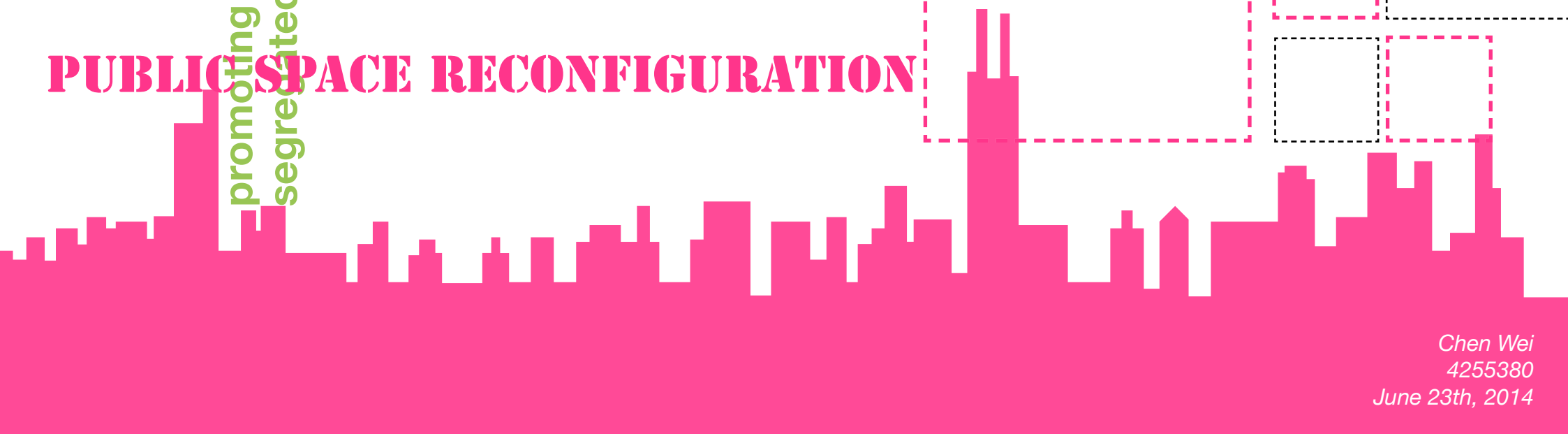
promoting socio-spatial integration in segregated neighbourhoods of Shenzhen

PUBLIC SPACE RECONFIGURATION



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June 23th, 2014

Colophon

Public Space Reconfiguration:
promoting socio-spatial integration in the segregated neighbourhoods of Shenzhen

P5 Report

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Public Space Reconfiguration

promoting socio-spatial integration in the segregated neighbourhoods of Shenzhen

Chen Wei

Master Thesis
Complex Cities Graduation Studio
June, 2014

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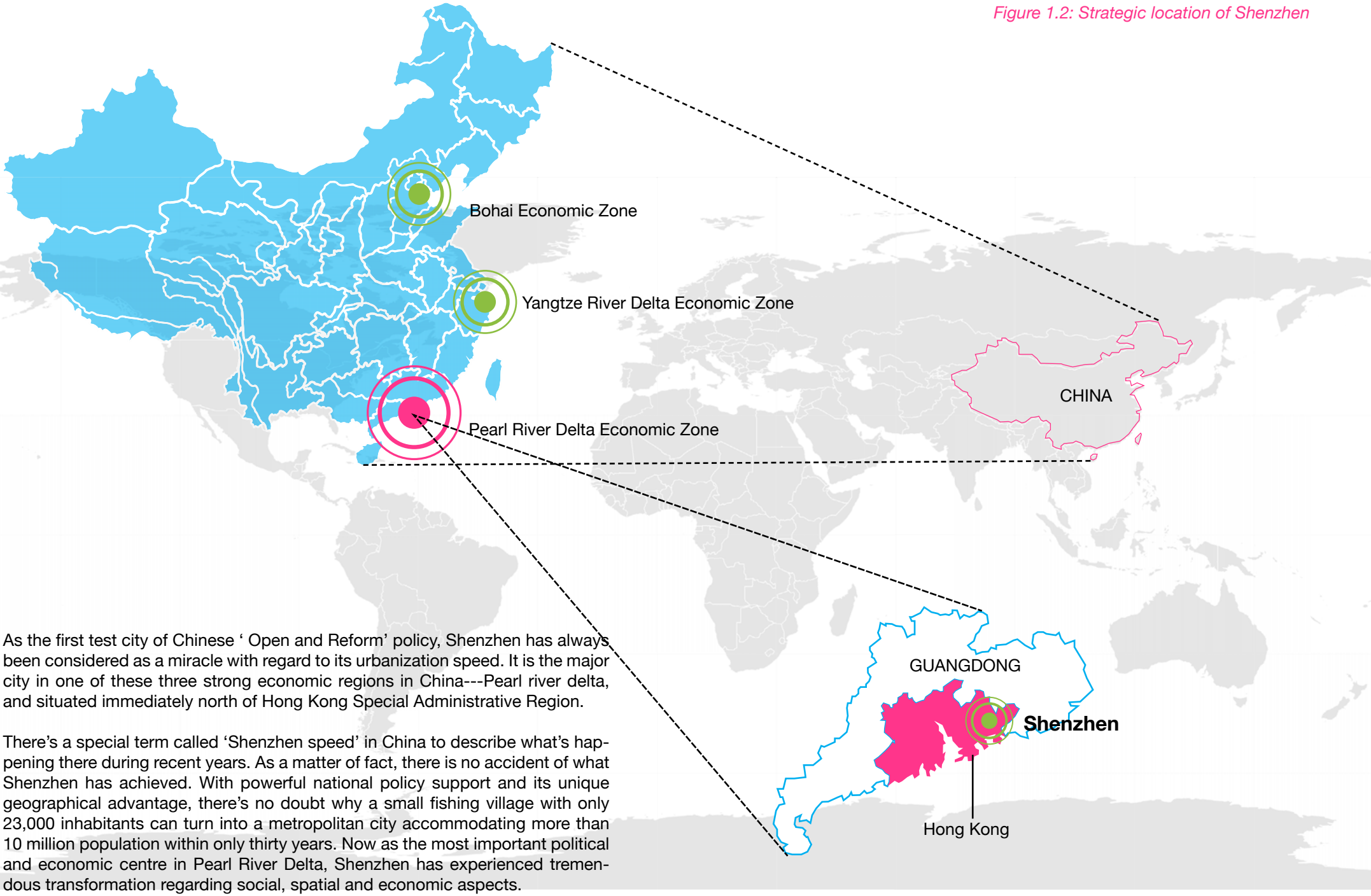
Figure 1.1: Photo of Shenzhen
source: http://www.meetingofstyles.com

1 Background & Motivation

This thesis is within the framework of SHENZHEN SCENARIOS---a research program organized by the INTI (International New Town Institute), which is dedicated to improving the urban and social quality of six exceptional New Towns in transition, within which, Shenzhen is the first study case.

Thus, the first part of this report will introduce several key aspects relating to Shenzhen's rapid urbanization---policy support, economic transform, socio-spatial development process and so on, major urban issues like urban villages, migrant workers, and also the focus of this project based on Shenzhen's background information and my own interest---socio-spatial segregation.

Figure 1.2: Strategic location of Shenzhen



As the first test city of Chinese ' Open and Reform' policy, Shenzhen has always been considered as a miracle with regard to its urbanization speed. It is the major city in one of these three strong economic regions in China---Pearl river delta, and situated immediately north of Hong Kong Special Administrative Region.

There's a special term called 'Shenzhen speed' in China to describe what's happening there during recent years. As a matter of fact, there is no accident of what Shenzhen has achieved. With powerful national policy support and its unique geographical advantage, there's no doubt why a small fishing village with only 23,000 inhabitants can turn into a metropolitan city accommodating more than 10 million population within only thirty years. Now as the most important political and economic centre in Pearl River Delta, Shenzhen has experienced tremendous transformation regarding social, spatial and economic aspects.

Figure 1.3: City image comparison

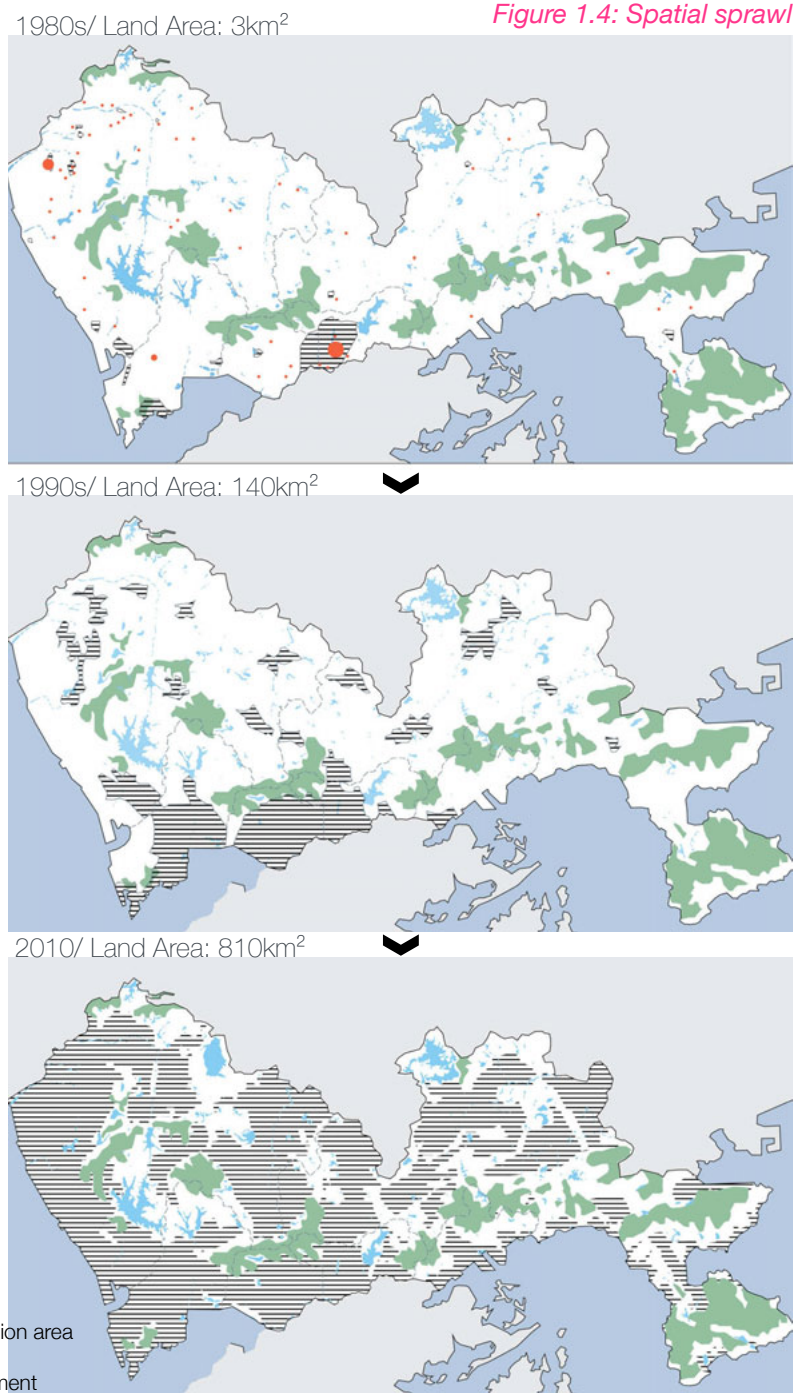
1980s

source: www.flickr.com

Now

source: www.businessinsider.com

Figure 1.4: Spatial sprawl



In 1980, Shenzhen became the first experimental city in socialist China to operate market economy. With the establishment of Special Economic Zone (SEZ), Shenzhen was able to manage its own economy to attract foreign capital, technology and skills in this specific area. Then the urban sprawl started to boom, which we can see from these maps (figure 1.4). Originally in 1970s, this small village was located near the Shenzhen-Hong Kong border, which now is the centre of Luohu district; in the first decade after the reform, the urban area had reached 140km²; until 2010, Shenzhen already occupies an area of 810 km²(Shenzhen statistical yearbook, 2012), taking over most available land within its municipal boundary.

The city boom can also be judged by its economic parameters: its GDP increased from RMB 200 million in 1978 to RMB 1150 billion in 2011 (Shenzhen statistical yearbook, 2012), which was companied by fundamental transformation of economic structure (figure 1.5). The economic growth has triggered a huge flow of migrant workers from other parts of China---from 0.31million in 1979 to more than 10 million population in 2011, within which non-registered population (migrants) composes almost 75% of total population in Shenzhen.

Figure 1.5 Composition of gross domestic product by three industries

Figure 1.6: Population growth

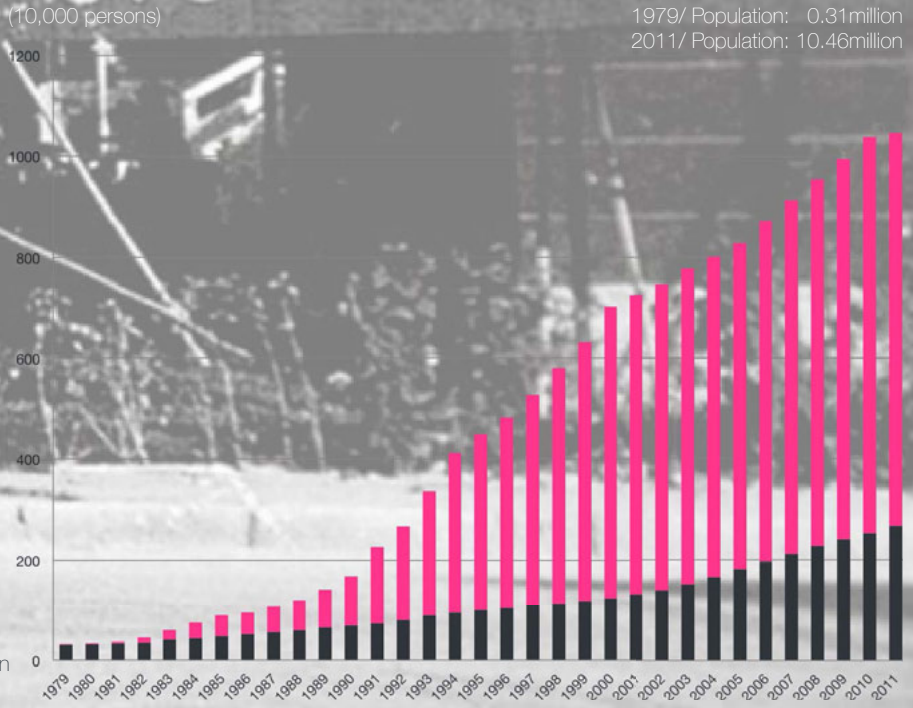
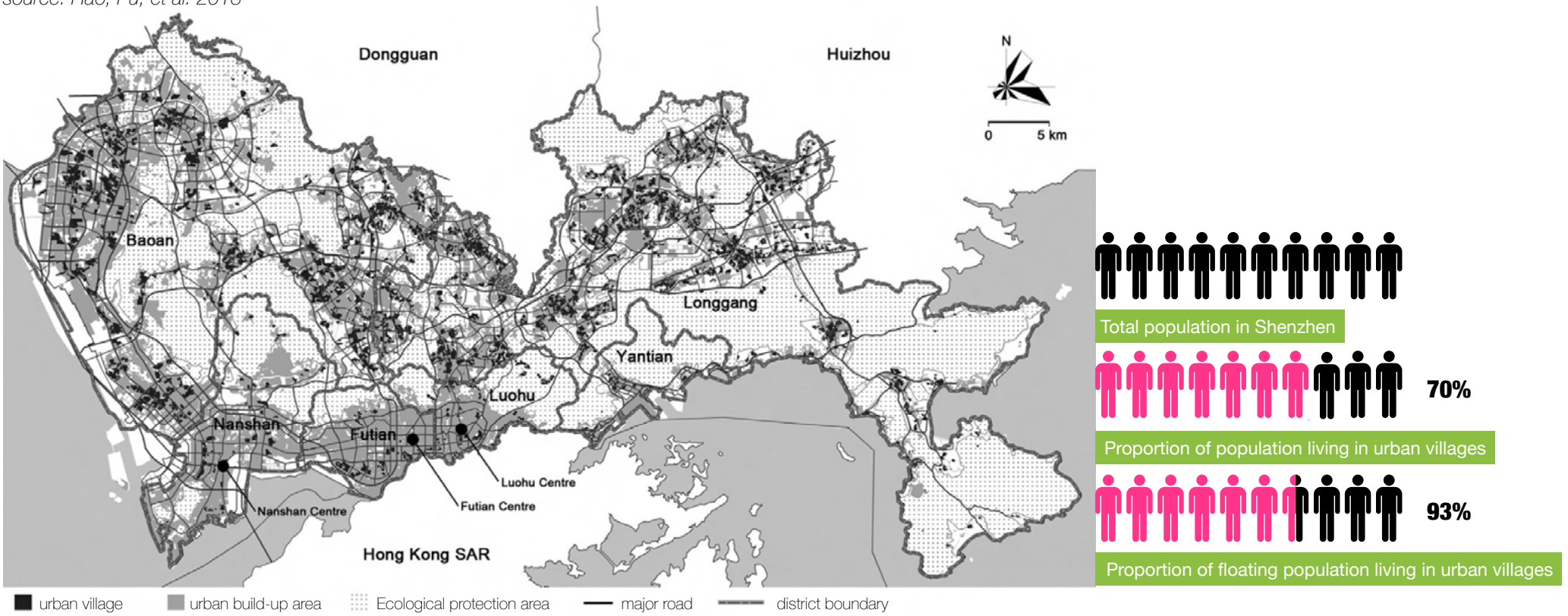


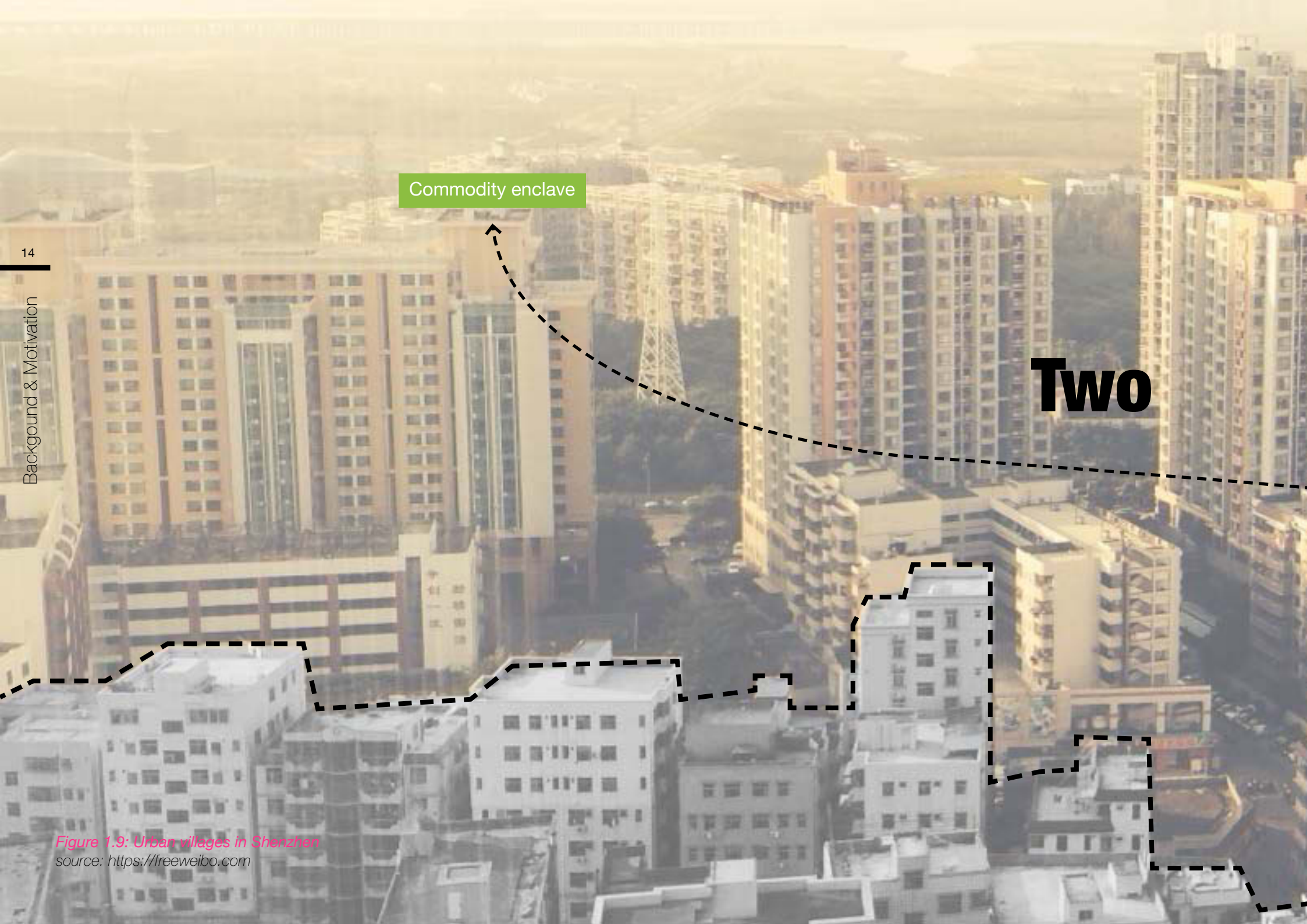
Figure 1.7: Migrant workers
source: http://dhnews.zjol.com.cn

Figure 1.8: Distinct urban fabric---urban villages
source: Hao, Pu, et al. 2013



The spatial development of Shenzhen occurred mainly by encroaching on pre-existing rural lands (Hao, Sliuzas, & Geertman, 2011). At that time, because of the revenue limitation, instead of occupying all the rural land, only the fields can be expropriated at a low price were transformed by the government for urban expansion and the village settlement for peasants was usually relocated nearby as residential quarters. This situation results in more and more 'urban villages' distributing all over the city area as 'islands'. These urban villages became a magnet for migrant workers due to its low rent and excellent location in response to the shortage of affordable housing in the city, but the environment in urban villages is often questionable and with limited public facilities. In the meantime, under the background of land reform and privatization, expensive commodity enclaves with high quality condition are growing in the city that mainly occupied by higher-class groups. The segregation between different social groups distributed in disparate spaces keeps getting worse as urban villages and degrading work-unit compounds are gradually gentrified to become high-end buildings, forcing low-class groups to move further from city centre.

Instead of making segregation problem worse and worse by increasing the gap between different social groups, my motivation of this project is about how can low-class group be considered in current development process to have space to live or live better, and what we can do as urban planners to facilitate and improve social and spatial equity and integration, by which alleviating negative effects caused by rapid urbanization and transformation.



Two

Figure 1.9: Urban villages in Shenzhen
source: https://freeweibo.com


worlds?
Urban village

Figure 2.1: Photo of old Hubei village, Shenzhen
source: http://blog.sina.com.cn

2 Problem Diagnosis

In the second part of this report, the focused problem will be gradually defined---through global scale analysis to problem area locating. This involves questions like what are drivers behind the issue---socio-spatial segregation, how can they lead to current situation, how this problem reflects on neighbourhood scale, and what's the possible way for urban planners to intervene.

What's more, there are lots of barriers and challenges to overcome in order to solve this problem. For example, current regeneration process and conflict between different stakeholders. These are also supposed to take into account in following interventions.

2.1 Socio-spatial segregation in Shenzhen

2.2 Define problem area

2.3 Socio-spatial trends

2.4 Problem statement

2.5 Relevance

2.6 Project Aims & Research Question

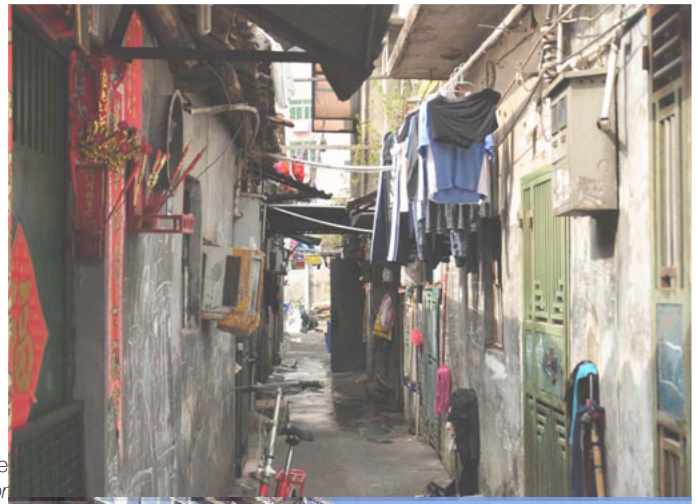
2.1 Socio-spatial segregation in Shenzhen

Not like the other big Chinese cities, Shenzhen didn't start its tremendous transformation until 1979. Before that, Shenzhen was a small and underdeveloped village. The period from 1949 to 1979 was an important period for socialist economy, during which large amount of work-unit compounds were built in most Chinese cities. The introduction of land reform was initiated in 1987, since when the real estate started to boom and brought a huge increase of commodity enclaves. Thus the construction time of work-unit compounds and commodity housing are supposed to be relatively separated in general Chinese context. But in the case of Shenzhen, the development during 1949 to 1979 was relatively slow. As its late urbanization and high speed of transformation, there's an overlapping construction time for these two types of housing, and work-unit compounds were built at a smaller scale with only residential function. The buffering time between different housing constructions thus is short, making the social and spatial disparities even obvious here.

Generally, there are two major drivers behind the issue of socio-spatial segregation----market force and institutional force (figure 2.3). The market force involves the effect of globalization and emergence of private sectors. These lead to a great need of both high-educated and high-skilled elites and also large amount of low-educated rural migrants from other parts of China. In addition to that, the Hukou (registered) system (institutional force) distinguishes welfare enjoyed by rural population and urban population, making social disparities even sever in Shenzhen. In terms of institutional force, economic reform plays a vital role in this mechanism. In earlier period of socialist economy, 'planned economy' was dominant when large amount of work-unit compounds were built. Later on, market economy was implemented first in Shenzhen. The reform of land and privatization of housing triggered the boom of commodity enclaves and rapid urban expansion, so the amount of urban villages keeps growing dramatically. The differentiation of multiple housing areas leads to spatial disparities in the city area with diffrent housing price. Finally, different social groups live in different housing areas depending on their economic position, formulating the problem of socio-spatial segregation.

As strong as these two drivers behind, to what extent we can do to intervene as urban planners? We can't change what's going on througn economic or institutional level, but at least we can try to diminish spatial disparities with not much influence on low-class groups---this will be my starting point of this project.

Figure 2.2: Three typical housing types

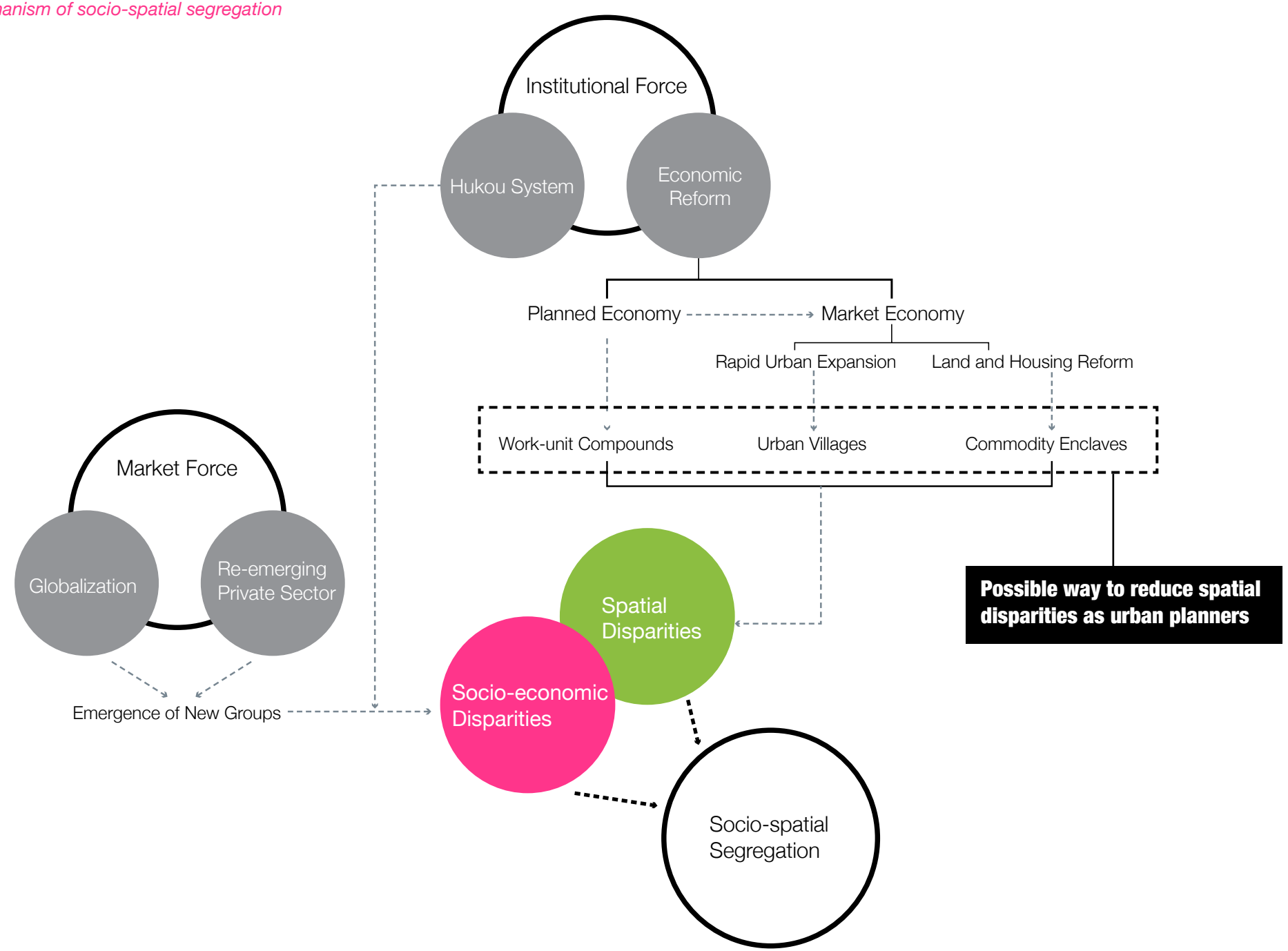


Urban village
source: photo by author

Work-unit compound
source: http://pic3.fangyou.com

Commodity enclave
source: http://pic16.nipic.com

Figure 2.3: Mechanism of socio-spatial segregation



In Shenzhen, the distribution of different housing types is closely related to its spatial development during different periods (figure 2.4). In 1980s, when Shenzhen just start its urbanization in planned economy period, work-unit compounds were mainly built in Luohu district and some in Sheko area; in 1990s, large amount of commodity enclaves started to boom after privatization of housing, mainly in districts of Futian, Nanshan etc. In the meantime, there's also small amount were built in old districts; until now, urbanized areas almost take over all available lands within city boundary along with many urban villages. This spatial distribution pattern of housing makes Luohu, the oldest district in Shenzhen, accommodating mixed housing types, an interest site for further investigation.

Based on what discussed above, there are basically three different living patterns existing in Shenzhen: urban villages, work-unit compounds and commodity enclaves. When these different patterns are marked in Luohu district (figure 2.5), we can see that the three housing types actually exist in almost every sub-district and neighbourhood, showing a homogeneous character at district scale.

Therefore, we take one neighbourhood---part of dongmen sub-district, as site area, which is located in the densest area in Luohu, as a detail explanation of 'social-spatial segregation' issue. This neighbourhood scale is chosen based on its size (10-minute walking distance), density (high concentration of people), large surrounding infrastructure (roads), and diversity of housing types (figure 2.6).

Figure 2.4: Housing distribution at Shenzhen scale

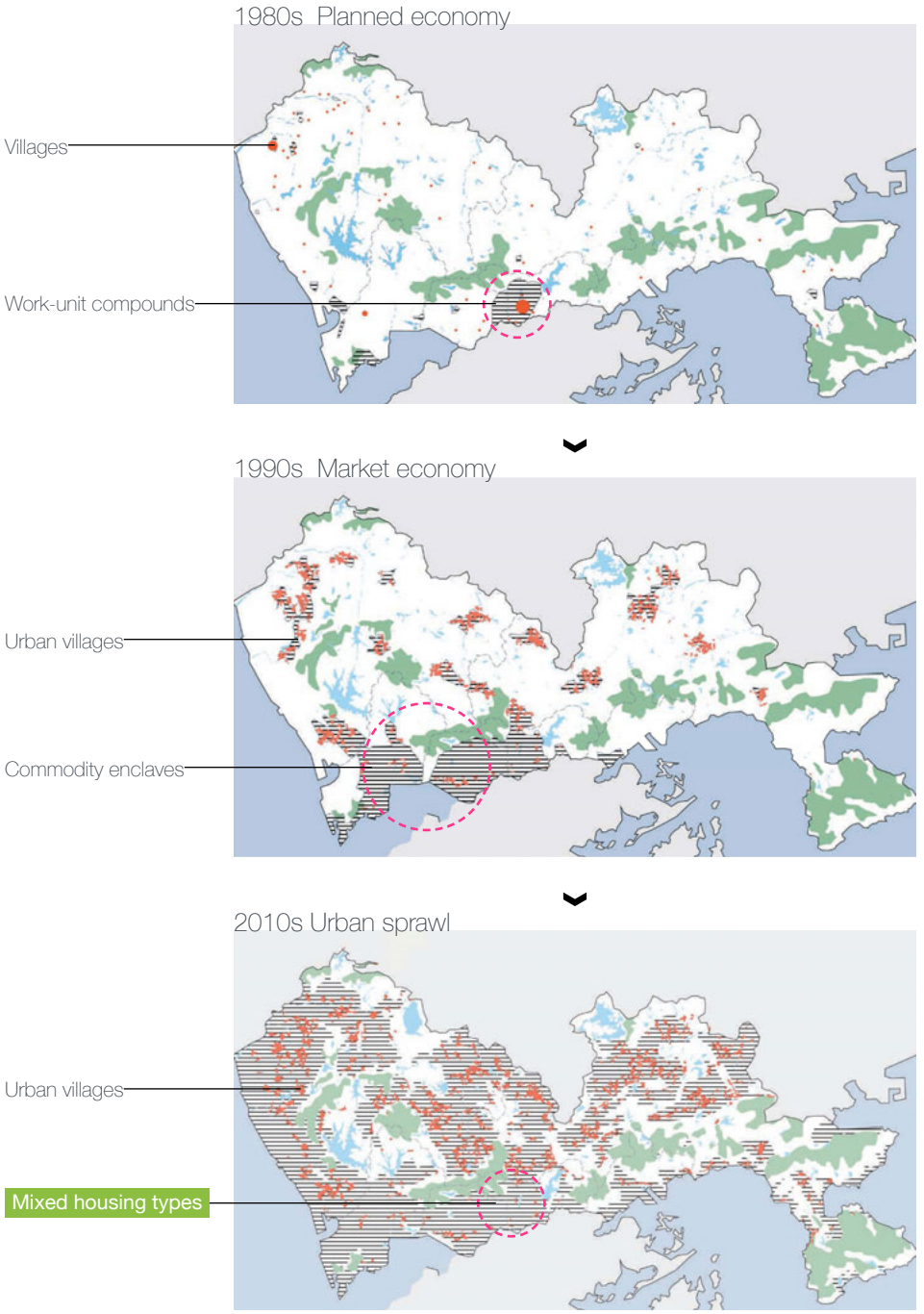
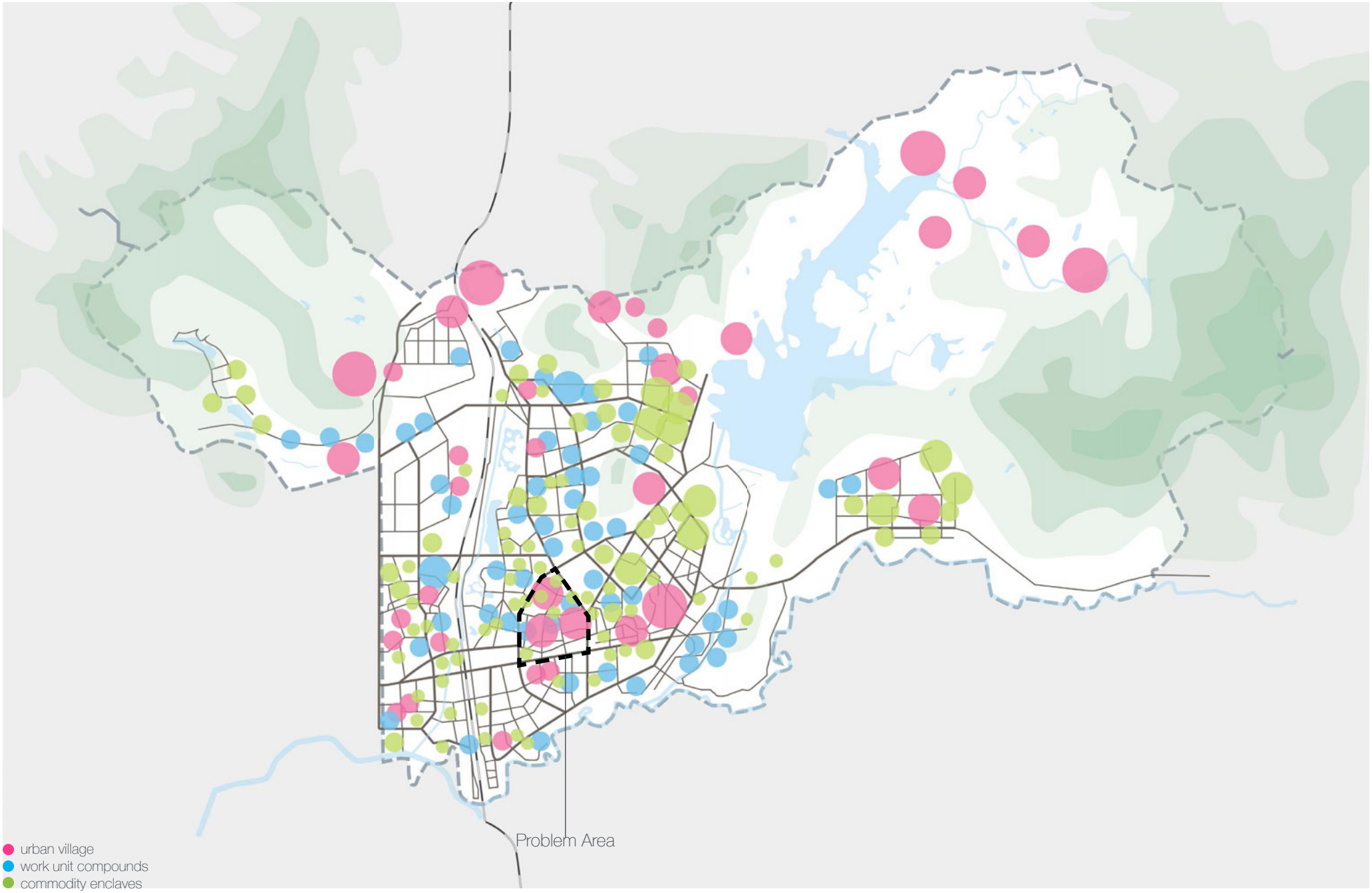


Figure 2.5: Housing distribution at district scale



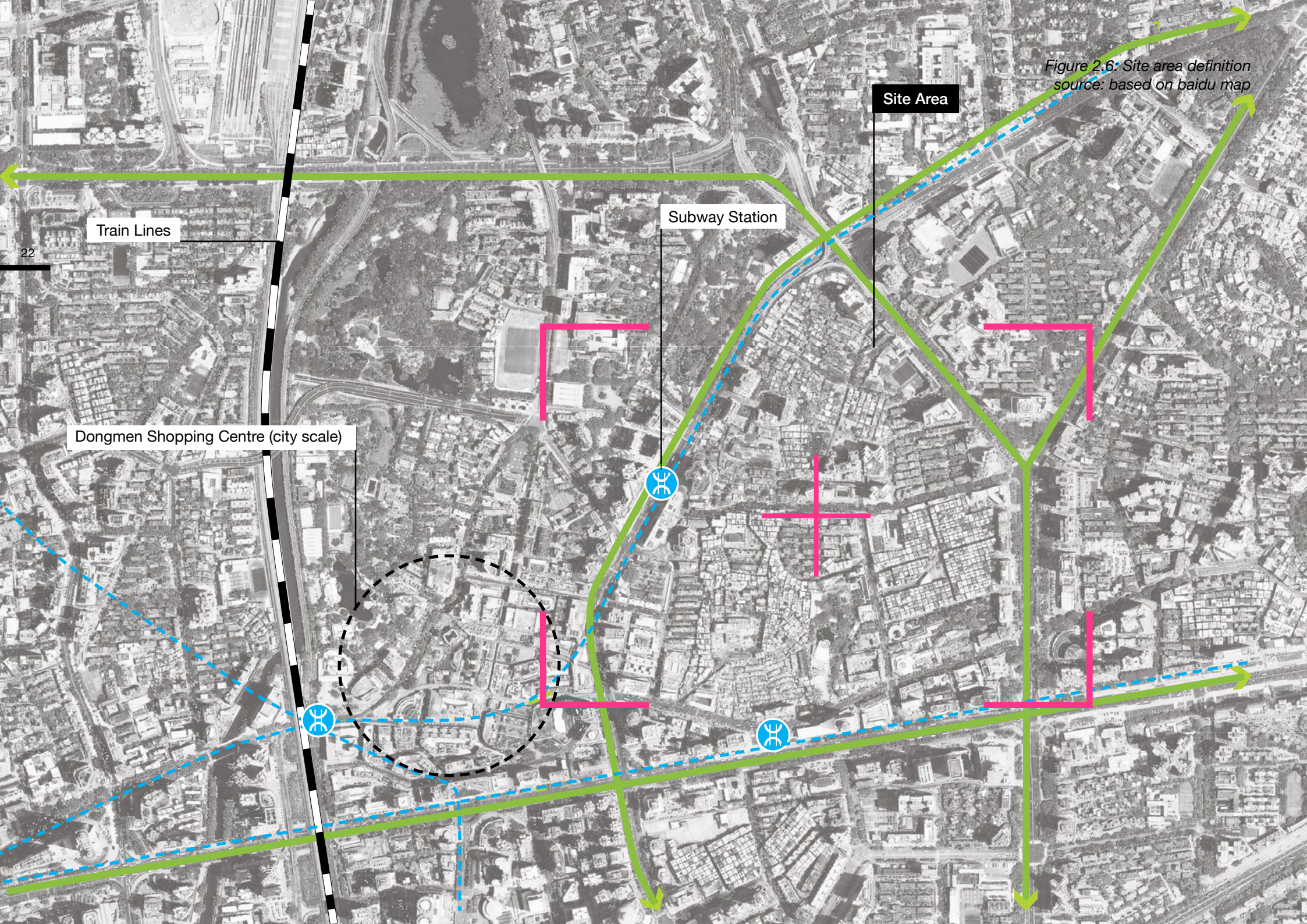
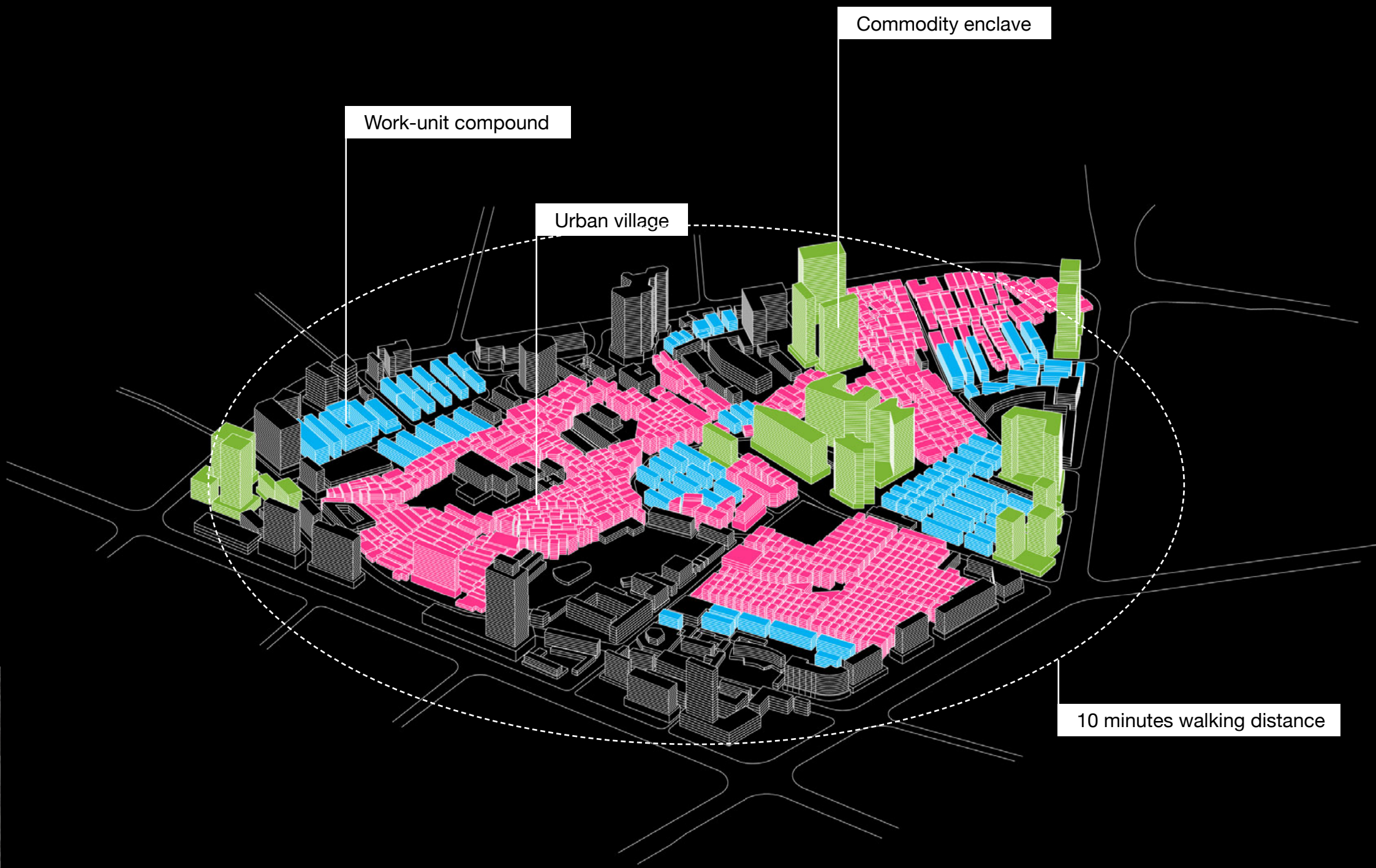


Figure 2.6: Site area definition
source: based on baidu map

Figure 2.7: Housing distribution at neighbourhood scale



2.2 Define problem area

This neighbourhood is very worthy of further investigation for its high mixedness (figure 2.7). The drivers explained earlier form the overall background of socio-spatial segregation at large scale, and at local scale, there are several factors further leading to current situation:

2.2.1 Power fragmentation

This neighbourhood is part of Dongmen sub-district, and there are four ‘Shequ’ (community) inside, which are Luoling, Hurong, Hubei and Chengdong.

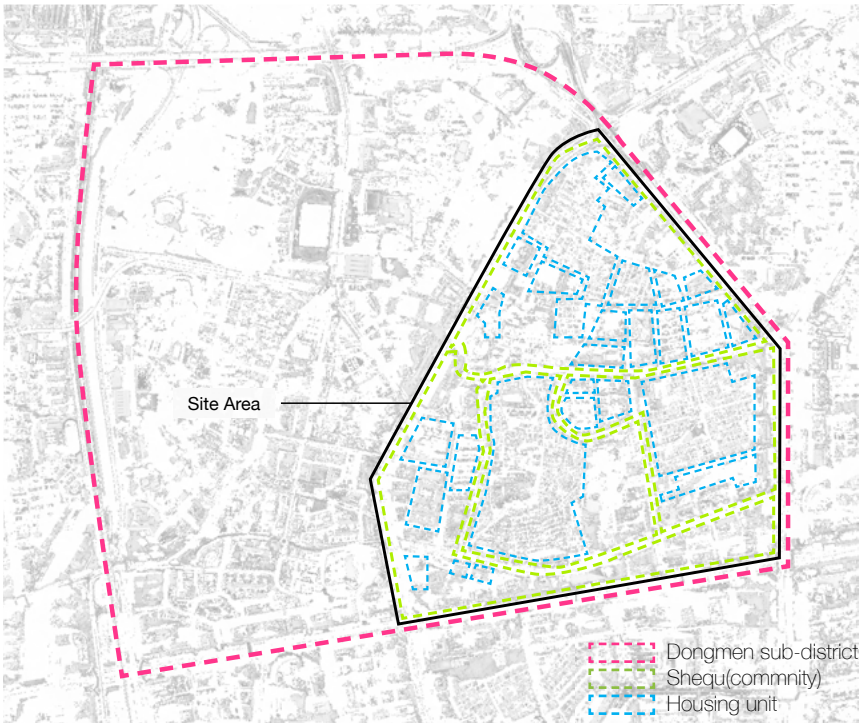
In addition to that, each housing unit such as one urban village, one work-unit compound or one commodity enclave has its own governance system to operate. The land of urban villages are usually collective-owned by Joint stock companies composed by villagers, and every villager is distributed with a piece of land, which usually they can use for 70 years. As there are no ‘planning standards’ when urban villages were built, so the public facilities are usually limited and hard to implement later because of the restriction of physical environment; some Joint stock companies offer basic public services like cleaning, or hire extra property management companies to do the job, but usually leads to low-level maintenance of public space due to the lack of regulations.

Work-unit compounds were managed and maintained by the specific work-units in early period, but after land reform and housing privatization, most of them are lack of management or suffer from low-quality of maintenance by property management companies; some of them have grassroots organisations---property-owner committee, who can decide which property management company to choose, but because of limited affordability, they can only afford limited service.

Commodity enclaves usually have their own private property manage companies to offer public services such as security guards, recreation facility and greenery. Because property owners here usually have higher-income, the quality of public space is much better than other housing areas.

Thus, the complex governance and multiple stakeholders involved actually differentiate the service and quality of public space between different housing areas.

Figure 2.8: Power distribution



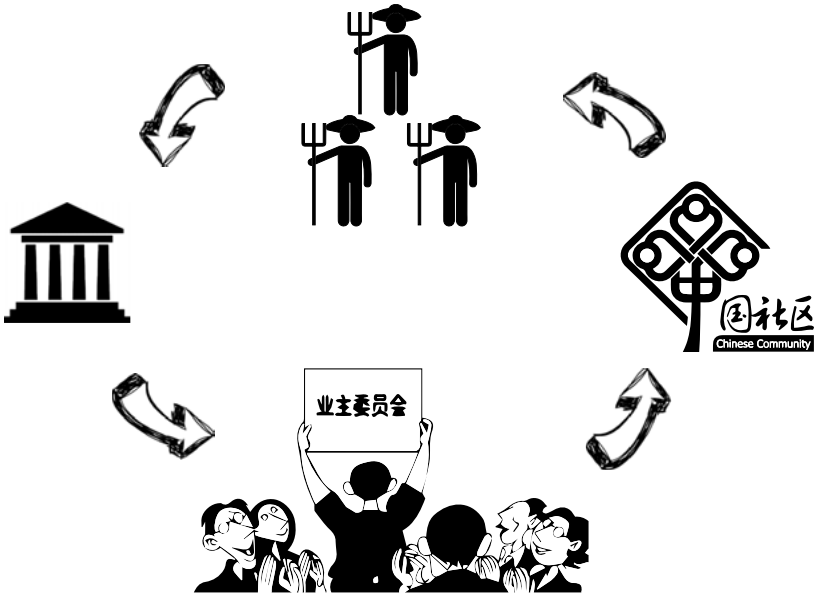
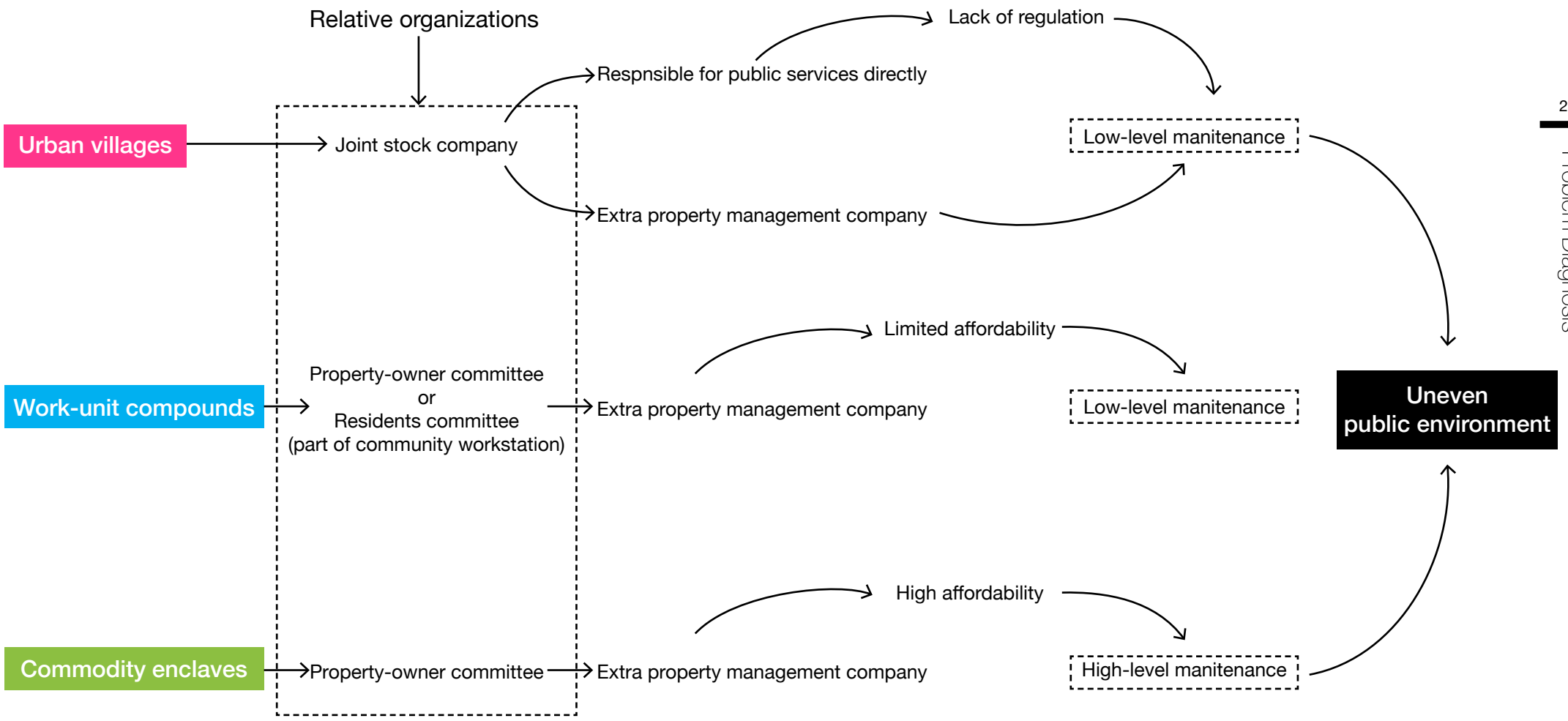


Figure 2.9: How power fragmentation leads to unequal public environment



2.2.2 Dual city character

'Dual city' is used as a description of the increasing polarization of society between rich and poor, haves and have nots (Marcuse, P., 1989). Based on the site investigation and online data, this neighbourhood shares some relevant characters of 'dual city' according to rental prices among these three types of housing (figure 2.10).

In urban villages, the average price for a single room per month is no more than 1000CNY, especially in old village, the price is only around 400~500 CNY; in work-unit compounds, the price is around 1000~1500CNY, the small difference is based on current living condition; in commodity enclaves, this price is about 2000CNY, in some cases more than 2500CNY.

This disparity of price leads to the distribution of different social groups living in different housing areas according to their economic position. Those with higher income can choose wherever they want (usually commodity enclaves with higher quality), and those low-paid workers who can't afford better housing, have no choice but live in those urban villages and degrading work-unit compounds.

Figure 2.10: Rent difference

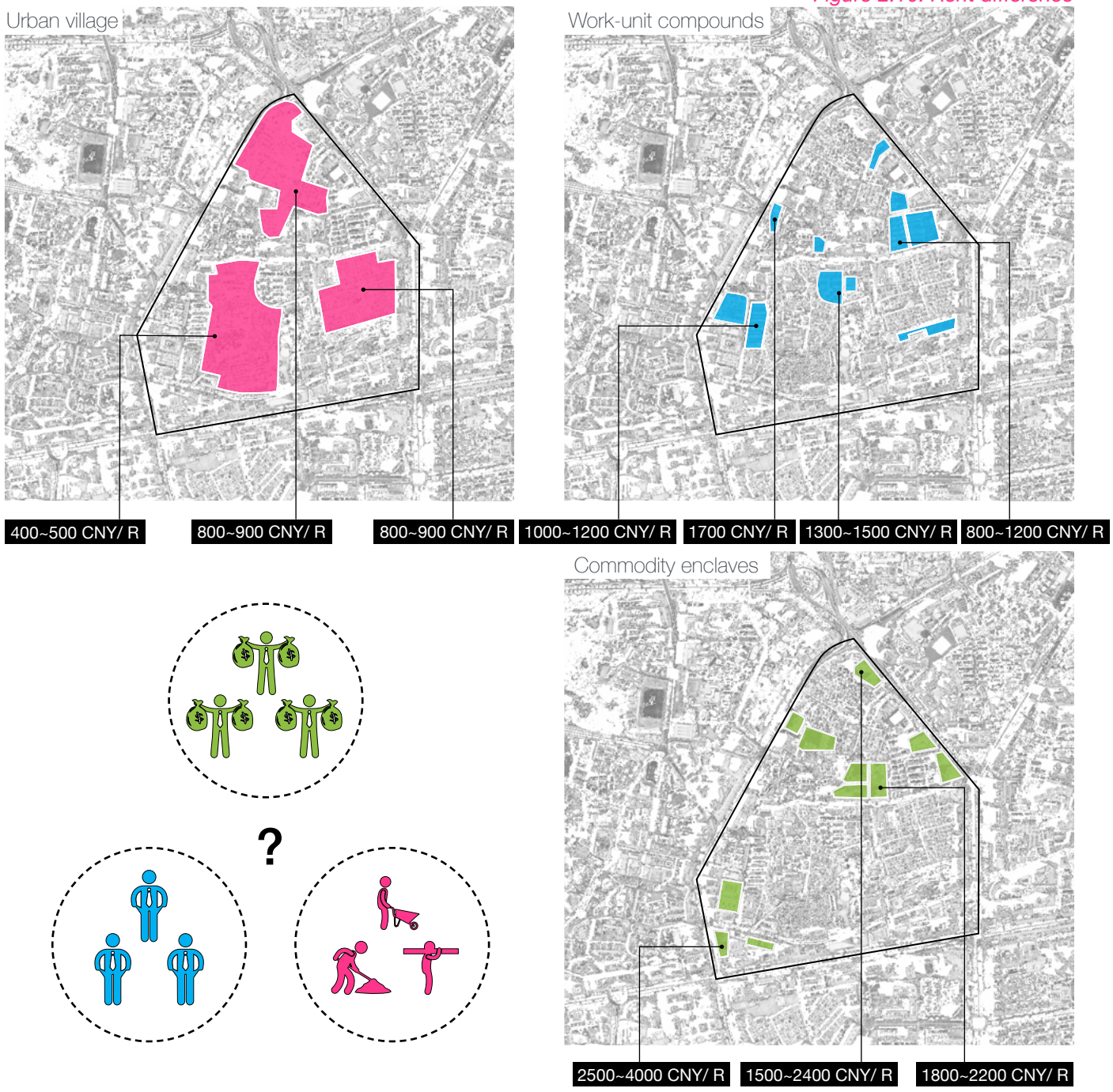
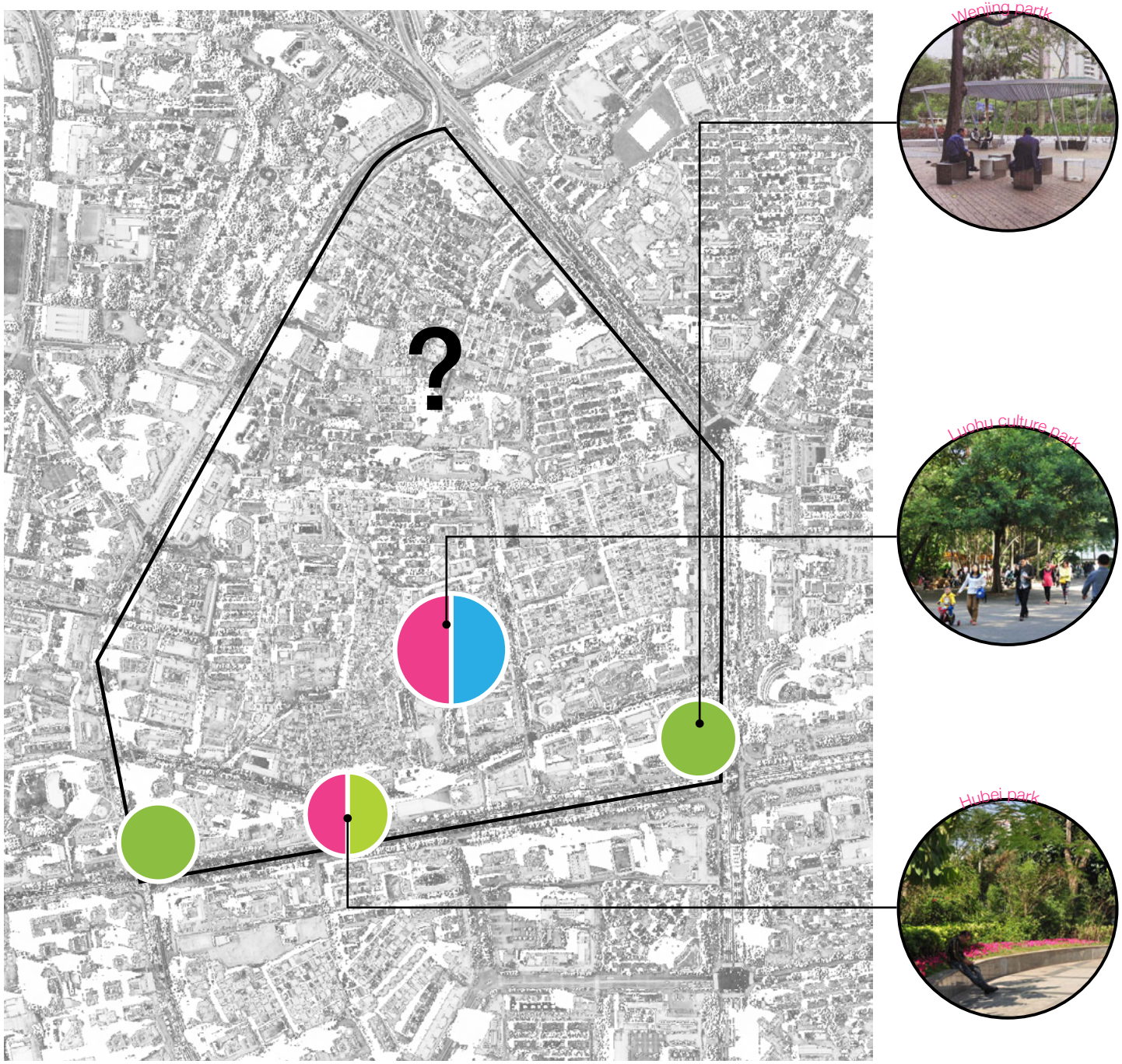


Figure 2.11: Lack of social space



What's more, there are limited public space for social contacts. What's marked on the map (figure 2.11) are current social space (adequate for interaction)---only one big park and three small street green spaces, which are segregated by a big infrastructure. These spaces are only used by certain groups (according to accessibility and site investigation). Thus, lack of social space further limits the opportunities for interaction between different social groups.

2.2.3 Physical boundary

There is another distinct phenomenon existing in this neighbourhood---physical boundary.

The physical boundary can be walls, fences and security guards restricting people from other areas to go inside. This usually happens in commodity enclaves and some work-unit compounds (figure 2.12). These walls have no extra function but segregating space, making residents feel safe from outside as 'islands'. Those 'islands' use walls to define their territory, so they have half-public space inside to facilitate their public activities with similar social group.

The quality distinction of different housing types can also be physical boundary. When walking through in between a fabulous commodity enclave and a dark and crowded urban village, there would be an invisible border that distinguishing different housing areas (figure 2.13), and restrict the use of a different type.

Another physical boundary is wide infrastructure. In this neighbourhood, one big road with four car lanes forms a barrier between different housing areas and restrict the accessibility to social spaces. It's not easy to cross the road with busy traffic and parking (figure 2.14).

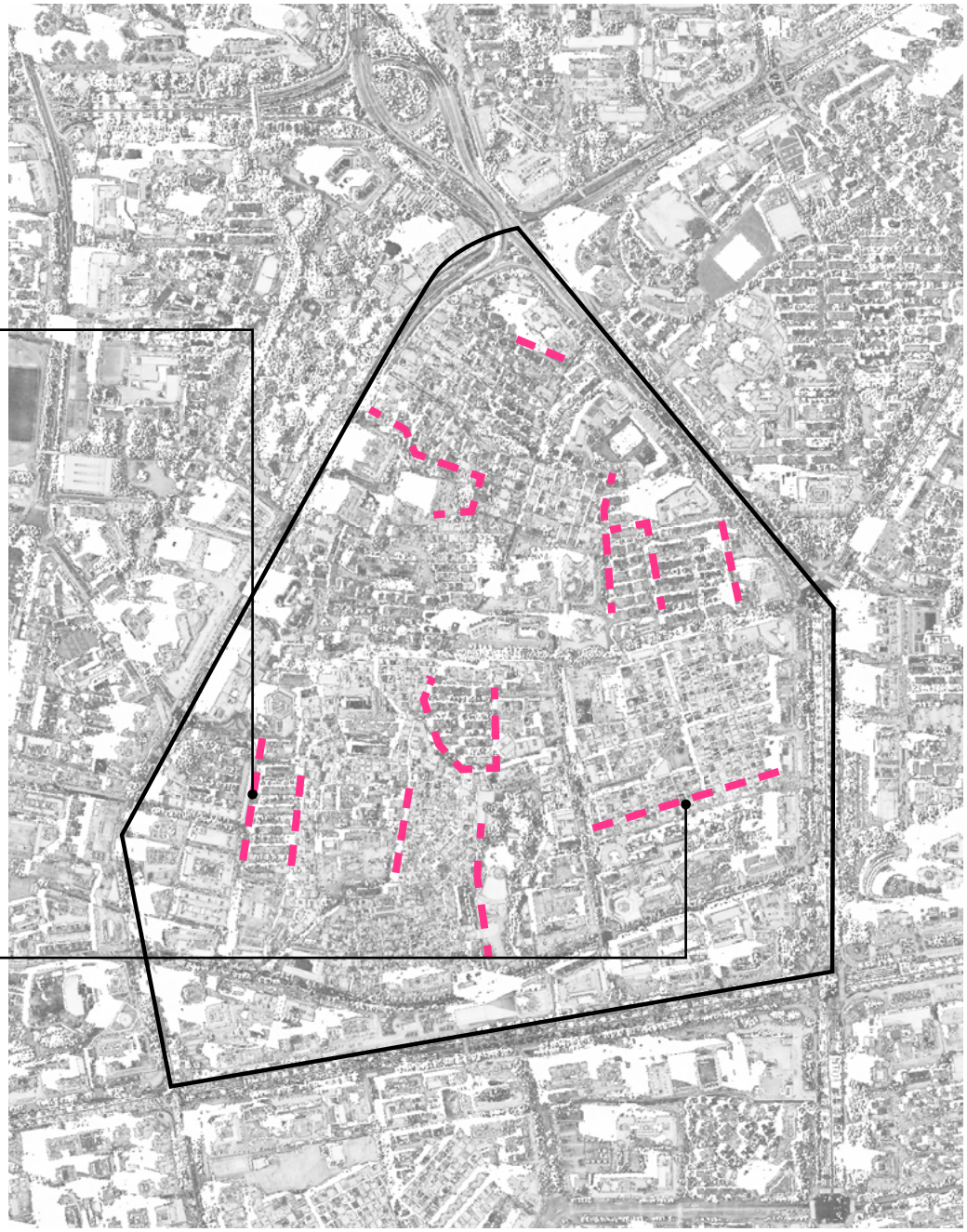


Figure 2.12: Walls and fences

Figure 2.13: Distinct spatial quality

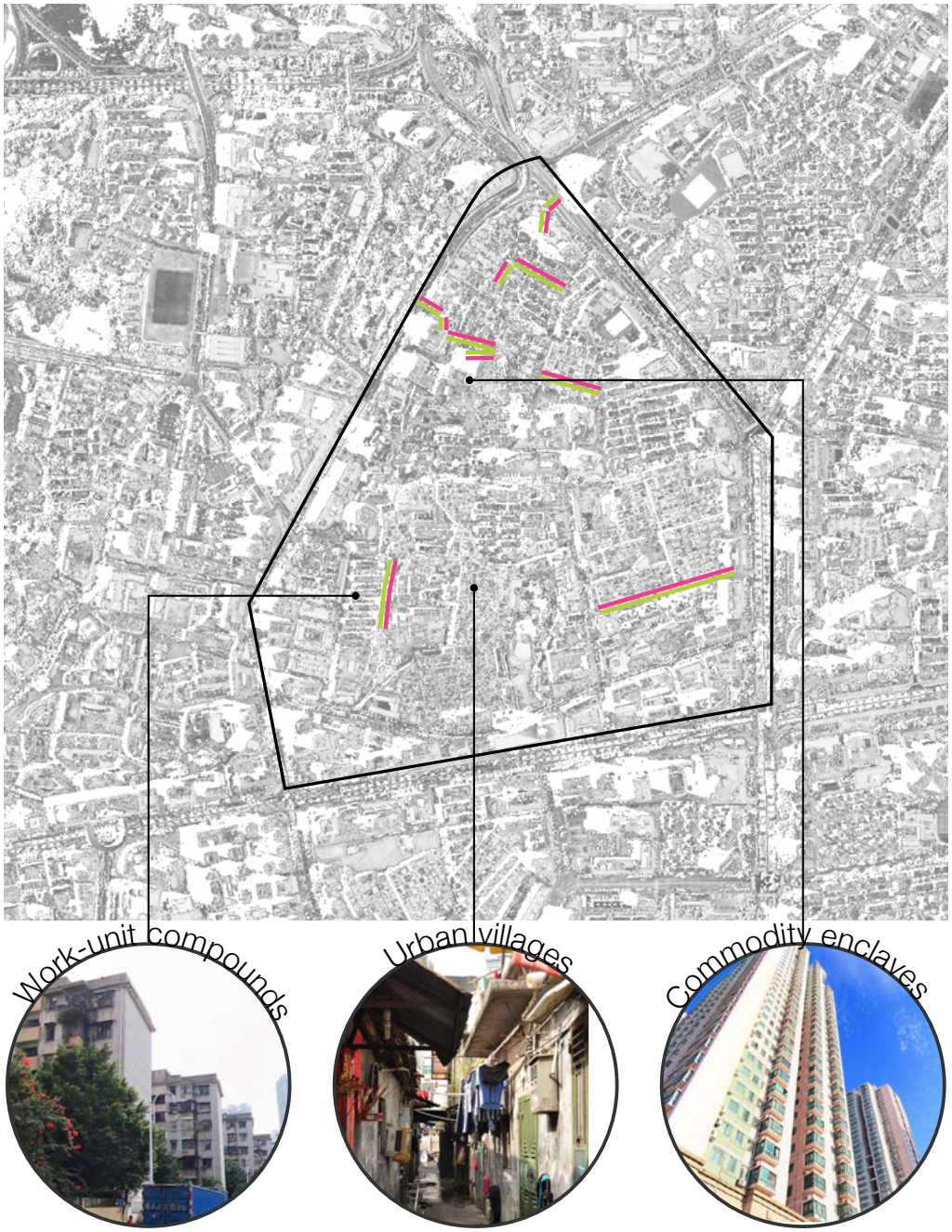


Figure 2.14: Big infrastructure

2.2.4 Separated life circles

Separated life circle means the different forms of daily supplies. From the land use and program maps (figure 2.15, figure 2.16), we can see that inside urban villages, there are always informal markets providing low-end products for residents They are temporally set up along main pedestrian routes, companied by poor spatial quality. While most normal commercials like restaurants, supermarkets and recreations are located on main and secondary streets. Thus, these different kinds of commercials serving different social groups further diminish the chance for interaction.

In site area, separated life circle can also be seen as the discontinuity of transport network and trading resource. Inside urban villages, roads usually are 1~2 meters wide, or less than 1 meter in some cases. Which means they can only be accessed by pedestrians, other transportation modes like cars are not available. Also there's no buffering space between private and public in urban villages, so one can find lots of private activities happening on street, maybe someone washing and others selling home-made food next to each other.

Figure 2.15: Low-end informal market

Figure 2.16: Mid to high-end commercials

Figure 2.17: Network accessibility

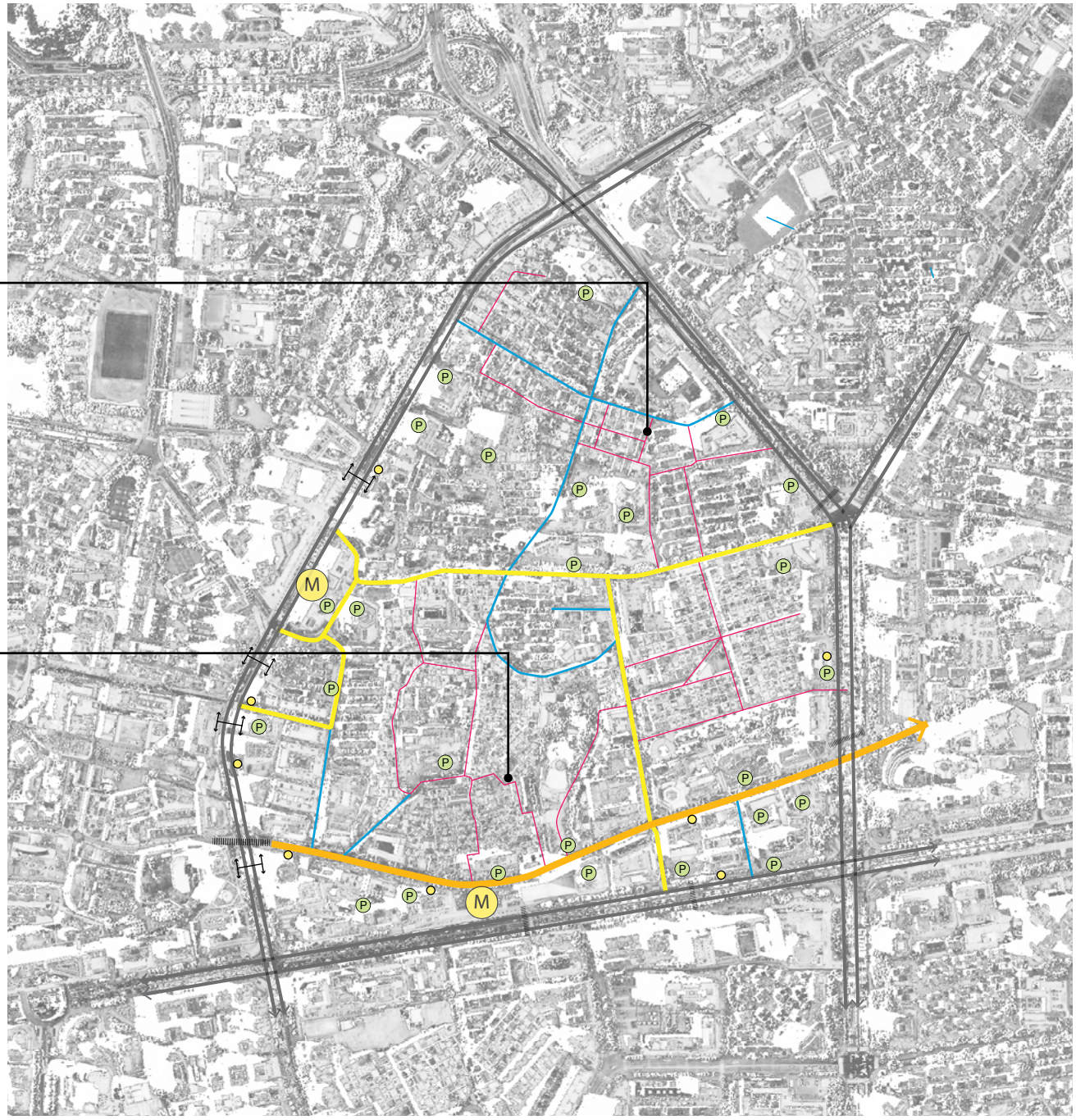
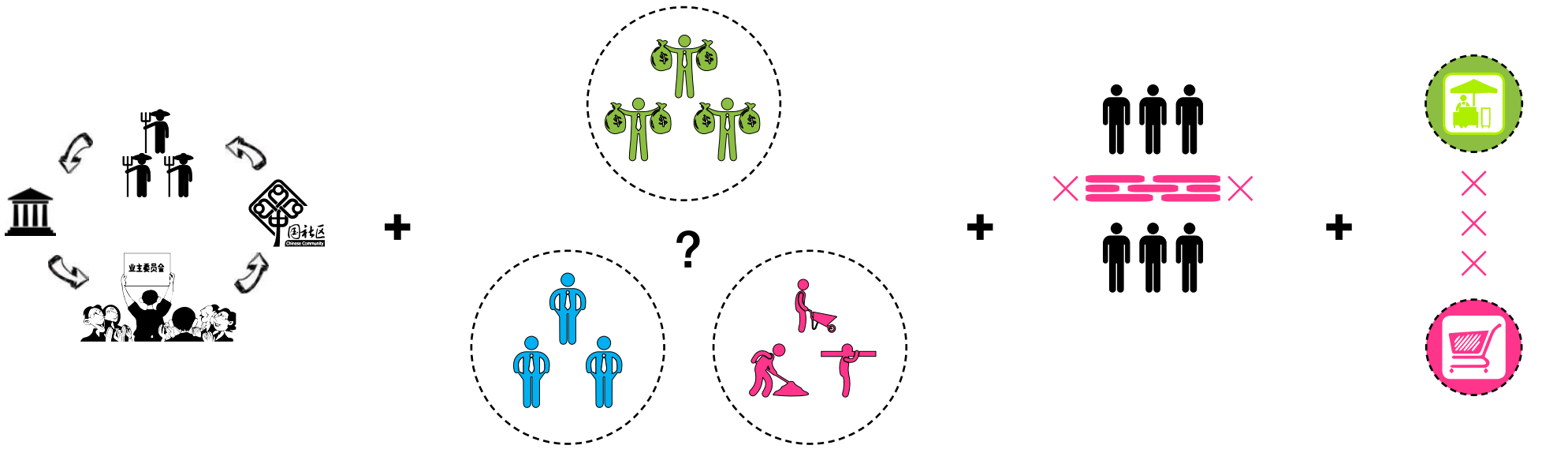


Figure 2.18: Four factors resulting in socio-spatial segregation



To sum up, there are four different factors defined as barriers resulting in socio-spatial segregation---power fragmentation, dual city character, physical boundary and separated life circles.

These barriers are not independent to each other, but interrelated to some extent. But in this project, these factors are being investigated and explained separately for better understanding. Further, these factors will be the basis for strategy and intervention.

2.3 Socio-spatial trends

Apart from these factors described above, the trends under current regeneration model also contribute to socio-spatial segregation in Shenzhen. Then it's also important to understand what's the future would be in this neighbourhood. There are three typical housing types in site area as we discribed---urban villages, work-unit compounds and commodity enclaves. Each housing type accommodate particular social group. Generally, urban villages and work-unit compounds are the focus of urban regeneration process due to the degrading environment. So government wants to improve the quality and also the land value, while developers want to invest by construct high-end buildings. As a result of that, these spaces are always transformed to high-end buildings such as commodity enclaves or big shopping malls, which only accommodate or offer services for up-class groups (figure 2.19).

During this process, common stakeholders like local government who provide certain permits and guidelines, developers who invest and property owners who transfer their ownership, can all get certain profit from it. While those low-income tenants who actually live here, can get nothing but give up their living space. Always, they have to search for another urban village or degrading work-unit compounds nearby. Eventually, these 'affordable housing' will disappear according to current transformation model, so where can these people go and live (figure 2.20)?

Figure 2.19: Socio-spatial trends

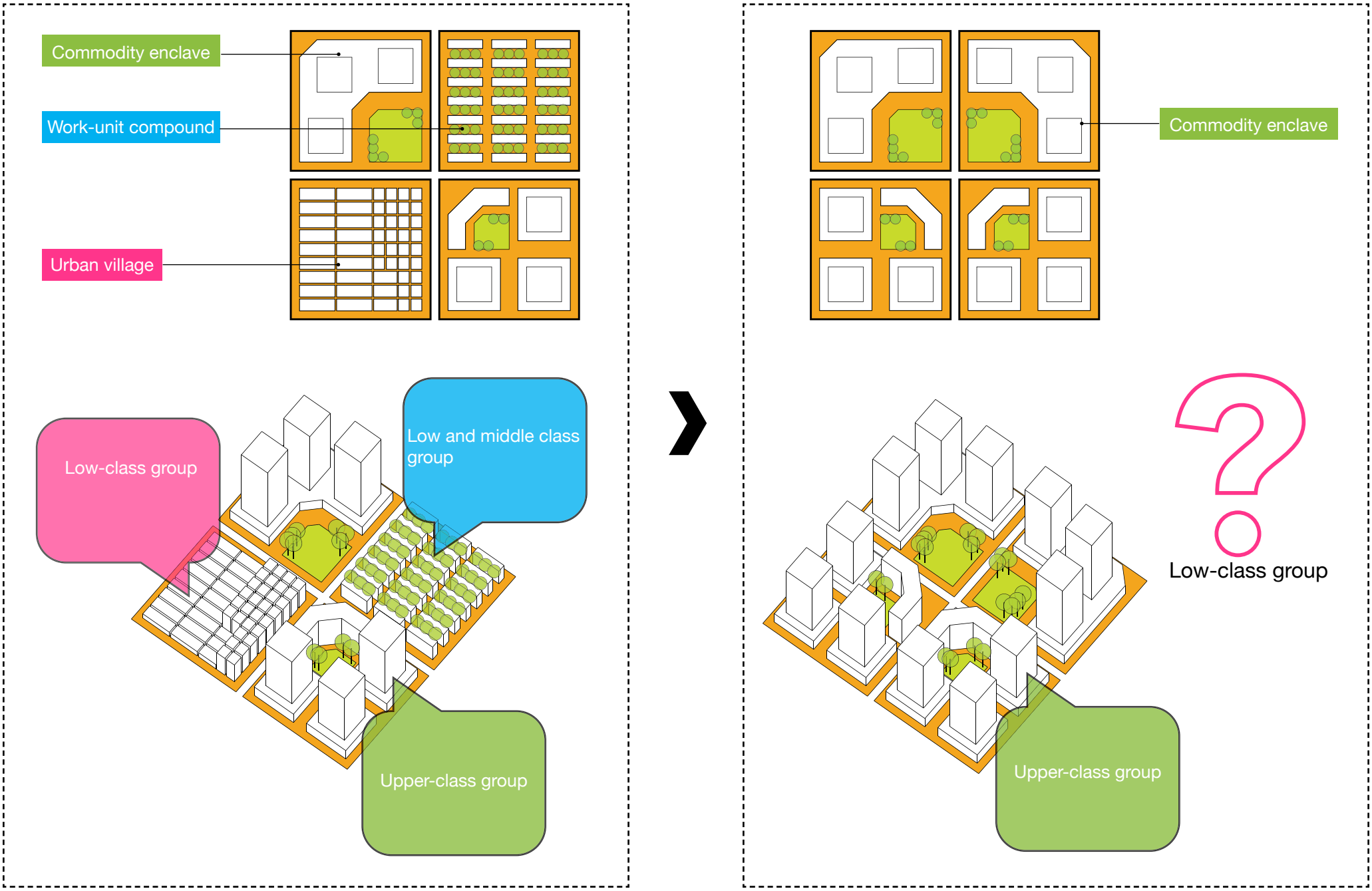
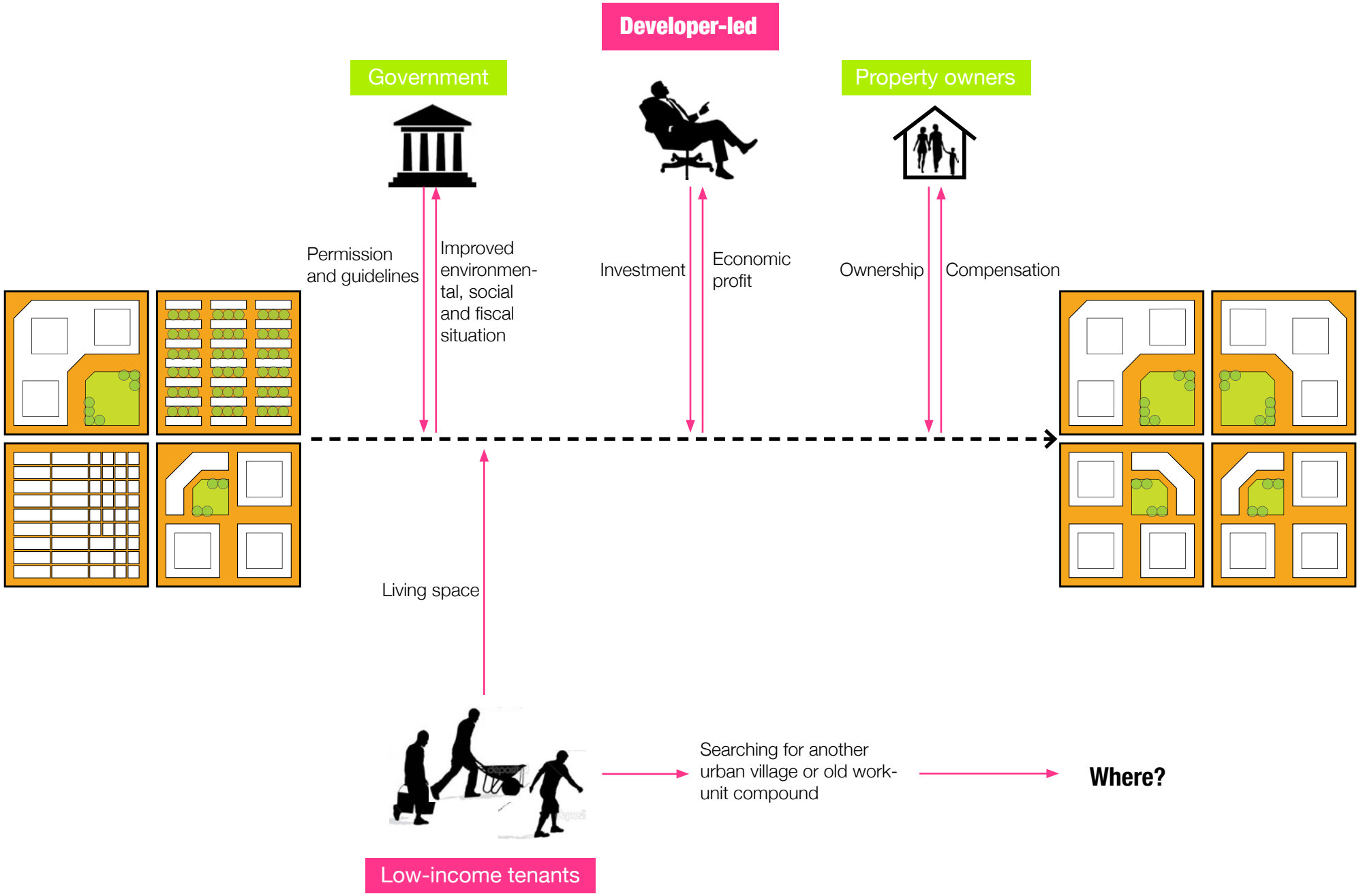


Figure 2.20: Interest of different stakeholders during regeneration process



2.4 Problem statement

Based on what's discussed above, the problem in this project can be defined as following:

Under the background of rapid and enormous urbanization and transformation in Shenzhen, socio-spatial segregation starts to emerge due to the **increasing social and spatial disparities**. Low-income migrants live in urban villages and degrading work-unit compounds without adequate public facilities, while high-income groups concentrate in commodity enclaves with gardens and private clubs, which cannot be accessed by outsiders. The **lack of interaction** among different social groups can be seen as a result of multiple barriers---power fragmentation, dual city character, physical boundary and separated life circles. The growing social and spatial inequity may limit one's access to information and resources, cause increasing discrimination of under class groups, and eventually incomplete participation in society (Musterd, 2005). In order to improve the poor urban environment, these areas are becoming the focus of urban regeneration area for government. But the current regeneration process results in similar high-end building plots, which are **no longer affordable** for low-income groups. They have to move further from the city centre searching for other cheap places to live, making the segregation issue even severer.

2.5 Relevance

2.5.1 Academic relevance

The study of urban segregation is almost a century old. The origin of research into urban segregation lies on the social inequity in urban society. Urban segregation is a concept used to indicate the separation between different social groups in an urban environment (Feitosa et al., 2007). When it reflects on spatial perspective, it results unequal distribution of population groups across space (Madrazo and Van Kempen, 2012). Other similar terms such as 'polarized cities', 'dual cities' (Mollenkopf and Castells, 1991; Marcuse, 1989; Marcuse, 2000), 'fragmented cities', 'partitioned cities' (Marcuse and Van Kempen, 2000, 2002), are all intended to describe the segregated phenomenon in cities.

Within the context of China, there's also a substantial body of research on social-spatial inequality and differentiation in cities (e.g. Gu and Shen, 2003; Li and Wu, 2006; Hao, Sliuzas, & Geertman, 2011). Most of them are concentrating on city scale; this project will focus on neighbourhood scale and try to ease this problem from a spatial perspective by formulating a system of design principles. This will contribute to the body of segregation research by offering more options to current regeneration process.

2.5.2 Social relevance

The social consequence of urban segregation relates to lots of negative effects caused by it. People living in different parts of a city often get unequal access to basic public services (Feitosa et al., 2007), which means living in certain spaces often suffer from poor quality of infrastructure, housing, public space and higher exposure to violence etc. (Bolt et al. 2009). Furthermore, the segregation may limit one's access to information, resources and opportunities to contact with other groups, then leads to intense prejudice and discrimination and incomplete participation in society, such as labour market participation and others like education, politics and culture (Musterd, 2005). In the case of Shenzhen, migrant workers who live in urban villages and degrading work-unit compounds are always neglected during the process of urban regeneration. Because they just simply rent the cheap housing without any right and ownership, and profit-oriented development don't have to consider the needs from them. They usually intend to build high-end buildings towards up-class groups, which will certainly leads to a more homogeneous space only for them. In this project, the challenge is to fulfil the needs of environment upgrading and facilitate interaction between different social groups based on current social structure at the same time.

2.6 Project Aims & Research Question

2.6.1 Project aim

According to the problem of socio-spatial segregation described above, the main aim of this project thus is to **maintain** the current **social structure, facilitate interaction** between different social groups and **balance the interests** of all stakeholders through neighbourhood **public space** reconfiguration.

2.6.2 Research question

Thus the main research question is:

What is public space reconfiguration method for a socio-spatial segregated neighbourhood, in order to make it attractive for residents of all classes?

In order to address this, several sub-questions need to be answered first:

1.What's the definition and drivers of socio-spatial segregation in global and local context?

2. What's the historical development of neighbourhoods in China and how socio-spatial bonding evolves?

3. What spatial principles are suitable to stimulate neighbourhood integration and how can they be implemented based on current context?

3 Methodology & Phasing

Figure 3.1: Methodology

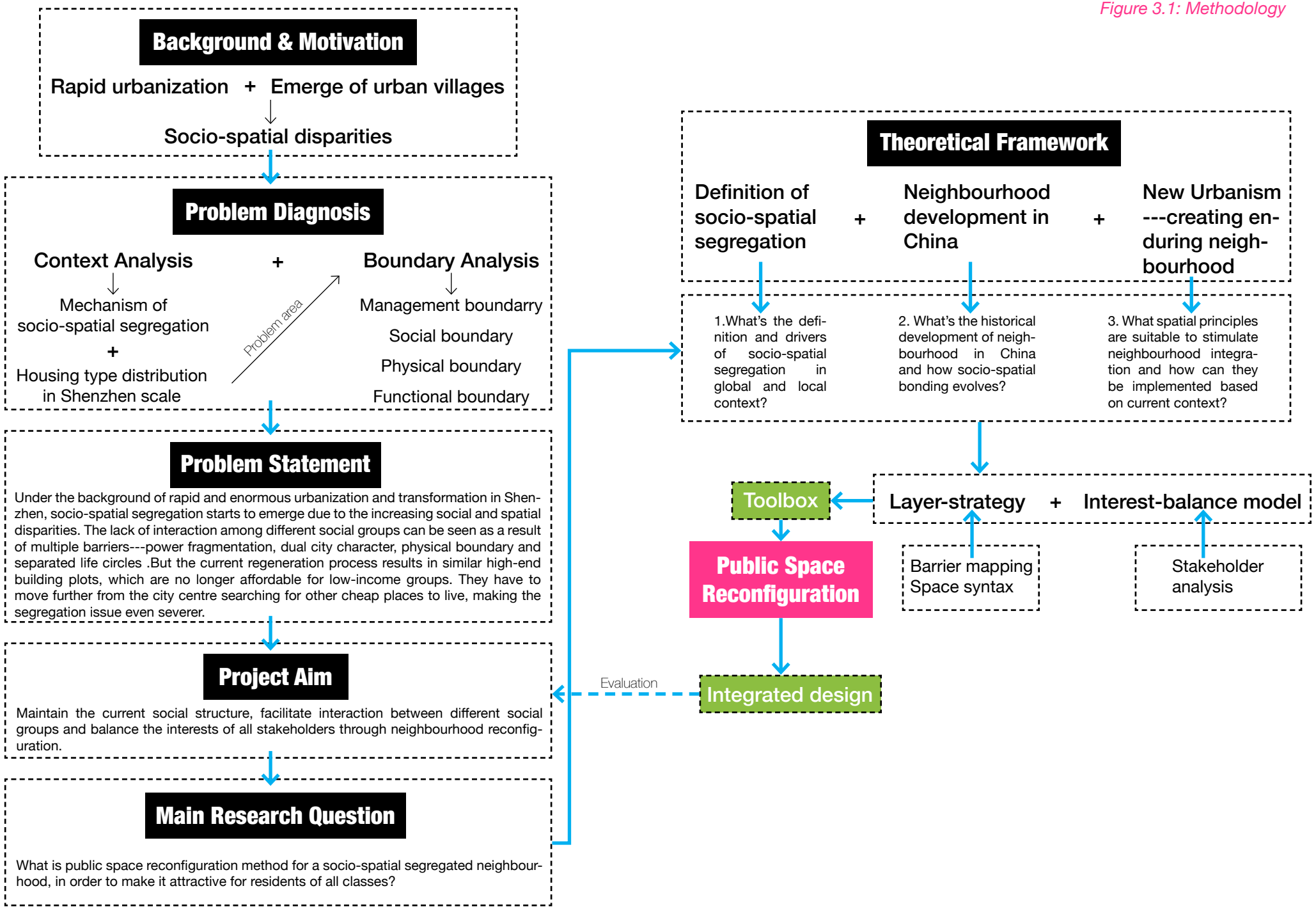


Figure 3.2: Phasing

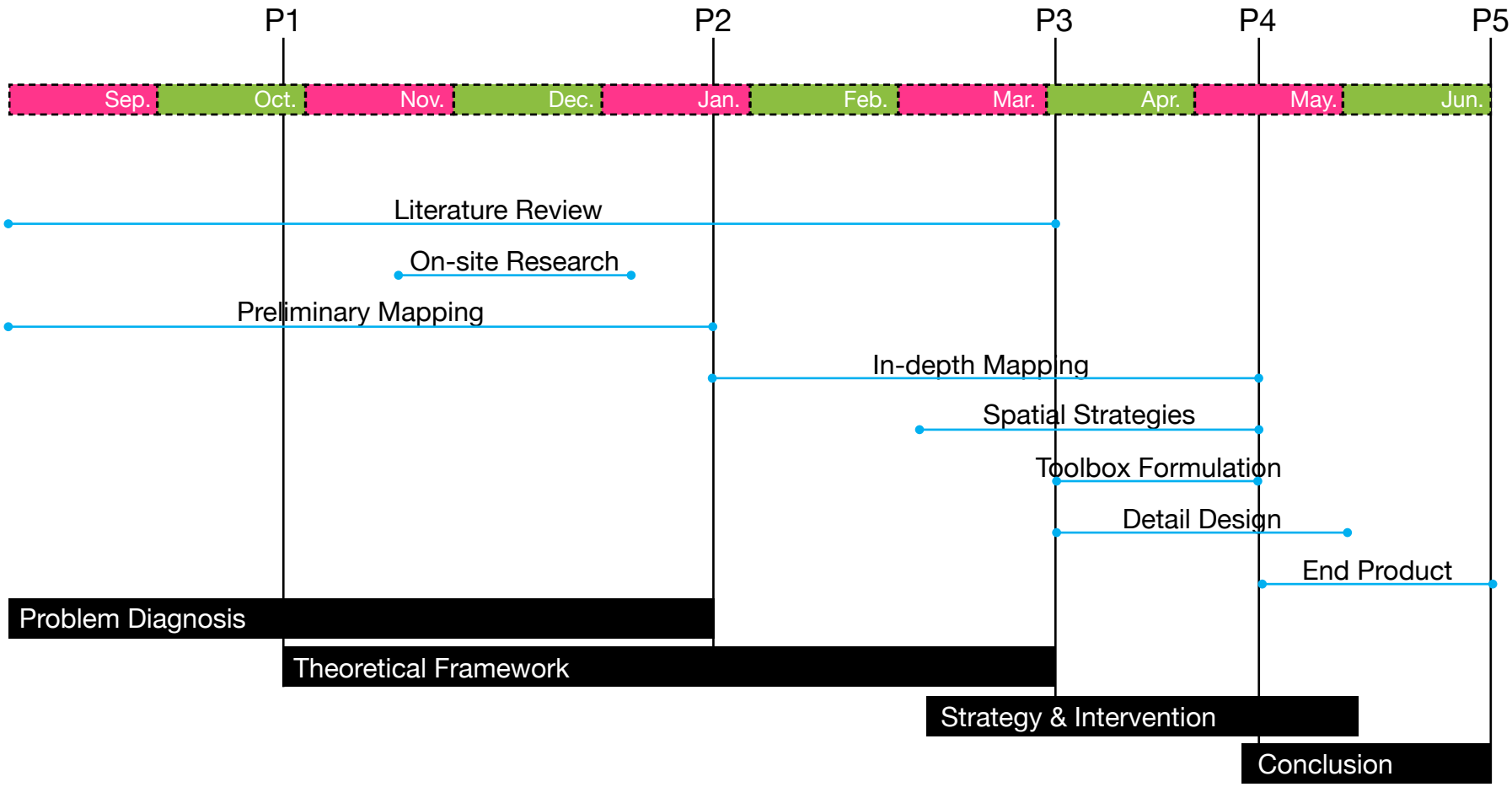


Figure 4.1: Photo from http://us.123rf.com/

4 Theoretical Framework

In this part, several important theories will be introduced. The first theory is about 'socio-spatial segregation'---its definition, general drivers and possible solutions under the European background, and what can be learnt from this to contribute to this project; the second theory is neighbourhood development in China, from Tang dynasty---Lvli, to current commodity enclaves, trying to understand Chinese background in order to fit into context; the last but not least, is about New Urbanism, whose aim is to create enduring neighbourhoods with spatial principles. These can form a basis for later intervention.

4.1 Socio-spatial segregation

4.2 Neighbourhood development in China

4.3 New Urbanism---creating enduring neighbourhoods

Figure 4.2: Socio-spatial segregation in European context

4.1 Socio-spatial segregation

4.1.1 Definition

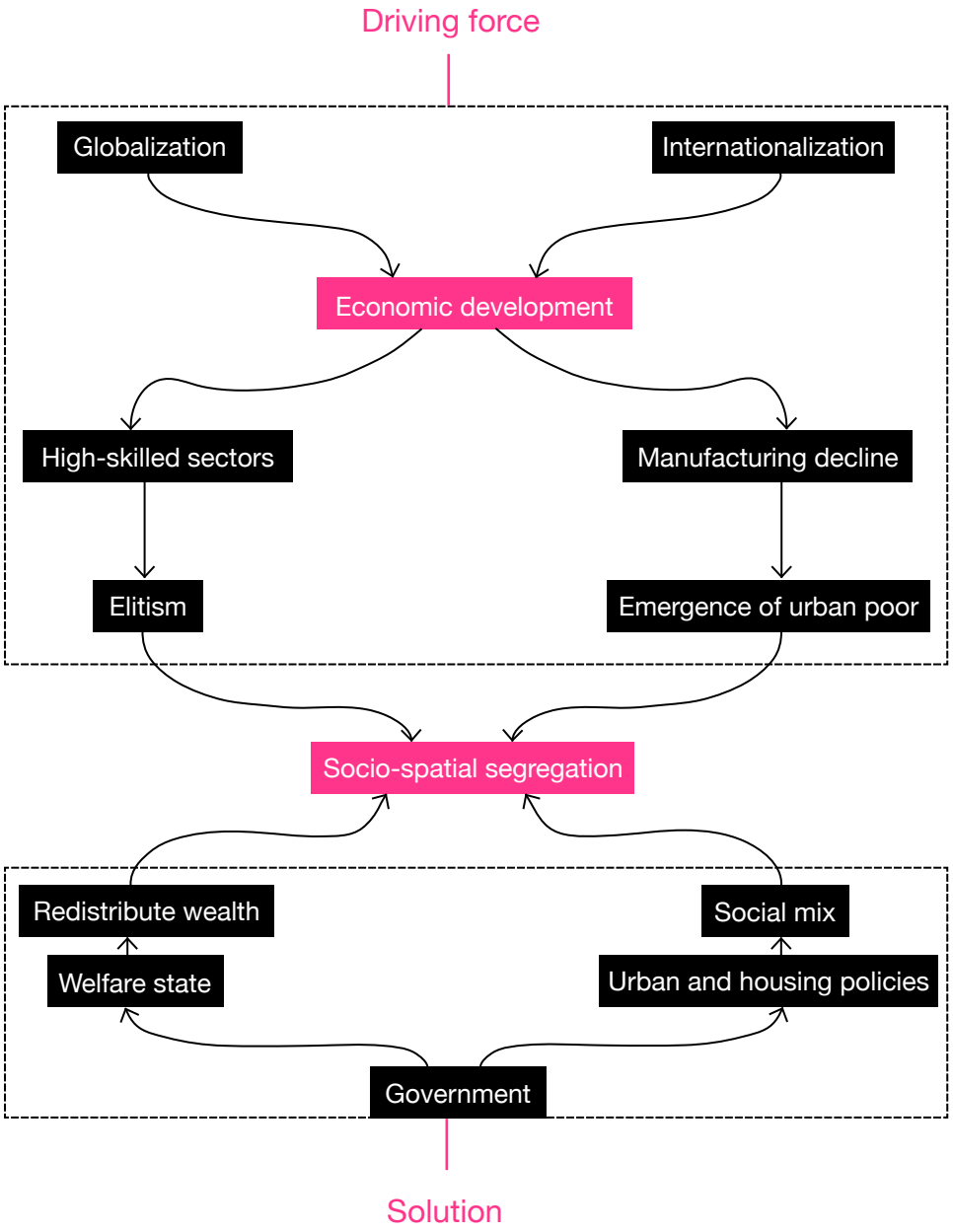
Cities under globalization and internationalization are experiencing enormous changes and transformations. There's an increasing socio-spatial differentiation of urban space whether in free market economies or welfare states (Clark, 1986; Johnston et al., 2001; Murie & Musterd, 1996; Sykora, 1999; Van Kempen & Ozuekren, 1998; Wessel, 2000).

Urban segregation is a concept used to indicate the separation between different social groups in an urban environment (Feitosa et al., 2007). When it reflects on spatial perspective, it results unequal distribution of population groups across space (Madrazo and Van Kempen, 2012). Other similar terms such as 'polarized cities', 'dual cities' (Mollenkopf and Castells, 1991; Marcuse, 1989; Marcuse, 2000), 'fragmented cities', 'partitioned cities' (Marcuse and Van Kempen, 2000, 2002), are all intended to describe the segregated phenomenon in cities.

The study of urban segregation is almost a century old. The origin of research into urban segregation lies on the social inequity in urban society. It is well known that scholars of Chicago School paid an initial attention to describe the pattern of urban segregation systematically (e.g. Park et al., 1925/ 1974). As an improvement of that, approaches like deductive analysis (e.g. Shevky and Bell, 1955) and inductive analysis (e.g. Murdie, 1969) are all trying to involve possible influence factors to explain the problem.

The relevance of this topic is lots of negative effects caused by it. People living in different parts of a city often get unequal access to basic public services (Feitosa et al., 2007), which means living in certain spaces often suffer from poor quality of infrastructure, housing, public space and higher exposure to violence etc. (Bolt et al. 2009). Furthermore, the segregation may limit one's access to information, resources and opportunities to contact with other groups, then leads to intense prejudice and discrimination and incomplete participation in society, such as labour market participation and others like education, politics and culture (Musterd, 2005).

Figure 4.3: Driving force analysis



4.1.2 Driving forces

Processes of globalization and internationalization can be held responsible for urban spatial segregation (e.g. Sassen, 1991; Marcuse and Van Kempen, 2000). The global mobility of goods, capital, and people often stimulate a city or a country's economic development, and this would not always lead to positive effects for those at the bottom of society (Wacquant, 1996). In western cities, post-fordist economic restructuring and globalization have been identified as the main drivers of social and spatial polarization (Kesteloot, 1995; Kempen, 1994; Walks, 2001; Wessel, 2000; Jordan & Redley, 1994). The decline of manufacturing and the increase of high-skilled sectors together triggered the emergence of new urban poor, followed by the growing inequity of income and occupation. As a result of that, the city becomes segregated both socially and spatially.

There're several approaches indicating to find drivers behind the problem of segregation:
The institutional approach often involve central state and local government as major factors determining patterns of segregation, because relative urban policies implemented by them are important in determining the location of housing supply (Madrazo & Kempen, 2012). Another factor I believe can also be included here is those key players of institutions with money (like private developers). Together with central and local government, their roles can be crucial to influence the land market in the distribution of different socioeconomic groups (Mills and Hamilton, 1994).

Another well recognized approach is behaviour approach, which remind urban researchers that individual preferences should be considered to a certain extent. This approach was criticized as little attention had been given to the constraints people face in a housing system (Hamnett and Randolph, 1988; Murie et al., 1976). Still, I believe lots of factors should be taken into account in this perspective, because constraints are not the only factor influence where people live. The urban segregation is also influenced by urban personality, attachment, identity, differentiation, perceptions of disorder and so on (Ruiz-Tagle, 2012), which relate to the making of public space; Madanipour (1996) pointed out that all of the following individual and group factors affect the perception of people's surroundings: socio-economic status, ethnicity and race, gender and age, time of residence, and the mode of transportation used.

All the drivers and influential factors mentioned above can all be considered when trying to identify urban segregation, and should be adjusted according to a local condition.

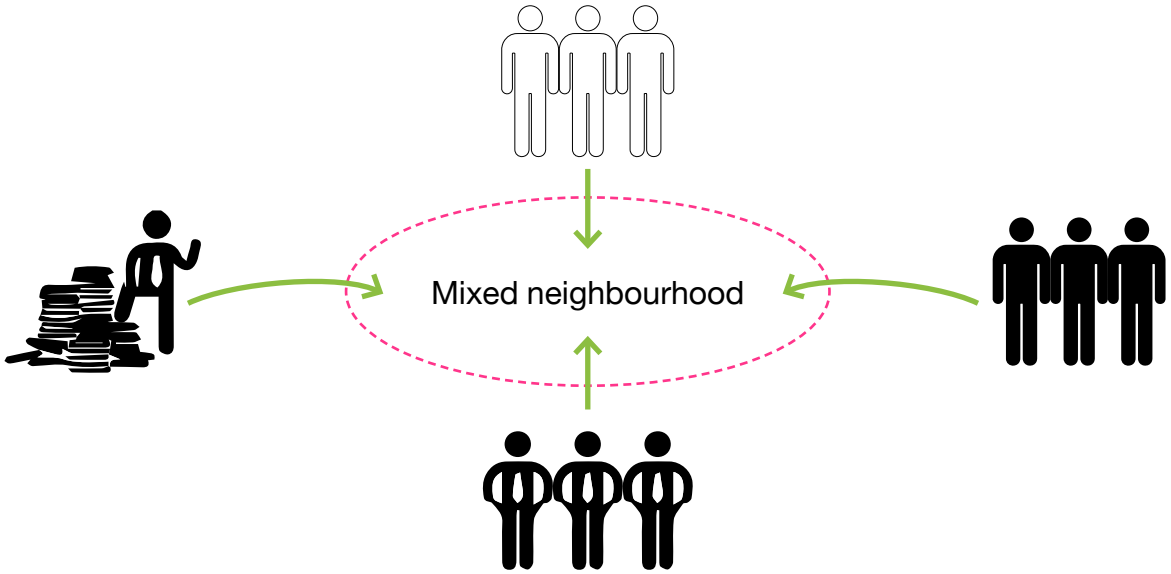


Figure 4.4: Social mix policy

4.1.3 Relevant solution

In order to diminish the increasing differentiation and fragmentation among multiple social groups, the general response of government is at large scale, through welfare state to redistribute wealth; at local scale, implementing urban and housing policies (e.g. social mix, urban renewal) to promote social interaction and end the concentration of poor (Bolt et al, 2009).

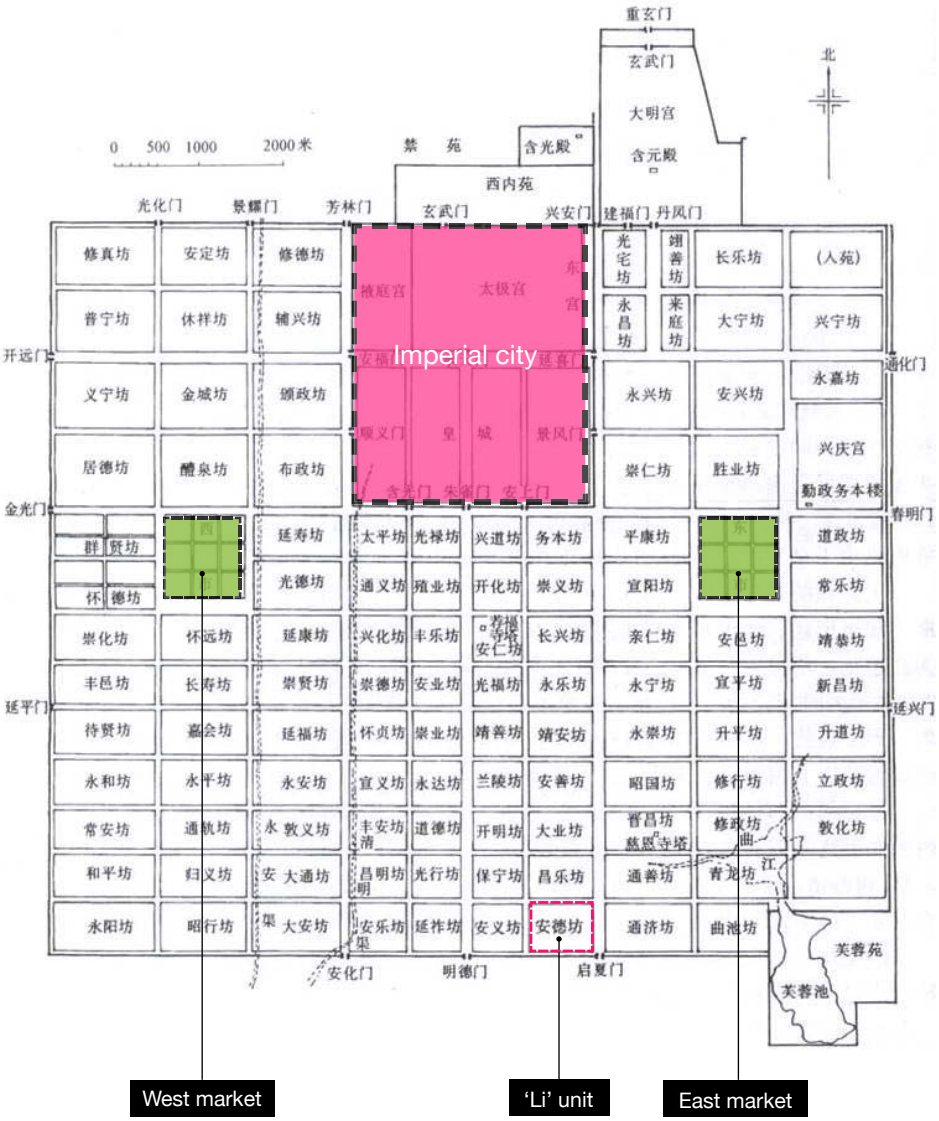
The urban and housing policies are increasingly focused on creating socially mixed areas. So social mix has become a major strategy of political agenda in most western countries, Australia and the United States (Bolt, Philips, & Van Kempen, 2010; Van Gent, Musterd & Ostendorf, 2009, Lelévrier, 2013). Other strategies like urban competitiveness, regeneration and urban renaissance are all relevant to deal with global economic change and industrial decline, which are major factors causing urban segregation (see e.g. Van Kempen & Murie, 2009). In the Netherlands for example, the public policies of urban renewal and restructuring are aiming to improve and end the concentration of poor and low-income neighbourhoods (Bolt et al, 2009).

The lack of social bonds and interaction, the increase of social conflict between different social groups has been revealed in lots of segregation-related studies (Atkinson & Kintrea, 2000; Graham, Manley, Hiscock, Boyle, & Doherty, 2009; Wood, 2003). Thus the objective of social mix strategy is supposed to encourage a profitable interaction between the inhabitants of disadvantaged neighbourhoods and the new social groups coming from outside the area (Lelévrier, 2013). As Van Kempen and Bolt (2012) argued, there are different dimensions in creating socially mixed communities: stimulate a housing career, improve the quality of public services, and facilitate possible social contact and social mobility. The new role for community is to identify the elements that can contribute to build a cohesive urban society (Mugnano & Palvarini, 2013), so residents living in the same neighbourhood could develop a sense of belonging to the place and a feeling of being part of a community with a common identity (Livingston, Bailey, & Kearns, 2008).

Although social mix is a well-known policy to solve the problem, its effectiveness has been criticized a lot (Cole & Goodchild, 2001; Dekker & Bolt, 2005). Because simply mix different social groups together are not always promoting cohesion, it can also involve problems and tensions. Because spatial proximity does not reduce social distance (Chamboredon & Lemaire, 1970). The interaction between different groups still limited, although they live closer.

Compared to the mechanism in Shenzhen context, we can see that drivers behind this segregation issue are similar. But the negative effect caused by the strategy ‘social mix’ shows that it’s not enough to promote integration only by improving spatial connection. Social connection should be considered together with spatial design.

Figure 4.5: Chang'an city in Tang dynasty
source: http://jpkc.gxun.edu.cn/



4.2 Neighbourhood development in China

4.2.1 Pre-socialist era (before 1949)

Before digging into the local context of segregation in Shenzhen, its necessary to understand how the spatial pattern of Chinese cities changes as the closed residential form played an important role during the long history. The most typical pattern in China is Chang'an city in Tang dynasty (figure X). At that time, there was a very restrict hierarchy system depends on power position. The royal family, which was the dominant class back then, had their own 'imperial city', which cannot be accessed by ordinary people. The 'imperial city' undoubtedly represented the centre of a city. The other high-class people were distributed around the imperial city, occupying these pieces of land with better location in the city. Apart from that, there was also a 'system of Lvli (neighbourhood)' to separate the general public into small units, so it would be easier for the government to control and manage. Each 'li' had walls and doors around it to restrict the mobility of residents during nights and special period, and households were not allowed to open their doors toward streets, only inside the 'li' neighbourhood. The city had two specific independent market spaces built for trading, also with walls and doors for government to manage (figure X), so residence and commercial function were totally separated. Besides that, there's usually a temple inside each neighbourhood, which can be seen as public space for residents. Within this context, the segregation was between the ruling class and public, plus a pure spatial segregation among similar general public. At that time, public life was limited due to low-density street network, little contact surface between housing and public space, weak accessibility of street and public realm, and also low vitality of commercial activity (Liu, Zhou & Chen, 2007). Still, residents have a mutual place belonging and identity (temple) at neighbourhood scale back then.

Figure 4.6: Li 3d-model
source: hudong photos

Since the Northern Song dynasty, the spatial pattern started to break down due to the contradiction between economic development and spatial restriction. The walls and gates were gradually destroyed, and households were allowed to open doors toward streets and set up commercial activities such as restaurants and retails. Then the street life started to wake up, so did the economic development. Thus the more open spatial pattern of 'street and alley' replaced the closed and introverted 'Lvli' system, combing commercials with residential function. Until now, this kind of space can still be found but gradually being destroyed under the pressure of urban regeneration.

Figure 4.7: Public space in Li unit

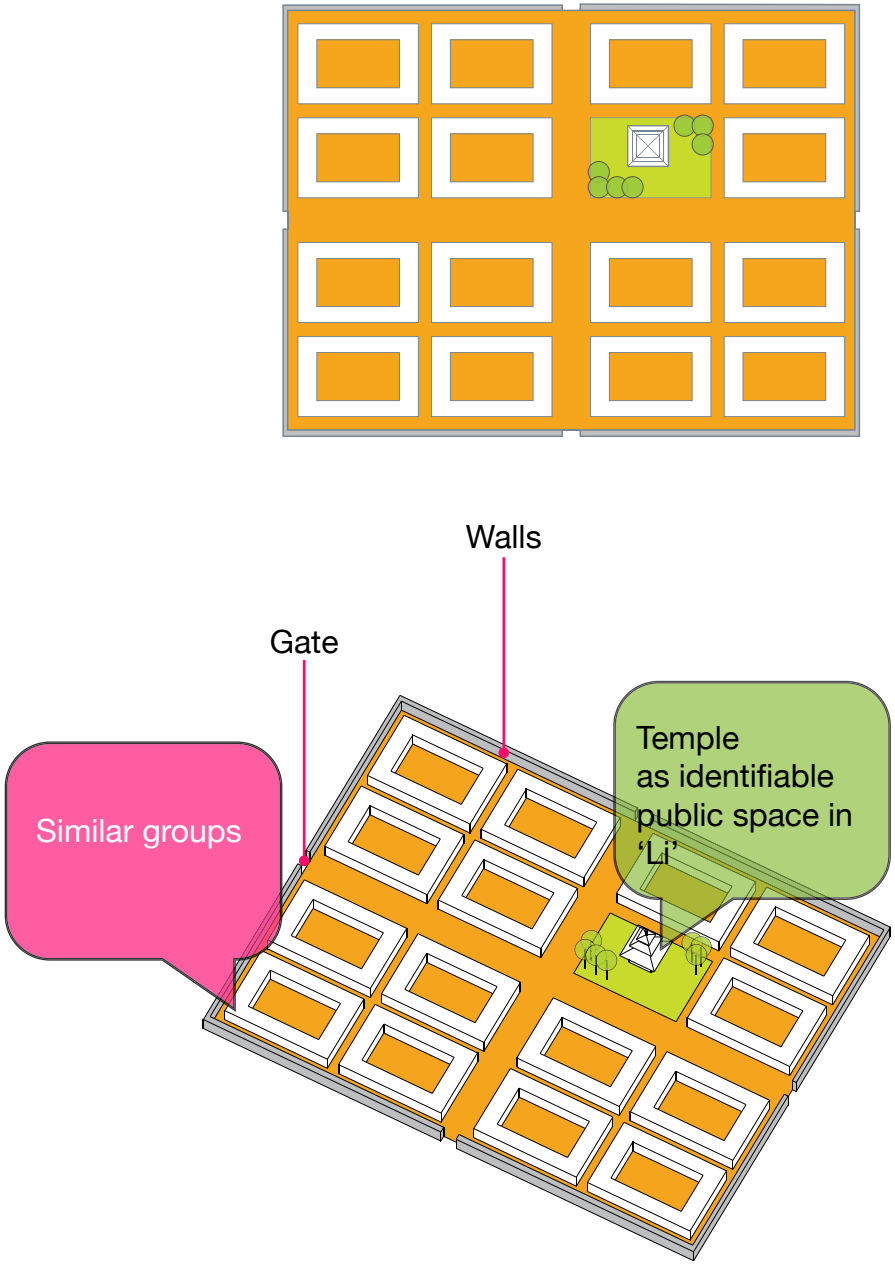
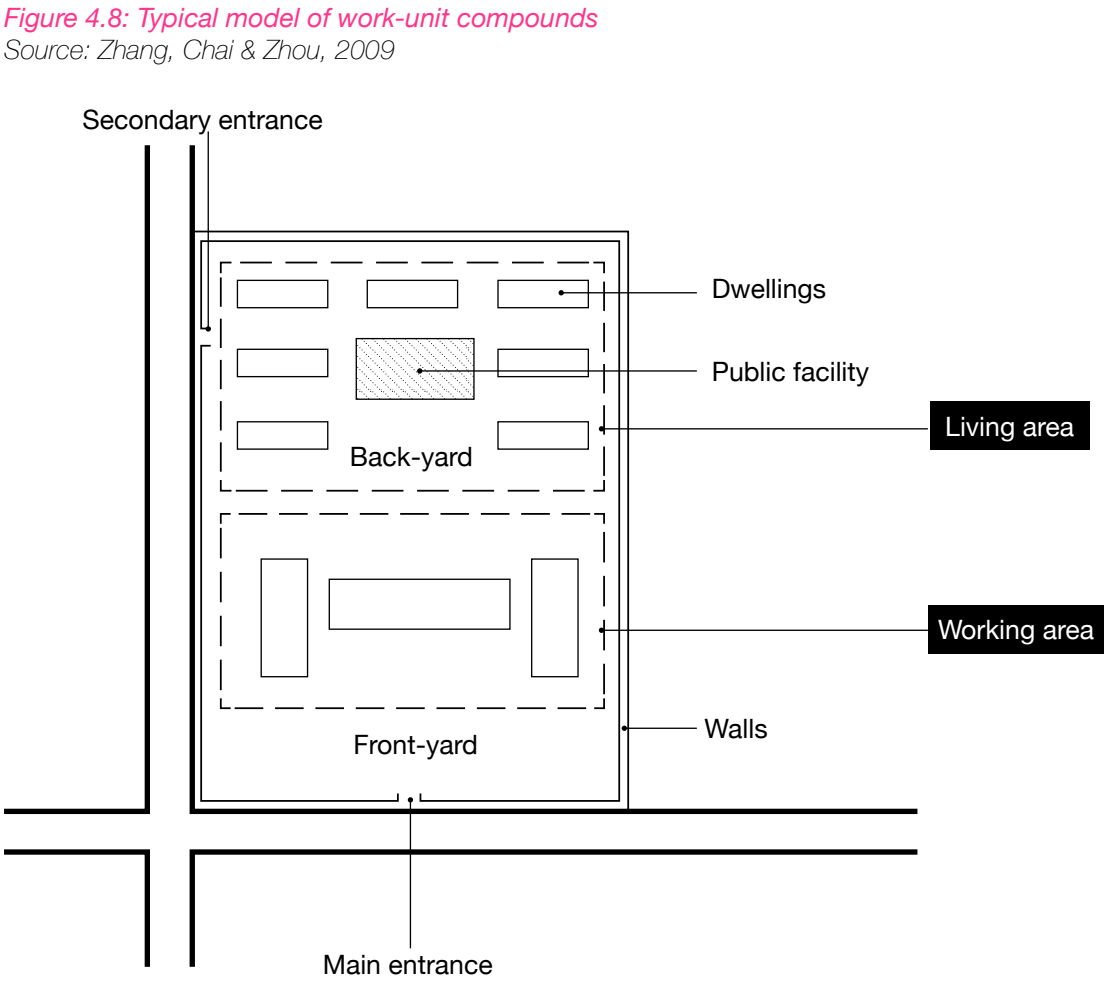
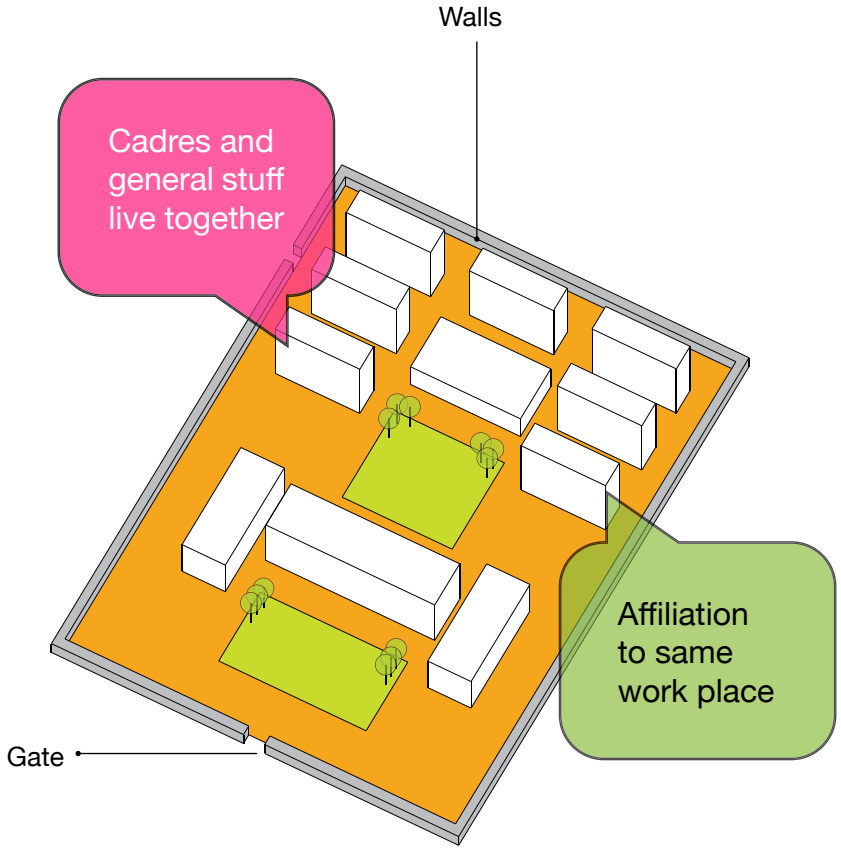


Figure 4.8: Typical model of work-unit compounds
Source: Zhang, Chai & Zhou, 2009





4.2.2 Planned economy era (1949-1987)

Another typical spatial pattern in Chinese cities is work-unit compounds. In 1949, the Communist Party came to power. The ideal of socialist emphasized the importance of social equity and evenness, thus the system of work-unit compound was established based on minimizing the distance to workplace from residential area. The compound is usually surrounded by walls and gates, and secured by the guards employed by the work-unit. Residents there are affiliated to the workplace, and can find almost everything they need for daily use inside the compound because of the integration of different functions. This model was considered as efficient because of inadequate infrastructure in the city and it's easier for information collection and monitor at that time (Wu, 2004). As both cadres and general staff lived in the same area, forming homogeneous self-contained enclaves, the interaction between people was intensive due to their affiliation to the same workplace. Thus the extent of socio-spatial difference was minimized (Li & Wu, 2005), but most public life was concentrated inside compounds, forming another introverted space.

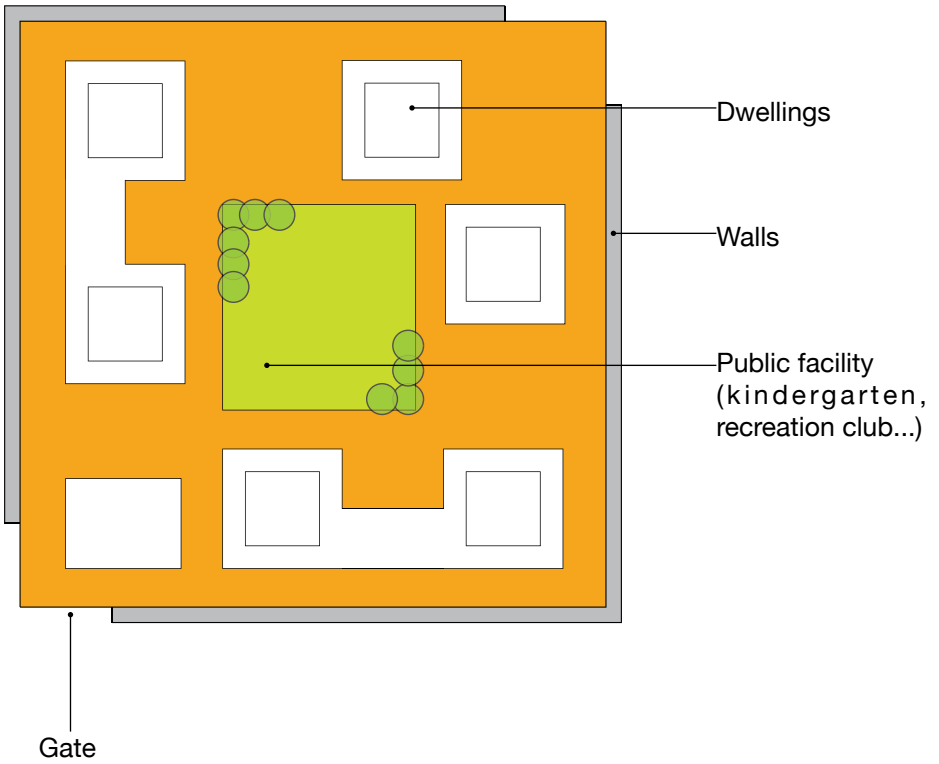
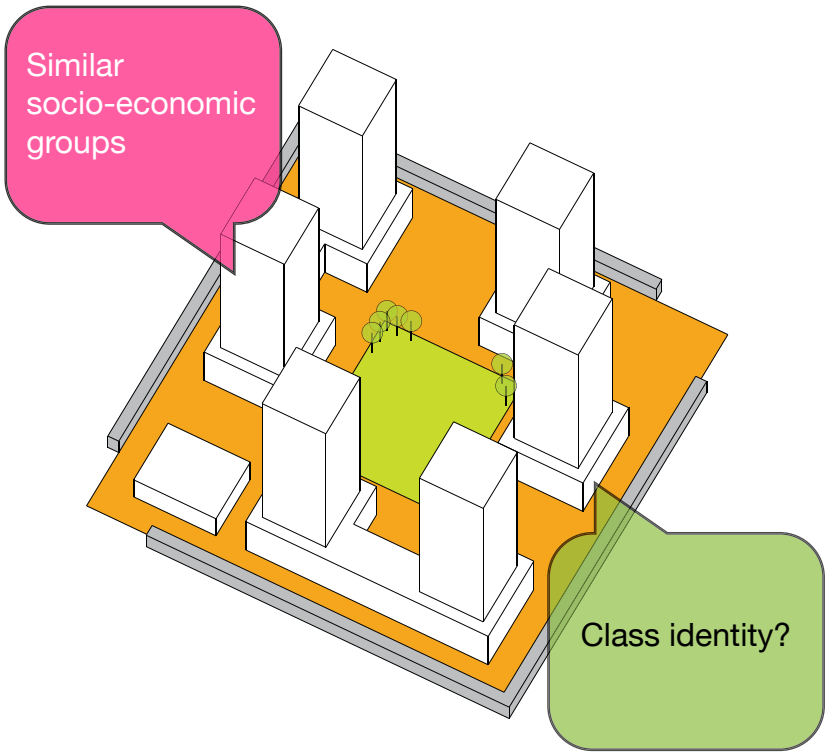


Figure 4.9: Commodity enclaves



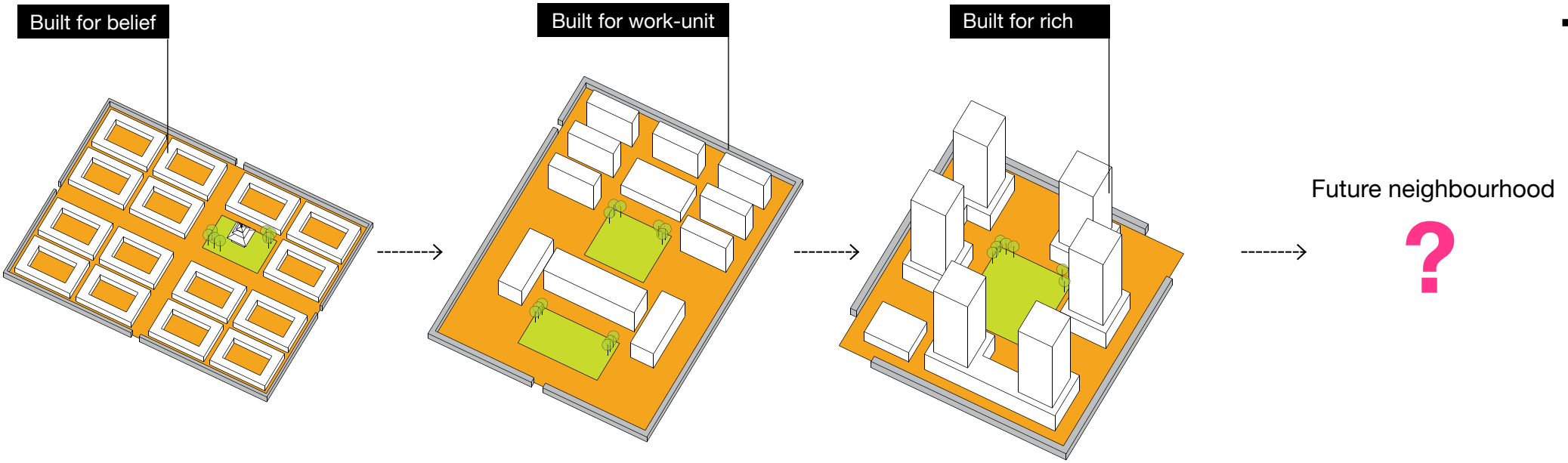
4.2.3 Market economy era (1987-now)

Starting in 1979, market reform and open-door policy brought new changes for urban development. The government started to relieve the burden of housing to residents themselves with the introduction of privatization. Together with the boom of real estate since 1987, residents have more freedom to choose where to live. The new commodity enclaves are built according to current standards, such as, building height, FAR, public facilities and so on. For safety and other reasons, these enclaves are surrounded by walls and gates too, making inside public space semi-private only for residents who live here. Those with higher income and affordability gradually move out to new commodity housing with higher environmental quality, while the others can't afford are left in old housing areas. Eventually, a new urban structure was formulated: upper class with high income are living in commodity housing such as gated communities, while lower-class who cannot afford expensive housing are still concentrating on low quality neighbourhoods such as urban villages, and degrading work-unit compounds with low-income migrant workers.

Another distinct spatial pattern is urban villages, which emerged in many big cities during tremendous urbanization period. The lands of urban villages are usually collective owned and distributed to each village household. Villagers try to occupy every corner to build for renting and there are limited standards for them to follow to achieve certain living quality. So when they are gradually surrounded by the city, these villages still remain their village identity, but on the other hand, offering opportunities for migrant workers.

From the analysis of neighbourhood evolvement, we can see that the social bonds are gradually vanishing, which raises the question of what is the social bonds in future neighbourhood?

Figure 4.10: Neighbourhood evolvement



4.3 New Urbanism-creating enduring neighbourhoods

4.3.1 Definition and objective

New Urbanism is a dynamic urban design revolution, which started in United States in early 1980s. They propose a vision of the future that combines the best of the past with the realities and modern conveniences today (Katz, P., Scully, V. J. & Bressi, T. W. 1994). They intend to address issues such as disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community-building challenge (Charter of the New Urbanism, 2001). As they say, 'We stand for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy.'

4.3.2 Principles of New Urbanism for neighbourhoods

Their principles involve large scale as region to small scale as block and buildings. Here are relevant principles about neighbourhoods:

1) The neighbourhood, the district, and the corridor are the essential elements of development and redevelopment in the metropolis. They form identifiable areas that encourage citizens to take responsibility for their maintenance and evolution.

2) Neighborhoods should be compact, pedestrian friendly, and mixed-use. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.

3) Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.
4) Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.
5) Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.

source: http://www.regionalplans.org/

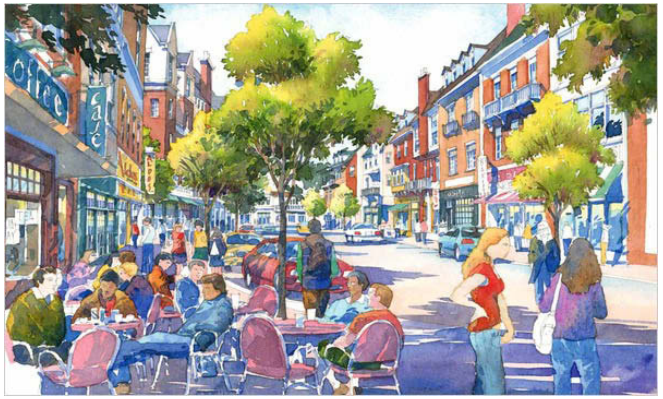
Figure 4.11: New Urbanism

6) Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.
7) Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods and districts, not isolated in remote, single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them.
8) The economic health and harmonious evolution of neighborhoods, districts, and corridors can be improved through graphic urban design codes that serve as predictable guides for change.
9) A range of parks, from tot-lots and village greens to ball fields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be used to define and connect different neighbour¬hoods and districts.

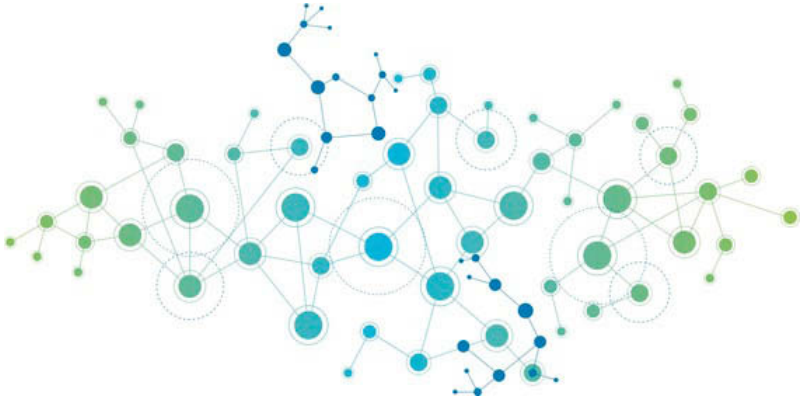
4.3.3 Evaluation

According to these universal guidelines for neighbourhoods and the problem statement from local context, I believe several essential principles should be fulfilled or improved in order to achieve the project aim: 'maintain the current social structure and facilitate their integration with others in both social and spatial perspective at neighbourhood scale.'

Figure 4.12: Image of enduring neighbourhoods



Walkability
source: http://www.nytimes.com/



Connectivity
source: http://bigthink.com/

Diversity
source: http://tmone.com/

---Walkability
Walkability indicates that the size of a neighbourhood is within walking distance, so residents can get access to daily functions such as working, shopping, and service by foot. In addition to that, the street network inside neighbourhood should be designed pedestrian friendly, encouraging walking instead of automobiles.
---Connectivity
Neighbourhoods should be well connected to district at big scale to organize metropolitan structure and revitalize urban centres. In local scale, street network, especially pedestrian network, should be interconnected and continuous together with public spaces and functions like parks or squares, commercial activities etc.
---Diversity
Diversity can involve mixed use such as shops, dwellings, and offices within neighbourhood, blocks and buildings. In the case of site area, mixed use of shops like supermarkets, restaurants and informal market like the ones inside urban villages can be arranged together to attract multiple social groups. Thus, the mixed housing types should be remained to maintain current diverse social structure, which is another sense of diversity.
---Quality urban design
Suitable urban design is also important for neighbourhood. Not only fulfil basic functions for multiple groups, but creating a sense of place for pleasant public space to make it more attractive for all. Thus, these principles showed above could all be improved better with beauty and aesthetics.

Quality urban design
http://www.bartlett.ucl.ac.uk/

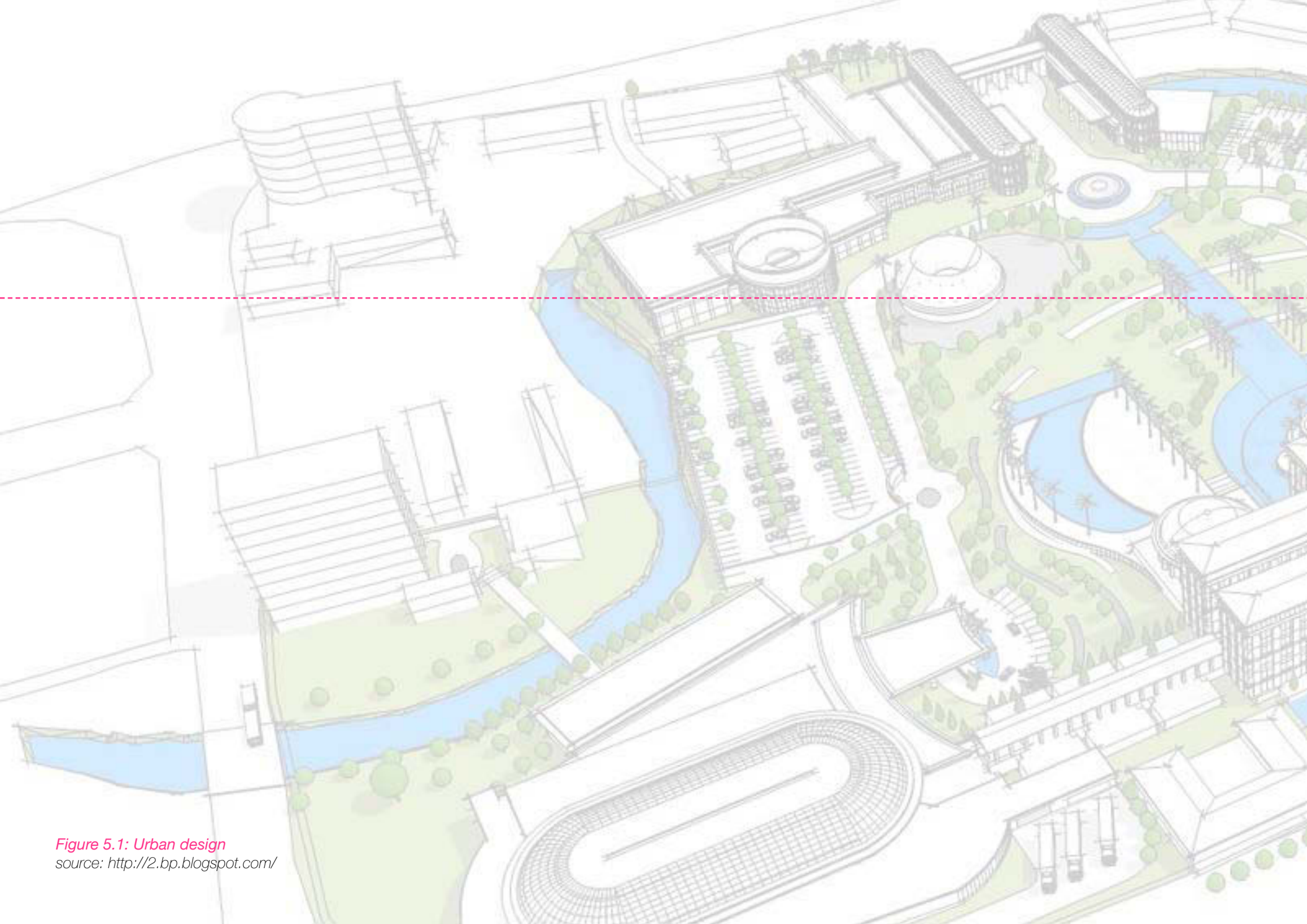


Figure 5.1: Urban design
source: http://2.bp.blogspot.com/

5 Strategy & Intervention

This part will introduce how strategy and intervention can deal with the problem---socio-spatial segregation. Based on the aim of this project, 'public space' is the focus and important aspect to achieve socio-spatial integration. Still, it's diffcult to deal with all the factors with one simple concept, so there will be different layers related to each factor. Later, these layers will be combined toghether to see a comprehensive structure plan.

The toolbox part will represent several detail interventions specific to each typical situation. Then an integrated design will involve all typical interventions, showing how different situations are resolved toghether.

5.1 Layer-strategy

5.2 Toolbox for intervention

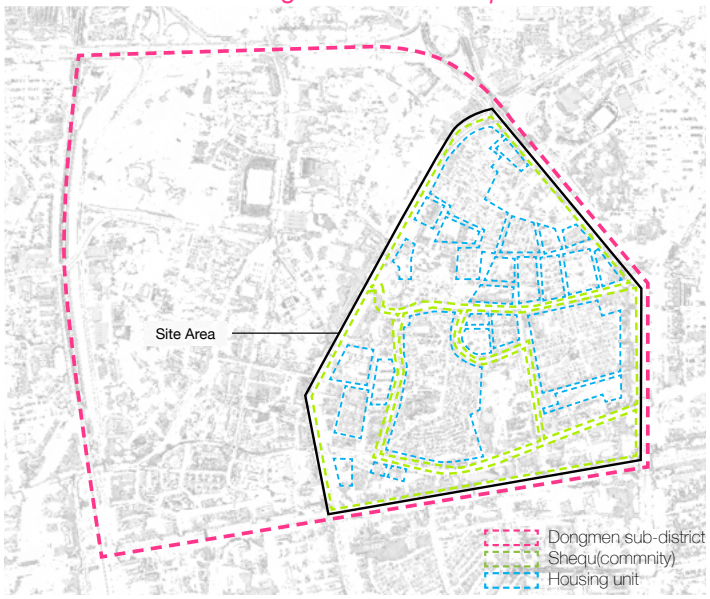
5.3 Detail design as end result

5.1 Layer-strategy

5.1.1 Neighourhood management organization

In order to deal with the fragmented management in site area and multiple interests of stakeholders, a ‘neighbourhood management organization’ is proposed here to replace current complex power situation. This organization can be set up temporarily and leaded by professionals with social awareness. Through this organization, local government, grassroots organization, developers and tenants can all be involved and considered in regeneration process. Compared with current situation, which usually ignore low-income groups and difficult to coordinate, this organization will deal with neighbourhood problem as a whole. Thus, public space within this neighbourhood can be improved and managed toghether, diminishing negative effect caused by complex negotiation between multiple communities and property management companies. Further more, there would be chance that the revenue from new development can contribute to the improvement of urban villages or work-unit compounds.

Figure 5.2: Current power distribution



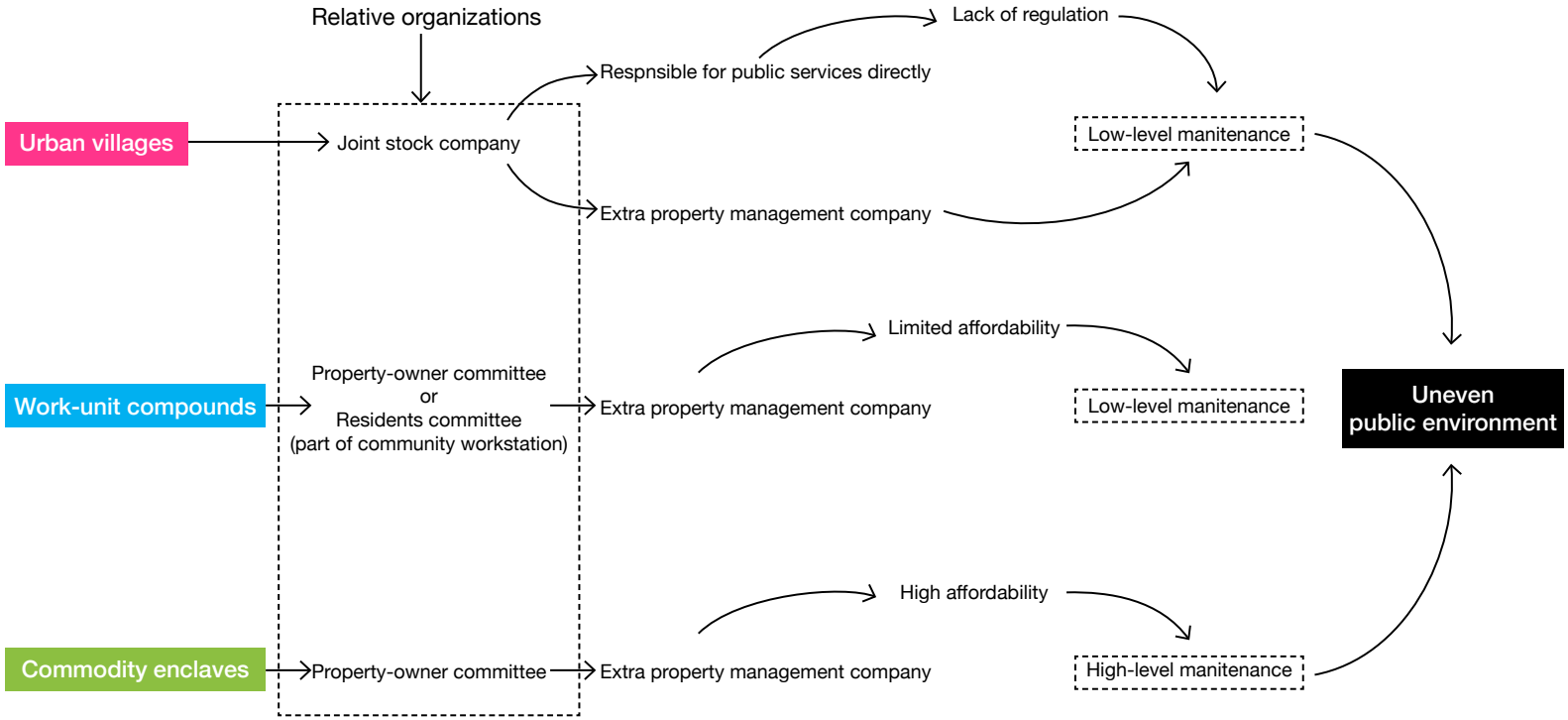
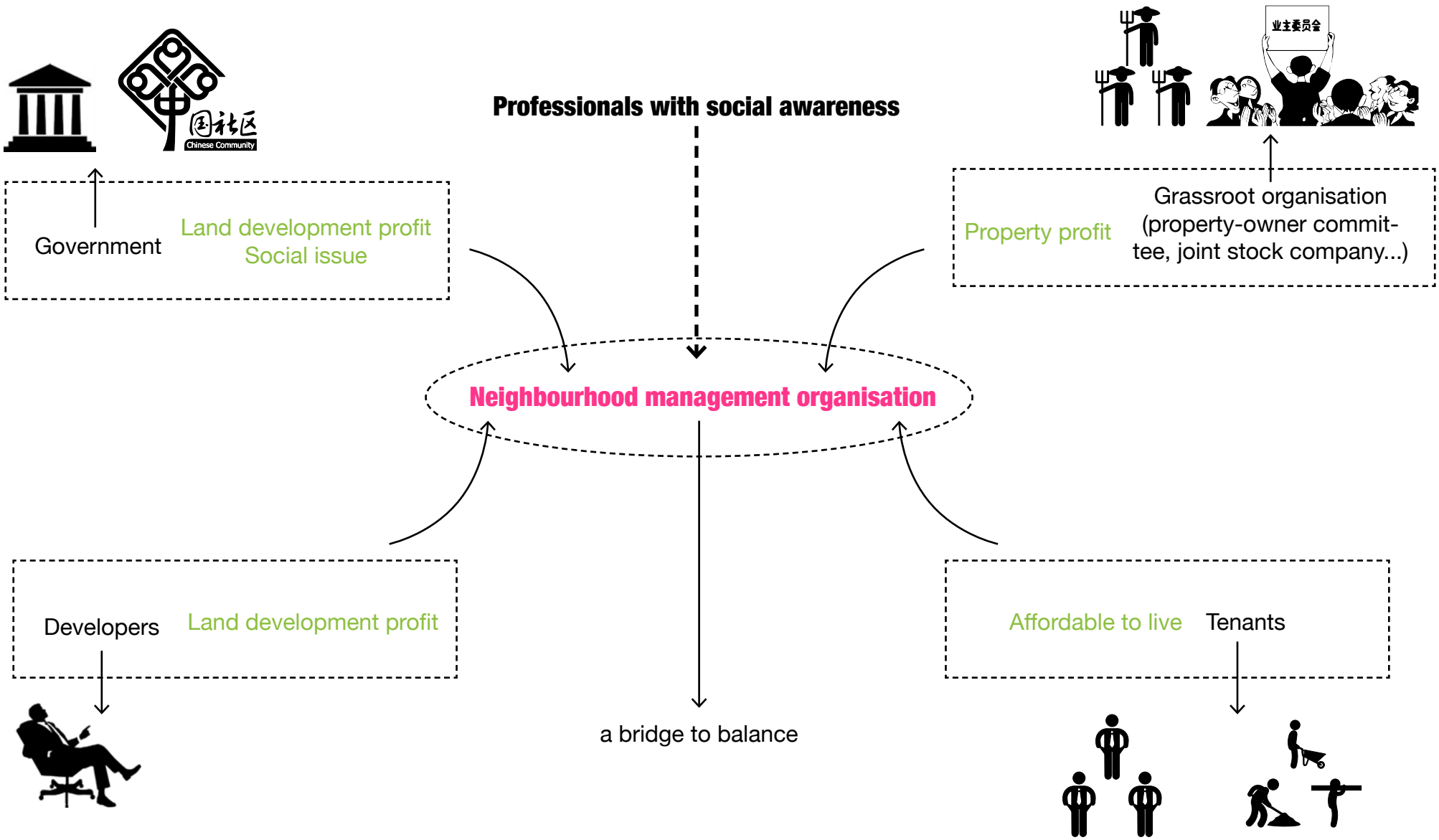


Figure 5.3: Current mechanism of unequal public environment

Figure 5.4: Proposed neighbourhood management organization



5.1.2 Social space network

Current living spaces for different social groups are constrained in fragmented compounds, and public space for all is limited. The map (figure 5.5) shows current social space such as park, green space and sports center. The groups who use these spaces are also mapped, from which we can see that most of them are used by certain groups, and places shared for all is limited.

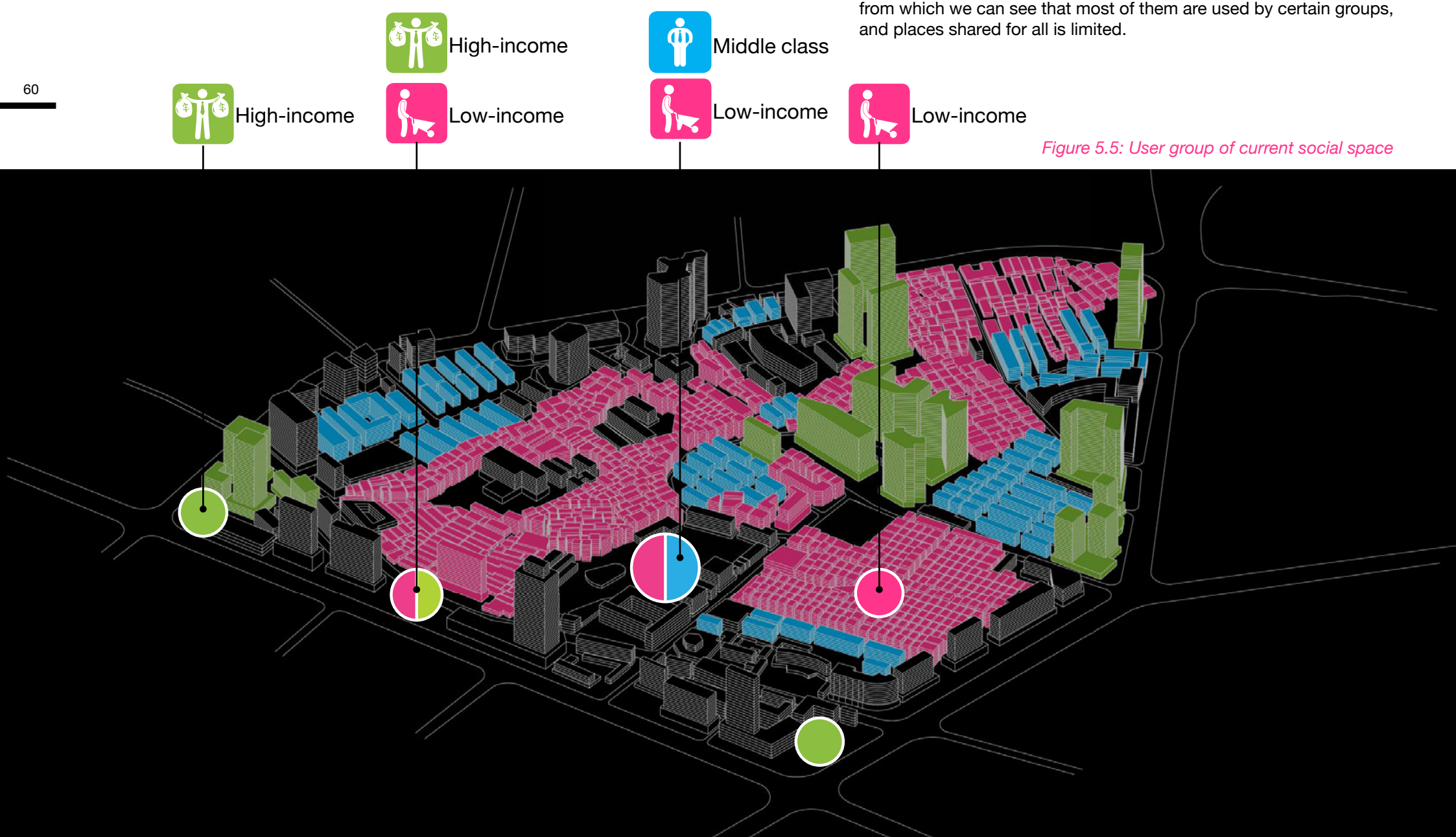
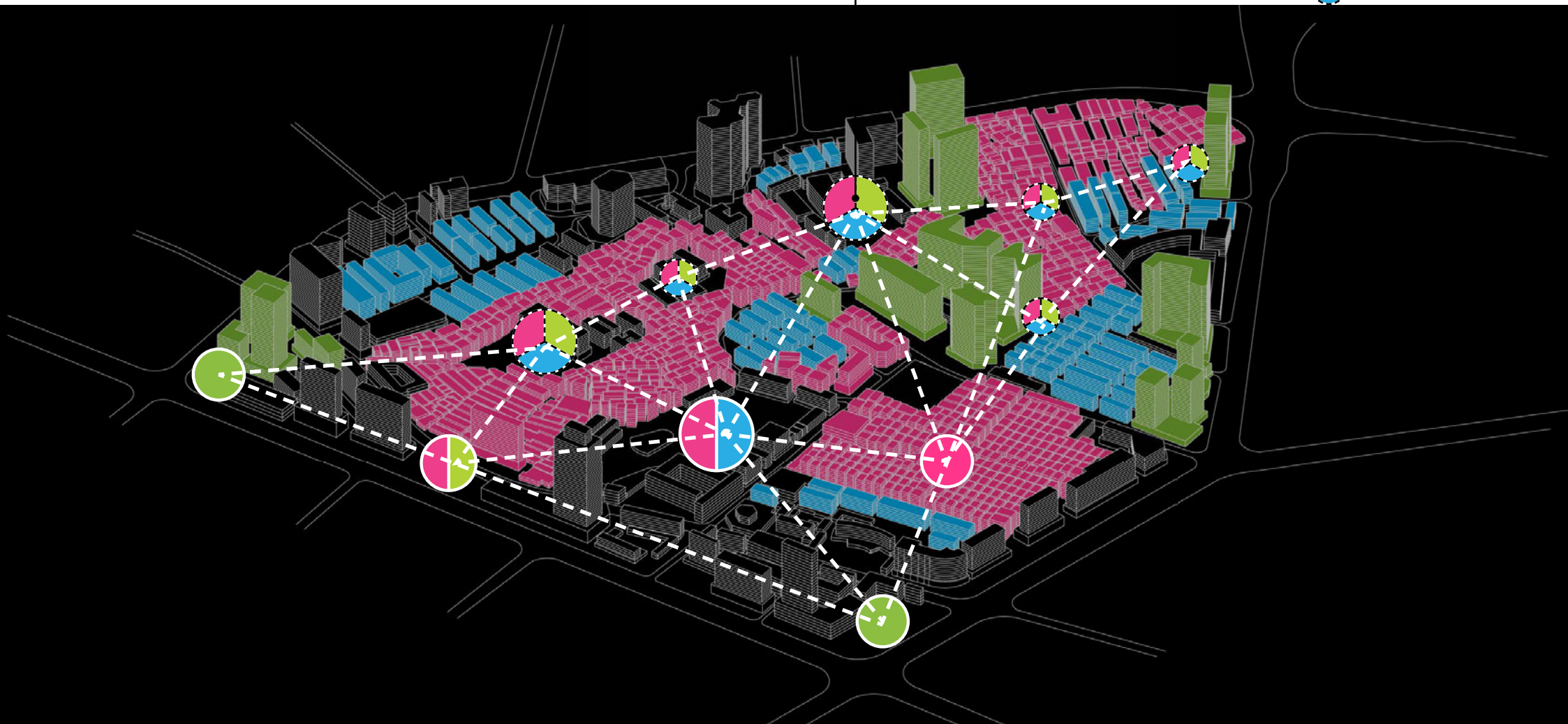


Figure 5.5: User group of current social space

In order to stimulate social cohesion and maintain current social structure, a social space network is proposed to offer more proper places in small scale for all social groups, and improve connection in between without influencing mixed social structure.

Figure 5.6: Proposed social space network



5.1.3 Border involvement

Lots of physical boundaries exist in this neighbourhood like walls and fences, distinct spatial quality, infrastructure etc. These boundaries are mapped in site area as can be seen (figure 5.7). These boudaries not only restrict the use of inside spaces, but create negative space without any function

The proposal dealing with this kind of boundary is trying to involve these borders into public space system---improve its quality, add dynamic or function, thus to diminish negative 'border' effect, and turn this negative 'border' condition to positive public space (figure 5.8).

Figure 5.7: Physical boundary

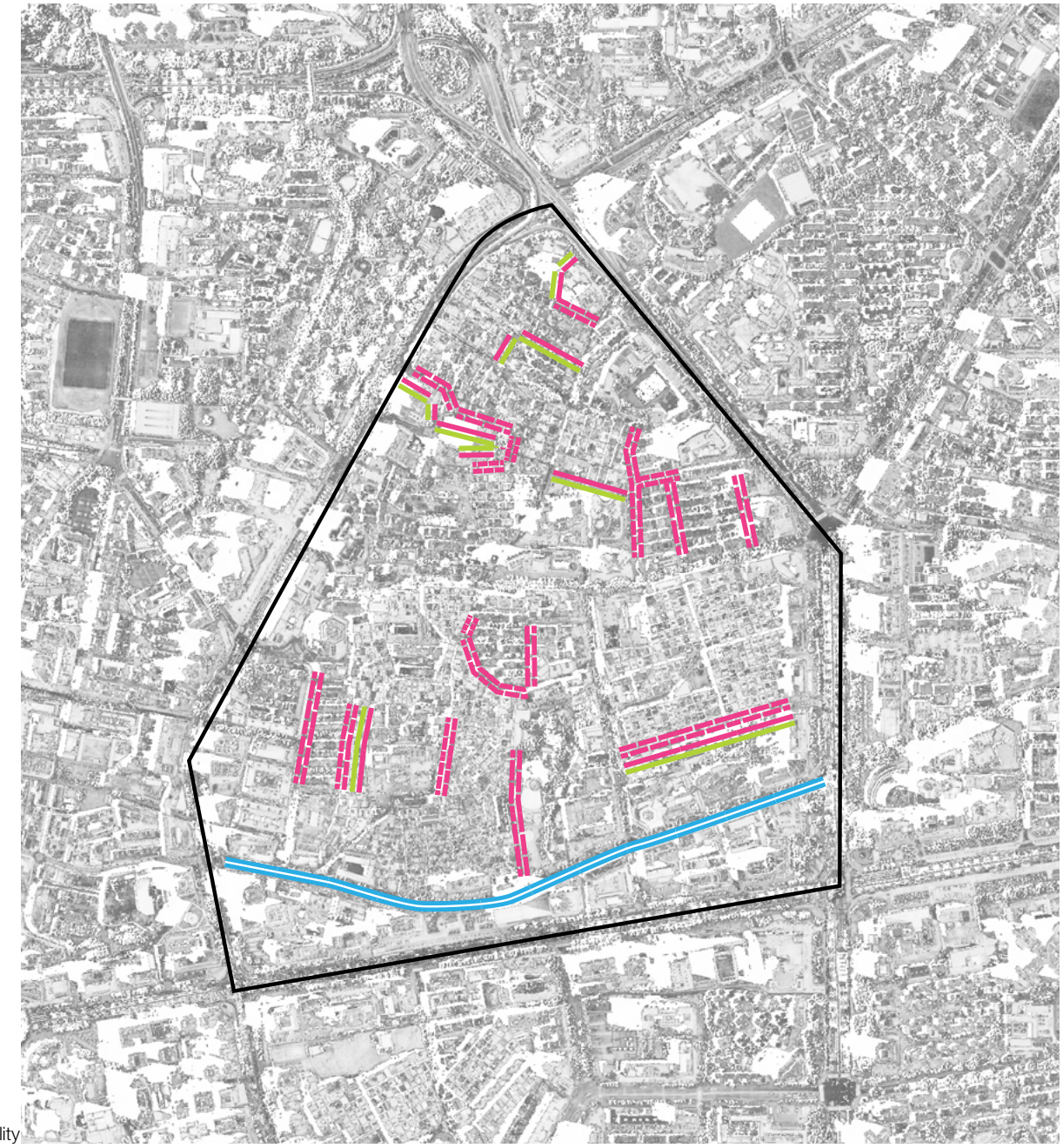
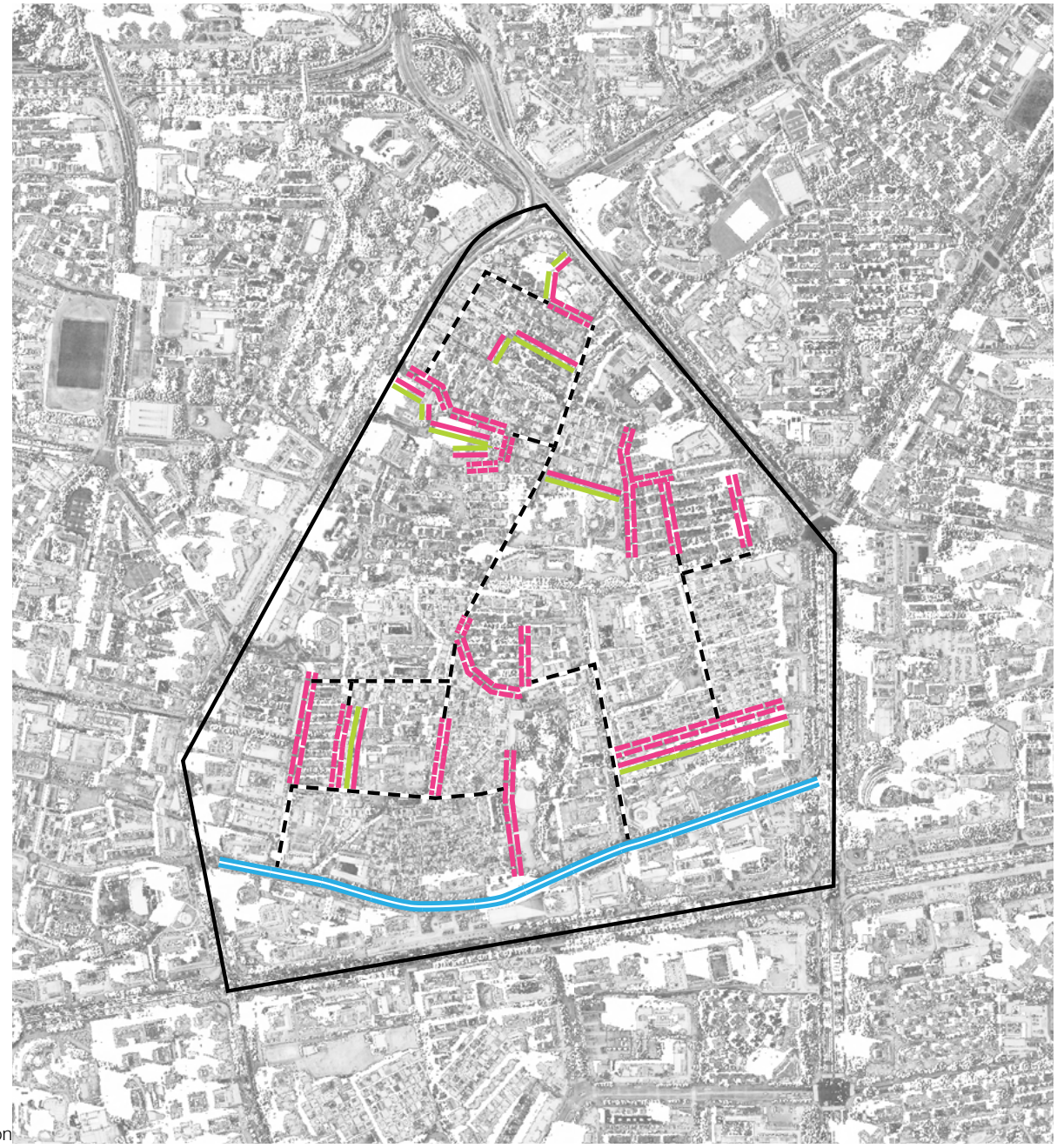


Figure 5.8: Proposed border involvement system



5.1.4 Separated life circles

According to program analysis earlier, different social groups have different commercial types to fulfil their daily use, which result in multiple introverted life circles (figure 5.9)---low-end informal market inside urban villages and normal commercials on main roads.

In fact, those low-end floating markets inside urban villages have great value also for other social groups. Thus, I propose a daily supply network to involve all commercial types, and add more diversity inside urban villages to make them more attractive, providing a continuous, comfortable walking environment for all residents (figure 5.10).

Figure 5.9: Separated life circles

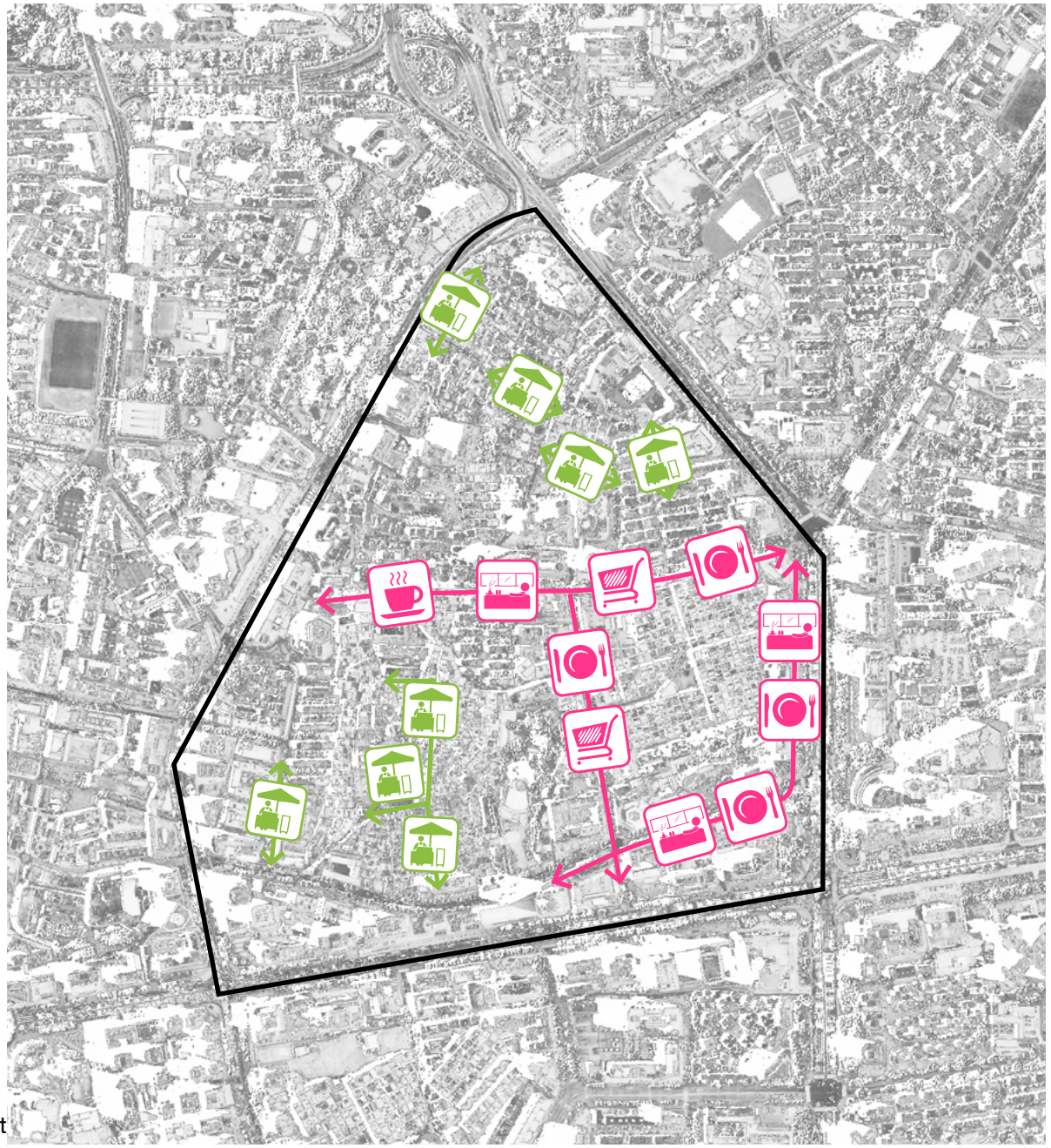
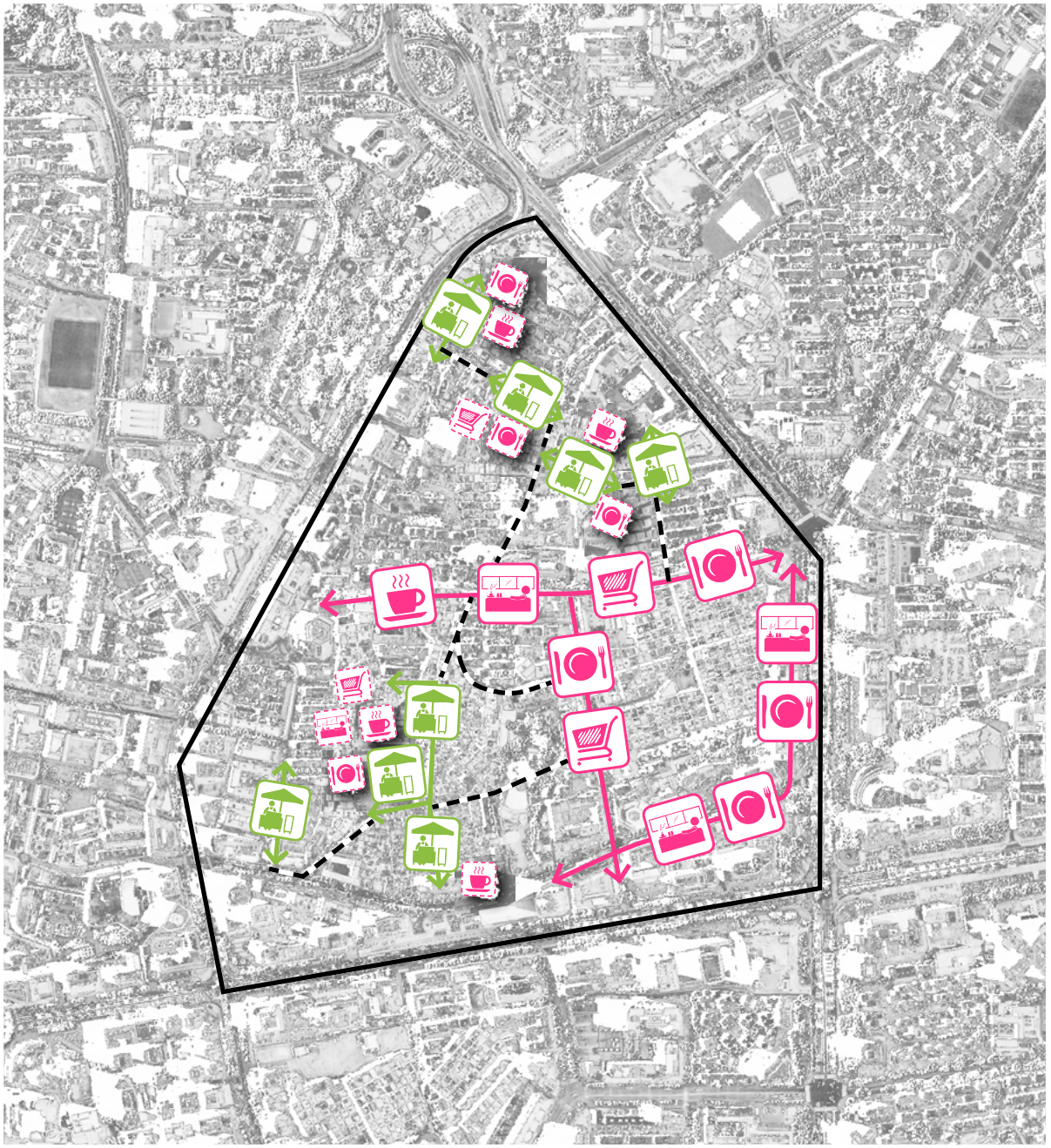


Figure 5.10: Proposed daily supply network



5.1.5 Composite structure plan

The four layers discussed above are dealing with different barriers. When they are put together, a composite structure plan is formulated (figure 5.11, figure 5.12).

This structure plan is an integrated public space system with multiple barriers to tackle. The figure 5.12 also shows where exactly what need to be intervened.

Figure 5.11: Four layers combined

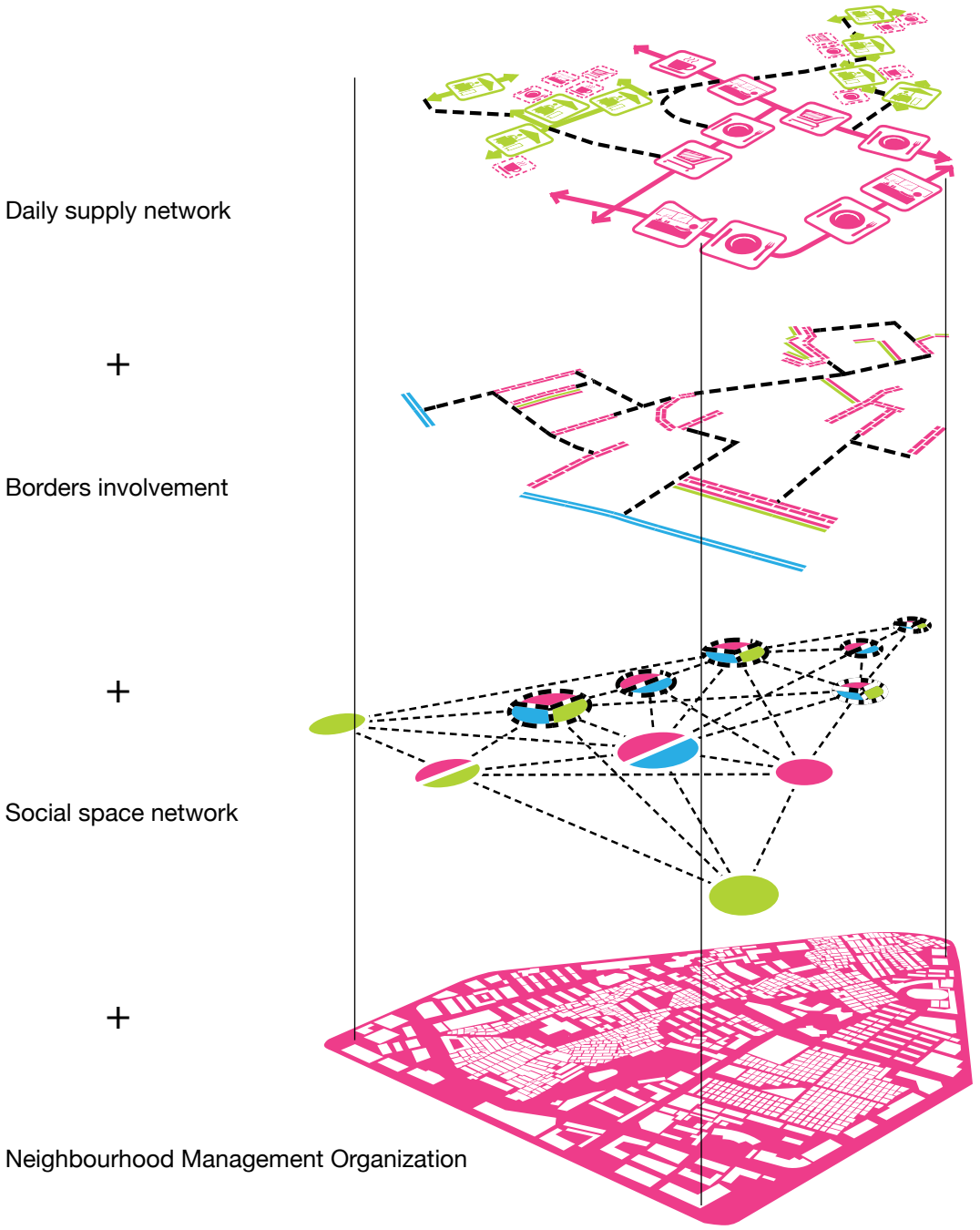


Figure 5.12: Integrated structure plan

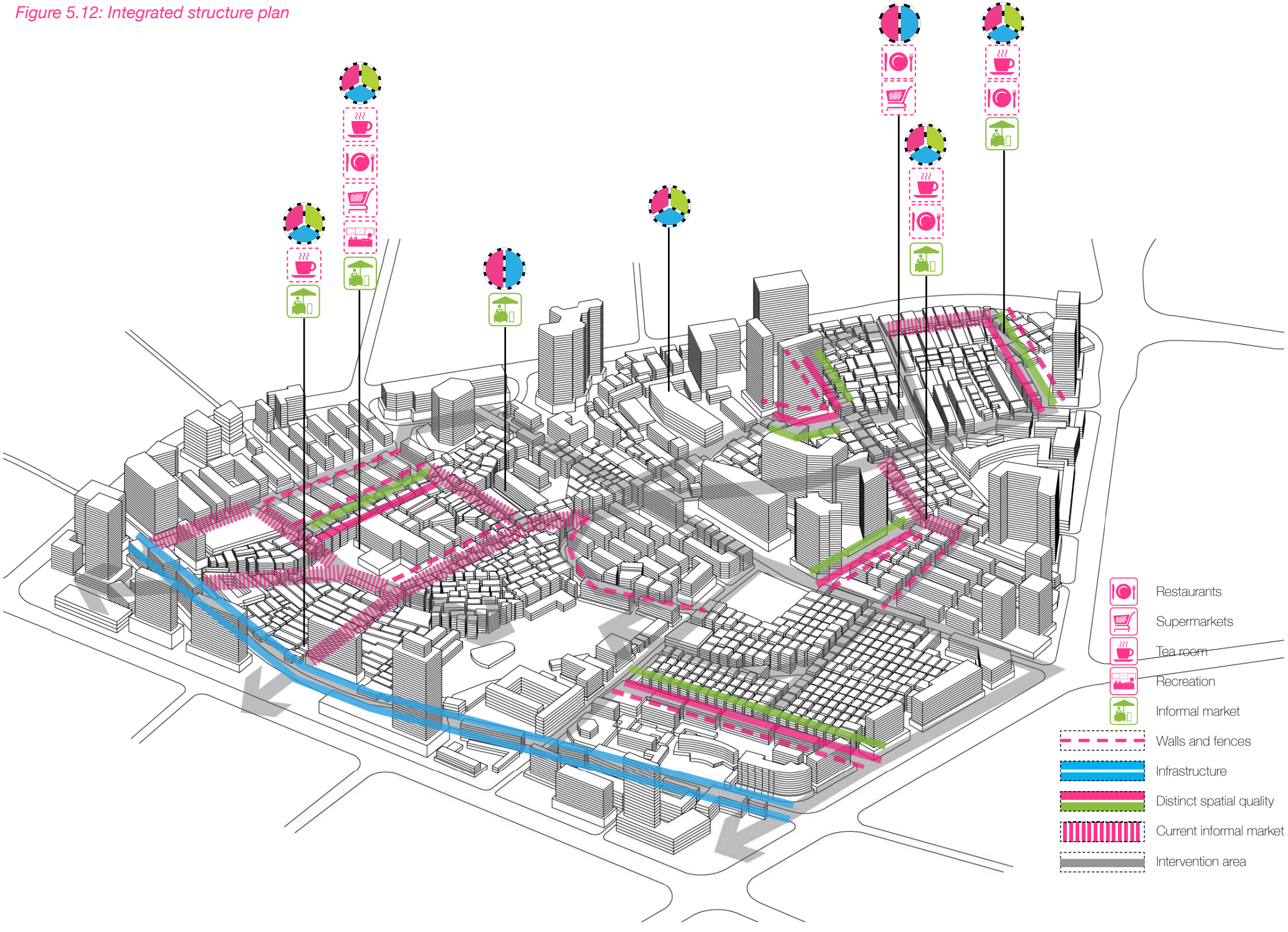


Figure 5.13: Space syntax evaluation

Here we evaluate this structure with space syntax to see if proposed public space system are accessible enough. From figure 5.13 we can see, those red lines have high-integrated value, while those are more blue and purple have less-integrated value, which need to be enhanced during intervention.

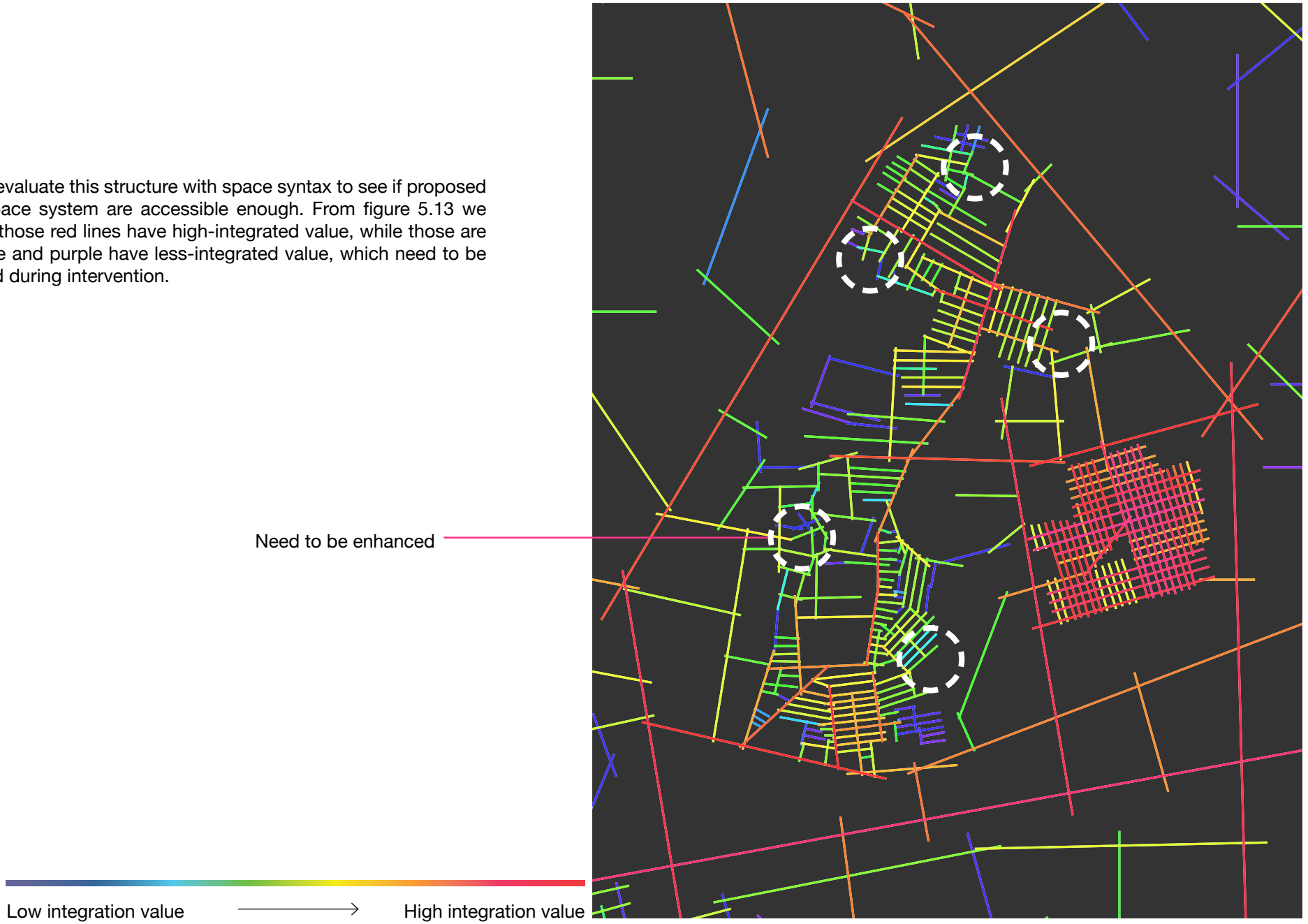
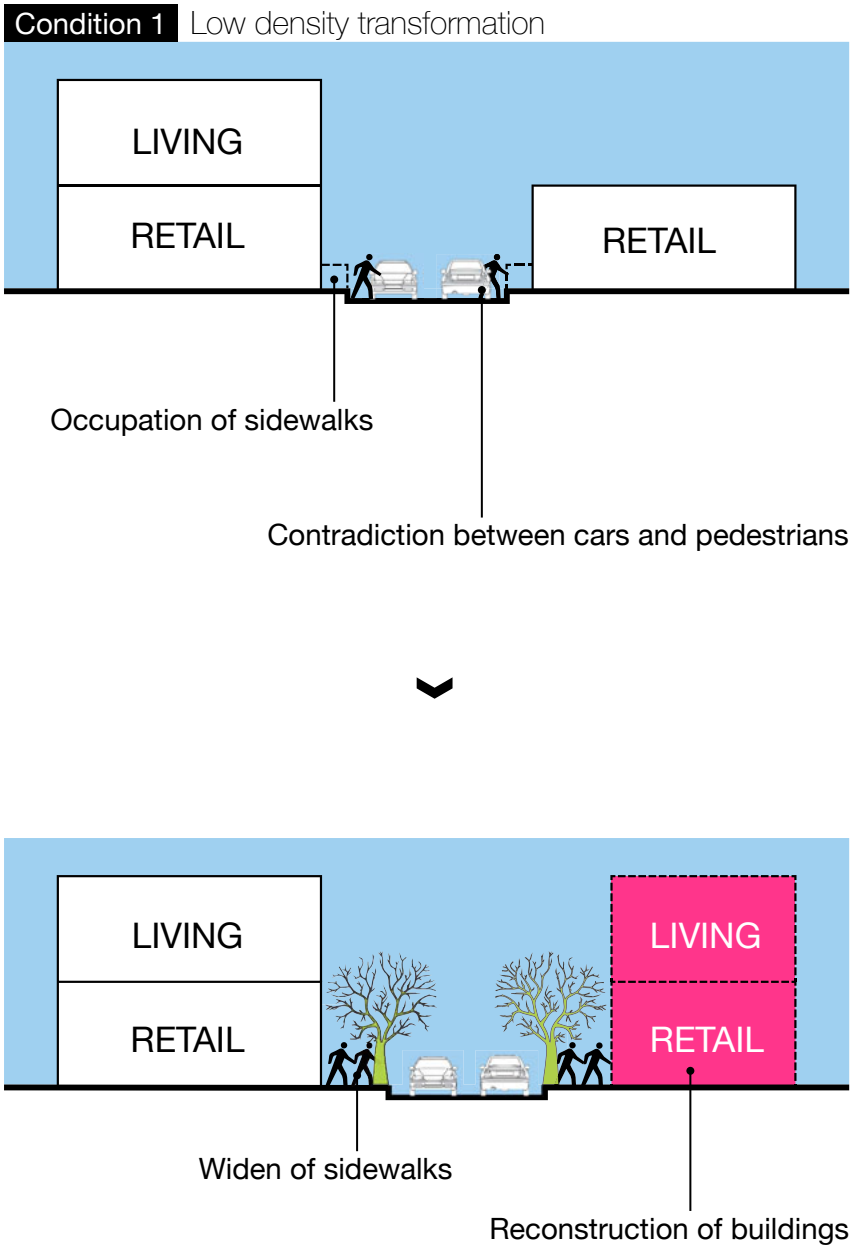


Figure 5.14: Transformation mode for general connection 1



5.2 Toolbox for intervention

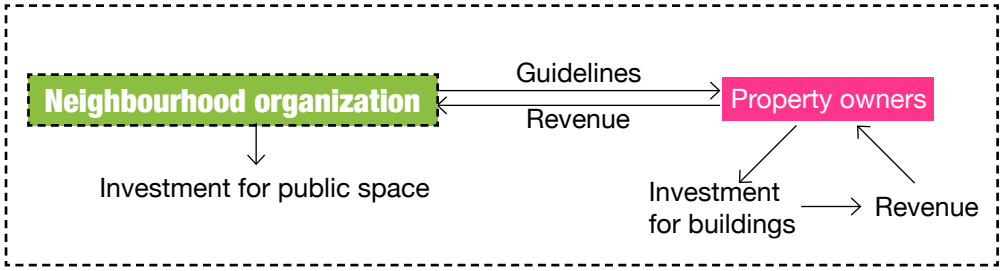
As this proposed public space network is complex, there should be different transform goals and modes according to specific barrier that need to be tackled. Here in this part, different tools will introduced in terms of spatial transformation methods and stakeholders organization to better intervention.

5.2.1 General connection

The first type is 'general connection'. There are basically streets and alleys connectiong different squares and markets. In those areas, walkability and connectivity need to be improved as basic elements within this public space network. When the connection is a street dealing with contradiction between cars and pedestrians (figure 5.14) in low density area, it's possible to rebuild one side of buildings to make more room for sidewalks. Then certain quality can be added such as materials and landscape elements. In the meantime, the reconstruction of buildings can also bring more diverse commercial types to active the street life.

In this case, a 'self-organised' model can be implemented (figure 5.15). Property owners of demolished buildings can reconstruct theri properties by themselvies according to the guidelines issued by 'neighbourhood organization'. Because they are given more floor space as compensation, which can encourage this process. Also, the possible revenue from this reconstruction can also contribure as part of investment for public space. Still, the investment from government is the basis for improvement of public space.

Figure 5.15: Self-organised model



Take one site as example, this street will be improved as connection within the proposed public space network. Based on the tranformation mode, this street can be transformed from figure 5.17 to figure 5.19.

Figure 5.16: 3D model of current situation---street with low density

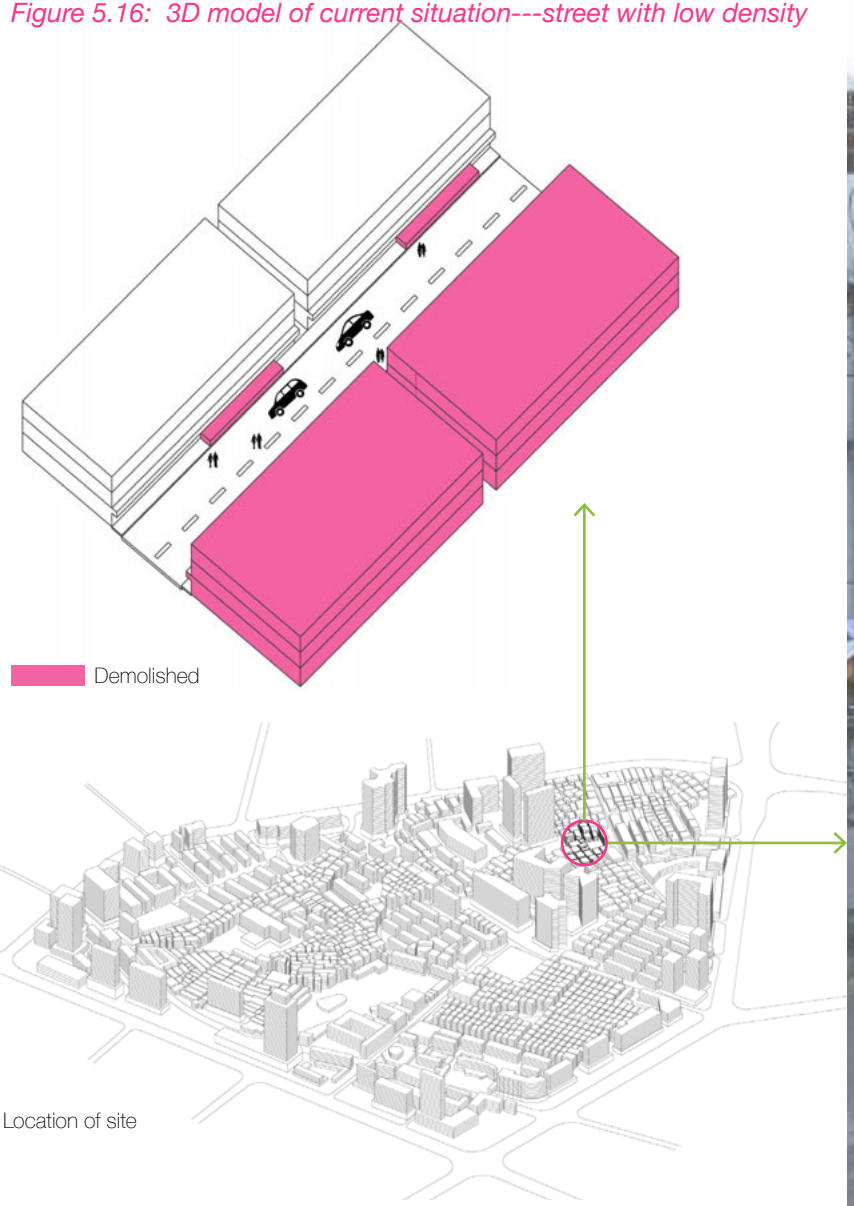


Figure 5.17: Current situation on general connection
source: http://map.baidu.com/

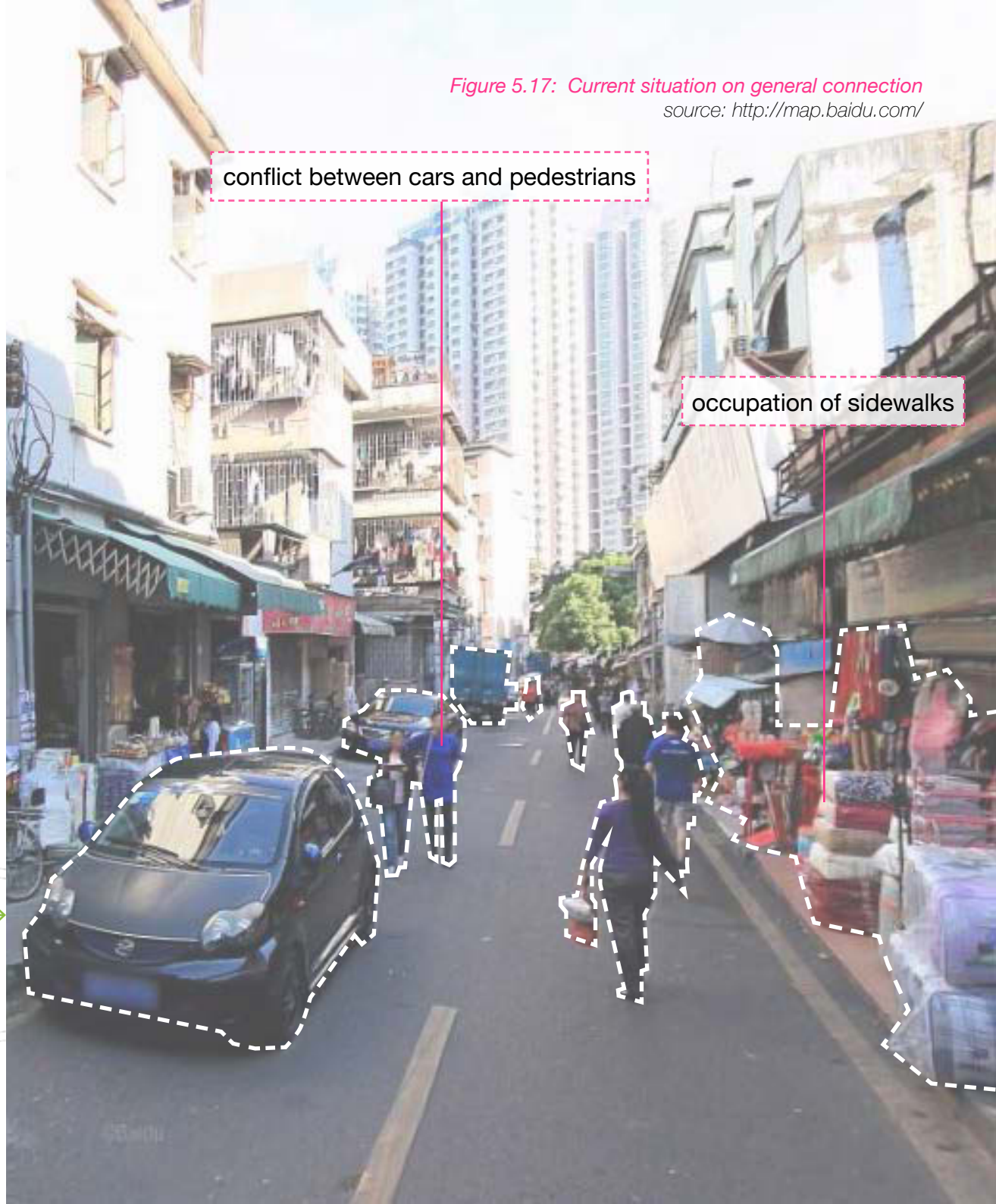
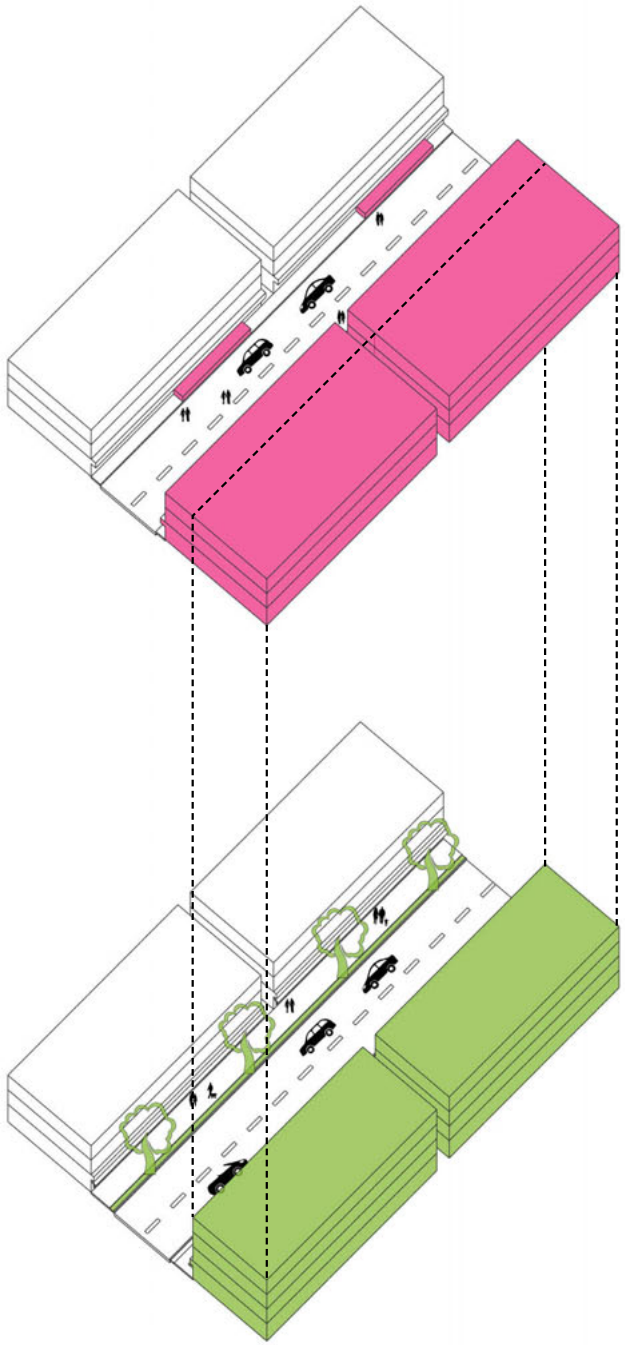


Figure 5.18: 3D model of transformation---street with low density



Current situation

↓

Demolish

↓

New construction of buildings

↓

widen of sidewalks

↓

Landscaping

↓

Improved connection

Demolished

Added ot new elements

Figure 5.19: Proposed image after transformation

When connections are inside urban villages that need to be improved, there's often a problem of limited space (1-2meters wide). Here new constructions with function transform can be applied to make cost and revenue balanced. With this new construction, connections in between can be widened and new dynamic can be added such as commercial or social facilities (figure 5.21).

Under this condition, property owners are villagers, can also play an active role (figure 5.20) similar as developers. As the function of lands use is transformed from dwelling to commercial use (usually with high economic value), villagers are more likely to participate in this process.

Figure 5.20: Self-organised model

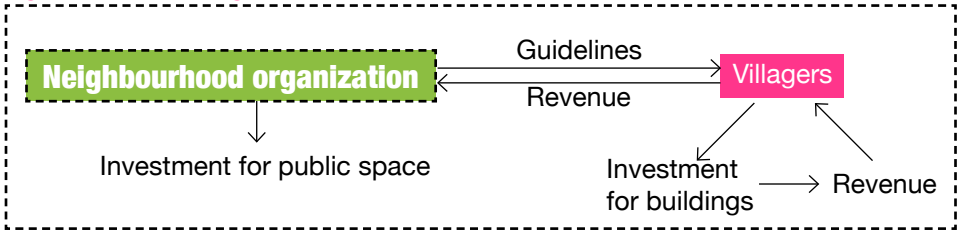


Figure 5.21: Transformation mode for general connection 2

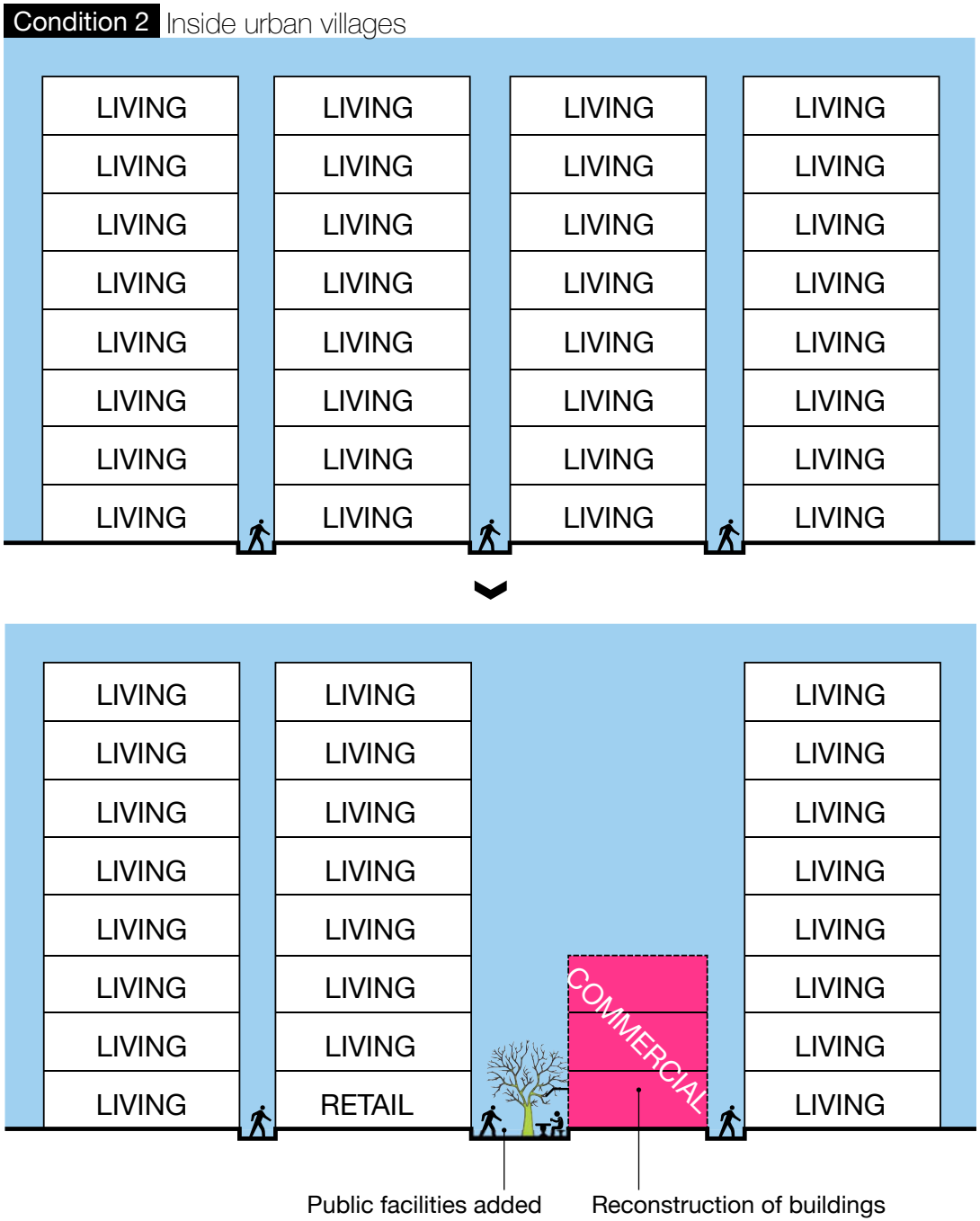
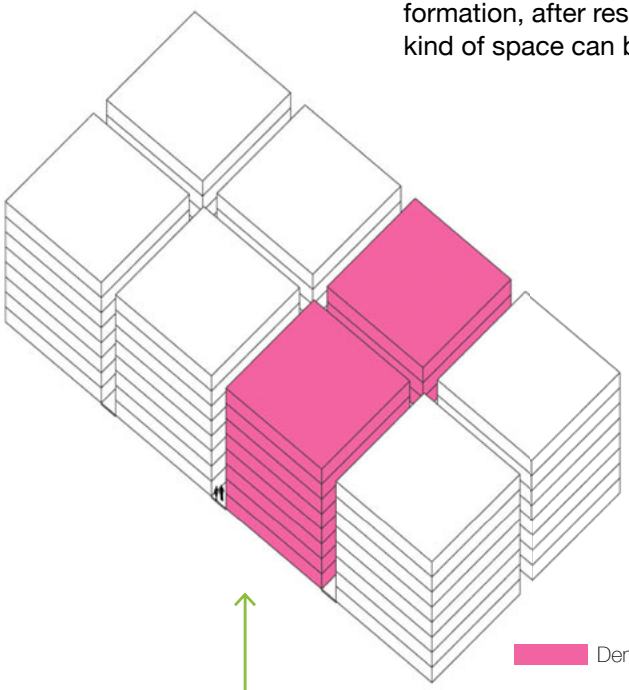
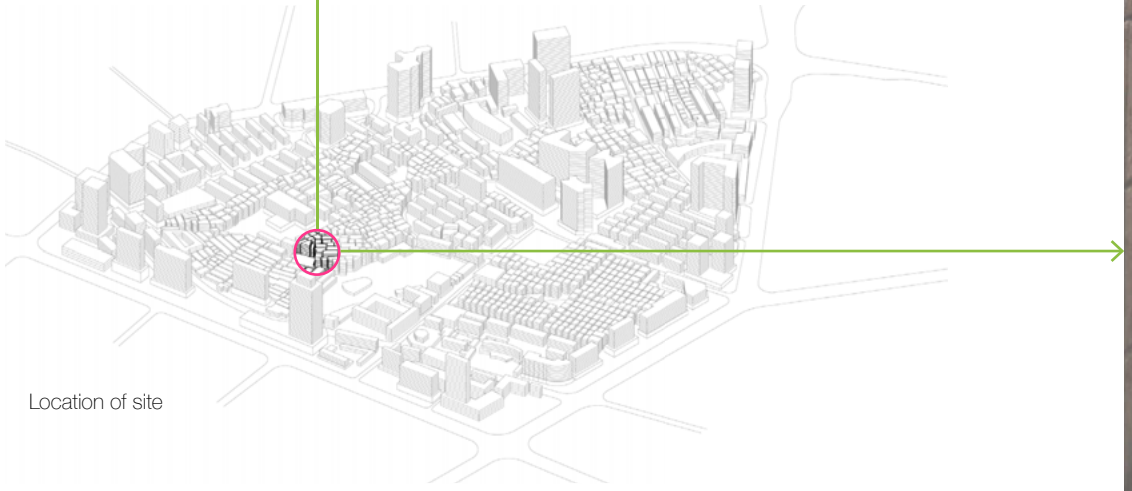


Figure 5.22: 3D model of current situation---connection inside urban villages

The figure 5.23 shows a photo inside urban villages. As the space in between is limited for tranformation, after resconstruction of buildings, this kind of space can be like figure 5.25.





Location of site

Figure 5.23: Current situation inside urban villages
Source: made by author

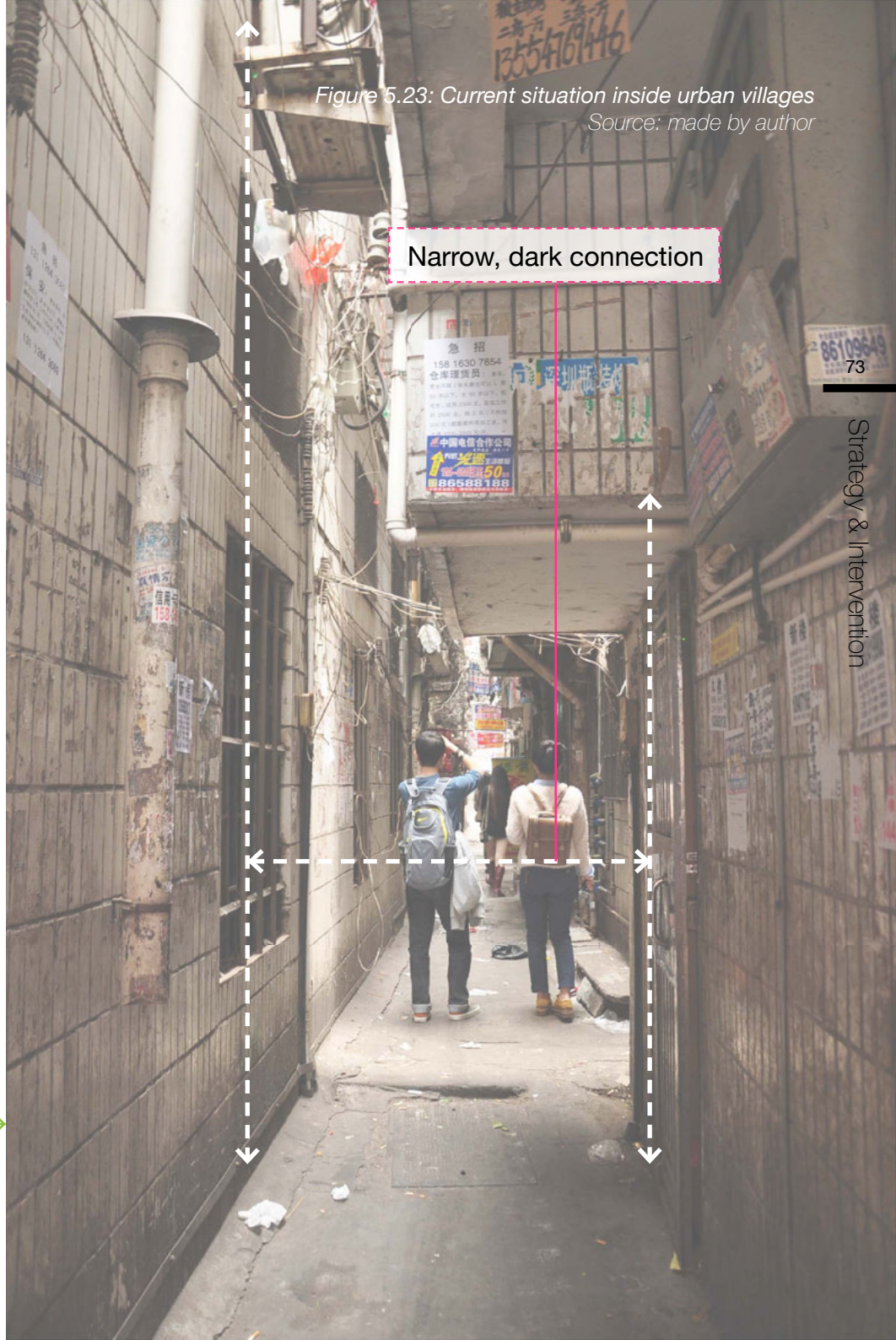
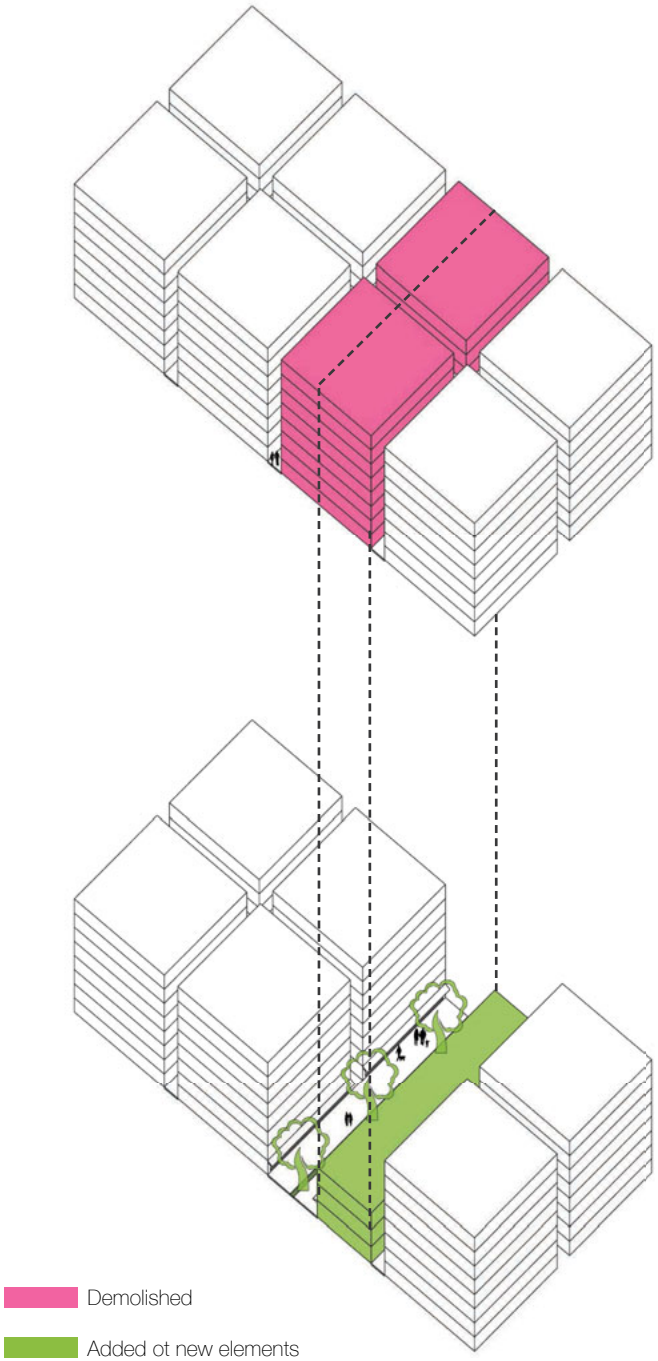


Figure 5.24: 3D model of transformation---connection inside urban villages



Current situation

↓

Demolish

↓

Function tranform

↓

New construction of buildings

↓

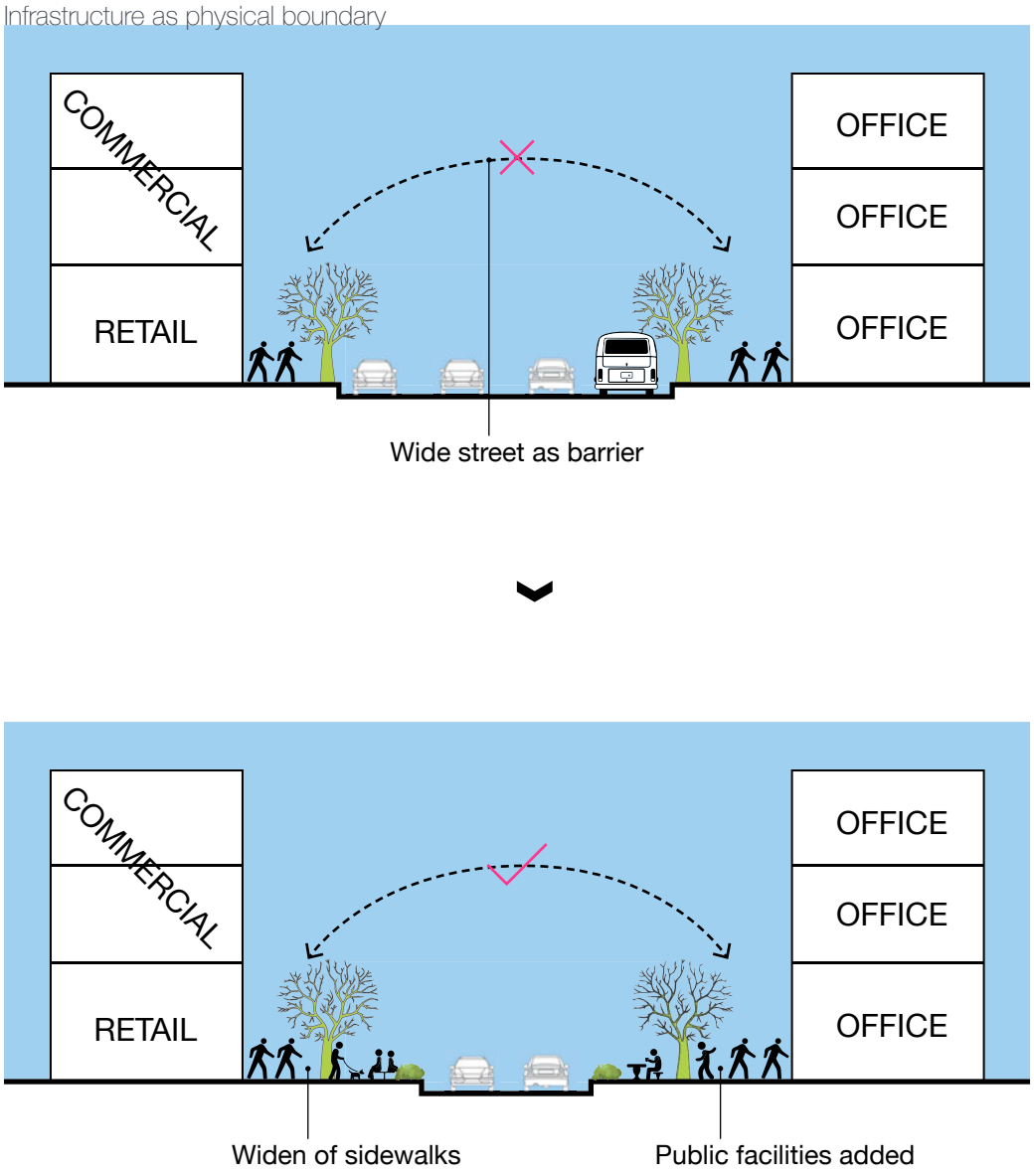
Landscaping

↓

Improved connection

Figure 5.25: Proposed image after transformation

Figure 5.26: Transformation model for infrastructure as physical boundary



5.2.2 Infrastructure as physical boundary

When the road is too wide, it can act as barrier for connections (figure 5.25). In this case, the road has four car lanes, separating metro station, green space and several commodity enclaves apart from others. As two lanes always act as parking space occupied by rows of cars, it's reasonable to transform part of them to sidewalk space. Thus, facilities like benches, greenery can be added to make street attractive and less impassable.

As this case only deal with public space---the road, stakeholders involved are less complex. The 'neighbourhood organization' thus will take responsibility of both guidelines set and implementation as well (figure 5.26)---so called ' organization-supported model'.

Figure 5.27: Organization-supported model

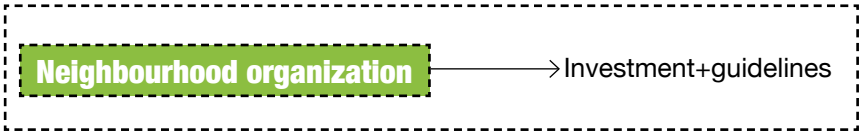
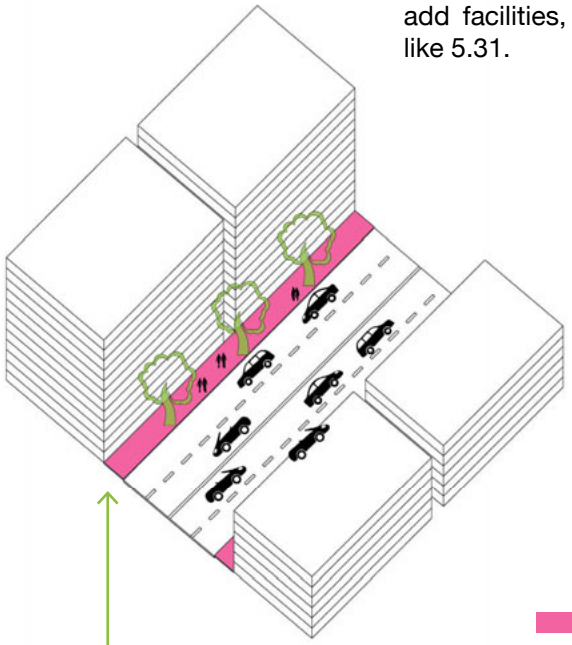


Figure 5.28: 3D model of current situation---infrastructure

The photo on the right---figure 5.29 shows a busy road in this neighbourhood. It's hard for pedestrians to cross. Widen the sidewalks and add facilities, the street can look like 5.31.



Transformed

Location of site

Figure 5.29: Current situation of infrastructure as physical boundary
source: http://map.baidu.com/

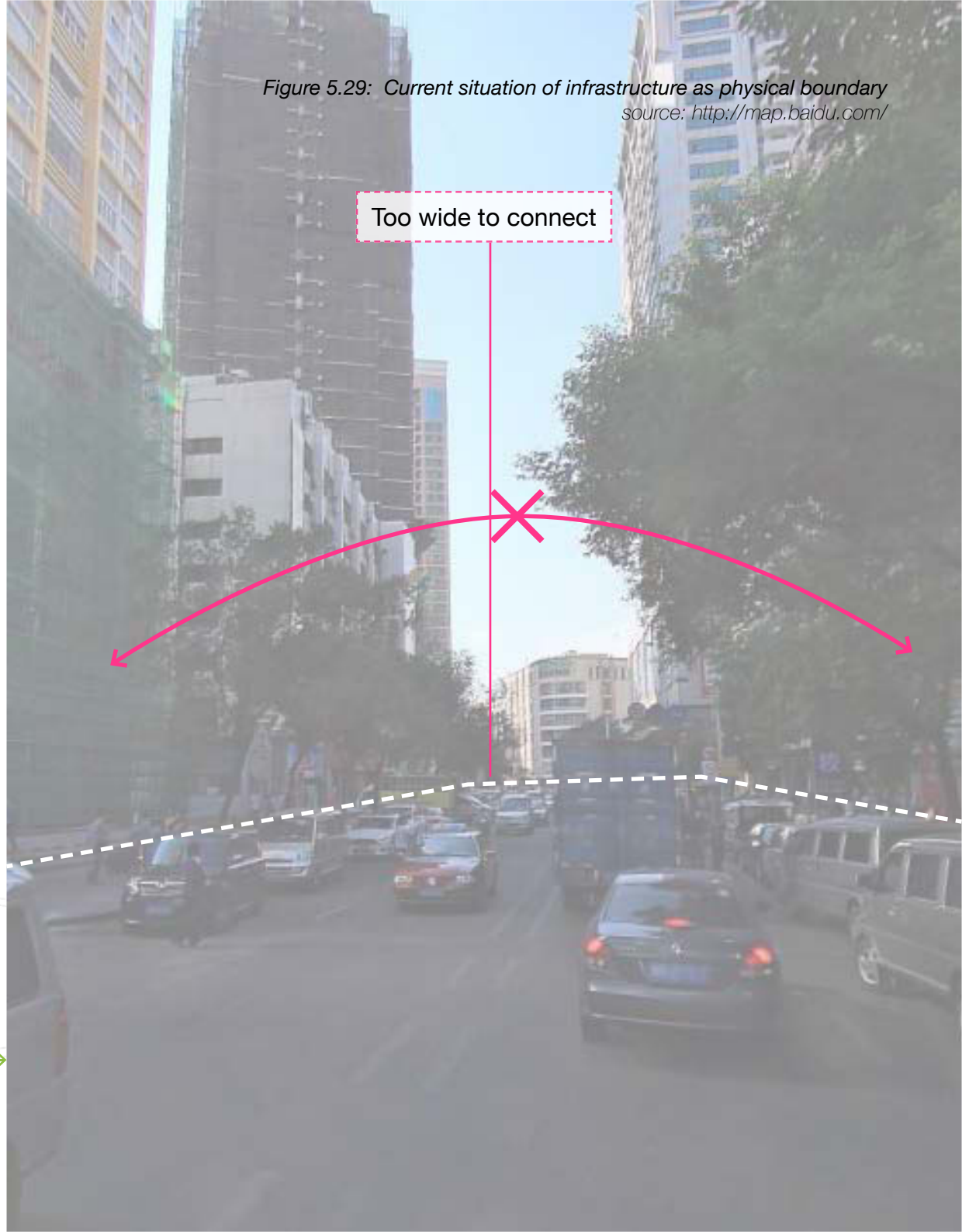
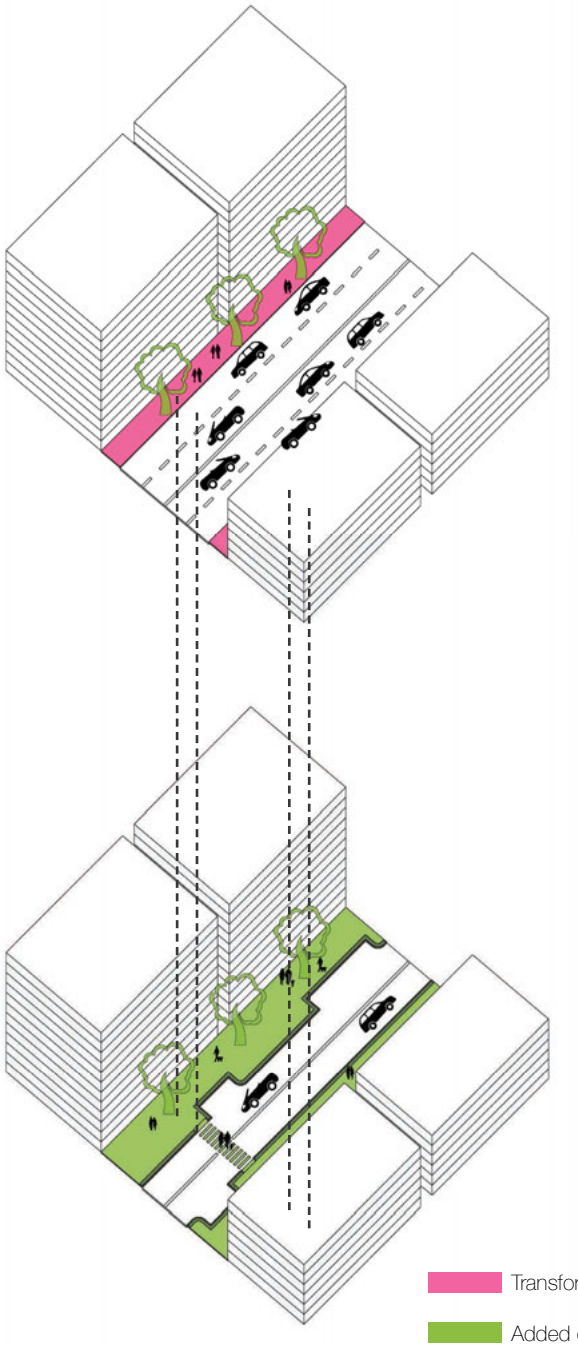


Figure 5.30: 3D model of transformation---infrastructure as physical boundary



Current situation

↓

Widen of sidewalks

↓

Landscaping

↓

Improved infrastructure

Transformed space

Added or improved new elements

Figure 5.31: Proposed image after transformation

5.2.3 Wall + distinct spatial quality as physical boundary

Walls are common in commodity enclaves and some work-unit compounds , mostly for safety reasons. It's hard to remove walls as they serve certain function, but it can act more than just walls. For example, certain landscaping and new social facilities can make space in between alive and attractive (figure 5.31).

In this case, consensus is needed as walls are part of property owned collectively by property owners. Although they don't have to pay for the improvement, the neighbourhood organization has to persuade them to accept the transformation (figure 5.32).

Figure 5.33: Consensus model

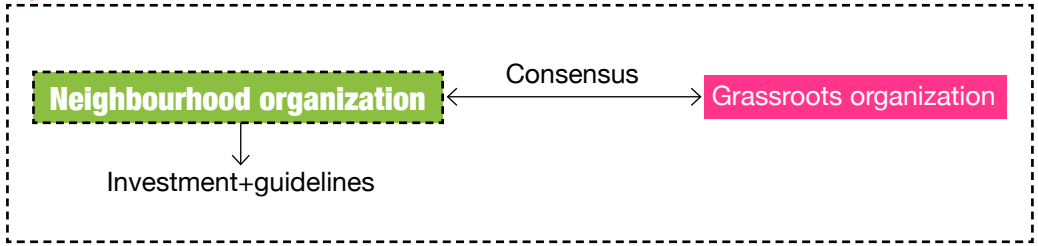


Figure 5.32: Transformation model for walls and distinct spatial quality

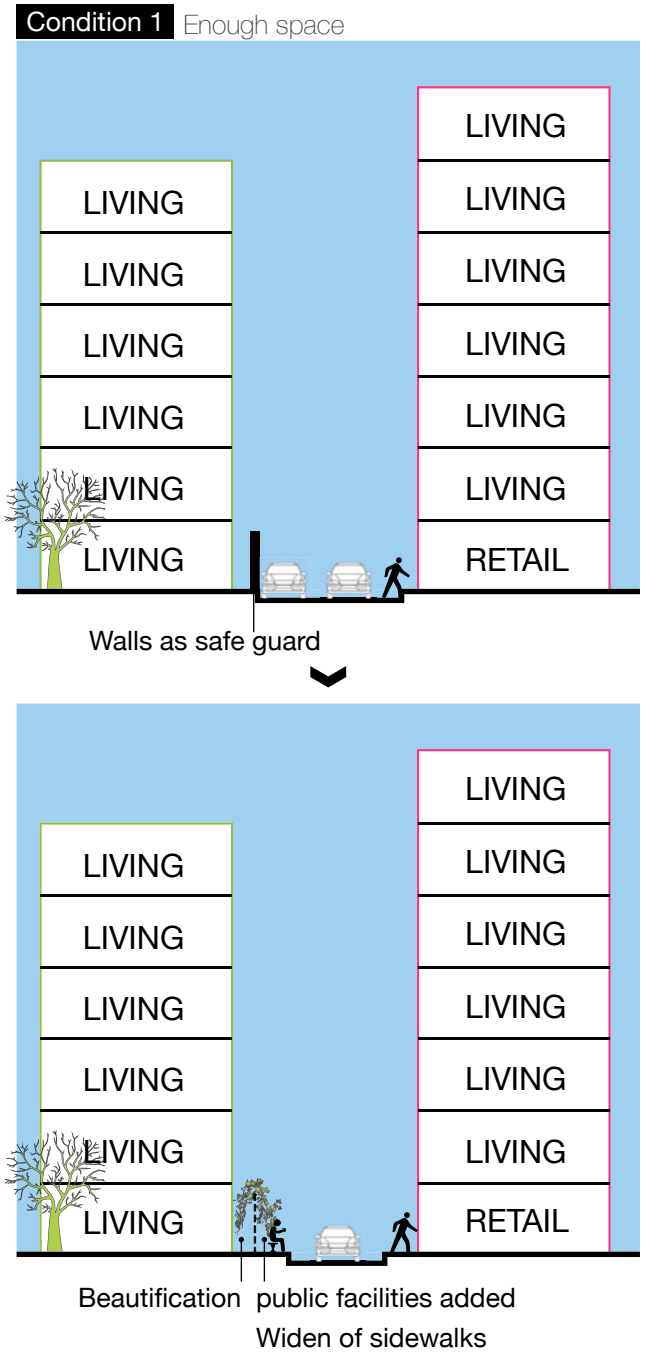
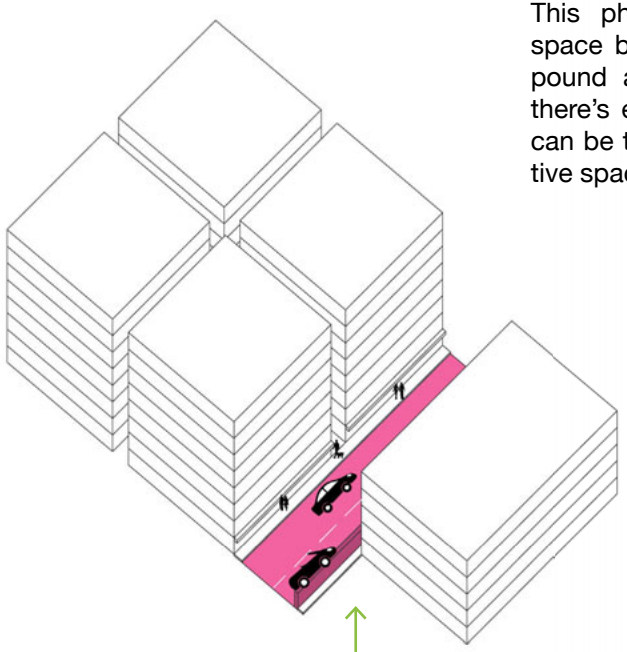


Figure 5.34: 3D model of current situation---walls and distinct spatial quality



This photo (figure 5.35) shows space between a work-unit compound and an urban village. As there's enough space (parking), it can be transformed to a more active space like figure 5.37.

Transformed

Location of site

Figure 5.35: Current situation---walls and distinct spatial quality
Source: made by author

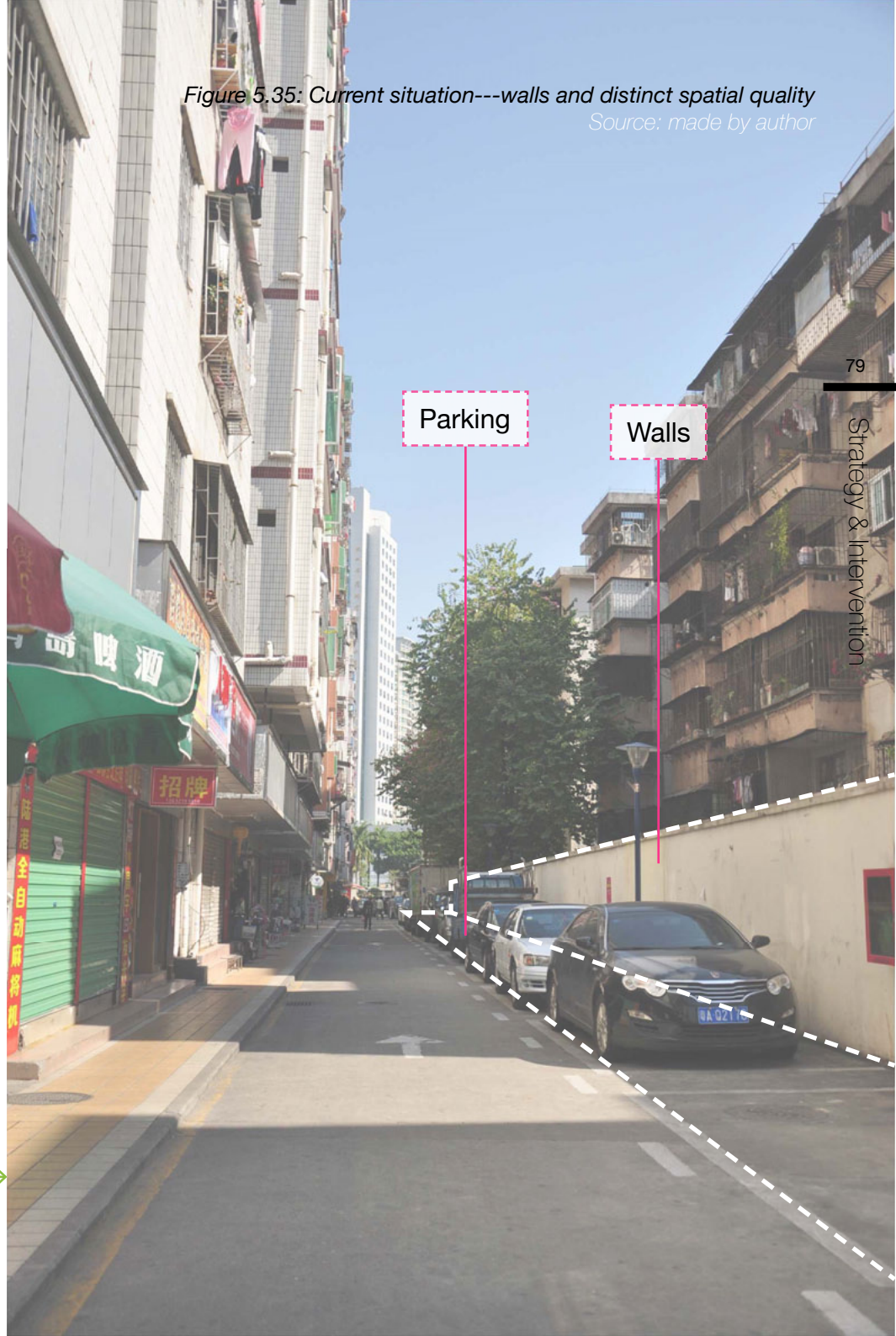
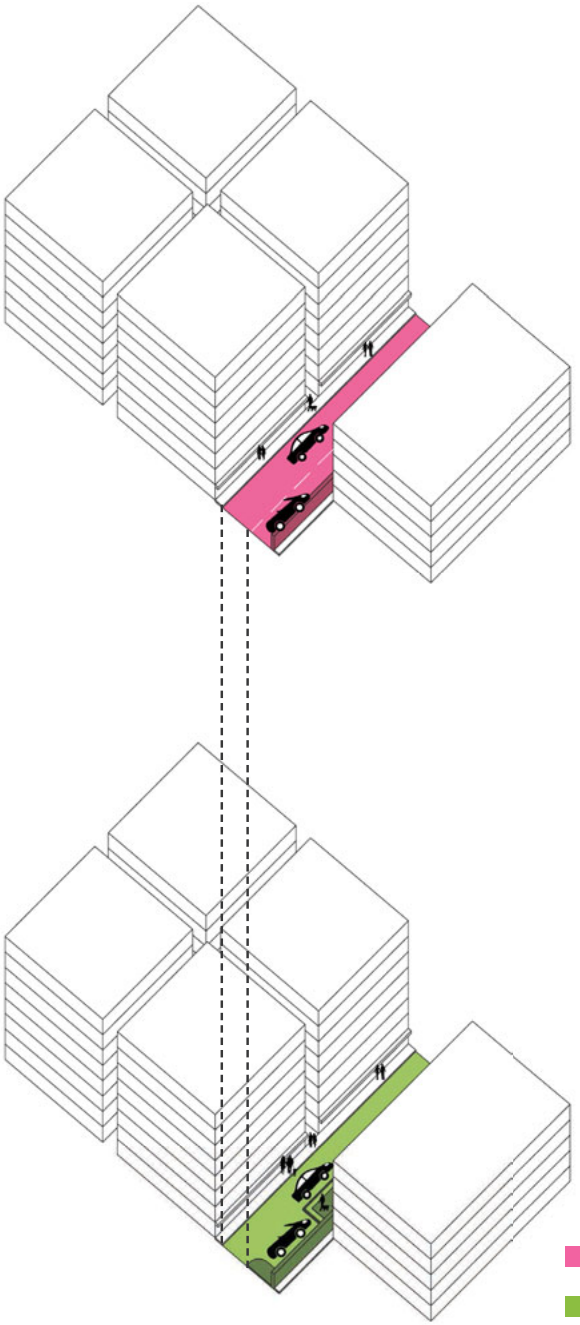


Figure 5.36: 3D model of transformation---walls and distinct spatial quality



Current situation

↓

Parking space transform

↓

Landscaping

↓

Facilities added

↓

Improved physical boundary

Transformed space

Added or improved new elements

Figure 5.37: Proposed image after transformation

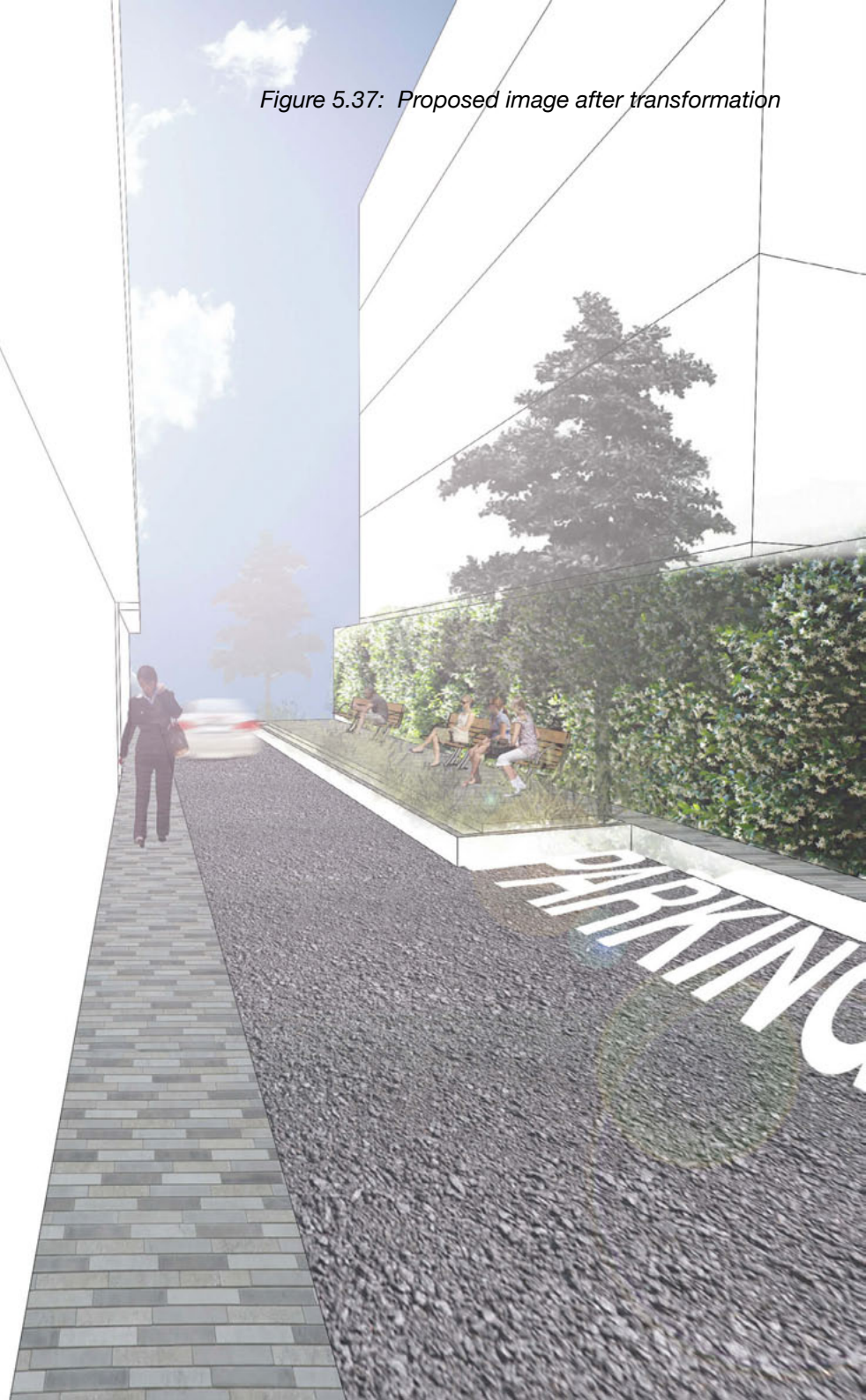
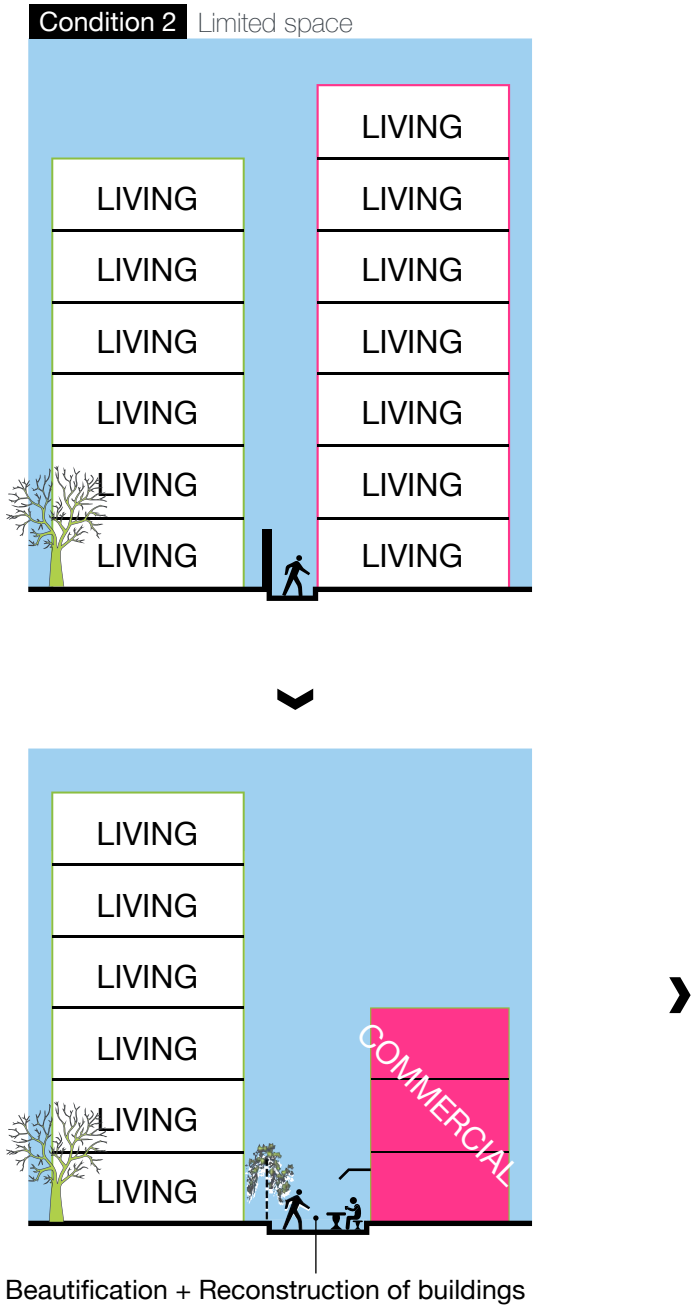


Figure 5.38: Transformation model for walls and distinct spatial quality



On other conditions like what is shown on the left, there's limited space for improvement, then new construction is needed. Usually buildings of villagers are reconstructed and transformed to commercial buildings, and space in betwen is widened and improved, toghether with the landscaping of walls (figure 5.38).

This process involves both villagers whose buildings are reconstructed and grassroots organization whose walls are improved. So self-organised construction and consensus process are both needed in this case (figure 5.39).

Figure 5.39: Self-organise plus Consensus model

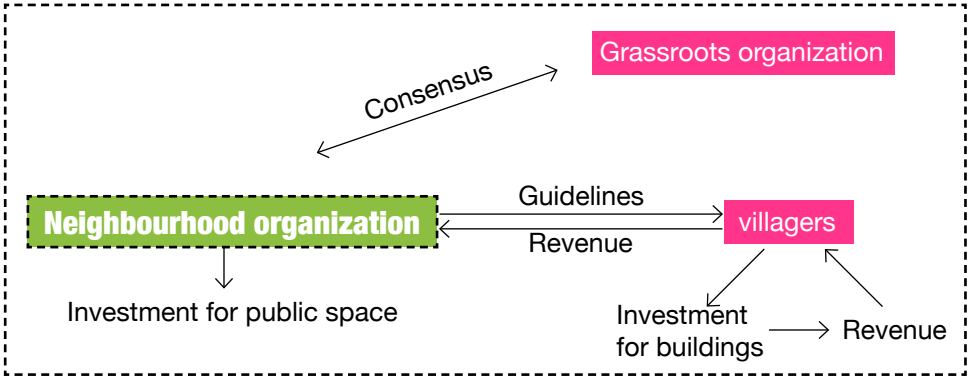
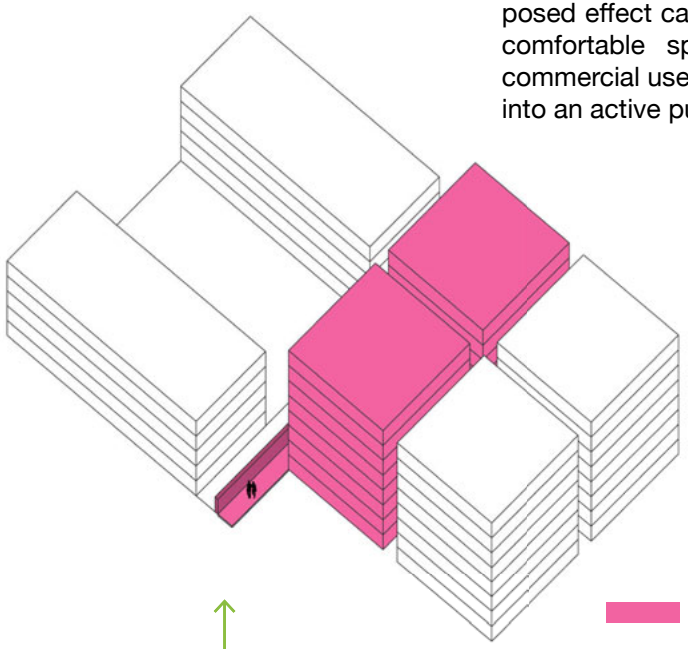
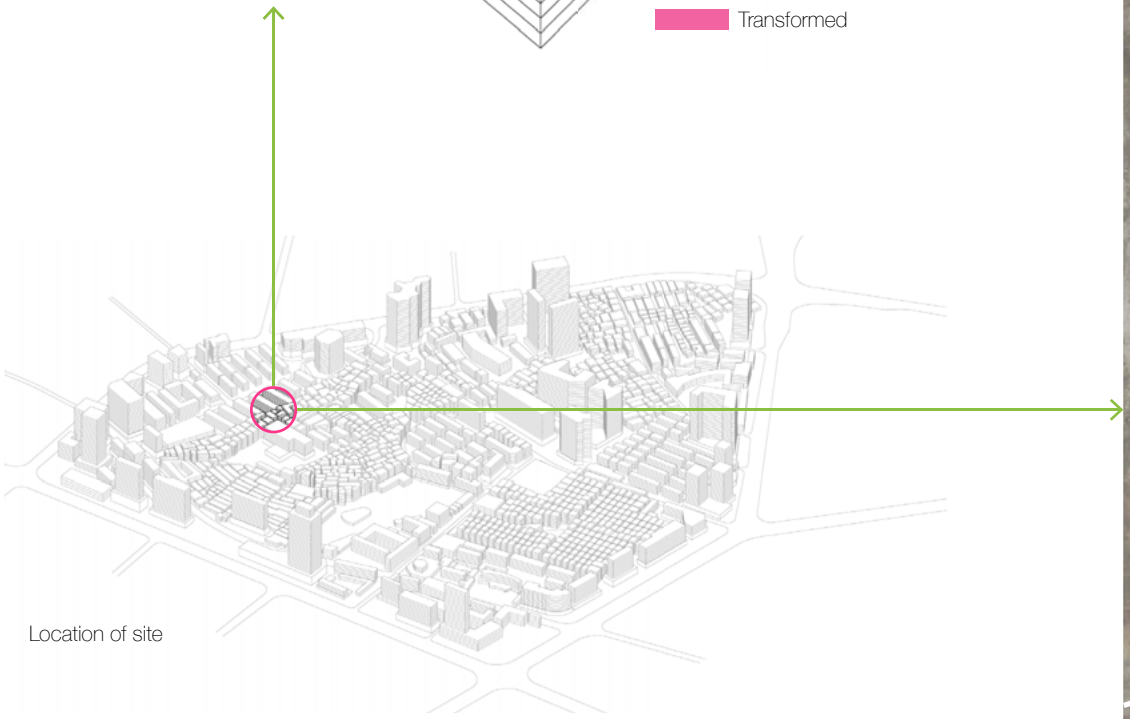


Figure 5.40: 3D model of current situation---walls and distinct spatial quality

When in the case of limited space in between as shown in figure 5.41, the proposed effect can be like figure 5.43---more comfortable space for pedestrians and commercial use, transforming a 'dead' alley into an active public street.



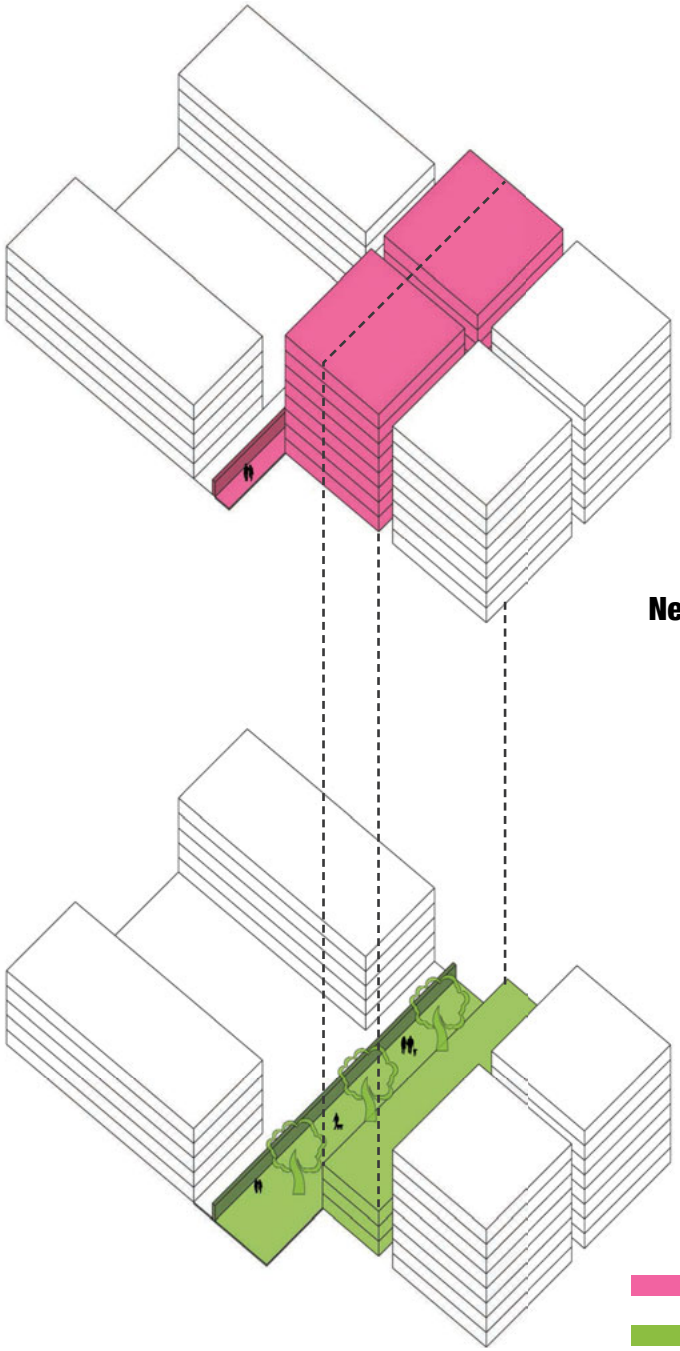
Transformed



Location of site

Figure 5.41: Current situation---walls and distinct spatial quality
Source: made by author

Figure 5.42: 3D model of transformation---walls and distinct spatial quality



Current situation

↓

Demolish

↓

Function tranform

↓

New construction of buildings

↓

Landscaping

↓

Facilities added

↓

Improved space

Transformed buildings and space

Added or improved new elements

Figure 5.43: Proposed image after transformation

5.2.4 Social space making

For where social space is needed, often there is no extra space for that, then demolish and transformations are both needed. The space used for demolished buildings can be transformed to social space for residents. Facilities, landscape can both added.

The way of balancing different stakeholders can be seen as a 'trade-off model'---those transformed buildings can accommodate more space for commercial use, part of which can be transferred to property owners whose buildings are demolished (figure 5.45).

Figure 5.44: Transformation model for walls and distinct spatial quality

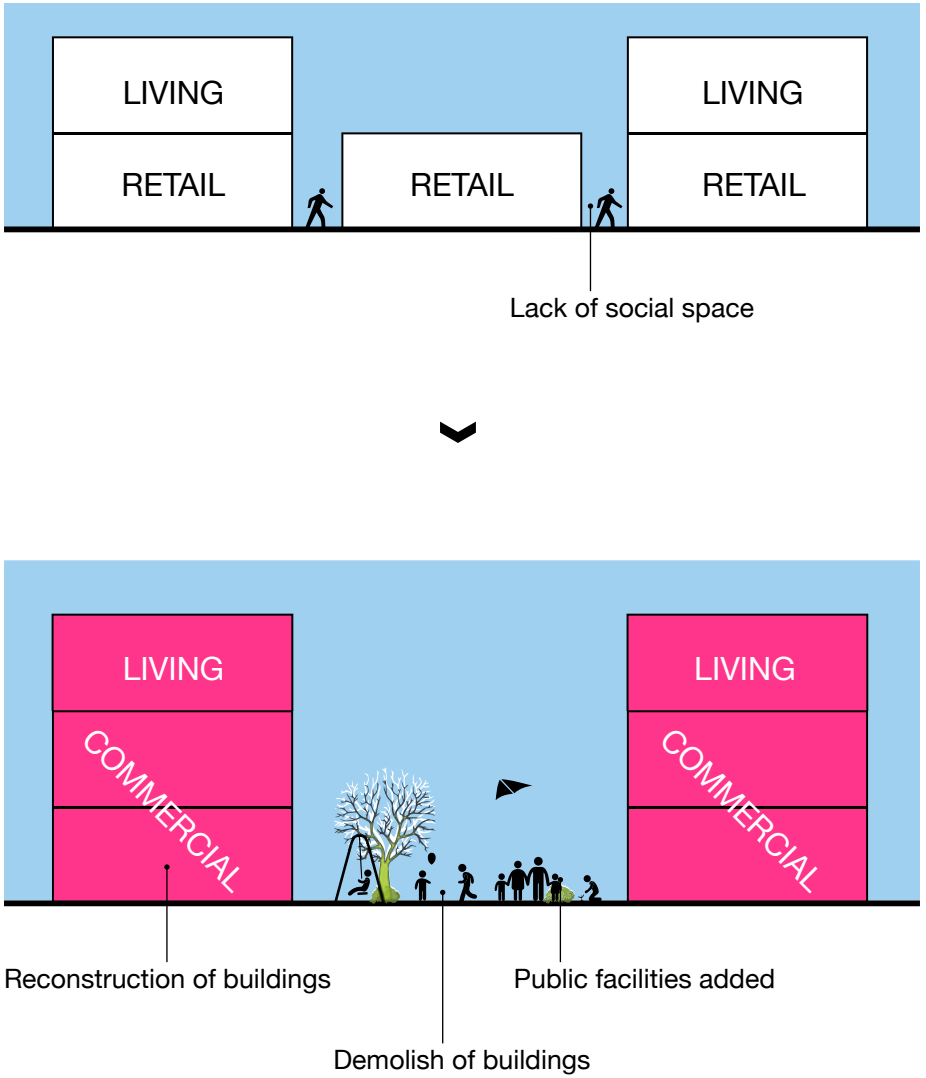


Figure 5.45: Trade-off model

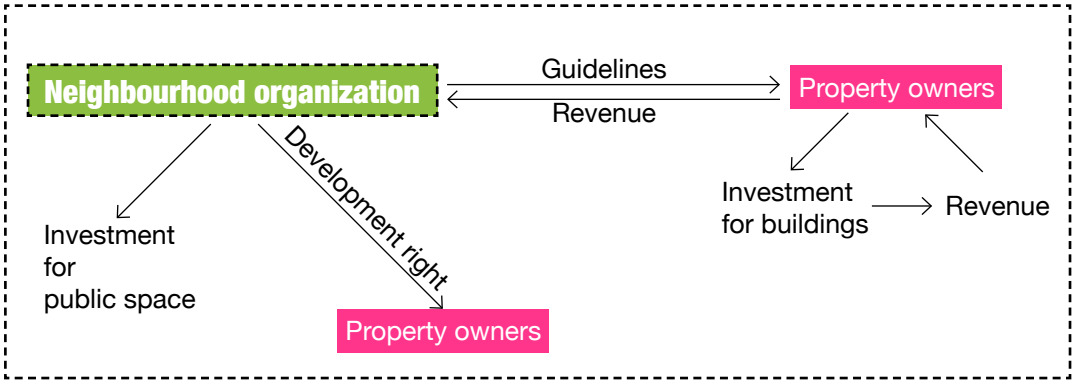


Figure 5.46: 3D model of current situation---lack of social space

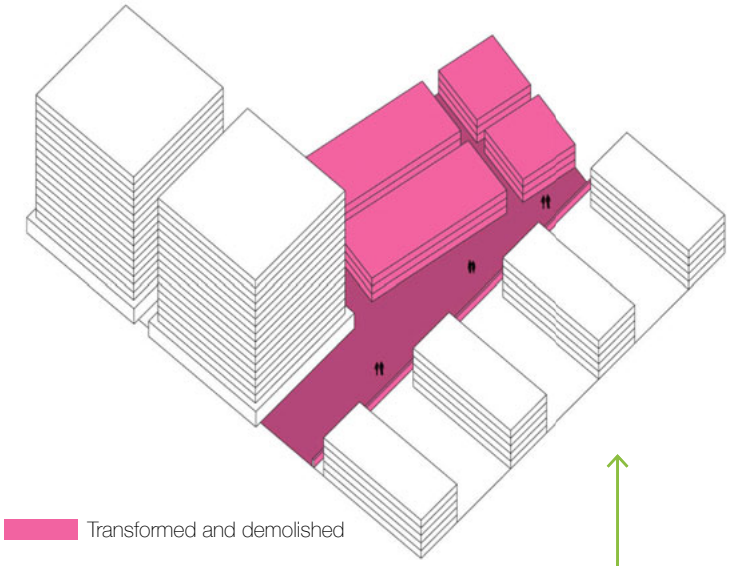
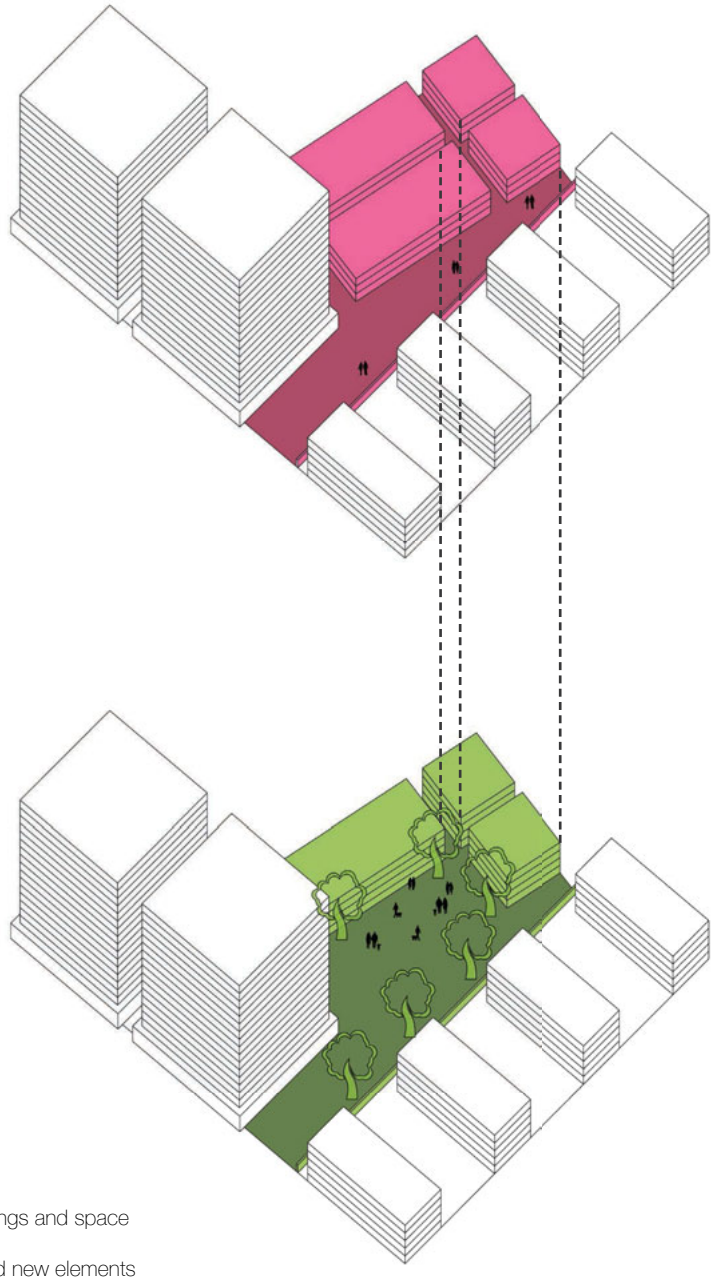


Figure 5.47: Current situation---lack of social space
source: http://map.baidu.com/

This is a photo (figure 5.47) of somewhere between three types of housing, with walls on one side. After demolish some buildings and add proper facilities and landscape elements, it could be a place for residents of all classes gathering (figure 5.49).

Figure 5.48: 3D model of transformation---lack of social space



Transformed buildings and space

Added or improved new elements

Current situation

↓

Demolish

↓

Function tranform

↓

New construction of buildings

↓

Landscaping

↓

Facilities added

↓

Improved social space

Figure 5.49: Proposed image after transformation

5.2.5 *Informal market street*

In the case of informal market street, the narrow and unpleasant spatial quality is a common issue. In order to get more walkable space on street, one side of buildings can be demolished and transformed to higher buildings (figure 5.50). What's more, other commercial types aiming at middle or upper class can be added to stimulate diversity in the same time.

As the type of commercial is essencial here to involve both informal market for low-income groups and high-end shopping, new developers are introduced to guarantee the level of commercials. This can be called as 'new developers involved' model (figure 5.51).

Figure 5.51: New developers involved model

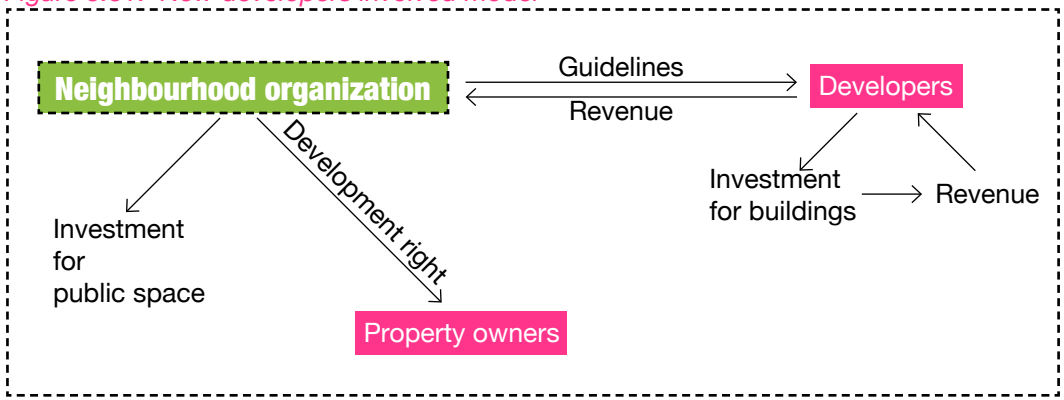


Figure 5.50: Transformation model for informal market 1

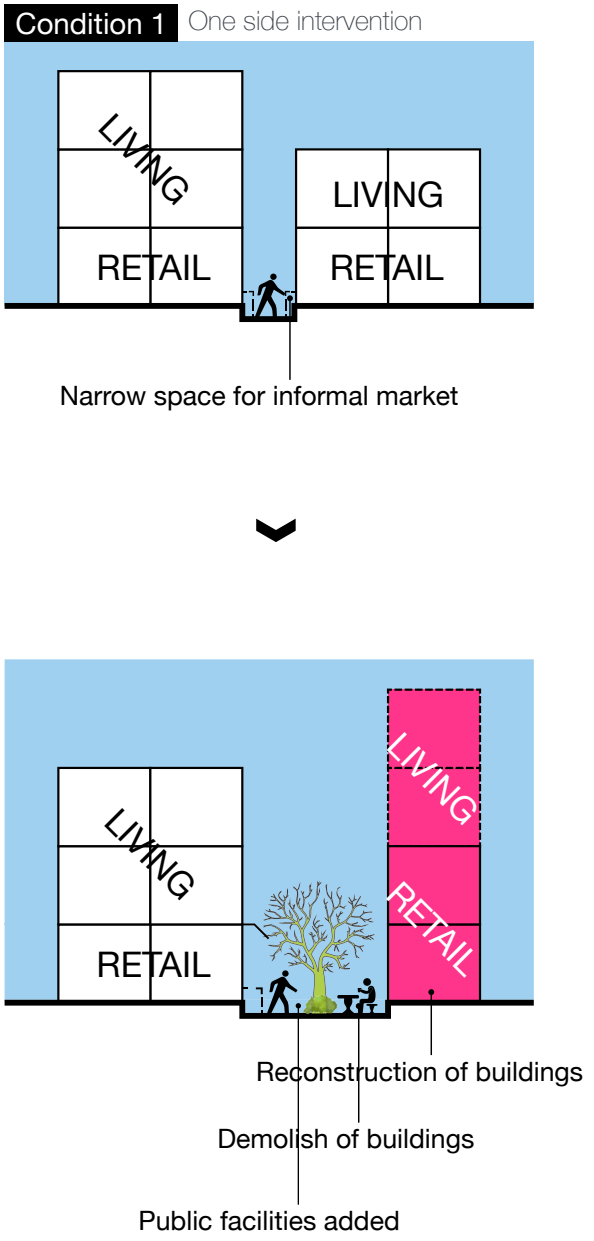
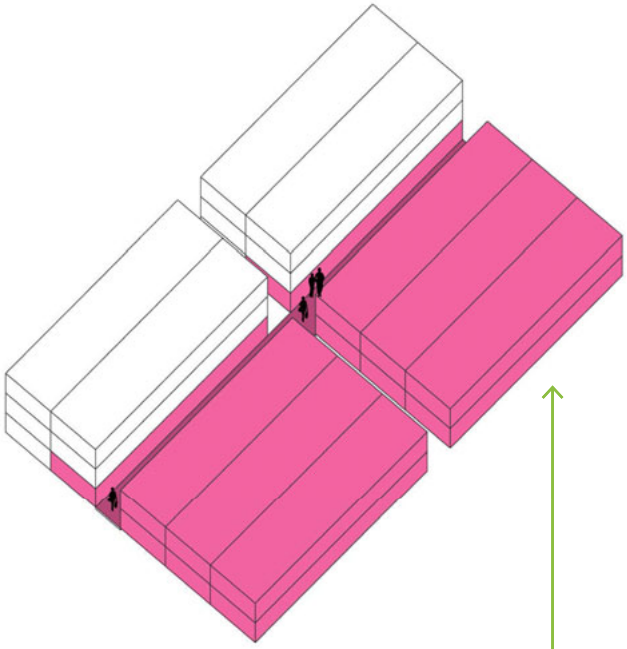


Figure 5.52: 3D model of current situation---informal market

This is a example of low-end informal market (figure 5.53) inside one of these urban villages---there's limited space for walking. After transformation, new commercial types can be added during reconstruction of buildings (figure 5.55)



Transformed and demolished

Location of site

Figure 5.53: Current situation---informal market
source: http://map.baidu.com/

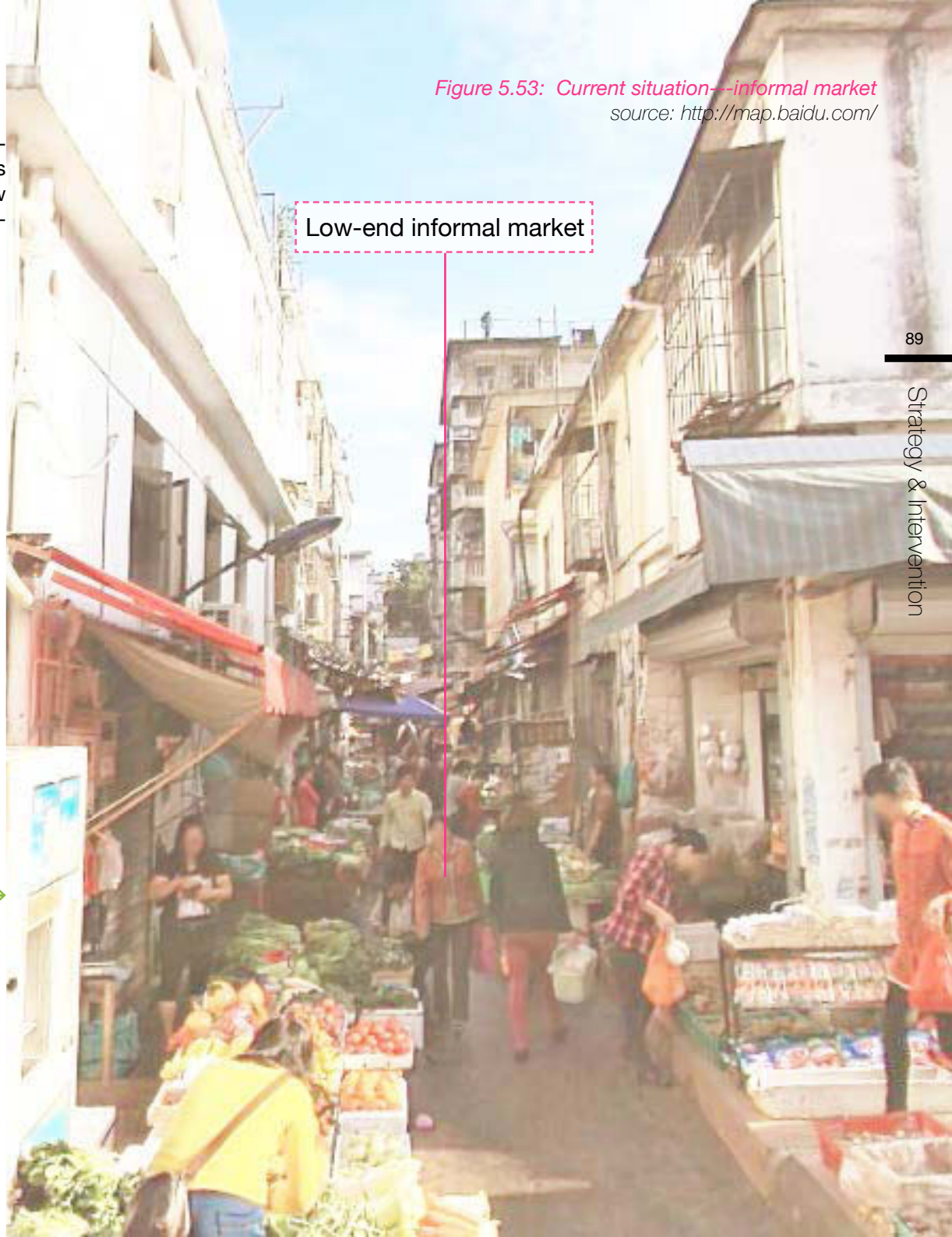
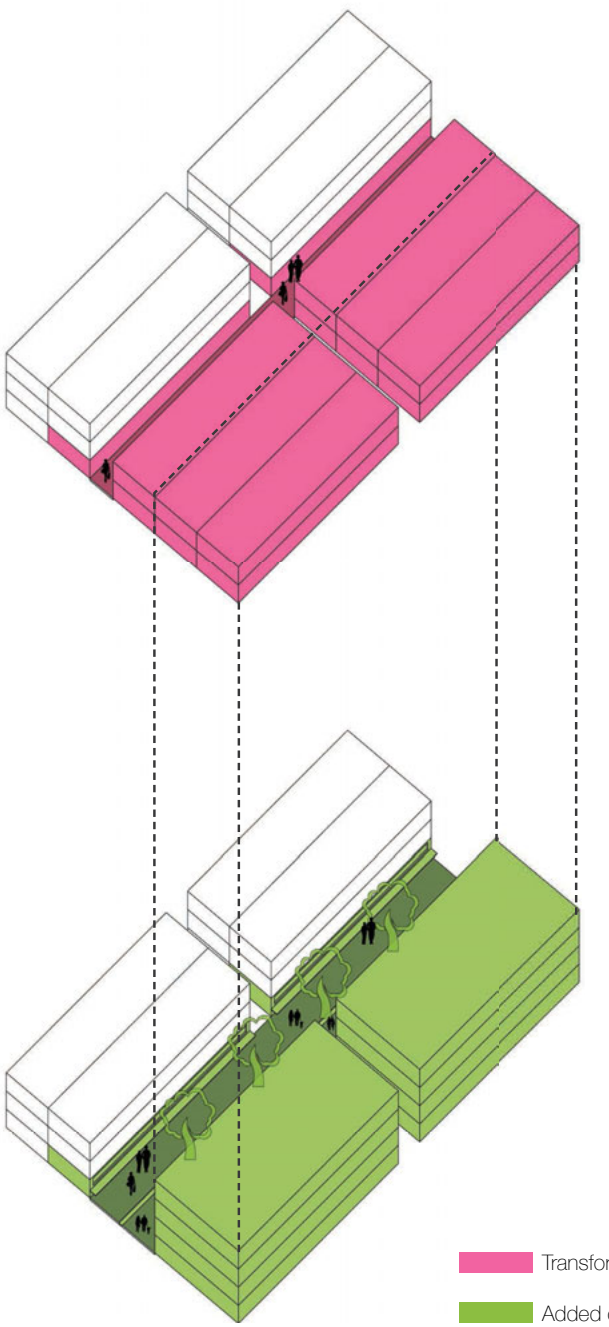


Figure 5.54: 3D model of transformation---informal market street



Current situation

↓

Demolish

↓

Function tranform

↓

New construction of buildings

↓

Landscaping

↓

Facilities added

↓

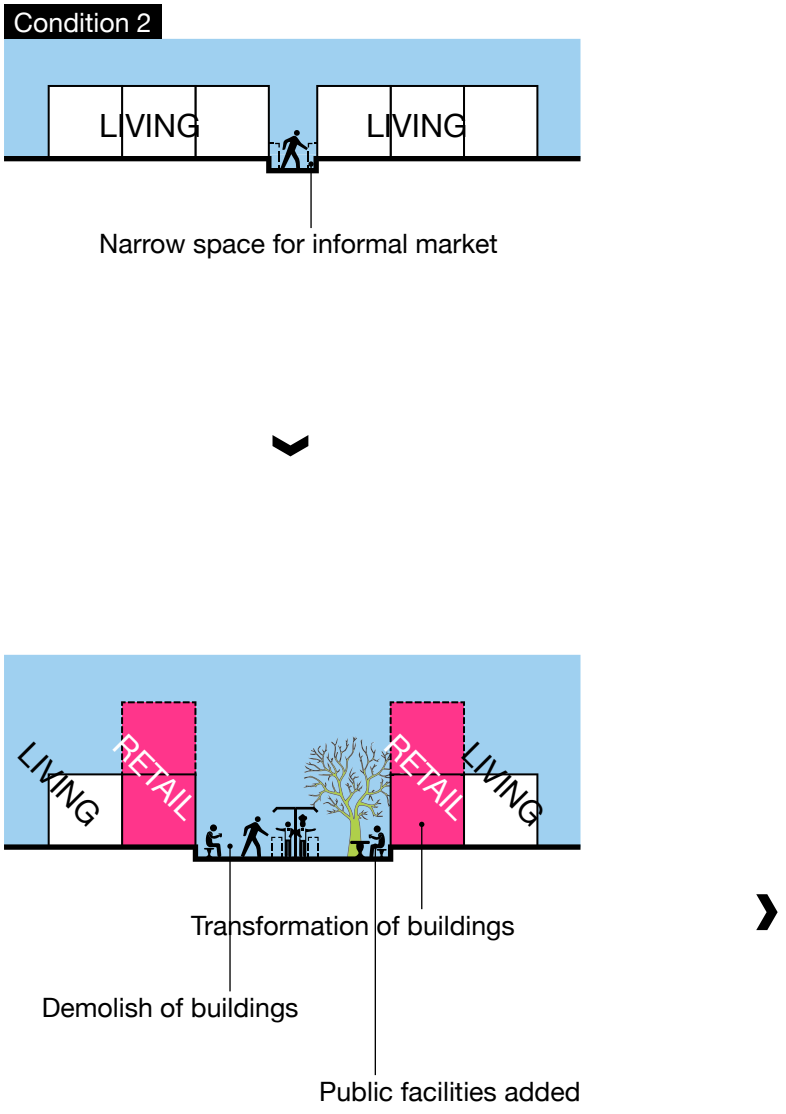
Improved market street

Transformed buildings and space

Added or improved new elements

Figure 5.55: Proposed image after transformation

Figure 5.56: Transformation model for informal market 2



When it's possible to transform both sides of buildings, market street can accommodate more social functions (figure5.56). For example, the informal market street inside old village. The street can be wider with both side of buildings are transformed, and new constructued buildings can be offer more floor space and higher-end commercial types. The informal market can be set in the middle. In order to make the mixed commercial types more integrated, some landscaping elements such as trees and grass can act as buffer zones.

In this case, the 'new developers involved' model can also be implemented (figure 5.57).

Figure 5.57: New developers involved model

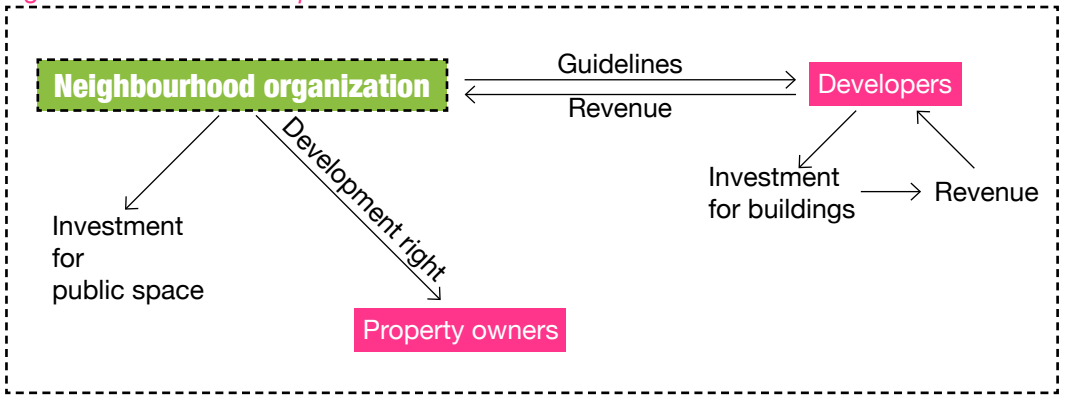
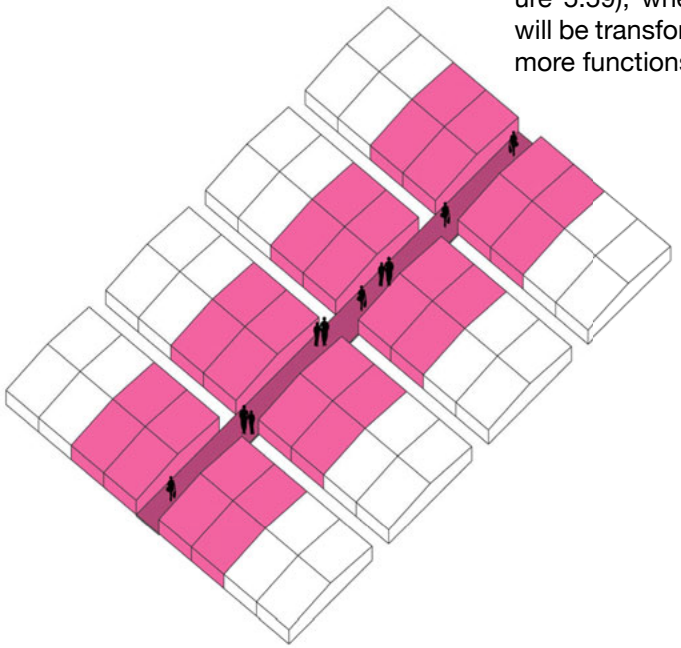


Figure 5.58: 3D model of current situation---informal market street

This is a photo of Hubei old village (figure 5.59), where both side of buildings will be transformed to a street containing more functions (5.61).



Transformed and demolished

Location of site

Figure 5.59: Current situation---informal market
Source: made by author

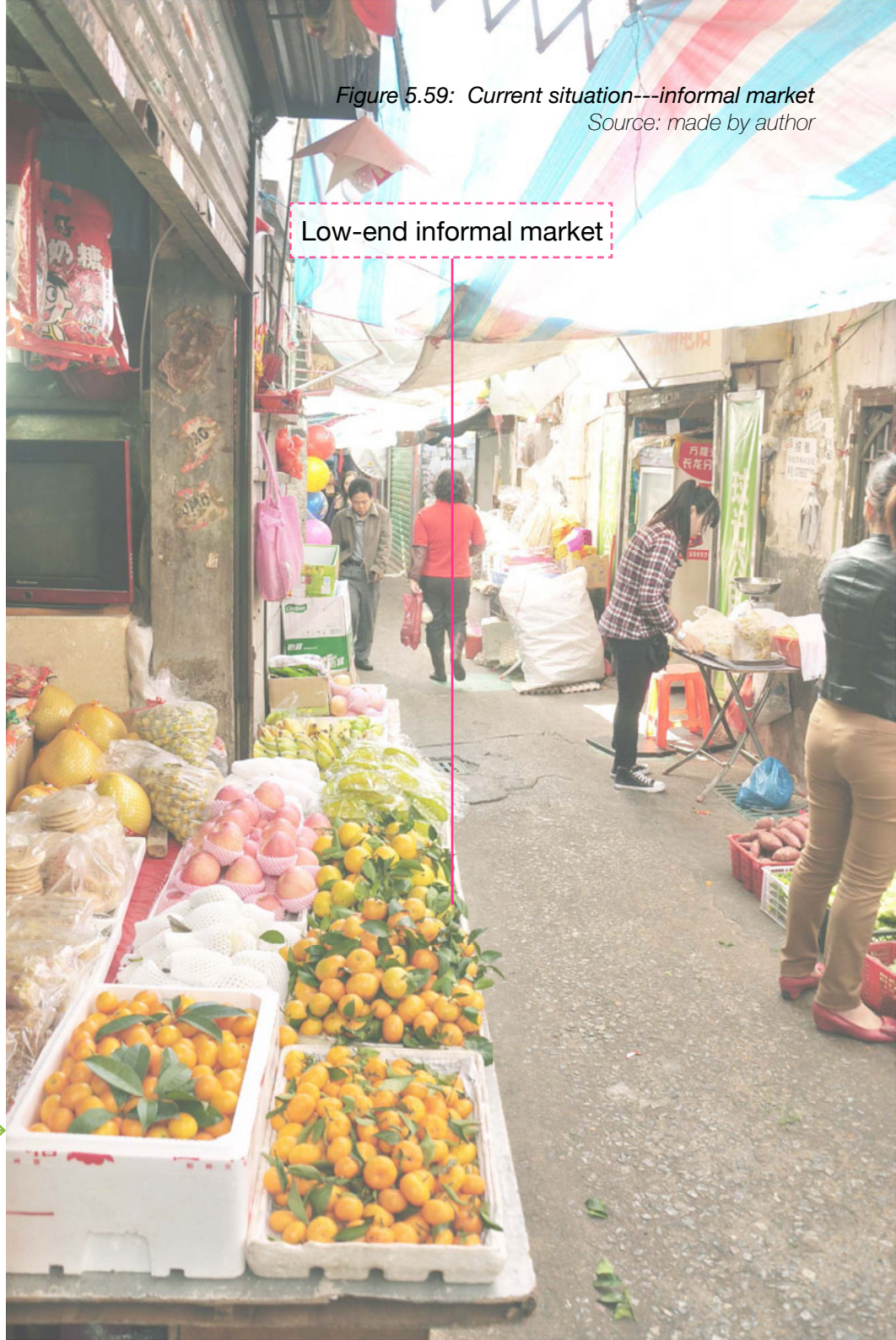
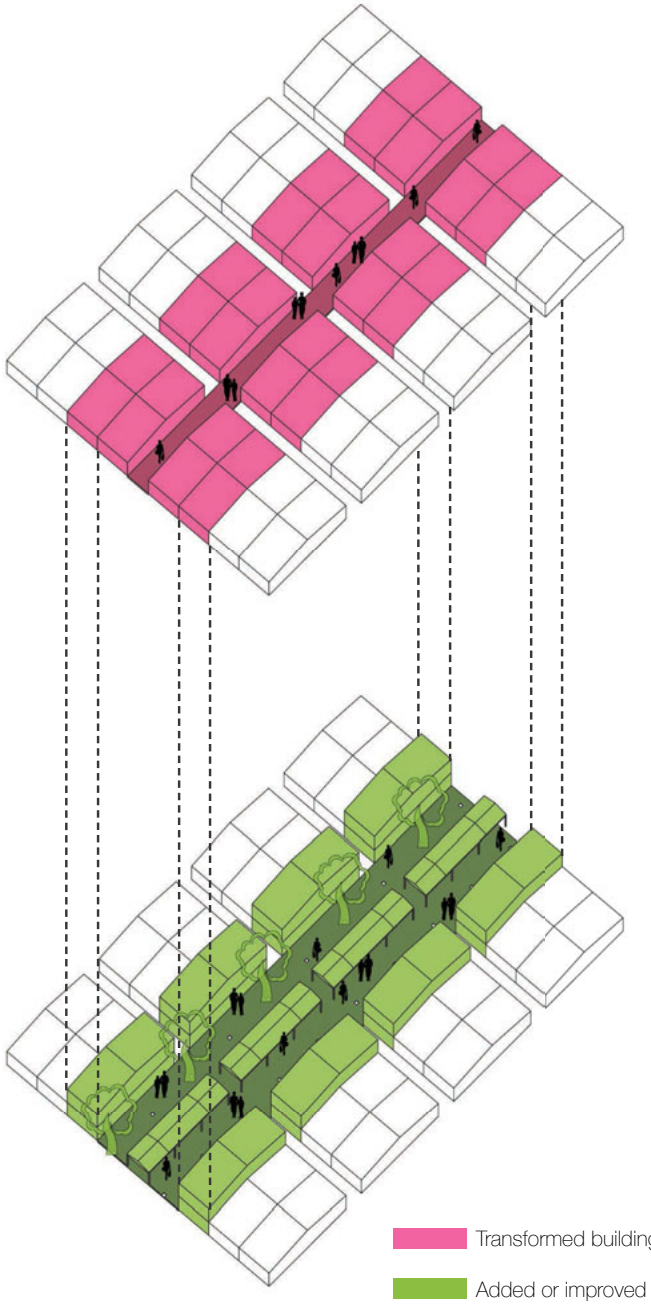


Figure 5.60: 3D model of transformation---informal market 2



Current situation

↓

Demolish

↓

Function tranform

↓

New construction of buildings

↓

Landscaping

↓

Facilities added

↓

Improved market street

Figure 5.61: Proposed image after transformation

When informal market street also has to deal with cars, and there's limited chance for buildings reconsruction (high-rise, large public building), a new tool is needed. Within this new tool, sidewalks can be widened, functions can also be retained and improved with higher accessibility (figure 5.62) by making the groundfloor an open space which can be accessed by several directions.

In this case, the 'consensus model' can fulfill the needs during this process (figure 5.63).
As no extra floor space is added, it's hard to let property owners to make transformation. Then neighbourhood organization will take the responsibility based on common sense with property owners.

Figure 5.62: Transformation model for informal market 3

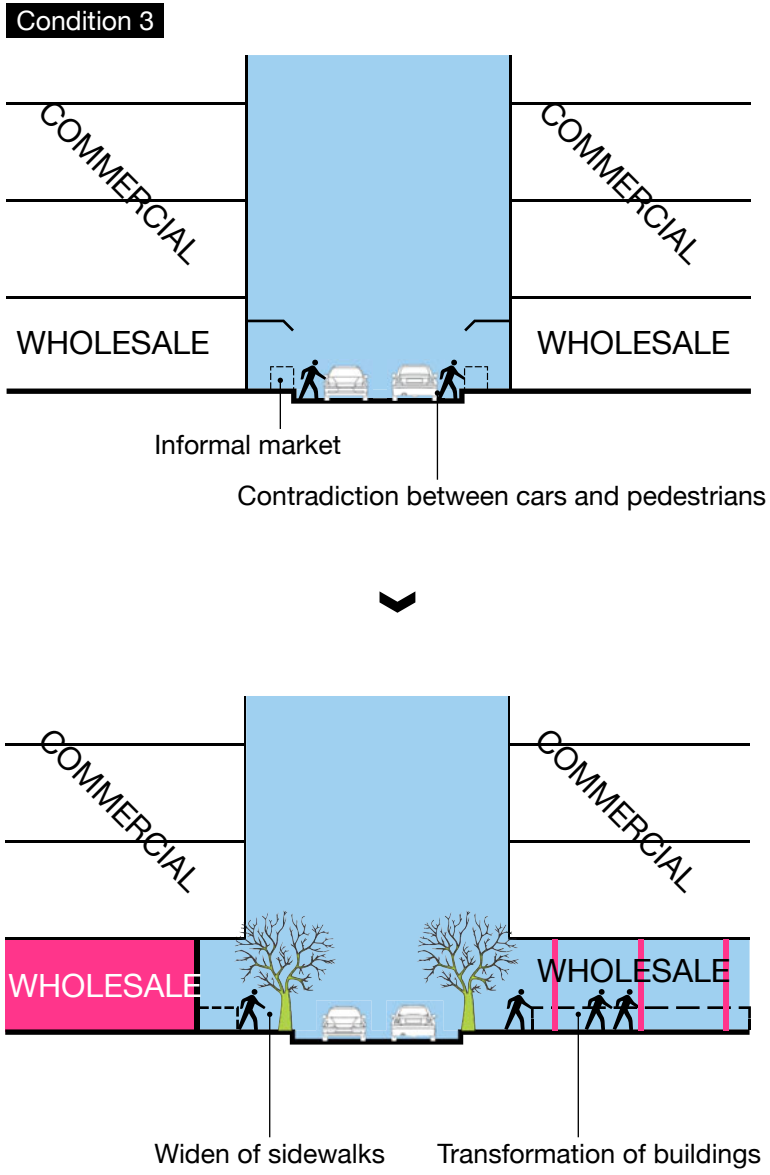


Figure 5.63: Consensus model

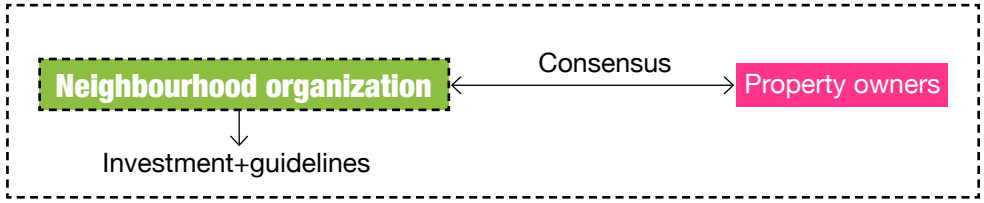


Figure 5.64: 3D model of current situation---informal market 3

Here is a photo of a busy road with informal market on both sides (figure 5.65). As the market taks over the space of sidewalks, pedestrians and cars have to share the roads, making the walkability not so good. After groundfloor transformed, it could be like figure 5.67.

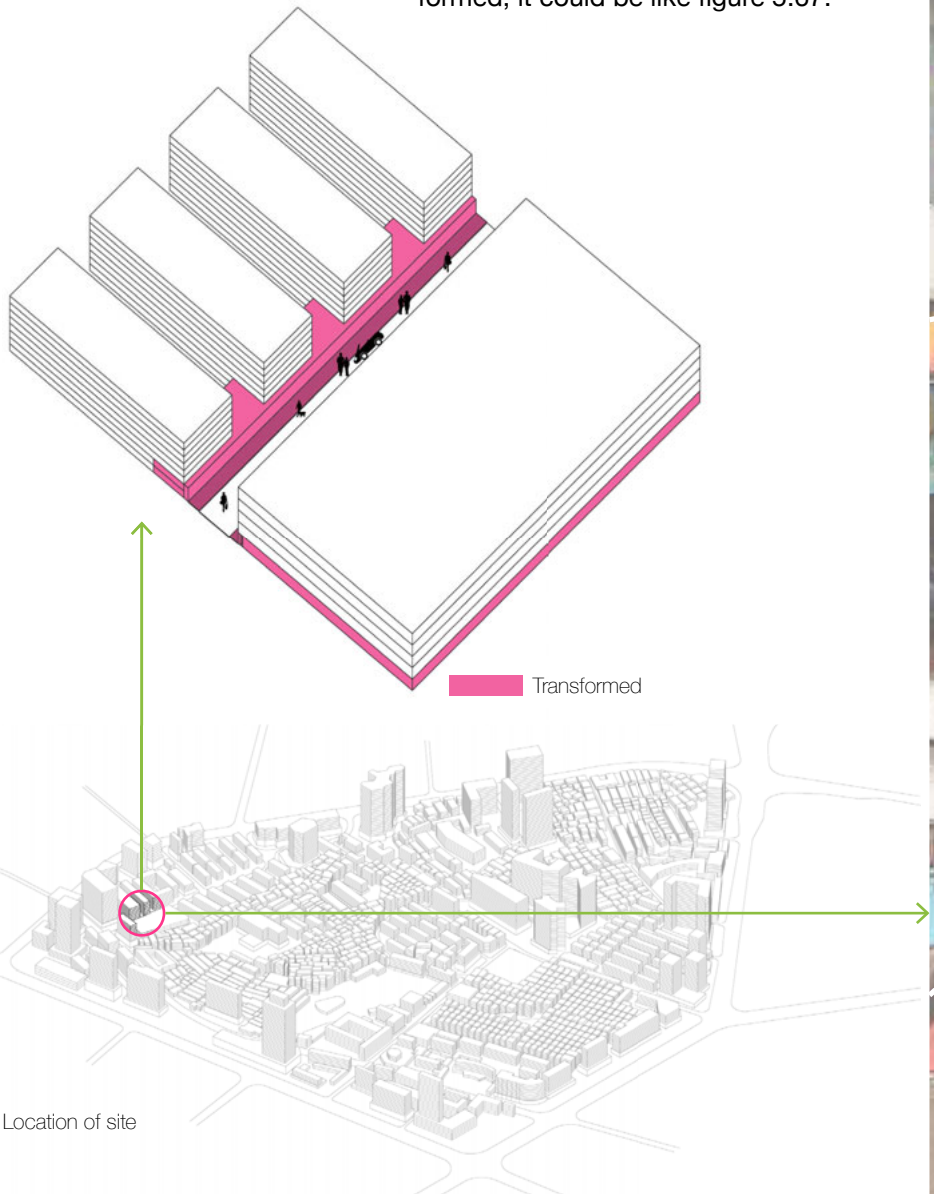


Figure 5.65: Current situation---informal market
source: http://map.baidu.com/

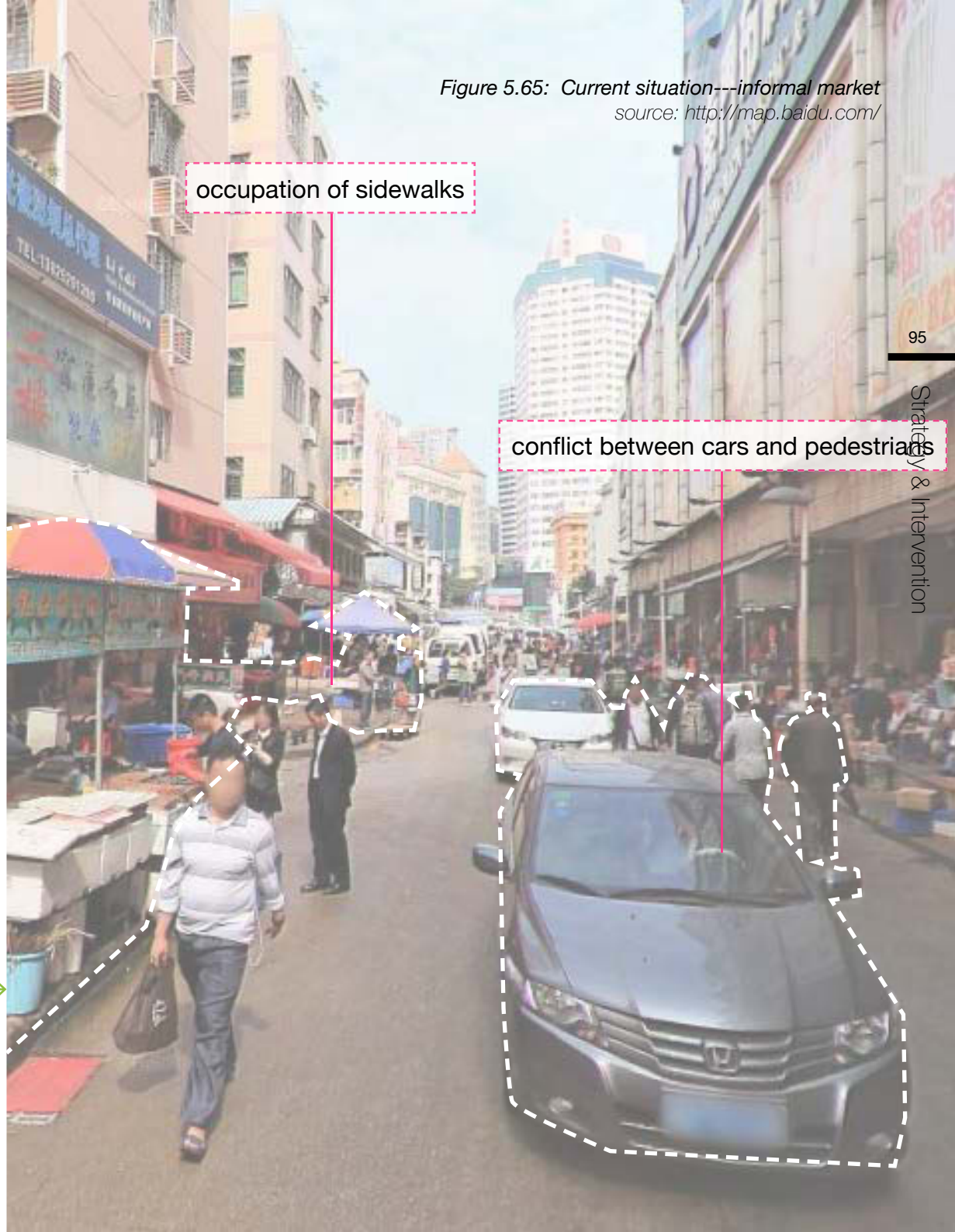
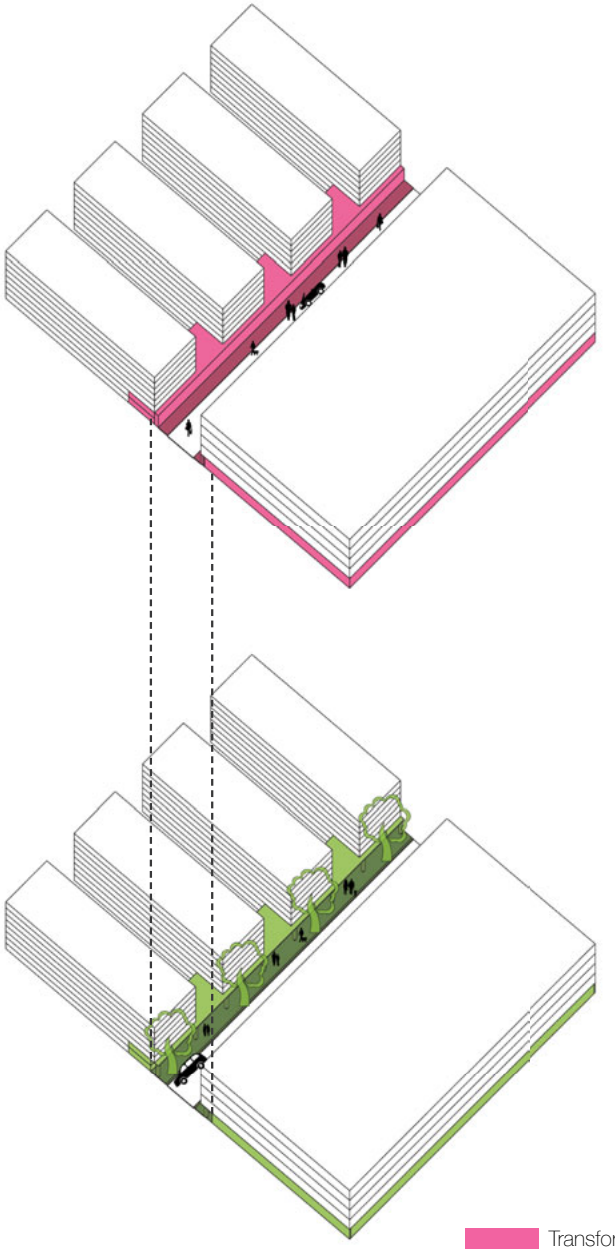


Figure 5.66: 3D model of transformation---informal market street 3



Current situation

↓

Ground-floor tranform

↓

Widen of sidewalks

↓

Landscaping

↓

Improved market street

Transformed buildings and space

Added or improved new elements

Figure 5.67: Proposed image after transformation

Untill here, this toolbox contains nine different interventions---two kinds of general connection, infrastructure as physical boundary, two kinds of wall and distinct spatial quality as physical boundary, social space making and three kinds of informal market street. These examples taken above are shown on the integrated structure plan (figure 5.68).

Each intervention type has its specific interest balance model, and spatial interventions needed. For clear implementation, a toolbox diagram is formed as Diagram 5.1.

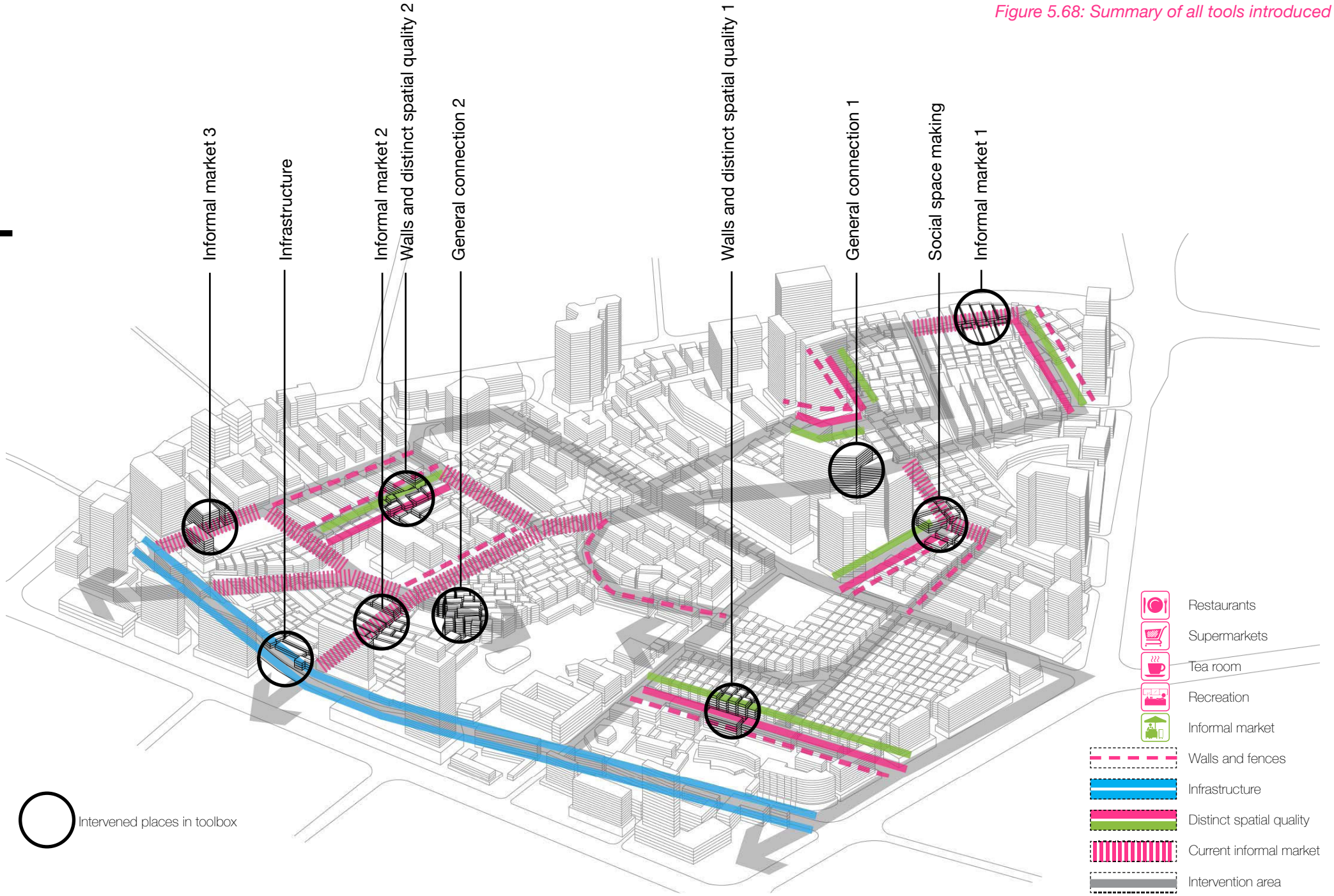


Figure 5.68: Summary of all tools introduced

Diagram 5.1 Toolbox Summary

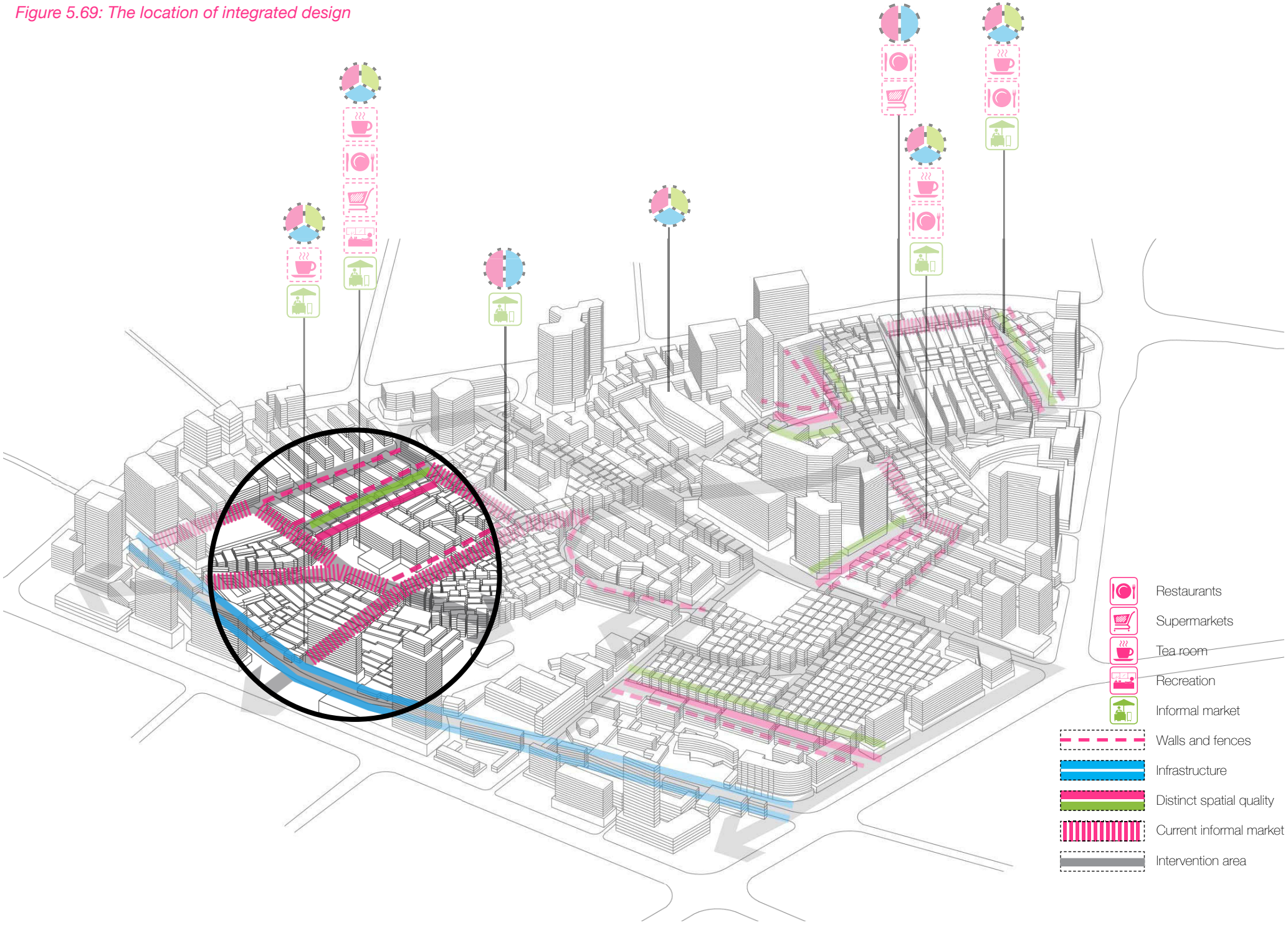
Transformation Type			Spatial Intervention	Interest-balance Model
1. General connection	Mixed-use streets		Widen of sidewalks; Reconstruction of buildings; landscaping	Self-organised
	Pedestrian routes		Reconstruction of buildings; Public facilities added; landscaping	Self-organised
2. Physical boundary---Infrastructure			Widen of sidewalks; Public facilities added; landscaping	Organization-supported
3. Physical boundary ---Walls & distinct spatial quality	Enough space		Widen of sidewalks; Public facilities added; Landscaping	Organization-supported + Consensus
	Limited space		Reconstruction of buildings; Function transformed; Landscaping	Self-organised + Consensus
4. Social space making			Transformation of buildings; Demolish of buildings; Public facilities added; Landscaping	Trade-off
5. Informal-market street	Mixed-use streets		Groundfloor transformation; Widen of sidewalks; Landscaping	New developer-involved
	Pedestrian routes	One-side transformation	Transformation of buildings; Demolish of buildings; Landscaping	New developer-involved
		Two-side transformation	Transformation of buildings; Demolish of buildings; Public facilities added; Landscaping	New developer-involved

5.3 Integrated design as an end result and catalyst

Although this toolbox contains all possible conditions when dealing with neighbourhood public space reconfiguration, it's still necessary to know when all barriers come togheter in a close relationship, how the public space should look like in that case? On the other hand, the typicality and complexity makes this site (figure 5.69) a proper start of whole neighbourhood. If stakeholders can foresee the future of transformation, that could be an effective encouragement for them.

From the map we can see(figure 5.69), this area contains all these barriers mentioned in the toolbox, which makes this site an interesting location to intervene.

Figure 5.69: The location of integrated design



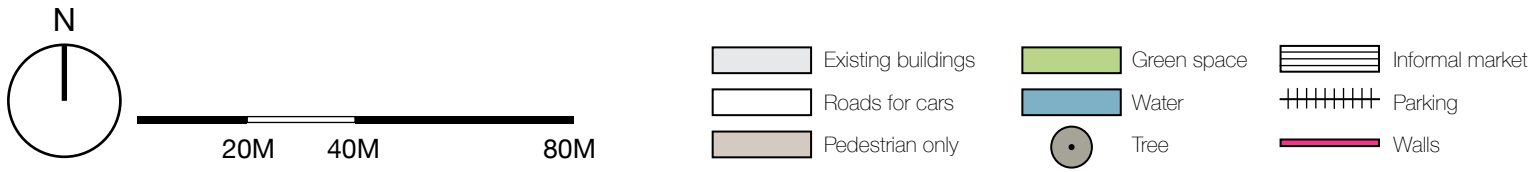
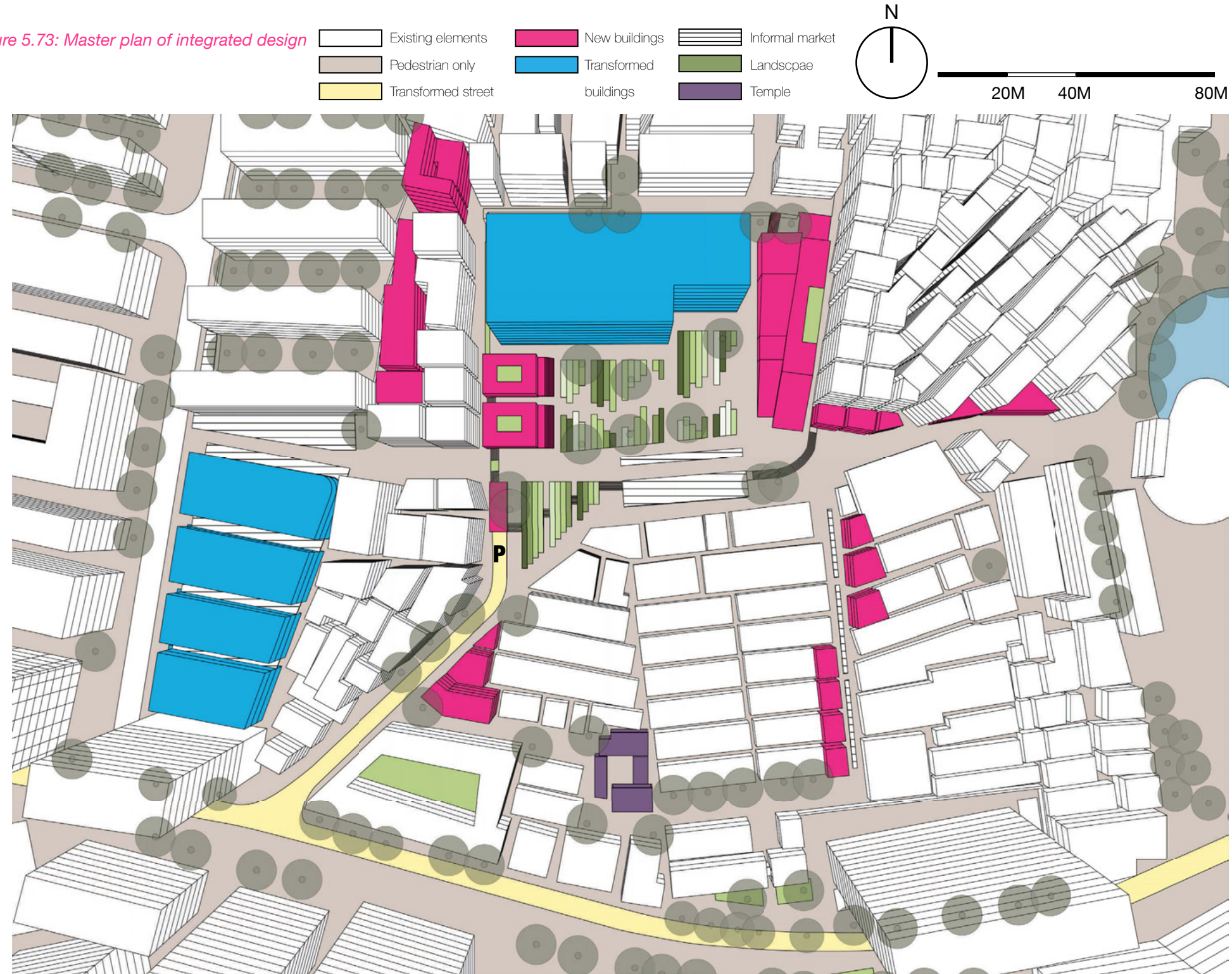


Figure 5.70: Plan of current situation

Figure 5.71: Photo of current situation
source: http://map.baidu.com/

Figure 5.72: Photo of current situation
source: http://map.baidu.com/

Figure 5.73: Master plan of integrated design



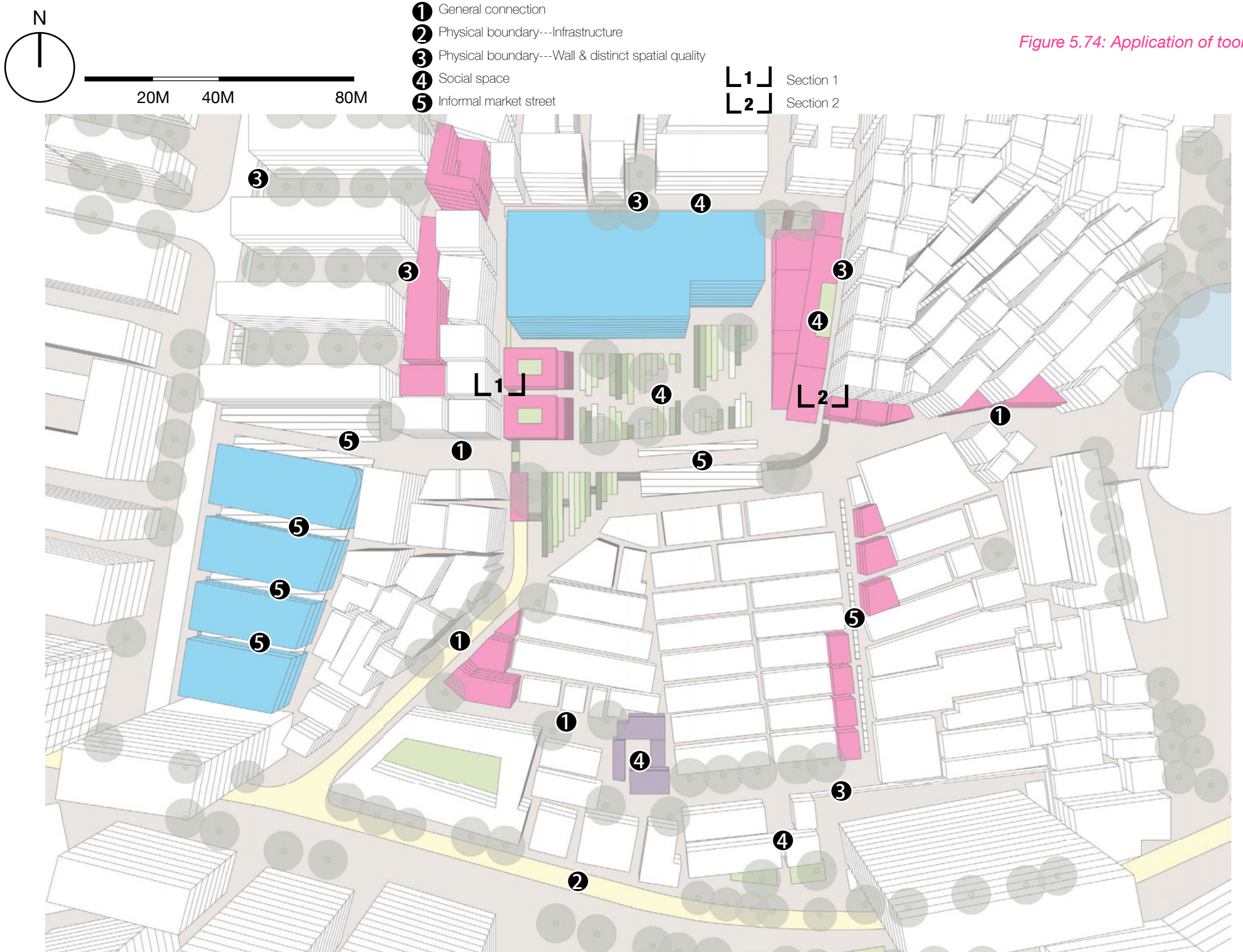
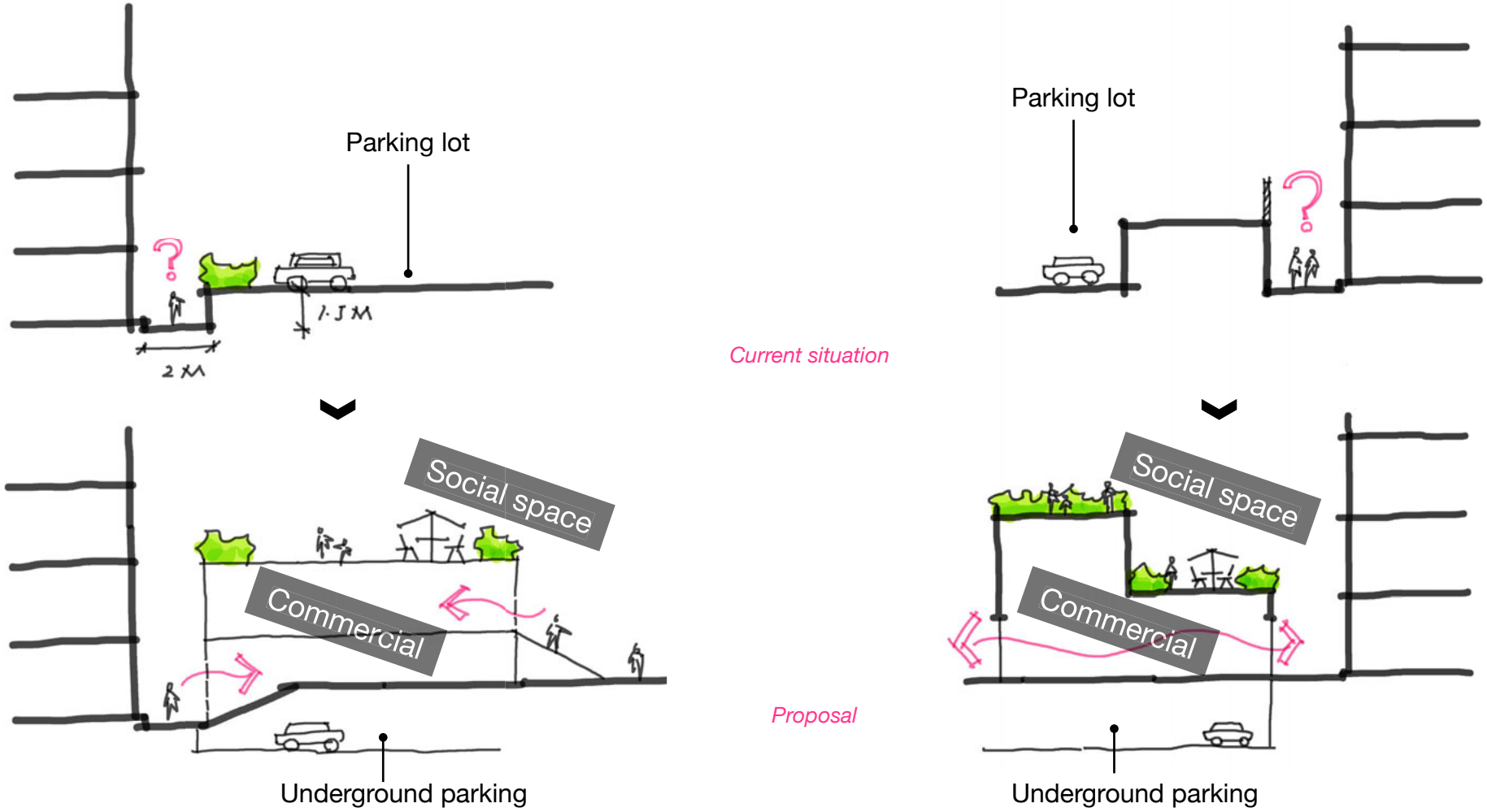


Figure 5.74: Application of toolbox

Figure 5.75: Sections

Section 1

Section 2



Current situation

Proposal

Figure 5.76: Proposed image

Figure 5.77: Proposed image

Image source:
http://th09.deviantart.net/

6 Conclusion & Reflection

1. The relationship between the theme of the studio and the subject chosen in this framework

'The subject of this studio is contemporary cities in global and regional contexts and how we as urban planners and designers work strategically to guide their development. Cities today are complex and diverse and have many aspects and characters and many different ways of being seen and understood…' (Complex Cities and Regions in Transformation)

As one of the preferred projects in this studio, Shenzhen is an interesting and challenging location to explore. Its strategic location in Chinese and global context, its tremendous transformation during the past decades and also multiple consequences caused by that have drawn lots of attention and need to be studied. Compared to other global cities in the world, Shenzhen shares lots of common social and spatial problems although they are influenced by different context. The study of similar global cities has contributed to the understanding of Shenzhen, and on the other hand, this project in Shenzhen may also remind people of similar problems in other cities and offer a suggestion of how to understand and react.

2. The relationship between the project and the wider social context

This project raises the problem of 'social-spatial segregation', which has been studied a lot, especially in European countries. The social consequence of 'segregation' relates to lots of negative effects caused by it. People living in different parts of a city often get unequal access to basic public services (Feitosa et al., 2007), which means living in certain spaces often suffer from poor quality of infrastructure, housing, public space and higher exposure to violence etc. (Bolt et al. 2009). Furthermore, the segregation may limit one's access to information, resources and opportunities to contact with other groups, then leads to intense prejudice and discrimination and incomplete participation in society, such as labour market participation and others like education, politics and culture (Musterd, 2005). This problem is actually very common but ignored in big cities of China due to its rapid urbanization. The majority of low-income groups live in degraded places such as urban villages while upper-class group live in gated communities, which have restricted access to outsiders. In this project, the challenge is to how to deal with 'segregation' caused by multiple boundaries in a complex and ever-changing context, diminish negative effect and lead to a better social environment for all groups.

3. The relationship between the methodical line of approach of the studio and the method chosen in this framework

'The studio puts forward the idea that spatial planners should act as articulators between various stakeholders producing the city. Spatial planners do that by assisting those stakeholders with translating those disparate interests into spatial organization that is notionally beneficial for society. We do that through the proposition of new forms of spatial organization and spatial intervention, by envisioning new forms of associations between different stakeholders, by using innovative tools to promote sustainability, by articulating those aspects through RESEARCH and DESIGN…' (Complex Cities and Regions in Transformation)

In my own project, one of the most important aspects is how to balance various interests of multiple stakeholders. The initial motivation of 'socio-spatial segregation' is actually the huge disparity of social and spatial resources that are accessible to different social groups. In order to deal with negative effects caused by this 'disparity', it's vital to consider and facilitate lower-class groups during interventions. However, to some extent, this may limit the interests of current beneficiaries such as developers or property owners. Then it's another challenge in this project to balance them all at the same time.

4. The relationship between research and design

The research of this project starts with understanding 'socio-spatial' segregation in various scales. From bigger scale as in China and Shenzhen city, it seems that two strong forces play vital roles---market and institution. When it comes to local scale, multiple boundaries come out as both consequences and causes of current situation. The problem seems too complex to tackle with a simple design proposal, so I propose different strategy layers for each kind of boundary and combine them together as a complex strategy network in the end. So the 'design' is closely related to what I got from 'research', and it's very clear that 'where', 'what' I should deal with and 'how'.
However, I can still see the limitations of my approach. The original goal of this project is to provide a public space network so that different groups could share, use and communicate. That means they can always find suitable and affordable housing in this neighbourhood. I can't foresee or predict the future effect caused by my interventions, but for sure the improvement of public space will raise the price of surrounding housing. If that happens without any regulation or control from relevant organizations, the 'reconfigured neighbourhood' for all may become another gated community only for wealthy groups.

5. Uncertainty of proposed interest-balance model

Apart from general thinking mentioned above, there's also uncertainty of my proposed interest-balance models (figure 6.1).

The 'new developer involved' model needs the involvement of new developers to invest, within the guidelines restricting the development process. This means in order to maintain current social structure, only a small amount of buildings can be demolished and rebuilt ; On the other hand, the floor space developers can get is limited due to the proposed height of buildings. Developers who invest for this project would take a relatively big risk plus long pay back period. Then the question is 'would this project be attractive enough for developers'?

Another uncertainty is those property owners and villlagers who are supposed to participate as 'developers'---rebuild their buildings. There are possibilities that they would not like to change current situation, especially villagers. They can already get lots of profit from renting, why would they invest again to take the risk?

The possible answer to these uncertainties is for government to have stronger and more useful tools. For example, proper compensation to ecourage stakeholders to participate, or to take one typical location as a catalyst to show promising result---this actually goes back to my analysis of 'mechanism of socio-spatial segregation', which identifies two strong drivers: institutional force and market force. Only deal with drivers can solve this problem thoroughly.

Figure 6.1: Uncertainty of proposed interest-balance models

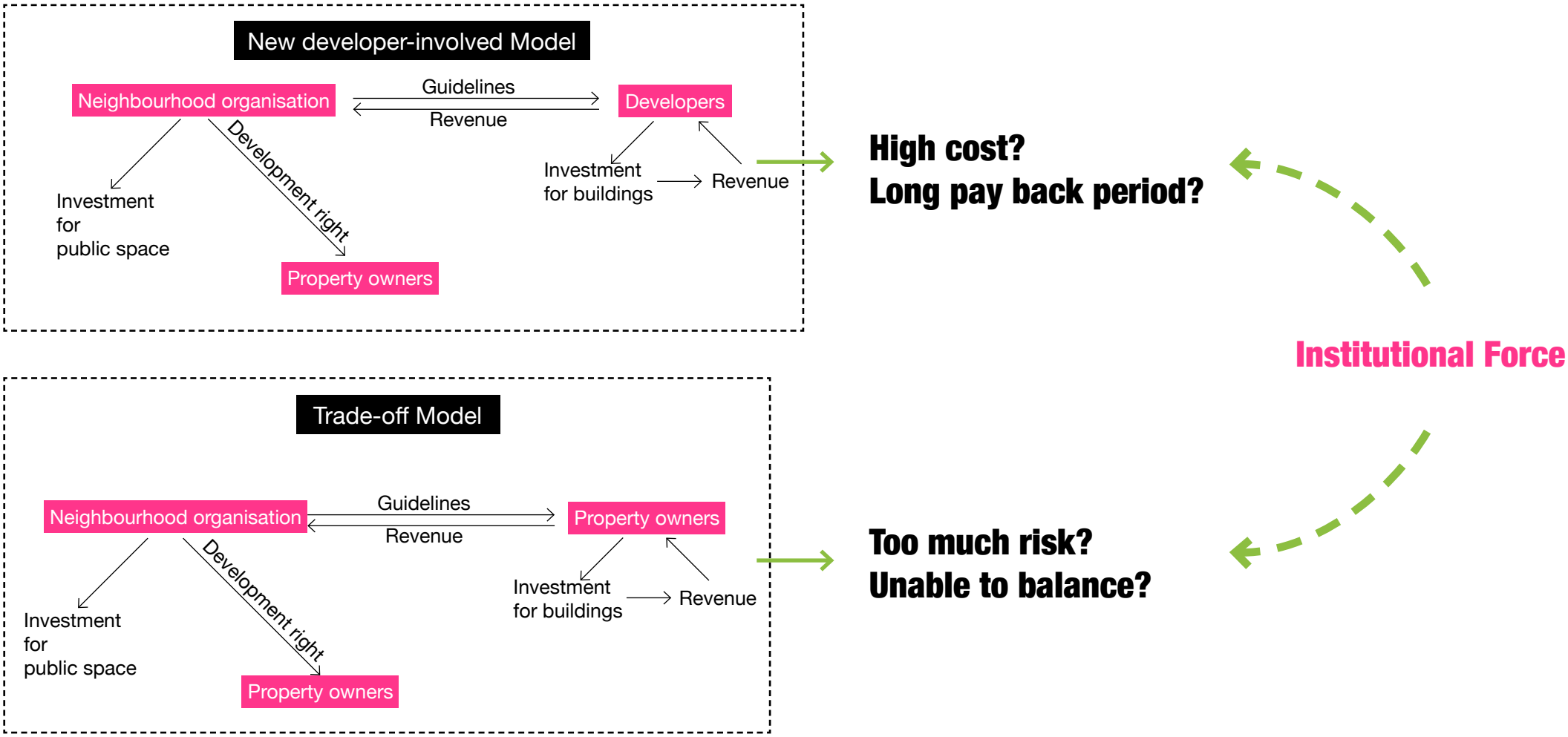


Image source:
http://bis.ricoh-usa.com

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