INSIDE-OUT TRANSITION

URBAN VILLAGES TRANSFORMATION STRATEGY IN SHENZHEN CHINA

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GRADUATION REPORT

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CONTENT

1. INTRODUCTION

1.1 CONTEXT

Figure 1.1 resident population in SHENZHEN

Source: Handbook of Shenzhen Statistics 1995; Statistical Yearbook 2002; Shenzhen Government Online 2012 at http://english.sz.gov.cn/gi/, 30-10-2012

Figure 1.2 urban hukou is the precondition for accessing social welfare in city
Source from Fang (2011)

RURAL-URBAN MIGRATION THE TIDE NOBODY CAN STOP

People migrate either because they are being pushed out of their place of origin, or because they are pulled to their new migration destination, or more often, people move because of a combination of overlapping pushing and pulling forces (UN-HABITAT and UNESCAP, 2008). Some are pushed out of rural area because they can't earn sufficient income to sustain themselves or their households through agriculture. Others may be pushed out of their place, either temporarily or permanently, by natural disasters such as floods, droughts or earthquakes or because of sustained ecological changes, such as desertification or soil erosion (UN-HABITAT and UNESCAP, 2008).

At the same time, people are pulled to urban area by better job prospects, better education and health facilities. The cities set them free from the traditional customs and hierarchical structures of village cultures, and offer young migrants and their children greater prospects of upward social mobility.

SHENZHEN-MIGRANT CITY

After Deng Xiaoping announced the decision to open China to world markets at the Third Plenary session of the Eleventh CPC Central Committe in December 1978, Shenzhen became the first of four Special Economic Zones established to pilot the reforms. After 30 years development, SHENZHEN has become one of the economic powerhouses of China as well as the important manufacturing base in the world. The job opportunities and urban resource attract many people from other cities or rural countries.

These migrants become the important component of SHENZHEN and account for over 70% of the total population (Fig. 1.1). They contribute to the SHENZHEN development, from the labour intensive manufacturing industries to the high-technology industries. Besides, the city needs their cheap labour and need the cheap goods and services they provide as workers, hawkers, laborers, artisans, waiters, taxi drivers, maids, cleaners etc. (UN-HABITAT and UNESCAP, 2008).
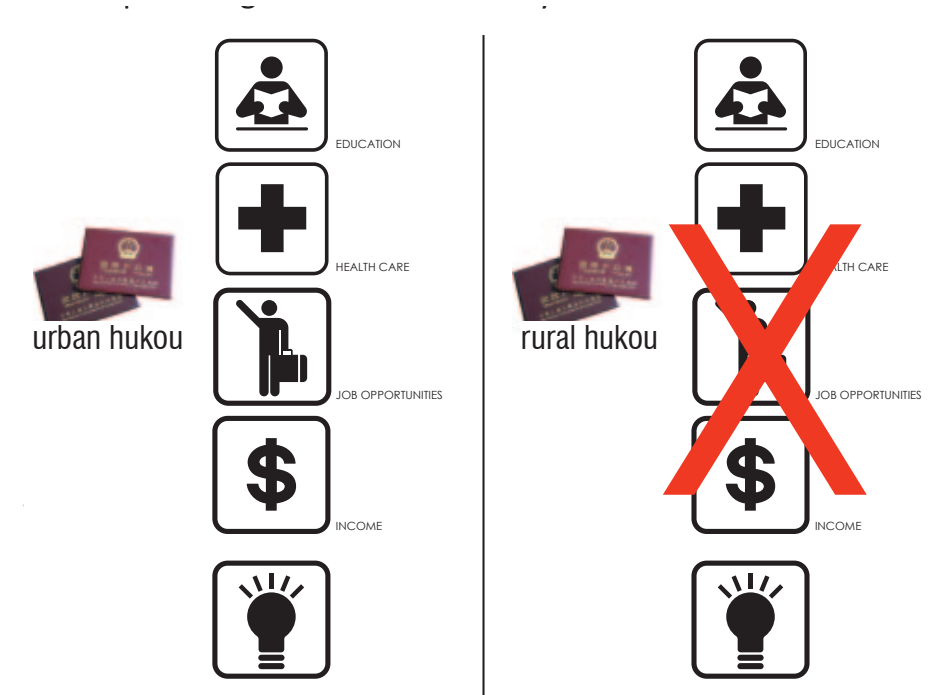
THE MARGINAL STATUS OF RURAL MIGRANTS IN THE SOCIAL WELFARE PROVISION

Although some migrants live and work in the SHENZHEN city for several years, they are still hard to access to the social welfare provision because of the dual hukou system.

The dual hukou system registers people by their birthplaces with urban or rural hukou status (Lin et al., 2014). Citizenship/villagership is the precondition for accessing public/collective facilities in cities/villages (Lin and De Meulder, 2012). Theoretically, SHENZHEN governments are responsible for providing social housing, public services (education, health, etc.) and facilities, employment opportunities and social security for residents who hold an SHENZHEN hukou. But the vast majority of migrants are excluded from the social welfare provision.

Figure 1.3 Housing price of shenzhen from 1998-2011

legend:
- average
- luohu
- futian
- nanshan
- yantian
- baoan
- longgang

unit: yuan/m2

Figure 1.4 Urban villages distribution in SHENZHEN
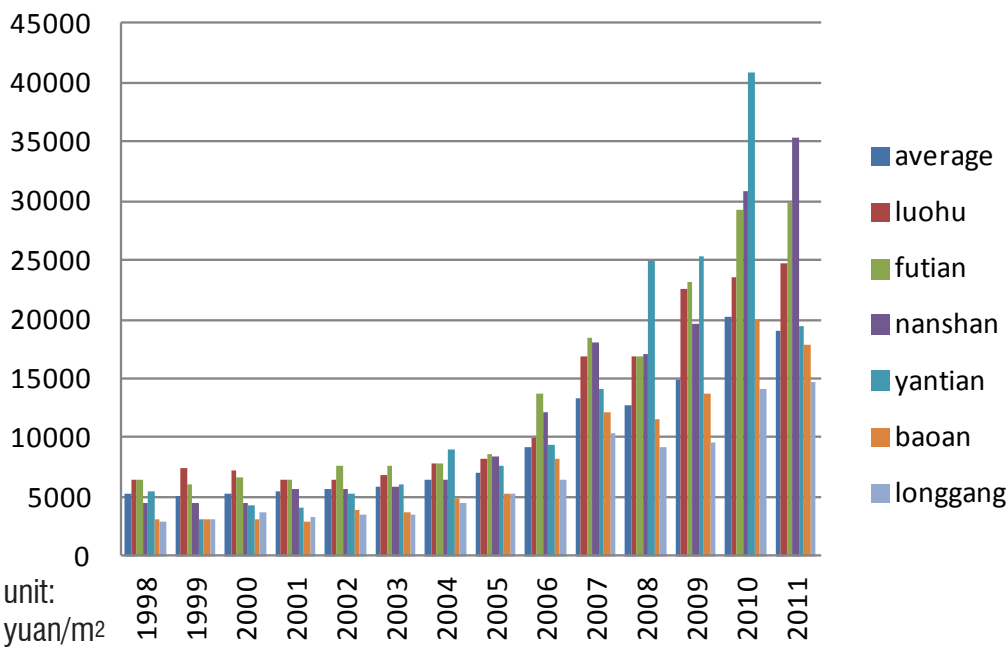
URBAN VILLAGES
MAIN ROLE OF HOUSING THE MIGRANT

For the reason of being excluded from the provision of social housing as well as not being able to afford the housing price in the formal market (fig.1.3),the migrants are forced to turn to the informal market and reciprocity spheres to look for housing (Lin et 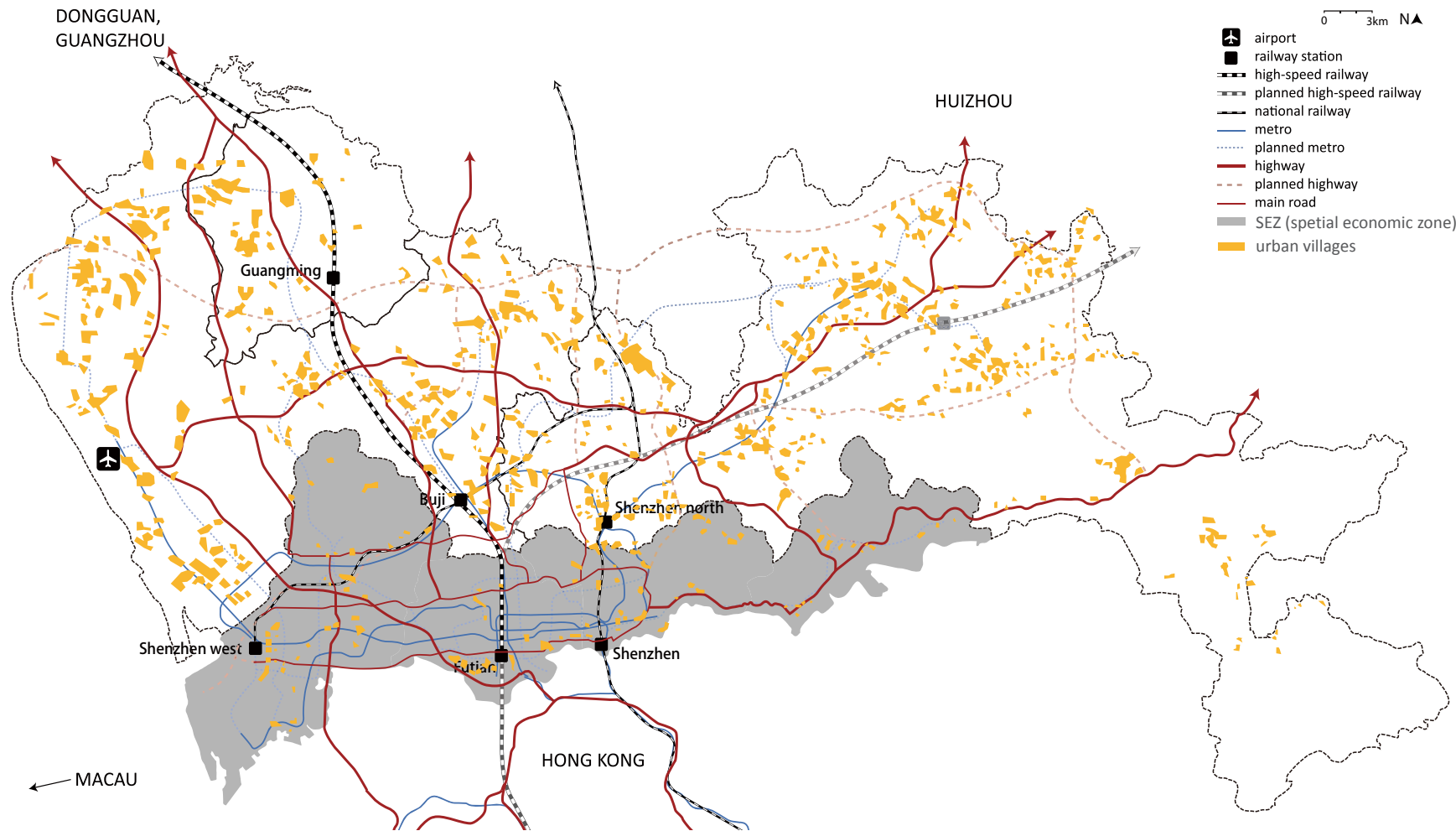al., 2011). The villagers who lose their farmland during the process of urbanization and find it difficult to participate in the formal urban labor market catch this opportunity and adapt their houses informally to accommodate the housing needs of rural migrants (Lin and De Meulder, 2012).

According to the Shenzhen Statistics in 2009, within the total residential Floor Area 0.4billion m2, self-constructed housing in urban villages was 0.17 billion m2, accounting for 43% and become the largest component of SHENZHEN housing.

Most of the urban villages were located outside the SEZ and occupy more than 90% of the urban villages land in shenzhen. However, the urban villages inside the SEZ are significantly denser and privide about 20% of the total floor area of urban villages, that is, the 8.6% of the total residential Floor Area in Shenzhen.

Although most of urban villages were constructed without planning or building regulation and with poor living conditions such as extremely high density, low building quality, insufficient public service delivery, inadequate sanitation, security problem, etc., they are the only choice for majority of migrants.

Figure 1.5 Housing category and proportion in SHENZHEN

self-constructed housing by Enterprise
10%
Affordable housing
6.2%
43% Urban Villages
25% commercial housing
15.8% Workers Dormitory
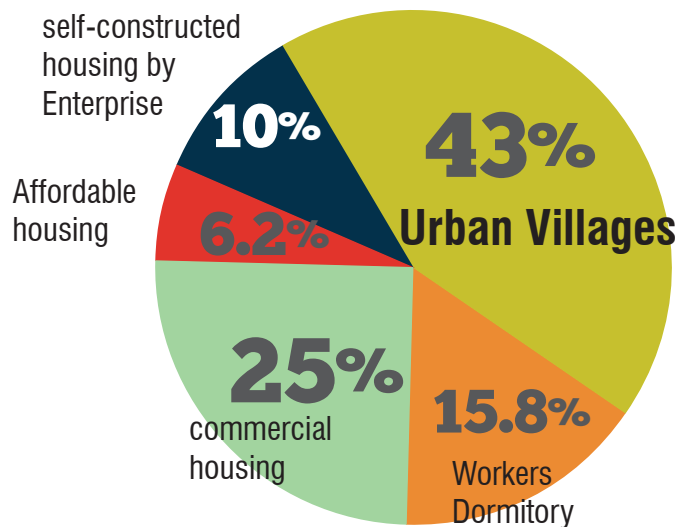
Figure 1.6 urban villages proportion in SHENZHEN

43%

residential Floor Area of urban villages
total residential Floor Area of shenzhen

8.6%

residential Floor Area of urban villages in SEZ
total residential Floor Area of shenzhen
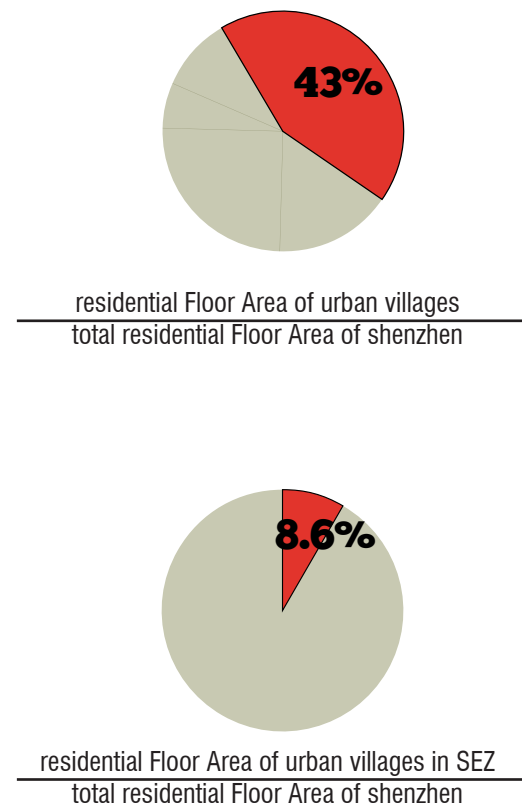
1.2 PROBLEM DEFINITION

Figure 1.7 image of urban villages
Source: http://p5.jtimg.com/zhuanti/uploadfiles/member/0/20111201042286292.jpg

Figure 1.8 Current approach balance urban villages redevelopment and housing the migrants and low-income citizens

- urban villages
- central districts
- shenzhen city
- social housing neighborhoods
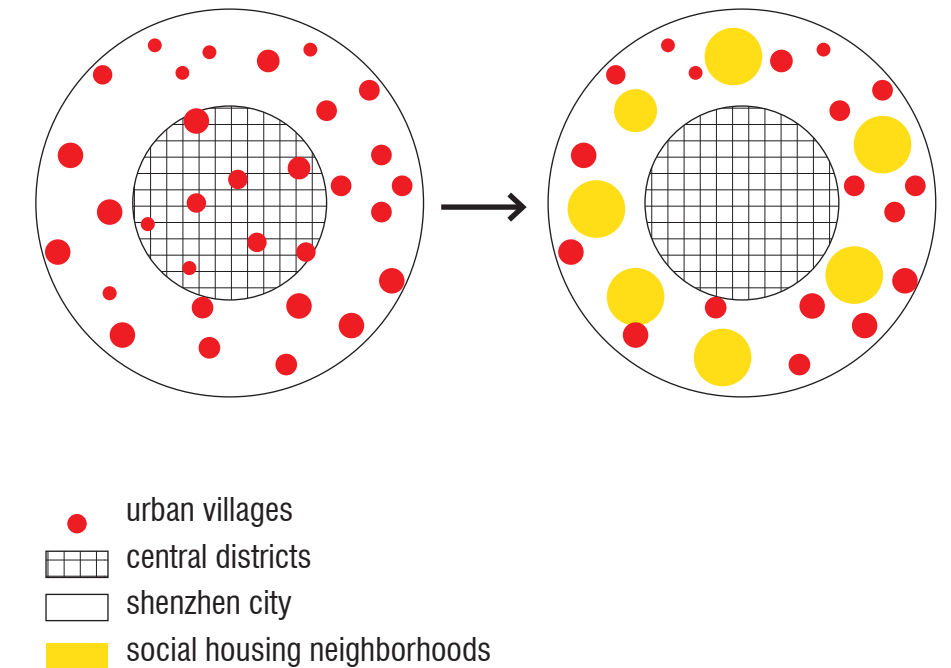
URBAN VILLAGE REDEVELOPMENT AND AFFORDABLE HOUSING DEMAND

As SHENZHEN urbanized further, which follow the land scarcity, increasing land value, industry upgrading in the SHENZHEN district, the conflict between self-organizing urban villages and the surrounding urban villages become remarkable. On one hand, urban villages have some problems ranging from spatial aspect like lack of public facilities and poor housing conditions, to the social aspect such as criminals. On the other hand, the urban development of the surrounding area enlarges the problems and the conflict. The conflict motivates the urban villages redevelopment in recent years, especially the redevelopment of urban villages in central districts. However, for the urban villages redevelopment issue, a unique challenge which SHENZHEN government need to solve is how to accommodate the huge amount of migrants (account for over 70% of the total population) and low-income citizens after urban villages redevelopment.

Unlike developed countries, which have the capacity to replace slums with social housing, most cities in developing countries do not have the resources to sustain the high costs

of city centre redevelopment, which usually involves the demolition of informal settlements and the construction of high quality subsidized housing for the poor (Carmona and Burgess, 2001).

To balance the urban village redevelopment, land value upgrading and the affordable housing demand, the SHENZHEN government provide solution from two aspects:

1. Demolishing the urban villages in the central area and replacing with the high-end neighbourhood which is no more affordable to the original tenants.

2. Constructing large scale social housing neighbourhoods on the urban fringe to alleviate the affordable housing demand.

8

CONSTRAINTS OF CURRENT APPROACH

The social housing provided by government can hardly replace the role of urban villages in the central districts as affordable housing provision for several reasons:

Fig1.9 The completed amouts of affordable housing in Shenzhen from 2006-2010.

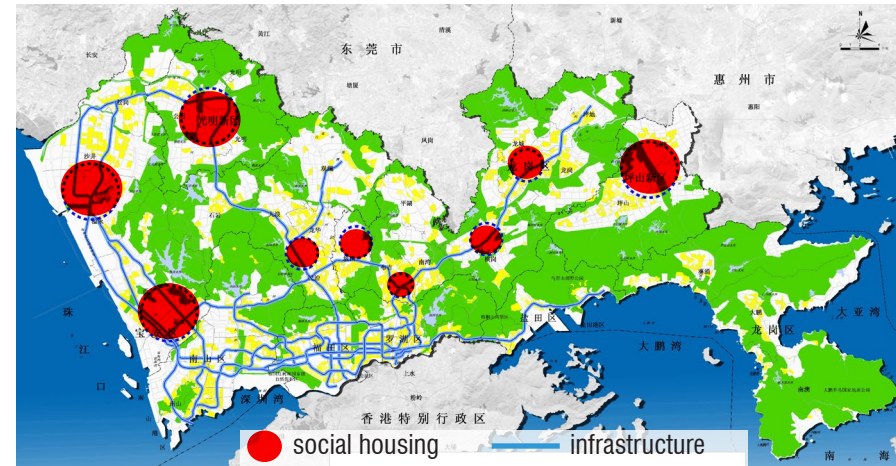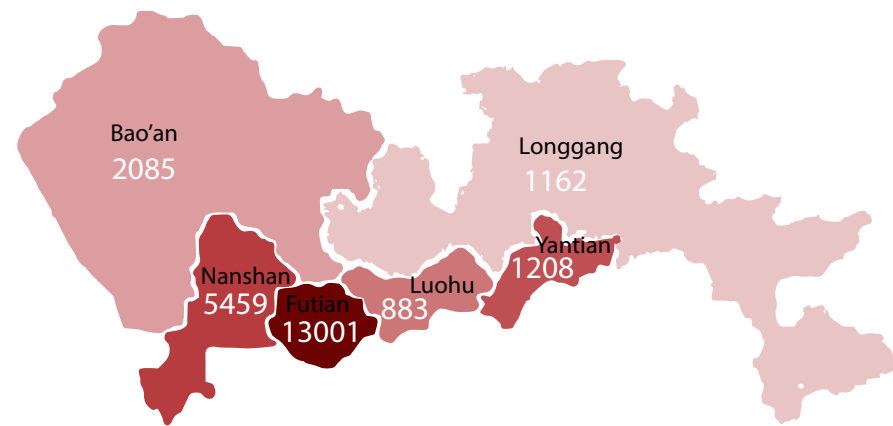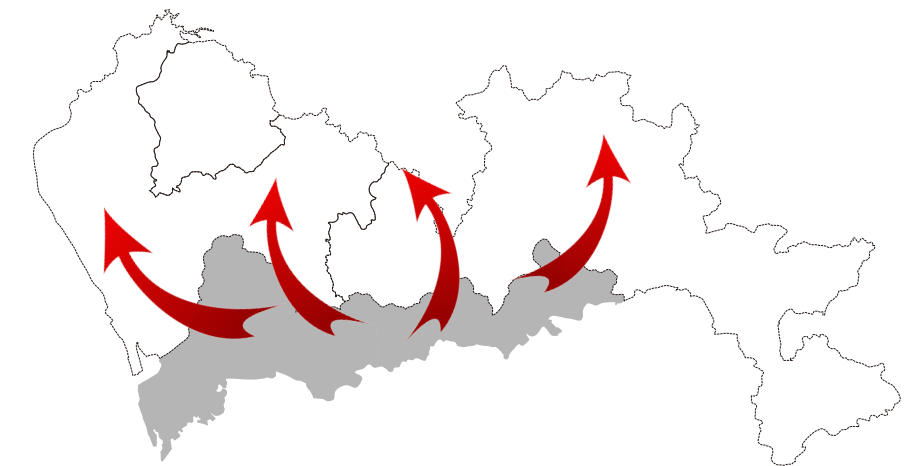Fig 1.10 The plan of affordable housing in Shenzhen from 2011-2015

Fig 1.11 SHENZHEN development during transitional period

1. Conflict between huge affordable housing demand and government's financial constraints

For most countries and cities, subsidized public-sector housing has almost always run into serious financial problems after some years, because the low-income housing needs are so much greater than what the governments could afford, and the supply quickly lags far behind demand (UN-HABITAT and UNESCAP, 2008).

In SHENZHEN context, the affordable housing demand are mainly from the migrants who account for over 70% of the total population. How could it be possible to provide affordable house to 70% population by SHENZHEN government?

2. Conflict between affordable housing location demand and government's land constraints

The low-income migrants are more rely on the central location with more job opportunities and urban facilities. Locating in central districts helps them save time and money as much as possible then provides them possibility to accumulate money which could be the main income of their families in hometown or meet their other demand. However, as the land scarcity problem in SHENZHEN becomes severe in recently years, SHENZHEN governments are unwilling to provide expensive land in central districts for social housing projects. The SHENZHEN social housing scheme during this period reveals that many social housing projects are located on the urban fringe (Fig 1.10), where land is cheap. During the SHENZHEN transitional period (Fig 1.11) when the urban fringe development (urban facilities and industry) have not completed, social housing is unliveable for low-income people.

3. Institutional constraints

As mentioned before, the affordable housing demand are mainly from the migrants. The HUKOU system is another constraint in providing social housing for migrants. HUKOU system is hard to disappear according to the Chinese context. Some Chinese cities attempt to break the institutional constraint through incorporating some migrants into the social housing target groups, the migrants must either have worked in the city for one year and hold a temporary residence card and a certification of housing fund deposit, or be employed in specific enterprise. This means that to be eligible, a migrant must have a formal job. The majority of low-income migrants who work in the informal sector are thus excluded from the social housing (Lin et al., 2014). Therefore, the provision of social housing is impossible to open to all the migrants as long as the HUKOU system exists.

1.3 AIM OF THE PROJECT

Because various constraints make it impossible to provide social housing for the bulk of low-income migrants in the near future (Lin et al., 2014), it is still necessary to preserve and upgrade the urban villages then use them as effective tools to house the migrants, especially during the SHENZHEN transitional period. But the role of urban villages is not permanent and can be adaptive to the uncertain future.

To upgrade the urban villages not only need solutions from spatial aspect, but also need to understand current self-organizing system which influence the urban village inside-out.

The aim of the project is to transform the urban villages into liveable neighbourhoods through improving the living environment and dealing with both the problems and opportunities of self-organizing systems in urban villages, and retain their roles as housing the migrants during SHENZHEN transitional period.

Fig 1.12 Mainstreet in the Urban villages

1.4 RESEARCH QUESTIONS

SELF-ORGANIZING SYSTEM?

LIVING ENVIRONMENT IMPROVEMENT?

PROBLEMS?

OPPORTUNITIES?

UNCERTAIN FUTURE?

HOUSING THE MIGRANT?

MAIN RESEARCH QUESTION

How to transform the urban villages into liveable neighbourhoods through improving the living environment and dealing with both the problems and opportunities of self-organizing systems in urban villages, and retain their roles as housing the migrants during SHENZHEN transitional period?

SUB RESEARCH QUESTIONS

1. How to improve the living environment in urban villages?
2. What are the problems and opportunities of self-organizing systems in urban villages?
3. How to retain roles of upgrading urban villages as housing the migrants during SHENZHEN transitional period?

1.5 RESEARCH FLOWCHART AND METHODOLOGY

PROBLEMFIELD

urban villages redevelopment

affordable housing demand

PROJECT AIM

upgrade the urban villages then use them as effective tools to house the migrants
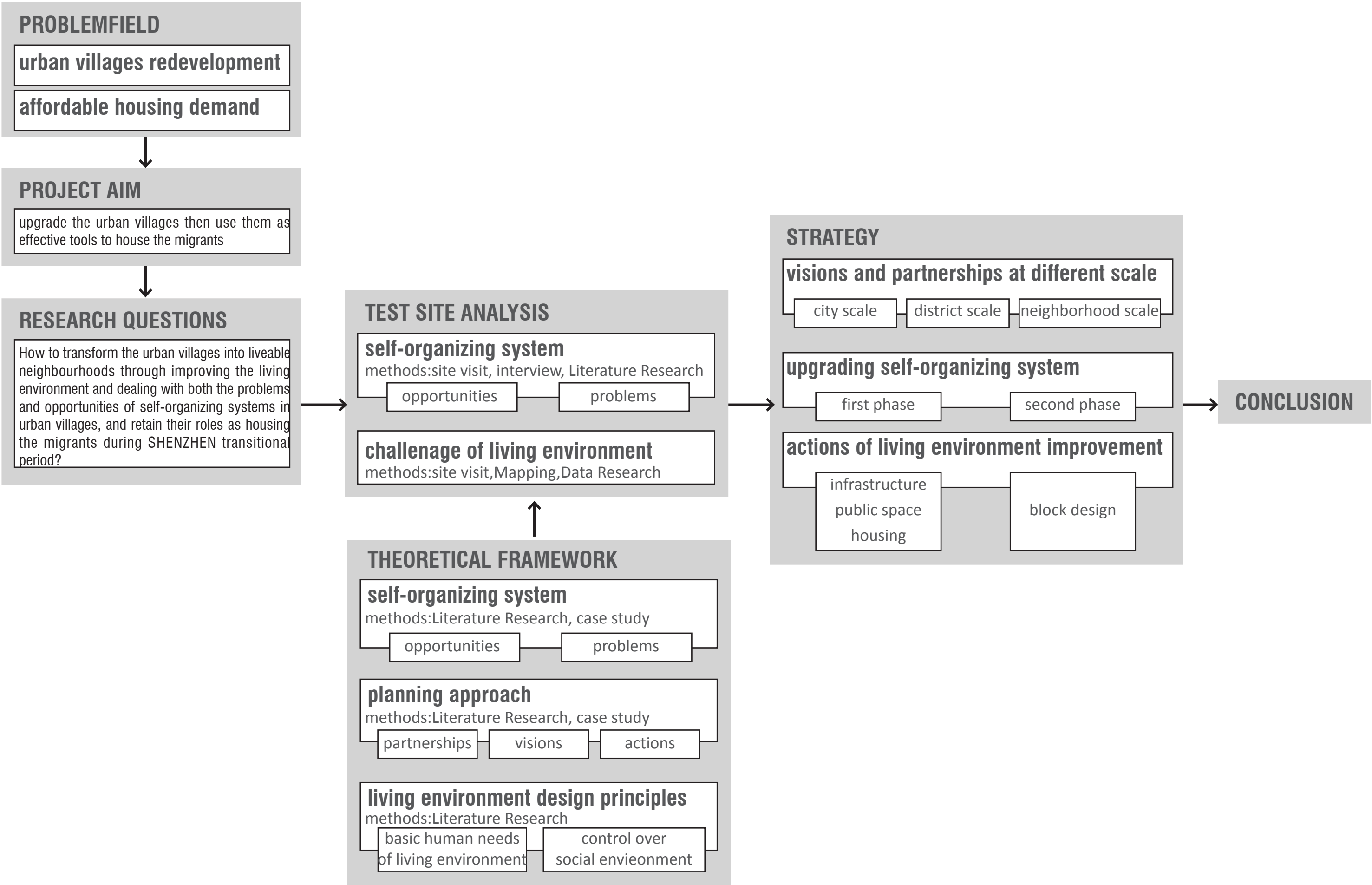
RESEARCH QUESTIONS

How to transform the urban villages into liveable neighbourhoods through improving the living environment and dealing with both the problems and opportunities of self-organizing systems in urban villages, and retain their roles as housing the migrants during SHENZHEN transitional period?

TEST SITE ANALYSIS

self-organizing system
methods:site visit, interview, Literature Research

opportunities | problems

challenage of living environment
methods:site visit,Mapping,Data Research

THEORETICAL FRAMEWORK

self-organizing system
methods:Literature Research, case study

opportunities | problems

planning approach
methods:Literature Research, case study

partnerships | visions | actions

living environment design principles
methods:Literature Research

basic human needs of living environment | control over social envieonment

STRATEGY

visions and partnerships at different scale

city scale | district scale | neighborhood scale

upgrading self-organizing system

first phase | second phase

actions of living environment improvement

infrastructure public space housing | block design

CONCLUSION

2. THEORETICAL FRAMEWORK

2.1 FRAMEWORK

URBAN VILLAGE ANALYSIS

SELF-ORGANIZING SYSTEM IN URBAN VILLAGE

opportunities	problems
Informal but efficient housing trade	Conflict between public and private interest
Informal but vibrant economic activities	Lack of effective regulation and maintenance
Informal but necessary public facilities	Lack of tenure security
Job opportunities in urban villages	Lack of tenant management

CHALLENGE OF LIVING ENVIRONMENT

STRATEGIC URBAN PROJECT APPROACH

stakeholders Partnerships

Visions at different scales

Specific actions in strategic locations

DESIGN PRINCIPLE OF LIVING ENVIRONMENT

basic human needs

escape temporarily from the physical
stresses of the urban environment;
experience nature;
privacy;
security and safety
affiliation and belonging;
social recognition and status;
physical exercise;
tension-release

control over social environment

INTERPERSONAL DISTANCE ZONE

TERRITORIAL BEHAVIOUR

DIFFERENT ZONES OF PRIVACY

2.2 SELF-ORGANIZING SYSTEM IN URBAN VILLAGE - OPPORTUNITIES

Informal but efficient housing trade

The poor access to public housing in state redistribution and housing on the formal market spheres forces migrants to turn to the informal market and reciprocity spheres to look for housing (Lin et al., 2011). The villagers who lose their farmland during the process of urbanization and find it difficult to participate in the formal urban labor market catch this opportunity and adapt their houses or build new houses informally to accommodate the housing needs of rural migrants (Lin et al., 2014). This is a mutually beneficial trade between migrants and indigenous villagers. These houses were built by the cooperation of developers and village committees or by village committees themselves and belongs to the **'Small property right houses'** (xiaochanquanfang).

'Due to the nature of the land, there is no house property right certificate issued by construction department for commercial houses built on rural collective land. It cannot go public either. The property right certificate for it is issued by the town government. The seller is the village committee. Compared with ownership of commercial residential buildings (built on state-own land) that is directly protected by law, the property right of the commercial houses built on rural collective land is less protected. Thus they are called "small property right house". It is reported that small property right houses save two parts of expenditures—the land grand fee and various taxes. Therefore the cost and price of this kind of house are very low. This is the main reason for its popularity.'
——- Research Report on Chinese Small Property Right House Market, 2009-2010

BUILDING OWNERSHIP
LAND USE RIGHT
INDIVIDUAL
house based land
LAND OWNERSHIP
collectivep land
COLLECTIVE

There are 3 types of housing trade inside the urban villages.

Housing property right trade (sale)
The transaction of small property right house is forbidden by Chinese law. Because housing property right must be accompanied with the land use right, but the land use right in the collective land is forbidden to transfer according to the Chinese law, that is why the houses built on the collective land is forbidden to transfer. However, the law can not stop the small property right house transaction because of the low price (50-70% lower than that of big property right houses) of these house. Many low income families- including citizen and migrants- buy the small property right house from the villagers through informal ways.

Housing use right trade-long term (rent)
In some cases, some informal companies which are established by a group of kin migrants rent clusters of housing from villagers. The contracts between villager households and the companies are usually for a 6-7 year period (Lin and De Meulder, 2012). Then, the companies fence the clusters as isolated community and upgrade the housing, facilities and services in the community.

Housing use right trade-short term (rent)
This is the most common trade between villagers and migrants. The migrants rent the houses for short term mainly because the location is near the workplaces or job opportunities. The contracts between villager households and the migrants are informal.

## Informal but vibrant economic activities

Buildings along village main roads that connect urban roads have usually gradually been adapted for commercial use and transformed into shop-front buildings (Lin and De Meulder, 2012). The functioning of these shops is predominantly reliant on informal economic activities, which supply opportunities for migrant entrepreneurs and cheap services for both urban villages and urban areas (Lin et al., 2011).

Informal but necessary public facilities

Supported by the income from collective industrial and commercial projects, the collective organizations (joint-stock company) provide public goods (Lin and De Meulder, 2012). They finance the public facilities including market, schools, sports centres, community hospital, etc. The public goods are mainly for the indigenous villagers, but sometime also cater to the migrants. Besides, some migrants also play the role as public facilities providers. For instance, some migrants rent collective land or villagers' housing in order to establish private schools to provide migrant children with education facilities (albeit substandard ones) (Lin et al., 2014).

Job opportunities inside the urban villages

Migrants who hardly find formal job in the city could find the job opportunities from the manufactures and service sectors on the collective lands or migrant entrepreneurs inside the urban villages.
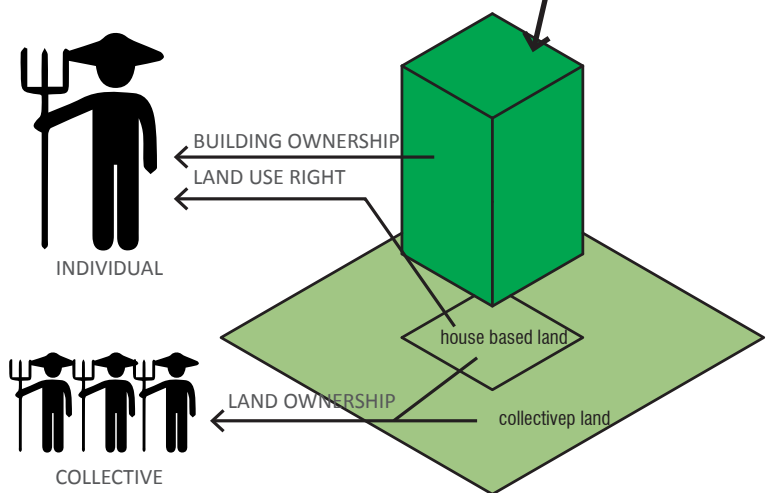
2.2 SELF-ORGANIZING SYSTEM IN URBAN VILLAGE - PROBLEMS

Conflict between public interest and private interest

The extreme densification of urban villages and the lack of public facilities is the expression of conflict between public interest and private interest. The ownership superiority (both land and building ownership belong to villagers and collective organization in village) provide villagers possibility to maximize the private interest with limited constrains. Without solving the conflict between public interest and private interest, or restrict the ownership superiority of villagers, the bottleneck of the physical environment is hardly solved.

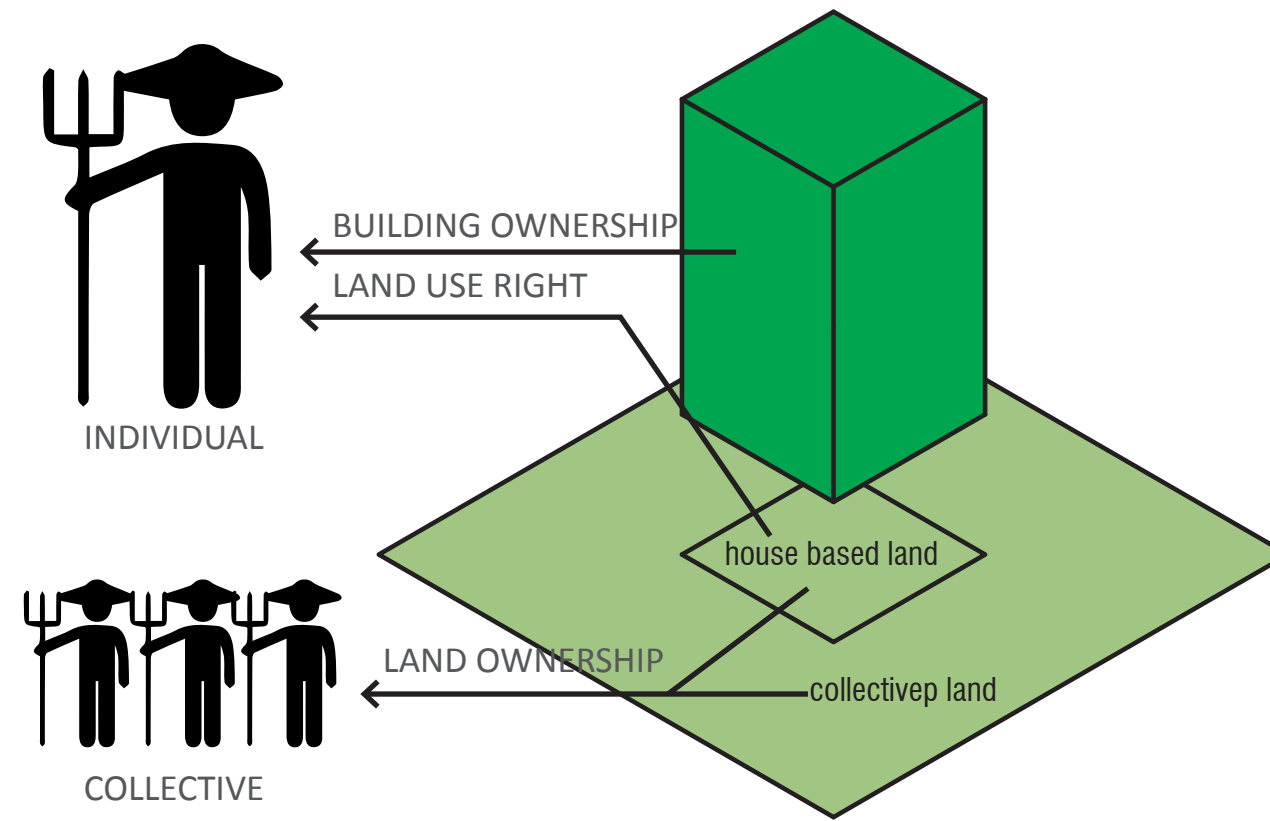## Lack of effective regulation and maintenance

There are no effective regulations for urban villages' planning and building (re)construction. The constructions are operated by informal construction teams, which have inadequate building technique. Besides, the buildings get little maintenance from the owner after the construction. Duo to the Lack of effective regulation and maintenance, the buildings in urban villages are declining faster than the ordinary buildings.
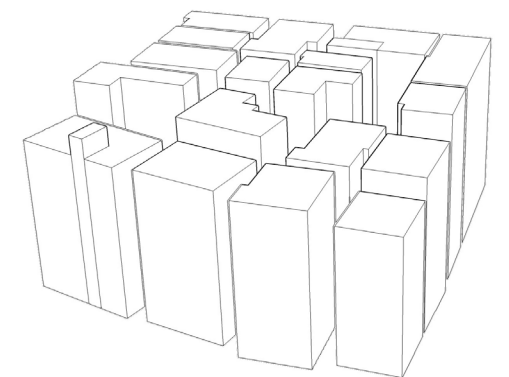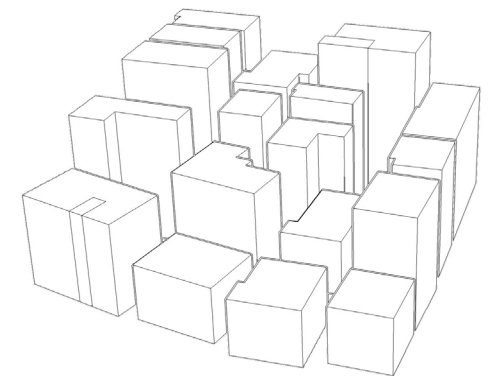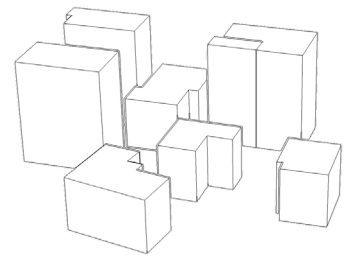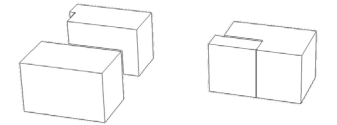
Lack of tenure security

The housing trades in urban villages are market-oriented and driven by maximum profitability. The tenants, especially the short-term tenants are always forced to leave because of the rising rent or the landlord wants to rent or sell the housing to others for higher price. As the contracts between villager households and the migrants are informal, the right of tenant are not protected by the law.

Lack of tenant management -
leave opportunity to the crime and housing speculator

As the housing trade is through the informal ways, the villagers are not able to have, actually they also do not care, the information tenants or buyer, which leave opportunity to the crime and housing speculators.

growing private interest

BUILDING OWNERSHIP

LAND USE RIGHT

INDIVIDUAL

house based land

LAND OWNERSHIP

collectivep land

COLLECTIVE

2.3 PLANNING APPROACH

PLANNING APPROACH REQUIREMENT

The planning approach is required to deal with both the problems and opportunities of self-organizing systems in urban villages. Complex stakeholder environment and the forces of the market should be fully recognized. The involvement of the state in balancing public interest and private interest and providing services for low-income migrants is probably necessary in order to enhance spatial cohesion and social justice (Lin et al., 2012). The integration of bottom-up processes and micro-strategies would strengthen the performance and efficiency of redevelopment strategies of urban villages (Lin & De Meulder, 2011b).

STRATEGIC URBAN PROJECT APPROACH

For the above, the strategic urban project approach that focuses on visions, actions and partnerships of key stakeholders could be adapted to deal with the complexity of the stakeholder environment in urban villages (Lin and De Meulder, 2012).

In this approach, there are three main tracks: visions for desirable future of the city, actions for solving bottlenecks, and partnerships of three stakeholders (the state, the market and civil society) (De Meulder et al., 2004). State redistribution remains essential for the upgrading of low-income neighborhoods (Conde & Magalhaes, 2004; Silas, 1984, 1992); civil society as an intermediate associational realm between the state and households, it encompasses various associational forms based on formal and informal social networks (White, Howell, & Shang, 1996).

The mediating role of space is recognized in the strategic urban project approach (Loeckx, 2009). The structure of space, seen amongst others as the expression of relationships, and the design of space as their form are key mediums for spatial quality and for sustainable development (Esho, 2003). The strategic urban projects for the redevelopment or upgrading of vulnerable residential neighborhoods emphasizes very often the creation of open space and the upgrading or provision of public facilities and infrastructure, which have the capacity to integrate different spatial elements and are platforms for social exchange (Lin and De Meulder, 2012).

In the case of urban villages upgrading, visions at different scale levels are required in order to integrate different actions and developments coproduced by various stakeholders, the mediating role of space also should be employed (Lin and De Meulder, 2012). What need to adapt is the stakeholder model- the state, the market and civil society. The stakeholder partnership should be re-established according to the urban villages context.

Therefore, the strategic urban project approach which is adapted to the urban village environment should pay attention to the followed aspects:

- **Partnerships** of key stakeholders, emphasizing the role of state in redistribution (poverty alleviation, service provision) and the involvement of the informal sector and households in the planning processes (Lin and De Meulder, 2012);

- **Visions** and integrated strategies as platforms for the integration of different actions coproduced by key stakeholders (Lin and De Meulder, 2012), which could integrate the public interest and private interest.

- Specific **actions** that deal with opportunities and problems in strategic locations (the redevelopment of collective project sites, the upgrading of village main roads)(Lin and De Meulder, 2012).

2.4 DESIGN PRINCIPLES

DESIGN PRINCIPLE REQUIREMENT

Living environment improvement in urban villages needs the modest but effective spatial interventions which could relieve the negative impacts from the spatial problems. Therefore, the design principles should trace back to the basic human needs of the living environment rather than the design itself.

BASIC HUMAN NEEDS AND THE HOUSING ENVIRONMENT

Robert Marans try to find the housing environment design solution from the fundamental human needs in contemporary society. To summarize, a number of problem situations stemming from the various environments that man encounters can give rise to several needs (Marans, 1975).

These include:
the need to escape temporarily from the physical stresses of the urban environment;
the need to experience nature;
the need for privacy;
the need for security and safety for self and family;
the need for affiliation and belonging;
the need for social recognition and status;
the need for physical exercise;
the need for tension-release

There are different ways to translate these fundamental human needs, according to the specific site conditions.

CONTROL OVER THE SOCIAL ENVIRONMENT

Health and safety are accepted themes for a sustainable neighborhood; they have been leading themes in the majority of guidelines in modern urbanism (van Dorst, 2012). However, control as a primary need for inhabitants has not been acknowledged (van Dorst, 2012). At extremely high densities, residents feel that they have less control over their social environment and are inclined to withdraw from the community, which they feel is invasive and beyond their control (Baum & Valins, 1977; Birchall, 1988; Coleman, 1990). To prevent or alleviate the conflicts in the high density neighborhood, the best result is the neighborhood in which individuals have control over the amount of social interaction (van Dorst, 2012). There are two key words – social interaction and control. This freedom of choice (Zimbardo 1969) is the core of the privacy theory of Altman (1975). From the perspective of the Altman, privacy is better approached as a changing self/other boundary-regulation process in which a person of a group sometimes wants to be separated from others and sometimes wants to be in contact with other. The desired level of social interaction can vary per person and over time, but the need of control is universal (van Dorst, 2012).

To translate this viewpoint into practical environmental designs is not easy. If privacy has a shifting dialectic quality, then, ideally, we should offer people environments that can be responsive to their shifting desires for contact or absence of contact with others. Thus environmental designers should try to create environments that permit different degrees of control over contact with others (Altman, 1975, p. 207).

In privacy theory of Altman, personal space and territorial behavior are mechanisms used to assist in the regulation of social interaction (Altman, 1975, p. 208). In addition to these, there are more explorations about how to control over the social interaction of the neighborhood. This chapter will discuss the spatially related aspects which can contribute to the environmental design.

1. INTERPERSONAL DISTANCE ZONE
There is threshold of the dimension for social interaction regulation. Edward Hall (1966) proposed a study of man's use of space as a communication vehicle. He spoke of four spatial zones used in social interaction-the intimate distance, personal distance, social distance and public distance.

2. TERRITORIAL BEHAVIOUR
Territories are geographical areas that are personalized or marked, and territoriality involves the mutually exclusive use of areas and objects by persons or groups (van Dorst, 2012). Territorial behavior is based on the perceived possession of a physical space (Bell et al. 2001). Territorial behaviors have diverse spatial expressions, such as building of walls and fences. Good fences make good neighbors (Frost 1914), which means the form of territorial behavior influences the quality of the neighborhood. A good form of territorial behavior is able to make the territories ownership legible as well as to facilitate social interaction with control. It can be achieved with the design feature of less sight-limiting and natural access control.

3. A SYSTEM OF PRIVACY ZONES SUPPORTS CONTROL OVER SOCIAL INTERACTION
In practice, territories that support social interaction consist of different zones of privacy (van Dorst, 2012). A house and courtyard is the privacy zone of a family; a street is the privacy zone of the occupants of that street (van Dorst, 2012). For a neighborhood, a system of privacy zones is necessary. All the privacy zones form a nested system functioning simultaneously at different levels for individuals and groups of different sizes, from which all residents can clearly position themselves on the system and regulate their social interaction. The successful privacy zones system facilitates the feeling of ownership and a need to protect the property of privacy zones.

2.5 CASE STUDY OF SOCIAL HOSUING PROVISION IN OTHER COUNTRY

2.5.2 SOCIAL HOSUING SYSTEM IN NETHERLANDS

In the Netherlands the term, 'social-rental sector' is used for all the dwellings that are owned by housing associations and municipal owned housing associations, non-profit agencies that build and manage dwellings in order to provide housing for low-income and middle-income households. Also, the social-rental sector is primarily directed to the accommodation of households incapable of acquiring satisfactory housing on their own account. But countless households with a middle or higher income also rent their homes from a housing association. That broad clientele has been a feature of the housing associations from the beginning.

respect to social housing.

The housing associations can also differ markedly from each other. There is hardly a local authority in the Netherlands where no housing association is active. In most municipalities there is more than one, usually two or three. More than that number of housing associations can also occur. In a few municipalities more than ten housing associations operate. The average housing association has about 3,600 dwellings. The size of the housing associations in the Netherlands varies from those with fewer than 100 dwellings to those with more than 25,000 dwellings.
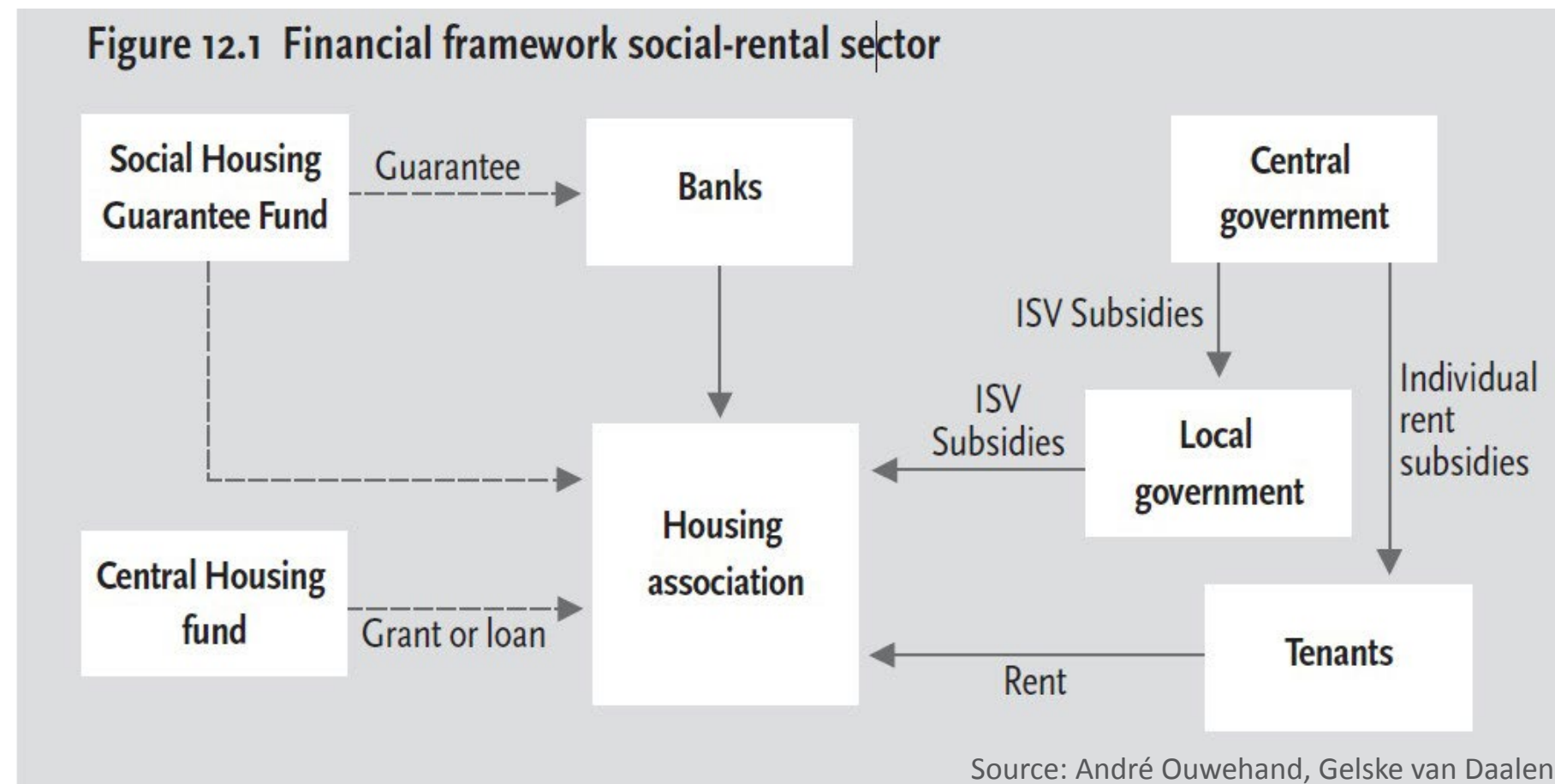
2.5.1 PURPOSE OF CASE STUDY

As we mentioned before, social housing provision is not a favorable approach to alleviate the affordable housing demand because of the finantial, land and institutional constraint. The purpose of social housing provision study from western countries is not to learn their solutions, but to learn how they proposed solutions adaptive to their specific context.
I choose Netherlands and Germany social housing system as my case study. By comparing the government roles in the social housing provision, some lessons can be draw to guide the SHENZHEN governmen.

The material of Netherlands case is from André Ouwehand, Gelske van Daalen, 2002, Dutch housing associations, A model for social housing; the German case is from QuLei.

Key actor of social housing system housing association

The social-rental housing stock is neither built by government nor by private developers. The key actor of Dutch social housing system is housing associations. These are independent organizations which function within a legal framework set up by the government and which only operate in the interests of social housing and on the field of social housing. They are thus not set up for profit making.
The legal basis of these organizations is laid down by the Housing Act of 1901. During the last hundred years, the housing associations have grown into wealthy institutions, having received considerable financial support from the State. Now they are organizations capable of carrying out their housing responsibilities by using the financial resources built up in the social sector during that century. At the present time, there is no longer any question of subsidies for the construction of new social-rental dwellings, or for the very necessary improvements required by older rental dwellings. The housing associations invest their own resources in the interest of social housing within the given legal framework and in consultation with the government. In this way they fulfil the responsibilities which are still imposed on them with

The coordination between the government and the housing associations

The housing associations work within a legal framework set up by the State, but they are nevertheless independent organizations, setting their own objectives and bearing their own financial responsibilities. To avoid government over-involvement in the details of the everyday affairs of a housing association, a distinction has been drawn between the coordination of policy and the supervision of the housing associations. By supervision we mean the control the government exercises to ensure that a housing association does not operate outside its legal framework and deals astutely with its property and assets.

7.1.3 financial framework for social housing system

Figure 12.1 Financial framework social-rental sector

Source: André Ouwehand, Gelske van Daalen

The decisions to develop social housing have always been founded on the fact that households on low incomes cannot afford to pay for a good quality dwelling on the open market. A hundred years ago, the Dutch government of the time found that situation unacceptable. The Housing Act of 1901 gave the state government the power to provide financial support to authorized institutions. Over the last 100 years, this financial support has taken a variety of forms: subsidies, providing state loans, and offering guarantees for the repayment of loans.
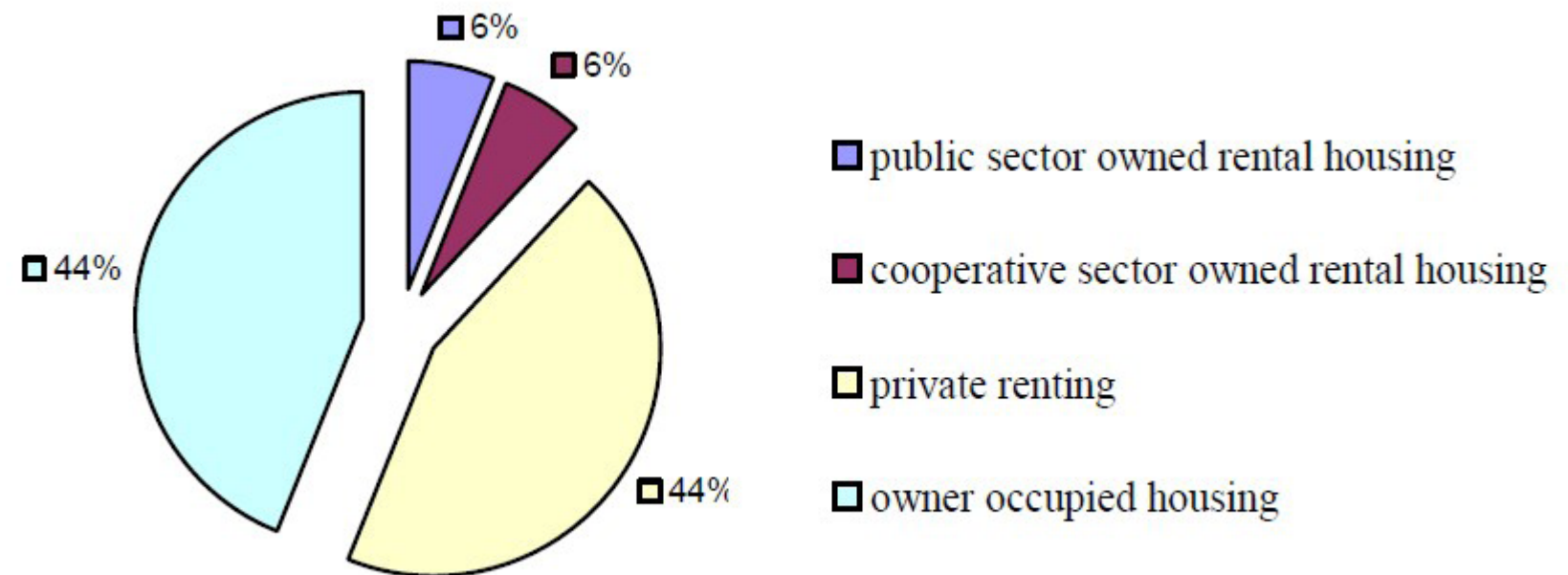
Building a house is expensive; it is an investment for decades to come. Building costs can be subsidized; by a lump sum or a yearly contribution for the housing association we refer here to object subsidies. Alternatively, subsidies can be granted to the residents; dependent to there income these we refer to as subject subsidies. Next to that, the costs for building dwellings, by housing associations have been reduced in the past and are still being reduced by the municipalities by charging lower land costs. In the past they were obliged to do so by the national government.

The costs of building a house are usually repaid over a long term; house building invariably involves borrowing money and being able to provide the security ensuring its repayment. The burden of interest payments for this loan forms a very large part of the total development costs of a dwelling. Interest is paid according to the current rate on the capital market; however, interest rates also depend strongly on the credit risk. This is the risk the financier bears that those borrowing money will fail to make complete, or timely repayments. In the past, the State has tried various ways of reducing the costs of borrowing. These include the granting of state loans at a lower interest rate, standing as guarantor for the repayment so that the banks can charge a lower interest rate, and the creation of a guarantee structure.

Now, in the 21st century, the social-rental sector in the Netherlands operates without any financial contributions in the form of government finance or subsidies for new house construction or for house improvements. The indirect subsidy in charging lower land costs, still occurs. The State and the municipalities only operate as a safety net for the guarantee

structure. The current situation has been achieved through the accumulation of capital over the last century by the social-rental sector with the help of financial support by the authorities. There is now evidence of an independent sector acting within a legal frame work which is able to afford to make the necessary investments by drawing on its own capital, partly because the housingassociations sell a part of their housing stock and making profit on that which they can invest elsewhere. That principle is usually referred to by the term revolving fund. Housing associations, together with the sector institutes which have been set up, are still in a position to build new dwellings and let them at an affordable price, providing that they manage their capital in a sound manner.

2.5.3 SOCIAL HOSUING SYSTEM IN GERMANY

6%
6%
44%
44%

■ public sector owned rental housing

■ cooperative sector owned rental housing

□ private renting

□ owner occupied housing

the current tenure structure of the housing stock in Germany (QU, 2010)

The social housing provision in Germany provides a good case study to explore how to incorporate the owner occupied housing into affordable housing system.

In Germany, very little housing is provided directly by the public sector, while the major part of the social housing stocks comes from public subsidization of private land owners and owner-occupiers (QU, 2010). Therefore, a high proportion of subsidized owner-occupied housing is a special feature of social housing provision in Germany in comparison to the dominant position of social rental construction in many other countries (QU, 2010).
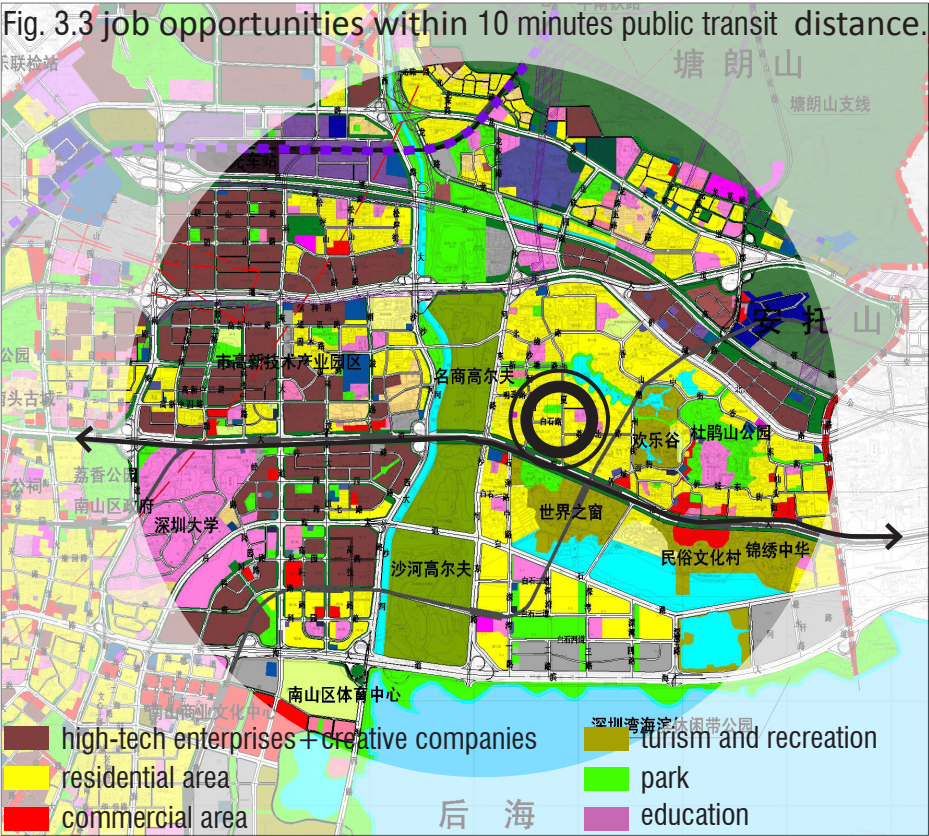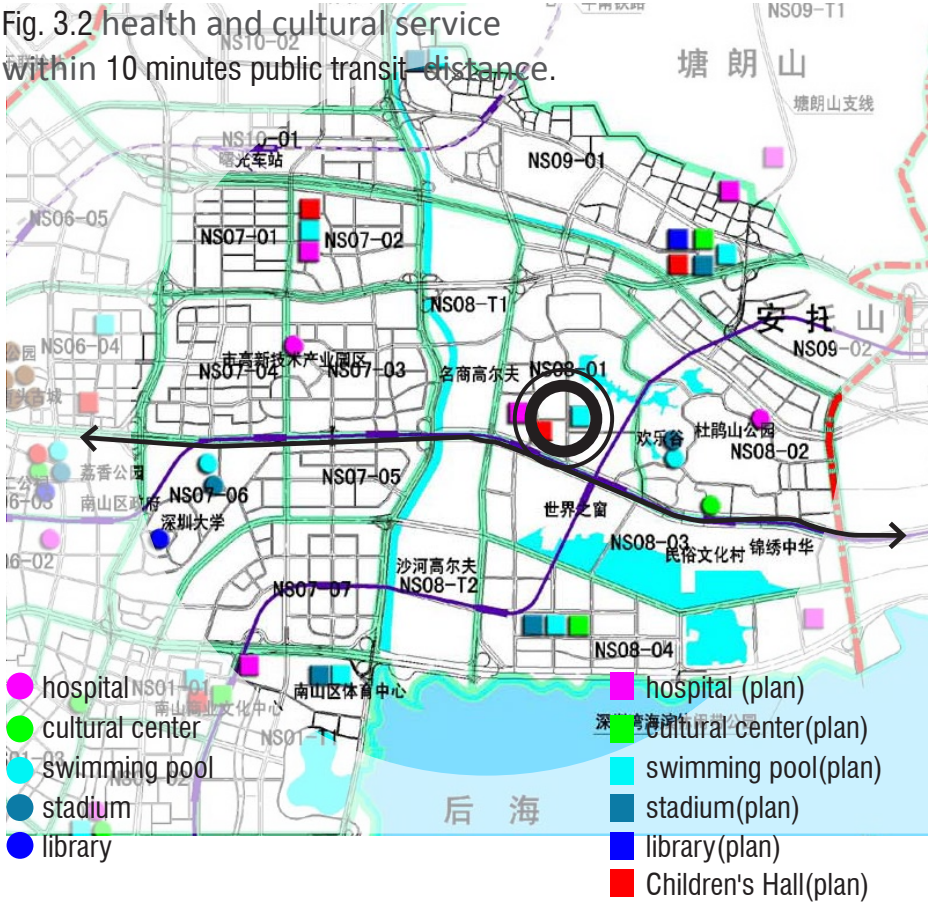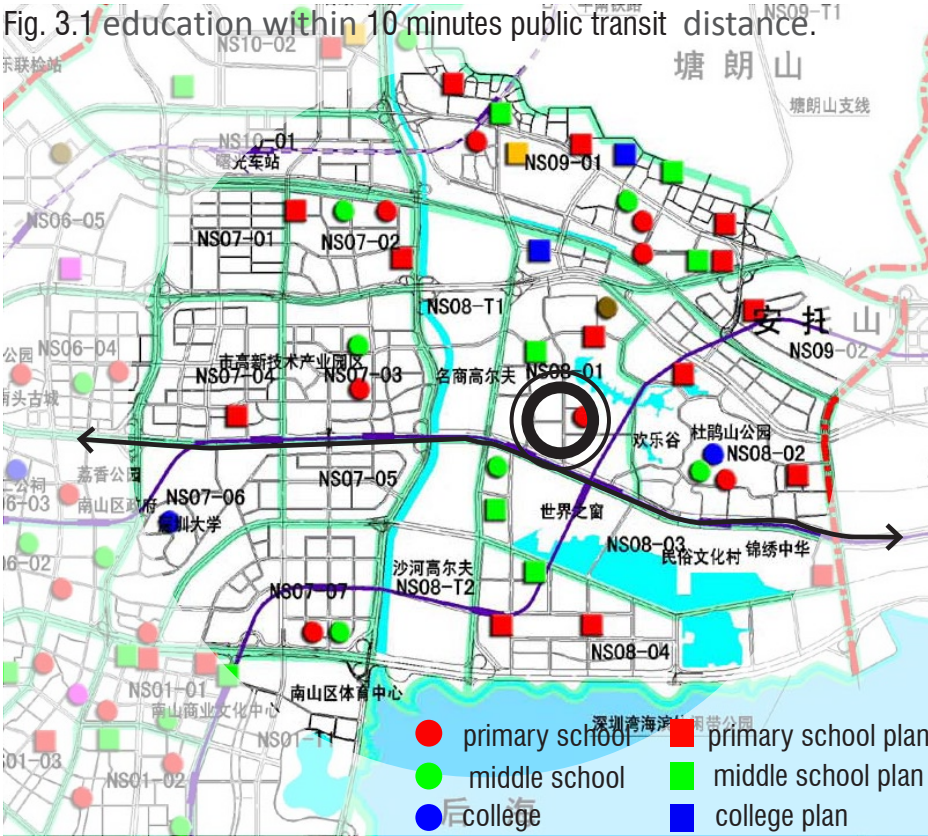
Housing policy in Germany has a controlling influence on housing markets, through the legal framework, tax and subsidization measures (QU, 2010). The legal framework is mainly defined by rent law, with certain aspects also specified in building regulations, planning and general contract law (Housing policy in Germany, p.1). Tax and subsidization measures are used as main economic instruments to support housing construction (QU, 2010). For instance, the subsidization of rental housing construction by local authorities reduces rents in corresponding dwellings (QU, 2010).

The Germany approach is hardly achieved in the Chinese context because of the absence of supporting system such as rent law, tax and subsidization measures. But the Germany social housing provision show the possibility of owner occupied housing function as public rental housing.

3. TEST SITE-BAISHIHZOU

3.1 WHY BAISHIZHOU AS POLOT PROJECT

Fig. 3.1 education within 10 minutes public transit distance.

- ● primary school
- ● middle school
- ● college
- ■ primary school plan
- ■ middle school plan
- ■ college plan

Efficient tools to house the migrants

Fig. 3.2 health and cultural service within 10 minutes public transit distance.

- ● hospital
- ● cultural center
- ● swimming pool
- ● stadium
- ● library
- ■ hospital (plan)
- ■ cultural center(plan)
- ■ swimming pool(plan)
- ■ stadium(plan)
- ■ library(plan)
- ■ Children's Hall(plan)

Fig. 3.3 job opportunities within 10 minutes public transit distance.

- ■ high-tech enterprises+creative companies
- ■ residential area
- ■ commercial area
- ■ turism and recreation
- ■ park
- ■ education

BAISHIZHOU is one of SHENZHEN's last remaining centrally located urban villages and home to approximately 140,000 people (90% are migrants). It includes 5 villages which form the 3 main clusters. Numerous migrants have the experience of living in BAISHIZHOU when they just arrived in SHENZHEN. They leave BAISHIHZOU as they become more familiar with SHENZHEN and have the ability to live in the better residential environment. Then the new migrants move in.

BAISHIZHOU always become the first choice of migrants because of the location. This neighborhood closely links to the employment, education, public open space, local shops, health and community services and leisure and cultural opportunities in the NANSHAN district and even the whole SHENZHEN city, via convenient public transport and cycling infrastructure.

The diagrams on this page show the education, health and cultural service, and job opportunities within 10 minutes public transit distance.
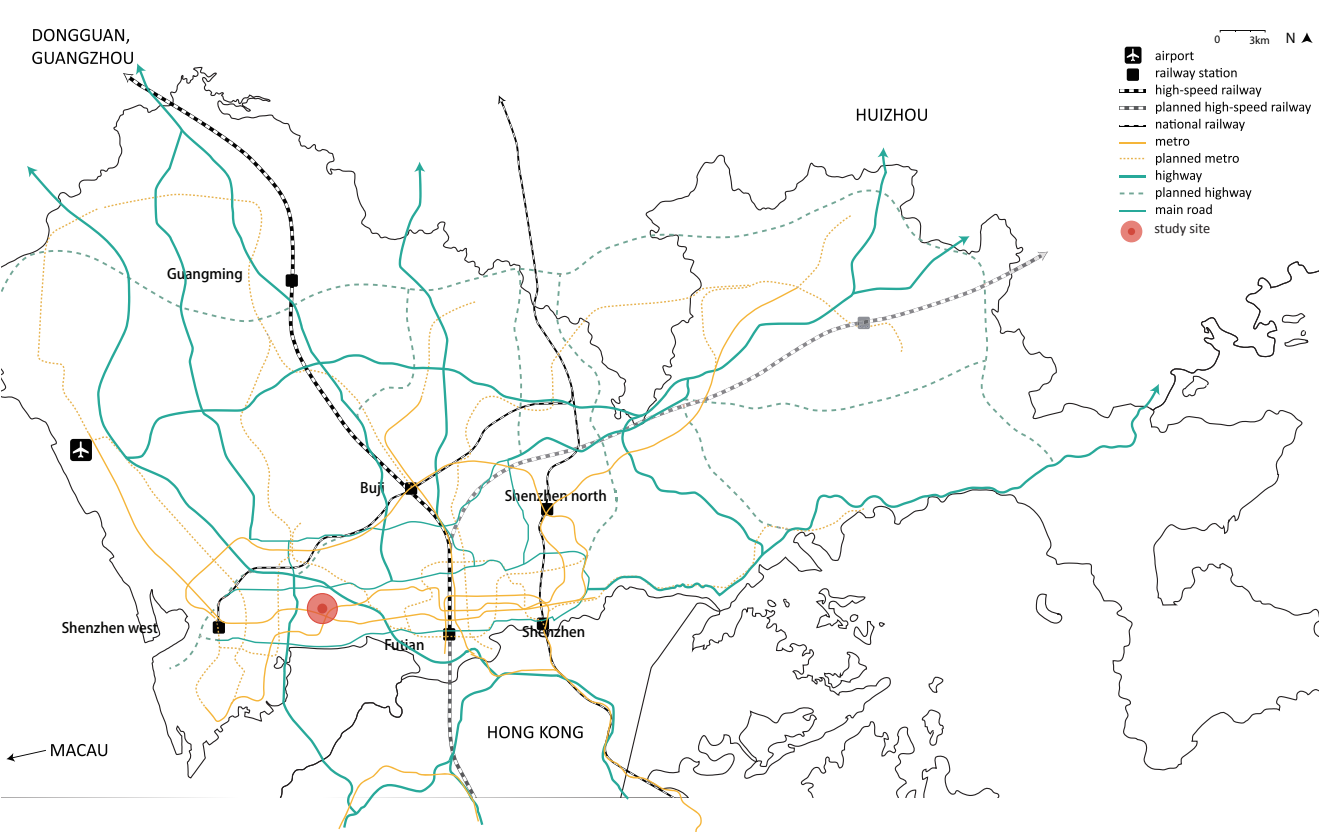

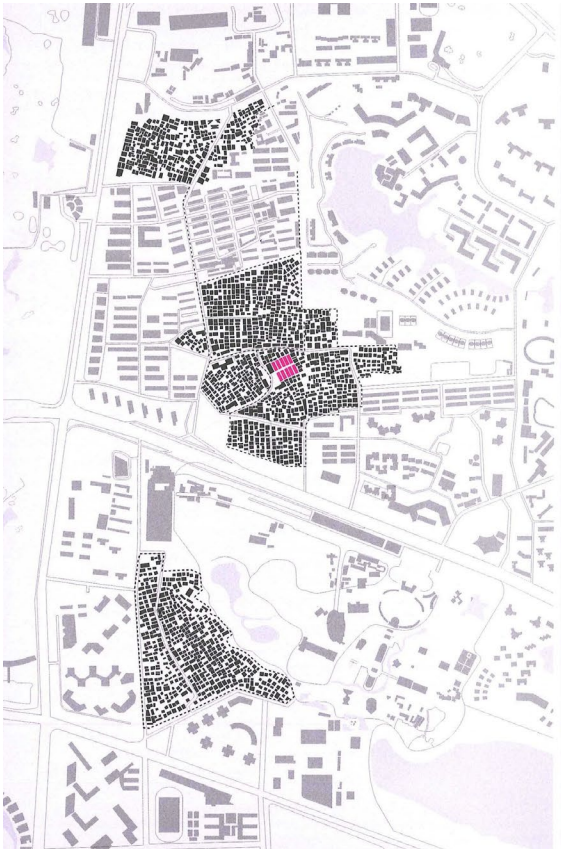Fig. 3.4 Location of BAISHIZHOU in city wide

Fig. 3.5 plan of BAISHIZHOU
source: from Donnell (2014)

23

Efficient tools to house the migrants

My test site is the largest cluster in BAISHIZHOU.
The diagrams on this page show the facilities and surrounding function within the walking distance of the test site.
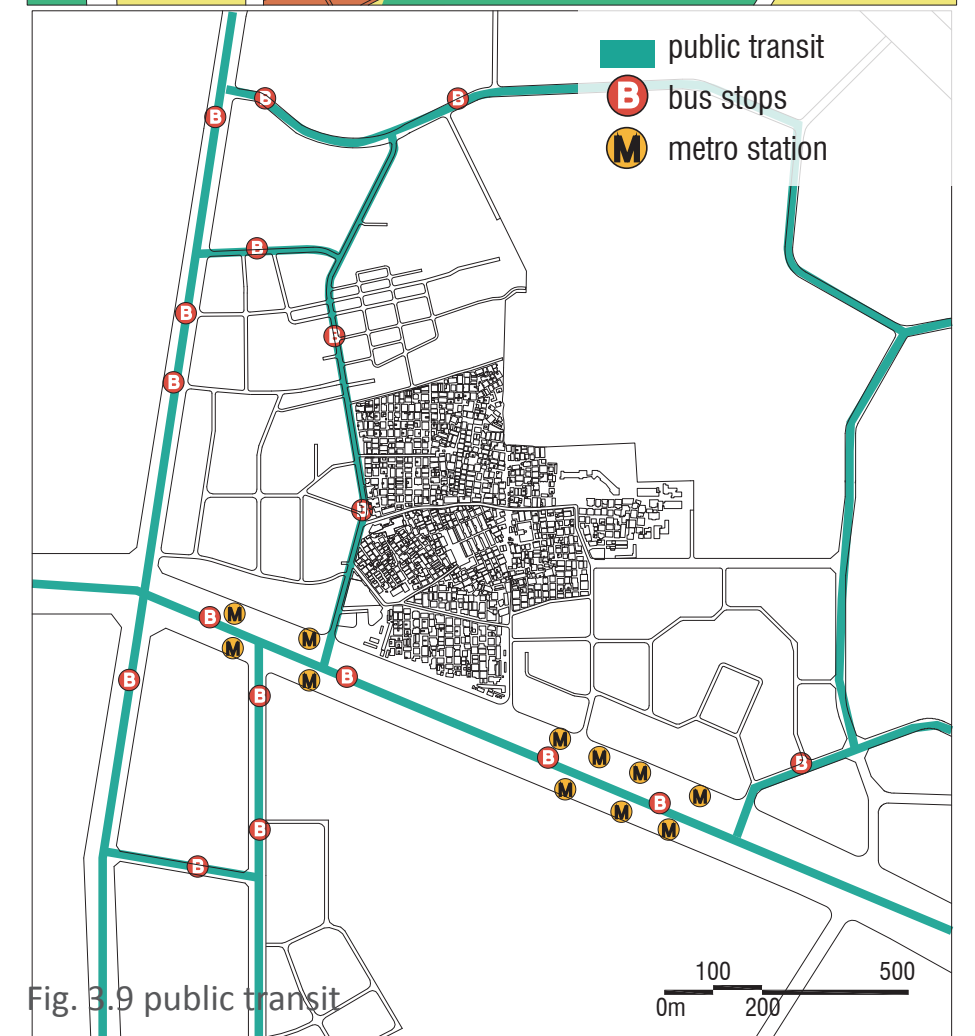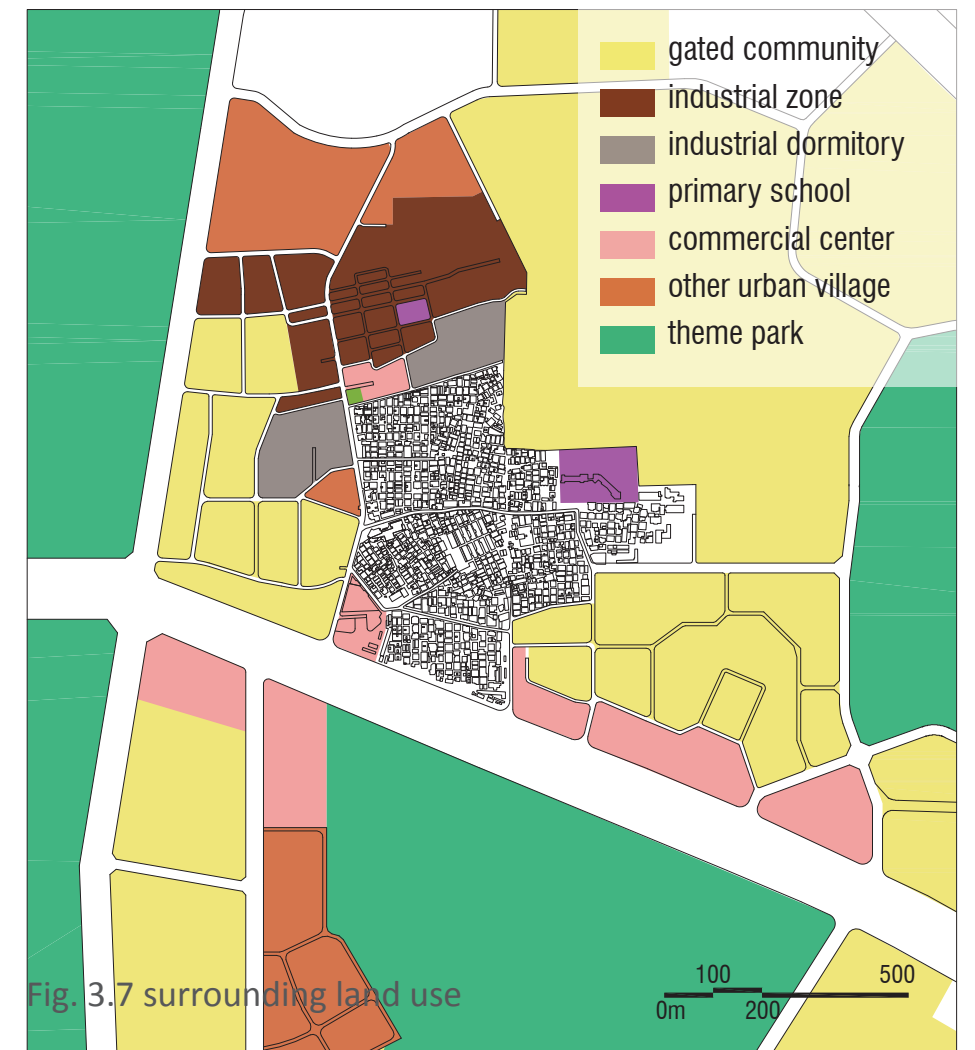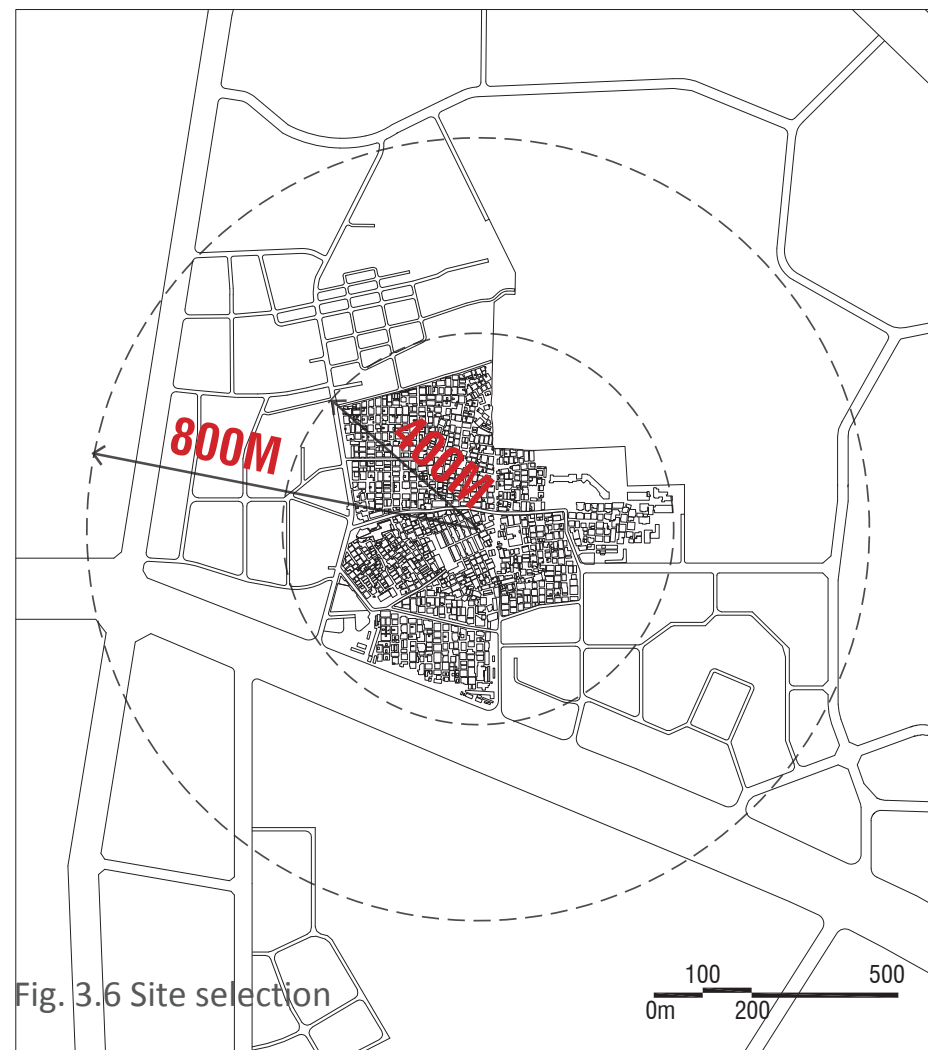

800M
400M

Fig. 3.6 Site selection

100 500
0m 200

- gated community
- industrial zone
- industrial dormitory
- primary school
- commercial center
- other urban village
- theme park

Fig. 3.7 surrounding land use

100 500
0m 200

- 6-lane highway
- main road
- secondary road
- secondary road (plan)

Fig. 3.8 road network

100 500
0m 200

- public transit
- B bus stops
- M metro station

Fig. 3.9 public transit

100 500
0m 200

Fig. 3.10 image of BAISHIZHOU

Demolition-redevelopment pressure

BAISHIZHOU faces the demolition-redevelopment pressure for 2 reasons:

Severe living environment
The living enviornment in BAISHIZHOU turn worse year by year and become the breeding ground of social problems and criminal issues. It is becoming unliveable to the tenants. From the perspectives of local government, it as the obstacle of the further district development.

High land value
Because of the excellent location, BAISHIZHOU become the target of many private developers. The housing price of the surrounding communities shows BAISHIZHOU has the potential to become the next luxury community. Now the private developers are in the collaboration with local government to redevelop BAIZHIZHOU. They are trying to persuade the villagers with incentives of favourable compensation to accept the demolishment-redevelopment idea.
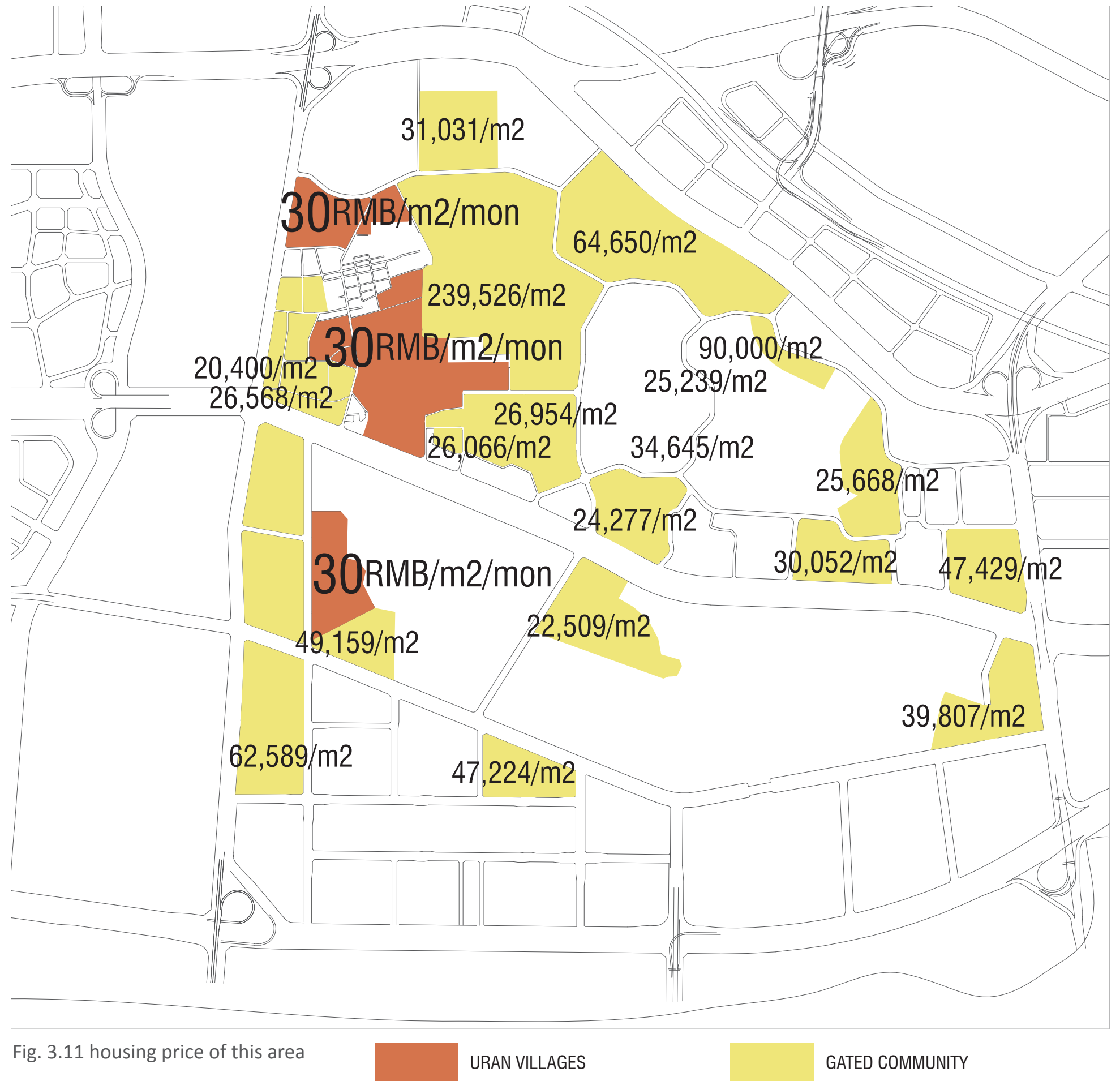

31,031/m2

30RMB/m2/mon

64,650/m2

239,526/m2

30RMB/m2/mon

90,000/m2

20,400/m2
26,568/m2

25,239/m2

26,954/m2

26,066/m2

34,645/m2

24,277/m2

25,668/m2

30,052/m2

47,429/m2

30RMB/m2/mon

22,509/m2

49,159/m2

39,807/m2

62,589/m2

47,224/m2

Fig. 3.11 housing price of this area

URAN VILLAGES

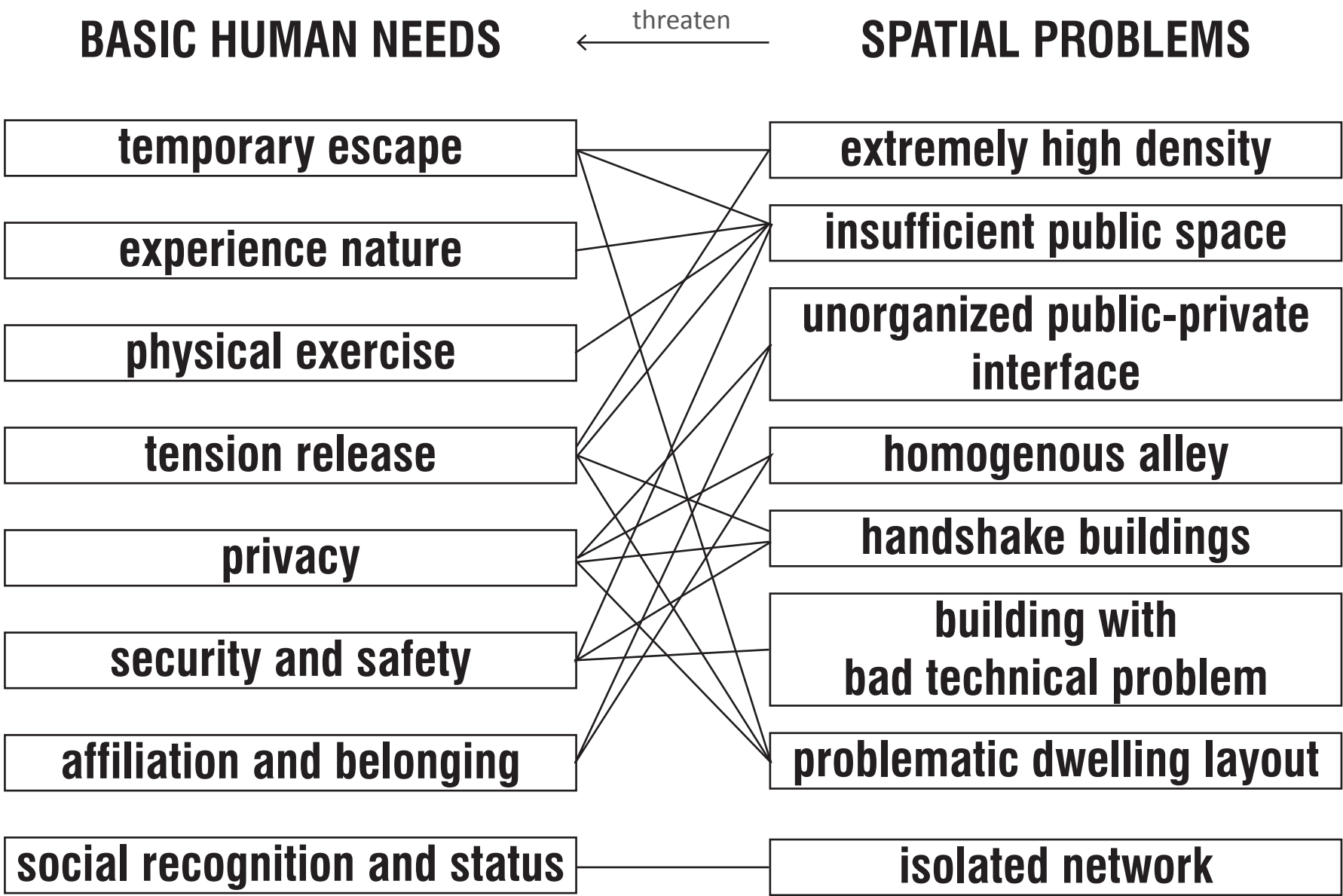GATED COMMUNITY

Dynamic self-organizing system in BAISHIZHOU

Although BAISHIZHOU has many problems, it is not a declining neighbourhood. On the contrary, BAISHIZHOU is a vibrant neighbourhood with dynamic self-organizing system, which provides it chance to be incrementally upgraded rather than be demolished, this is the main reason I choose it as my test site.

Fig. 3.11 photo of a children drama in BAISHIZHOU

3.2 CHALLENGE OF LIVING ENVIRONMENT IN BAISHIZHOU

BASIC HUMAN NEEDS ← *threaten* SPATIAL PROBLEMS

BASIC HUMAN NEEDS	SPATIAL PROBLEMS
temporary escape	extremely high density
experience nature	insufficient public space
physical exercise	unorganized public-private interface
tension release	homogenous alley
privacy	handshake buildings
security and safety	building with bad technical problem
affiliation and belonging	problematic dwelling layout
social recognition and status	isolated network

THEATEN THE BASIC HUMAN NEEDS

The challenge of living environment in BAISHIHZOU is summarized according to the basic human needs and the housing environment theory from ROBERT W. MARANS and the observation in BAISHIHZOU.
The diagram indicates how the housing environment in BAISHIZHOU threaten the basic human needs. All the problems work together and give BAISHIZHOU a bad reputation and influence the social recognition of the residents. It is isolated by the surrouding community with wall or fence.

FSI=3.6   GSI=0.57   L =6.3   OSR=0.12

EXTREMELY HIGH DENSITY

The spacemate model shows the extremely high density of BAISHIZHOU which is with high Floor Space Index (FSI), Ground Space Index (GSI), Layer (L) and low Open Space Ratio (OSR).

High density is not necessarily resulting overcrowding if there is better spatial regulation. However, BAISHIZHOU is not the case.

Altman used a model of crowding (see illustration 6.2.2) to state the formulation of crowding. crowding exists when various privacy-regulation mechanisms does not work effectively, causing more social interaction to occur than is desired.

The crowding in BAISHIZHOU threaten the basic human need of temporary escape and tension release.

INSUFFICIENT PUBLIC SPACE NETWORK

The public space in BAISHIZHOU is not only have insufficient quantity, but also quality.
Current public space network is mainly accompanied with commercial frontage with similar spatial form and daily consumer goods. There are only necessarily activities (e.g. going to school or to work, shopping etc.) happen on the streets. Few exercise and recreational facilities on the network and local people shows the desire of more exercise and recreational facilities. The quality of infrastructure (car lane, pedestrian etc.) is low and lack of maintenance and management. The only square is underused now, and is occupied by the widespread temporary booth and restaurants.

car lane

pedestrian

market street

snooker

well

square

excercise facilities

20   100

0m   50   200

ACTIVITIES IN THE PUBLIC SPACE NETWORK

pedestrian and car lane
car lane: dead end, low connectivity with the surrounding urban network, bad quality.

excercise facilities
people show the desire of physical exercise.

well
small groups of women gather, washing the cloth, chatting.

market street
pedestrian and market street: be companied with commercial frontage, which with similar spatial form and neccessary consumer goods. There are only necessarily activities (e.g. going to school or to work, shopping etc.) happen on the streets.

snooker
one of few recreation choice in BAISHIZHOU.

square
the only square in BAISHIZHOU.small bunisee at daytime, night market at night.

UNORGANIZED PUBLIC-PRIVATE INTERFACE

The photos show the residents desire to keep their privacy zones in different level, but the public-private interfaces lack of organization and bring some negative influence to the surround space. But the majority of small clusters inside BAISHIZHOU lack of the public-private interface.

HOMOGENOUS ALLEY

The narrow alleys between the buildings sometimes become the temporary outdoor space for the residents. The average size of alleys is 2-3 meters, without any facilities. Different activities which reflect the local needs can be found inside the alleys. However, these activities should happen in different level of privacy zones. The homogenous and the low quality alleys are the compromising choice. The sense of belonging is hard to create within these homogenous alleys.

local needs for the outdoor space? →

'HANDSHAKE' BUILDINGS

Handshake buildings get the name because of the ability to shake your neighbor's hand simply by reaching out of the window. The widespread handshake pose threat to the safety and privacy. First, the fire truck is hard to access to many buildings through the narrow alley; second, residents lose the privacy of their indoor life. To keep the privacy, the windows face to the alleys gradually turning blind. The alleys lose the eyes(watch) from the residents in the building and become dangerous.
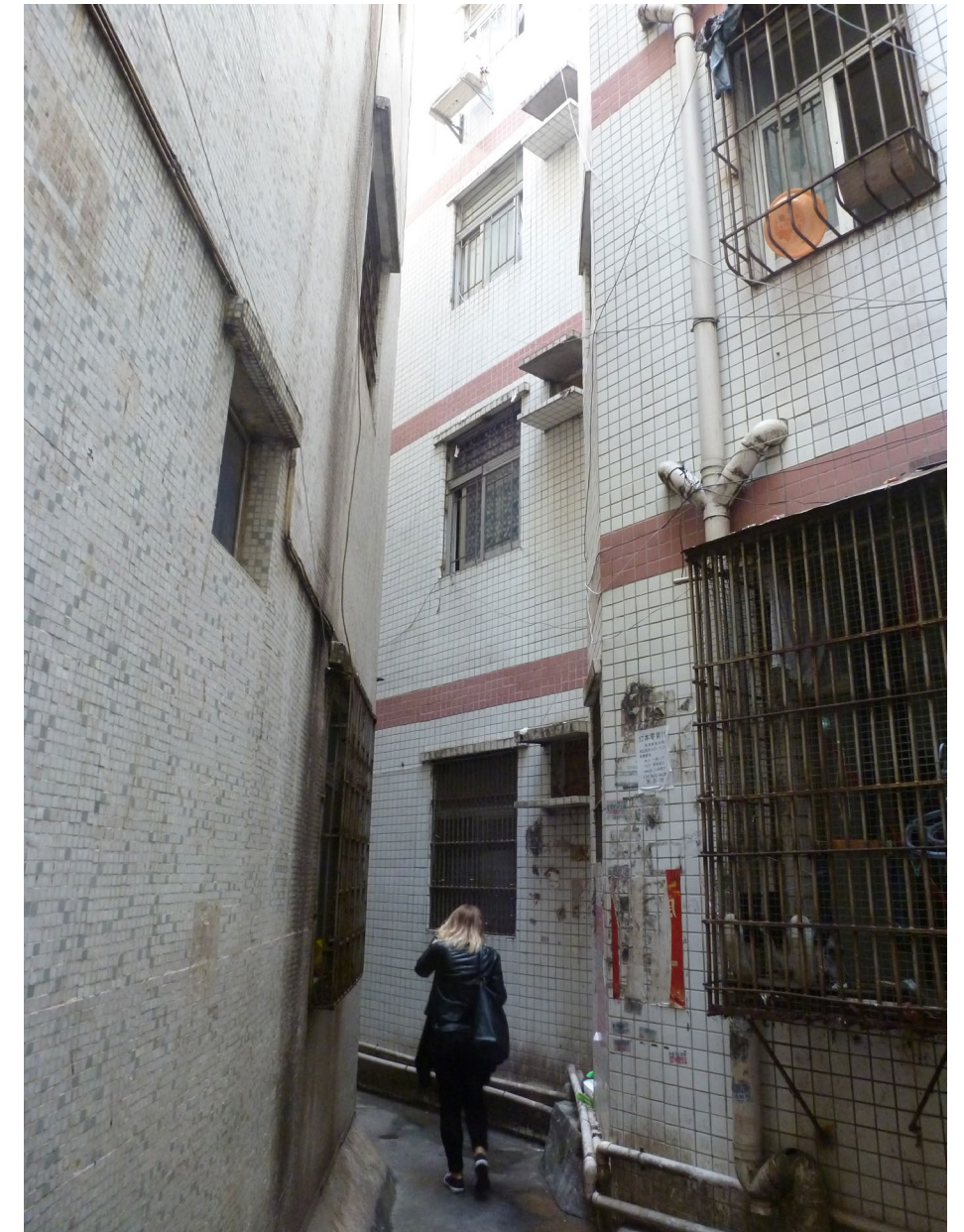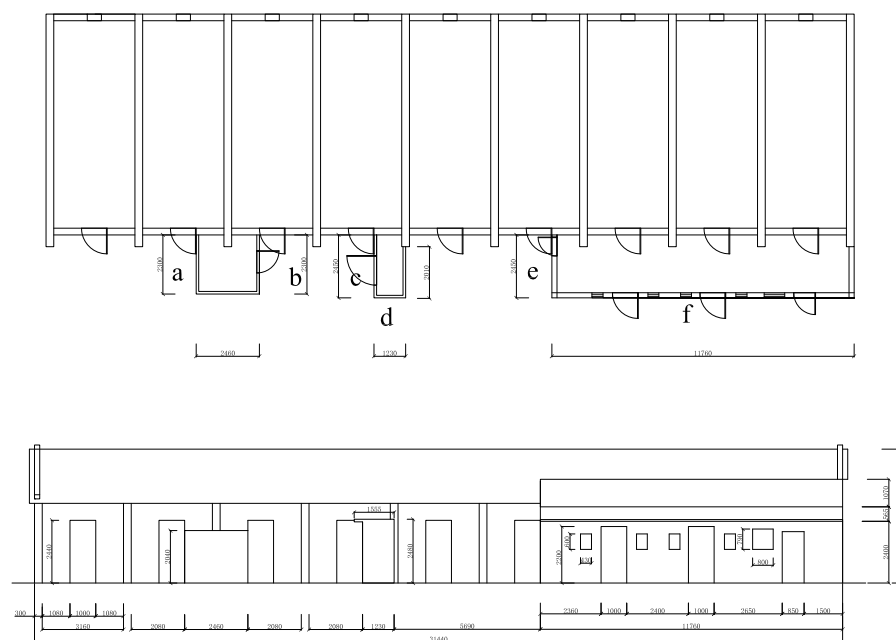
BUILDING WITH BAD TECHNICAL QUALITY

The indicators used to evaluate the technical quality of the building are the building structure, material and building age.

The old village buildings were built in the 1960s by the first generation villagers. They are 1 floor brick structure buildings with low quality as well as low cultural value, which are not worth preserving. The reason to maintain them is the unfinished process of property right clarification and compensation to the villagers involved. Nowadays it is not permitted to live in by the local government because of the severe structural problems.

The new village residential buildings were built no more than 30 years ago, but the buildings were declining faster than the ordinary buildings because of the irregular building construction and few maintenance. Generally, the buildings under 3-floor have bad technical quality. Some of them are the first generation building and others are the temporary buildings. Besides, some of the buildings with 4-6 floor also have the technical quality.
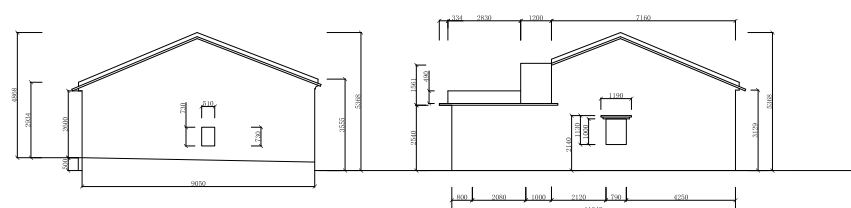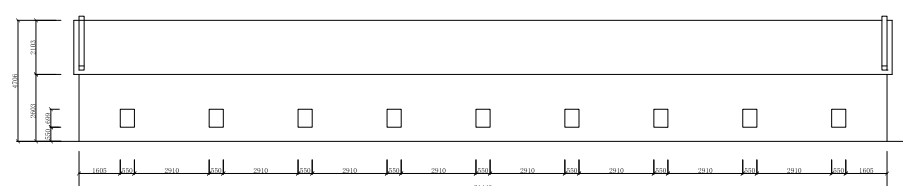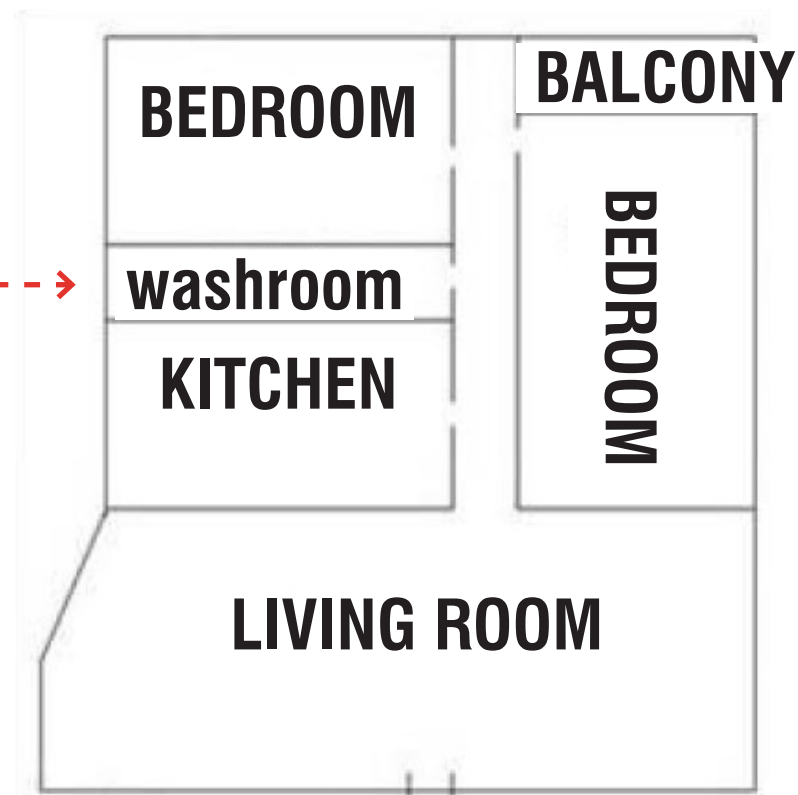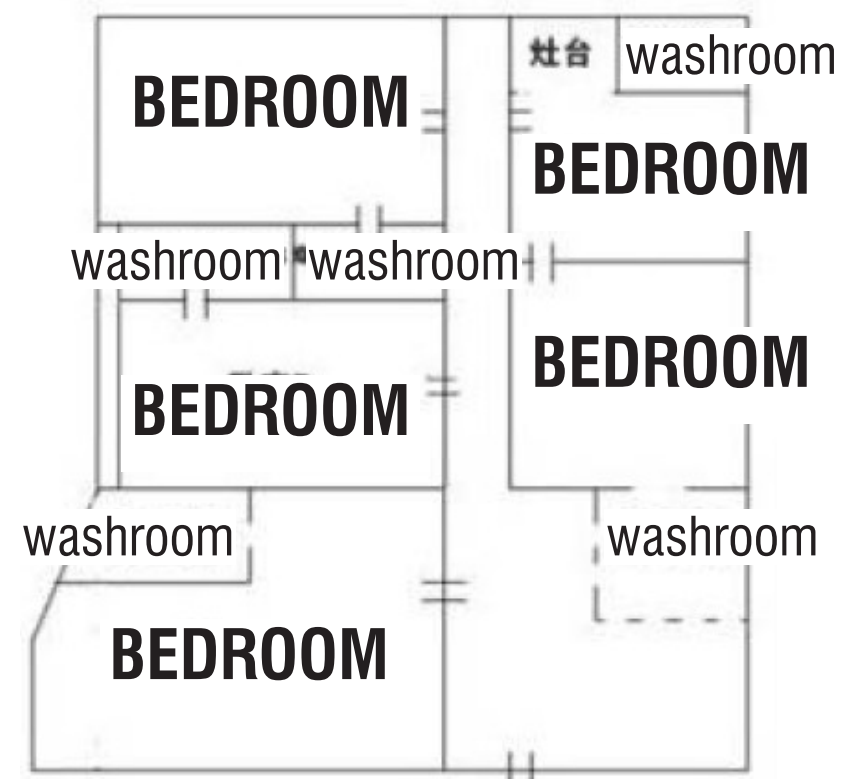
PLAN AND ELEVATION OF OLD VILLAGE BUILDING
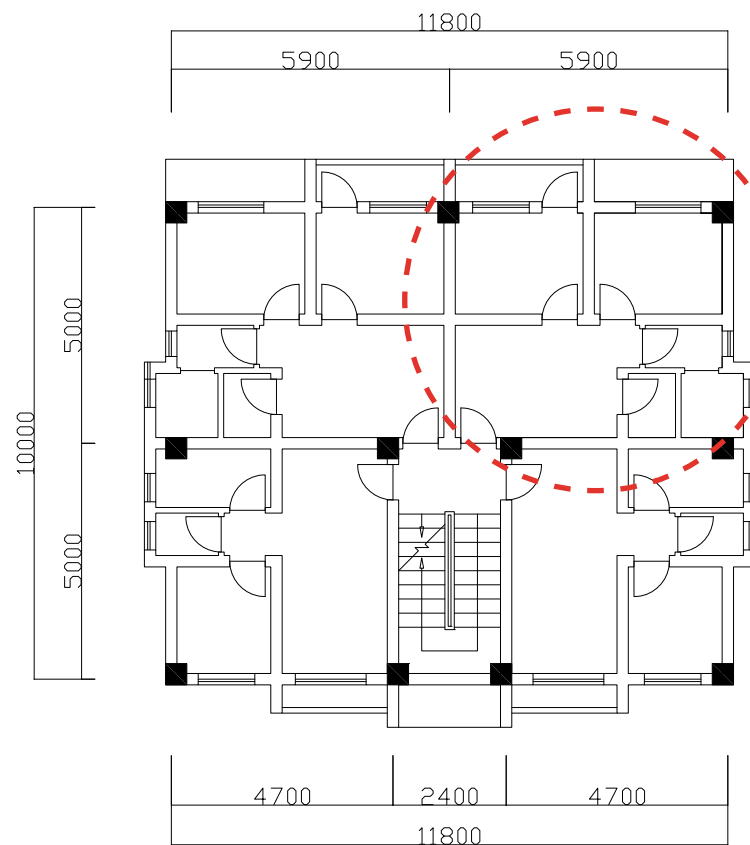
FLOOR PLAN OF TYPICAL HOUSING STOCK
IN URBAN VILLAGES

BEDROOM

BALCONY

washroom

KITCHEN

BEDROOM

LIVING ROOM

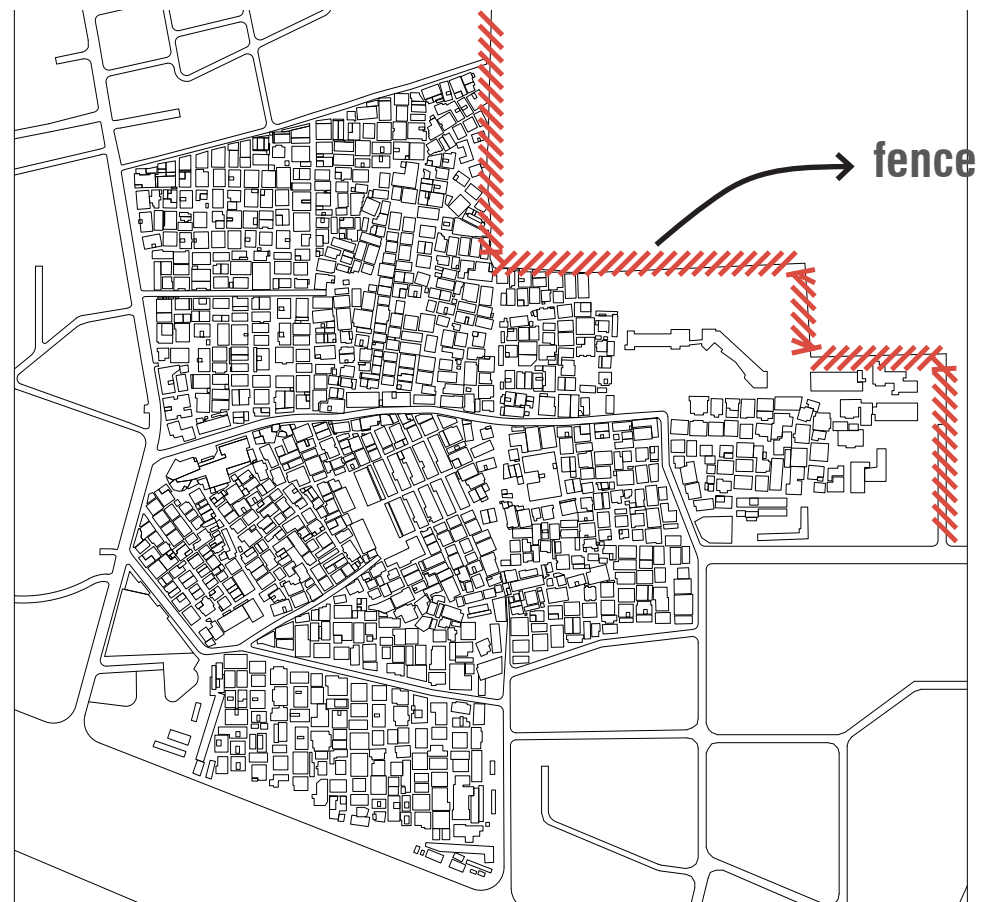UNIT PLAN BEFORE

PROBLEMATIC DWELLING LAYOUT

In order to gain more rent, the housing owner always divides one dwelling unit into several sub units and rent to more tenants. These sub units in most cases face the problems like room without window, lack of privacy, several households have to share one lavatory or bathroom etc.

BEDROOM

灶台 washroom

BEDROOM

washroom washroom

BEDROOM

BEDROOM

washroom

washroom
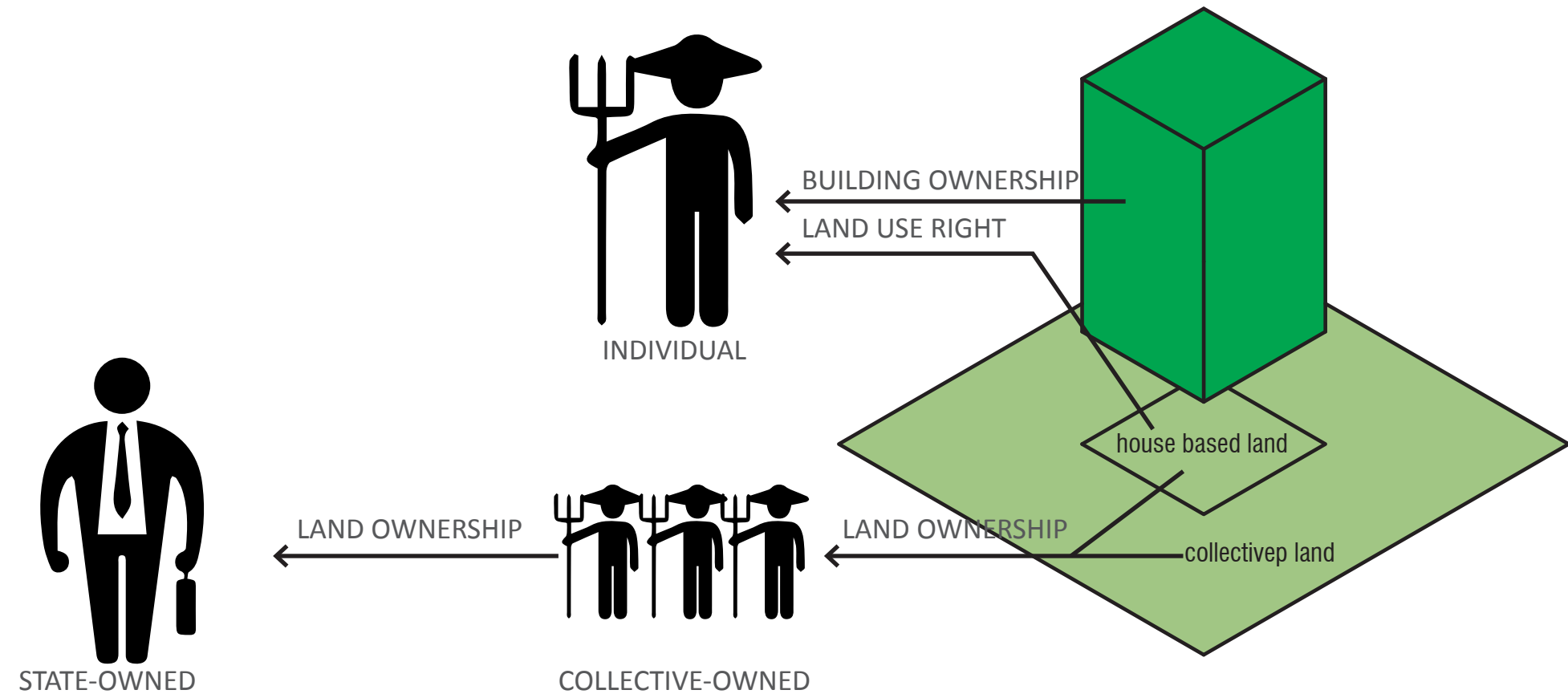
BEDROOM

UNIT PLAN AFTER

ISOLATED NETWORK

All the problems work together and give BAISHIZHOU a bad reputation and influence the social recognition of the residents. It is isolated by the surrouding community with wall or fence, creating the network with a lot of dead ends.

fence

3.3 SELF-ORGANIZING SYSTEM IN BAISHIZHOU - PROBLEMS

BUILDING OWNERSHIP

LAND USE RIGHT

INDIVIDUAL

house based land

collectivep land

LAND OWNERSHIP

LAND OWNERSHIP

STATE-OWNED

COLLECTIVE-OWNED

Conflict between public interest and private interest

The conflict between public interest and private interest is also server in BAISHIZHOU. What is special in SHENZHEN is the stakeholder environment of urban villages. As Shenzhen became the first city in China to transform all the land in SHENZHEN to state-owned land in 2004, the urban villages' land ownership was transferred to the SHENZHEN government and the villagers have the land use right within 70 years. In this context, SHENZHEN government has more power and responsibility to preserve the public interest.

However, SHENZHEN government do not capitalize on this advantage to solve the conflic of public interest and private interest and to some extent, it avoids the responsibility.

Lack of effective regulation and maintenance

There are no effective regulations for planning and building (re)construction of BAISHIZHOU. The constructions are operated by informal construction teams, which have inadequate building technique. Besides, the buildings get little maintenance from the owner after the construction. Duo to the Lack of effective regulation and maintenance, the buildings in BAISHIZHOU are declining faster than the ordinary buildings.

霞 时装

沙河街

拍摄日期：2013.05

http://snarkcriticpop.com/wp-content/uploads/2011/08/burglar-cartoon.jpg

Source: http://www.condo.ca/wp-content/uploads/2012/05/Depositphotos_speculator.jpg

Source: http://pic28.nipic.com/20130419/4429371_160905081393_2.jpg

Lack of tenant management - leave opportunity to the criminals and housing speculators

As the housing trade in BAISHIZHOU is through the informal ways, the villagers are not able to have, actually they also do not care, the information tenants or buyer, which leave opportunity to the crimals and housing speculators. The criminal activities in BAIZHIZHOU are frequent and pose threat to the tenants security.
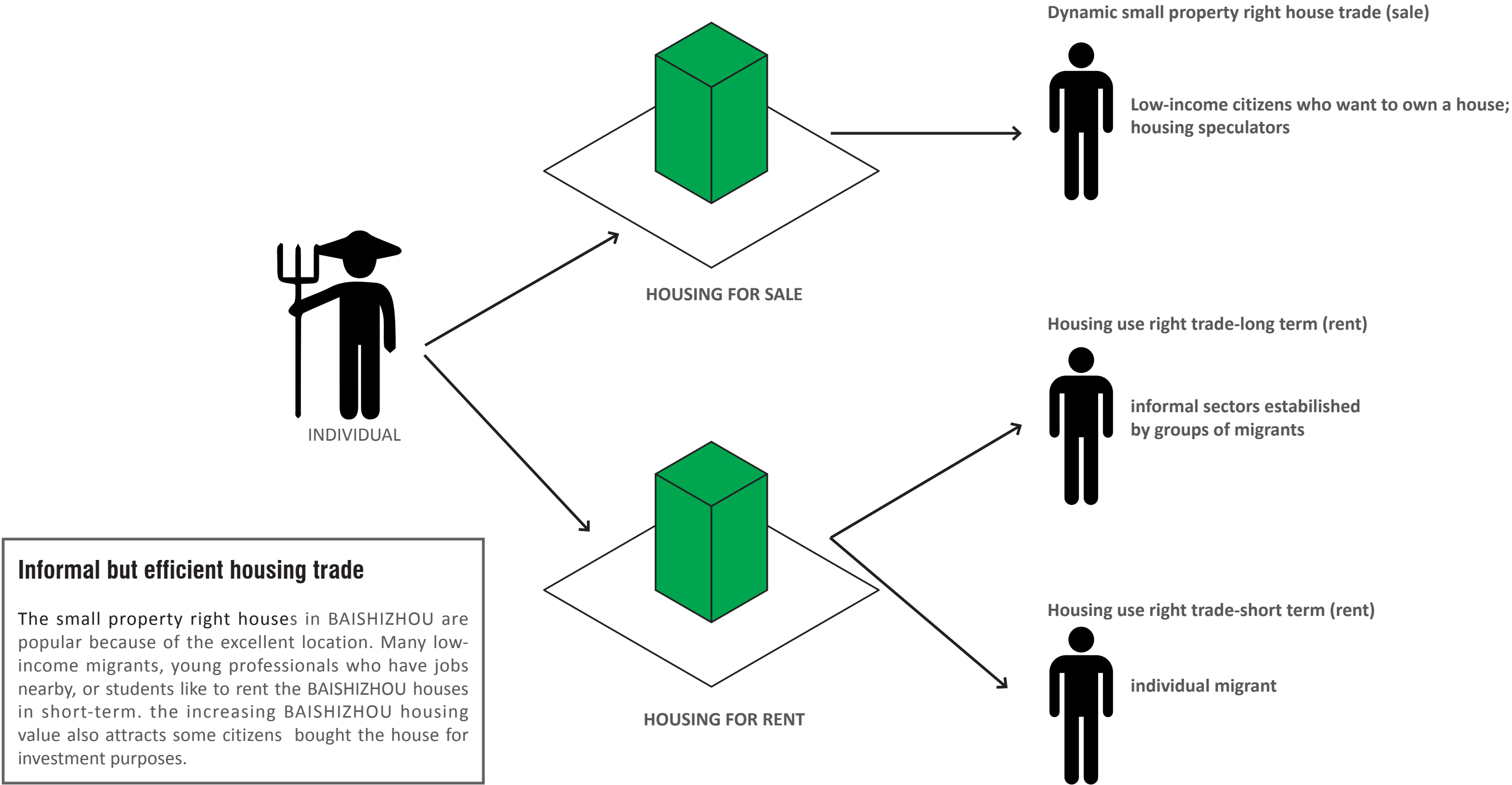
Lack of tenure security

The housing trades in BAISHIZHOU are market-oriented and driven by maximum profitability. The tenants, especially the short-term tenants are always forced to leave because of the rising rent or the landlords want to rent or sell the housing to others for higher price. As the contracts between villager households and the migrants are informal, the right of tenant are not protected by the law.

3.3 SELF-ORGANIZING SYSTEM IN BAISHIZHOU - OPPORTUNITIES

Dynamic small property right house trade (sale)

Low-income citizens who want to own a house; housing speculators

HOUSING FOR SALE

INDIVIDUAL

Housing use right trade-long term (rent)

informal sectors estabilished by groups of migrants

HOUSING FOR RENT

Housing use right trade-short term (rent)

individual migrant

Informal but efficient housing trade

The small property right houses in BAISHIZHOU are popular because of the excellent location. Many low-income migrants, young professionals who have jobs nearby, or students like to rent the BAISHIZHOU houses in short-term. the increasing BAISHIZHOU housing value also attracts some citizens bought the house for investment purposes.

Informal but vibrant economic activities

Buildings along village main roads that connect urban roads have usually gradually been adapted for commercial use and transformed into shop-front buildings (Lin and De Meulder, 2012). The functioning of these shops is predominantly reliant on informal economic activities, which supply opportunities for migrant entrepreneurs and cheap services for both urban villages and urban areas (Lin et al., 2011).

Economic activities are not only be found on the BAISHIZHOU main road, but also on the corner where there are some residents passing by.

Informal but necessary public facilities

BAISHIZHOU joint-stock company finances the public facilities including market, schools, sports centres, community hospital, etc. The public goods are mainly for the indigenous villagers, but sometime also cater to the migrants (fig.). Besides, some migrants or villagers also play the role as public facilities providers. For instance, some migrants rent villagers' housing in order to establish kindergarten to provide migrant children with education facilities. (fig.)

Job opportunities inside the urban villages

Migrants who hardly find formal job in the city could find the job opportunities in BAISHIZHOU from the manufactures and service sectors on the collective lands or migrant entrepreneurs inside the BAISHIZHOU. Or they can easily start some small business in BAISHIZHOU.

4. STRATEGY

Being converted into a modest but livable neighborhood not only needs to improve the living environment but also upgrade the current self-organizing systems in urban villages. Without upgrading the self-organizing system, the problems which pose threats to the liveability will still exist even after physical environment upgrading.

STRATEGY FRAMEWORK

visions and partnerships at different scale

| city scale | district scale | neighborhood scale |

upgrading self-organizing system

| first phase | second phase |

actions of living environment improvement

| infrastructure public space housing | → | block design |

Vision is premised upon attractive long-term perspectives and the structuring of the city as a whole (De Meulder et al, 2004: 189). Visions at different scales are platforms for stakeholder cooperation and communication (Lin and De Meulder, 2012).

Infrastructure plot, public space, and housing are strategic locations for actions that deal with opportunities and problems at the ViC level. The capacity of space for mediation between diverging and even contradictory customs, functions, uses, experiences, interest, property statuses - may be employed when settling up partnerships or when offering spatial support to participation (Loeckx, 2009: 29)

4.1 VISIONS AND PARTNERSHIPS

A vision and integrated strategy at the city scale

At the city level, there needs to be a recognition of balance between urban villages redevelopment and housing the migrants and low-income citizens. An comprehensive and adaptive strategy of housing the migrants is required to deal with the challenge of different periods and respond to the future uncertainty.

Partnership at the city scale
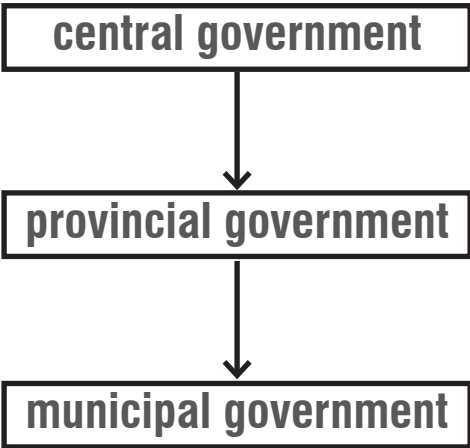
The partnerships of key stakeholders (the government, the joint-stock company and villagers) require a combination of vertical and horizontal cooperation (Lin and De Meulder, 2012). Close collaboration of the central government, the provincial government, and the municipal government may well be demanded to fulfill the city-wide vision (Lin and De Meulder, 2012). Without redistributive resources (such as comprehensive financial support) from the government, the vision combines housing the migrants, upgrading urban villages neighborhoods, economic development and urban infrastructure networks seems impossible.

Vision during SHENZHEN transitional period

SHENZHEN is the city in the transitional period followed the feature of great demand of affordable housing, insufficient affordable housing system, initial development on the SHENZHEN urban fringe with unfinished infrastructure network and industry. How long does the transitional period last? There is not a definite answer, but according to the urban fringe planning scheme, the SHENZHEN transitional period is around 10 years. During the transitional period, SHENZHEN government is difficult to provide accessible and affordable housing to all the migrants because of the land, financial and institutional constraints. Therefore, urban villages, especial the urban villages in the central districts are still the most efficient tools of housing the migrants in the transitional period. Besides, as urban villages are parts of urban systems and complex relationship with the surrounding urban areas, a vision at the city scale, which specifies the role of urban villages in the functioning of regular urban areas, is required for mixed development and coexistence (Lin and De Meulder, 2012).

Therefore, a city-wide vision in the transitional period should emphasize on the integration of housing the migrants, upgrading urban village neighborhoods, economic development and urban infrastructure networks.

Vision after SHENZHEN transitional period

After establishing the mature affordable housing system and completing the urban fringe development with adequate infrastructure network as well as industry distribution, affordable housing provided by government might be the efficient tool to housing the migrants and low-income citizen. At that time, the task of urban villages in the central districts to house the migrants can be shared with the official affordable housing and the urban villages on the urban fringes. The role of urban villages in the central districts will be diverse.


Role of housing the migrants and low-income citizens
During SHENZHEN transitional period
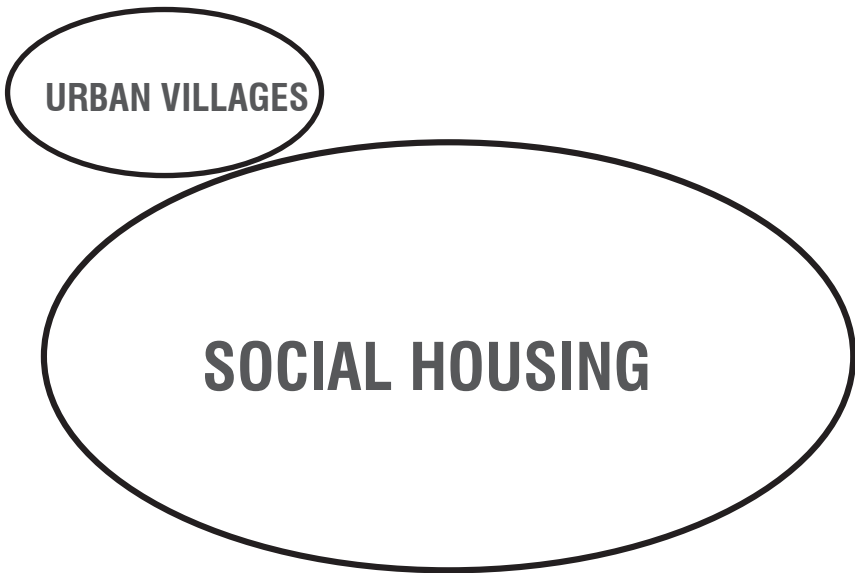
Role of housing the migrants and low-income citizens
After SHENZHEN transitional period

Vision at the district scale

A vision at the district scale is embedded in the city-wide vision (Lin and De Meulder, 2012). Strategies should be made to strengthen the interrelationships between BAISHIZHOU and the surrounding urban areas. As the proximity and accessibility of public facilities and employment is the most important asset for urban villages and urban system (Lin et al., 2011), specific emphasis should be given to the connections between urban roads, traffic nodes, industrial and commercial corridors in both urban areas and urban villages, housing distribution, and public space (Lin and De Meulder, 2012). In this project, the vision at the district scale is to incorporate the BAISHIZHUO network into the district network and to facilitate the co-development of BAISHIZHOU and the surrounding urban area.

current situation - isolated system

vision - co-development with surrounding area
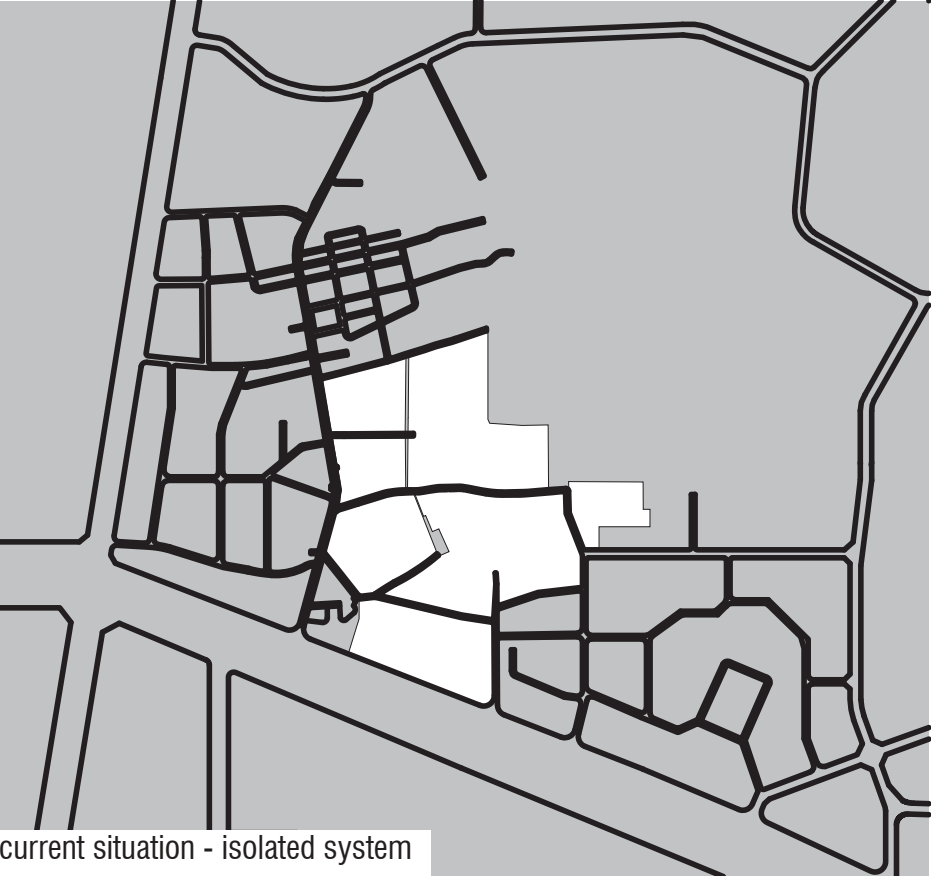
**Partnership at the district scale**

The partnership of stakeholders to fulfill the vision at the district scale can be made by SHENZHEN municipality, district government, street offices, BAISHIZHOU joint-stock company, and formal and informal sectors.
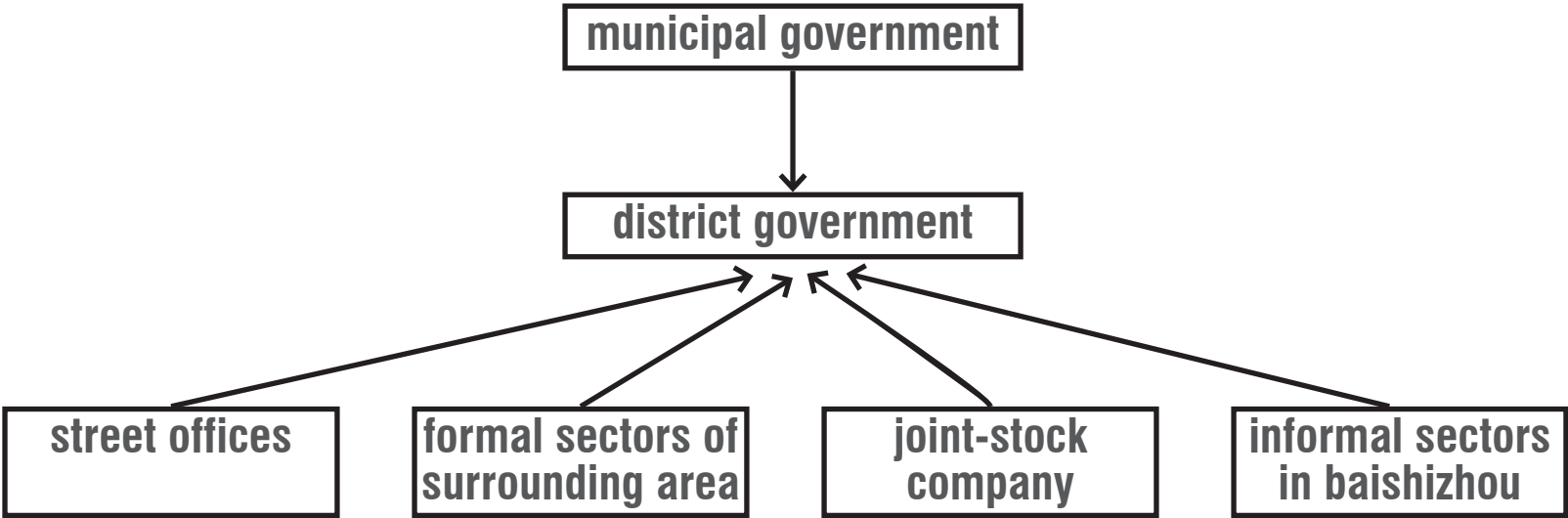
Visions at BAISHIZHOU scale

The vision at BAISHIZHOU scale needs to solve the conflict between public and private interest. The private (villagers) interest is to gain increasing profit from the housing.
The public interest is the livable environment (physical and social), sufficient public facilities.
The conflict exists because the private interest is achieved through increasing the housing quantity which encroaches on the public interest. But if the private interest is achieved through increasing the housing quality, the conflict will disappear. Therefore, a livable neighborhood is the common interests of stakeholders.
On basis of visions at city and district scales, BAIZHIZHOU vision should be adaptive to the different context of SHENZHEN.

Partnership at the BAIZHIZHOU scale
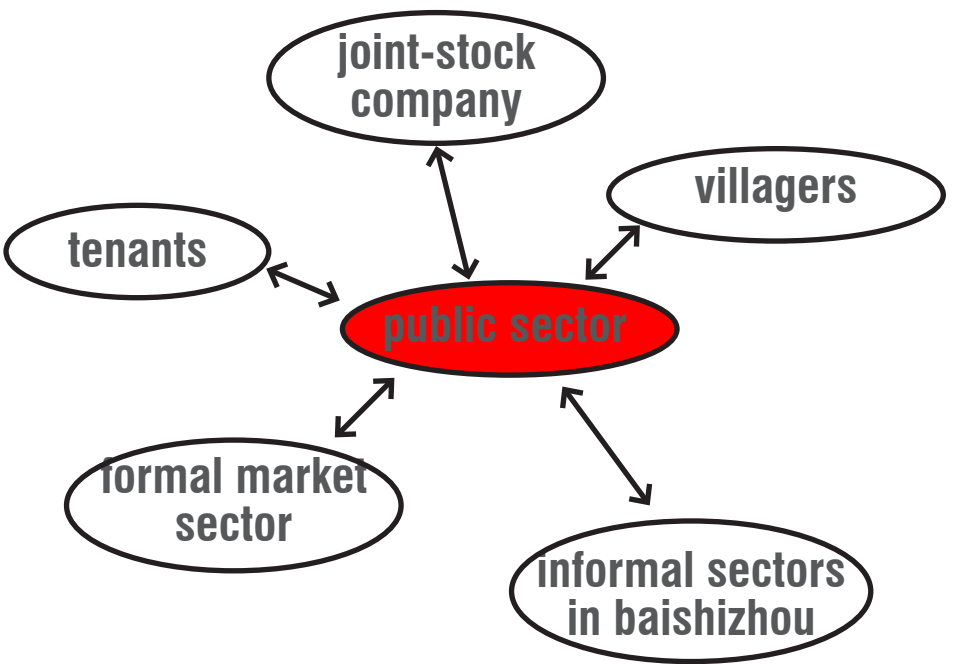
One the BAISHIZHOU scale, district government should set a public sector as the main stakeholder leading upgrading process. Besides, the formal market sector, BAISHIZHOU joint-stock company, the informal sector, villagers and tenants should be considered as the stakeholders and involved in the formation of the vision.

Vision during SHENZHEN transitional period

Being converted into a modest but livable neighborhood and the original tenants (90% are migrants) have the priority to rent the housing with original rent.

housing amount to house the migrants

Vision after SHENZHEN transitional period

The neighborhood's role is not restricted to housing the original tenants (90% are migrants) and will be more diverse according to the market needs.

housing amount to house the migrants

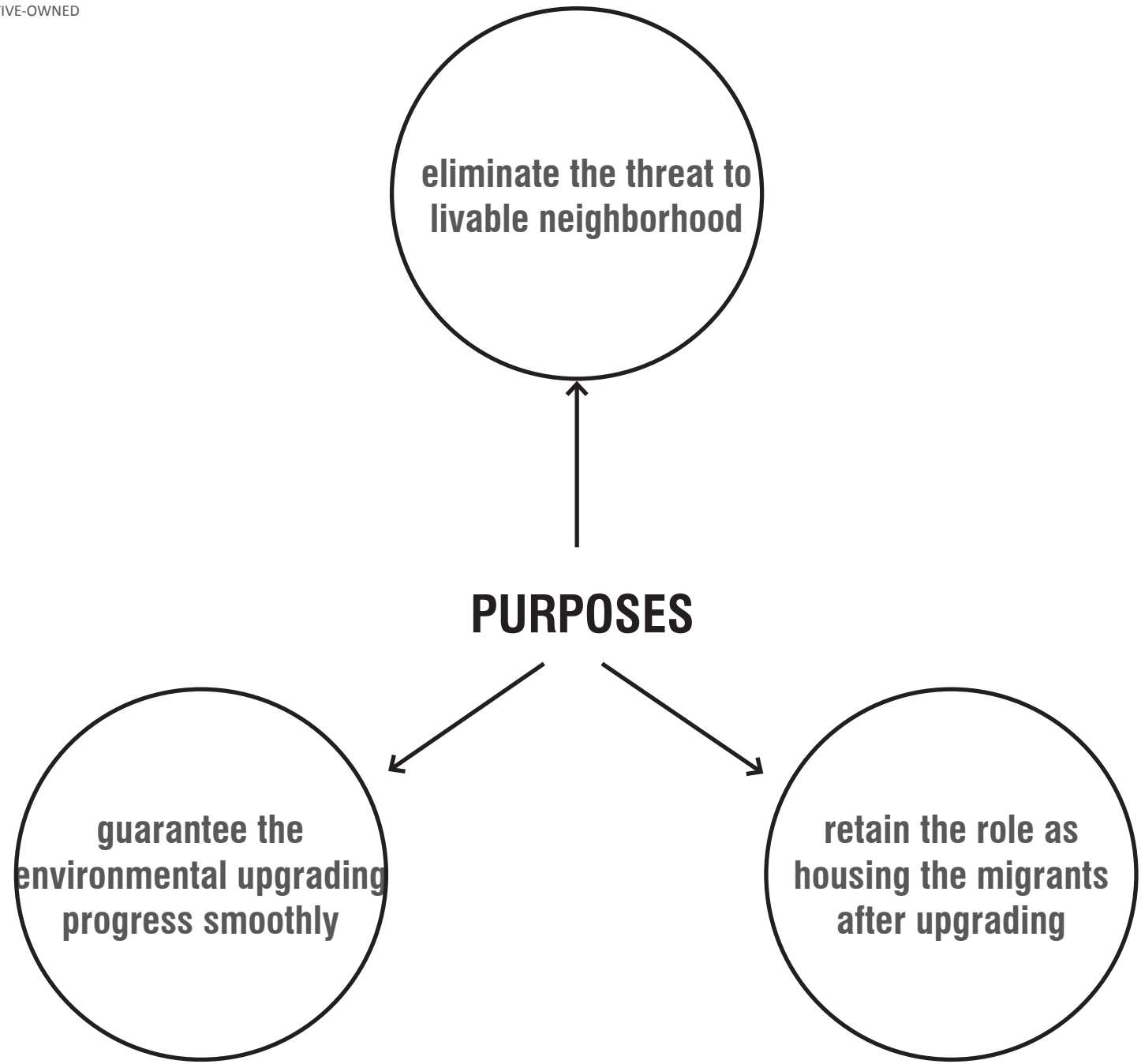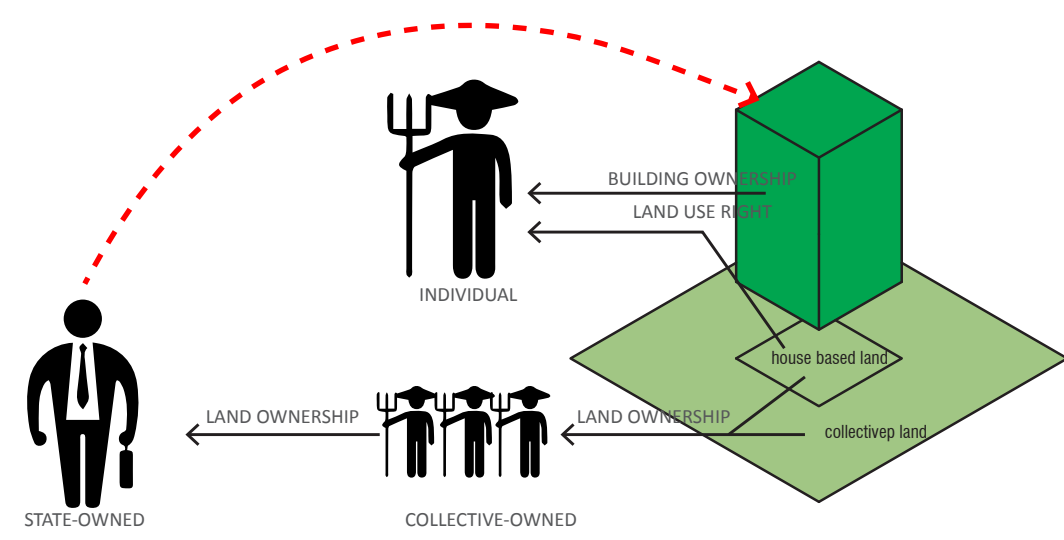# 4.2 UPGRADING THE SELF-ORGANIZING SYSTEM

Being converted into a modest but livable neighborhood not only needs to improve the living environment but also upgrade the current self-organizing systems in urban villages. Without upgrading the self-organizing system, the problems which pose threats to the liveability will still exist even after physical environment upgrading.

Besides, the living environment improvement is hard to progress smoothly without self-organizing system upgrading. Furthermore, to guarantee the original tenants (90% are migrants) are still able to afford the rent after the upgrading in the near future, the self-organizing system upgrading is necessary.

So the SHENZHEN government should capitalize on its advantage as land owner and upgrading the current self-organizing system in BAISHIZHOU.
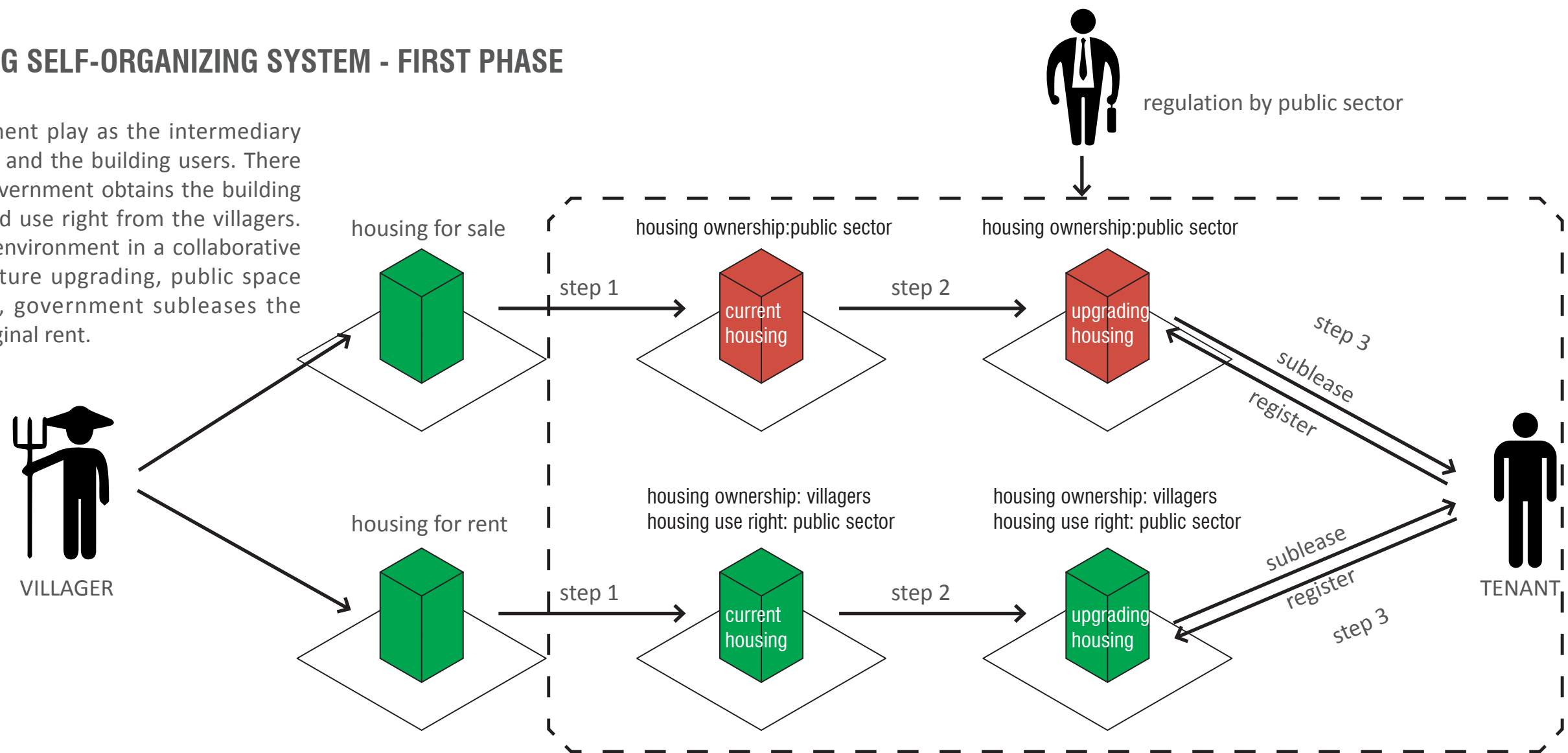

BUILDING OWNERSHIP

LAND USE RIGHT

INDIVIDUAL

house based land

LAND OWNERSHIP   LAND OWNERSHIP   collectivep land

STATE-OWNED   COLLECTIVE-OWNED

PURPOSES OF THE UPGRADING SYSTEM

1. The upgrading system should eliminate the problems of the current self-organizing system which pose threat to a livable neighborhood. As mentioned before, this problems are:
Conflict between public interest and private interest;
Lack of effective regulation and maintenance;
Lack of tenure security;
Lack of tenant management which will leave opportunity to the crimals and housing speculators.

2. The upgrading system should garentee the the actions of living environment improvement progress smoothly.

3. The upgrading system should guarantee the original tenants (90% are migrants) are still able to afford the rent after the upgrading in the near future.

4. The upgrading system should be adaptive to the uncertain future.

eliminate the threat to livable neighborhood

PURPOSES

guarantee the environmental upgrading progress smoothly

retain the role as housing the migrants after upgrading

PROCESS OF UPGRADING SELF-ORGANIZING SYSTEM - FIRST PHASE

The proposal is that government play as the intermediary role between building owners and the building users. There are 3 main steps. First, the government obtains the building ownership or the building land use right from the villagers. Second, improving the living environment in a collaborative way, including the infrastructure upgrading, public space network, and houses. Third, government subleases the houses to tenants with the original rent.

regulation by public sector

housing for sale

housing ownership:public sector — housing ownership:public sector

step 1 — current housing — step 2 — upgrading housing — step 3 — sublease — register

VILLAGER

housing for rent

housing ownership: villagers
housing use right: public sector — housing ownership: villagers
housing use right: public sector

step 1 — current housing — step 2 — upgrading housing — sublease — register — step 3

TENANT

1. Building ownership and building use right acquisition
Unlike obtaining the building ownership compulsively in the traditional planning approach, the public sector will obtain the building ownership according to the current trade activities of housing. Some villagers have several housing stocks, they live in one housing unit and sell or rent out the others (including housing unit or commercial unit). So the public sector can buy and rent the housing unit or commercial unit from these villagers at the market price. For the housing units or commercial unit which are not for sale, public sector try to rent them at the market price for long-term (like 10 years) through some incentives, for example, the villagers who rent the housing units to the public sector will get back the new or refurbished housing units of same size (still in BAISHIZHOU) after 10 years, which means the public sector have demolition-rebuild right and housing renovation right. After the negotiation process, public sector will gain the building ownership (from the buildings for sale) and the building use right (from the building for rent). These buildings transform to the public rental housing.
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2. Living environment improvement

3. Sublease to the tenants
Then the public sector will sublease the housing unit or commercial unit at the market price (the same as the original price). People who want to rent the unit need to apply through the registry system. From this registry system, the public sector will establish the tenant information database which is helpful for the neighborhood management. To keep the tenant information database up to date, tenants need to re-register each year if they want to continue the lease contract.
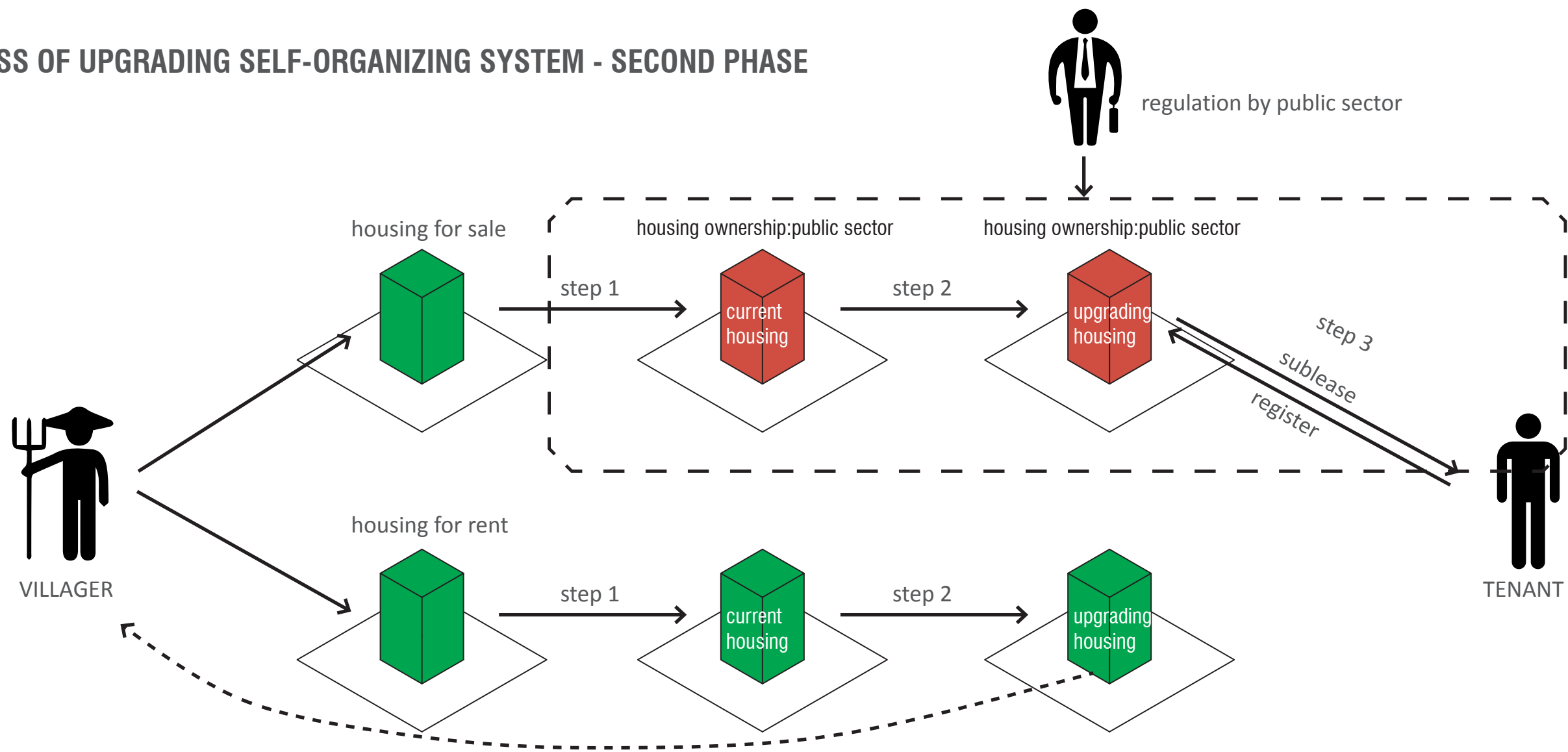The public sector will give priority to the original tenants and need to know their current unit size and their ideal unit size (the rent will follow the size). To guarantee all the original tenants are able to rent the housing, the public sector will sublease the unit to the original tenants mainly base on their current unit size, but there will be some adjustment respond to their ideal unit size.

Through the sublease process, the public sector will establish the tenant information database efficiently because the tenants are incorporated into the management system on their own will.

The advantage of upgrading system
1.Rent control after physical environment upgrading.
2.Increase the tenure security of the housing.
Tenants can come or leave on their own will and will not be forced to leave (within 10 years) because of the landlord's will or the rising rent.
3.It helps to prevent the criminals and housing speculator if the tenants are incorporated into the management system.
5.Tenant information database will provide helpful information to the economic activities research in the urban villages, such as the typologies, job opportunities etc.
6.Tenant information database will also help to understanding the employment status of the tenants, which provide direction of the job training programs and job opportunities creation during the BAIZHIZHOU upgrading process.

PROCESS OF UPGRADING SELF-ORGANIZING SYSTEM - SECOND PHASE

regulation by public sector

housing for sale

housing ownership:public sector

housing ownership:public sector

step 1

step 2

current housing

upgrading housing

step 3

sublease

register

VILLAGER

housing for rent

step 1

step 2

current housing

upgrading housing

TENANT

Ownership and the rent

The villagers who rent the housing units to the public sector during transitional period will get back the new or refurbished housing units of same size, which means the amount of public rental housing will decrease after the transitional period (10years). There is still rent control of the remaining public rental housing, however, for the housing units returned to the villagers, the rent is decided by the market and the villagers.

Collaborative management

The application of the public rental housing will restart. The tenant information database established during the transitional period will provide the reference to the choice of tenants. The management system established during the transitional period also provided good platform for the villagers, the joint-stock company to manage their own housing property and the collaboration with local government.

Conclusion

By Intervening in the self-organizing system, public sector could start the physical environment upgrading with a relatively low investment, guarantee the upgrading progress smoothly and the original tenants (90% are migrants), eliminate self-organizing systems' problems which pose threats to the liveability, guarantee the migrants are still able to afford the rent after the upgrading in the near future; meanwhile, the villagers achieve their private interest no matter short-term or long-term.

4.3 Specific actions of living environment improvement
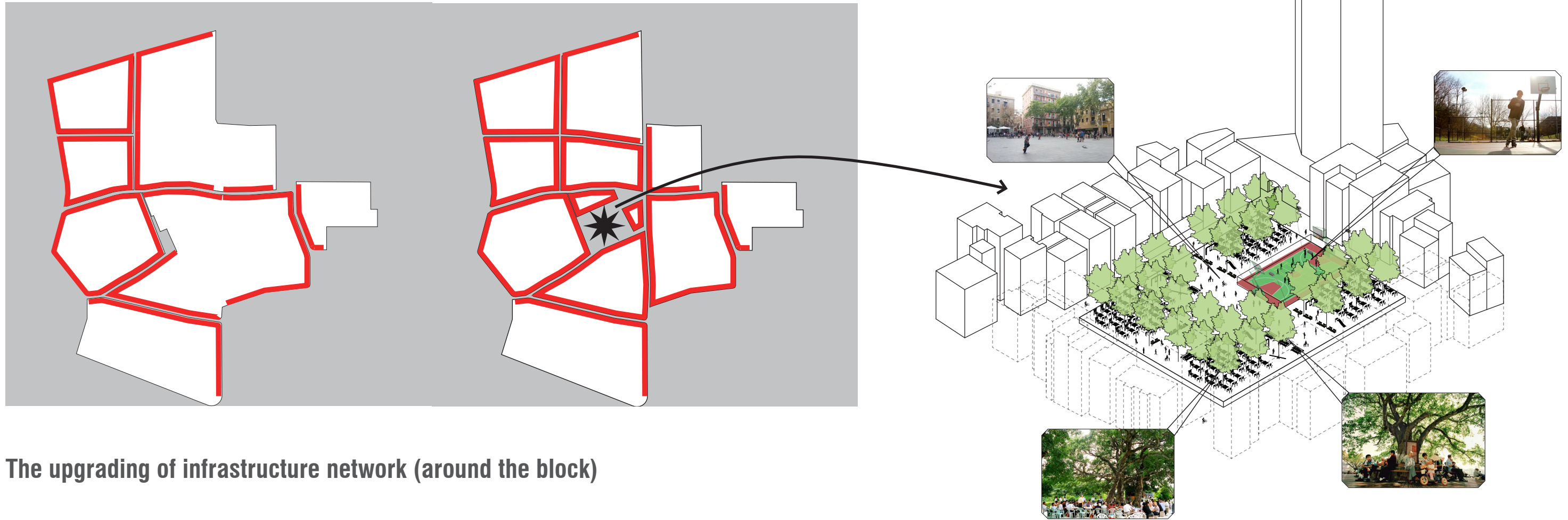
The upgrading of infrastructure network (around the block)

The upgrading of infrastructure can increase standards and improve the spatial quality of low-income neighborhood (Conde & Magalhaes, 2004; Silas, 1992). As mentioned above, village main roads that connect with urban roads are urgent need of strategic interventions (Lin and De Meulder, 2012). The current infrastructure network of BAISHIZHOU has low quality as well as low connectivity with the surrounding urban area. It is isolated by the surrounding neighborhood because of the poor environmental conditions and some social problems like sanitation and security problems. So upgrade the current infrastructure network and incorporate it into the surrounding urban network is the important steps.

Design principle: accessing, connecting, integrating

Integration of different actions:

1. They could be widened and extended, with rainwater drainages, sewers and streetlights alongside them (Lin and De Meulder, 2012).
2. Demolition of some existing buildings to make the roads accessible.
3. Improvement of street frontage. A continuous and diverse street frontage can be created by filling the unnecessary spaces between buildings and making the lower two floors continuous street shops; Ground floor experience can be diverse through adapting the spatial form and function of ground floor.
4. New note - public square
The new public square could increase the connectivity with the surrounding urban area and become the integration machine of the BAISHIZHOU and the surrounding neighborhoods.

Partnership of stakeholders:

On basis of the ownership game rules mentioned before, the public sectors is the main stakeholder of infrastructure network upgrading (land ownership, building ownership of some buildings, building use right including the demolition-rebuild and housing renovation right of some buildings) and is responsible to invest the upgrading actions. Besides, the infrastructure is also the collective property of BAISHIZHOU village, the infrastructure network maintenance need the collaboration of the joint-stock company and the villagers.

one block
housing
street
network

public space network

units creation

courtyard in each unit

public-private interface

eyes on the outdoor

neighborhood management

block management

unit management

building management
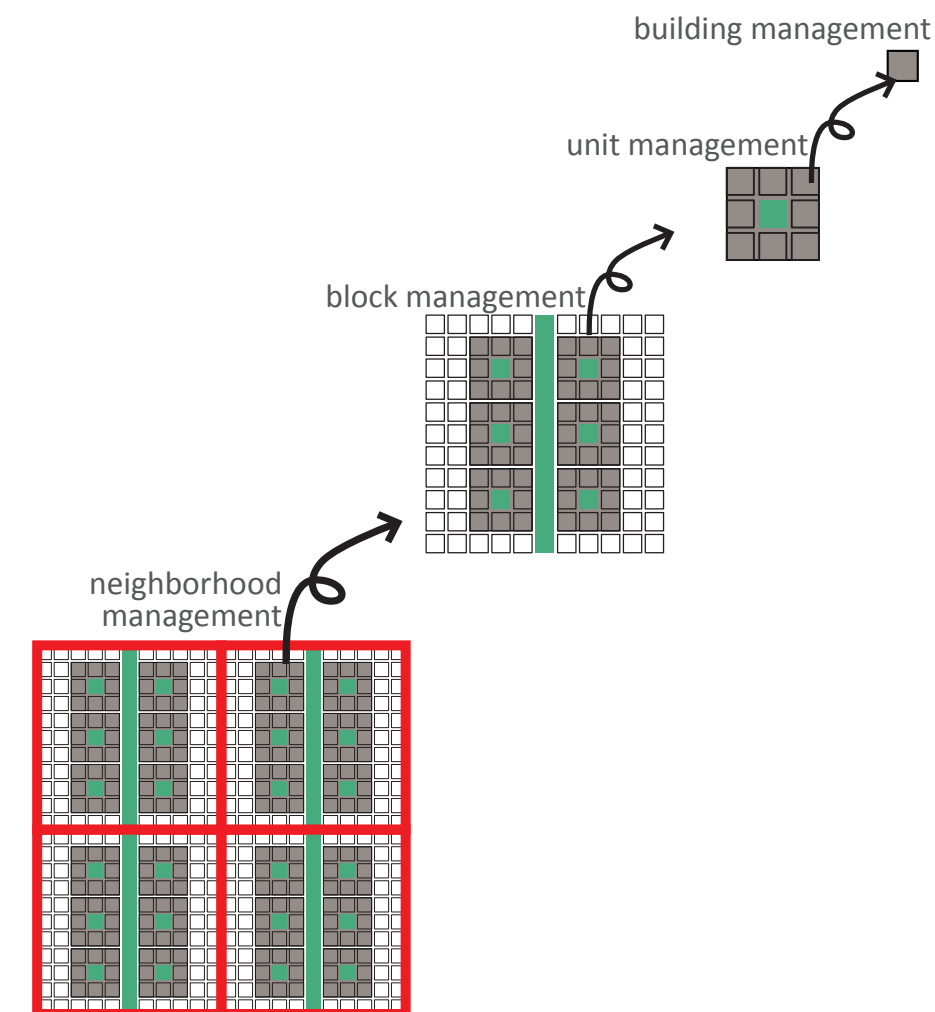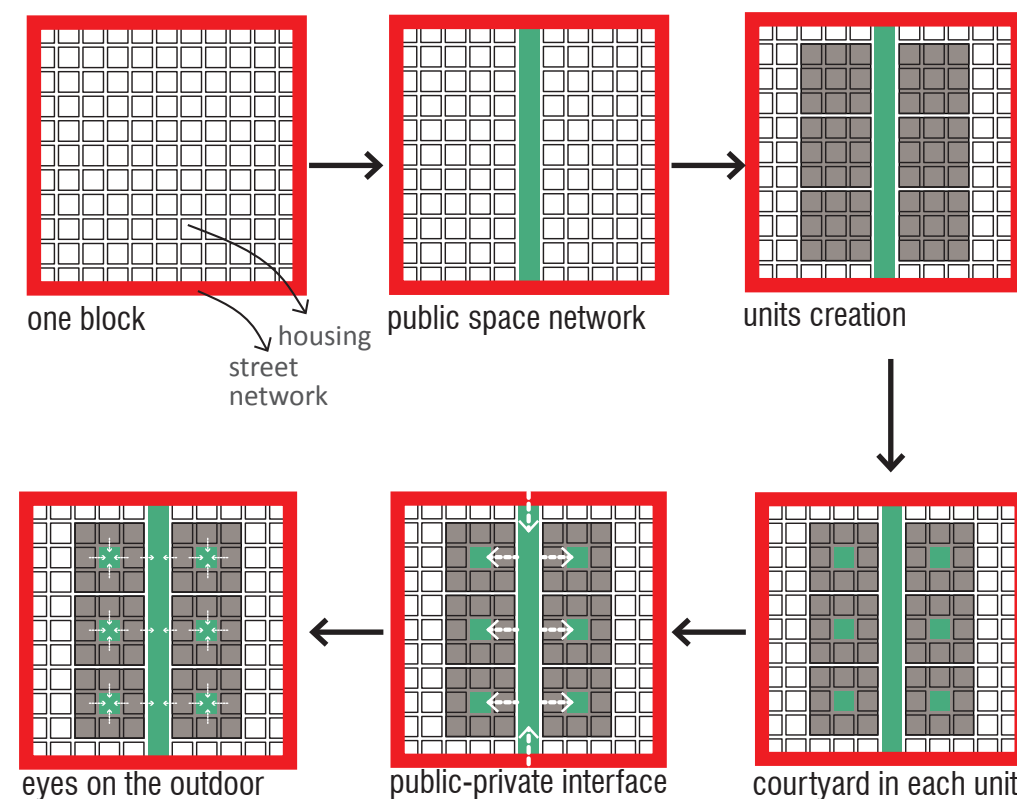
The creation of public space network (go through the block)

The current public space is going with the infrastructure network which mainly provides commercial atmosphere and has little potential to add more residential environment experience. Therefore, a new public space network is necessary in order to improve the living environment. To achieve the principles of livable neighborhood environment, the new public space network would better go through the blocks.

Design principle:
different zones of privacy
From the different privacy zones all residents can clearly position themselves on the system and regulate their social interaction. The successful privacy zones system facilitates the feeling of ownership and a need to protect the property of privacy zones. It is necessary for BAISHIZHOU neighborhood which is only with the homogeneous and narrow alleys.
public-private interface
The readable public-private interface the important component to define the different zones of privacy.
It is not a necessary a real physical barrier, but should be

readable by the people who don't belong to the privacy zone. And it is helpful to organize the traffic system.
eyes on the outdoor space
The new structure facilitates the eyes on the outdoor space, feeling of ownership and security improvement.
**increase physical exercise and nature experience**

Integration of different actions:

1. Grouping and reconfiguring plots might allow more regular platforms and facilitate the partial transfer of land to the public domain (such as streets widening, the creation of public space, and the provision of public facilities) (Lin et al., 2014).
2. Frontage design along the public space network (ground floor function and spatial form, façade face to the public space, handshake building solutions).
3. Increasing green (roof garden, green wall, sidewalk planting ,small front garden)
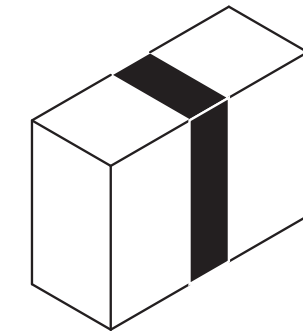
Partnership of stakeholders:

There is well-defined spatial hierarchy in the new public space network, and each hierarchy has the specific management unit. The public sectors should play as the leading role of deciding the upgrading actions because of the ownership superiority. But the key to the success of these actions is the partnership between local government, joint-stock company, villagers and the tenants in public facilities and space provision, maintenance, and management.
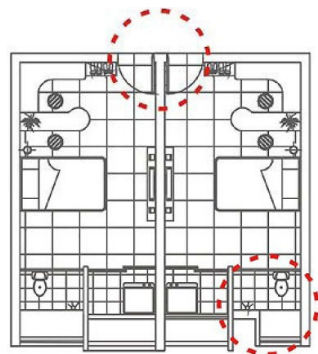
53
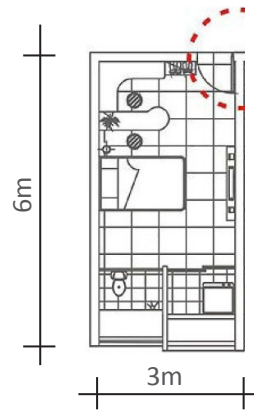
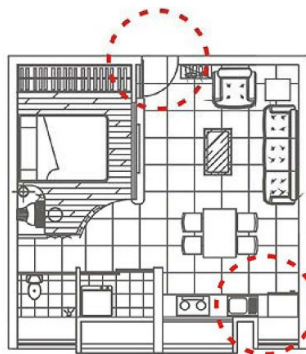single unit plan

small and flexible design

6m

3m

integrate 2 single units

one bedroom & one living room

OR

integrate 3 single units

two bedroom & one living room

buildings integration +
internal layout redesign

window face to window

window face to green wall +
privatized alley to garden
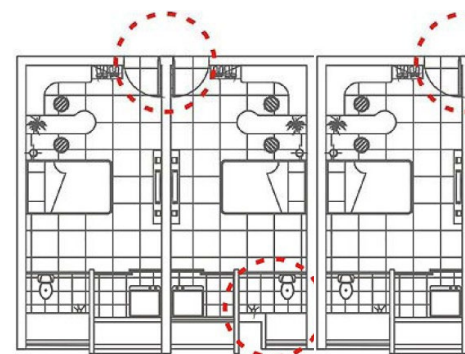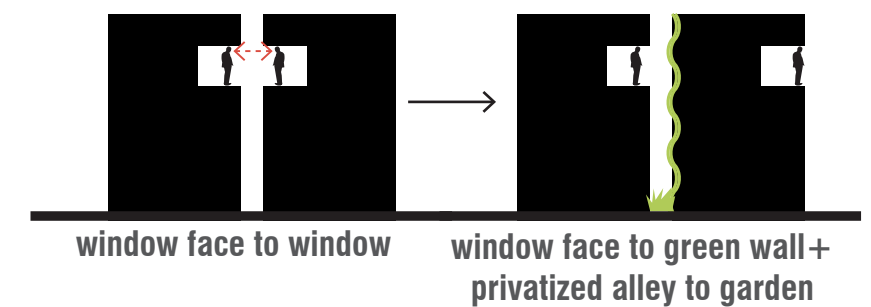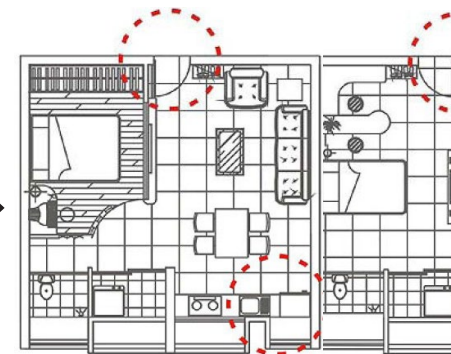
Adapting housing

Some existing buildings need to be demolished for two reasons, to upgrade the infrastructure network and the public space network mentioned before, and the buildings have structural problems. The floor area of demolition needs to be compensated with new construction.
For the remaining buildings, there are many architectural or landscape interventions to improve the building quality and interior environment.

Design principle:
increase the single units,
As mentioned before, the sub-unit divided by the owner of the housing is problematic. But it reflects the great demand of single unit in BAISHIZHOU. Generally, the layout of existing buildings needs to be redesigned, which should take the demands of target groups into account. The social groups dwell in BAISHIZHOU is diverse because of the various service industry from the surrounding area: villagers, blue-collar, small businessman, white-collar, students, starting artists, young professionals etc. 90% of them are migrants.
54

For the migrants, BAISHIZHOU always means a temporary accommodation. They will move out when they have their own families. So majority of the tenants are single. To guarantee the upgrading neighborhood could accommodate no less than the original amount of residence, there is limitation of the housing unit size. So the single units need the small but flexible interior design.
Adaptive housing units.
There still a certain proportion of couples and families, and the proportion is changing. Therefore, flexible floor plan design based on the single units might be one of the solutions. The single unit could be the basic module. It is flexible to integrate two single units into the unit with one bedroom and one living room, or integrate three single units into the unit with two bedrooms and one living room etc.
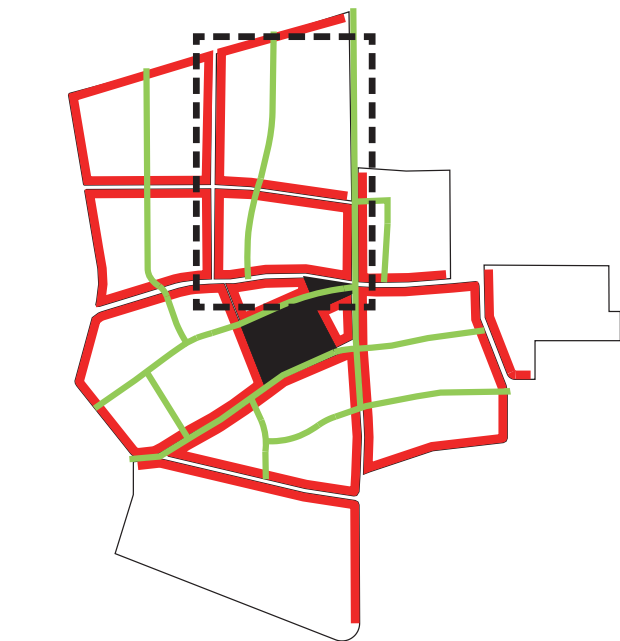**privacy, ventilation and lighting**
these is the most common problems of the handshake buildings and need to be solved through different actions.

Integration of different actions:

1. buildings integration
2. building facade ajustment
3. internal layout redesign

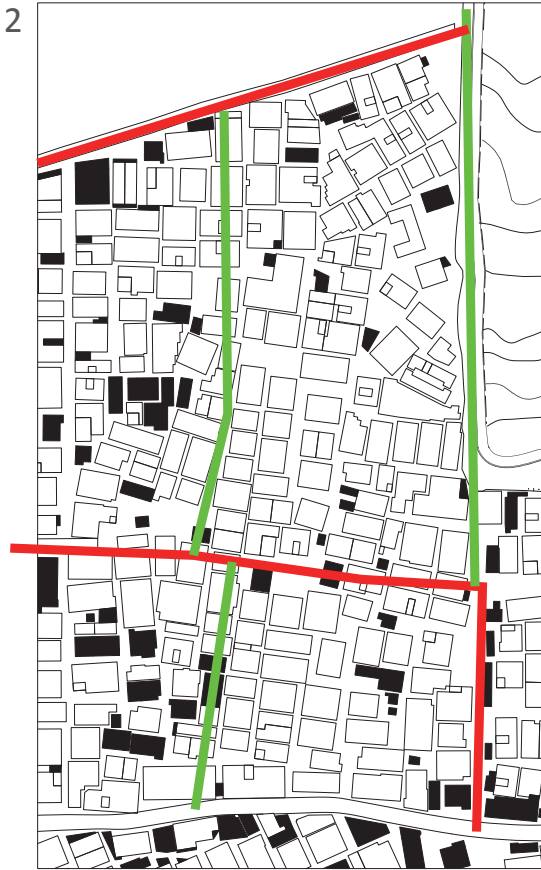# 4.4 APPLY THE ACTIONS TO THE BLOCK DESIGN

DESIGN PROCESS

Block selection
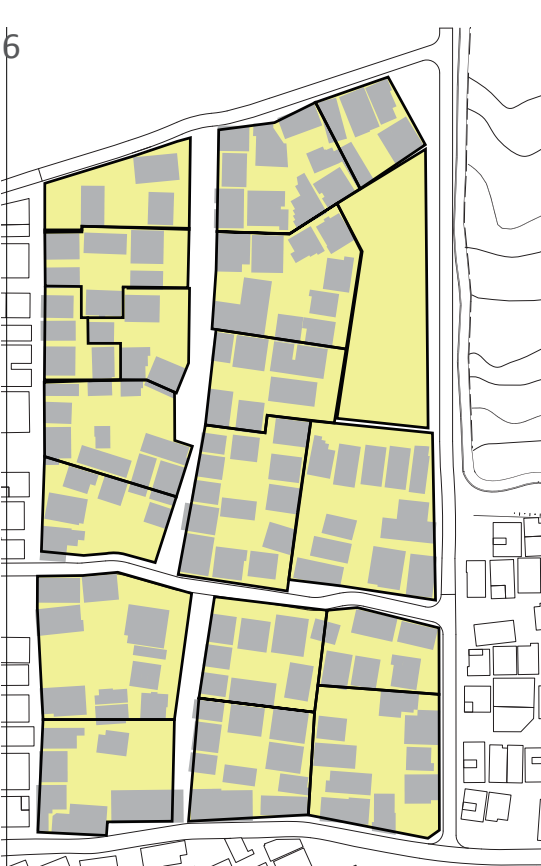

1

Demolition of buildings with technical problems

2

New network intervention

3

Demolition of buildings on the new network

7

new spatial structure

- renewal unit
- new unit
- commercial street
- greenway on the edge
- intermidiate greenway
- readable entrance

6

Remaing buildings

5

Demolition of buildings in each group

4

Grouping remaining buildings

PLAN

GROUND FLOOR SPATIAL INTERVENTION

10 50
0m 100
20

- ▪ groundfloor indoor
- ⬚ remaining buildings
- ▪ fill with vertical green
- ▨ fill with privatized garden
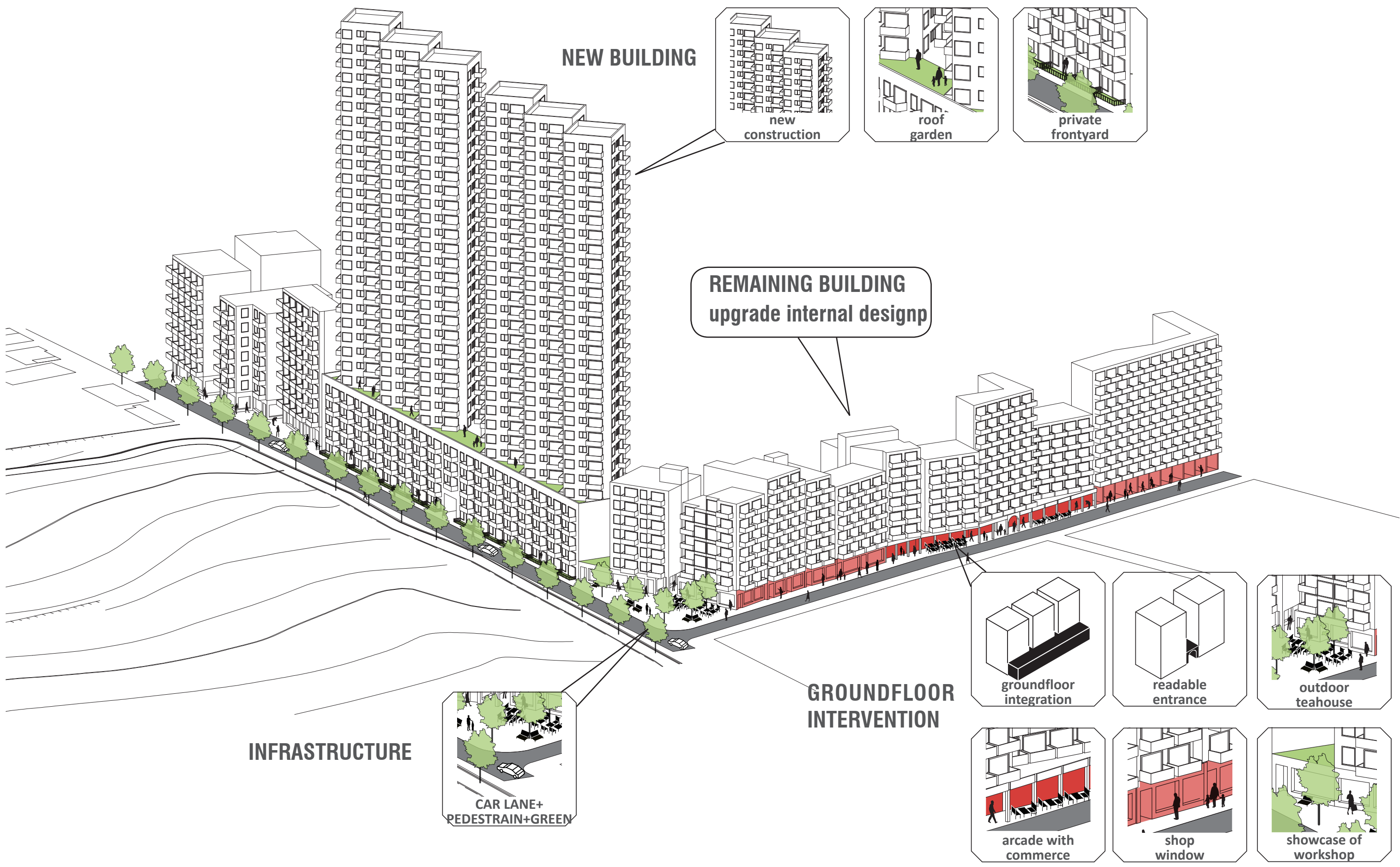- ⬚ area with roof

GROUND FLOOR FUNCTION

10 50
0m 100
20
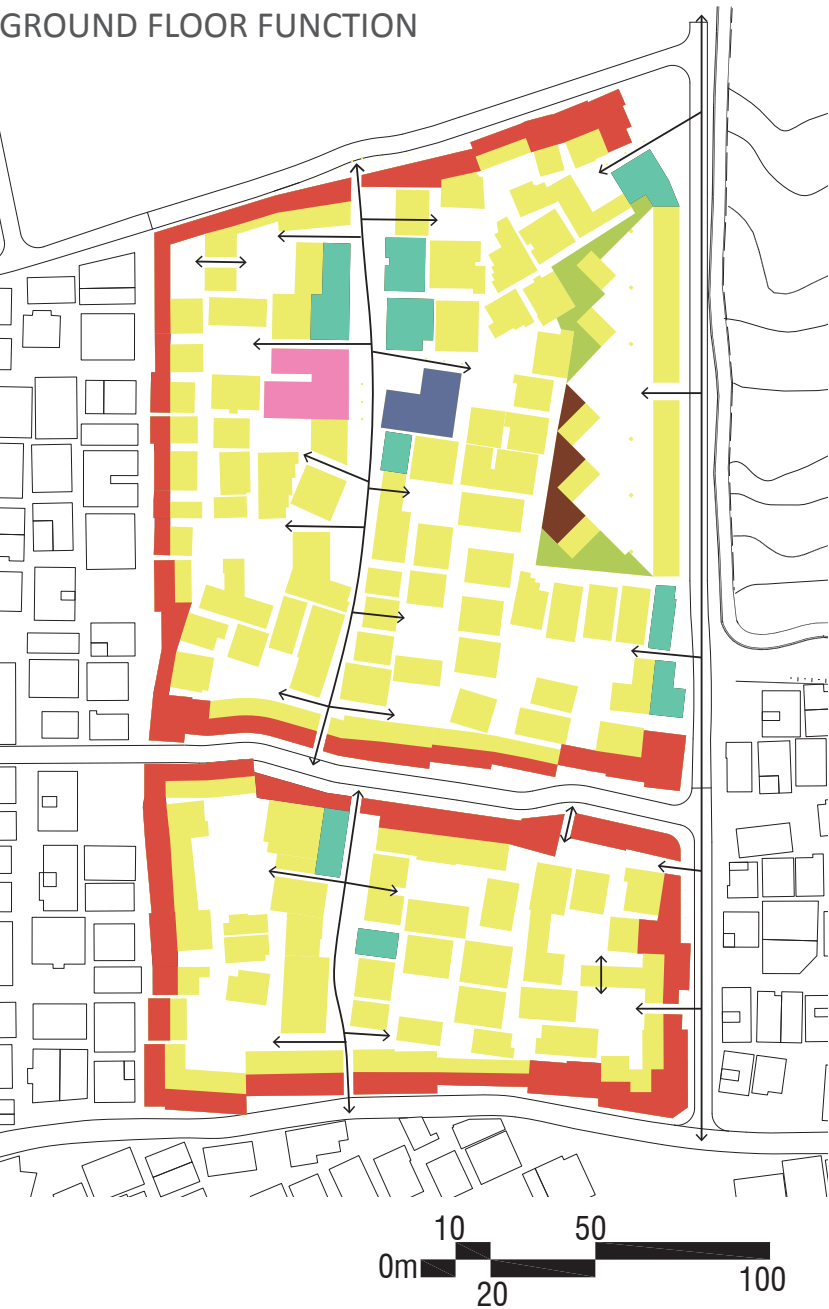
- ▪ commercial
- ▪ residential
- ▪ workshop with showcase
- ▪ neiborhood center
- ▪ bike room
- ▪ green house

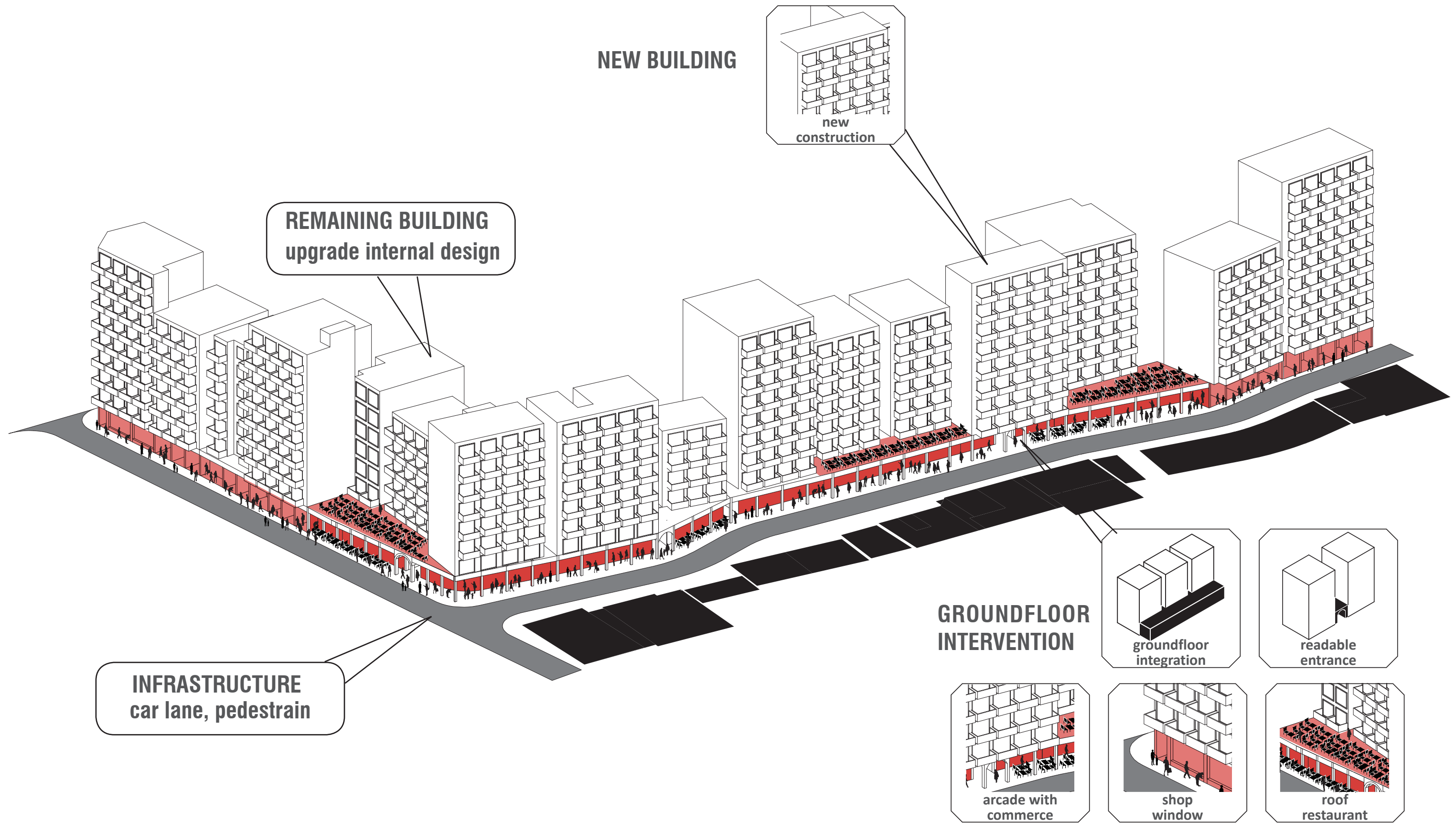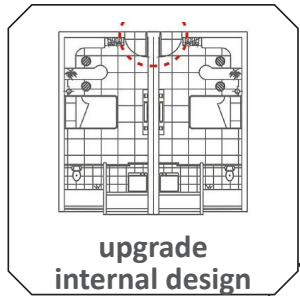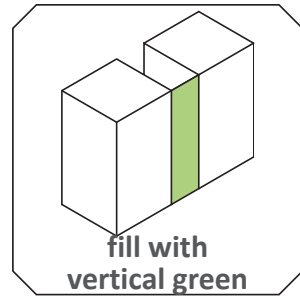## TOP PLAN

10 50
0m 100
20

- ▪ new building
- ▪ remaining building
- ▪ building with one floor
- ⬚ area with roof

the New construction should balance the demolition

Specific actions in strategic locations

NEW BUILDING

new construction

roof garden

private frontyard

REMAINING BUILDING
upgrade internal designp

INFRASTRUCTURE

CAR LANE+
PEDESTRAIN+GREEN

**GROUNDFLOOR
INTERVENTION**

groundfloor integration

readable entrance

outdoor teahouse

arcade with commerce

shop window

showcase of workshop

NEW BUILDING

new construction

REMAINING BUILDING
upgrade internal design

GROUNDFLOOR INTERVENTION

groundfloor integration

readable entrance

arcade with commerce

shop window

roof restaurant

INFRASTRUCTURE
car lane, pedestrain

REMAINING BUILDING

buildings integration

fill with vertical green

upgrade internal design

NEW BUILDING

new construction

INFRASTRUCTURE

small plaza

pedestrian+ green

GROUNDFLOOR INTERVENTION

groundfloor integration

readable entrance

showcase of workshop

leisure facilities on the roof

private frontyard

COURTYARD INSIDE RENEWAL UNIT

5. CONCLUSION

5.1 CONCLUSIONS ON THE GRADUATION PROJECT

Urbanization and rural-urban migration are the tidy no one can stop, SHENZHEN is the representative city of the tidy. A great number of villages originally located at the fringes of the city have been swallowed up by the rapid urban development and turn to the villages inside the city. Meanwhile, the job opportunities and urban resource attract many people from other cities or rural countries to SHENZHEN and become SHENZHEN migrants. The majority of migrants are not able to afford the housing on formal market and excluded from the social welfare system because of the hukou system. Therefore, the SHENZHEN villagers who lose their farmland during the process of urbanization and find it difficult to participate in the formal urban labor market catch this opportunity and adapt their houses in the villages informally to house the migrants. So the migrants and indigenous villagers establish reciprocity through the urban villages. And the urban villages are running under the self-organizing systems.

As SHENZHEN urbanized further, which follow the land scarcity, increasing land value, industry upgrading in the SHENZHEN district, the conflict between self-organizing urban villages and the surrounding urban villages become remarkable, which motivates the urban villages redevelopment in recent years, especially the urban villages redevelopment in central districts. However, for the urban villages redevelopment issue, a unique challenge which SHENZHEN government need to solve is the huge affordable housing demand after urban villages redevelopment. The solution provided by SHENZHEN government is demolishing the urban villages in the central area and replacing with the high-end neighbourhood, then constructing large scale social housing neighbourhoods on the urban fringe to alleviate the affordable housing demand. In SHENZHEN context, the affordable housing demands are mainly from the migrants, which means the social housing can hardly alleviate the affordable housing demand because of the financial, land and institution constrains in the near future.

Therefore, it is still necessary to preserve and upgrade the urban villages then use them as effective tools to house the

migrants. But the role of urban villages is not permanent and can be adaptive to the uncertain future. To upgrade the urban villages not only need solutions from spatial aspect, but also need to know the problems and opportunities of the current self-organizing system. The aim of the project is to transform the urban villages into liveable neighbourhoods through improving the living environment and dealing with both the problems and opportunities of self-organizing systems in urban villages, and retain their roles as housing the migrants during SHENZHEN transitional period.

With the method of literature Research, case study, site visit and interview methods, the opportunities of the self-organizing system can be concluded as Informal but efficient housing trade, Informal but vibrant economic activities, Informal but necessary public facilities, Job opportunities in urban villages; meanwhile, the problems are obvious in terms of Conflict between public and private interest , Lack of effective regulation and maintenance, Lack of tenure security and Lack of tenant management.

To better deal with the complex stakeholder environment and the forces of the market during the urban villages upgrading process, a comprehensive planning approach is require, and this planning approach should also capitalize on the opportunities of the self-organizing system as well as solve the problems. After comparative study, the strategic urban project approach that focuses on visions, actions and partnerships of key stakeholders could be adapted to deal with the complicated urban villages upgrading process. As the living environment improvement in urban villages needs the modest but effective spatial interventions which could relieve the negative impacts from the spatial problems. The design principles should trace back to the basic human needs of the living environment rather than the design itself. After the site visit in BAISHIZHOU, two main theories of living environment help me to do the further site analysis, they are the BASIC HUMAN NEEDS AND THE HOUSING ENVIRONMENT theory and the CONTROL OVER THE SOCIAL ENVIRONMENT theory. These two theories encourage me to read the living environment from new perspectives, which consequently

affected my design approach of the site.

The theories integrated closely with Shenzhen context, test-site analysis during the research process. The final strategy is the coproduction of all of the research, including the theory study or case study I did during the research process but after comparison I didn't adopt them to my final strategy.

The strategy of my project is based on the SHENZHEN context which has specific challenge and opportunity. There are different challenge and opportunity at different scale. So there need to be visions and partnerships at different scale first because it is the precondition of efficient cooperation and communication in the complex stakeholder environment. Before specific actions of living environment improvement, one important step is to upgrade the self-organizing system for the purpose of eliminating the threat to livable neighborhood, guaranteeing the environmental upgrading progress smoothly and retaining the urban villages' role as housing the migrants after upgrading. Public sector plays as the intermediary role between building owners and the tenants. Through the interventions, government could gradually solve the problems of the self-organizing system without huge investment. Finally, base on the upgrading system, the actions of living environment will progress smoothly. The actions could be concluded as upgrading of infrastructure network, creating public space network and adapting housing. Then I choose one block as the strategic location to show how does the actions work together to improving the living environment.

5.2 REFLECTIONS ON THE GRADUATION PROJECT

Although the final strategy is on the basis of SHENZHEN context, the ideas behind of the strategy explore a balance between urban development and social justice through capitalizing on the opportunities of specific context. The balance is important for the city long-term development and it is difficult to achieve without a clear recognition of the challenge and the opportunities.
During the research process, I draw some lessons from the countries which have done well in balancing the urban development and social justice. What I learn is not the solutions themselves, but how they proposed solutions adaptive to their specific context.

This graduation project still could provide references and experiences in some aspect. The strategy could provide a suggestion to other Chinese large cities in terms of balancing the urban development and social justice effectively within the Chinese dual system; the perspective of dealing with problems and opportunities of urban village self-organizing system could also be generalized to other Chinese cities which face the conflict between urban villages and the formal urban area; the design principles of living environment improvement could provide references to the residential area which face the environment challenge; and planning approach focus on the visions and partnerships at different scale, the integration of top-down and bottom-up approach could be applied in other type of development project.

I appreciate the process of observing and researching the urban issue from different perspectives. Thanks to my mentors provide me support to develop my research interest.

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7. APPENDIX

Control in Dense Environment

Facilitating the control over the social interaction in the neighborhood with high density

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Abstract − It is a global trend that increasing population concentrated on the metropolitan cities and lead to a great dwelling demand. The metropolitan cities (especially in the non-western countries) witness the increasing density – both population density and building density- of the residential area. The densely built and populated area will easily be accompanied by conflicts like crowding, anonymity, unsafe and unhealthy living conditions without reasonable environmental design. Moreover, at extremely high densities, residents feel that they have less control over their social environment and are inclined to withdraw from the community, which they feel is invasive and beyond their control (Baum & Valins, 1977; Birchall, 1988; Coleman, 1990). To prevent or alleviate the conflicts as well as enhance the livability in the high density neighborhood, facilitating the control over the social interaction by individuals (van Dorst, 2010) is one of the approaches.
This paper discuss the privacy theory of Altman(1975) which is the theoretical base of control over the social interaction. Then translate the viewpoint into practical environmental design principles which will guide my graduation design.

Key words −social interaction; control; privacy; high density; neighbourhood

1 Introduction

As increasing residential areas in the metropolitan cities (especially in the non-western countries) become densely built and populated area, a series problems – crowding, unsafe and unhealthy living environment - might follow and pose threat to the well-being of the residents. To prevent or alleviate the problems as well as enhance the livability in the high density neighborhood, this paper discusses the approach as facilitating the control over the social interaction by individuals.

The first chapter defines the 'high density neighborhood' in this paper, then followed the state of potential conflicts in the high density neighborhood in second chapter. The third chapter introduces the viewpoint of control over the social interaction which is based on the privacy theory of Altman (1975), then explains it can be used as the approach to alleviate the conflicts resulting from extremely high density. After that, translates the viewpoint into environmental design principles. The fourth chapter discusses how does the neighborhood facilitating the control over social interaction prevent or alleviate the conflicts in the high density neighborhood. Finally, the last chapter concludes the implications to my graduation research of the informal neighbourhood with high density.

2 Definition of high density

The 'high density neighborhood' in this paper not only indicates the population density, but also emphasizes the spatial aspects of density. In the past, a number of indicators were defined and used for measuring physical density (Berghauser Pont and Haupt, 2005). Until the presentation of Spacemate which become one of the most accepted methods used to measure density.

There are 4 variables introduced to describe the built space in Spacemate model: Floor Space Index (FSI), Ground Space Index (GSI), Open Space Ratio (OSR) and Layer (L). FSI (ratio of floor space and ground area) is more informative as it reflects the building intensity independently of the programmatic composition; GSI describes the amount of built ground in an area and reflect the compactness. The OSR describes the intensity of use of the non-built ground; the last variable, L, indicates the average number of floors in an area (Berghauser Pont and Haupt, 2005). Combining these four variables gives every project a unique 'spatial fingerprint' (Berghauser Pont and Haupt, 2005). Therefore, the high density neighborhood has a clear criteria according to the Spacemate model – the neighborhood with high building intensity (FSI), high compactness (GSI) and high average number

of floors (L) and low OSR which reflect the high pressure on non-built space.

3 Potential conflict of the high density neighborhood

3.1 Crowding

The differences between the terms "crowding" and "density" are not always made clear (Altman, 1975, p. 149). Stokols (1972a, 1972b) brought the distinction between density and crowding into sharp focus. He limited density to a strictly physical meaning-the number of people per unit of space. Crowding, on the other hand, is a psychological concept, with an experiential, motivational base. Stokols stated that density is a necessary though not sufficient condition for the feeling of being crowded. That is, increased numbers of people per unit of space is an important prior condition for a feeling of crowding, but it is not always wholly sufficient to create the feeling (Altman, 1975, p. 150).

Altman used a model of crowding (see illustration 1) to state the formulation of crowding. Crowding exists when various privacy-regulation mechanisms does not work effectively, causing more social interaction to occur than is desired.
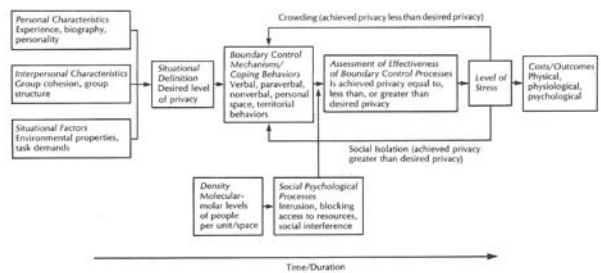

Illustration 1 A model of crowding

The figure also indicates, physical density is hypothesized to increase the possibility that intrusion, social interference, and blocking of access to resources may occur (Altman, 1975, p. 157). Some writers (Dubos, 1965, 1968; Cassel, 1971) notes that humans are quite adaptable to even the most severe conditions but may pay an extreme price for successful adaption; that is, even though people may cope successfully with intrusion, goal blocking, and social interference, they may do so at some psychological or physical expense (Altman, 1975, p. 158).

3.2 Unsafe living environment

The main threat to the safety in high density neighborhood is crime and fire safety. One outcome of density and crowding that has been of particular interest is antisocial behavior (Altman, 1975, p. 186). Studies by Galle, Gove, and McPherson (1972) and by Booth and Welch (1973) represent more sophisticated approaches to density analysis and to

the role of mediating variables underlying crowding/crime relationships (Altman, 1975, p. 187). Galle and his colleagues distinguished different types of density according to the relative closeness of the interacting people - for example, number of people per room in dwelling units, number of rooms per dwelling unit, dwelling units per structure (apartments), and building structures per acre (Altman, 1975, p. 187). They also statistically controlled for differences in social class and ethnicity and thereby partialed out factors that might underlie density/pathology relationships (Altman, 1975, p. 187). The highest correlations occurred between person-per-room density measures and crime, and successively lower correlations appeared for the grosser, less interpersonally oriented measures of density (Altman, 1975, p.187).

Although high density is not necessarily resulting crime, some space which causes crime can be easily found in the neighborhood with extremely high densities, such as the narrow alleys (see illustration 2) between the buildings in some informal neighborhood of non-Western countries. According to Newman (1972), the place which is not easily personalized, territorial, under the control of the residents, and easily watched by the residents is mostly of high crime rate and is termed as non-defensible space. Newman's solution to this space is to enhance the control and the surveillance from the residents. However, the neighborhoods with extremely high densities generally aim at accommodating population as much as possible, within which space is limited resource and inclined to be used to build housing and leave no outdoor space controlled by the residents, but the narrow alleys where only the passing through is possible. These narrow alleys eventually turned into the non-defensible space.
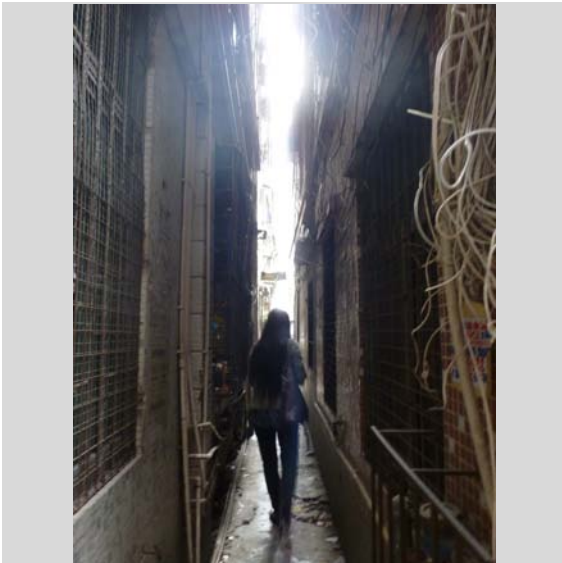

Illustration 2 narrow alleys in the informal neighborhood

3.3 Unhealthy living condition

A densely built and populated area may suffer from a declining quality of the microclimate, like less fresh air or sunlight (van Dorst, 2012). Especially in some informal neighborhoods with extremely high densities in non-western countries, the narrow alleys between the buildings pose threat to healthy living condition, some rooms can not enjoy any sunshine during the whole year, only the top floor can gain adequate sunshine during the day; no ventilation between the buildings; overcrowding rooms and dwellings etc. These high-density and low-quality physical environment were not necessarily associated with high-rate of disease and death, as Dubos (1968) stated on his thesis, people are capable of successful adaptation to even the direst circumstance of climate, environment, and social situation, including extreme population concentration. However, the long-term psychic and physical costs may be serious and thereby degrade the quality of life.

4 Control over social interaction and the design principles

Health and safety are accepted themes for a sustainable neighborhood; they have been leading themes in the majority of guidelines in modern urbanism (van Dorst, 2012). However, control as a primary need for inhabitants has not been acknowledged (van Dorst, 2012). At extremely high densities, residents feel that they have less control over their social environment and are inclined to withdraw from the community, which they feel is invasive and beyond their control (Baum & Valins, 1977; Birchall, 1988; Coleman, 1990).

To prevent or alleviate the conflicts in the high density neighborhood, the best result is the neighborhood in which individuals have control over the amount of social interaction (van Dorst, 2012). There are two key words – social interaction and control. This freedom of choice (Zimbardo 1969) is the core of the privacy theory of Altman (1975). From the perspective of the Altman, privacy is better approached as a changing self/other boundary-regulation process in which a person of a group sometimes wants to be separated from others and sometimes wants to be in contact with other. The desired level of social interaction can vary per person and over time, but the need of control is universal (van Dorst, 2012).

To translate this viewpoint into practical environmental designs is not easy. If privacy has a shifting dialectic quality, then, ideally, we should offer people environments that can be responsive to their shifting desires for contact or absence of contact with others. Thus environmental designers should try to create environments that permit different degrees of control over contact with others (Altman, 1975, p. 207).

In privacy theory of Altman, personal space and territorial behavior are mechanisms used to assist in the regulation of social interaction (Altman, 1975, p. 208). In addition to these, there are more explorations about how to control over the social interaction of the neighborhood. This chapter will discuss the spatially related aspects which can contribute to the environmental design.

4.1 interpersonal distance zone

There is threshold of the dimension for social interaction regulation. Edward Hall (1966) proposed a study of man's use of space as a communication vehicle. He spoke of four spatial zones used in social interaction-the intimate distance, personal distance, social distance and public distance. For the project researching social interaction in neighborhood scale, the social distance and public distance is more relevant.

Social distance, ranges from about 4 feet (122cm) to 12feet (366cm) and is the normal distance at which business and general social contact occur (Altman, 1975, p. 60). In the near part of the social zone (4 to 7 feet), interaction among people who work closely together and among casual acquaintance often occurs at this distance, and it is an acceptable and appropriate distance in public settings (Altman, 1975, p. 60). The far phase of the zone (7 to 12 feet) is considerably more formal, which is more ideal distance to stimulate social interaction between strangers in which there is an explicit expectation of interaction. Public distance varies from 12 feet (366cm) to 25 feet (762cm) and is the distance at which communication cues become quite gross; the richness of most communication channels is much less than that of the preceding zones (Altman, 1975, p. 60).

Several ideas are explicit in Hall's analysis of distance zones: (1) the zones are not necessarily universal, and there are wide cultural variations in what behaviors are permissible in each zone and in what distances are appropriate with certain persons in settings (Altman, 1975, p. 60). This requires more explicit observation in the specific site and figure out what are the conditions of different kinds of social interaction. (2) The zones are not important in terms of physical distance per se; they are important because of the interpersonal communication possibilities they offer. They are milieus within which a variety of behavioral possibilities and communication channels are embedded (Altman, 1975, p. 60).

4.2 Territorial behaviours

Territories are geographical areas that are personalized or marked, and territoriality involves the mutually exclusive use of areas and objects by persons or groups (van Dorst, 2012). Territorial behavior is based on the perceived possession of a physical space (Bell et al. 2001). Territorial behaviors have diverse spatial expressions, such as building of walls and fences. Good fences make good neighbors (Frost 1914), which means the form of territorial behavior influences the quality of the neighborhood. A good form of territorial behavior is able to make the territories ownership legible as well as to facilitate social interaction with control. It can be achieved with the design feature of less sight-limiting and natural access control.

A fence along a front garden is not a real physical barrier (see illustration 3). This garden fence imparts a message: this is private territory, enter only with permission from the owner (van Dorst, 2012). The natural access control creates a protective barrier "providing a degree of privacy and territorial control with options for active contact into adjacent public space" (Skjaeveland et al., 1996, p. 193). Thus, the fence can protect residents from overexposure which may lead to withdrawal and a reduction in social interaction. Besides, the less sight-limiting fence provide the residents opportunity to see and hear the activities outside their territories, which greatly influences their sense of community and enables them to observe others with whom they would like to interact (Williams, 2005).

Illustration 3 A fence along a front garden

4.3 A system of privacy zones supports control over social interaction

In practice, territories that support social interaction consist of different zones of privacy (van Dorst, 2012). A house and courtyard is the privacy zone of a family; a street is the privacy zone of the occupants of that street (van Dorst, 2012). For a neighborhood, a system of privacy zones is necessary. All the privacy zones form a nested system functioning simultaneously at different levels for individuals and groups of different sizes, from which all residents can clearly position themselves on the system and regulate their social interaction. The successful privacy zones system facilitates the feeling of ownership and a need to protect the property of privacy zones.

5 The effect of control over social interaction

The neighborhood facilitating the control over social interaction is able to prevent or alleviate the conflict in the high density neighbourhood. First, it works through avoiding crowding. The model of crowding shows, crowding could be avoided even in the high density neighborhood if the boundary-control mechanism success to produce a match between desired and achieved levels of social interaction. The neighborhood facilitating the control over social interaction has good boundary-control mechanism. Second, it works through crime prevention. The neighborhood facilitating the control over social interaction enhances the surveillance and the sense of ownership from the residents thus followed the need to protect the neighborhood. Finally, it works through improving unhealthy living conditions. According to the theory of interpersonal distance zone, there is threshold of the dimension for social interaction regulation. Maybe the dimension is not sufficient for the daylight or ventilation, at least the condition is improved comparing to the previous situation. Moreover, interpersonal stresses in dense environment are alleviated in the high density neighbourhood.

6 Conclusion

My graduation project focuses on the informal neighborhood with extremely high density in the metropolitan cities of China. Because of insufficient support from technology and design, the conflicts of crowding, unsafe and unhealthy living environment are severe. Solutions in previous years were demolition and rebuilding. As the researches on the informal neighborhoods increasing, the solutions become diverse in recent years. However, facilitating the control over social interaction in the neighborhood as one of solutions is always ignored, and the meaning of different amount of social interaction is not recognized.

But if with sufficient observation in the informal neighborhood, the space which have good social interaction regulation is always a desirable place which does better in the aspects of avoiding crowding, crime prevention and healthy living condition. Unfortunately, there're few of this type of space. In most cases, the buildings occupy the land as much as possible, so the zones between the buildings are only enough for the passers-by and leave no space for informal interaction within the neighbors.

This paper states the importance of facilitating the control over social interaction in the neighborhood

and explains it can be used as the approach to alleviate the conflicts resulting from extremely high density. The research of privacy theory and the environmental design principles provide guideline to my graduation project.

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