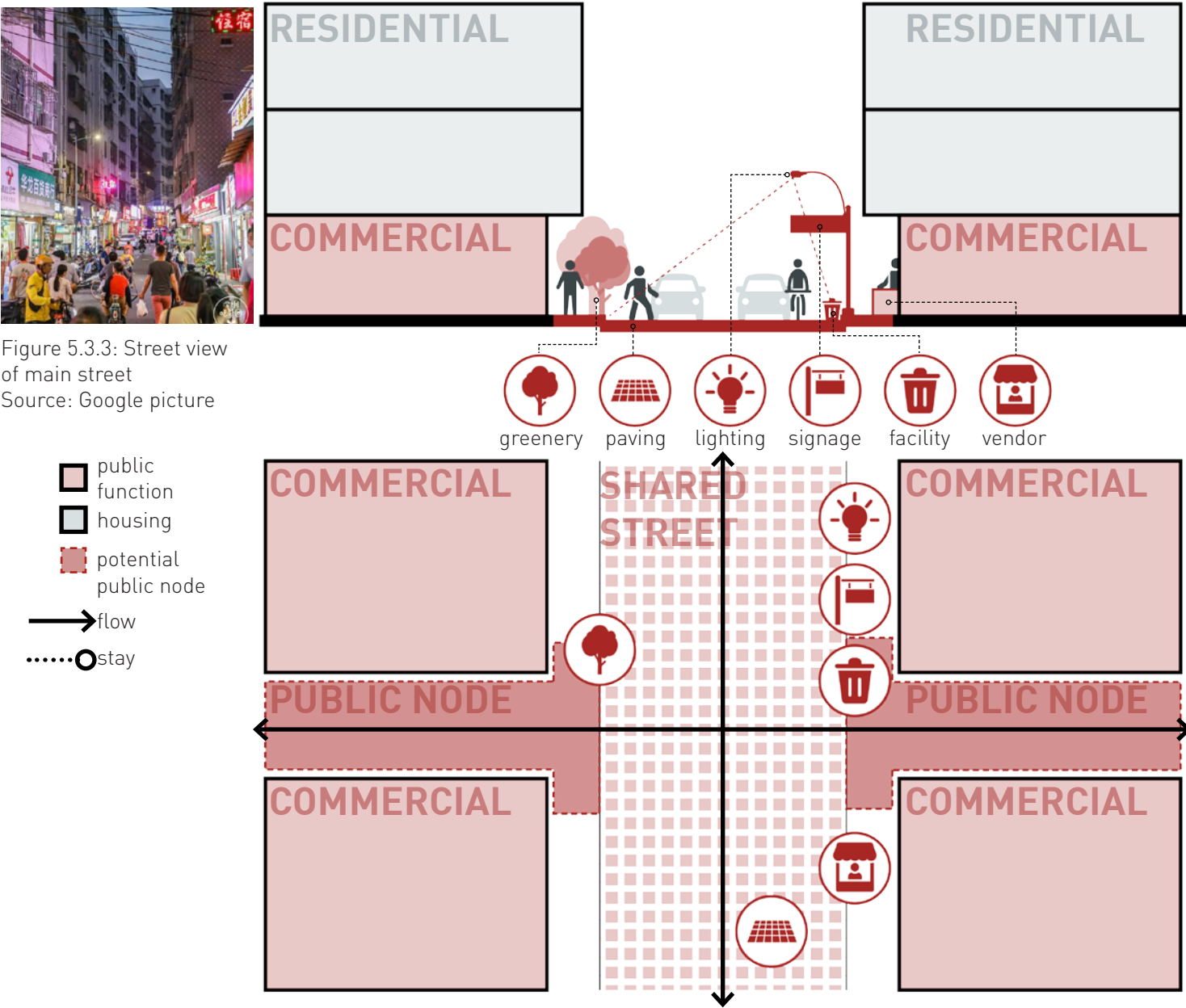


Figure 5.3.3: Street view of main street
Source: Google picture

The main street is the main connection between the village and the city, and also the most public area inside the village, usually dominated by various commercial activities. Not only the residents of the village but also people living in the surrounding come to the main street. By adding infrastructures like lighting, signage, and public health facilities, the main street has great potential to be integrated into the city network, so that the accessibility will be improved, and the urban village will not be separated from the urban environment.

Figure 5.3.4: Diagram for main street regeneration principles (Made by author)

Programs: public functions

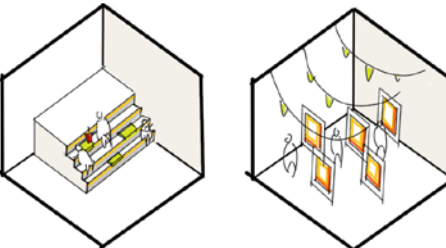





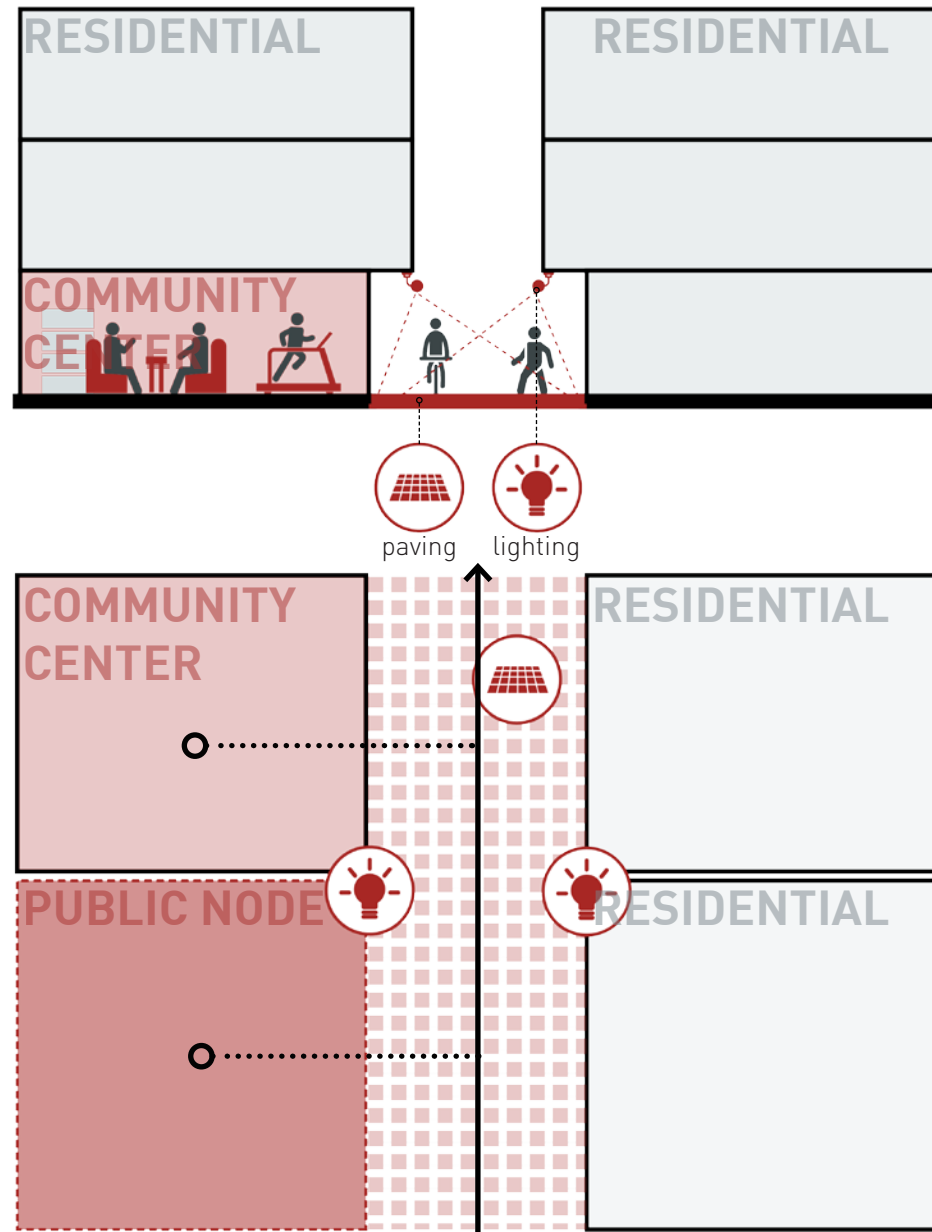


Figure 5.3.5: Programs for public functions (Made by author)

Some public space nodes can be seen on the main street, which can be the gateway of the village. The program inserted should focus on public functions, like some installations and exhibitions.

 public
 housing
 potential
 public node
 flow
 stay






The programs for public space nodes on the secondary street should focus more on social demands, like sports, playgrounds, and chess and cards.




sport field

playground

chess and card

 public
 housing
 potential
 public node
 flow
 stay



clothes hanging seat planting bicycle parking

17

Design principles-block

Block: increase public space while maintaining density

The public space is the trickiest one as it conflicts with the driving force of the densification in the urban village. Therefore, the design principles for the block should focus on increasing public spaces while maintaining density.

New village type

The new village type buildings are relatively well-planned with high density. The potential for adding public space is by adding aisles, making use of the rooftop, and reorganizing indoor space. The case of Shuiwei village is an example.

After the regeneration, some indoor public spaces can be created while the rooftop can also become open spaces for residents.

Initial type

Initial type buildings are low-density in general, and some buildings are built a long time ago with poor quality, so small-scale demolition can take place. The buildings with historical value should be preserved with no doubt while other low-density buildings that are at risk can be demolished to release some space for public use and new construction.

After the regeneration, the potential safety hazard can be eliminated while both open space and the density of the block can be increased.

Mix type

The mix type buildings have the most potential for spontaneous regeneration. Villagers can cooperate by turning their properties into shareholding and investing as a group. Villagers who hold vacant land or low-density housing free their land, and the density can be added to the surrounding building owned by their partners, which can be seen as the shareholding they invest. They can manage their properties as a group and distribute the profit according to the shareholding.

In this way, some open spaces can be liberated from the dense block, while the density will not decrease a lot.

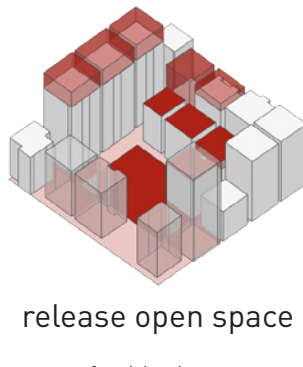
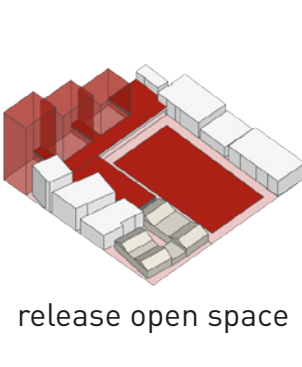
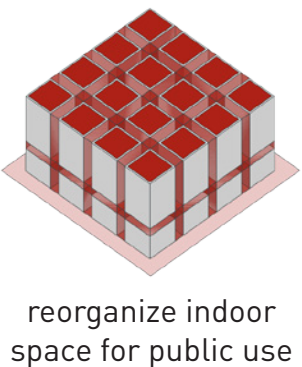
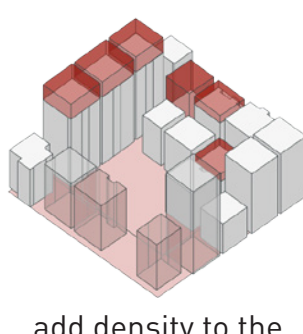
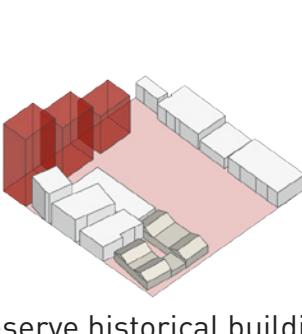
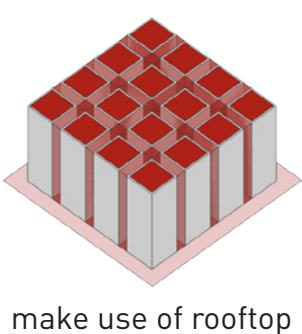
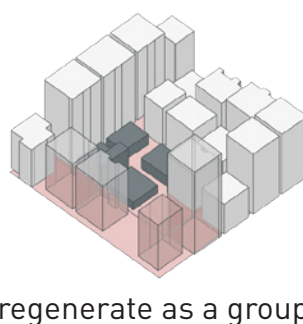
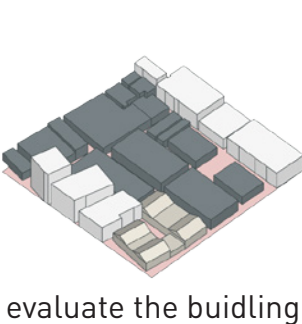
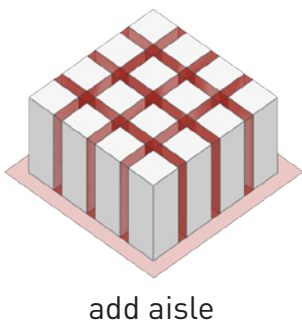
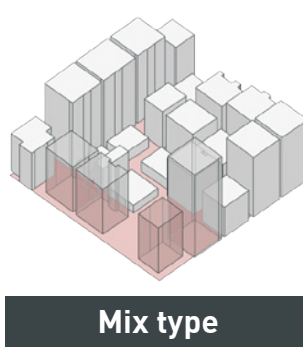
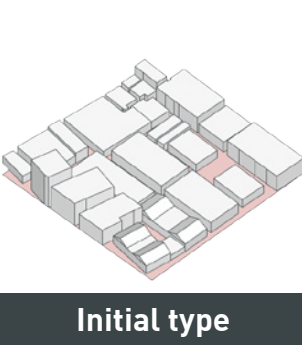
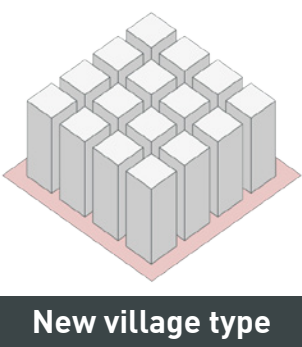
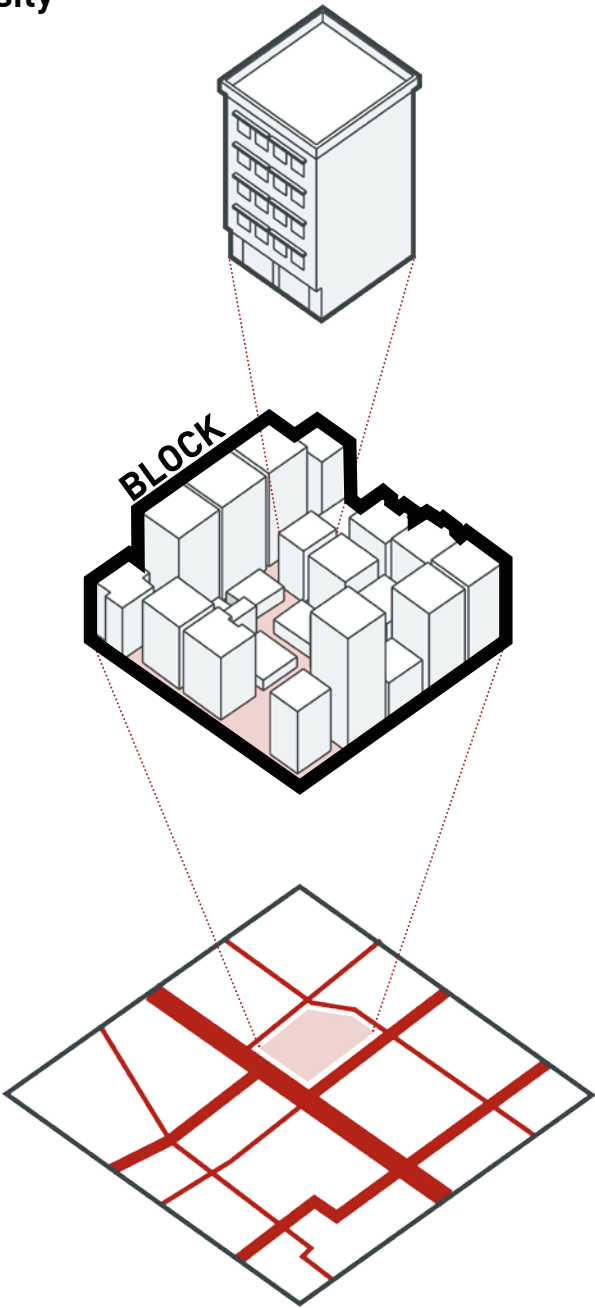


Figure 5.3.12: Diagrams for block regeneration principles (Made by author)

Design principles-building

For a single building, the potentials for regeneration are adding extra construction, making use of the rooftop, and reorganizing the indoor space.

Add extra construction

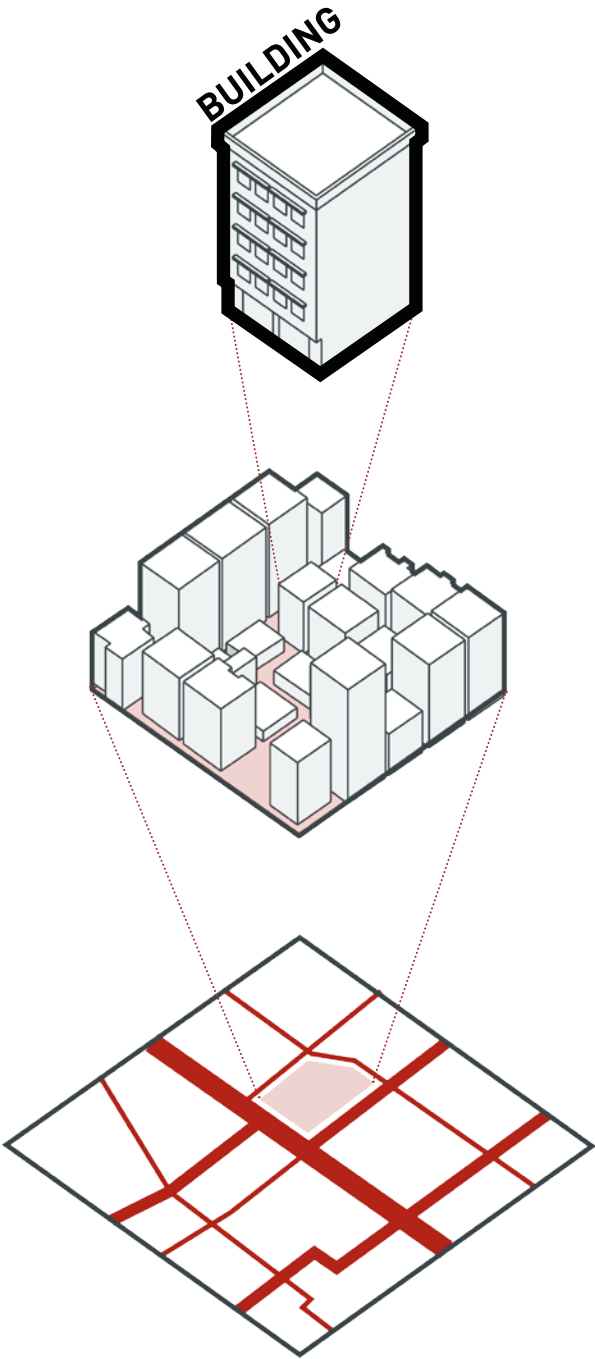
Extra floors, balconies and aisles, and infrastructure like the elevator, can be added according to the condition of every single building so that the accessibility inside the building can be improved.

Make use of rooftop

Rooftop can be regenerated as open spaces for residents' demands like cloth hanging and planting. Some social activities like barbecues can also happen on the rooftop.

Reorganize indoor space

Some of the functions in each household can be extracted and placed into the common space. For example, many young graduates do not need an extra kitchen or a big living room. These functions can be extracted and put into a common living room. The ground floor of the building, where the sunlight is not sufficient, can be regenerated as commercial areas for convenience stores and laundry to provide services to the residents. After the regeneration, there will be more mix-use functions inside the building.



Building: insert public functions while maintain density

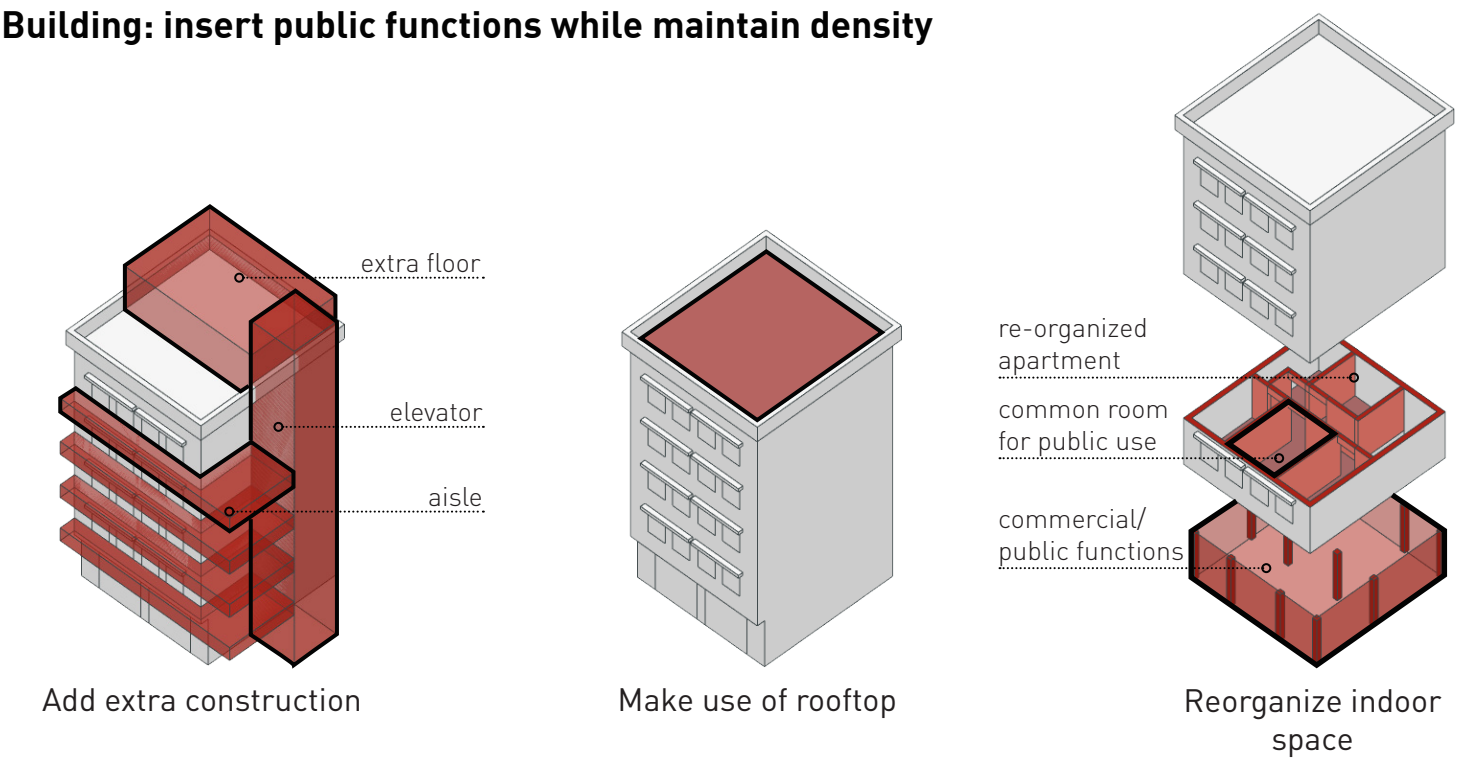


Figure 5.3.13: Diagrams for building regeneration principles (Made by author)

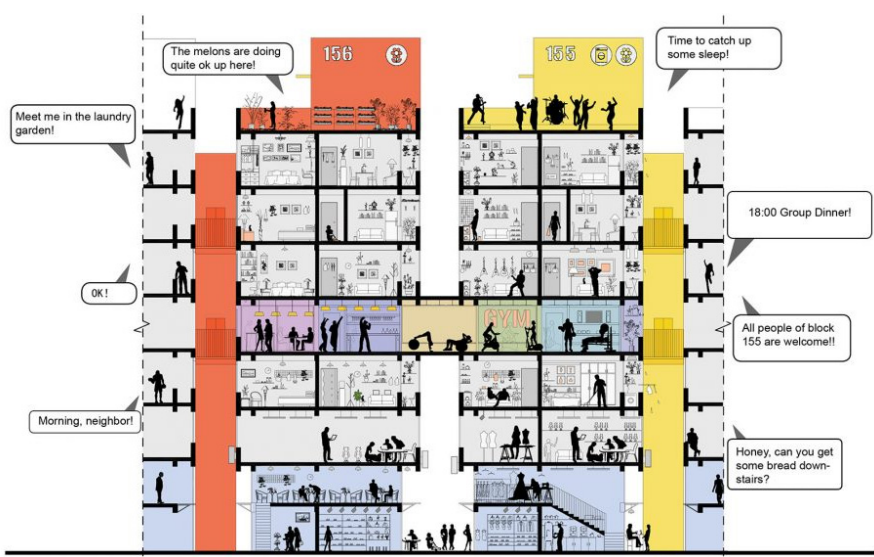


Figure 5.3.14: Section of regenerated Shuiwei village
Source: <https://www.gooood.cn/lm-youth-community-china-by-doffice.htm>

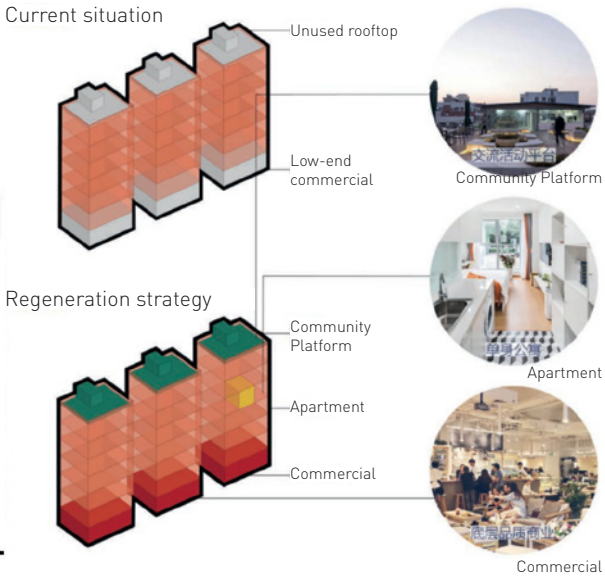


Figure 5.3.15: Regeneration strategy for urban village
Source: Village-City Symbiosis: Research on Urban Village Renovation in Shenzhen, Yang et al., 2020

Case of Shuiwei village: insert aisles and elevators to increase accessibility; create indoor public spaces by rearrangement; transform the rooftop into a community platform.

Phasing

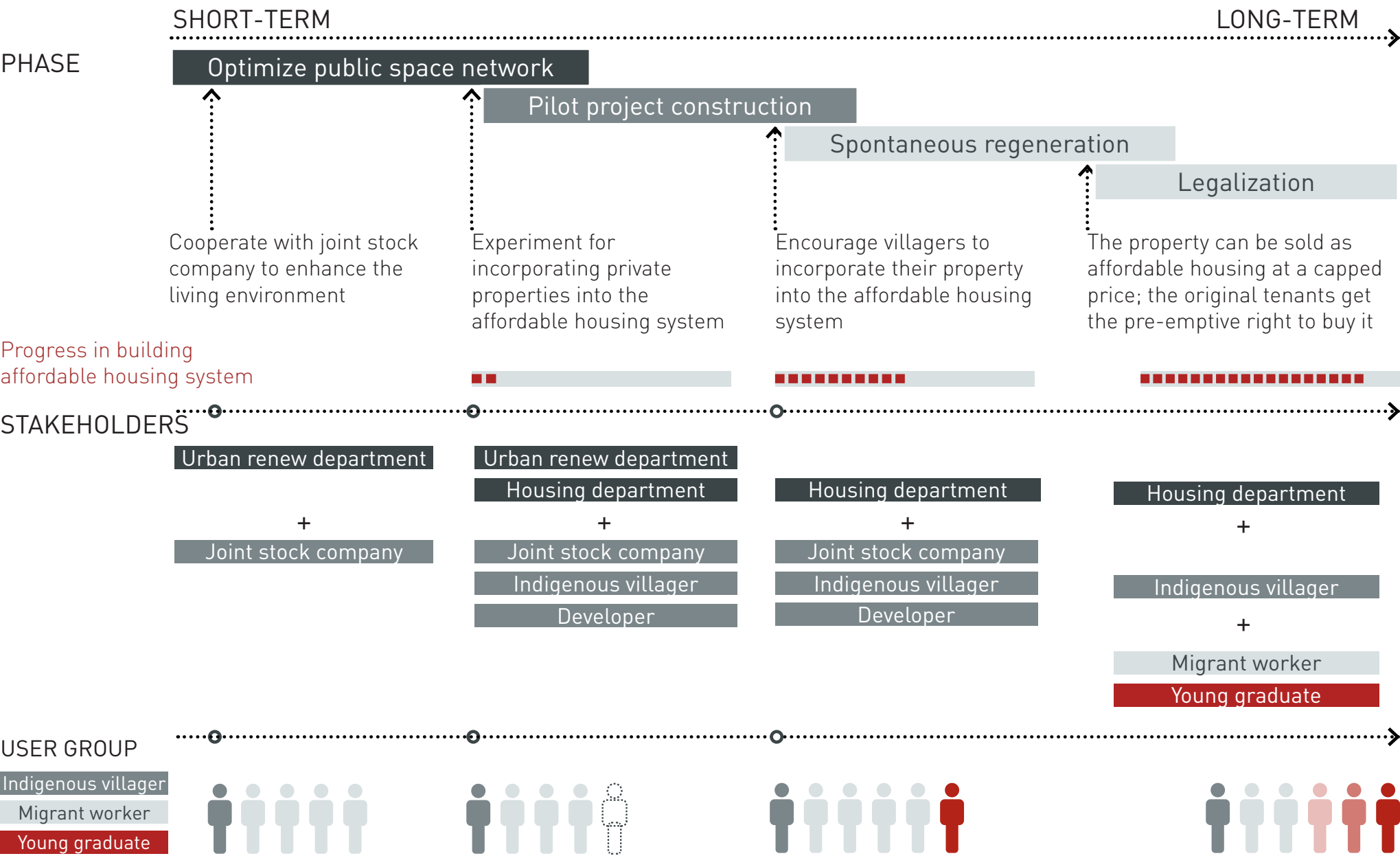


Figure 5.4.1: Phasing of regeneration strategy
(Made by author)

User group of the village

Intensive resident displacement will be avoided in the process. During the construction, some residents may have to move, but most residents will not be affected. The regeneration will increase a small amount of densification to introduce young graduates to the urban village. In the future, with the spontaneous regeneration along with the industrial upgrading, more and more young graduates will move in, but there will always be some places for migrant workers and business owners who work in or nearby the village to stay.

Optimizing public space network and pilot project construction are the short-term strategies led by the public sector and the joint-stock company. The improvement of the public space network will be the first phase of the strategy. The public space of the urban village is collectively owned and managed by the joint-stock company, which makes it easier for the regeneration as the municipality can cooperate with the joint-stock company directly by providing funding.

The pilot project construction will be the second phase. It is not only the spatial exploration, but also the experiment for the operation of affordable rental housing. During this period some individual villagers will get involved to rent out their property for regeneration, so it may take a longer time to coordinate and balance the interests among different stakeholders. The housing department will become an important stakeholder in the public sector. The pilot project can be the experiment for including private properties into the affordable housing system. Therefore, at this stage, the public sector will still play a relatively leading role by providing funding and renting subsidies to encourage villagers to get on board and transform their private properties into affordable housing.

Spontaneous regeneration is the long-term strategy. Hopefully, the experiment of the pilot projects can generate an effective governance model and a series of interventions that can be used as toolkits. At this stage, the public sector will gradually withdraw from the process, and the leading force of regeneration will turn out to be the villagers, and some small developers may also take part in the cooperation. Encouraged by the policy, villagers will regenerate their properties according to the quality of the buildings and the changing demands.

Legalization is the last phase. After contributing as affordable rental housing for a certain period, the property owner can get more property rights. The housing can be maintained as affordable rental housing to get rental income for the villagers, or they can also choose to sell their properties at a capped price while the original tenants get the pre-emptive right to buy. The properties will become affordable housing that can be owned by eligible new citizens. In the future, the trading of these properties will need to meet the regulations of the affordable housing system, such as making a profit from the housing transaction will be forbidden.

The phasing will be embedded in the process of building the affordable housing system. The improvement of the affordable housing system will bring more guidance for the construction and management of affordable rental housing, while the spontaneous regeneration and legalization of urban villages will become a source of housing supply for the affordable housing system.

06 DESIGN PROPOSAL

Case: Baishizhou village

In order to test the implementation of the strategy, Baishizhou village is chosen as a case for the design proposal. The first step is to analyze the existing network in the village: mapping the important destinations around and inside the village, as well as the main footpath connections.

Mapping shows that the west part of the village, which is close to the main city road, is more public and better connected to the urban area; the east part of the village, which is adjacent to the gated theme park, is less attractive with poor accessibility.

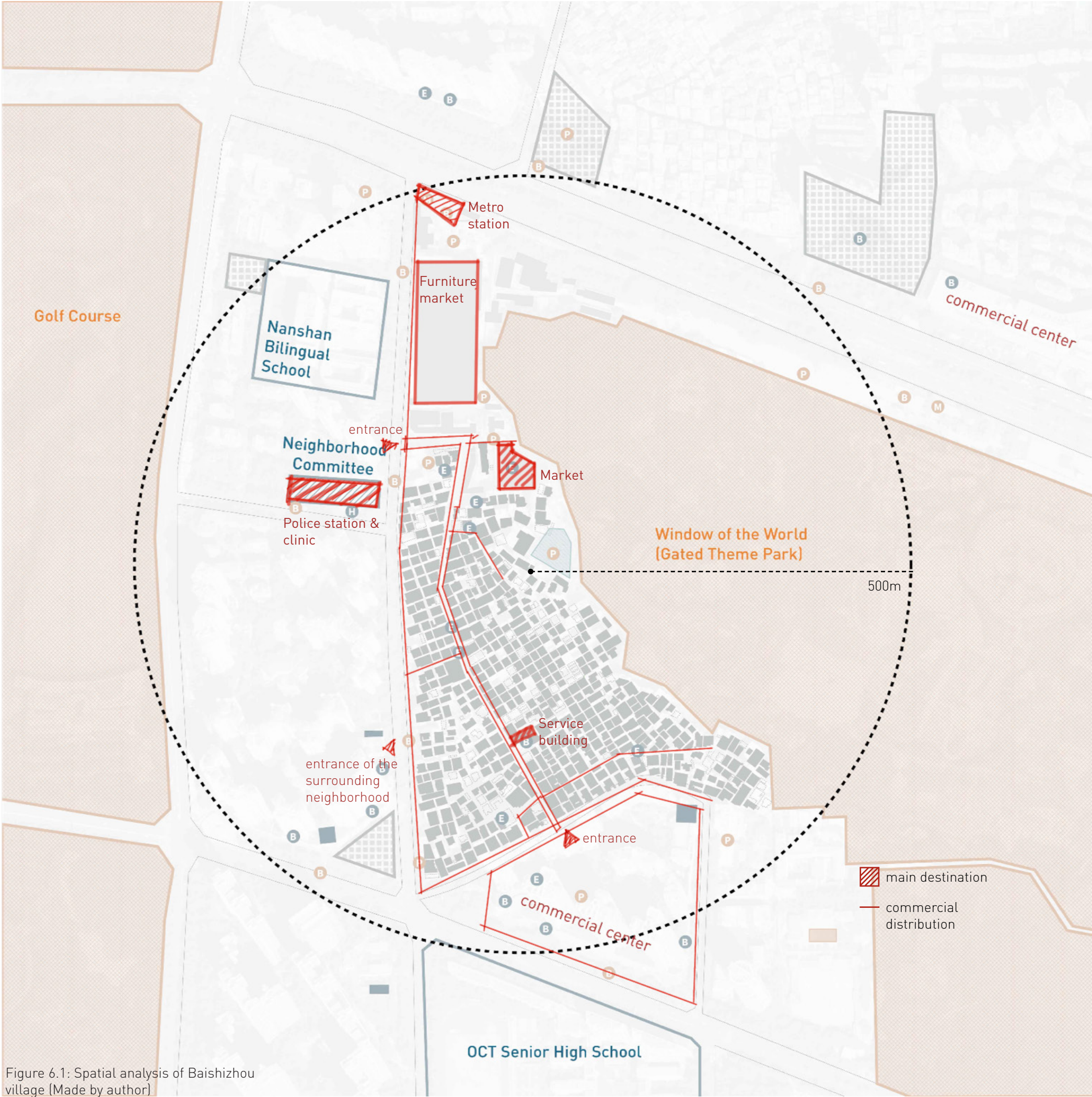


Figure 6.1: Spatial analysis of Baishizhou village (Made by author)

Vision map

As Baishizhou village is located in the city center, providing affordable housing to tens of thousands of migrant workers and young graduates, a vision of the regenerated village is proposed:

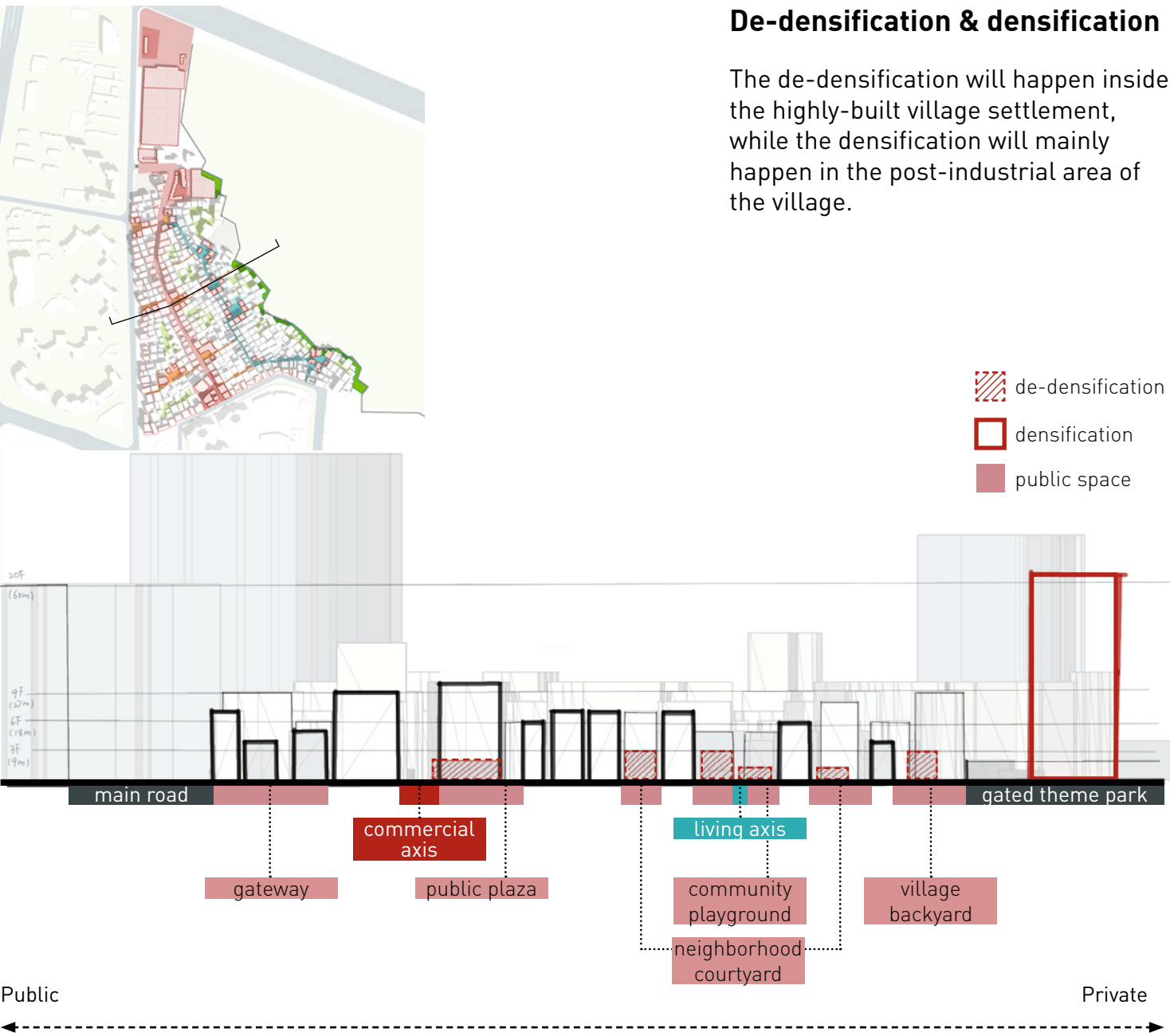
After the regeneration, Baishizhou village will become an affordable living community that can be intergrated into the city with better accessibility and higher living quality.

- The main strategy for the regeneration will be
1. Activate the public gateway to bring better connection to the main street of the village and the city network;
 2. Insert living axis to connect several public spaces, so as to make the east part of the village as livable community;
 3. Bring better connection among different public space to optimize the network;
 4. Fill the leftover vacant lands and the gap between the gated theme park and village with green spaces, making them the sideyards and courtyards of the village;
 5. Densify the post-industrial area to compensate the demolished areas.



Figure 6.2: Vision map (Made by author)

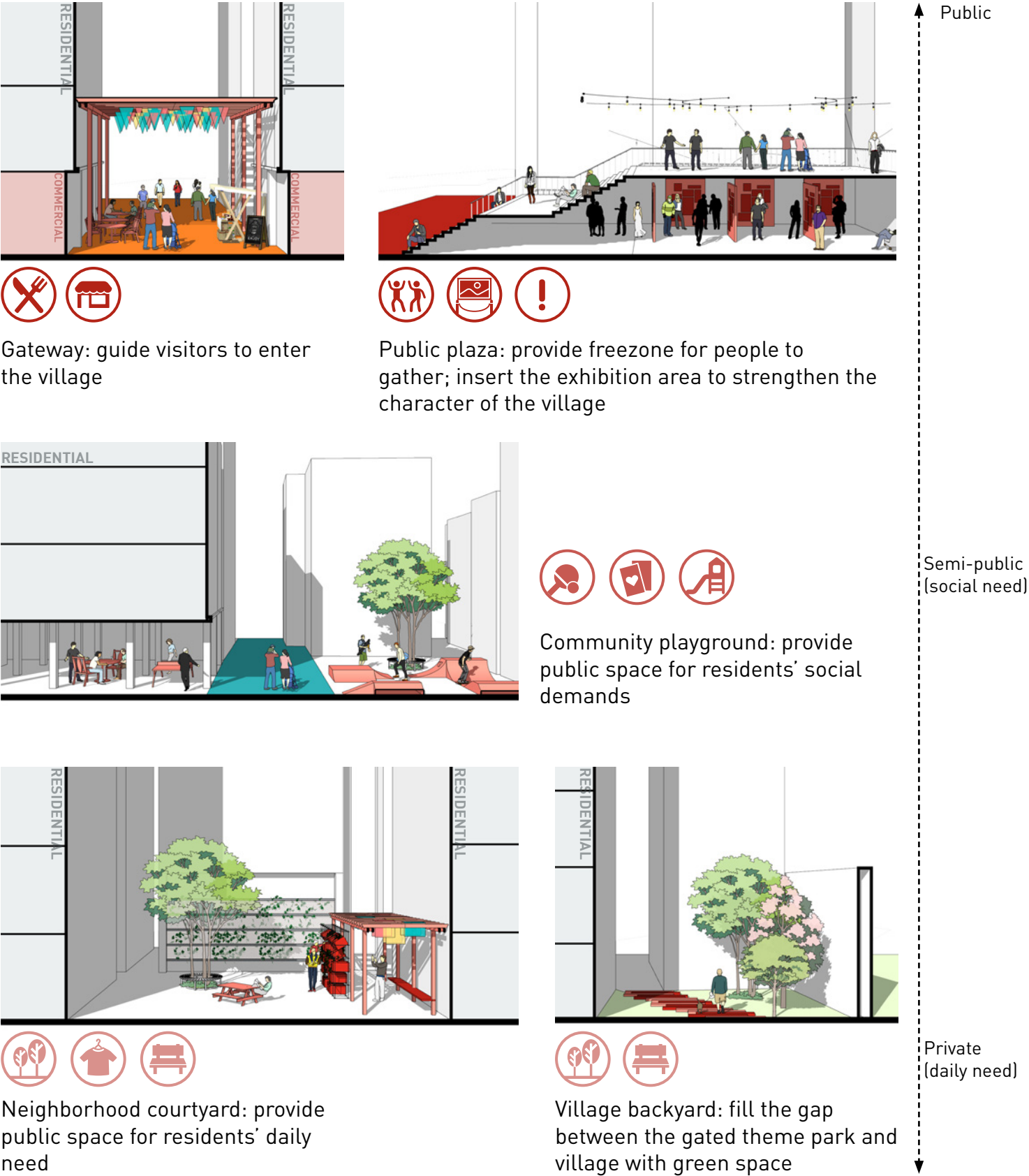
Section



De-densification & densification

The de-densification will happen inside the highly-built village settlement, while the densification will mainly happen in the post-industrial area of the village.

Program & atmosphere



The west part of the village, which is close to the main city road, will remain more public with commercial activities, while the east part of the village, which is adjacent to the gated theme park, will be regenerated as a living community where the atmosphere will be more quiet and private.

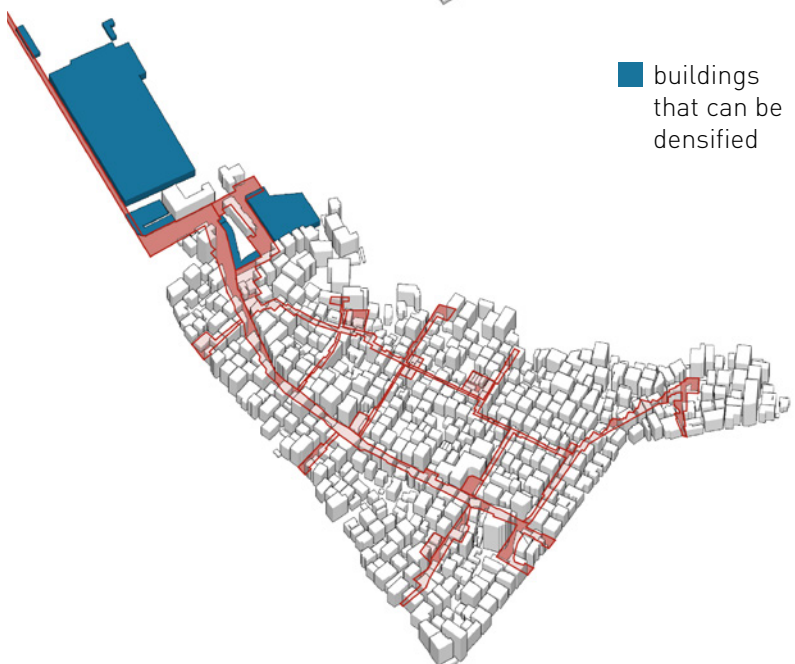
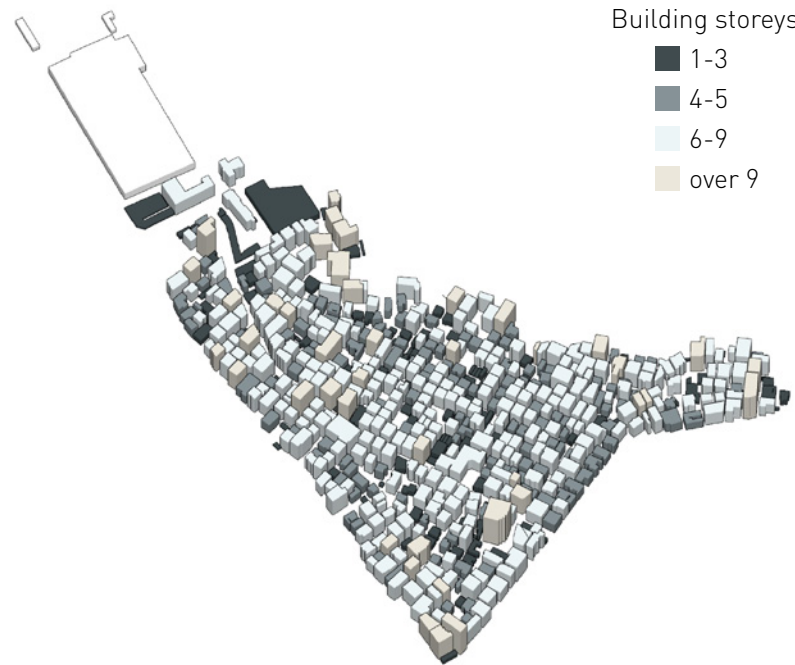
Public	Social	Daily
freezone	reading room	green space
service point	sport field	hanging clothes
exhibition	card & chess	resting space
restaurant	playground	
shop		

Figure 6.4: Sections of public spaces (Made by author)

Building code

01 Building height

1-3 storeys: were mostly built before or during the early 1980s;
4-5 storeys: were mostly built during the late 1980s; did not exceed the regulatory floor area limit of 480m²;
6-9/ over 9: Newly built with better quality relatively; the areas that exceed 480 m² are considered illegal construction.

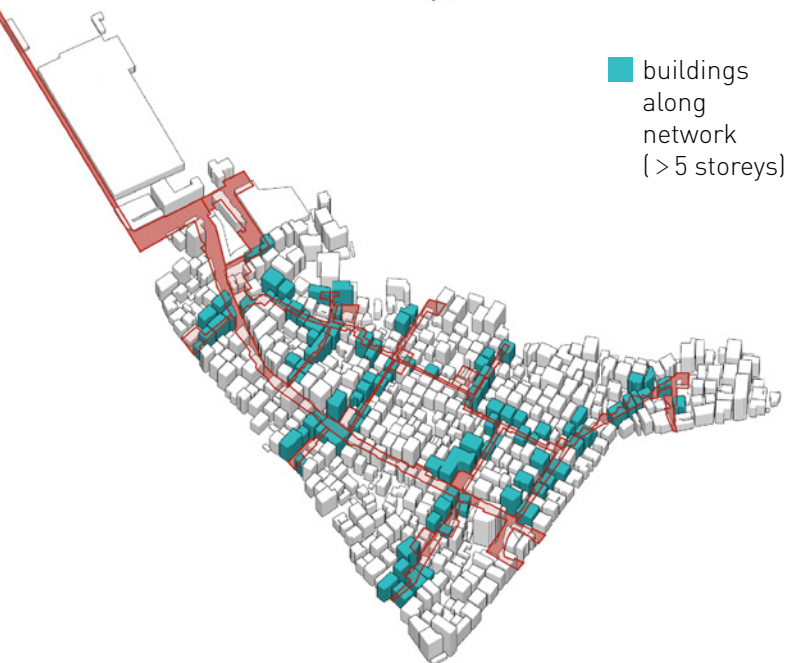
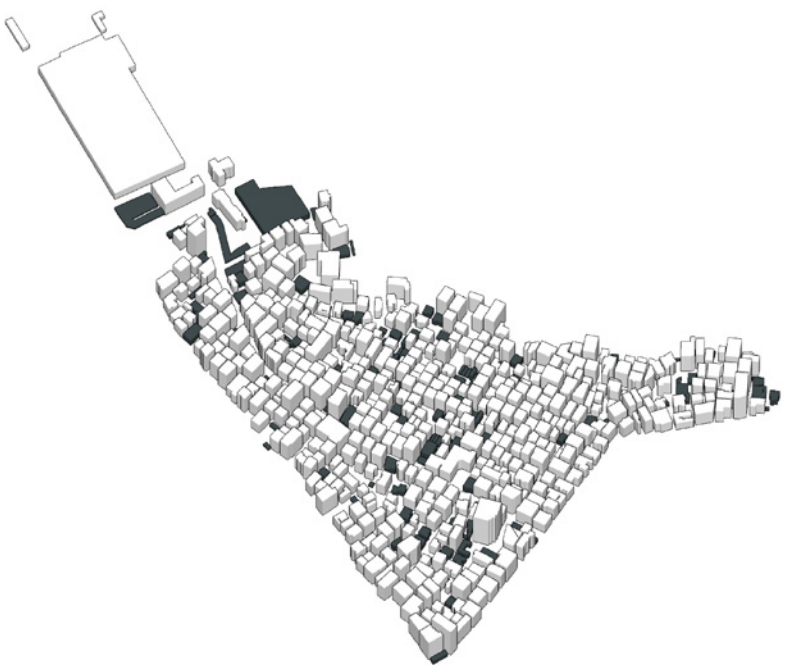


04 Densification as compensation

Densify the collective-owned post-industrial area with low density as compensation for the demolished and liberated area.

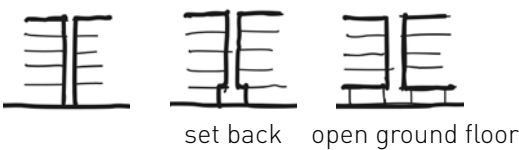
02 Demolition

Buildings below 3 storeys with poor quality or at risk will be demolished as a priority when necessary.



03 Set back/ open ground floor

When the street width is too narrow (< 3m), the buildings along the network need to take a setback on the ground floor or have an open ground floor.
-4-5 storeys: property owners can get compensation for the liberated area.
-over 5 storeys: property owners will not get compensation; free space on the ground floor will be a pre-condition for the legalization.



05 Insert public program

Insert public program to the ground floor of the buildings surrounding the main public spaces.

Densification

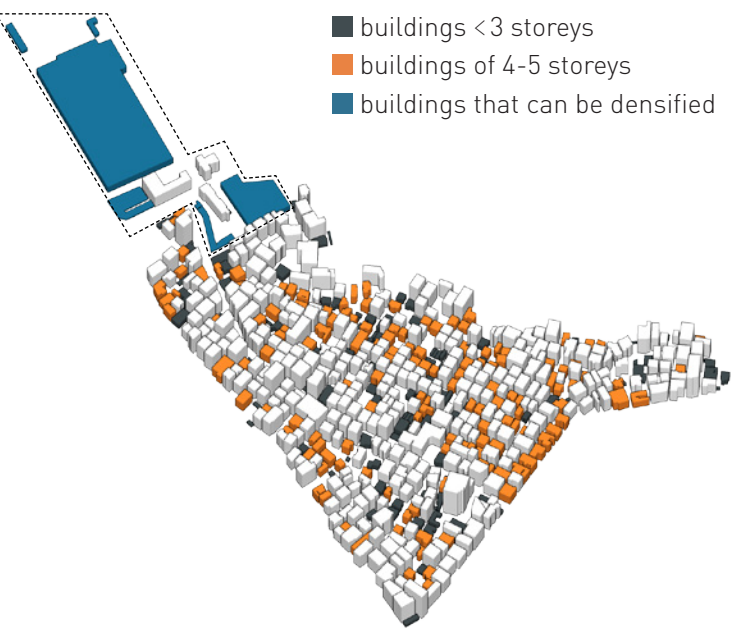


Figure 6.6: Building code applied (Made by author)

Demolished	floor	area (m²)	total area (m²)
	1	4722.87	
	2	2730.82	
	3	17888.43	25342.12
Transformed (ground floor)	4	3886.09	
	5	10412.77	14298.86
Added volume (residential)			39640.98
Initial volumn			70133.41
commercial	1	1574.07	
	3	7270.11	
	4	52083.76	
residential	6	2336.58	
	7	4869.2	
	7	1999.69	
gross floor area			109774.39
plan area			36880.37
FAR			2.98
Total residential area		48846.45	45%
Other function		60927.94	55%

Figure 6.7: Calculation of demolition and densification (Made by author)

In order to compensate the demolished areas, densification is needed and the new housing typology may be applied.

The first step is to calculate the amount of densification. A hypothesis is made based on the zoning code:
it is assumed that
-all buildings under 3 storeys will be demolished;
-all the ground floor of the buildings of 4 to 5 storeys will be liberated for public functions

The same amount of these areas needs to be densified as compensation, while the same amount of original function needs to be kept for the joint-stock company to maintain the daily management service of the village.

From the calculation, the FAR of the post-industrial area after the densification will be around 3, and 45% of the area will be for the residential function, while the rest will be for commercial function.

Comparative case study

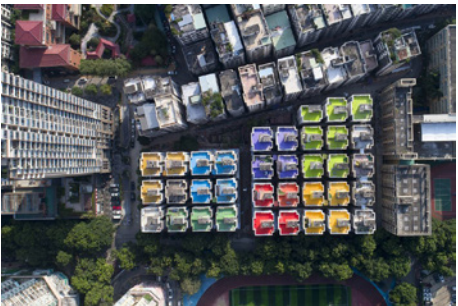
In order to explore the building form, a comparative case study of the existing social housing project in China is made. FAR around 3 is reasonable, which means it is possible to add the needed amount of densification. The building form can be a combination of the high-rise tower and mid-rise building block.



Longnan Garden Social Housing
Construction area:146,106 m²
Plan area: 48,112 m²
FAR: 2.2



Baiziwan Social Housing
Floor area: 303,351 m²
Plan area: 93,900 m²
FAR: 3.2



LM Youth Community
floor area: ≈25,200 m²
plan area: ≈7,000 m²
FAR: 3.6

Building form

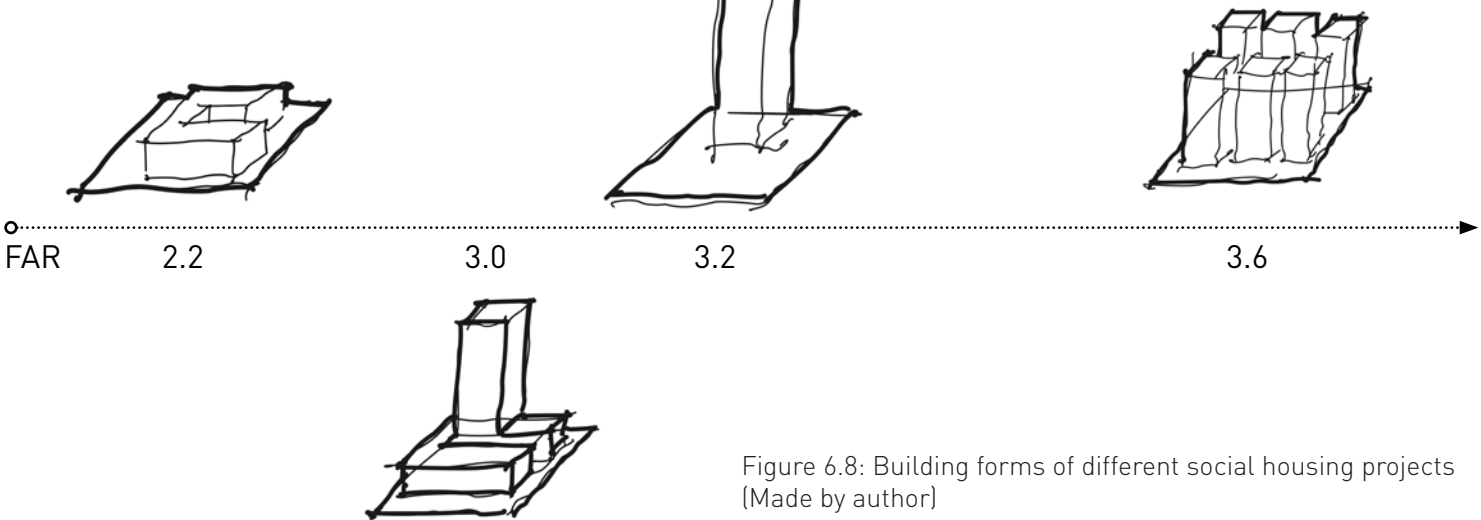


Figure 6.8: Building forms of different social housing projects (Made by author)
Source: <https://www.goood.cn/>

Strategic projects

In order to explore the implementation detailly, three strategic projects are chosen for design on block scale. They will be led by different stakeholders and provide public spaces with different functions and atmosphere after regeneration.

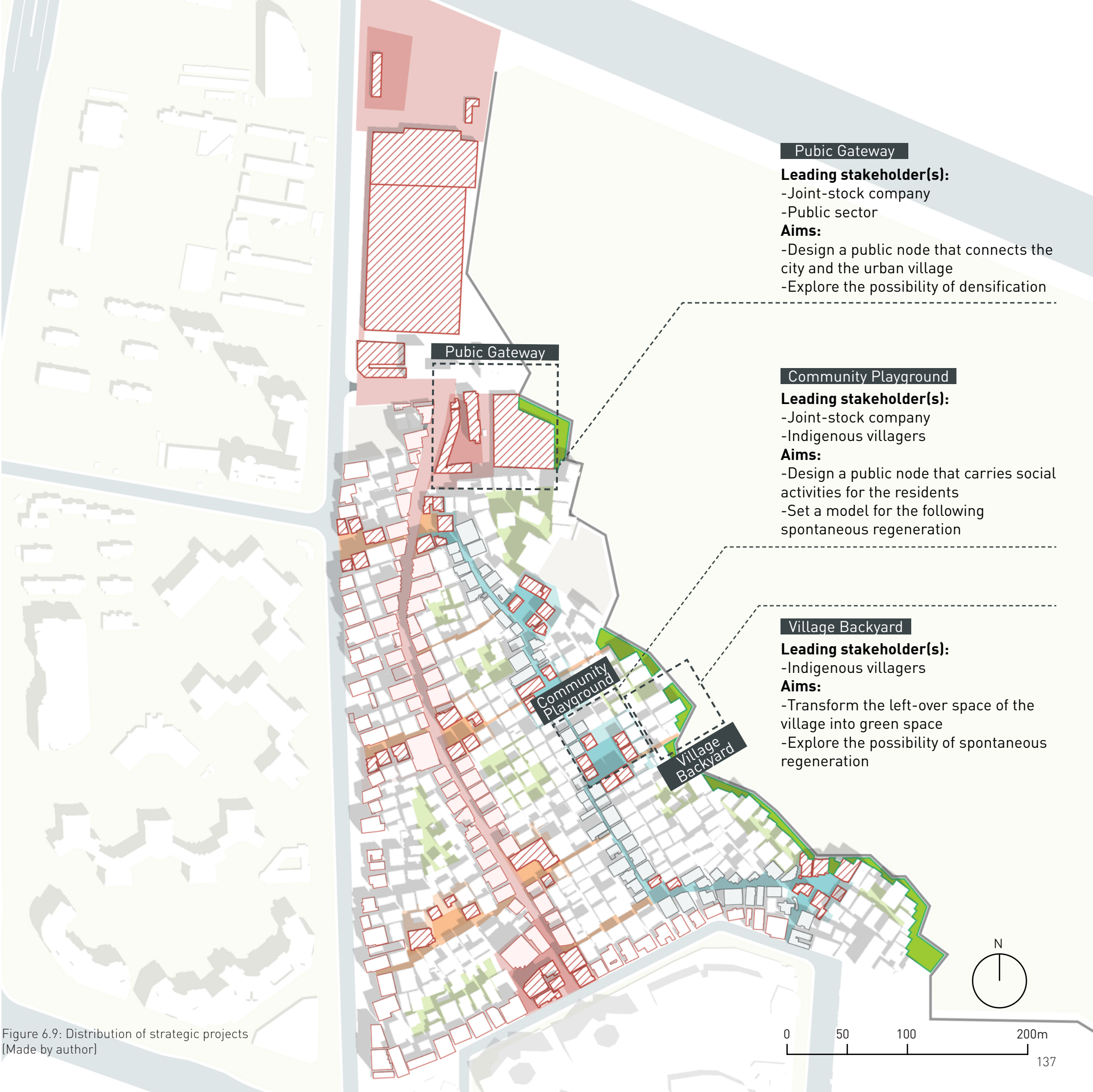
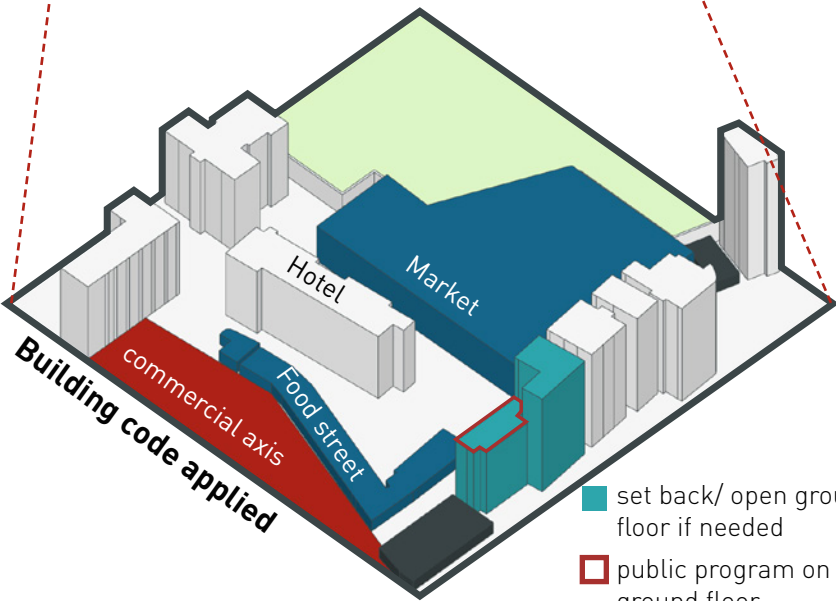


Figure 6.9: Distribution of strategic projects
(Made by author)

Strategic projects: Public Gateway



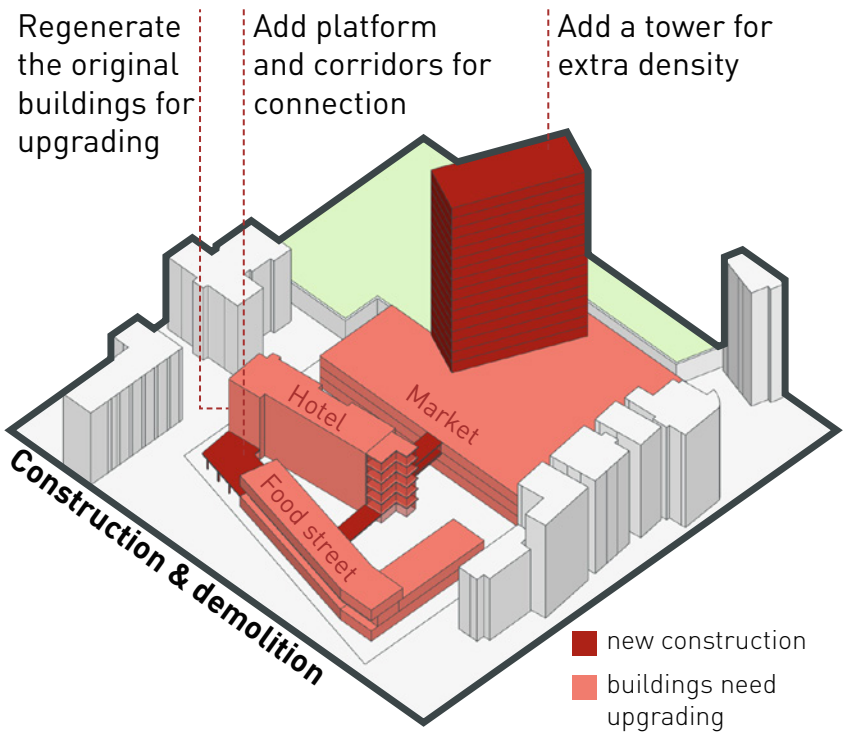
The first one is the public gateway, which is located at the main entrance of the village, along the commercial axis. It is a collectively owned post-industrial area, consisting of a market, a hotel, and a food street. Apart from the regeneration, densification will also happen here.



- set back/ open ground floor if needed
- public program on ground floor
- demolition
- densification

Building code applied

The existing function of the buildings will mostly be kept and upgraded. The market will be regenerated and densified as a mix-use complex for both commercial and residential functions.

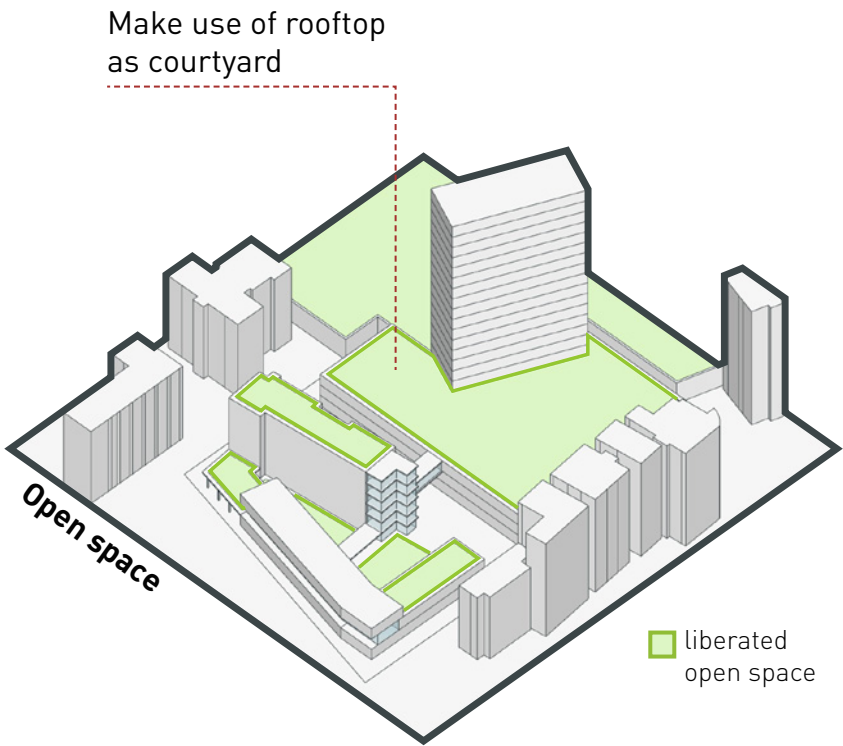


- new construction
- buildings need upgrading

Construction and demolition

A tower will be added for densification and some aisles and platform will be constructed to connect the buildings and lead the users toward the public spaces on the rooftop of the market.

The original buildings will also be regenerated. The hotel will be rearranged as youth apartment and the food street will be densified to carry more commercial activities.



Open space

The rooftop of the market will be regenerated as an open space, which can not only be used by the residents of the block but also other people in the village. The rooftop can provide a relatively large open space for different functions, which is rare in the dense urban village.

Figure 6.10: Regeneration approach of public gateway (Made by author)

Strategic projects: Public Gateway



Figure 6.11: Spatial atmosphere of public gateway
[Made by author]

This project will mainly be led by the joint-stock company and the public sector because the properties are collectively owned and it is located in a public node. The functions and the building forms of the project will be similar to the urban areas as it is the connector between the city and the village.

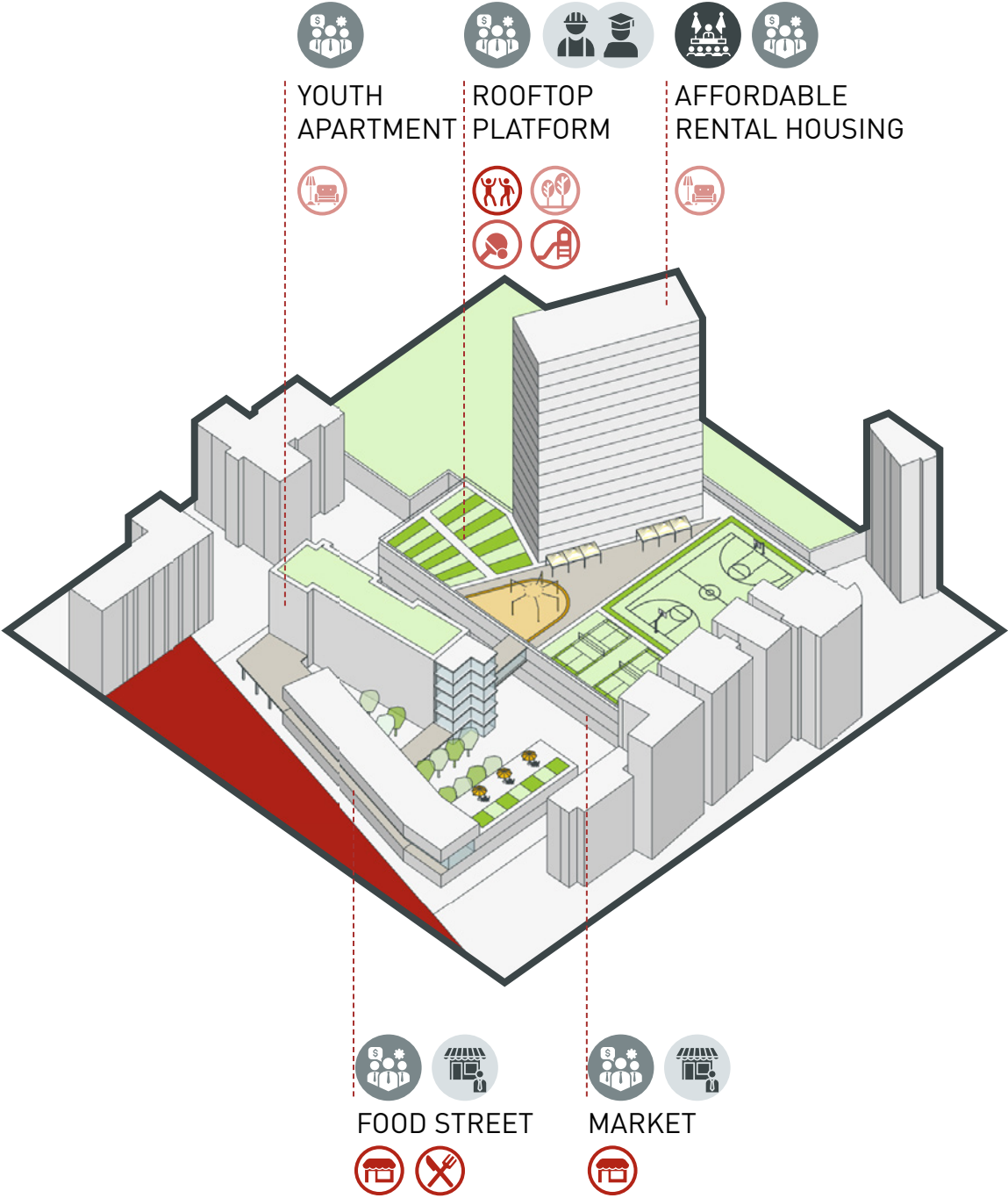
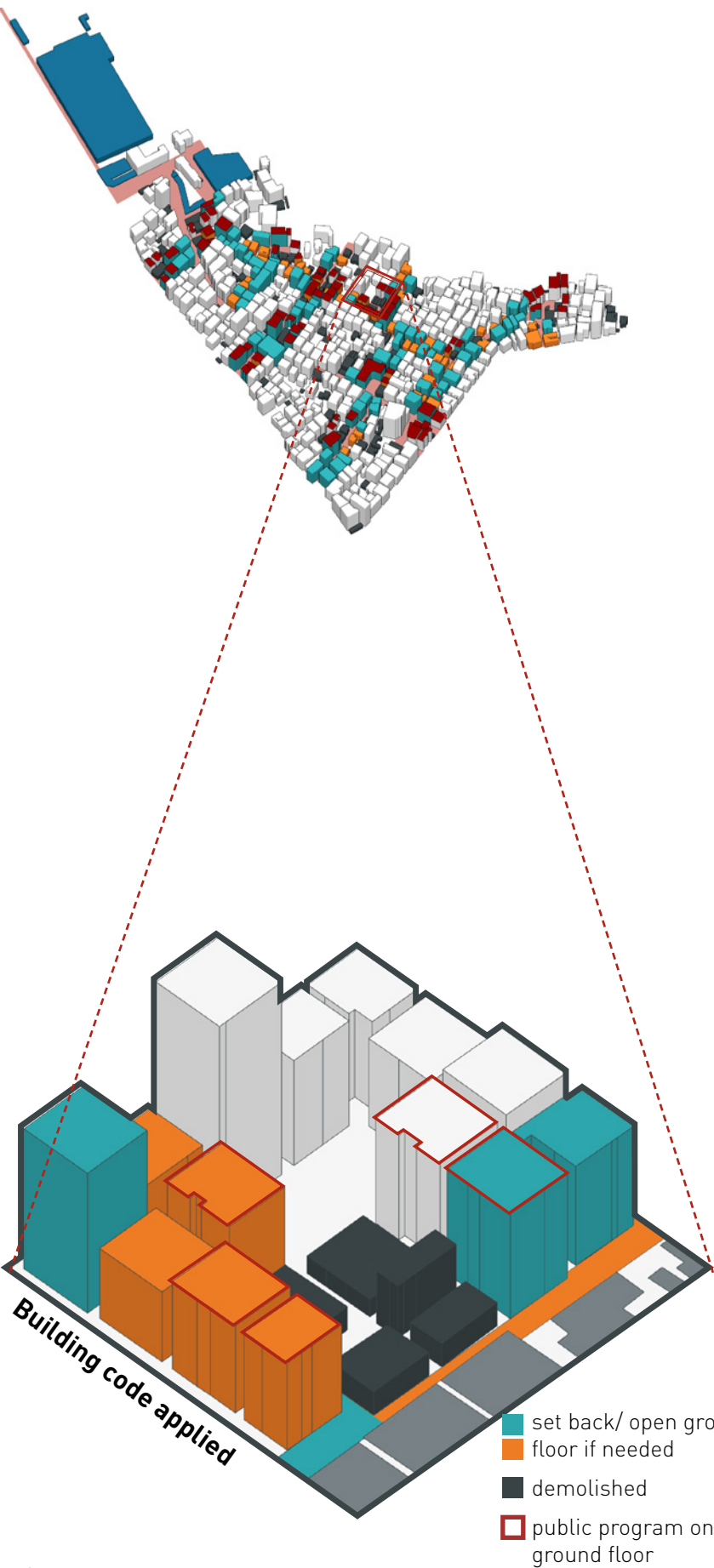


Figure 6.12: Visualisation of public gateway
(Made by author)

Involved stakeholders		Functions	Social	Daily
 public sector	 villager	 joint-stock company	reading room	green space
			sport field	hanging clothes
			card & chess	resting space
 young graduate	 migrant worker	 business owner	playground	residential
			retail	restaurant
			freezone	

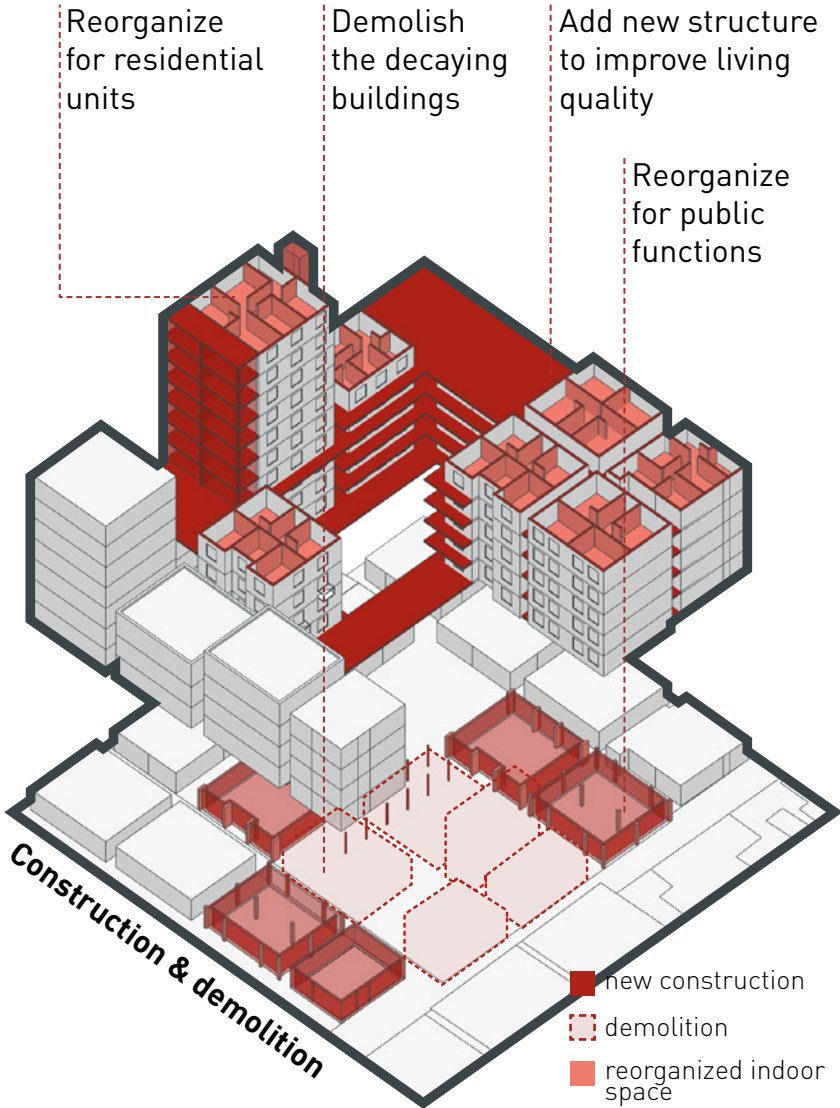
Strategic projects: Community Playground



The second one is the community playground, which is located along the living axis. The original buildings here are privately owned. Located in this strategic area with a relatively large vacant land, it can be regenerated as a pilot project to explore the possibilities of different interventions.

Building code applied

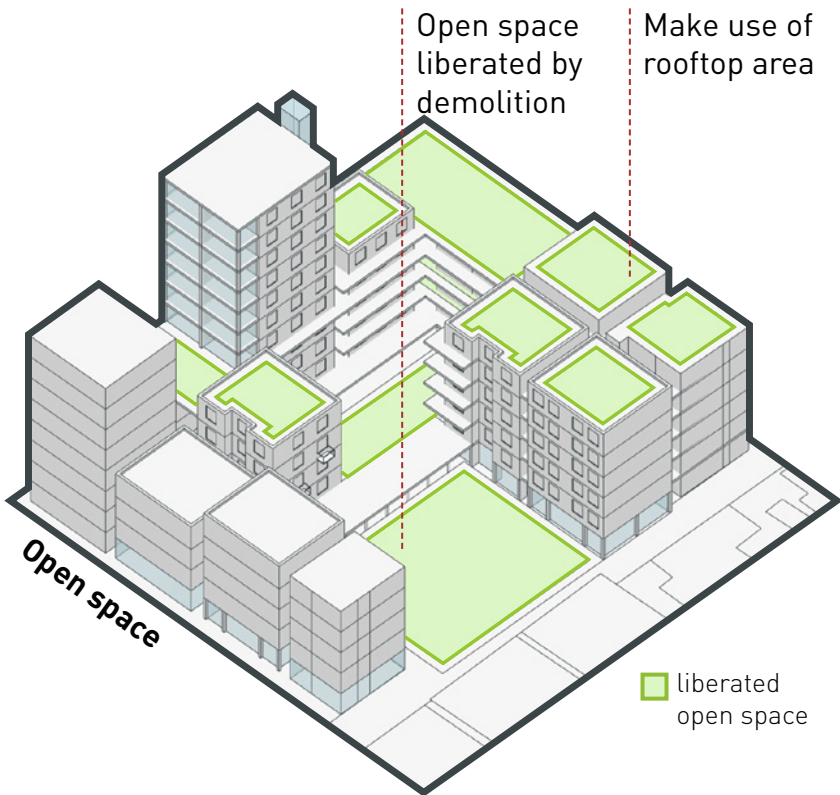
There is a group of low-density buildings which has the potential to be demolished for liberating open spaces. Public programs can be inserted on the ground floor of the surrounding buildings to cooperate with the open space and create a community playground for different social activities.



Construction and demolition

The low-density buildings will be demolished to liberate open space while some aisles, balconies, and elevators will be added to bring connections among each building, making them as a whole and increasing accessibility.

The ground floor of the building will be rearranged for public programs as well as the upper floor will be reorganized as residential apartments.



Open space

On the ground floor, a courtyard will be created, and combined with the surrounding public function, it will become a community playground for the whole village. The rooftop will also be regenerated as public spaces for the residents of the building.

Figure 6.13: Regeneration approach of community playground (Made by author)

Strategic projects: Community Playground



Figure 6.14: Spatial atmosphere of community playground [Made by author]

This project will mainly be led by the joint-stock company and the villagers. The public sector will also take part as this can be seen as a pilot project. After the regeneration, this area will be a place for residents' daily recreation and social activities.

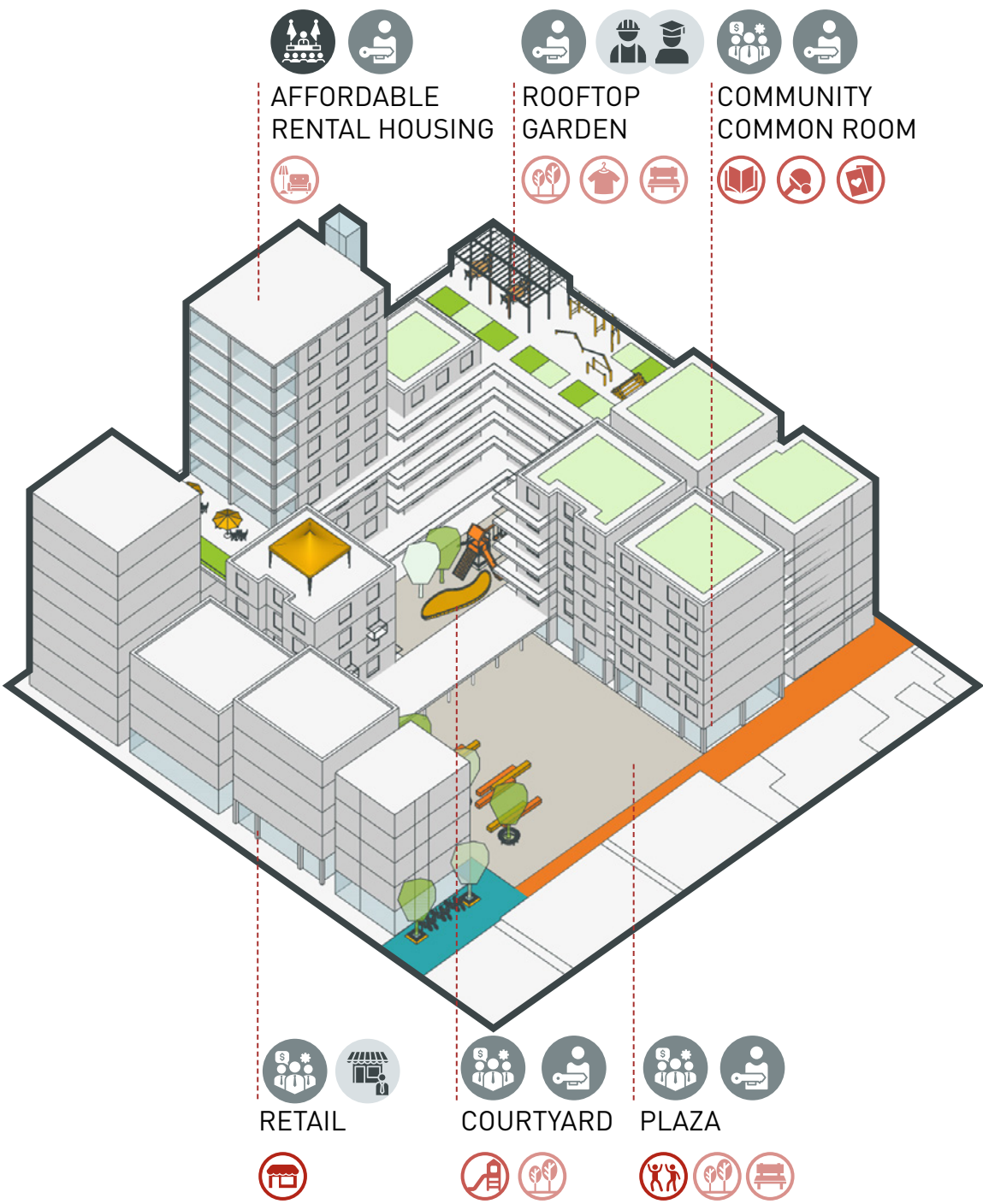
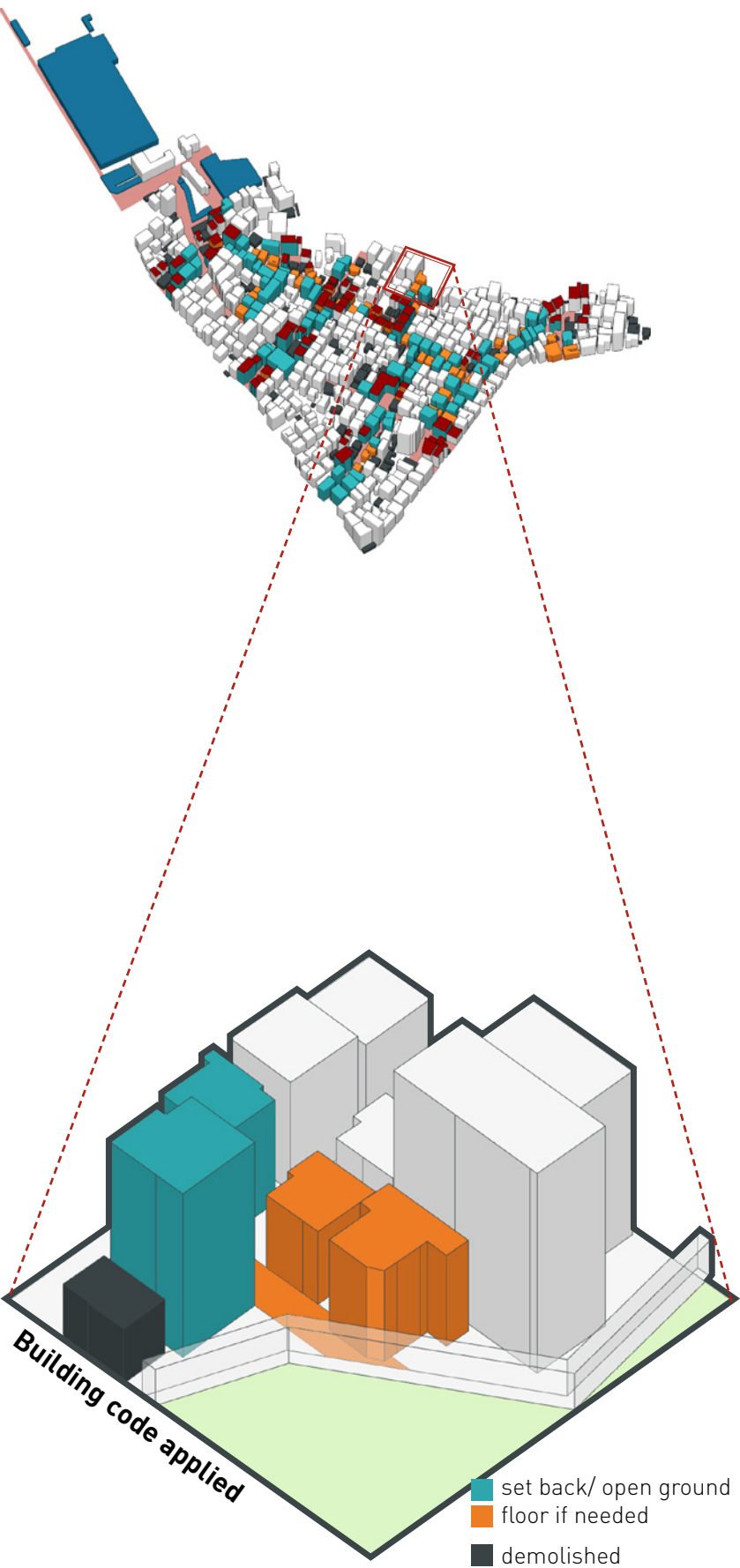


Figure 6.15: Visualisation of community playground [Made by author]

Involved stakeholders		Functions	Social	Daily
		Public	reading room	green space
		retail	sport field	hanging clothes
		freezone	card & chess	resting space
			playground	residential

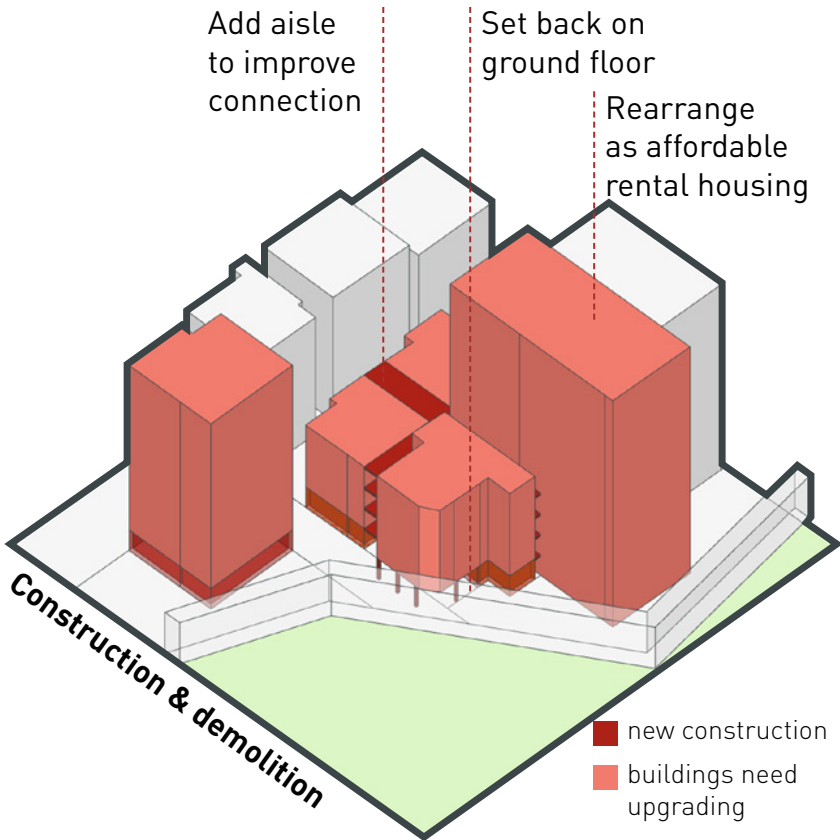
Strategic projects: Village Backyard



The third one is the village backyard, which is located in between the gated theme park and the urban village. These areas can be seen as the dead-end of the street now, but after the regeneration, they can become the backyard for the surrounding buildings.

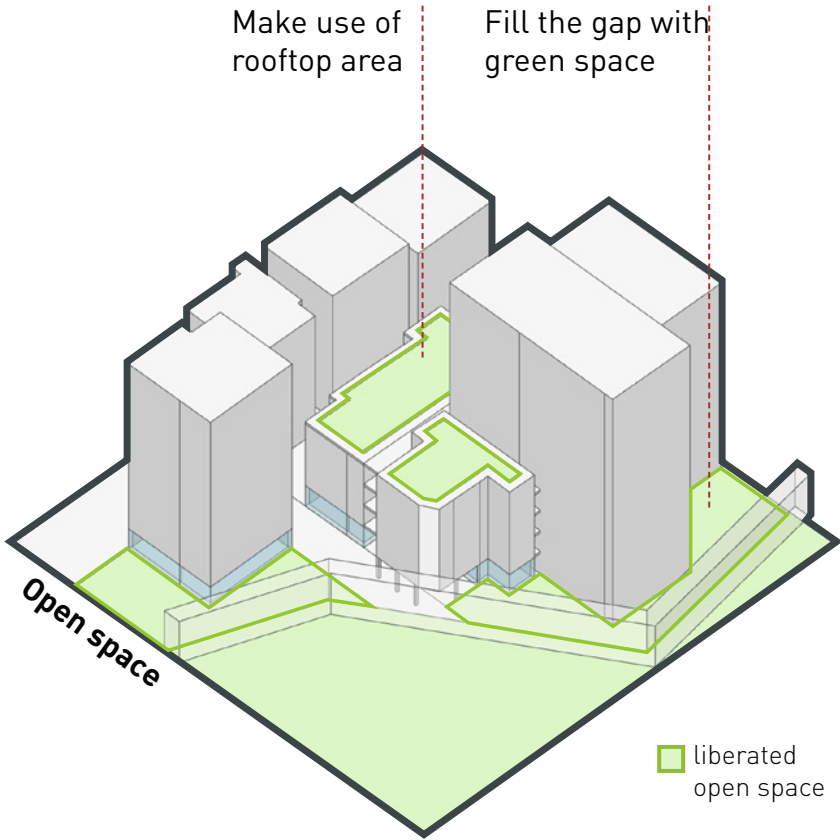
Building code applied

There will not be many public programs inserted here as the atmosphere of the public spaces in this area is relatively quiet. The building that blocks the street should have a setback on the ground floor so that the backyard is accessible.



Construction and demolition

There will not be much construction and demolition. Most of the buildings will be regenerated as affordable rental housing by reorganizing indoor spaces. The ground floor will be rearranged for public functions like convenience stores and laundry room. Some aisles will be added to improve the accessibility among different buildings.



Open space

The gap between the gated theme park and the buildings will be regenerated as green space for the residents living in the surrounding, and it is also accessible for other people in the village. The rooftop will also be regenerated as open spaces for residents' daily demands.

Figure 6.16: Regeneration approach of village backyard (Made by author)

Strategic projects: Village Backyard



Figure 6.17: Spatial atmosphere of village backyard (Made by author)

This project will be mainly led by the villagers themselves. It is an exploration of how spontaneous regeneration can happen. Compared to the other two projects it is less public, and the functions of the public space focus more on the residents who live in the surrounding buildings.

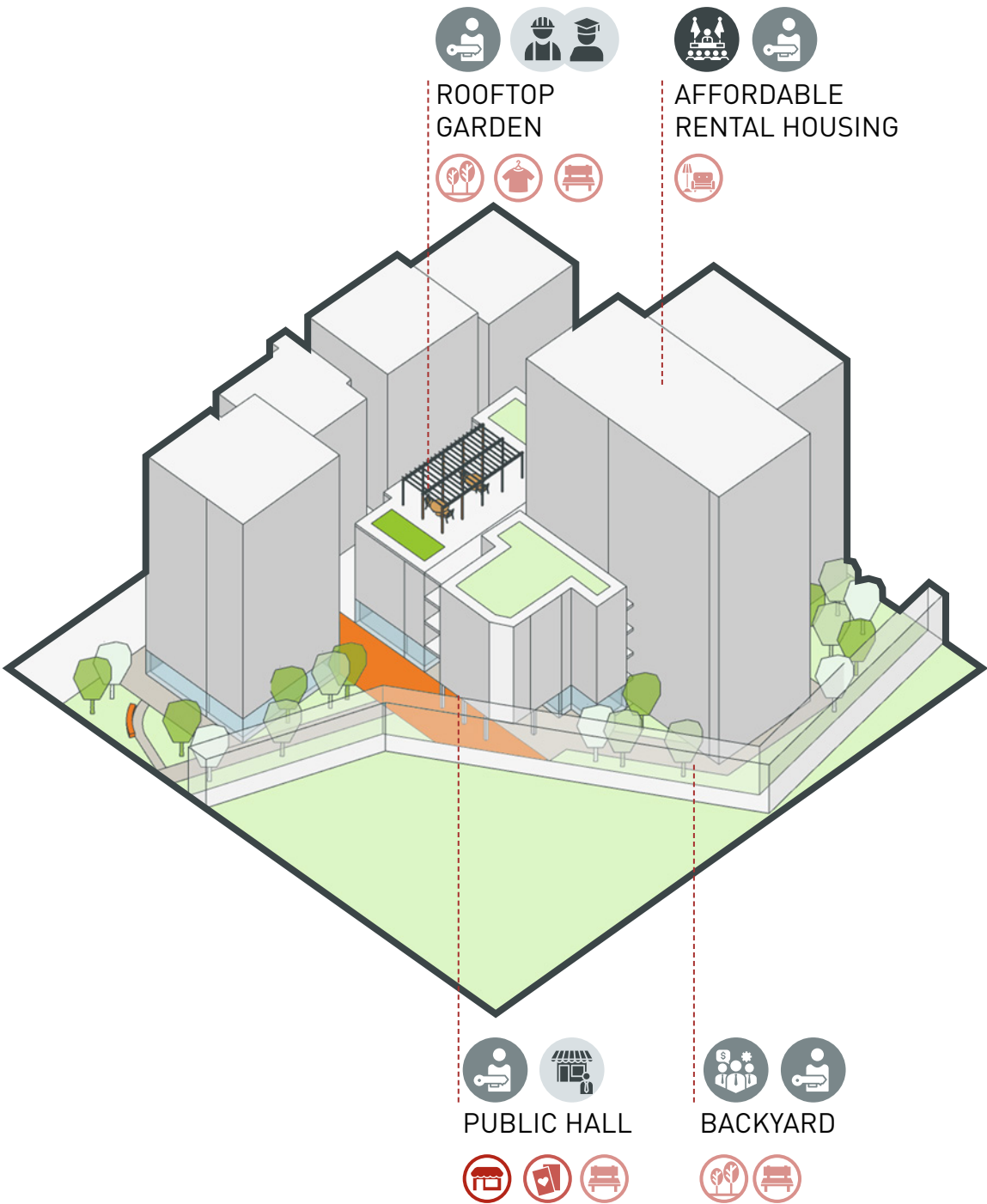


Figure 6.18: Visualisation of village backyard (Made by author)

Involved stakeholders		Functions	Daily
		Public	green space
		retail	hanging clothes
		Social	resting space
		card & chess	residential

Conclusion

- From the above design exploration, it is possible to draw several conclusions:
- 1.The highly-built village settlement needs de-densification to improve the spatial quality. In order to compensate for the demolished property, extra land apart from the original village settlement will be needed;
 - 2. The collective-owned industrial/commercial area has potential for densification, while the amount of the original function should be kept to maintain the management of the joint-stock company;
 - 3. In some villages where the post-industrial area has already been developed or transformed into urban function, the government should help the village to get another piece of land as a replacement. As urban villages have the potential to provide a considerable amount of affordable housing after the regeneration, which can relieve the pressure on the government to build new affordable housing, it is the government’s duty to compensate the villagers who contribute their properties.
 - 4. The new development for replacement can be combined with the construction of the city sub-centers, where the opportunity accessibility will be improved in the upcoming future, to make the quality equal to or better than the regenerated urban village.



Figure 6.20: Distribution of post-industrial areas in 4 villages (Made by author)

Affordable housing network

In this way, the well-located urban village, which are close to job opportunities and public transportation, are capable to provide plenty of affordable well-located housing for young graduates. Together with the new development which can be combined with the construction of the sub-center, the affordable housing network on city scale can be formed to promote job-housing balance and relieve the housing pressure that young graduates are facing.

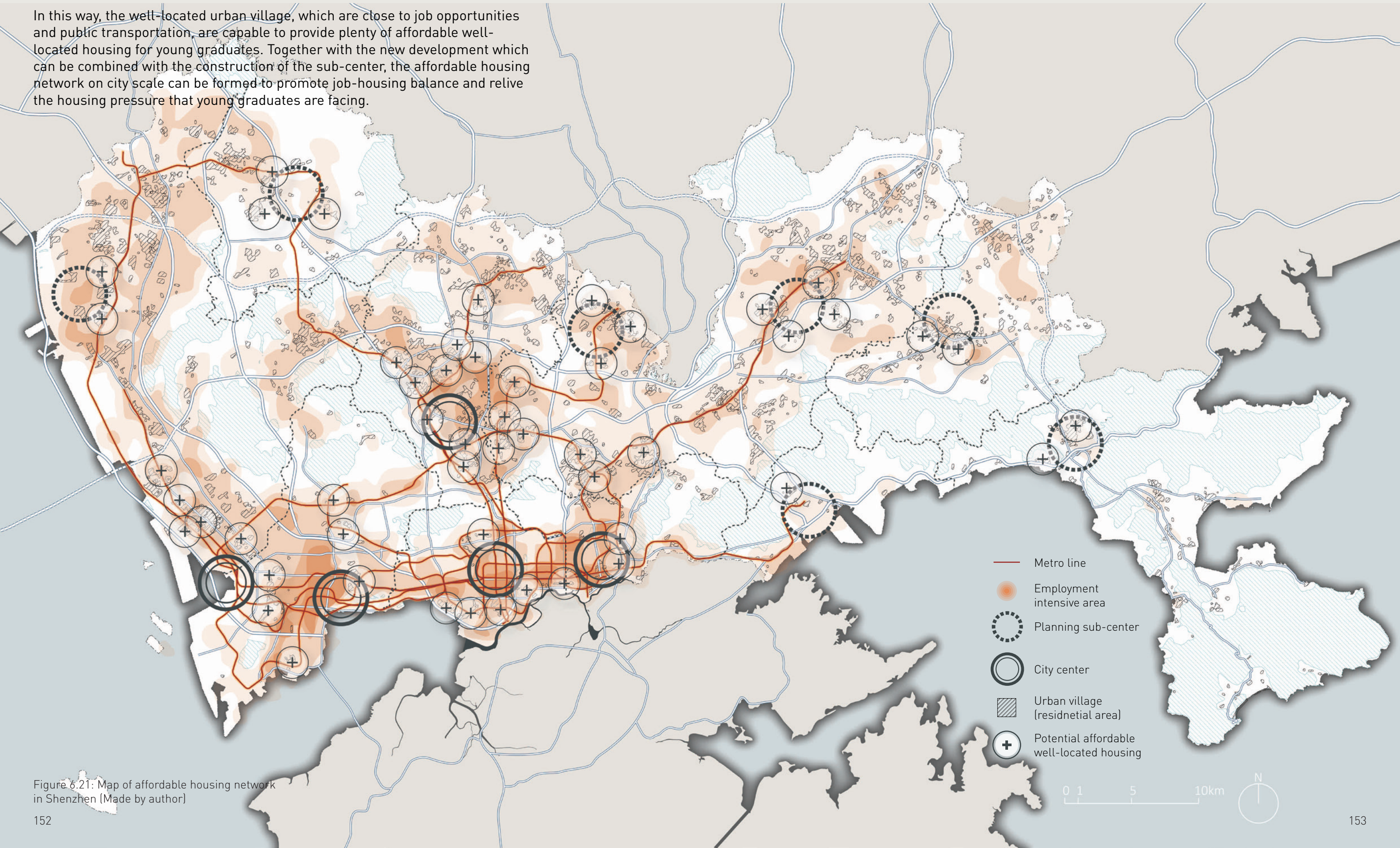


Figure 6.21: Map of affordable housing network in Shenzhen (Made by author)

08 DISCUSSION

Reflection

I was born and raised in the Pearl River delta. Our generation witnessed how the elder generation seized the opportunity of reform and opening up and accumulated their wealth in the past two decades. However, when we step into the society, we find that it is impossible for us to achieve their success with our own effort, as they have taken most of the resources and become the privilege in the city. This is true for local young people, not to mention the migrant ones. Therefore, in the thesis, I try to take the housing problem as the main subject to explore how urban planning and design can respond to the inequitable distribution of social resources.

Methodology

The methodology I used can be concluded into 3 steps: 1. Envision a preferable future; 2. Evaluate the current situation; 3. Use planning and design to mend the gap between the current situation and the preferable future.

Research guides the design part of my thesis. In order to envision a preferable future, I did some research including theoretical analysis and demands analysis to understand what young graduates need, and extracted the space-related indicators to evaluate the current situation. After the evaluation, I understood what should be transformed to meet the new demands and what can be kept, which became the base for the following planning and design.

Limitation of data collection

The methodology was quite straightforward, but the data collection for the spatial evaluation was a huge challenge. Due to the covid, I was not able to do the field trip. I collected most of the data from the street view and the POI information from the Baidu map, which may be not sufficiently accurate. Thanks to some of my friends who did similar research before and who work in the local planning institute, I have the opportunity to access some noun-public data, but this also decreases the applicability of my approach.

Moreover, as I did not do a field trip, the data for demand analysis are mostly from the rental market reports of some online platforms for housing services. The research groups are mainly the users of these platforms, which means that the result may have some bias. Local villagers' and tenants' real attitude toward the regeneration is not clear to me. Therefore, I feel that I am proposing a possibility, which may be not sufficiently practical.

Societal relevance

My motivation for the graduation project is the housing difficulties that young graduates are facing in metropolitan areas. Before P1 I was wondering, as the accommodating capacity of the city is limited, whether the high property price is a means of selection so that the uncompetitive people leave to make room for the new wave of young graduates. But the prosperity of urbanization should not be shared by only some privileged people; others should at least have the opportunity to choose rather than being forced to leave by the sky-high property price. In that case, the urban village plays a role as the buffer to accommodate the migrants.

The spontaneous regeneration of the urban village will not only benefit the migrants and young graduates, but also the indigenous villagers, whose long-term livelihood will be affected. Under some existing redevelopment models, villagers may get rich in a short time due to the huge compensation, but their long-term livelihood may be affected negatively, as they rely too much on the rental income but do not have the skill to make a living. Instead of expropriating their properties, the spontaneous regeneration will be a chance to legalize their housing, regulate the rental market, and avoids the leap of the gap between rich and poor caused by overnight wealth from compensation.

Moreover, the legalization process will further promote the unfinished urbanization, helping the urban villages to be integrated better into the

urban environment and planning system. After the regeneration and legalization, the informal village settlements will become a considerable amount of well-located affordable housing that can be added to the housing security system. Therefore, the government should play an active role because the regeneration is not only the affairs of the village but also the responsibility of the public sector.

Scientific relevance

The thesis contributes to the concept of affordable housing in the context of intensive urbanization. Different from most of the discussion of affordable housing which focuses on poverty, the target group of my study is the young graduates, who are not actually poor, but still suffer from the inequitable distribution of social resources. Therefore, in my thesis, affordable housing for young graduates should be well-located with satisfying spatial quality.

I also try to explore the implementation of urban village regeneration and find that the low-density post-industrial area has the potential for densification to compensate for the demolished areas in the dense village settlement. In some existing regeneration projects, the post-industrial areas were redeveloped separately in priority, making the regeneration of the settlement more tricky. Therefore, the implementation of regeneration should not be divided into separated areas but should be considered as a whole.

Transferability and applicability

The governance model for spontaneous regeneration and the mechanism for legalization can be applied to other urban villages, even other cities. They will contribute to the further promotion of urbanization, as well as transform the informal settlements into a source of affordable housing.

But there are preconditions for the applicability. Without the construction and improvement of the housing security system, it is impossible to

achieve the goal with only planning and design. The public sector needs to realize that the regeneration of urban villages is not only a matter for the village collective, because it is the government that indulged in the initial development of the urban village and benefited from the labor force settled in the informal construction. It is also their responsibility to make a contribution to the regeneration.

Relationship with studio topic

The reason I chose the studio Planning Complex Cities was that I think the housing problem cannot be solved by the urban design itself, but needs the cooperation of policy and governance. During the past year, I have learned a lot from the methods and theories introduced in the studio lectures, which guides me to analyze the stakeholders and the governance model. I applied different planning tools to design a legalization mechanism, which leads to the following spatial strategy, and the design aims to test the implementation of the strategy. The outcome of my thesis is a package combining mechanism design, governance model design, regeneration strategy, and urban design, which responds to the studio topic: planning for the 'complex' system of the city.

Reflection

Ethical issues and dilemmas

I propose a new governance model in the thesis in order to balance the conflicting public and private interests. However, compared to the huge compensation that villagers may get from the past redevelopment model, the incentives proposed in my thesis may be less attractive for them, which may be a dilemma for the potential applications. The huge compensation brought by the mass demolition intensified the social injustice and the privilege of the indigenous villagers. It may take some time for the villagers, who believe they can make great profits from the regeneration, to accept the new model. The improvement of the housing security system and some pilot projects construction may help the villagers change their mindset.

In the thesis, I also try to explore a model for the bottom-up strategy which can benefit the civil society, but I doubt whether the civil society can be an active stakeholder in the process. The absence of the civil society may be seen as a problem for the governance, but do they actually have the interest and power to take part? The political system and the operation of the village show that the indigenous villagers have the most power, and as most of the tenants think of the village as temporary accommodation, they may not have much interest to participate. Instead of emphasizing civil engagement, I think it is more effective to arouse the awareness of the public sector to pay more attention to the civil groups, so as to protect their rights and ensure that their voice can be heard. In long term, when the civil society finds that it is possible for them to settle down in the village and be integrated into city life, they may gradually become more willing to participate in the civil engagement.

Moreover, in research by Fingleton (2008), adding affordable housing in the opportunity-rich area may not increase affordability, but on the contrary, may even make it worse as the demands for housing will also increase. The municipality stated in the Territorial Spatial

Master Planning of Shenzhen that several new sub-centers will be built to alleviate the housing pressure in city centers, and the employment opportunities will be spread, so as to achieve a job-housing balance in the city (Planning and Natural Resources Bureau of Shenzhen Municipal People’s Government, 2021). It is to say that there is not only one answer to the housing problems that young people are facing, and I am not looking for the best solution, but just want to explore one of the possibilities to respond to the problems.

09 APPENDIX

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