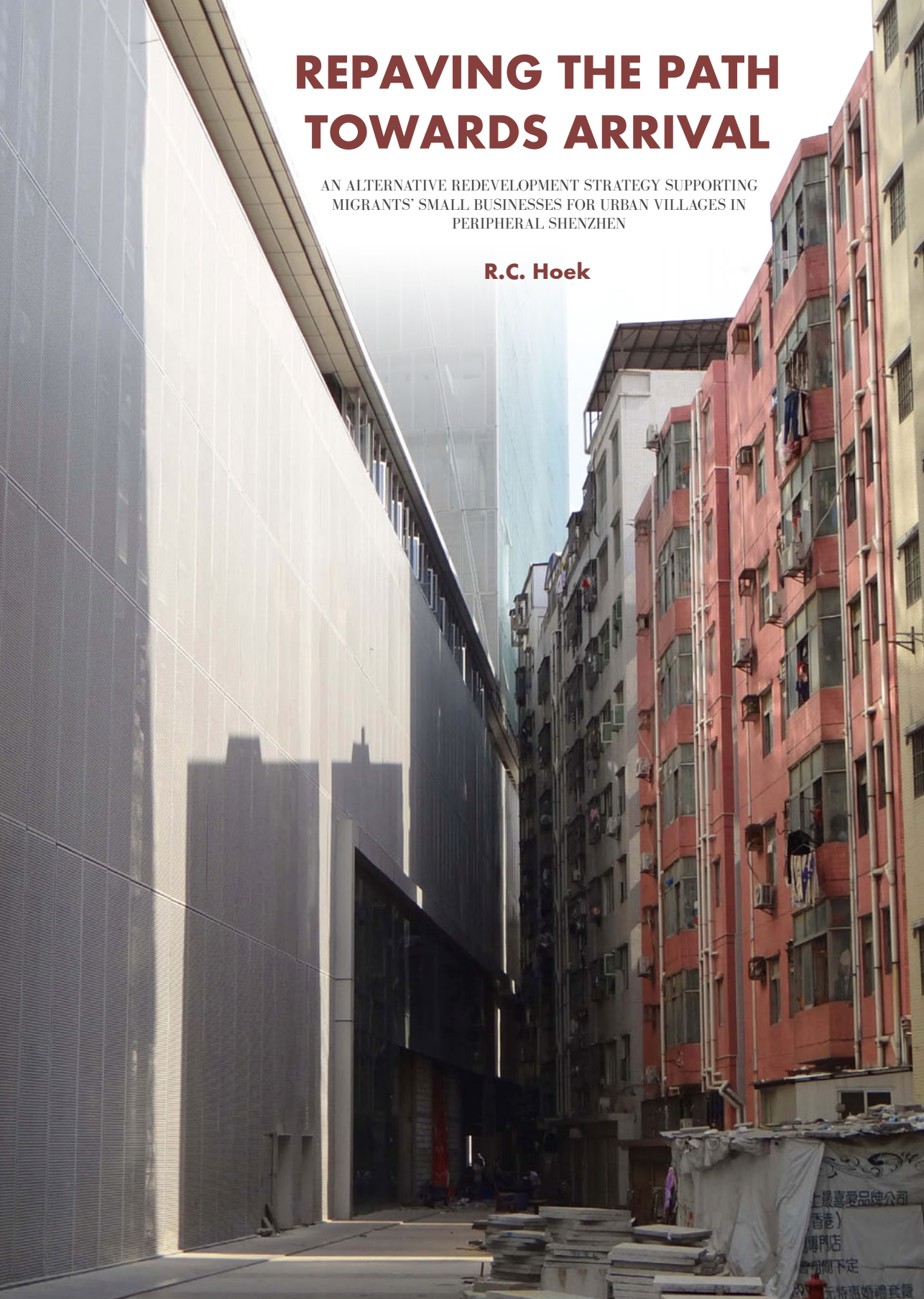


REPAVING THE PATH TOWARDS ARRIVAL

AN ALTERNATIVE REDEVELOPMENT STRATEGY SUPPORTING
MIGRANTS' SMALL BUSINESSES FOR URBAN VILLAGES IN
PERIPHERAL SHENZHEN

R.C. Hoek



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CONTENT

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1. INTRODUCTION	8
2. METHODOLOGY	20
3. MIGRANTS' SOCIAL MOBILITY & SELF-EMPLOYMENT	26
4. SPATIAL CONDITIONS SUPPORTING SMALL BUSINESS ESTABLISHMENT	34
5. MIGRANTS' INTENTIONS	44
6. STREETS & BUSINESS DISTRIBUTION	52
7. SPATIAL STRATEGY	70
8. PILOT PROJECT	80
9. REFLECTION	108
10. CONCLUSIONS	116
REFERENCES	120
APPENDICES	124



Migrant workers returning home for Chinese new year; still from the movie *Last train home* (2009)

1. INTRODUCTION

1.1 Motivation

The notion that the path towards sustainability in the twenty-first century has to run through cities, has been one of the most recurring ones in the readings I have been doing in the preparation for writing this thesis. I agree with many authors that the world-wide Great Migration and the associated process of urbanization that is taking place at the moment, and will continue for some decades, is the most far-reaching trend of our time. Millions of migrants, most of whom come from rural areas, seek in cities a place to live and make a living. China is a clear example of this worldwide trend (fig.1 & 2). The extent to which cities succeed in incorporating these people in an inclusive way, could make a big difference in insuring a sustainable future. The way urban planning and design practice deals with the city makes a big contribution to cities' inclusiveness. Sociologist Michael Keith states that 'as major urban regeneration reshapes cities globally in the 21st century, the emerging city incorporates, excludes, or displaces new arrivals and old communities' (Keith, 2014).

My main motivation for this research is based on the observation that much of the urban design and planning practice seems to exclude and displace, rather than contribute to incorporation of cities' recent and future arrivals. Mass demolition and 'regeneration'

schemes seem to be aimed at regenerating rent values rather than regenerating quality of life for present and future inhabitants of neighborhoods. This kind of practice is usually done under the slogan of making cities competitive. As a young urbanist, I wish to take a stand against this way of working. Therefore, the main goal of this study is to research alternative planning and design strategies, which can contribute to the integration and assimilation of migrants in cities, rather than excluding them. While my interest initially lied in increasing socio-economic segregation in European cities, getting more familiar with urbanization processes in China convinced me to shift my attention. Not only is China's population of rural-to-urban migrants, which consists of over two hundred million people, the biggest in history, the country is also in a stage of socio-economic transition. Its economy is shifting from being mainly industry-export-based towards a more service-oriented economy in which the domestic market, with its growing middle-class, becomes increasingly important. This transition offers an interesting context to think of China's urban future. Shenzhen, the first Special Economic zone in the history of China, has since its establishment been a laboratory for urbanization models. Shenzhen still appears to be the most suitable case to study in which ways the city can adapt to changing demands driven by migration and economic transition.

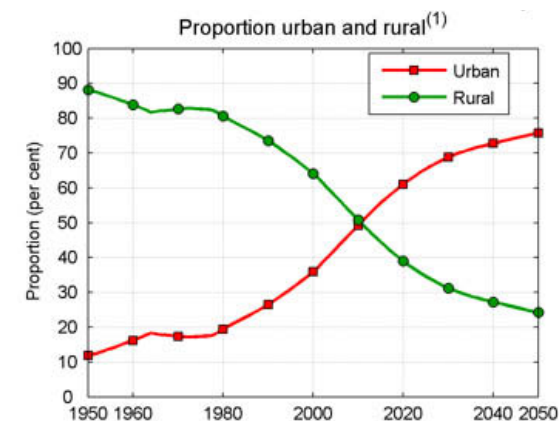


Fig.1: Proportion urban and rural citizens in China (United Nations, 2014)

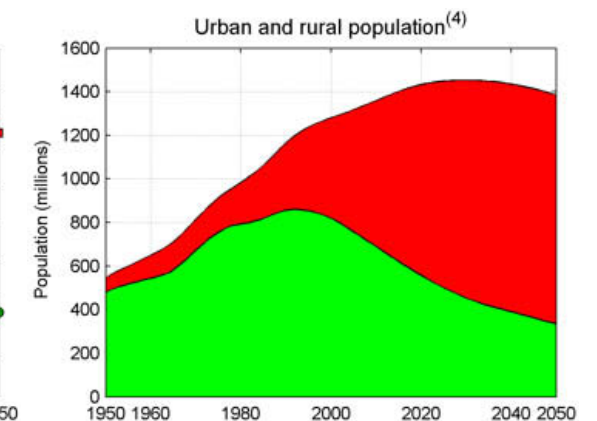


Fig.2: Total urban and rural population in China (United Nations, 2014)

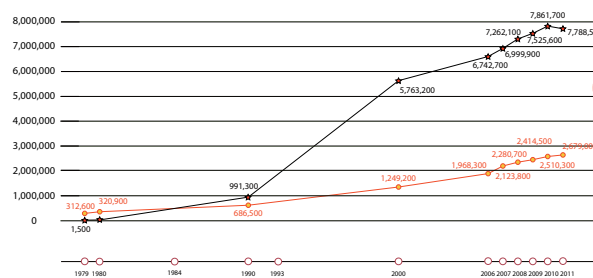


Fig.3: Development of Shenzhen's population, registered and non-registered

Shenzhen Inner & Outer Area Population 1982 - 2010

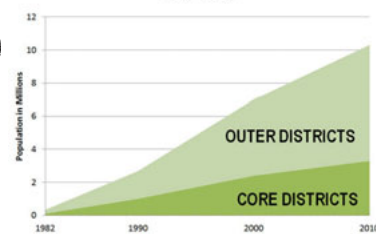


Fig.4: Distribution of Shenzhen's population over the SEZ and periphery (Cox, 2012)

1.2 Problem analysis

The problem which will be addressed in this thesis emerged through the historic development of the urban fabric of the Shenzhen metropolitan region. The unique conditions the establishment of the Special Economic Zone offered, resulted in two very different landscapes. Now Shenzhen has to turn to redevelopment, it is relevant to consider how this redevelopment should take shape.

1.2.1 Shenzhen & the Chinese miracle

Shenzhen is one of the most remarkable and representative examples of Chinese urbanization since the economic reforms which took place in the seventies. Its establishment as the Special Economic Zone of Shenzhen in 1980 has been an experiment to attract international capital, in particular from Hong-Kong, to set up an export-oriented economy (Hao, 2014, Lai et al., 2014a, Roberts, 2013). Since its designation as the first Special Economic Zone (SEZ) in 1980, the agricultural municipality of about 300.000 inhabitants transformed in only three decades into a metropolitan area of approximately fifteen million (fig.3), of which a large share lives in the peripheral districts (fig.4). So in terms of growth the experiment seems to have been successful. This growth

was mainly driven by a combination of export-oriented industrialization and an influx of millions of rural migrant workers who were attracted to work in this industry. This makes the nick name 'world factory', as the cities of the Pearl River Delta are often called, very applicable to Shenzhen.

1.2.2 Two landscapes

Shenzhen's exceptional status as SEZ and the institutional environment it offered, has resulted in an urban expansion with very different spatial characteristics in the center and the periphery. Since the expansion of the Special Economic Zone in 2010 and the incorporation of the peripheral districts of Bao'an and Longgang, the SEZ covers the complete Shenzhen municipality. However, the former border between the central districts and the others remains a mark between very different forms of urbanity.

The four original central districts of Shenzhen were planned as a linear city along the border with Hong-Kong (fig.5). However, the lands on which this new linear city was planned, were far from empty. Hundreds of agricultural and fishery villages already existed, distributed over the whole municipality. The master plan for the central districts was superimposed over this landscape of agricultural lands and

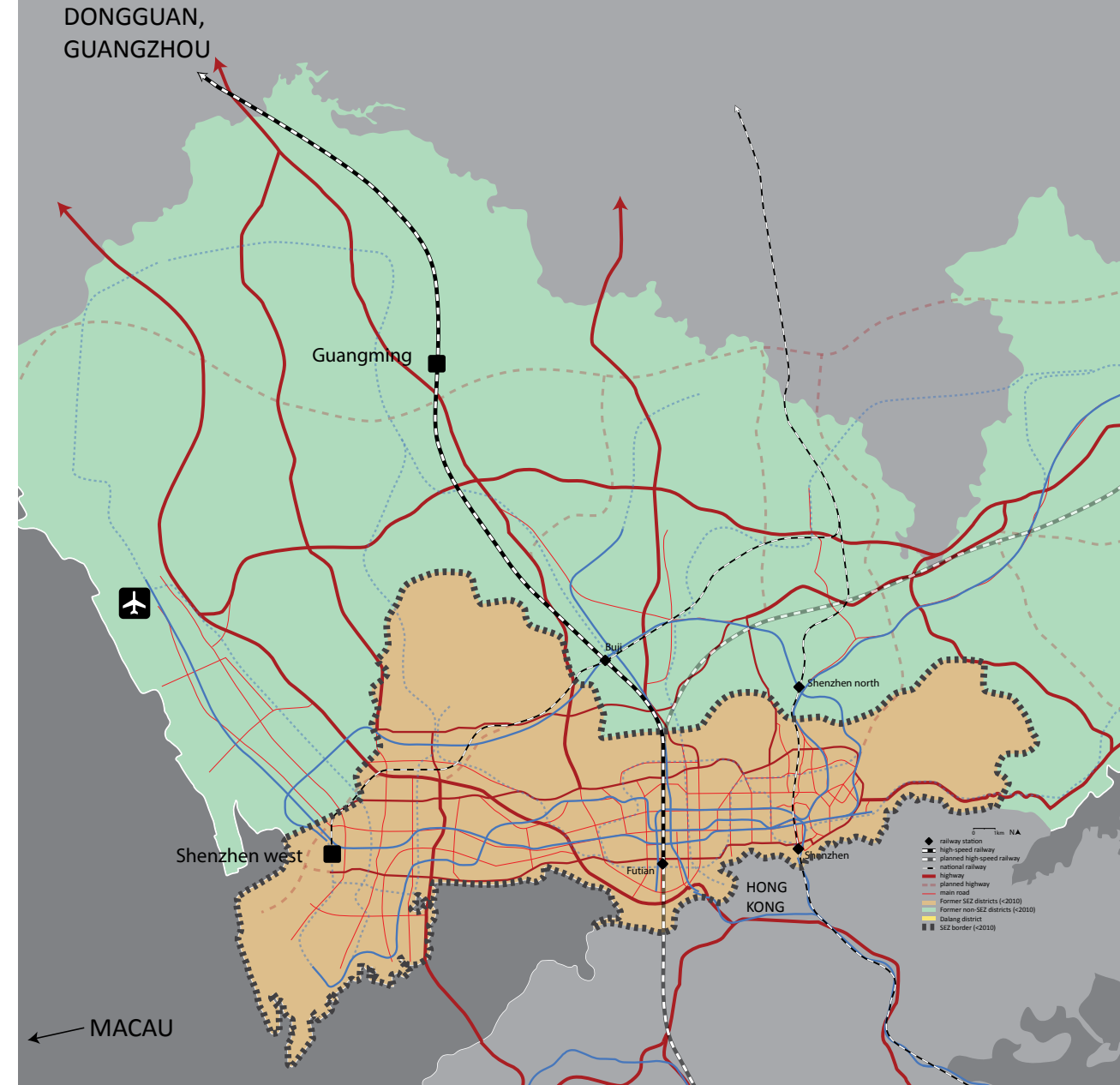
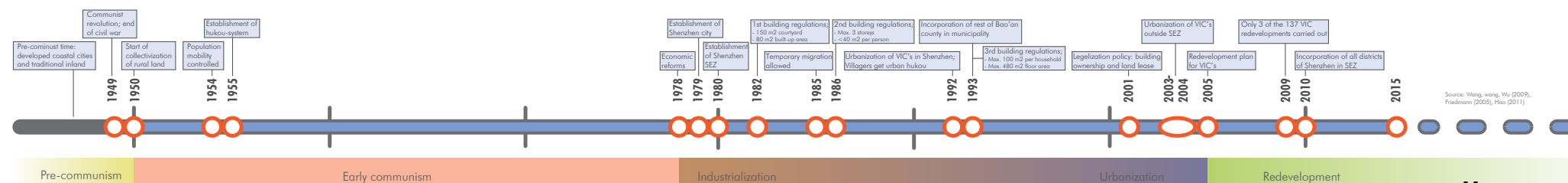


Fig.5: Map of the metropolitan area of Shenzhen; the former SEZ (brown) and the peripheral districts (green)

Fig.6: Timeline of important events in the urban development of Shenzhen (based on Wang, Wang & Wu (2009), Friedmann (2005), Hao (2011))



Source: Wang, Wang, Wu (2009), Friedmann (2005), Hao (2011)



Fig. 7: Typical aerial and eye level image of urban structures within the former SEZ



Fig. 8: Typical aerial and eye level image of urban structures outside the former SEZ

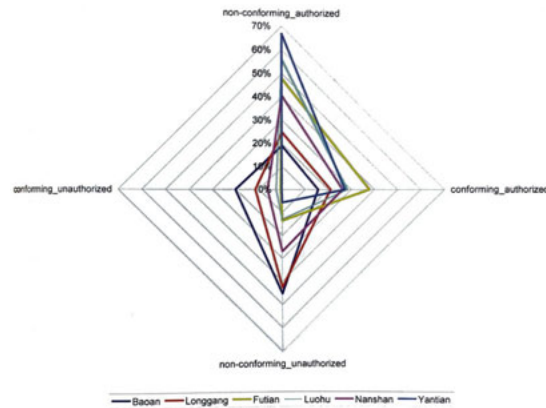


Fig. 9: Percentage of conforming and authorized land use within and outside the former SEZ (Hao, 2010)

villages. As planned urban development took place on expropriated agricultural lands, the villages got encircled by the newly constructed city and came to be known as “Villages in the City” (VIC). However, the original villagers of these swallowed villages did respond quickly to their new environment. They developed their collective owned land in a speculative way to offer housing for the millions of rural-to-urban migrant workers, who moved to the city to work in the industrial sector (fig.10-13). Because of the Chinese household registration system (hukou), these migrants were not able to become registered citizens of the city and therefore were not eligible to apply for social housing, welfare and other social services in the city of arrival. As a consequence of the hukou-system the migrants are dependent on the VIC's for accessible affordable housing. This has resulted in a situation in which half of Shenzhen's population lives in these urban villages, which only cover thirteen percent of its total built-up land (Hao, 2014). In this way, urbanization in the central districts resulted in a landscape of neatly planned formal high rise buildings and broad express-ways, in the image of a “global city”, but with a patchwork of densely urbanized villages interrupting this planned reality (fig.7).

The urban landscape in the peripheral districts is rather different. Outside the former border of

the former SEZ land and labor costs were lower and spatial planning did hardly exist. This enabled rapid and haphazard industrialization. Not only were most buildings constructed without any quality control, also public space and facilities are not adequately present. In comparison to the neatly planned boulevards and shiny skyscrapers of the inner city, the image of the peripheral districts is therefore rather messy. It can be characterized as sprawl of urbanized rural villages and factory areas with fuzzy boundaries (fig.8). Research by Hao (2010) clearly shows that a large share of the total land uses outside the former Special Economic Zone does not conform to formal planning, and that this share is significantly bigger than that of the districts inside the former SEZ (fig.9). This is mainly due to fact that development outside the former SEZ in general preceded official planning, but also because planning was ignored since it did not meet the local market's demands.

Shenzhen is not unique as a case in which urban expansion has resulted in strong spatial differences between the core and the periphery. UN-habitat (United Nations Human Settlements, 2013b) observes that in many parts of the developing world, this process leads to ‘peripherization’, referring to the presence of large peri-urban areas with much informal land use ‘combined with a lack of infrastructure, public facilities and basic services, and often accompanied by a lack of both public transport and adequate access roads’ (2013b). The report states the lack of adequate space for streets as one of the main spatial problems cities in Latin-America, Africa and Asia have to deal with, because street connectivity is a key element in increasing public health, inclusion and productivity. Therefore, the gap between street connectivity between the core and the periphery of a city is a component of the inequality in many developing cities. According to Peter Hall (1997) peripherality is not so much a matter of topographical distance, but more of the extent to which outer urban

districts are isolated from the centre and perceived as being far away from it. Because of the problems associated with peripherality, the focus of this thesis will be on the peripheral districts of Shenzhen.

Also in functional terms the distinction is obvious: whereas the center is dominated by head quarters, shopping malls and theme parks, the role of the peripheral districts is still that of the ‘world factory’. Here the majority of the population consists of rural migrants who came to Shenzhen to work in its factories and mainly live in dormitories or rental apartments in urban village houses.

1.2.3 City in transition

This functional difference between Shenzhen's central districts and the peripheral ones points out the transition the city is going through: the promoted shift in the macro-economy of the Shenzhen metropolitan area from mainly industrial towards tertiary sector based. The municipal government argues that Shenzhen has priced itself out of the market as a settlement location for industries and therefore has to upgrade its manufacturing and become more service-oriented. This transformation from ‘world factory’ towards ‘world city’ has direct and indirect implications for the urban space of Shenzhen, and the urban villages in particular. Manufacturing functions are moving out of the city into the hinterlands, leaving behind vacant factory buildings (fig. 14). Regeneration schemes are being carried out to replace the industrial building stock with buildings housing more service based functions. At the moment, redevelopment is mainly happening in the central districts, but can be expected to happen in the peripheral districts in the near future as well. This transition from industry to service also means the more or less straightforward relation between manufacturing industries and migrant workers will have to transform into a more layered economic system. Many parts of Shenzhen, including almost the entirety of

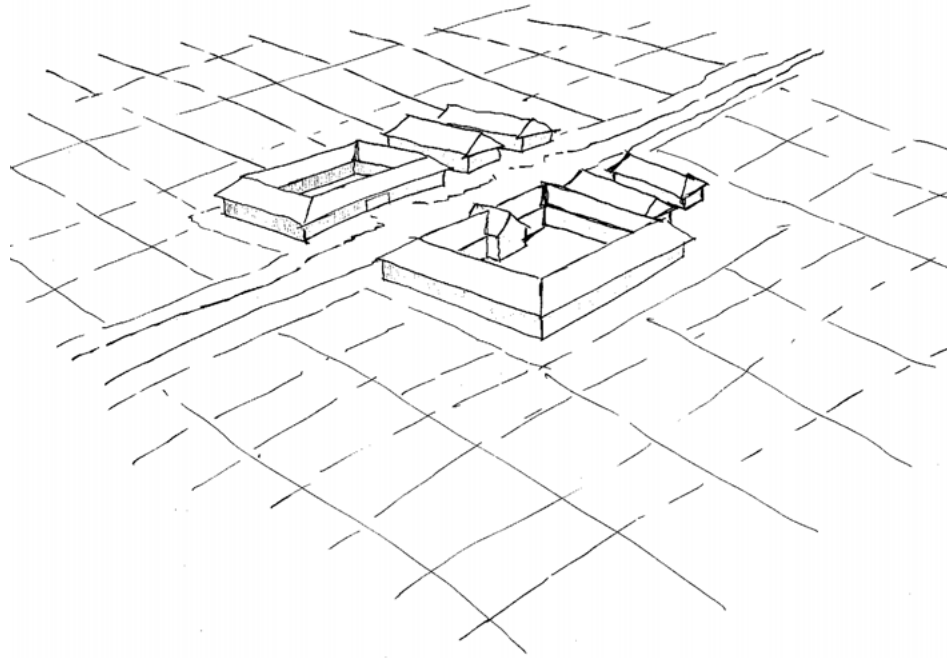


Fig. 10: The initial stage of a rural village

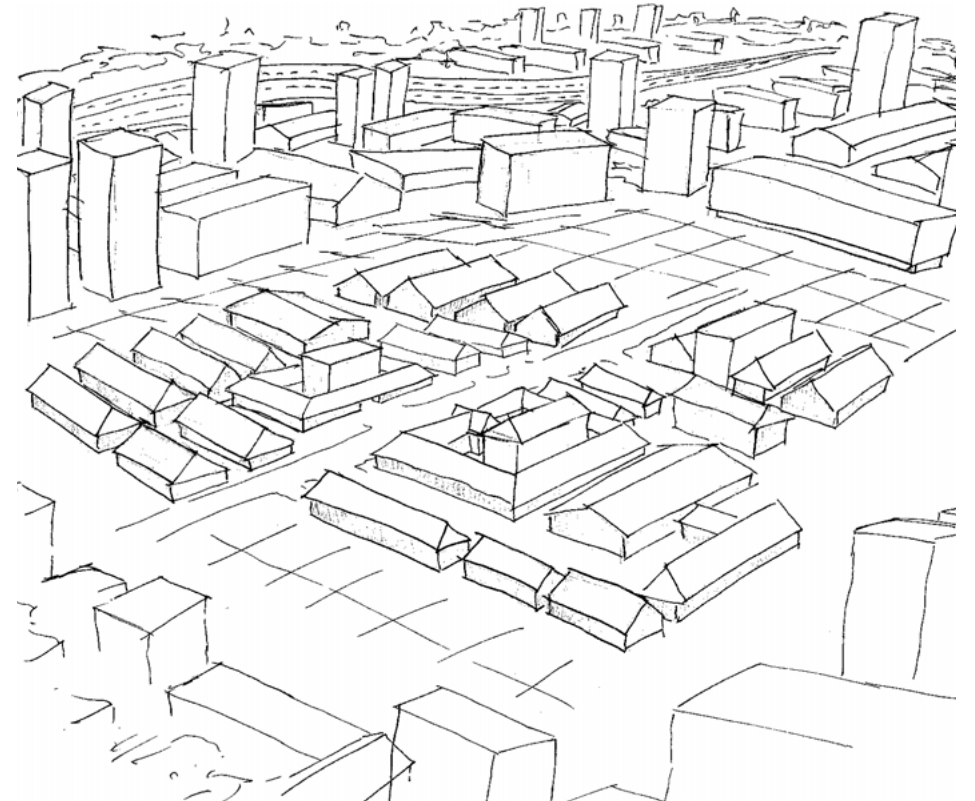
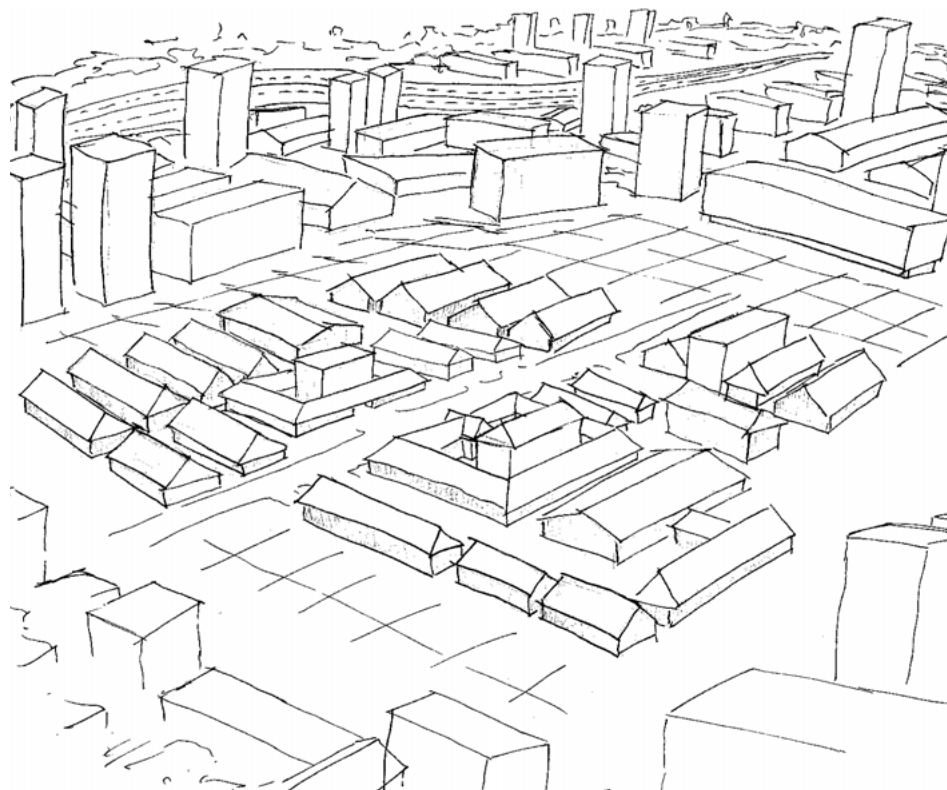


Fig. 12: The stage of densification; now the village is completely encircled, new development happens inward, filling all open land inside the village



14 Fig. 11: The stage of expansion; villages expand outwards to secure land while getting encircled by planned urbanization

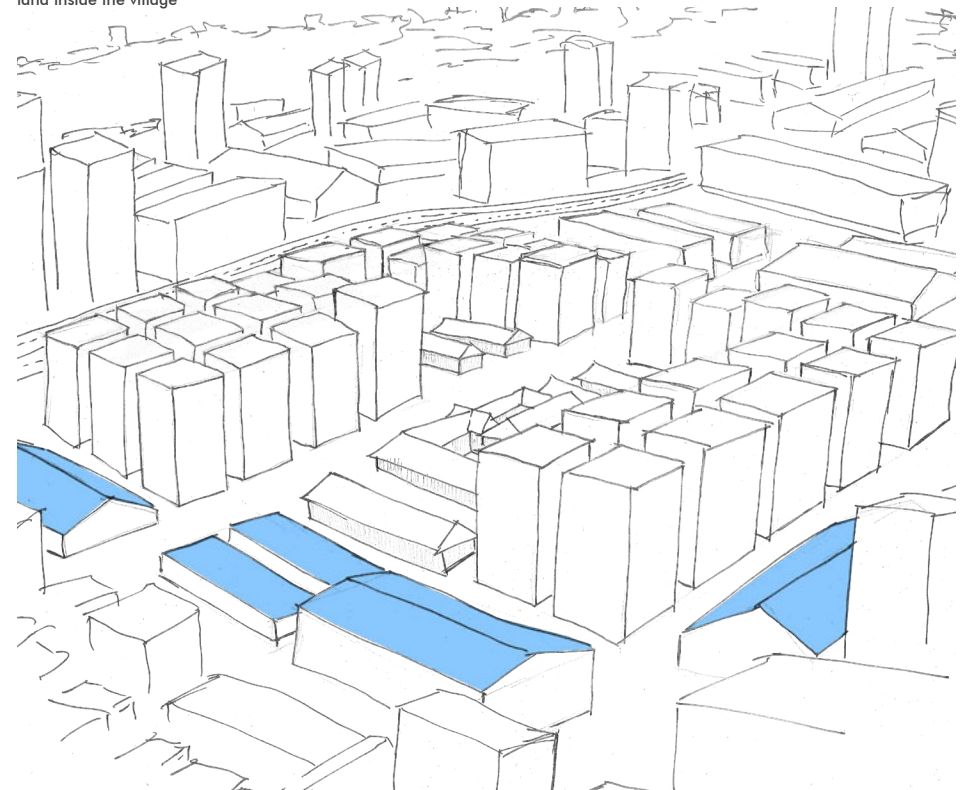


Fig. 13: The stage of intensification; traditional village buildings get replaced by the 'handshake' type and industrial buildings, increasing the total floor area vertically.

the peripheral districts, were built as a factory, rather than as a city. Permanent settlement for migrants is difficult, since the urban fabric does not offer many opportunities for this; good (family) housing, facilities like education and health are not present and there are few job opportunities except for factory work. Redevelopment strategies for urban villages need to address this transformation from factory to city. Furthermore, the need to redevelop run-down or underused parts of the city has been increasing further because of the lack of empty land. Since the municipality allocated over fifty percent of its land surface as ecologic zones and big project developments fill up the last remaining empty land, redevelopment of existing fabric is becoming the only option.

1.2.4 Demolition of migrants' foothold

It is important to clarify that when I mention "migrants" in this thesis, I am in general referring to low-skilled rural-migrants. They are the ones who suffer the most from the excluding hukou-system, because in practice only college graduates are eligible to convert to an urban hukou. The "Chinese miracle", of which Shenzhen is the poster child, has only been possible because of cheap labor offered by millions of these low-skilled rural migrant workers. Because of their majority among Shenzhen's population, they are vital for its existence. However, they have not been treated according to this.

Redevelopment schemes initiated or supported by the municipal government often demolish the urban villages and thereby displace their population without any compensation (fig.15). This is not only disastrous for those

migrants who already found their way around in Shenzhen, but also for the potential future migrants, because the villages offer them 'a haven to settle down in the city and later, as a springboard, to seek better employment and accommodation' (Hao, 2012). The demolition of these springboards has been justified by the municipal government with two arguments. The first is that these migrants do not have full citizenship rights and are therefore treated as beings in between temporary workers and illegal residents. The second is that, because they are developed outside the official planning, the buildings and facilities in the VIC's are below standards and need to be demolished. In the end migrants are left to their own to find replacement housing in more and more remote locations.

Not only is this ethically at least questionable,

it also creates some serious threats for the city as a whole. First, this practice effectively increases commuting time and therefore costs. Many migrant workers go to work by foot, because they cannot afford other means of transport. Displacement to the outskirts of the city would make living in Shenzhen increasingly unattractive for migrants and the city less productive (Hao, 2012). Social unrest is also likely to develop. Therefore, Shenzhen could potentially face a decrease in competitiveness. Second, demolition of urban villages not only reduces the affordable housing stock, it also reduces diversity of use and local employment and services. Because of their own density, their often favorable location in the city, near main employers or attractors, and the presence of plenty of affordable small spaces for business, they tend to evolve into mixed use neighborhoods with



Fig. 14: Vacant factory building in Dalang



Fig. 15: Demolition of an older part of an urban village in Dalang

a great variety of commerce and services. Hao (2012) found that the diversity in land use of urban villages significantly decreases when it gets redeveloped. This would mean a loss of much employment and functional diversity. Also in terms of scenery and atmosphere, the redevelopment of urban villages would mean an erosion of diversity; 'With each village renewal project, another piece of the city's identity is swept clean, and the abstract, monotonous space of "real urbanization" spreads', as Nick Smith (2014) states in an essay in which he inverts the villages name: these settlements are not villages in the city, but are the most urban parts of the city; they are the city in the village.

1.3 problem statement

Thus, the demolition of urban villages is at the same time a loss of valuable diversity for the city, will decrease Shenzhen's competitiveness and impedes migrant's permanent settlement opportunities. The permanent settlement of migrants is essential to insure a sustainable future for Shenzhen. Their incomplete incorporation in the city by means of the exclusive hukou-system and the uncertainty of their housing situation will eventually frustrate sustainable growth, as it impedes their upward social mobility (Zhu, 2007, Chan, 2010). Shenzhen simply cannot afford to exclude and eventually possibly lose such a big part of its population. The redevelopment model of complete demolition and replacement of complete villages is also becoming increasingly unfeasible, because it becomes more and more difficult to persuade village collectives to accept a compensation for demolishing their real estate. This notion has also reached the consciousness of Shenzhen's officials, especially after the crisis of 2008, when many now unemployed migrants did not return to the city after Chinese new year (Saunders, 2010). Altogether it becomes clear that there needs to be new model of redevelopment for Shenzhen's urban villages. One that is inclusive towards

the migrant residents and supports their needs. One that acknowledges the migrants' first foothold to urban life and tries to build something better from this.

It is clear that such a model is either not existent, not known among Shenzhen's urban planners or not being implemented in practice. The practice of village redevelopment observed in Shenzhen does not properly address the needs of migrants to support their permanent settlement. It also fails to deal with the dynamic nature of migration because of its all-or-nothing style of redevelopment. Summarizing, I come to the following problem statement:

The current spatial planning and design practice in redeveloping Shenzhen's urban villages does not properly address the permanent settlement conditions of present and future migrants.



Fig. 16: The urban village of Baishizhou; traditional village buildings in the front, the 'handshake' buildings in the back

2. METHODOLOGY

2.1 Research questions

As follows from the problem statement, the main goal of this thesis is to contribute to the understanding of the spatial structures of the peripheral districts of Shenzhen, the processes that formed them and how they can be changed for the better. Eventually this understanding could be used as a base to shape policy aimed at supporting migrants' permanent settlement in the city. As mentioned in the problem statement, the needs of migrants for their permanent settlement should be central in this project. However, addressing all those needs would be too much for this thesis. Therefore, I need to specify and limit the needs to be researched.

The evolution of the urban village has been a model where specific demands and supply were able to come together in a very efficient way: villagers, former fishermen or farmers, when their traditional rural livelihood became impossible to continue because of advancing urbanization, saw an opportunity to develop real estate for an immense market for affordable housing migrants who did not have many other options for housing. The villages, with their own high density and favorable location, offered good conditions to start small businesses, as many migrants did. So from the point of view of the migrants, the urban villages offer both affordable housing and resources for a livelihood. Housing and livelihood could be seen as the main needs which have to be met to ensure migrants' permanent settlement. After all, it was this livelihood which has been the main reason to move to Shenzhen for virtually every migrant. This is why I will be focusing on this need in this thesis. At present, factories provide the biggest share of the jobs migrants are engaged in. The envisioned transition from world factory to world city will also mean factory work might decrease in importance as employer. A substantial share of migrants is already working in different jobs, many of them work in small businesses, either working

for an acquaintance or being self-employed, and this share might be growing. In this thesis I will focus on this group: the migrants who decide to be their own boss and start a small business. To be more precise, it is about the spatial conditions allowing for or impeding migrants' small businesses to be established. The main research question is:

How can Shenzhen's peripheral districts preserve and enhance their spatial structures supporting self-employed migrants' small businesses?

In order to answer the main research question, I defined the following sub questions:

- 1. How does self-employment and small business operation relate to migrants' social mobility in China?*
- 2. What are, theoretically, the spatial conditions influencing the potential for establishment of small businesses?*
- 3. What does the migrant population of Shenzhen's periphery demand from their environment?*
- 4. What are the spatial conditions affecting the distribution of small businesses in the periphery of Shenzhen at present?*
- 5. Where do opportunities lie to improve small business opportunities?*

The focus on the potential self-employed migrants does not mean the others are excluded. I will argue that what is good for the business starters, could be good for the migrants in general, and even for the whole city. For the potential business starters themselves, self-employment offers a recognized social mobility path, as will be put forward in the theoretical framework. It also is an alternative to the strict factory work with a little more personal freedom. The benefits for the general population becomes clear when one considers that business owners tend to be less mobile in physical terms. Because of the investment they usually made to start their business, they are less likely to move.

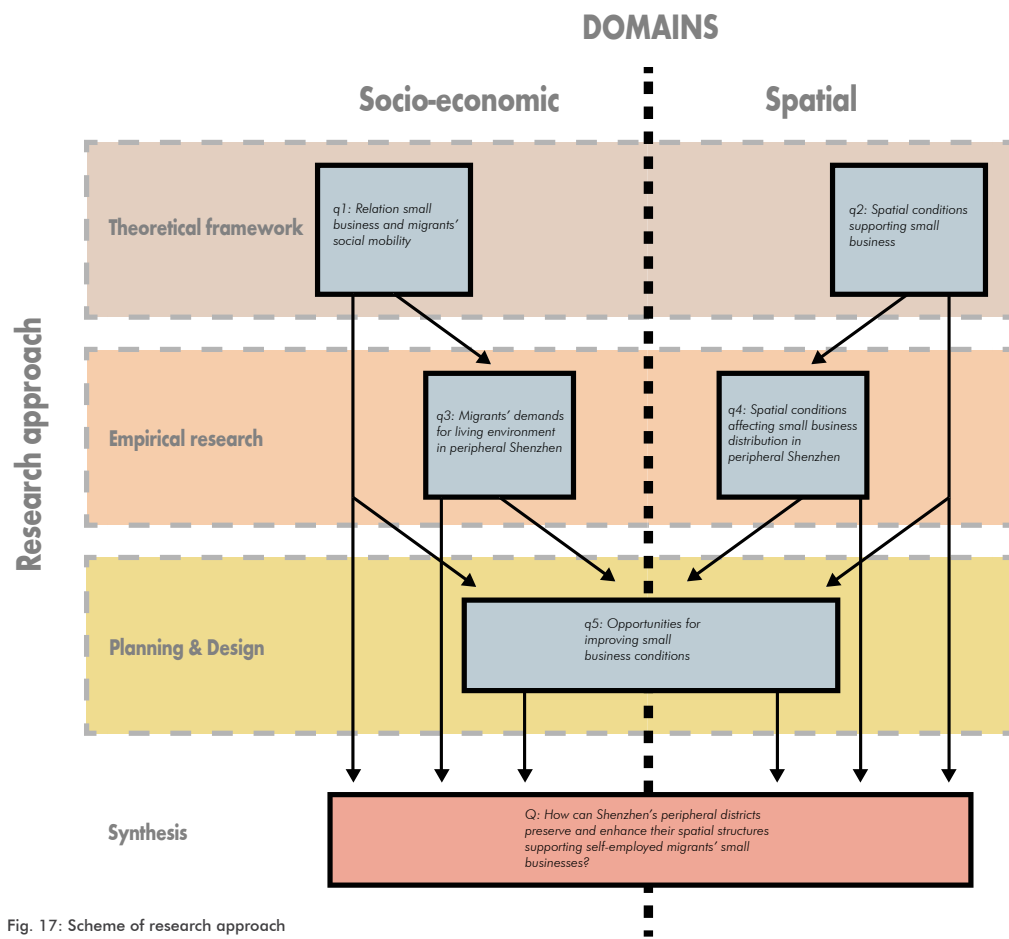


Fig. 17: Scheme of research approach

This makes them important anchors in forming communities, as they can offer a neighborhood some stability. Some of their small businesses might be successful and could start employing others; they can become providers of local employment. The shops, workshops or services they start, can be an addition to the diversity of uses in a neighborhood, especially when this neighborhood used to be exclusively residential or for work. With this diversity of use, also the street life vitality and safety will increase. In short, supporting the establishment of small businesses is a way to achieve more diverse, lively and safe neighborhoods, where local employment and community building is stimulated.

2.2 Methodology

The research approach of this thesis can be

best explained by analyzing the main research question: How can Shenzhen's peripheral districts preserve and enhance their spatial structures supporting self-employed migrants' small businesses? It mainly questions the relation between two phenomena which respectively belong to two domains. The spatial structures in Shenzhen's peripheral districts is a spatial phenomenon, while small businesses is rather a socio-economic phenomenon. This distinction between the socio-economic and the spatial domain helps clarifying the methodology used to structure this thesis and eventually to answer the main research question (fig.17). Furthermore, the methodology can be divided into a theoretic, an empirical and a design component. Each sub research question can be attributed to one of these three components. The sub questions in general also relate to either the socio-economi

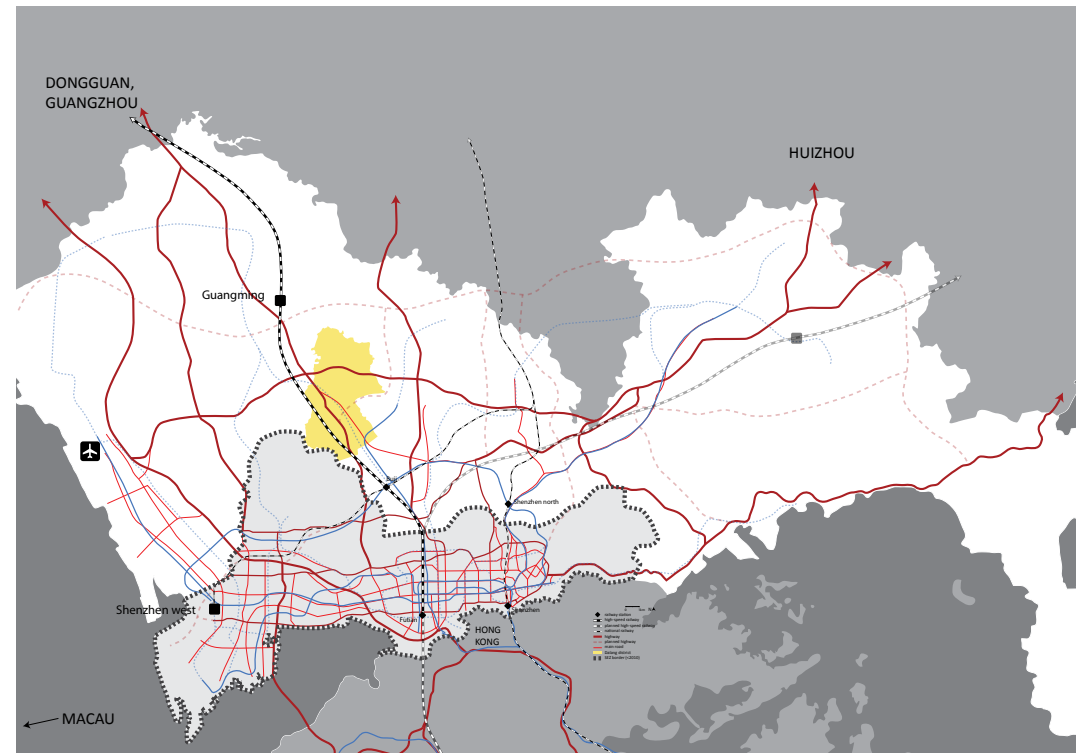


Fig. 18: Situation of Dalang in the metropolitan region of Shenzhen

or the spatial domain, except for the last one which is meant as the synthesis of both. The structure of the methodology is shown in the diagram above. The first two sub research questions are dealt with in the theoretical framework. This framework is a review of theory on migrants' social mobility and the spatial conditions for small business. First, the socio-economic domain will be addressed by reviewing the relation between self-employment and small business and migrants' social mobility in the Chinese context. Then, for the spatial domain there will be a review of theories on spatial conditions supporting small business establishment.

Because reality can be different than any theory would predict, the theoretical part is followed by empirical research. The empirical part within the social domain will answer the third sub research question: What does the migrant population of Shenzhen's periphery demand from their environment? By means of a questionnaire, 93 migrant inhabitants



Fig. 19: Aerial photo of Dalang

of Dalang, which represents a typical district of Shenzhen typical for its periphery (fig.18 & 19), were interviewed. The largest share of respondents was collected through the network of voluntary organisation KIDO (fig.20). This

questionnaire serves a few purposes: First it tries to gain understanding of the profile of the target group: the migrant workers. Then it also tries to indicate what the appreciation of their living environment and their intentions of staying in Shenzhen and possible future jobs are. The empirical part within the spatial domain is covered by some spatial analyses, all related to streets. During the fieldtrip to Shenzhen, I mapped all the shops, workshops and services in a chosen area consisting of a few urban villages. Then I use space syntax to find some intrinsic properties of the built urban form. One of those properties, the local angular integration, a measure which describes how likely it is a certain street is used to travel on for local traffic, will be used for a correlation. By defining the density of the amount of shops, workshops and services along the sides of streets, there will be quantitative data which can be compared with the local integration of the same streets. By plotting the shops per 100m street length against the local angular integration in a scatter plot, it is possible to find out if both variables correlate. Other analyses will be done to show connectivity from the main street grid and the crossing possibilities of main roads. These analyses are done to find what the spatial conditions are that affect the distribution of small businesses in Shenzhen's periphery.

The findings from the theoretical and empirical parts, both from the socio-economic and the spatial domain, will be used to formulate a strategy for improving the spatial conditions for small businesses in the peripheral districts of Shenzhen. Through design it will be visualized where the real opportunities lie for intervention to achieve these improvements. A pilot project will be proposed to show how the spatial strategy could be implemented.



Fig. 20: In conversation with young migrant workers on a meeting in Dalang, organized by KIDO

3. MIGRANTS' SOCIAL MOBILITY & SELF-EMPLOYMENT

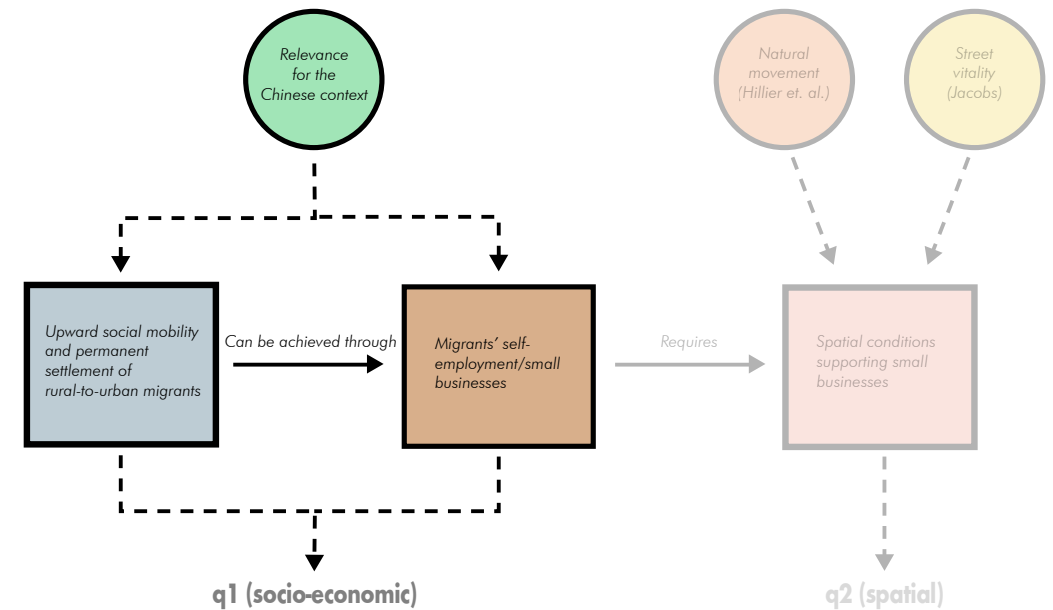


Fig. 21: Theoretical framework part 1

This chapter is the first of two that together constitute the theoretical framework of this thesis (fig.21). Each of the two chapters deals with one of the sub research questions, as mentioned in the methodology chapter. Whereas chapter 4 will really have a spatial perspective on the migrant's small business - as can be expected from a thesis in the field of urbanism - this chapter has a broader, more societal perspective. It deals with the notions of upward mobility of migrants and self-employment or small business as a path of achieving this. Although some key texts on migrants social mobility used for this framework have a global scope, effort is done to specify the relevance of these notions for the Chinese context.

3.1 Introduction

'What will be remembered about the twenty-first century, more than anything else except perhaps the effects of a changing climate, is the great, and final, shift of human populations out of rural, agricultural life and into cities.'

(Saunders, 2010)

With this sentence Doug Saunders introduces readers of his book *Arrival City* (2010) to what he, among many others (Gleeson, 2012), considers the most significant event of our time: the migration of millions of people from rural villages into cities; the greatest migration in history. The relevance of the associated urbanization process stretches far beyond the field of spatial planning and design. So far, the biggest share of this migration and urbanization has happened in China, where 200-250 millions rural residents moved to cities and towns within China (Chan, 2012a).

Saunders (2010) presents this massive migration as the context and main driver of a specific spatial phenomenon: the arrival city. The arrival city is the place that should, when it is functioning properly, function as the first foothold for migrants who seek to fully arrive in their city of destination. It is a place of transition. In this aspect lies its importance, because this transition could either be towards successful upward mobility of its residents and

as a neighborhood as a whole, or a transition into perpetual poverty, conflict and violence. The way the public, and especially governments view and treat them could make the difference between these extremes.

In the case of a well-functioning arrival city, it 'is a place of upward mobility - or at least a calculated grasp for the best hope of mobility' (Saunders, 2010). In this way, they are a vehicle towards permanent settlement of migrants in cities. The arrival of migrants to cities often goes hand in hand with an expanding informal sector (Keith, 2014). Self-employment and associated small businesses, key elements of the informal economy, are essential to the success of arrival cities according to Saunders (2010). He therefore argues that spatial policy should create conditions, or at least allow existing conditions, for small businesses to establish. The beneficial role of small businesses for cities, especially for the social mobility path for migrants, was already recognized by Jane Jacobs in *The death and life of great American cities* (1961). In this chapter I will do a literature review on this presumed role of small businesses in the social mobility of rural-to-urban migrant and the implications for the Chinese context, thereby answering the first sub-research question:

1. How does self-employment and small business operation relate to migrants' social mobility in China?

The second paragraph deals with the notion of "social mobility" and its relevance for contemporary China. The third paragraph will elaborate on the relevance of self-employment and its connection with social mobility in China. The fourth paragraph concludes.

3.2 The notion of social mobility and its relevance for China's migrants

The question whether migrants should be allowed to make their migration to cities permanent through the mechanism of social mobility, is one that has arisen a long time ago, and so have the arguments in favor and against. This influx of migrants has historically been beneficial for most cities. Many cities are dependent on migrants to compensate their lack of reproduction (Friedmann, 2005), to grow their efficient size needed to support a business service-oriented economy (Chan, 2010), and to sustain tax revenues (Keith, 2014). However, the provision of public services to migrants also bring costs. Because the cost and benefits of migration for cities do not occur evenly, many authorities are reluctant towards migration (Keith, 2014). Because of it still being heavily constrained by the hukou household registration system, in spite of reforms in the last years, migration in China is generally more circular than permanent of nature (Cao et al., 2015). Recently though, labor shortages developed resulting from migrants returning to their village of origin after the economic crises in 2008 This has raised authorities' awareness that to achieve sustainable growth, Chinese cities should start to encourage permanent settlement (Cao et al., 2015). This makes it relevant to discuss the notion of social mobility in China.

American political sociologist Lipset presented in *Social mobility in industrial society* (1959) that social mobility is an inherent aspect of the process of industrialization. He refers to social mobility as 'the process by which individuals move from one position to another in society - positions which by general consent have been given specific hierarchical values' (Lipset and Bendix, 1959). It is seen as a process of a redistribution of talents and rewards, until, in the ideal scenario, an optimum efficiency of the use of talents is met with the fairest distribution of rewards. Thus, the main benefit of social mobility for a society is an optimization of the use of talents. It is obviously not realistic for a society to achieve this ideal, but Lipset (1959)

sees the extent to which societies achieve this as the main reason to study social mobility. He concludes that in industrial societies, social mobility happens more frequently and rapidly than in non-industrial societies. The related processes of urbanization and rural-to-urban migration are specifically mentioned as major sources of social mobility.

Jacobs attributes 'the ability to transform poor people into members of the middle-class' (1961) as an integral aspect to well-functioning metropolitan economies. This means that cities are capable to grow their own middle class, and that policy should be aimed at supporting this process, rather than attempting to "bring back" a middle class from their suburbs (Jacobs, 1961).

In the more contemporary paper *Social mobility of migrants and their children* (Papademetriou et al., 2009) the notion of social mobility includes, beside the extent to which an individual can reach a position matching their potentials, also the question whether they can do this regardless of their parents' background. This paper also elaborates on why it matters that social mobility exists, especially in the upward direction. From the perspective of migration, social mobility is an essential mechanism in the integration of migrants in the community of their destination. In general, a big share of rural-to-urban migrants will occupy a position at the bottom of the economic ladder at arrival. In these positions migrants can be marginalized. When this happens integration and assimilation will be difficult and this will eventually negatively affect social cohesion (Papademetriou et al., 2009). The financial benefits social mobility offers individuals also contributes to the economic performance of a city, since migrants can contribute better to the economy if they can use their skills productively and can invest in enhancing these skills (Papademetriou et al., 2009). However, supporting social mobility is not a sole condition to counter instability, because other social processes can impair the

effect of social mobility. Rising socio-economic inequality, for example can cause economic recession, as the purchasing power of the middle-class diminishes (Chen and Qin, 2014). In general though, enhancing social mobility is worth pursuing (Papademetriou et al., 2009).

If Lipset's (1959) conclusions could be used as a prediction for the Chinese context, as a nation which has industrialized and urbanized rapidly, China should have been seeing a rise in social mobility as well. Indeed, there has been a significant rise in social mobility for rural migrants moving to big cities in China (Chen and Qin, 2014). However, the hukou household registration system still impairs social mobility (Chan, 2012b, Knight et al., 2011, Friedmann, 2005, Chan, 2010, Cao et al., 2015). Since the communist regime divided the Chinese population in either urban or rural citizens, the majority of them, holding a rural household registration (hukou), could not migrate to cities (Friedmann, 2005). Even when the migration restrictions were reformed to support the national industrialization policy and consequently millions of rural residents moved to cities, they were 'not legally considered as urban workers, and are therefore not eligible for the regular urban welfare and rights that are available to any urban resident' (Chan, 2010). This policy assures that migrants cannot permeate into the urban permanent population and this impedes social mobility (Chan, 2012b, Cao et al., 2015).

Many authors agree that this situation will eventually harm China's development (Chan, 2010, Friedmann, 2005, Knight et al., 2011). One of the results of the hukou- system is that China's economic growth is not equally shared amongst its citizens. Friedmann (2005) predicts that people's disappointment with this fact might cause instability. In the long run the costs associated with unassimilated migrants in China might be higher than the costs of supporting their assimilation in the present (Chan, 2010). The impossibility of permanent

settlement will also become economically unfeasible, as the demand the employ migrants with certain skills rises (Knight et al., 2011). Thus, supporting migrant's social mobility including the possibility for permanent settlement is necessary to assure sustainable growth in China.

3.3 Social mobility of self-employed migrants in China

Compared to their bigger counterparts, small businesses take much benefits from being located inside a city. They even owe their existence to the presence of cities (Jacobs, 1961). On the contrary, small businesses also have an important role in cities, especially for the arrival city. 'Small businesses', Saunders states, 'are at the heart of almost any successful arrival city, and their absence or the presence of laws that keep immigrants from opening them, is often the factor that turns arrival cities into poverty traps (2010). Small businesses should not exclusively be imagined as the small corner shops established in ground levels of street facades; the type of businesses often found in Jacobs work (1961). Even though this kind of entrepreneurship is quite easily accessible for any business starter, even migrants, there is another type of business which is still more easily accessible. Street vending is a form of entrepreneurship which can be found in almost every city, both in the developing as in the developed world (United Nations Human Settlements, 2013b) (fig.22). Because they do not have to buy or rent a fixed premises, the overhead costs of running a business for street vendors is lower than those in a building. This makes them accessible as a livelihood for the poorest groups, of which migrants are often one. Bromley (2000), who studied attitudes in public planning towards street vendors, emphasizes that policies aimed to advocate migrants, are often supportive of street vending. Street vending, although not exclusively, is often a survival strategy and

therefore it 'offers alternative channels of upward social mobility for groups which have traditionally been excluded from the corridors of wealth and power' (Bromley, 2000). This does not mean street vending and fully established businesses are completely separate tracks of mobility. Successful street vendors can eventually move their business into a fixed premises, so one could argue street vending represents a 'laboratory of entrepreneurship' (Bromley, 2000).

Thus, small businesses, on or off the street, can provide a path of upward social mobility. As social mobility is what the arrival cities are all about, Saunders acknowledges the importance of small businesses for their functioning. Apparently, he even looks at self-employment as offering a more effective social mobility path than formal employment. If this is assumption is funded, then small businesses deserve special attention in policy, if its aim is to support permanent settlement and social mobility of migrants. To what extent is this reasoning relevant for the Chinese context?

Self-employed migrants in China have received little attention and have been discriminated against in policy reform, even though, according to Cao et al. (2015), 'the rise in self-employment is probably one of the most significant employment trends in urbanising China'. Since China's economic boom in the early 2000s, 'a huge increase in the numbers of urban and rural traders, merchants, and small and medium-sized businesses run by individuals or households' occurred (Cao et al., 2015); between one fifth and a quarter of China's rural-to-urban migrants is now self-employed (Giulietti et al., 2012, Cao et al., 2015). On average, migrants decide to go into self-employment more often than native urbanites (Chen and Qin, 2014). The proportion of self-employed migrants in big Chinese cities will continue to increase when traditional industry will move inland, as big cities will remain popular destinations for



Fig. 22: Mobile street vendor serving lunch to school kids in Dalang

rural-to-urban migrants (Friedmann, 2005). In short, self-employment among migrants appears as a significant phenomenon in China.

The observations of an increasing self-employed sector is not enough to treat it as an opportunity in policy. The intentions for people to choosing self-employment and its socio-economic effects need to be considered. Generally, there are two opposing arguments to explain migrant's decision to go into self-employment and start small businesses. Some see this decision as a failure to get formal employment, due to various reasons. The United Nations interprets the higher numbers of migrants engaging in informal self-employment in the developing world as the result of exclusion from formal work opportunities (United Nations Human Settlements Programme, 2003). Others emphasize that migrants might prefer self-employment over other types of jobs. For example, self-employed people value their independence and are more satisfied in their work (Blanchflower et al., 2001, Benz and Frey, 2008).

In the case of China both arguments might be true. Because of the discrimination migrants face related to the hukou- system, they are generally only eligible for jobs without social benefits or protection against exploitation. Cui et al. (2013) finds this discrimination to be the main reason for migrants to chose self-employment. In that sense, when one considers all the jobs available in a city, self-employment might be a negative choice because other jobs are not available. However, when we compare self-employment only to the standard factory jobs, which are available to migrants, then self-employment is an improvement. Self-employed migrants have higher incomes than wage-earners, and feel more free and independent in their work (Cui et al., 2013). This is one reason why self-employment increases the social mobility of Chinese migrants. A second has to do with their permanent settlement. Self-employed migrants tend to be more likely to

settle permanently in their city of destination due to various reasons: they migrate together with their family, they are more involved with the urban economy and society and, because of their higher initial investment, they need to stay in the city longer (Cao et al., 2015). Their higher income also helps them to make city life more affordable then it is for wage-earning. Altogether, it is clear that self-employment is a relevant opportunity to increase one's social mobility for Chinese rural migrants.

3.4 Conclusions

Saunders' (2010) Arrival cities are those places where migrants can find their first foothold in their city of destination. Whether these places succeed to be providers of an effective social mobility path defines the faith of our societies. Small businesses are, according to Saunders, one of the main drivers of migrants' social mobility. This chapter intended to reason how self-employment and small business operation relates to migrants' social mobility in China. Social mobility can be understood as the extent to which people are able to move up the socio-economic ladder to fully use their talents. Permanent settlement is an important step in social mobility for rural-to-urban migrants. In the great migration of the twenty-first century billions of people from rural villages worldwide will move to cities. Chinese migrants are responsible for a big share of this migration and associated process of urbanization. Industrialization and urbanization have been main sources of social mobility worldwide, and this also appears to be true in China. However, the hukou household registration system has been constraining migrants' permanent settlement and therefore social mobility. To assure sustainable growth, China will need to encourage migrants' social mobility. In China, migrants who decide to go into self-employment and start small businesses appear to improve their social mobility. Compared to wage-earners, their income is higher and the freedom and independence they experience in

their work makes them more satisfied with their job. They are also more likely to settle in cities permanently compared to wage-earners. These benefits, in combination with the fact that a substantial and increasing share of migrants is self-employed, justify encouragement of small businesses in policy.

Because small businesses manifest themselves in space, policy encouraging small business should have a clear spatial component. The next chapter deals with the spatial conditions that influence the possibilities for establishing small business.

4. SPATIAL CONDITIONS SUPPORTING SMALL BUSINESS ESTABLISHMENT

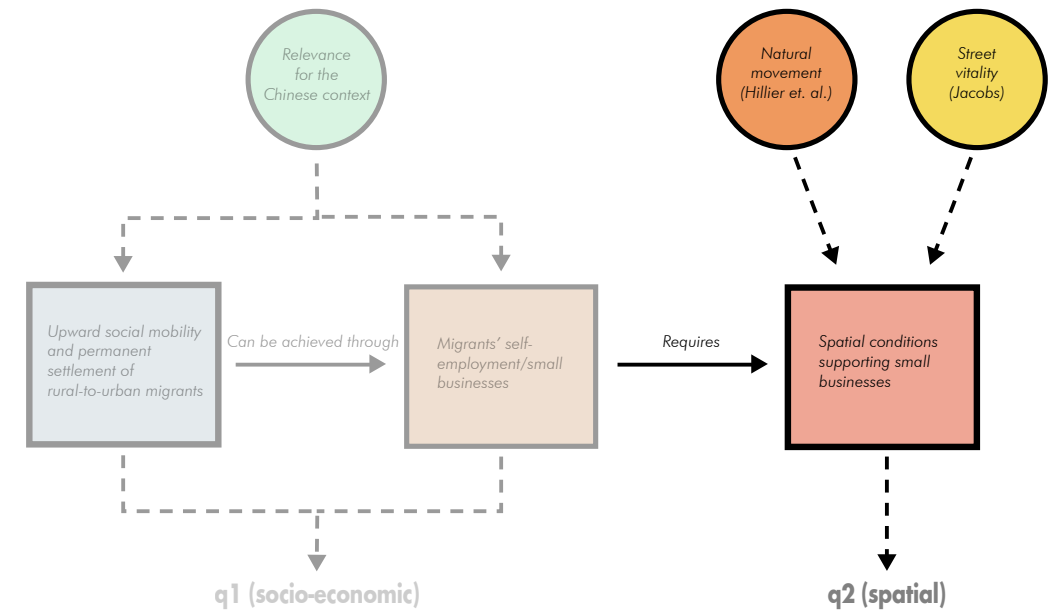


Fig. 23: Theoretical framework part 2

The previous chapter has made clear that the small businesses, established by many rural-to-urban migrants in China, offer an effective social mobility path, and that this is important to ensure sustainable growth in China. In this chapter the spatial conditions related to small business (fig.23).

4.1 Introduction

For an arrival city to function well, it needs to provide the spatial conditions to meet the demands for housing, provision of health and education and the establishment of small businesses (Saunders, 2010). In this chapter I will elaborate on the spatial component of policy encouraging the establishment and operation of migrants' small business in China and by doing so I intent to answer the second sub research question:

2. What are, theoretically, the spatial conditions influencing the potential for establishment of small businesses?

Supporting the social mobility function of arrival cities through spatial policy has implications for both its attitude and its techniques. So before discussing the actual spatial characteristics small businesses demand to thrive, the attitude of planning towards migrants small business needs to be discussed first. Obviously, if spatial policy is not supportive of or ignores migrant businesses, there is no need to discuss how they can be supported through spatial techniques. The second paragraph deals with this planning attitude. In the third paragraph some rather obvious spatial conditions will be introduced that all relate to the availability of adequate business spaces. Then in the fourth paragraph I will elaborate on the role of the configuration of the urban form, and especially the street as a central element, in the generation of opportunities for small business settlement. Finally, the conclusions of this chapter will follow in paragraph five.

4.2 Tolerant attitude towards migrants and their businesses

As self-employment has for long not been acknowledged as a valuable means of livelihood for many Chinese migrants in public policy (Cao et al., 2014), neither have the spatial patterns which housed most of their businesses received much positive attention in policy. Chinese rural-to-urban migrants, generally being poor and excluded from formal housing, depend for the biggest share on so called “urban villages” to meet their demand for affordable housing (Hao, 2012). Aside from public space, these villages are also the main supplier of spaces for small businesses for self-employed migrants. China’s spatial policy has not been very tolerant towards these urban villages; many have already been demolished to be replaced by formally planned developments. In the words of Saunders, this practice is ‘disrupting the lives and economic relationships of families that have invested everything in this urban foothold’ (2010).

This modernistic idea of redevelopment of a site to achieve neatly planned public order is very questionable. Not only does it raise ethical questions, it also fails to realize that is not a way to get rid of these informal settlements, even if that would be desirable. Informal urbanization has ignored official planning and will continue to do so when formal planning is aimed at controlling or diminishing it (Watson, 2009). The only thing the demolition of urban villages will achieve is displacing many people to further, less favorable locations, raising business and travel costs. A decent share of the migrants will stay in the city either way and will change the space in ways which allow them to make a living (Friedmann, 2005). Jane Jacobs also argues that these settlements, when supported in the right way, have the potential to redevelop themselves over time, in a much more just and efficient way than modernistic planning could achieve (Jacobs, 1961).

Thus, contrary to the current Chinese planning paradigm, tolerance and support should characterize the attitude of planning towards informal self-employment (United Nations Human Settlements Programme, 2003, Watson, 2009). This means that planners need to allow spaces where migrants can ‘develop their own solutions to the poverty within which they live’ (Cross, 2000). Planners also have to be aware that migration is a dynamic phenomenon. This demands flexibility from the city. Not only this generation of migrants needs to have the opportunities to adapt the space of the city to their needs, but so do future generations. Keith (2014) calls this ‘the city’s permeability, its ability to integrate new presence in an old fabric’.

4.3 Availability of adequate business space

When discussing spatial planning, the actual techniques and instruments of planning and design are just as important as its attitude. The most obvious way of supporting small business establishment is by ensuring enough adequate space is available for the actual activity of operating a business. So how to achieve this?

The need to preserve or create adequate premises to house businesses is a widely mentioned instrument to support the establishment of small businesses. These premises need to have flexible tenure forms, because the targeted small businesses need to be able to enter and leave the premises without much bureaucracy. Also, there needs to be a flexibility in size, so businesses can stay in the same neighborhood when they grow. This is important because these businesses rely on local networks both when they are established and for their market. Finally, these premises need to have a low rent, in order for them to be affordable for migrant entrepreneurs (Nolan and OECD, 2003, Westall et al., 2000). Jacobs (1961) stresses the importance of preserving



Fig. 24: Street market in Dalang

buildings of different ages. This is because older buildings are usually cheaper to rent than newer buildings. Therefore, older can offer affordable premises to migrants, who generally cannot make big investments to start up companies. Preserving buildings of different ages implies that redevelopment is done incrementally, because complete redevelopment of whole neighborhoods would result in a building stock of a homogenous age and therefore rent prize.

As mentioned in chapter 3, street vending is a way of avoiding having to pay a rent for a business space. Because of street vending, the public street is a big, collective business space in itself (fig.24 & 25). This means streets in this respect have a double role: the not only provide access to businesses in buildings adjoining them, they are also claimed by street vendors. This double role could result in a conflict. Because most street vendors are attracted to the places where the highest concentration of potential customers can be found, there danger exists their presence results in congestion. Too much congestion can harm the profit of businesses established in the buildings facing those streets. This conflict has brought many cities to discouraging or relocating street vendors (Bromley, 2000). However, this response can work counterproductive because it can negatively impact the entire economy of a city. It would be better to take street vendors into account in the design of streets, in such a way that they do not harm accessibility of the shops nearby.

To achieve enough adequate space to establish and operate a business does not have to be a matter of actively planning this top-down. In most cases, much more or less adequate space is already present and in use, sometimes in unlikely places from a planning perspective. Tolerant planning needs therefore needs exceptional, flexible zoning, in order to protect the vulnerable networks supporting self-employment (Keith, 2014). Flexible zoning

contributes to the availability of business space in such a way that it allows business to take place in those places migrants themselves expect to be most profitable or are available to them most easily. Allowing businesses take run where they are already established and in addition making them more accessible could be a much more effective way of supporting them.

Still, urban form is important. Saunders (2010) illustrates this importance by stating that when 'evicted slum-dwellers are given rudimentary apartments in tower blocks' they lose their livelihood because these buildings do not offer opportunities to adapt them to business spaces. Planners cannot just assume business will take place anyway and anywhere; some buildings just do not possess the adaptability to change from use (for example from residential to business) or are not located where they cannot easily serve a market. Therefore, planning needs to be aware that many types of business need to be located there where a market exists. The street is an element that plays a vital role in connecting businesses to their markets and vice versa. The next paragraph will elaborate on this.

4.4 The role of the street network and its configuration

The vital role of streets for achieving prosperity on the scale of the city has been advocated effectively in the UN-Habitat report *Streets as public spaces and drivers of urban prosperity* (2013b). It opposes the modernistic assumption that streets are wasteful elements of space in cities and proves the contrary: that there is a correlation between the share of a cities' space allocated to streets and its prosperity, as measured through the *City Prosperity Index* (United Nations Human Settlements, 2013a). It is obvious that the provision of basic services is hardly possible in neighborhoods with insufficient street networks, of which there are many, mainly in the developing world.



Fig. 25: Shoe repairman working in a niche in the streets of Baishizhou

However, streets contribute to prosperity in a much broader sense than just in their obvious role as infrastructure. They affect environmental sustainability, quality of life, social inclusion and productivity. The report demonstrates how streets contribute to a cities' productivity by discussing their importance for small business. Well connected spaces tend to attract most costumers and thus businesses. High connectivity of the street network makes it possible to maximize the benefits of agglomeration. This connectivity can be expressed by measuring the space allocated to streets, the total length of streets and the amount of intersections. However, connectivity is not only a matter of these quantifiable aspects, but also of the extent to which streets are public spaces for everyone. Streets need to be safe and comfortable not only for private cars, but also for public transport and especially for pedestrians and cyclist. This is even more relevant in cities in the developing

world, where most people cannot afford to travel by private car.

Even though the report by UN-habitat also emphasizes the importance of the qualitative aspects of connectivity, its main message is that authorities should provide a sufficient street network in the quantitative sense in all parts of the city. However, not every street has the same potential to support businesses. A Businesses can obviously only exist when there is a market for the products or services offered. Many small businesses, especially among those started by migrants, depend on a direct contact with their customers. Especially for commerce this means shops need to be where the people are. Two different theories, although quite different from each other, can be very helpful in understanding the relation between the built urban form and this economic aspect: the four generators of diversity from Jacobs' *The death and life of great American cities* (1961) and the

theory of natural movement by Bill Hillier as introduced in *Cities as movement economies* (1996). The main similarity between these theories is the role of city streets and their configuration as a central notion. However, in Jacobs' work the street is regarded as an integral property of a block size. Furthermore, 'short blocks' is one of four equally important preconditions: the four generators of diversity (short blocks, mixed primary uses, presence of buildings of various ages and sufficiently high density). Hillier's theory differs from Jacobs theory in that he presents aspects as density and land use as subordinate to the importance of streets. This is because he claims that density and land use evolve mainly in relation to the city grid.

According to Jacobs, a decent amount and diversity of small shops, which she calls secondary diversity, is not so much something planners can take care of directly just by allocating space to them: it is more a byproduct of primary diversity. This separation between primary and secondary diversity has to do with the extent to which there exists a combination of different primary uses. Primary uses are those main functions that are responsible for putting people in certain places, like residence, work or leisure. When there is a combination within a neighborhood of different primary uses that put people on the streets at different moments of the day, the neighborhood becomes an attractive place for secondary uses. 'Secondary diversity is a name for the enterprises that grow in response to the presence of primary uses, to serve the people the primary uses draw' (Jacobs, 1961).

Hillier shares the perception of the presence of small shops as a byproduct of something else, like a mixture of primary uses in the case of Jacobs' theory. However, instead of the byproduct of mixed uses, Hillier emphasizes the byproduct of movement. Of course one could argue that Jacobs is actually talking about the movement of people using those

primary functions, still there is a fundamental difference. Hillier talks about movement generated by the configuration of streets, instead of related to specific destinations. He calls this type of movement 'natural movement': 'the proportion of movement on each line that is determined by the structure of the urban grid itself rather than by the presence of specific attractors or magnets' (1996). When one would observe all the trips people make within an urban system from any possible origin to any possible destination, some spaces in between would be used more often than others. It is these spaces that allow for the shortest route between most origins and destinations: the most well 'integrated' spaces. This integration gives these spaces an advantage over other, worse integrated spaces. It is these spaces which will develop the highest density and diversity of land use in the evolution of a city, because of people wanting to profit from this advantage. In this way a multiplier effect is created, because of the attraction of higher densities: 'It is this positive feedback loop built on the relation between the grid structure and movement which gives rise to the urban buzz, which we prefer to be romantic or mystical about, but which arises from coincidence in certain locations of large numbers of different activities involving people going about their business in different ways' (Hillier, 1996). This all means that streets are not just supporting infrastructures that have to be planned for specific functions, as traffic planners tend to do, but streets themselves generate possibilities for uses as well. Hillier uses small shops to demonstrate this. Highly integrated streets tend to be places where many people and shops can be found in cities. It could be that the shops attract all those people, but the integration of the streets cannot have been changed because of their presence. Therefore, shops selectively locate themselves on the most integrated streets because they generate the most natural movement of people. Sevtsuk (2014), although he uses the term 'betweenness' instead of integration, found a

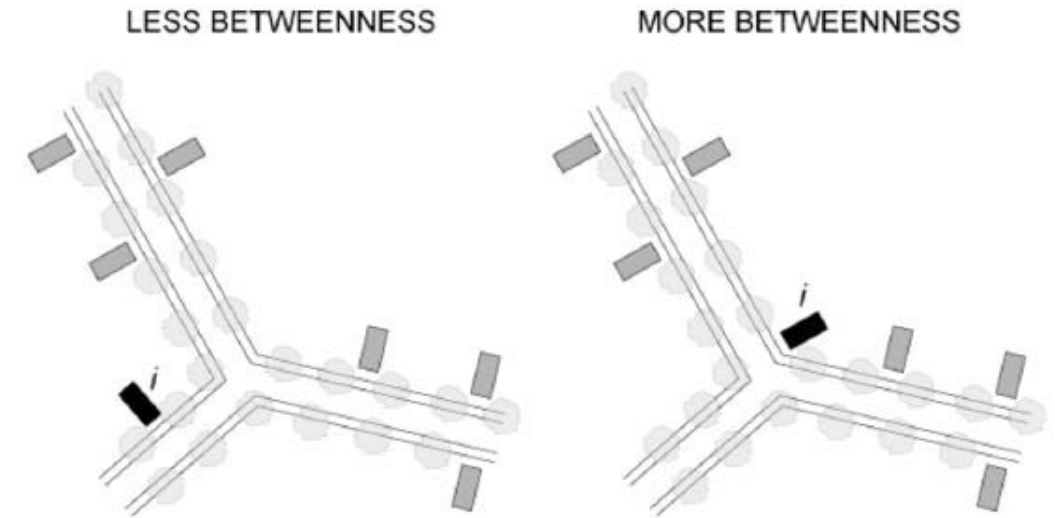


Fig. 26: The concept of betweenness and shop location (Sevtsuk, 2014)

strong relation between configuration and the location of retail (fig.26). Places that are more in between surrounding destinations are more likely to attract retail activities, because these are the places where more people are likely to pass by. Read (2002) argues in a very similar way that urban centralities are 'constructed on movement flows and activity patterns within the urban spatial matrix'. He states that its often the places where the urban scale of the neighborhood connects with the scale of the urban super grid, where most activity is found. The 'openness and transparency at the local scale' combined with the connectivity to the scales above determine whether a place can become a centrality (Read, 2002).

Thus, the theory of natural movement shows how spatial centrality can support social centrality. However, Van Nes (2007) argues the two types of centrality do not necessarily always coincide, because 'political forces, interests' conflicts and organizational constraints can overrun the generative power of the street grid's topological structure' (Van Nes, 2007). This means planning has a role in the extent to which the potential of streets to generate centralities is realized. Planning that does acknowledge or actively opposes this attribute of the street grid, will also not result in a built city that is able to adapt to changes in its social fabric over time and is therefore unsustainable (fig.27). Van Nes, just like UN-habitat, pleads for a type of planning that is centered around

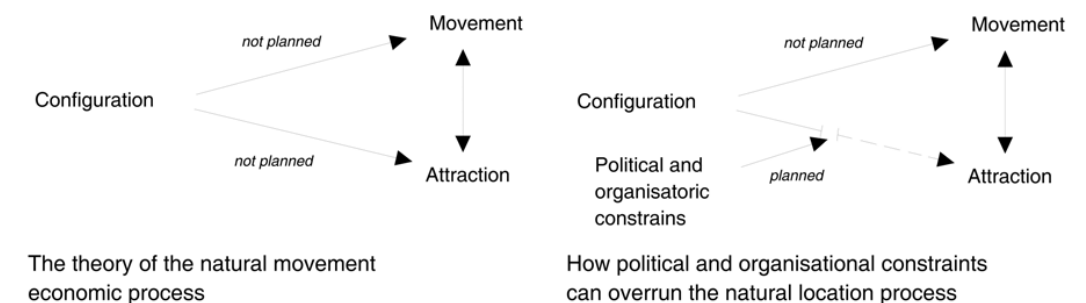


Fig. 27: The relation between configuration, movement, attraction and planning according to the theory of natural movement (Van Nes, 2007)

the realization of a well integrated street net, because well integrated streets possess the generative force to shape density, mixture of land use and micro-economic activity in for many plans preferable directions. Jacobs' argument on streets is very similar. Shops will locate themselves in streets used by the most people. This also means that less shops can be expected to be found in abandoned streets. Jacobs argues that long blocks result in a high share of such abandoned streets, with only a few streets crowded. The viable spaces for business are therefore limited in blocks with long streets without intersections. This is based on the thought that certain small businesses profit from being close to their market and dispersed from their competitors: 'The supply of feasible spots for commerce would increase considerably, and so would the distribution and convenience of their placement' (Jacobs, 1961). With this argument, Jacobs opposes redevelopment programmes replacing dense street nets with 'super-block projects'. The implications for spatial policy Hillier speaks of are highly similar. Replacing continuous small blocks by 'enclaves' will diminish the opportunities for natural movement and therefore for diverse land uses and density to evolve; 'Any tendency in an urban structure towards 'precinctization' must also be a tendency towards a lessening of the useful by-product, and therefore of the multiplier effect on which urban vibrancy depends' (Hillier, 1996). Even though Hillier says land use to a high extent evolves in relation to the city grid, Jacobs' suggestions on stimulating mixing use through spatial policy still stand. She argues local governments do have some tools to influence the mixture of uses in neighborhoods. Apart from relaxing zoning codes which formally separate uses like residence and work, public institutions can locate their buildings in neighborhoods in need of a complementary use.

4.5 Conclusions

As self-employment and small business can

offer Chinese migrants a decent upward social mobility path, it is worth to study which spatial conditions can benefit the establishment and operation of small migrant businesses. The aim of this chapter has been to discover what these conditions can be, so spatial policy could steer towards achieving these conditions. Spatial policy in China considering "urban villages", informal settlements which house the biggest part of migrants' households and small businesses, has been about demolishing and replacing these urban footholds for migrants. Saunders (2010) warns that such an attitude can harm the functioning of arrival cities. To support migrants' social mobility, spatial policy should have a more tolerant, sensitive and supportive attitude towards these places. Spatial conditions which support the establishment of small businesses should be preserved where they are available and created where they are not. First of all, planning should ensure enough easily accessible, adequate space is available in all parts of a city to migrants who cannot make big investments to start up their business. Then, planners should also be aware of the city functions as a mechanism connecting businesses and their customers. The theory of natural movement and the four generators of diversity can help a lot in understanding how the urban form contributes to generating the traffic of people most small businesses profit from. The most integrated streets in the configuration of the urban grid will generate the most traffic and are therefore good business locations. A combination of different primary uses can assure enough people are in the streets at different times of the day to allow for secondary diversity to emerge.

5. MIGRANTS' INTENTIONS

5.1 Introduction

The previous chapters held literature reviews on the relation between migrants' social mobility, small business and their spatial demands. However, to move towards a redevelopment strategy which takes into account migrants' settlement needs, literature studies have to be accompanied by empirical research. 'Migrant' is a very generalizing term, so it is necessary to make an effort to check if the inhabitants of Shenzhen's periphery match the stereotype of the migrant worker. This is important because the migrant population is often dealt with in policy as a temporary phenomenon; Shenzhen's public policy do not seem to take into account a share of the migrant workers might want to settle permanently in Shenzhen. This chapter gives an overview of the results of a questionnaire used to get an idea on whether these migrants expect to stay in Shenzhen, how they appreciate their living environment and what they demand from it in the future. The

aim of this chapter is to answer the third sub research question:

3. What does the migrant population of Shenzhen's periphery demand from their environment?

As mentioned in the methodology, the district of Dalang is used as a representative for Shenzhen's peripheral districts, and the questionnaires were handed out to and replied by inhabitants of Dalang. In total there were 93 useable responses to the questionnaire. Even though many questions were open, some answers were so recurrent that it is possible to make quantified diagrams of the respondents. For other questions the answers varied much, therefore the points made by the respondents cannot be generalized. However, they still can provide some good points of attention for a spatial strategy. The second paragraph intends to sketch a profile of the surveyed migrants. The third paragraph will be an interpretation



Fig. 28: Origin of interviewed migrant residents of Dalang

of the spatial demands these people have for their environment. The fourth paragraph concludes what this means for a spatial strategy.

5.2 Profile of the migrant population in Dalang

The most obvious characteristic of a target group of migrant workers would be that they migrated to Shenzhen from somewhere else. The term 'floating population' often used to describe the big share of unregistered migrant population of Shenzhen suggests these people are not so much home but away from home, at least for now. To get an idea where the migrants in Dalang originated from, the questionnaire started by asking them where they originally come from.

The diagram (fig.28) makes it clear that the migrant population of Dalang originates from all over China. There are representatives from 16 provinces among the respondents. However, the majority of the respondents (53 out of 93) come from the provinces close to Shenzhen (Guangdong, Guangxi, Hunan, Jiangxi). There are no significant differences from an equal distribution in gender. The results confirm that most migrants already knew someone who lived in Shenzhen before they arrived themselves (fig.29). These acquaintances probably play a considerable role convincing potential migrants to come to Shenzhen or in finding housing or employment.

Another characteristic of the stereotype of the migrant worker population confirmed by the survey is that they are generally very young: only 5 respondents were older than 34 (fig.30). This means facilities for elderly people might not have priority here, but facilities for children on the other hand can be expected to be in high demand. We asked the respondents for how long they have been living in Shenzhen to check how truly 'floating' this population is. Even though the biggest category has arrived in

Acquaintance in SZ before moving

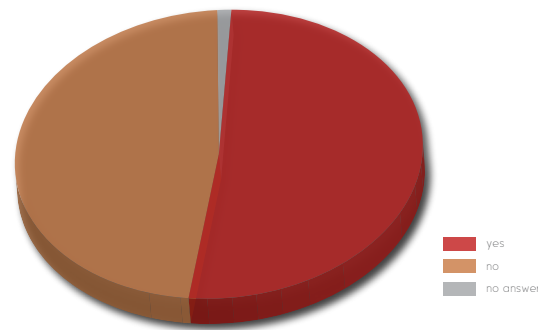


Fig. 29: Interviewees having an acquaintance in Shenzhen before moving

Type of house

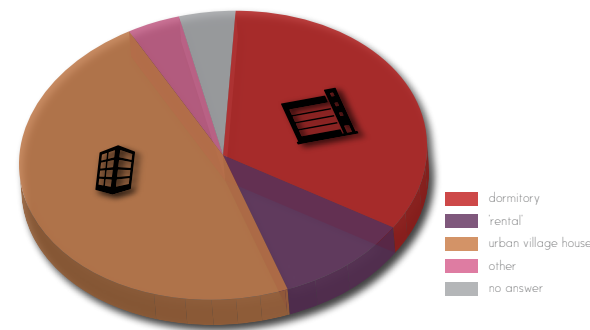


Fig. 32: Type of housing the interviewees live in

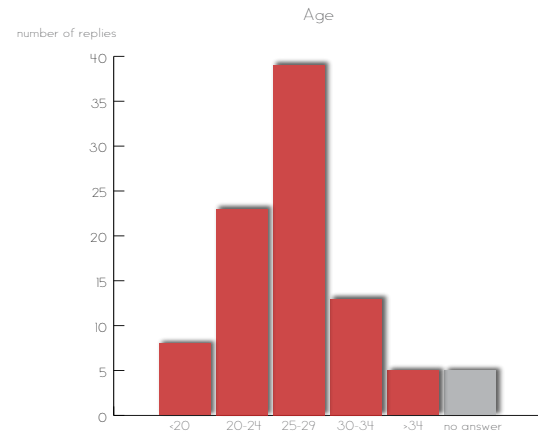


Fig. 30: Distribution of ages of interviewees



Fig. 33: Distribution of monthly income of interviewees



Fig. 31: Distribution of duration of interviewees' stay in Shenzhen



Fig. 34: Percentage of interviewees' income spent on housing

Shenzhen in the last three years, the majority of the respondents has been living there for at least three years (fig.31). I would argue that this fact decreases the credibility of calling these people temporary inhabitants.

Because the urban village has been mentioned multiple times before in this thesis as an urban phenomenon offering a big share of the housing for the migrant population in Shenzhen, respondents were asked in what kind of house they lived. The answers confirm that most people in the periphery of Shenzhen have found housing in urban villages (fig.32). When the answer 'rental' is included (which most likely refers to a rental apartment or room in an urban village) 54 out of 93 respondents say they live in an urban village. The factory dormitory is also still a considerable provider of housing (31 respondents). Dormitories are generally significantly cheaper than urban village houses. Dormitories are either free (provided by the employer) or cost 288 RMB on average, whereas the average monthly rent for an urban village houses was found to be 576 RMB. Apparently the costs for rent are not the most important factor for choosing between a village house or a dormitory, since more people live in an urban village even though this is the more expensive option. It could be that these migrants prefer the relative privateness of the urban village, or the independence from the employer. However, it is also likely that the capacity of the dormitories is just limited and that the urban village houses have been built to deal with this shortage.

The monthly incomes found through the survey are quite evenly distributed: the majority of the respondents earns a monthly income between 3000 and 4500 RMB (fig.33). The most common percentage of the income spent on housing lies between the 10 and 15 percent (fig.34). This might not seem a lot from a western perspective, but many migrants moved to Shenzhen to earn money to send back home to their family. Higher housing cost would harm

the feasibility of this construction.

In general the results from the questionnaire among the inhabitants of Dalang confirm they meet the stereotype of the migrant worker. They are young, originate from all over China and most of them live in urban village houses. However, the majority has been living in Shenzhen for at least three years. In the end, they might not be so much floating as expected.

5.3 (Desired) occupation and appreciation of environment

Another obvious characteristic of the migrant worker is that they work. 'Shenzhen works' is a Chinese saying to illustrate unemployment hardly exists in Shenzhen. It is therefore not surprising that 'unemployed' was not a common answer in the questionnaire. Since the occupation question was an open one in the questionnaire, many answers were also open to interpretation. Still it is quite clear that a majority of the respondents has a job some kind of factory; 60 percent answered either 'factory worker', 'manufacturing', 'operator' or something similar (fig.35). This percentage also includes those who said to have a 'R&D' function. The rest of the respondents works in the service sector.

Just as relevant as their current occupation was to ask the migrants what their desired job in the future would be. If self-employment is truly a trend among migrants in China, as was found in the literature study, then this should be reflected in respondents' desired future jobs. This clearly appears to be the case. One third of the respondents would prefer to be self-employed in the future (fig.36). Many articulate this as being 'my own boss', suggesting that they long for a job with more freedom of choice and own responsibility. This assumption is underpinned because eleven more respondents say they would either want to be a manager/boss or have more freedom in

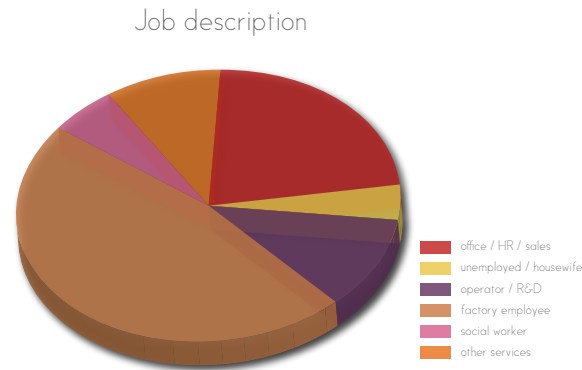


Fig. 35: Description of interviewees' jobs

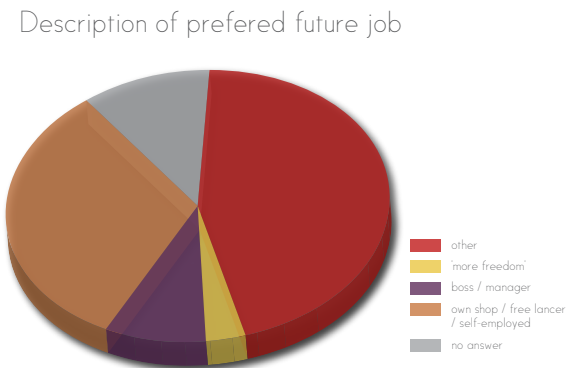


Fig. 36: Description of preferred future jobs of interviewees

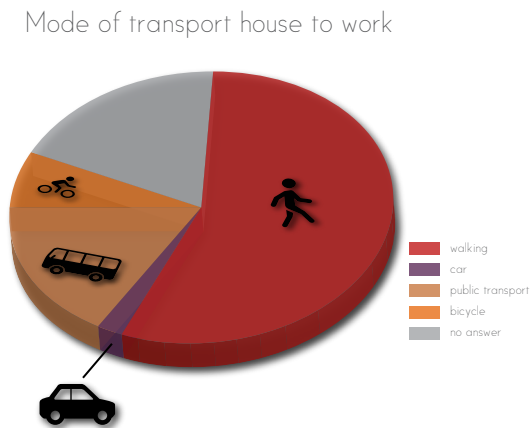


Fig. 37: Means of transport used by interviewees to get from house to job

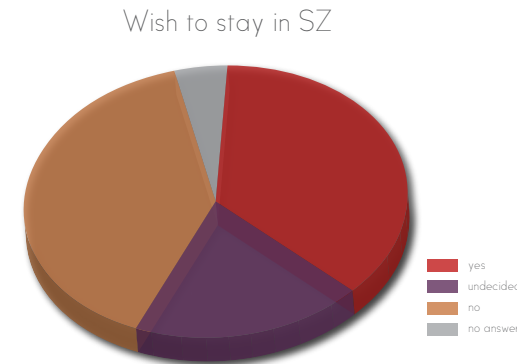


Fig. 38: Interviewees' wish to stay in Shenzhen

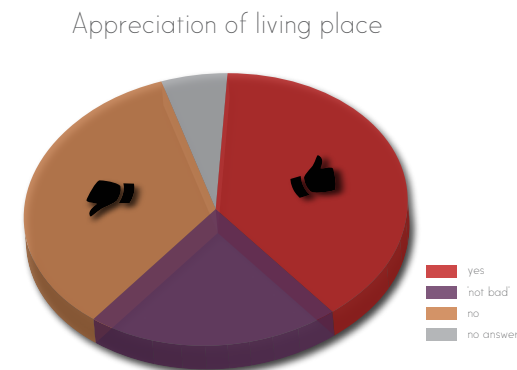


Fig. 39: Interviewees' appreciation of living environment

their job. That such a significant share of the migrants, represented by the respondents of this questionnaire, considers self-employment, supports putting a focus on small business in spatial planning for the periphery of Shenzhen.

To make an estimation of which modes of transport are being used most, people were asked how they travel to and from work. This can be an important input for street design and spatial policy in larger scales. Interestingly, Only a few respondents use a private car to travel to work (fig.37). This is surprising because the road widening projects seem to suggest the car has priority in transport policy. The majority (52 out of 93) of the respondents walks to work. High percentage of people walking to work in cities in the developing world can often be explained by a lack of affordable alternative modes of transport (United Nations Human Settlements, 2013b), as probably will be the case in Shenzhen as well. However, this high percentage of people using modes of transport other than the private car also presents an opportunity for spatial policy to sustain this by facilitating for slow mobility.

The question how long people have been living in Shenzhen showed that the majority has been living there for at least three years. However, when asked if they would wish to stay in Shenzhen in the future, the answers are mixed (fig.38). The share of people declaring they wish to stay in Shenzhen is about as big as those that wish to leave eventually. The relatively high costs of living is an often mentioned reason to doubt about a future in the city. Also the wish to return to the hometown is common among those expressing their preference to leave Shenzhen eventually. That 18 out of 93 respondents says they have not decided on staying or not might be explained by the young age of many migrants. It also suggests that there is quite a high margin when one would predict how many migrants will eventually permanently settle in Shenzhen. For Shenzhen to achieve sustainable development, its public

policy should be aimed at encouraging those who wish to stay and those who are still in doubt to eventually do so, by working to meet their demands for permanent settlement.

Just as the question whether respondents wish to stay in Shenzhen in the future received mixed answers, respondents are also divided in their appreciation of the living environment (fig.39). On the question 'do you like the place you live in?' 36 answer yes, 32 no and 20 say it is 'not bad'. Commonly mentioned reasons for disliking the living environment are crowdedness or a lack of privacy, a too small house, not enough sunlight in the house, too much noise or pollution and a lack of possible activities outside of the house. This last complaint is strengthened by the answers on the question whether they wish there would be more appropriated public places to meet people, on which 66 out of 93 respondents answers positive. In general there seems to be a lack of possibilities to do leisure and other social activities. Voluntary organizations like KIDO in Dalang aim to enrich the 'third eight hours' of migrants' daily lives: the hours not spent working or sleeping. The interviewees seem to make the connection between these desired activities and they space which needs to be available for them. Many of the complaints about the living environment are also reflected in the descriptions of the desired type of house in the future: spacious, well lit houses with elevators are popular. However, also the wish to return to the home town can be found, since many people see a villa in the countryside as their dream house. There are no significant differences found in both the appreciation of the living environment and wish to stay in Shenzhen between migrants living in urban villages or in a factory dormitory.

5.4 Conclusions

This chapter has been an overview of a questionnaire with 93 respondents, all migrant residents of Dalang in the periphery

of Shenzhen's metropolitan area. The results confirm their profile matches the stereotype of the young migrant worker: they are young, originate from all over China, most of them live in urban village houses and work in a factory. However, the majority has been living in Shenzhen for at least three years. This means policy should take into account a fair share of them will eventually settle in Shenzhen permanently. It seems that improving the living environment of the migrants, could encourage more of them to settle permanently in Shenzhen. Commonly mentioned reasons for disliking the living environment are crowdedness or a lack of privacy, a too small house, not enough sunlight in the house, too much noise or pollution and a lack of possible activities outside of the house. The lack of good public space to spent the 'third eight hours' could work against Dalang, and Shenzhen in general, in migrants' eventual decision to stay or not. A big majority of the residents goes to work by foot. Spatial policy should therefore focus on facilitating slow mobility instead of prioritizing car users. Many of the respondents express the ambition to become self-employed in the future. Thus, spatial policy should respond to this desire for more small business opportunities and social activities.

6. STREETS & BUSINESS DISTRIBUTION

6.1 Introduction

In chapter 4 a set of spatial conditions affecting the opportunities for starting and operating small businesses, found through literature studies, were introduced. However young Shenzhen may be as a city, spatial conditions are already existing. So before translating the theoretical findings immediately into a spatial strategy, the present situation needs to be analyzed. In this chapter the existing spatial characteristics of Shenzhen's peripheral districts will be analyzed, through the perspective of the theory. It was already mentioned that the district of Dalang serves as a representative for these peripheral districts (fig.40); the previous chapter gave an overview of the results of a questionnaire taken among Dalang's residents. Because the presence of small businesses is a phenomenon that can be best observed on a scale below the level of a district, a delimited area of Dalang is chosen to carry out specific analyses. This area, in the south-east edge of Dalang, has the typical haphazard mix of factory compounds, urban villages and wide, metropolitan roads characteristic for the whole of Shenzhen's periphery (fig.41). It is close to a station of a metro line, running directly to central Shenzhen. It also contains some parks and schools and the layout of the urban villages is not too problematic. This means that this area does not only stand as a good example of the rest of Shenzhen's periphery, it also seems to have enough potential to sustain in some form or another in the (near) future. The aim of this chapter is to answer the fourth sub research question:

4. What are the spatial conditions affecting the distribution of small businesses in the periphery of Shenzhen at present?

The second paragraph will be about the spatial structures of Dalang, focused on the connectivity aspect. The third paragraph will go into the found distribution of small

businesses in some blocks in the south-east of Dalang, and how this can be explained through the configuration of the space. The third paragraph will conclude what this means for the spatial strategy introduced in the next chapter.

6.2 The permeability of space in south-east Dalang

In chapter the term 'permeability' was used in a reference to Keith (2014) in quite an abstract way. He uses the term to describe the ability of the old fabric of a city to new presence of newcomers in a city, migrants in this case. Permeability also has a more physical use, and is as such used to describe 'the extent to which an environment allows a choice of routes both through and within it' (Carmona, 2003). In the report on streets as generators of urban prosperity by UN-habitat (2013b), street connectivity is a central notion which is highly related to physical permeability. It argues that cities need a certain amount of streets to be prosperous. Not only is there a need for a certain quantity of streets, streets also need to have enough quality to be useful for all groups in a society. It should be safe and comfortable to walk or use other slow modes of transport in these streets. Streets that exclusively allow cars, also exclude a big share of the population, especially in the developing world. A 'street' should in this context therefore not solely be imagined as a stereotypical street with car lanes and adjacent pavements, but generally all permeable open space can be called a street.

UN-habitat has been ranking cities in terms of their street connectivity, by measuring a list of figures. These include, among others, total area of streets, total street length and the amount of street intersections, all per square kilometer. Even though they have been doing by looking at the average of the total surface of cities, it still might be interesting to investigate these figures for one square kilometer in the

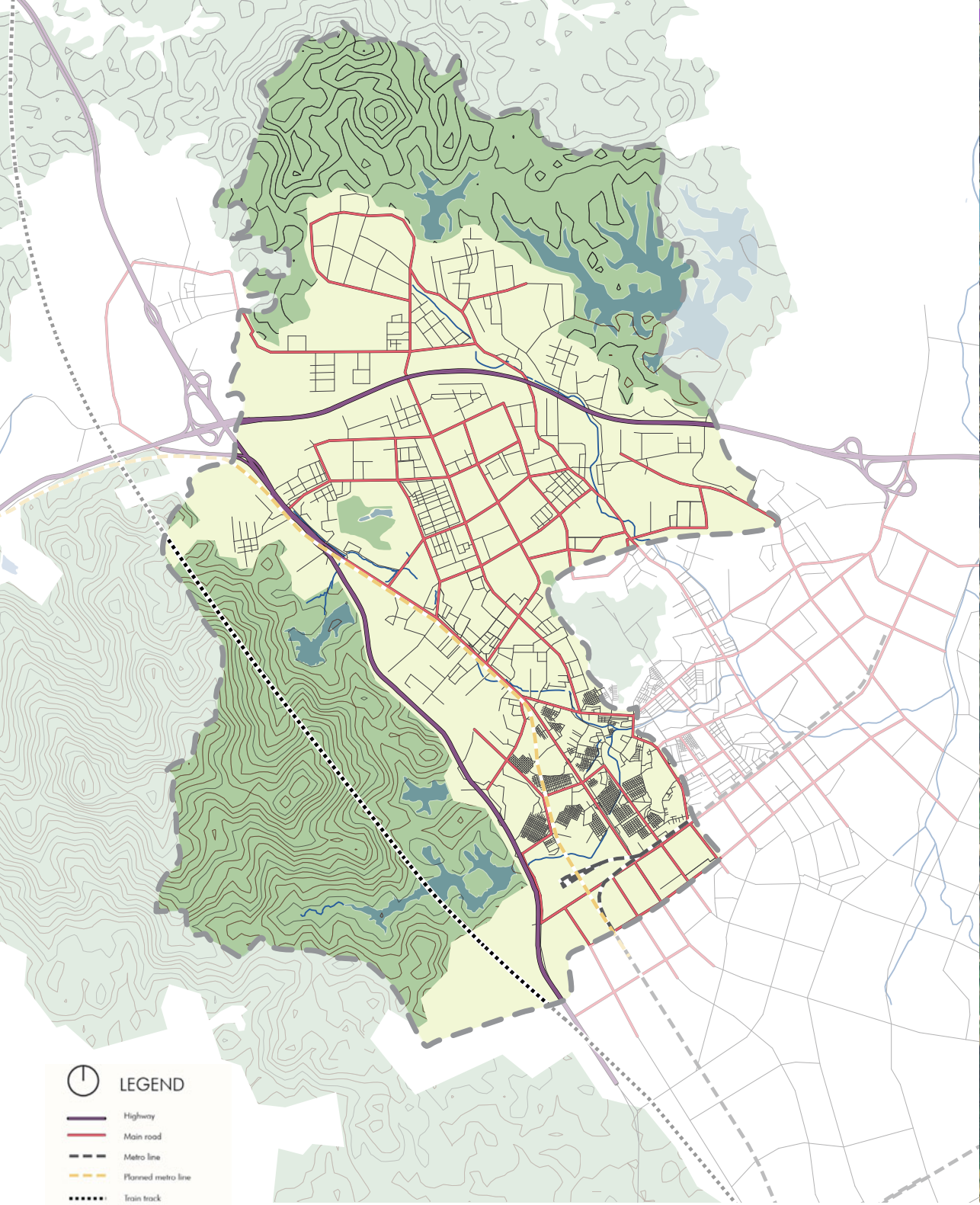


Fig. 40: Overview map of Dalang



Fig. 41: Zoom in on south-east Dalang



Fig. 42: Investigated square kilometer of south-east Dalang



Fig. 43: Street axes (green within urban villages)



Fig. 44: Area allocated to streets



Fig. 45: Street intersections (green within urban villages)

Table 1: Comparison of street connectivity of Hong Kong and Shenzhen

	Proportion of land Allocated to street (%)	Street density (Km/Km ²)	Intersection density (#/Km ²)
Hong Kong center	33,7	35,7	382,1
South-east Dalang (urban villages included)	31,9	34,2	660
South-east Dalang (urban villages excluded)	-	19	121

south east of Dalang (fig.42-45). The city core of Hong Kong has the highest ranking in the list of street connectivity of cities in the developing world. Because of this and because of Shenzhen's historic relation with Hong Kong, I will compare my findings with the figures of the core of Hong Kong (table 1). In the chosen square kilometer of south-east Dalang almost 32% of land is allocated to streets. That is almost as much as in the core of Hong Kong.

The total length of streets in this square adds up to about 34 kilometers, again very similar to this figure of Hong Kong. However, almost half of this street length can be ascribed to the urban village streets, which are in general more alleys than streets. A big difference occurs when comparing the intersection density of the chosen square kilometer and the figure of Hong Kong. When the urban village streets are not included, there are 121 street intersections in the chosen square kilometer. This is much less than the 382 intersection that be found in every square kilometer on average in the core of Helsinki). When the intersections in urban villages are included though, the total amount of intersections in this part of Dalang go up to a staggering 660. What does this say about the quantity of streets in south east Dalang? In the first place it is clear that this square cannot be used to generalize the whole of Dalang and compare it to the figures of Hong Kong, which are calculated as an average of multiple square kilometers, probably including some with very few streets. Still, it is a sign that in this part of Dalang there is not so much a problem of quantity of streets. However, a big share of the streets comes in the form of the narrow urban village streets, of which generally only a few connect to bigger streets. Even though there might be enough streets, it is still not clear how well they interconnect or function adequately.

As introduced in chapter 4, the configuration of streets matters to the extent to which activities are likely to take place along them. This is called the theory of natural movement (Hillier, 1996). Because of their topological relation to all other streets, some streets will be used more than others considering all trips from any possible origin to any possible destination within the totality of the city grid. Therefore, we can call these street highly integrated. To compute the integration of all streets can give an idea about relations within the total street grid of a city. This is done by running an angular segment analyses on axial

line map of Dalang and the Special Economic Zone. This is done both on a global scale ($r=n$) and on a local scale ($r=3$). Whereas in the first case the topological distance is calculated from all other lines to a specific line, in the second case this is limited to the distance to all lines with a maximum of three 90 degree direction changes from a certain line. The global angular integration predicts which streets will be used more for trips on the scale of the whole metropolitan region, presumably by car, while the local angular integration predicts which streets are preferred for shorter trips, for example by walking. The global angular segment analyses shows that Dalang is indeed a peripheral area of Shenzhen (fig.46), in the way Hall (1997) refers to peripherality. The highest integrated streets can be found in the center of the Special Economic Zone, while almost all street in Dalang have a low integration value. When zooming in, it is possible to see the highways around Dalang and the bigger city roads are slightly more integrated (fig.48). The chosen area in the south east of Dalang is bordered by some of these higher globally integrated roads (fig.50).

The local angular segment analyses shows that Dalang, while being peripheral in relation to the SEZ, has a sub centrality in itself (fig.47). This is not surprising considering the size of its population is about 500.000. Still the most integrated streets are located inside the center, but now there is more hierarchy visible within Dalang as well. When zooming in on Dalang, it is clear that the bigger city roads took over from the highways as the most integrated streets (fig.49). This means that the highways are the most globally integrated, while the bigger city roads are the most locally integrated. What is striking though is that there are hardly any well integrated streets that are not multiple lane car roads (fig.51). Also it seems that there are not so much intermediate streets connecting the well integrated city roads and the mass of the roads, most of them in urban villages or factory campuses. The reason for

Fig. 46: Global angular segment analysis ($r=n$) for Dalang on the metropolitan scale

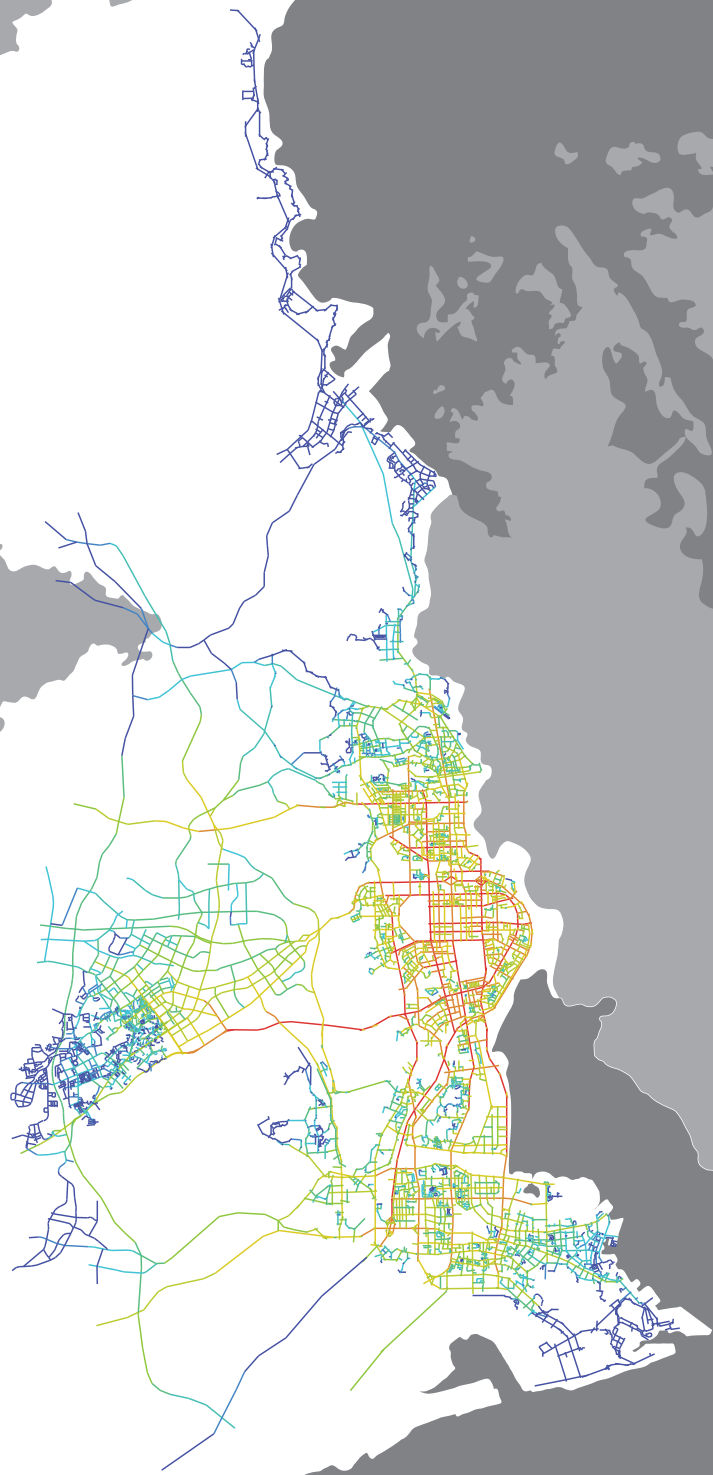
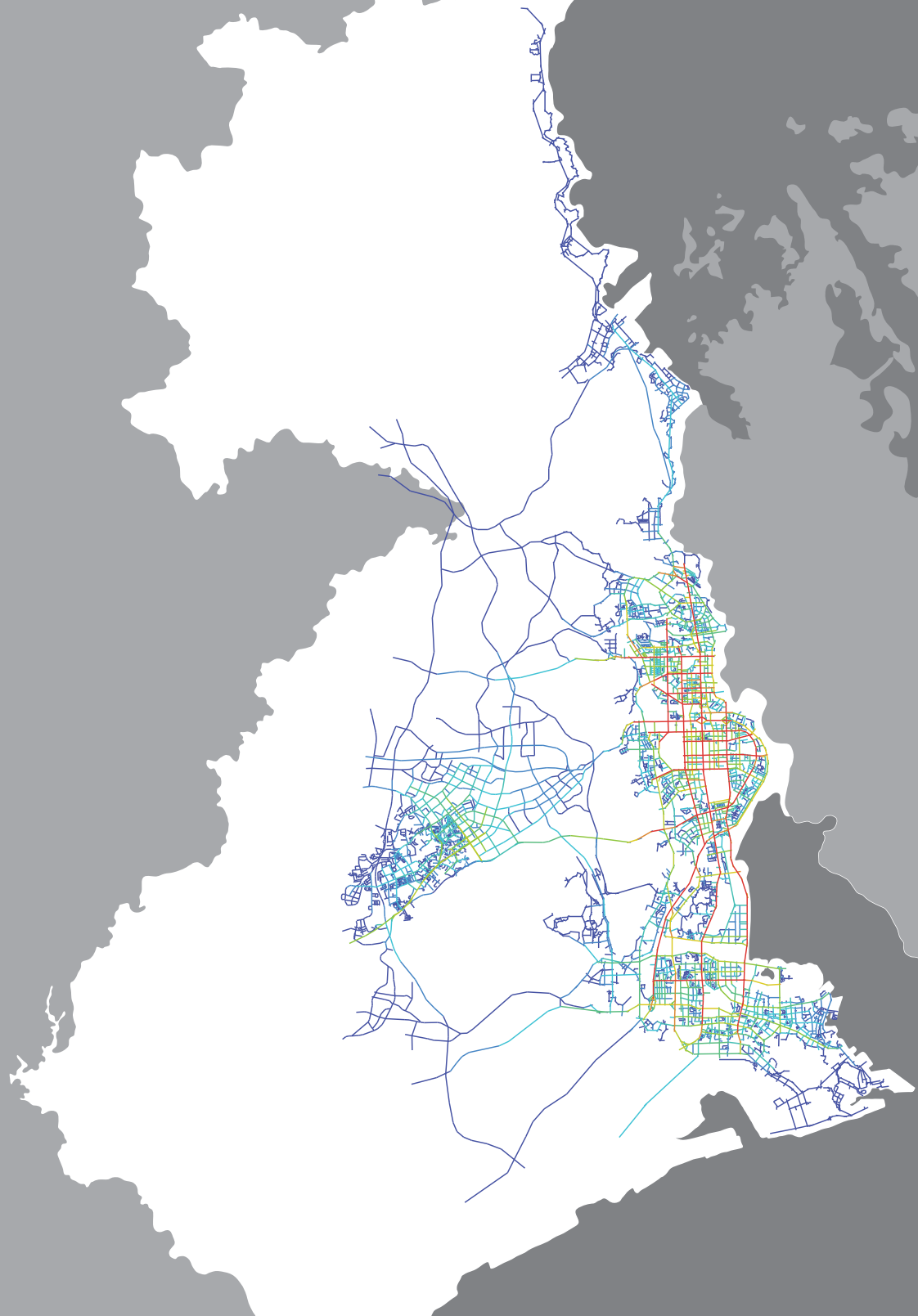
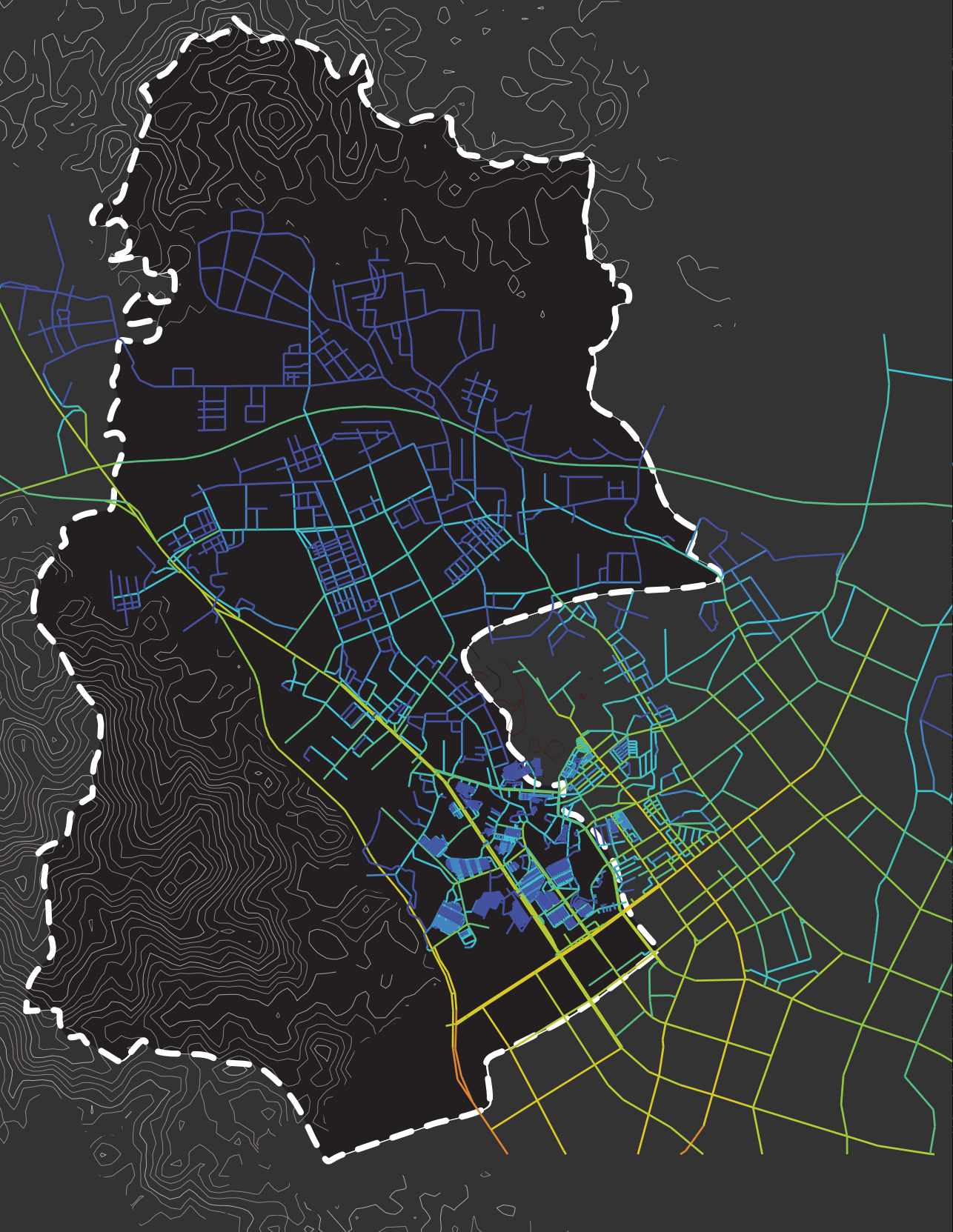


Fig. 47: Local angular segment analysis ($r=3$) for Dalang on the metropolitan scale





60 Fig. 48: Global angular segment analysis ($r=3$) of Dalang on the district scale

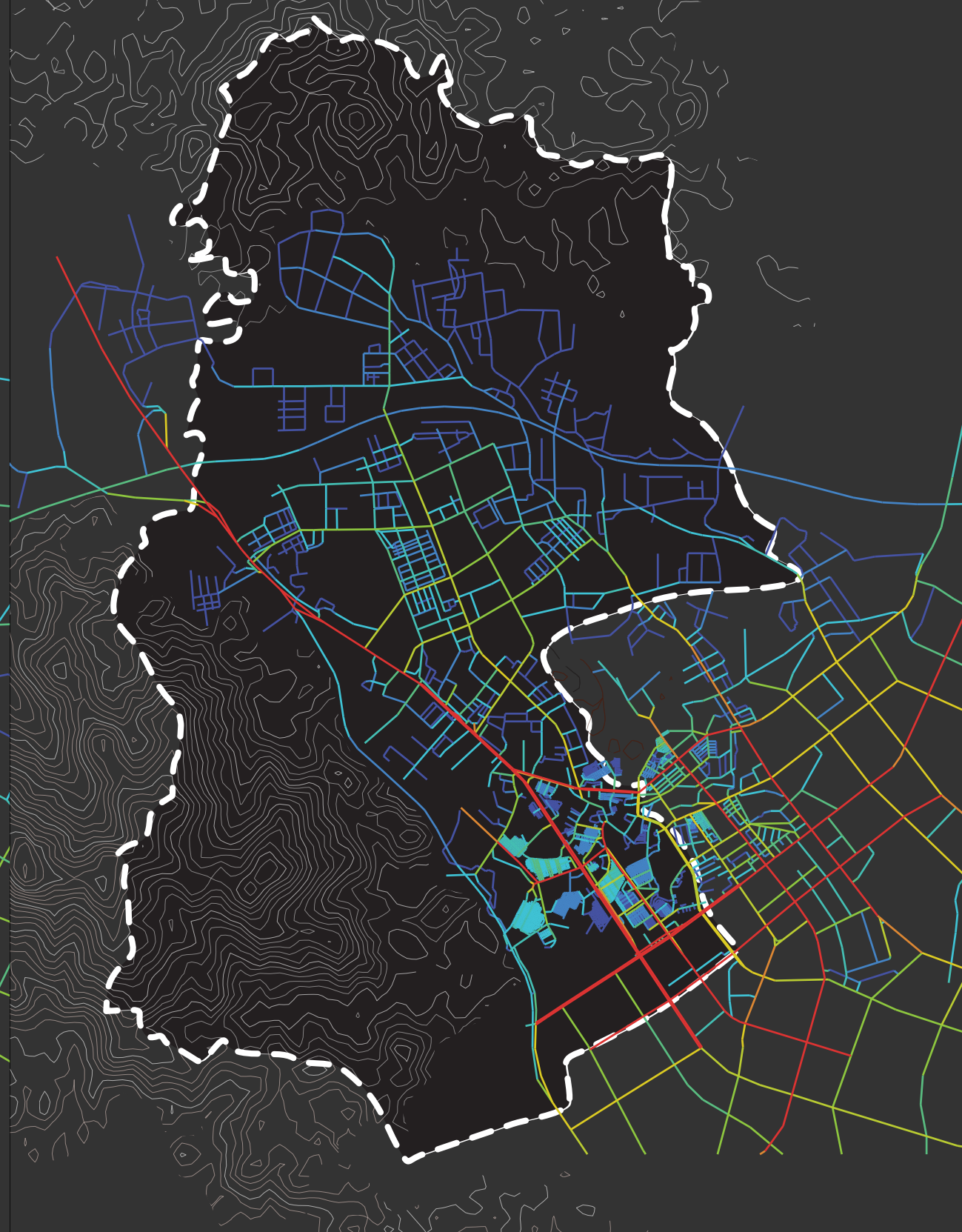


Fig. 49: Local angular segment analysis ($r=3$) of Dalang on the district scale 61



62 Fig. 50: Global angular segment analysis ($r=3$) of Dalang on the neighborhood scale

Fig. 51: Local angular segment analysis ($r=3$) of Dalang on the neighborhood scale 63

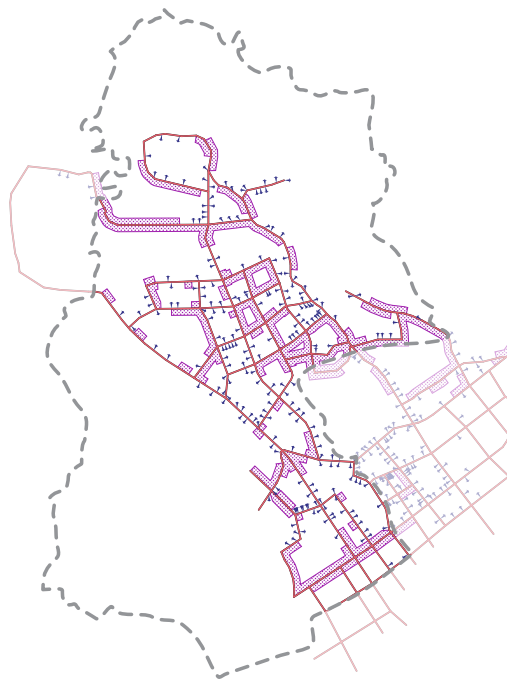


Fig. 52: Lack of intermediate level connecting streets, Dalang (intermediate streets in blue, zones without intermediate streets in purple)

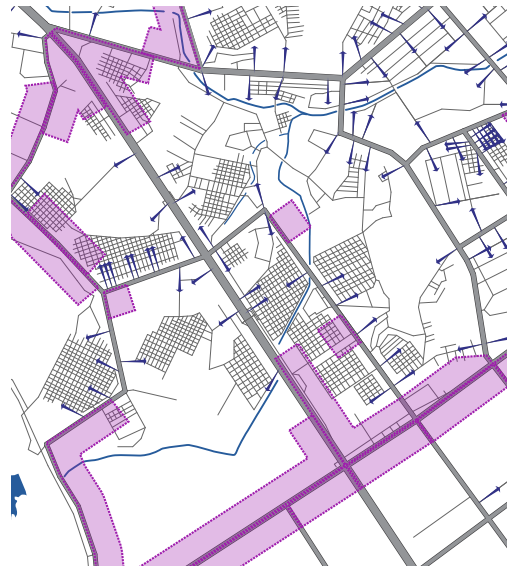


Fig. 53: Lack of intermediate level connecting streets, south-east Dalang (intermediate streets in blue, zones without intermediate streets in purple)

this is that the number of intermediate level streets, connecting two sides of a block enclosed by the city roads through its interior, is quite limited (fig.52 & 53). In some places of Dalang, there are hardly any and sometimes even none of this intermediate, connecting streets. This is a problem because it is exactly at this intermediate level between the city scale and the neighborhood scale where most (economic) activity takes place (Read, 2002).

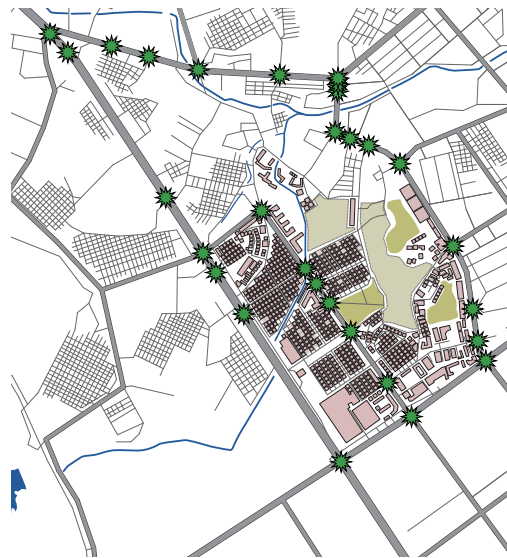


Fig. 54: Spots where a city roads can be crossed, not all safely

Another problematic aspect of the dominance of the big city roads in the local integration, is that these roads, while expected to generate the most traffic for local trips, is not very comfortable to use for slow modes of transport, and for pedestrians in particular. Many of the city roads are very wide, with multiple lanes for cars (fig.55). The standard fences in between driving directions makes it in addition almost impossible to cross the street for a pedestrian (fig.56). The amount of spots where one can cross these roads is very limited (fig.54), and not even all of them have proper crossing

facilities for pedestrians. This is a problem because this highly impedes trips from one neighborhood to another one which lies across such a road. This also makes it much harder for businesses to benefit from the high amount



Fig. 55: Big city roads, poor crossing facilities



Fig. 56: Fences making crossing the street near impossible

of traffic related to the high integration of the city roads. This present situation, in which the city roads function as segregators that also do not even bring so much connectivity to the local scale, seems like a component of the modernistic, car-dominated planning paradigm which dominates Shenzhen's spatial policy. This is problematic because the majority of Dalangs residents uses walking as their main means of transport.

Thus, the analyses of the streets in south east Dalang shows there is sufficient amount of streets, but the real permeability is much lower than can be expected from these numbers. There is a gap of integration between the city scale roads and the local neighborhoods (fig.57). The lack of safe and comfortable pedestrian crossings is a sign of the bad walkability of these roads. This seriously impedes the opportunities for establishing and operating small businesses.

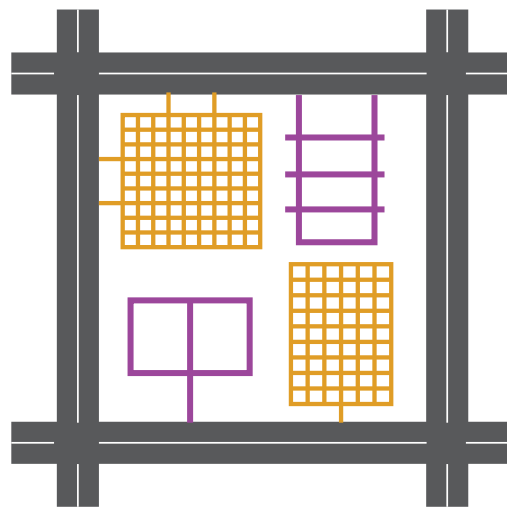


Fig. 57: scheme of Dalang's road network: big city roads and isolated road systems of urban villages and factory areas; intermediate connectors are lacking

6.3 The distribution of businesses in relation to the street configuration

A strategy aimed at enhancing the spatial

conditions supporting small business can be informed by the existing patterns of distribution of small businesses. During our trip to Shenzhen, I mapped the small businesses in a few neighboring urban villages in the south east of Dalang. I divided them into three categories (fig.58-60). The first category, retail, contains 23 types of shops ranging from food stores to drugstores. I found 14 types of services, like hairdressers, beauty salons and internet cafés. Then there were also some workshops and small factories. Because of my lack of knowledge of the Chinese language and because some businesses were closed during my mapping, I had to label some businesses as 'unknown' (fig.61). In addition I mapped ground floor units in urban village buildings which were not actively used for a business. Many of them were used as parking garages or storages. There were generally three types of premises used to house businesses. The most common type of premises was the ground floor of a village house, sometimes the complete ground floor, sometimes only a part of it. The village building seems to be able to house a great variety of businesses. This could be due to its morphology, but also to its flexible tenure form. The second type of premises, of which there were two, was a purpose built building in which similar types of shops were concentrated. The first building contained many small units selling food, a supermarket on the second floor and some restaurants and bakeries in the façade facing the street. In the court it encircled on the backside, an open air food market was situated. The second building of this type was right next to the first, but was much smaller and more simple. This building held 26 units of clothing stores in narrow and shallow units. The third type of business premises was a building housing only one, bigger business: a car dealer.

Looking at the distribution of the small businesses (fig.62), especially the shops, one can see with the naked eye that some streets are more popular to locate shops along than



Fig. 58: Example of the mapped retail businesses



Fig. 59: Example of the mapped services



Fig. 60: Example of the mapped workshops



Fig. 61: Example of the mapped unknown businesses



Fig. 62: Distribution of businesses in a few urban villages in south-east Dalang

others. The first street that stands out is the bigger road in the middle of the three villages. Also the buildings were multiple businesses are concentrated face this street. The second outstanding street is the main street of the village on the western village. In this street almost all ground floors are used for businesses, sometimes divided to house three businesses next to each other. This street connects the two city roads on both sides of this village. On the western side it leads to a pedestrian bridge across the wide car road. From this observation, I can make the hypothesis that what was introduced about business location in chapter four, also applies in this part of Shenzhen: that shops locate themselves where most people pass, and most people pass the most integrated streets. To test this, I computed the relation between the amount of shops in a street and the integration of that street. To get a comparable figure for the amount of shops in a street, I converted to the average amount of

shops per 100 meters on one side of a particular street. From this limited amount of data, there seems to be quite a strong positive correlation between the local integration of a street and the amount of shops, services and workshops found along it (fig.63). This suggests that by increasing the amount of integrated streets, there will be more places where businesses can profit from flows of potential customers.

6.4 Conclusions

In a quantitative sense, the provision of streets in the focus area in the south east of Dalang is adequate. However, there are qualitative shortcomings which impede small businesses from profiting from the economic potentials streets can offer. First of all, there is a lack of highly integrated space in the intermediate scale level between the big city roads and the neighborhood, while this is the level where the most potentials lie for small businesses. These

businesses are depending to a fair extent on people passing by, using slow modes of transport, especially walking. Even though walking is the most popular means of transport among the interviewed migrants, the walkability of the big city roads is problematic. Cars are dominating the street design and there are very few places where a pedestrian can safely and easily cross the big roads. The result of this, is that these roads act as segregating elements, that also do not bring much connectivity to the neighborhood level.

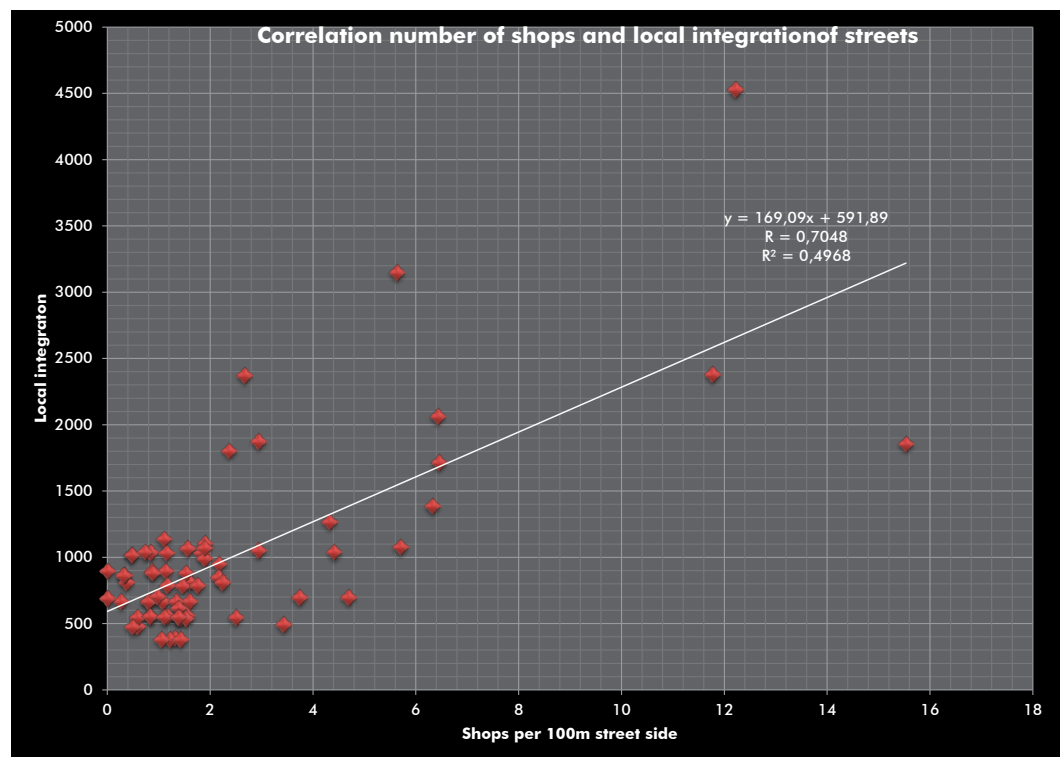


Fig. 63: Correlation between street local integration and amount of shops per 100m street side; every dot represents a street.

7. SPATIAL STRATEGY

7.1 Introduction

Based on the findings from the literature and empirical research, now a spatial strategy will be sketched. It was found that self-employment and small business provides Chinese migrants a decent path of upward social mobility and that many migrants seem to have the ambition to be self-employed at some point in the future. This strategy is aimed at facilitating this ambition. Most migrants live in urban village houses and the majority walks from their house to their job. However, walking is not properly facilitated through street design, in which the car is prioritized at the moment. Shifting this priority towards slow modes of mobility will be a central part of this strategy. As small businesses tend to locate themselves on the places where most people pass along, the strategy should try to maximize the number of people in the streets. This will mainly be done by increasing the amount of integrated space and by diversifying the use and character of streets. The intermediate level street is the key element of this strategy, because this feature is often lacking between the big city road grid

and the dense urban village street net.

This spatial strategy has to offer an alternative to the current model of redevelopment, especially for urban villages. This alternative should be addressing the needs of migrants for permanent settlement better than the dominant planning practice does. The strategy should in its principles be applicable to the whole of the peripheral districts of Shenzhen. It seems obvious that this strategy is formulated to the perspective of a public government, most likely the district or municipal government. In China, government still has a relatively strong power. However, it is very well possible and also desirable if initiatives are raised which fit in the strategy by other parties, like village collectives or private developers. In this case the government should be open to these initiatives and supporting them in any way possible. The second paragraph will first of all introduce the primary actions that form the core of the spatial strategy. The third paragraph describes some aspects of the spatial framework, which should support the primary actions (fig.64).

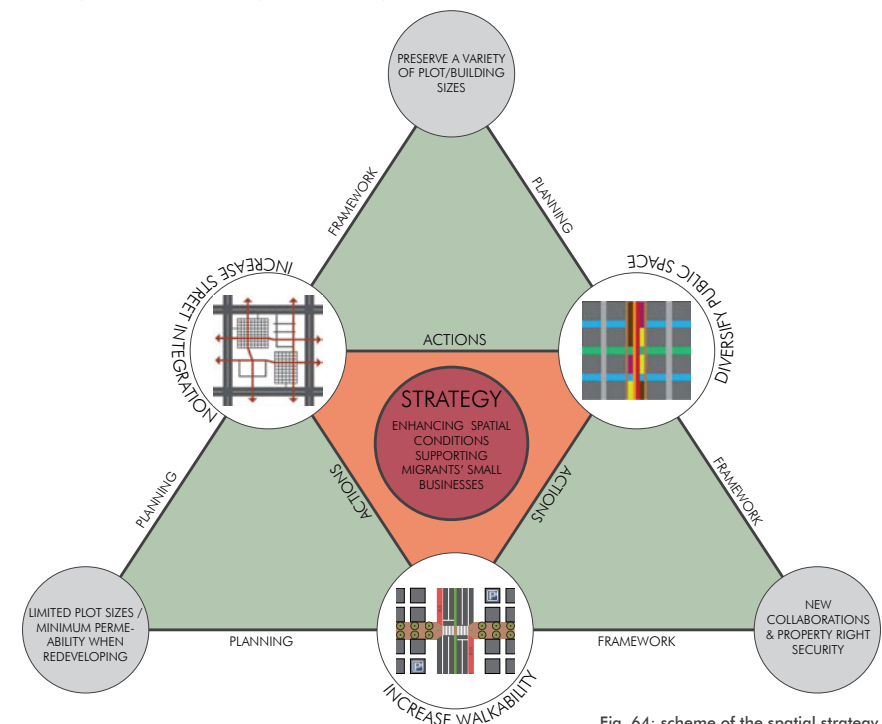


Fig. 64: scheme of the spatial strategy

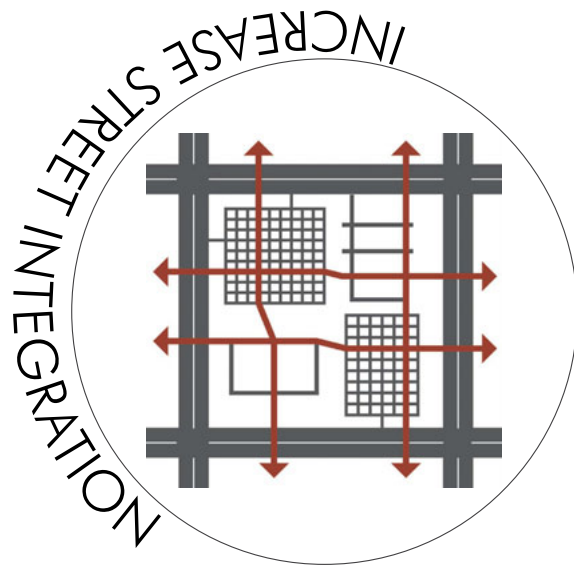


Fig. 65: First primary action principle: increasing street integration



Fig. 66: Second primary action principle: increasing walkability

7.2 Primary actions

The primary actions are those measures that need to be actively implemented for the spatial strategy to work. First the street integration needs to be increased by connecting existing dead end streets and opening up new streets. Slow mobility needs to be prioritized in these newly integrated spaces. Finally the use of these streets should be diversified so they become more than just movement spaces.

7.2.1 Increase street integration

As it became clear from the spatial analyses, there is a lack of integrated intermediate streets connecting the city scale roads to the neighborhood scale of the urban village and the factory compound. This is a problem because it is especially these integrated streets where most small businesses can be found. A lack of integrated streets therefore means a lack of small business establishment opportunities. The first key action of this strategy is to increase the amount of integrated space (fig.65). Since there is not so much a lack of streets in the quantitative sense, it would be

preferable if this increase in integration would be achieved by increasing the connectivity of existing open space.

For example, many factory compounds have an internal road system which resembles a tree structure: there is only one road connected to the big city roads and the rest of the roads are at best loops from and to this one access road. Something similar can be observed in urban villages. There are only a few village roads that connect to roads of higher scales, while the rest of the roads is separated from them, usually by fences. Extending existing dead end streets and selectively removing fences will increase the general integration of space. A rule of thumb to determine whether a street will be sufficiently integrated is that this street should be continuous from one road belonging to the metropolitan grid to another, preferably without too many right angles. To decide where to start with increasing street integration, it must be determined where existing public facilities or main attractors can be most easily connected through extension and connection of existing open space. Space Syntax can be used to assess whether a proposed intervention

has a significant impact on the integration of the street net. This can help to discover which relatively easy interventions would have the most benefits for the overall integration, making these intervention the most strategic ones. Because the increase in street integration is merely a tool to improve opportunities for small businesses, attention should be given to the designation of space along the newly integrated streets; there should be many narrow plots designated to small businesses, to maximize the number of parties that can benefit from the increase in traffic flows.

7.2.2 Increase walkability

Since many types of businesses, especially retail, profit from people passing by their store using a slow mode of transport, increasing the integration will not be sufficient to support small business operation if car traffic profits most from the increased integration. Potential customers should be able to reach the businesses in a safe and convenient way. The intermediate level streets should be (re) designed so they properly facilitate pedestrians and if possible cyclists (fig.66). It should not be

ruled out there will also be car lanes, but slow mobility should be prioritized. Many small businesses need to be supplied regularly, so exceptions could be made for vehicles supplying stores, but only during quiet hours of the day. Facilitating pedestrians means paving of good quality and removing obstacles, so they will not be hindered on the way to their destination. To make their travel more convenient, there should be attention for the provision of shade, which is an asset in Shenzhen's climate. An elegant and multipurpose way of casting shadow is by introducing more trees in streets and open space. Not only because of the shadow they cast, but also because of the effect of evapotranspiration, trees contribute to a more comfortable micro-climate in streets (CPPD, 2008).

The intersections of the intermediate level streets and the big city roads will have a specific role in this strategy. First, proper crossing facilities should be installed here, to diminish the segregating power the big city grid has upon the slow mobility patterns. A street level crossing has the preference over an under- or overpass, since those make crossing

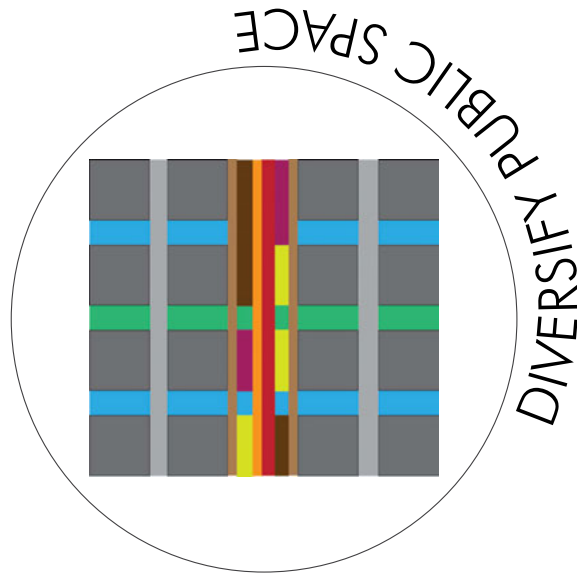


Fig. 67: Third primary action principle: diversifying the use and character of public space

the roads more complex both psychologically and physically. This especially disadvantages elderly and children. Increasing the amount of safe, street level pedestrian crossings implies that the maximum driving speed on the city roads should be decreased. In addition, public transport stops should be located around these intersections. A combination of walking or cycling and bus, tram or metro will in this way be a very convenient option for many people. The need to own or use a private car therefore decreases. For those who do own and use a car, some facilities should be available though. When intermediate level streets become pedestrianized, some parking places might be lost. Planning some concentrated parking facilities around the intersections of the intermediate streets and the big city roads could compensate this loss. In this way the big city roads remain the main territory for cars, and after parking the car near the intersections, one walks the remaining part of the journey. This means that because of the public transport stops and the parking facilities, the intersections become attractors in themselves, generating traffic flows between them and people's houses and jobs: traffic flows

which small businesses can profit from again. In short, a redefinition of territory should be achieved. The big city roads facilitate the longer distance trips, designated to private cars and public transport. The intersections with the intermediate level streets become nodes of transition, while the intermediate level streets become the primary domain of slow mobility, not longer subordinate to car traffic.

7.2.3 Diversify public space

At this point it has been frequently mentioned that maximizing the number of people out in the streets on different times of day enhances opportunities for small businesses along these streets. Streets are not just means to get from an origin to a destination, they can be destination themselves. Not only should the street give access to the shops on its edges, the street itself can be used for other activities as well, like mobile commerce or leisure. The more potential activities a street can offer space to, the more people can be expected to be attracted to them. This is the main argument to encourage diversifying streets in use and character (fig.67).

Not only can trees contribute to enhancing the micro-climate of open space, they also help to make streets more than just spaces for movement. Since parks are not ubiquitously available in Shenzhen's periphery, greener streets can make significant contributions to the wellbeing of people and the ecology of the city. By repaving the streets and using elements like vegetation to suggest different uses, these activities can happen next to each other without disturbing one another. When facilities for leisure activities can be provided, the street can become a common social place for the local residents. One could think of small facilities for activities like Chinese chess, table tennis, pool, space for square dancing or just for conversation. Thus, street design does not only benefit the small businesses by means of attracting more potential customers, it will also benefit the general population of Shenzhen's periphery. One can also expect that an increase of quality of the public space will result in a higher potential value of the real estate in the near vicinity. The village collectives, as the landlords of the urban villages, will therefore also profit from investments in diversifying the

public space. The added sense of safety more lively streets can achieve will also be of value, both for the village collectives as for local governments. In this way the spatial strategy, while having a socio-economic perspective, can also enhance the general livability of the neighborhoods accessed from the streets and eventually the wider society.

7.3 Planning framework

The primary actions need to be supported by some measures that can help reaching the goal of the spatial strategy (fig.68). Different sizes of plots need to be preserved where existing, and when redevelopment takes place, the size of plots should be limited in order to preserve spatial permeability. Because the primary actions take place on an intermediate scale, the small spatial units like different urban villages should form new forms of collaboration in order to manage the transformations. Property security is required for villages to commit to these transformations. These measures together form the planning framework.

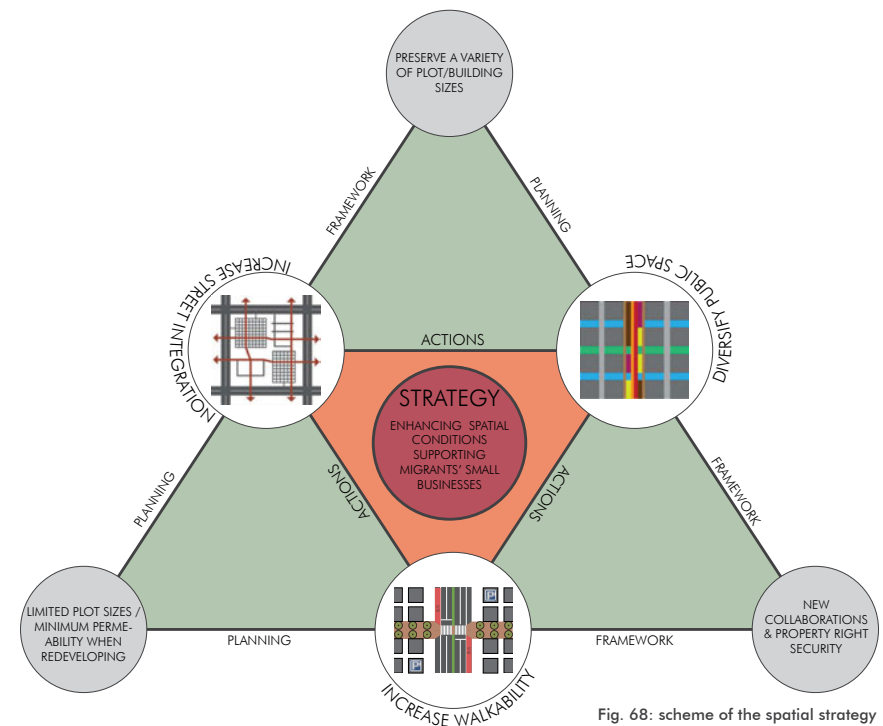


Fig. 68: scheme of the spatial strategy



7.3.1 Preserve different sizes

It was already observed that the small scale that characterizes the urban village offers many flexible spaces which can be used to operate small businesses. The dense networks of space of the urban villages is therefore a valuable asset to this strategy, and should be preserved, even when redevelopment of the village buildings is necessary. However, it would be a mistake to only promote the preservation of the dense and small scale structures of the villages, because there is also value in the structures facilitating bigger functions. The theory of natural movement says it is the byproduct of movement from all possible origination to all possible destinations which small businesses can profit from (Hillier, 1996). Shops can be destinations in their own right, but many people visit shops on their journey to somewhere else. Even though the combinations of originations and destinations are endless, still some more recurrent patterns might be observable. The most predictable pattern of movement in the peripheral districts of Shenzhen is from someone's residence to their work. Most people work in a factory and live in an urban village. It will therefore probably be the trip from the urban village house to the factory which should offer the biggest potential market to small businesses (fig.69). And even though factories might slowly be moving away



76 Fig. 69: Shops profiting from traffic flows from house to work



Fig. 70: A range of sizes of business premises within a neighborhood

from Shenzhen, it can be expected that big employers will sustain to be present in some form or another. The proposed central parking facilities will also demand bigger plots. A mix of bigger structures and smaller structures should therefore be promoted and preserved where possible. It is the relation between the two that forms the potent base for small business.

Another reason why beside smaller scale village structures, also bigger buildings and plots should be preserved, is that a range of sizes is needed to make sure businesses can grow within the neighborhood they were initially established (fig.70). Imagine a migrant who successfully operates an informal street vending business and decides to expand by renting a fixed premise in the ground floor of a village building. In the same logic there might be thriving businesses currently housed in a village building that also wants to expand. The urban village does not provide much bigger spaces though, except by renting more floors above the ground floor. When this is not sufficient, it would be good when there is space available in a bigger building near the urban village. At this moment those buildings are generally used for industrial functions. More and more factories are becoming vacant though. These vacant factories could be good spaces for businesses that want to expand from their village building ground floors. For this reason also, a mix of sizes should be present within the neighborhood scale.



7.3.2 Maximum plot sizes/ minimum permeability when redeveloping

Even though a mix of bigger and smaller plots and buildings will mean an advantage for small businesses, when plots get too big, the danger arises of what Hillier (1996) calls 'precinctization': the tendency towards closed enclaves. This is exactly the opposite of what this strategy tries to achieve through increasing the integrated space. If plots get bigger, the density of streets and thus the integration decreases. For this reason, there should be a maximum plot size when redeveloping. This does not mean it becomes impossible for developers to redevelop an area bigger than a few buildings, but it means they have the responsibility to ensure the permeability of the areas surrounding the redevelopment project (fig.71). This is important because

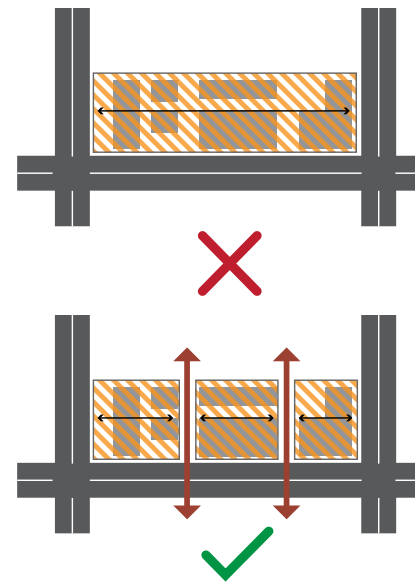


Fig. 71: Preserving permeability when redeveloping

one can expect that the industrial campuses might be redeveloped sooner than the urban villages, because of their less complex property situation. Since many industrial campuses lay in between urban villages and the bigger city roads, a redevelopment scheme which does not take responsibility of the permeability might turn out to be like a huge fence blocking the village's connectivity to the rest of the city. Conditions to granting permissions to redevelop more than one plot in one go should include a rule stating that a sufficient amount of streets should be provided. 'Streets' in this sense does not necessarily have to mean complete streets with lanes for cars, it can be a narrow continuous space through which pedestrians



can find their way.

7.3.3 Property security & new collaborations

This strategy does not intend to take the complete redevelopment of the peripheral districts in Shenzhen on its shoulders. The vast sum of redevelopment will have to be done by village collectives in cooperation with migrants and possibly private developers. When property rights and the future of villagers assets is insecure though, they might be hesitant to invest in these kind of projects (Lai et al., 2014b)(fig.72). This is why it is also part of the strategy to create a sense of security for the village collectives, so they can trust their investment will not go to waste. One way of creating this sense of security is by showing it is the general aim to upgrade the urban villages incrementally rather than demolishing and replacing it. Limiting the plot

sizes of redevelopment is an example of this. When the local government takes the initiative in projects that increase the integration of village space, this is also a clear and active sign towards the collective that their village will not be demolished soon.

It might be interesting to reform the actual property rights, so villagers would actually get more security over their property rights. In return there could be a tax on land value. This would encourage redeveloping old industrial buildings on favorable locations, near metro stations for example. These considerations are outside of the scope of this strategy though. These are issues national or provincial government has to deal with, and about which the peripheral districts of Shenzhen cannot make independent decisions.

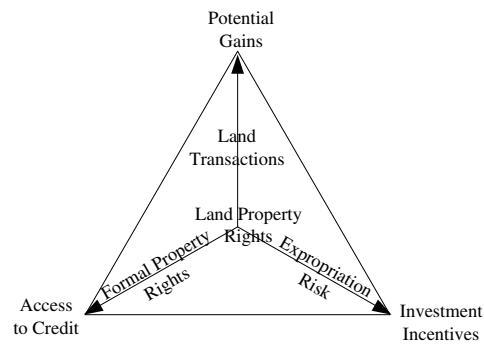


Fig. 72: The role of land property rights in land developments (Lai et al., 2014b)

Because the essential spatial element of this thesis is the intermediate level of space in between the big city roads and the village street networks, multiple parties will become stakeholder. Streets cannot be extended outside factory compounds if the land owner does not agree, even if the local government took the initiative. The same is true when village collectives would not want a fence being removed to increase the integration of the street it is blocking. Design can be an effective tool to show what such an intervention would look like and benefits there might be for

those local stakeholders. It is important any intervention with the primary aim to increase integration of space, should also bring added value to the stakeholder involved. Even though design can have the imaginative power that could bring stakeholders closer to each other, still there is a need for some more concrete agreements. Public-private partnerships can assure the equal involvement of both the local government and village collectives over a longer time span. Clear agreements need to be made on who is responsible for the management and maintenance. The public government should ensure that the upgraded spaces, (partially) financed with public money, stay accessible to the public.

A result of the introduction of continuous public space on the intermediate scale, is that urban units, like urban villages and industrial parks, get a common feature: a common space. Since the common space will need a common decision making, a new form of governance might arise. Neighboring villages, which used to be isolated, might join forces around this new common space. Together they could for example be able to provide more and better services to the village inhabitants, since they now have a higher critical mass. The most logical location for these new services would be at the new connectors. So without giving up their own identity, the villages, and potentially former factory areas, could form something like a village union: a joined body in which the different village collectives decide on a shared strategy. This will give them a much better position in negotiations with private developers or the government. If such 'unions' turn out to be successful, their common public spaces could really become centralities within the peripheral districts of Shenzhen.

8. PILOT PROJECT

8.1 Introduction

To show how the strategy could be implemented and to test its impacts, a pilot project could be initiated. When the pilot project turns out to be successful, it might win the hearts and minds of those stakeholders in power to change the spatial situation of peripheral Shenzhen. This chapter shows a design case of how such a pilot project could take shape. Even though the general population of peripheral Shenzhen should benefit from the intervention, its main motif is still improving small business opportunities for migrant entrepreneurs. Together with previous chapter, this chapter tries to answer the last sub research question:

5. Where do opportunities lie to improve small business opportunities?

The same area as was the object of study in previous chapters in the south-east of Dalang is chosen again to locate this pilot project. The approach of the design has been to first look for where potential exists to create a new connection of the intermediate level from the

big city roads, through the interior of the blocks they enclose. Increasing the integration was the main starting point for design. I decided to concentrate on a canalized river for various reasons (fig.73). First of all, this canal is in itself such a linear element on an intermediate level between the city and the neighborhood scale. It became clear to me that this river was a clear example of underused space; a potential connector. This potential connector functions in the complete opposite way at the moment though. It runs in between a few urban villages, and is effectively used as if it were a fence to separate them from each other. Its banks can only be accessed through the village and because of fences, which are located every now and then at a right angle on the canal, it is not possible to move along the canal for more than maybe one hundred meters. The canal is probably being used as a drainage device and does not offer an attractive sight.

Still, because its direction does not match with orthogonal grid of the urban villages, some interesting left-over spaces can be found between the canal and the villages (fig.74).



Fig. 73: Canal in south-east Dalang, satellite view and map

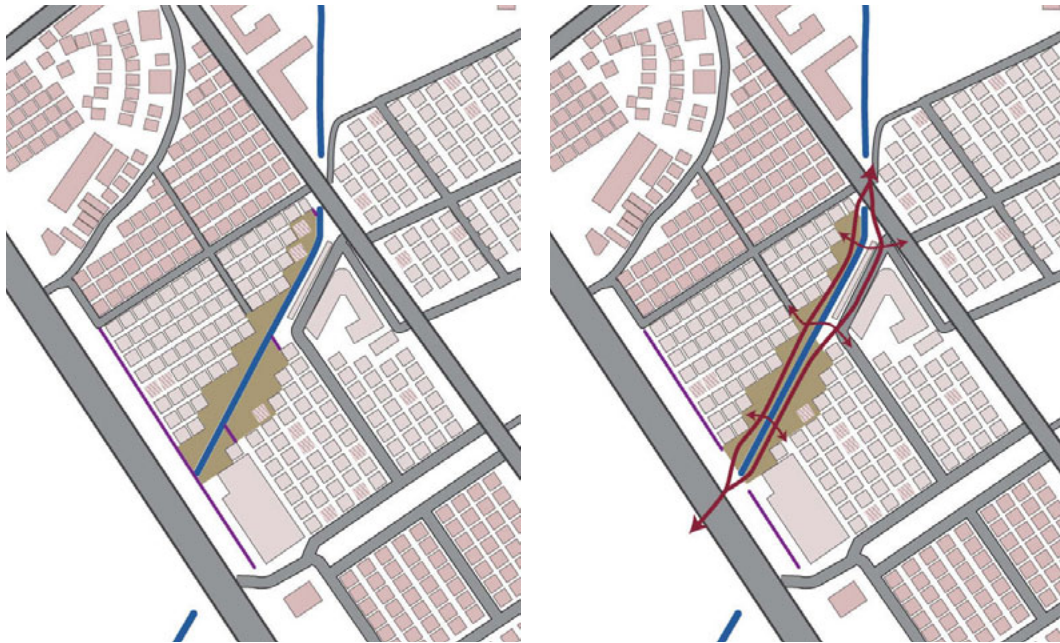


Fig. 74: Principle of intervention: making left over space along canal accessible to the public

These spaces are now mainly used as parking spaces. This design case is used to research what the possibilities are to activate the canal as a connecting spatial feature, and what effects this could have on the development of its surrounding structures.

8.2 A strategic connector

Because this originally natural element already cuts through the urban fabric of south-east Dalang, the canal already connects on an intermediate level, although the public cannot make use of this connection. With the canal as a basis, a new corridor can be imagined that connects multiple urban villages, industrial buildings and public facilities (fig.75). Eventually it could serve as a route from the Longsheng metro station to the Longhua public park (fig.76), while along the way passing some big schools. If the canal banks would be accessible, a strategic connection would emerge. To accomplish a continuous accessible space, fences and some individual buildings will need to be demolished. The separating force the canal now possesses, is not only due to the inaccessibility of its banks,

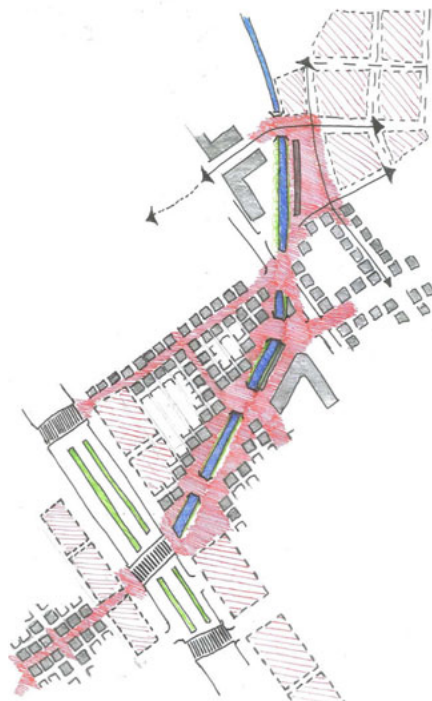


Fig. 75: Conceptual drawing of a continuous public space along the canal

but also because there are not many places where the canal can be crossed. The result of this is that most buildings face the canal with their backsides and ground floor units are

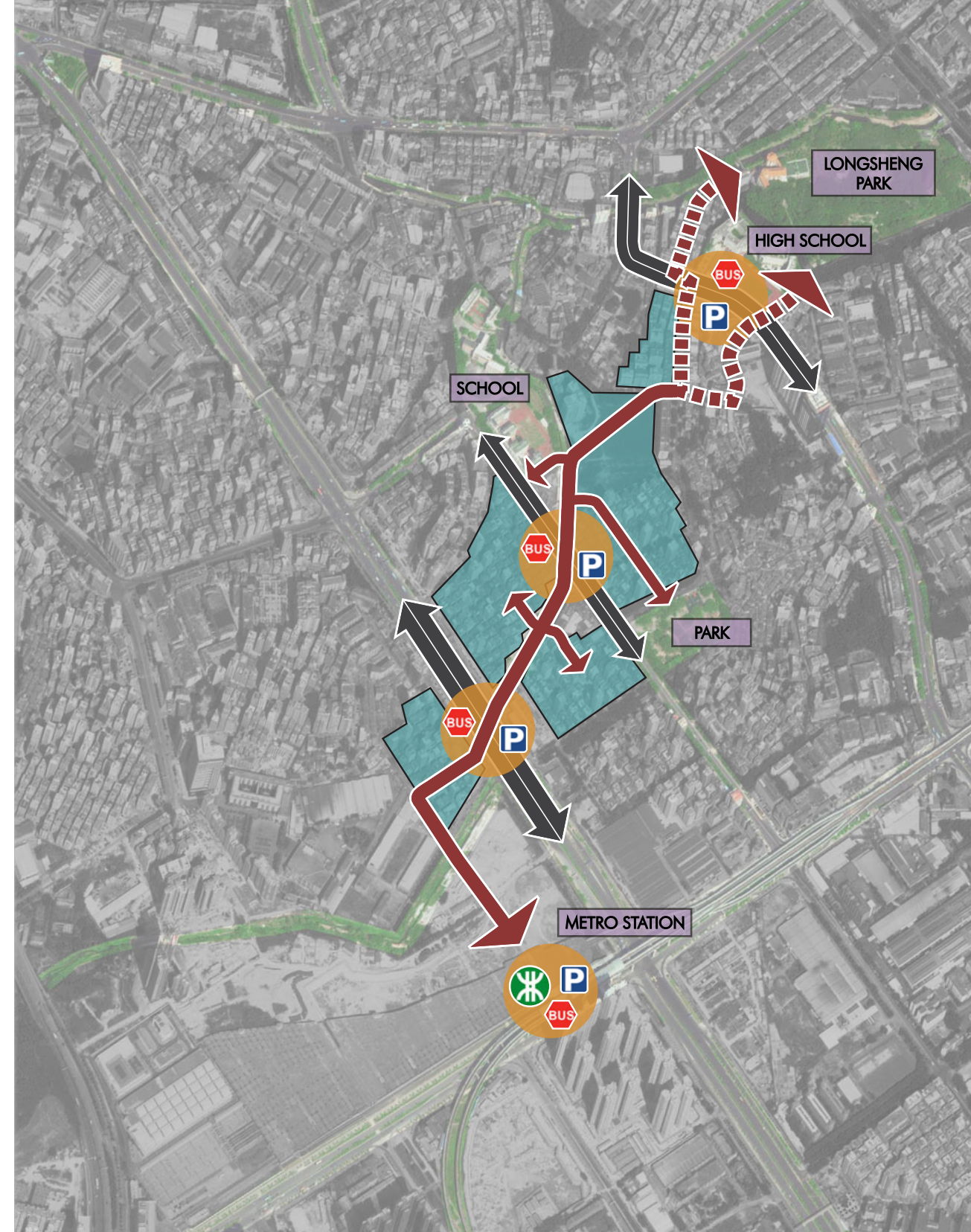


Fig. 76: Diagram of new route along the canal; parking facilities and public transport stops at the intersections with the city roads



Fig. 77: Existing situation at proposed crossing; the long, low building in the front blocks access to the urban village in the back

underused. Increasing the integration of this space might reverse that. Adding some bridges would probably increase the integration of the canal banks and the adjacent villages. In short, the first action in this pilot project is to redefine the banks of an existing canal as public space, turning it into an integrator on the intermediate scale. The map (fig.76) shows the new canal route intersects with the big city road grid three times. As was emphasized in the spatial strategy, these intersections play an essential role, upon which the next paragraph will elaborate.

8.3 Intersections of new route and city roads

The crossings are namely the transition nodes between what could be considered the realm of the car and the realm of the pedestrian and

cyclist, who will be prioritized on the new route along the canal. For this to be possible, there needs to be proper facilities to make the transition from modes of transport more suitable for short trips to modes of transport suitable for trips on the metropolitan scale. That is why around the intersections special concentrated parking facilities should be built. In addition, this is the most convenient location for public transport stops. Also because the plots along the widened city roads are bigger than in the interior of the blocks, bigger functions like parking facilities and public transport stops can better be located at those intersections.

As stated in the strategic actions, integrated space is of little use if it cannot be comfortably used by pedestrians or cyclists. To truly rebalance the ratio of cars versus slow mobility in the division of space, there should be

proper, safe pedestrian crossings constructed at the intersections of the route and the big city roads. This means the crossing should clearly be marked by means of paving and be protected by traffic lights and a reduction in the maximum driving speed for cars. The street level crossings at strategic locations (namely there where the intermediate integrator meets with the city scale grid), diminishes the segregating power of the big roads and makes it much more convenient to travel from an urban village on one side of a big road to a factory on the other side, without using a car.

Another aspect of the spatial strategy that becomes apparent at the intersections of the new route and the city roads is the limited size of plots when redevelopment takes place. Many industrial complexes are located along the widened roads and many of them can be expected to be redeveloped in the near future,

not only because they might become vacant, but also because these locations might have a higher potential profit for private developers. When big, continuous buildings would be built along the city roads, they would prevent all access to the urban villages in the interior of the blocks. This can clearly be seen in the existing situation of the location where one of the intersections would be (fig.77). For the pilot project, the long, low building should be (at least partially) demolished and redeveloped. This has to happen in such a way that both the density can increase, but that plenty of connections are made to make the urban village behind it accessible. One of these connections can be used to extend the new route across the big city road, to eventually reach the metro station (fig.78). The new buildings replacing the long and low one, can be higher and they could even be deeper by taking a part of the wide space between the road and the now demolished



Fig. 78: Proposed intervention at city road crossing: a proper street-level pedestrian crossing, with parking facilities and public transport stops, limited width of redevelopment to assure accessibility of urban village

building. However, the new development should be divided in plots with a much narrower width than the building it replaces.

8.4 A diverse street

Now I have discussed the intervention of redefining the canal sides as a way of introducing an integrator on the intermediate scale, connecting several villages and formal transition nodes at the intersections with the city scale grid, it is time to look at what its design could look like on the smaller scale. The street design should support opportunities to actually profit from the presumed added level of integration. Also, it should facilitate a diverse range of potential activities that could take place in the street, because diversifying the use of the public space was one of the primary actions from the spatial strategy to maximize the number of people in the streets at any time of day.

The design for the space between the canal and the adjacent urban villages was mainly derived from its peculiar shape. Because the canal has a direction which does not match the direction of the orthogonal grid of the urban villages, there are some left over spaces between the built up area of the villages and the canal where no extra buildings fit, forming a saw-toothed stretch of space. Another quite determining existing feature is the rows of trees marking the edges of the canal. Since mature trees are quite rare in the peripheral districts of Shenzhen, I decided to preserve them where possible, especially the palm trees in the north edge of the canal. These characteristics brought me to dividing the canal side space in three zones: a narrow zone between the trees for sitting and small leisure activities, a zone for through movement with a bicycle lane and a zone for pedestrians and finally a zone mainly for business activities in the triangular 'pockets' in between the village and the movement zone (fig.79 & 80).

The business zone is positioned directly in

front of the existing village buildings. The ground floor units in these buildings, now often underused (as storages or garages), could be transformed into small businesses. This will most likely happen in a bottom-up way when, because of the increased integration of the space, more traffic passes by these buildings. The business zone of the street is not only there to provide access to the stores or offices in the ground floors, it can also be used as outdoor business space, for example by extending a business from the buildings outdoors. One could imagine restaurant terraces, but also for example bicycle stores displaying their bikes in the business zone. Not only the fixed businesses should be able to benefit from this space, it can also be used by mobile vendors, either from the local village or from elsewhere in the city.

The materialization and the use of vegetation and other elements should support the differentiation between the zones. A different kind of pavement is used for the different zones, to indicate the different potentials for activities. This can be used as a management tool as well: for example by making clear that business can take place on all the pavement with the same, distinct color. The bicycle path is slightly deepened to prevent cyclists from bothering pedestrians too much. For the bridges, a prefab industrial truss bridge type could be used. These bridges would be cheap and fast to construct, and because of their distinct appearance they would contribute to a recognizable route. A very recognizable route could become part of a new, common identity for the villages the route connects. The bridges themselves can also be used as outdoor business space by mobile traders.

The use of vegetation serves a few purposes in this street design. First it serves to contribute to a comfortable micro-climate. In the warm south-Chinese climate, the presence of plenty of shaded surfaces is an asset which contributes to the convenience of traveling through a street or doing business in it. But beside providing



Fig. 79: Model of the redesign of the space between the canal and the village buildings

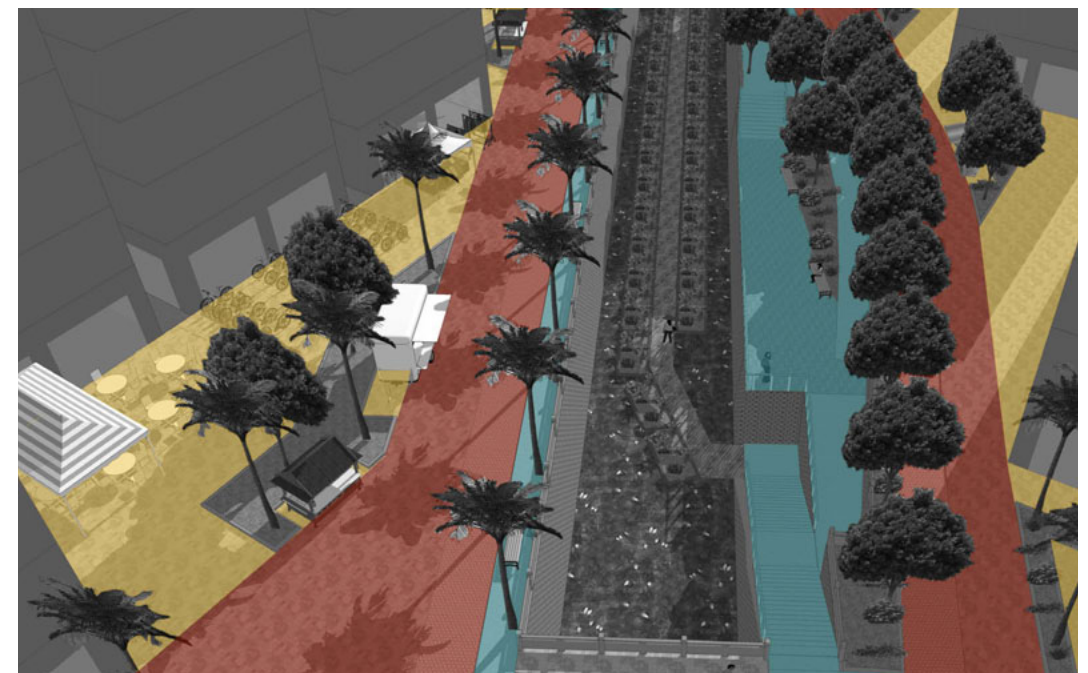


Fig. 80: Zoning of redesign of space along canal: movement space (red), leisure space (blue) and business space (yellow)

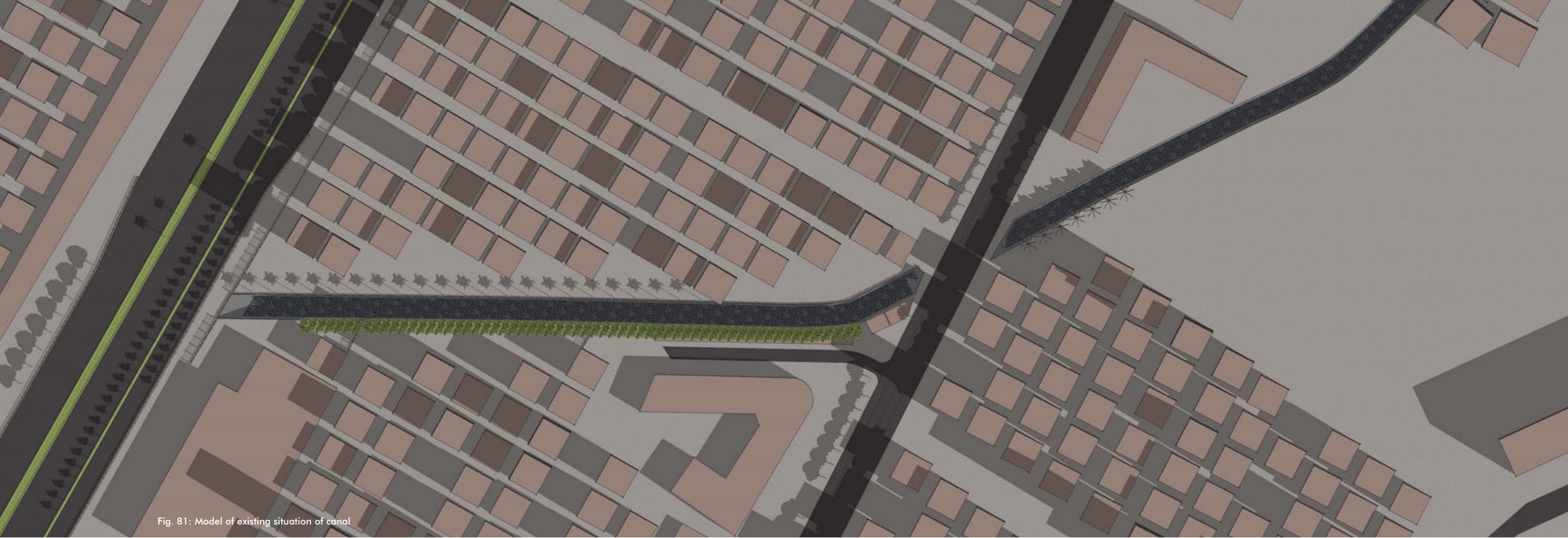


Fig. 81: Model of existing situation of canal



Fig. 82: Model of proposal for canal

shade, trees can also cool streets through the effect of evapotranspiration. Finally, vegetation is used in this design to make a further distinction within the business zone, suggesting spaces designated for mobile commerce. Small pockets are carved out of the vegetation units. This is done to try to create space for mobile businesses without impeding access to the fixed stores, which can be a threat when streets are getting filled up with street vendors.

The zones should not be seen too rigidly though. The triangular pockets, the business zones, could also be used for other activities. Think of space for games like pool or table tennis. Especially on the south edge of the canal, which is the side with the most shade, leisure activities could take place instead of business too. As stated in the spatial strategy, the bigger the diversity of uses the street facilitates, the more people can be expected to be in the

streets at different times of day, which makes business establishment attractive. A possible way to create a multifunctional space which is particularly suitable for different forms of leisure, is by locally widening the leisure zone directly at the edge of the canal. This is also shown in the design. By carving out a lowered platform in the canal's bank and placing vegetation at its side facing the movement zone, a space is created which is more quiet and shaded from the movement zone. This makes this space not so attractive for business, and therefore leaves the possibility for a more residential activities and leisure. One could imagine it to be a very suitable place for people to do tai chi or square dancing in little groups, or just sit around and watch the people pass by on the opposite side of the canal.

However, this terrace at the canal would not be a very pleasant place when the canal itself stays

the way it is now. Its water level was very low at the time I visited the site and was moderately polluted. The steep concrete banks also do not offer an attractive site. I propose to upgrade the quality of the canal by means of several design features. First of all, a so called 'canal restorer', as was built in Fuzhou, could be used to clean the water and at the same time introduce a special recreational route (fig.83). It consists of a floating boardwalk, which can be walked upon, and on both its sides floating planters with helophytes and flowers. The water level needs to be heightened for this device to work properly. The walls bordering the canal can also be upgraded. By planting some flowery, hanging vegetation, walking across the floating boardwalk would give the canal a park-like experience. One could also imagine the walls to be used in some more bolder ways, for example as an open air gallery of wall paintings, possibly by local artists. With atmospheric lightning, suspended from the bridges and across the canal, the canal could become a true attraction at night, possibly attracting people from all over Dalang to pay a visit to this area.

8.5 Evaluation

This pilot project is not a project on its own, it is supposed to be an experiment with the implementation of the spatial strategy. It is therefore useful to evaluate to what extent the design case achieved the aims of the strategy. Since the starting point of the design was to create a well integrated connecting route on the intermediate scale, the evaluation of its impact on the street integration is the most obvious. When comparing the space syntax graph of the existing situation with that of the proposed situation, especially the north bank of the canal clearly stands out as a well integrated connector between the big city roads (fig.91 & 92). A significant difference can also be seen in the street nets of the adjacent urban villages. A remarkable increase in integration can be seen in the small urban village on the far south-east corner of the graph. Apparently this village

really benefits in terms of integration when a breach is made in the long building at its edge and a direct, street level pedestrian crossing is installed.

It is difficult to say how many small businesses might establish around this newly integrated space. Just by counting the amount of urban village buildings directly facing the canal, approximately 25 ground floor units could be used for small businesses, just by adapting the existing buildings. At least two buildings will have to be demolished to realize the new route. Because the route will also pass a now empty plot of land, the amount of new small businesses can be much higher when the new developments on this empty land conform to rules of this strategy: many small plots on the ground floor level and many side streets.

As is shown in the various impressions, the redesign of the canal sides will not only offer business opportunities, but will also bring added value for the inhabitants of the near urban villages. Besides the space created for business activities, there is also space for those 'third eight hour' activities, which as the interviews suggested is so urgently needed. This added value will eventually also benefit the village collectives, since the expected rent value for the buildings along the canal will go up. The increase in street life and the increase in the ecological quality of the canal will be attractive for local governments. This route with a length of about one kilometer connects five different urban villages. For forming something like a 'village union' the number of five seems feasible. Summarizing; this design case seems to achieve the goals of the strategy and might be a good example to convince stakeholders like village collectives and local governments to commit to the strategy. The benefits could truly outweigh the efforts of demolishing some buildings, removing fences, investing in upgrading the space and coming to a common policy.



Fig. 83: Canal restorer project in Fuzhou, before the intervention (upper right) and after (left and bottom right)(John Todd Ecological Design, 2002)



Fig. 84: Existing situation of canal



Fig. 85: Proposal for canal

- ① New bridge; industrial character to contribute to the recognizability of the route
- ② A more diverse range of plants to increase the ecological qualities and overall experience of the canal
- ③ Canal restorer: floating boardwalk and helophytes to purify the canal water; can adjust to varying water levels
- ④ Bridge deck can be used as outdoor business space by mobile vendors
- ⑤ Canal walls could be decorated with paintings by local artists; eventually forming an open air gallery
- ⑥ Adaption of underused units in village building plinths to become house small businesses
- ⑦ Stairs carved out of the canal sides giving access to the boardwalk in the canal



Fig. 86: Proposal for canal; night impression



Fig. 87: Existing situation of leftover space between canal and urban village



Fig. 88 Proposal for redesign of space in between canal and urban village

- 1 Adaption of underused units in village building plinths to become house small businesses
- 2 Pockets of vegetation to divide the movement space and the business space
- 3 Indents in the vegetation pockets to designate space for mobile commerce
- 4 Trees planted to cast shadow and increase the aesthetic quality of the route
- 5 Separate bicycle lane, slightly deepened so pedestrians and cyclists do not bother each other
- 6 Leisure zone directly at the canal, furnished with benches; for example suitable for playing mahjong
- 7 New bridge; industrial character to contribute to the recognizability of the route
- 8 Preserved palm trees; cast shadow and prevent the leisure zone from being used for movement



Fig. 89: Existing situation of canal bank



Fig. 90: Proposal for redesign of canal bank

- 1 New bridge; industrial character to contribute to the recognizability of the route
- 2 Canal restorer: floating boardwalk and helophytes to purify the canal water; can adjust to varying water levels
- 3 Stairs carved out of the canal sides giving access to the boardwalk in the canal
- 4 Adaption of underused units in village building plinths to become house small businesses
- 5 Benches to sit and observe the opposite side of the canal
- 6 Trees planted to cast shadow and increase the aesthetic quality of the route
- 7 Terrace carved out of canal side; paved with gravel to drain rain water. Can be used for a variety of leisure activities, e.g. square dancing



Fig. 91: Graph of local integration in existing situation



Fig. 92: Graph of local integration after proposed intervention

9. REFLECTION

9.1 Introduction

This chapter will serve as the round up of this thesis. Before making the final conclusions, I would like to reflect on the results and the process as they have been presented in the previous chapters. This is the point to reflect to what extent the ambitions I had with this thesis have been realized. Its title - *Repaving the path towards arrival* - is a clear articulation of the main ambition. It is off course a literary reference to the act of repaving, remaking, redesigning, redefining the street (=path) for the benefit of the migrant population of Shenzhen. However, it also holds a more abstract reference. 'The path' does namely not only refer to the street as a physical phenomenon, it also means to refer to the path of upward social mobility of migrants. Repaving this path then suggests the ambition to intervene in the existing paths of social mobility. The title therefore combines the socio-economic and the spatial domain, just as I have tried to do with this entire thesis. In the introduction I started by stating the current redevelopment model of urban villages, which turned out to be a valuable foothold for rural-to-urban migrants in China, tends to disadvantage migrants in their permanent settlement ambitions. The current spatial planning practice therefore rather impedes upward social mobility rather than encourages it. It was my ambition to propose an alternative for this model of urban redevelopment in this thesis. The alternative can be summarized as a strategy to transform public space to increase small business establishment opportunities, and by doing so supporting migrants upward social mobility. In this chapter I will reflect on to what extent the strategy I have proposed could be a real alternative to the current dominant model of redevelopment of urban villages in Shenzhen. Furthermore, I will reflect on the process and the relevance of this project. Finally, in the next and last chapter I will make the final conclusions of this thesis.

9.2 The uncertain future of the urban village

Even though the subtitle of this title announces an alternative redevelopment strategy for urban villages in the periphery of Shenzhen, the actual strategy and the pilot project representing it do not actually sketch a clear future for the urban villages themselves. It definitely does not offer a complete end image of any redevelopment. It is more concerned with the intermediate level between the small urban units of the urban villages and the metropolitan scale car roads. The strategy focuses on the streets on this intermediate scale not as means on their own though; they are devices to direct future developments of urban villages, factory areas and any other urban pattern in Shenzhen's periphery in such a way that some basic qualities get secured, independent of the redevelopments. The basic qualities I am talking about here are those which are really vital to the potential permanent settlement of all those migrant workers who live in Shenzhen's periphery. The intermediate streets should be foundations for creating livelihoods and the social lives of the inhabitants. The pilot project route passes a currently cleared site, presumably for speculative purposes. I tried to show how the new route could proactively direct the new developments on this plot in a such a way that it doesn't become an exclusive enclave (fig.93). Even though future redevelopments of urban villages should preferably be more incremental than for this plot was the case, this example still shows how the intermediate scale streets can positively influence development around it. When these redevelopments are then solely focused on creating newer and more apartments, even though I would reject this, those intermediate connectors can at least secure some of those vital qualities. After all, the speed of urban development - not accidentally referred to as 'Shenzhen speed' - is so high and the macroeconomic and political environment could change so

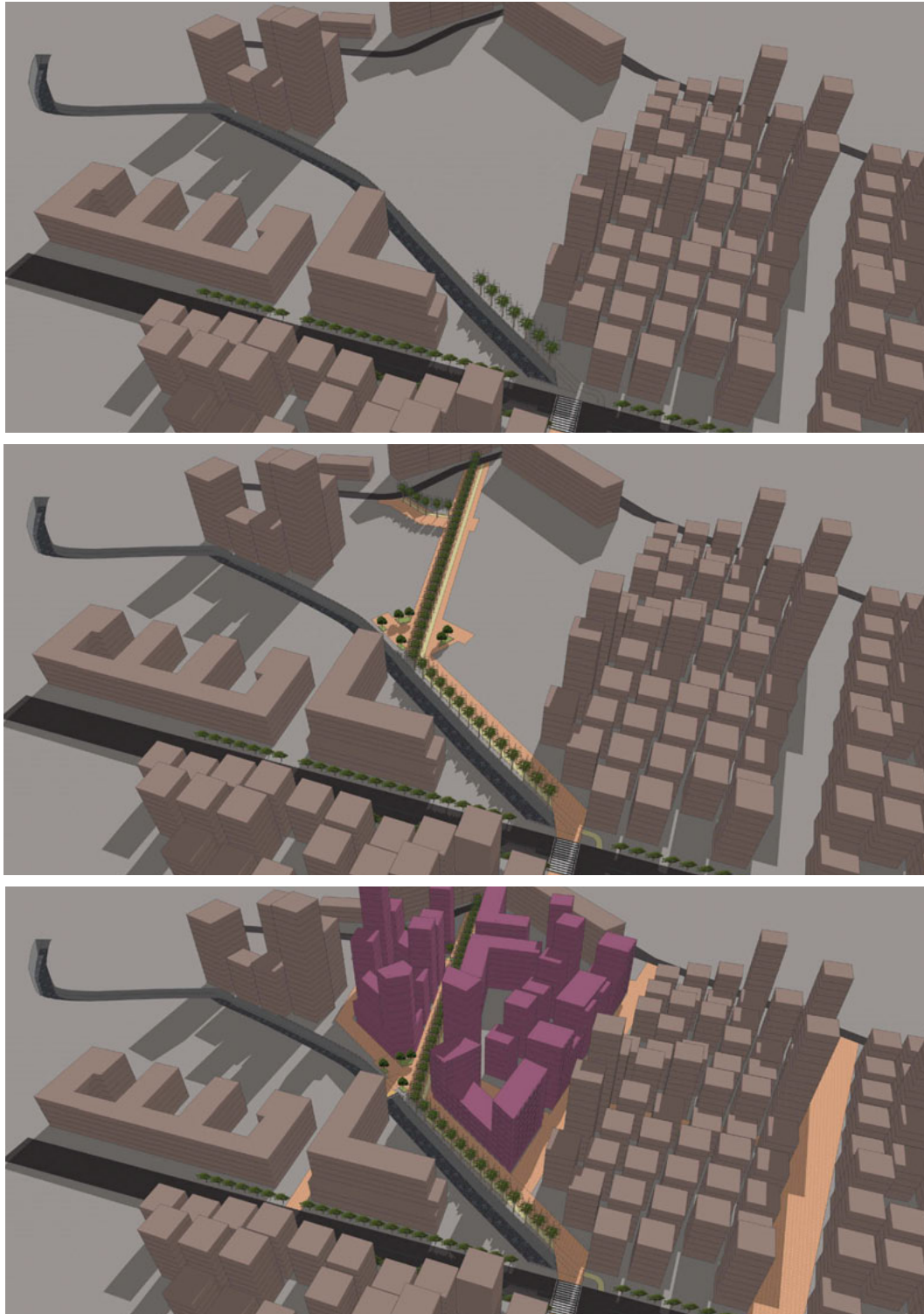


Fig. 93: Impression of how the proposed route could direct the developments on the cleared site

rapidly, accurately predicting the future of urban villages would be impossible. By reusing the existing canal as a base for a new public route, the chances of it being removed in the near future are very limited, because it is a more or less natural element which is already embedded in its surroundings.

This uncertainty is at the same time also a potential danger of this strategy, or at least a flaw in its construction. The eventual design and planning of redevelopments of urban villages still could be very disruptive for migrants' lives. It is thinkable that even incremental redevelopment which respects the rule of the limited plot sizes results in exclusive condominiums or offices which turn out to be unaffordable for migrants. This would mean that the ideal of this strategy - affordable housing, a livelihood and space for one's social life within the same neighborhood - would not be reached. Then at least, because of the increased integration and the designated spaces for mobile commerce, there would be opportunities for migrants to profit from traffic flows, even though they wouldn't be able to live around the corner too. One could even argue that increasing the street integration might actually also migrants' situation. Since highly integrated places tend to be real estate locations in high demand in a city, it is often also these places where rents can rise sharply. The fear of gentrification when increasing the street integration is therefore understandable. In further studies it could be researched how the socio-economic benefits from increasing the integration can be realized without the disadvantages of rising rents, in order to remain inclusive towards migrants.

9.3 Rethinking the redevelopment business case and other changes in attitude

From very early on in this project, it was clear to me that any alternative redevelopment

strategy, which aims to be inclusive towards the permanent settlement needs of migrants, cannot possibly compete with the current model in terms of short term profit. Addressing migrants needs inevitably means paying attention to the affordability of housing and to quite basic, low capital forms of business, whereas big developers seek to realize as much square meters to sell to the upper-middle class as possible. The question whether the alternative this thesis offers is realistic, is therefore at the same time the question if short term profit will ever diminish as the main driver of urban redevelopment in China. I believe it will, at least at some point in the near future. This transition has to happen at all levels of governance within China though. Because private interest of big companies are so dominant in spatial planning at the moment, it is not likely a strategy based on improving opportunities for small businesses through public space interventions will be adopted soon or easily. Even though the effects such a strategy might have on the *local* economy and street vitality can be expected to be considerable, this might be ignored if GDP growth continues to be the main goal of public policy in China. I hope the governments will realize that displacing migrants further and further from the center of cities and from the places where the jobs are, might eventually damage the wellbeing of the whole city and even the nation. Implementing pilot projects such as the one presented in this thesis, might create references of an actually possible alternative. In this sense I believe the results of this thesis can be relevant.

The change in mindset about the business case of redevelopment is not the only one which needs to happen before a project like this would be a realistic option. The water cleaning device in the canal proposed in the design case can only be reality when environmental issues, water management in particular, get more attention in public policy. If this canal will be used as a sewerage, a cleaning device of

helophytes will not suffice. Water management needs to be consistent both upstream and downstream as well. Also the current vision on mobility is not compatible with the proposed strategy. Street level pedestrian crossings imply that speed limits will need to drop. In addition, even though some facilities for parking are included in the strategy, still cars would need to go down the priority list in street design. Before streets can become pedestrianized as a general strategy, there needs to be a shift away from the modernistic, car-dominated mobility planning. Implementing a pilot project and monitoring its effects could again help to change the hearts and minds of the powerful stakeholders.

Maybe the most radical change of attitudes would be the one towards migrants, or the 'floating population'. As long as they are seen as temporary workers who will leave the city when the factory jobs are getting scarce, instead of young people who are longing for an urban lifestyle who seek to permanently settle in Shenzhen, the proposed strategy is of no use. In this respect I am quite hopeful. My impression from the visit to Dalang was that the local government slowly starts to accept this reality. Efforts are done to improve the living environment as well as the social and professional skills of the migrant workers. Because the commercial pressure on urban redevelopment is also lower in Dalang than within the borders of the former SEZ, alternative spatial strategies might have higher chances of becoming reality in Dalang than in the center.

9.4 Reflection on the graduation process

The research approach for this thesis consisted of three parts. First, through literature studies I tried to define which spatial conditions can contribute to migrant upward mobility through the operation of small businesses. Then in the

second part, I empirically researched what the current spatial conditions in the periphery of Shenzhen are, and made an interpretation of what migrants demand from their environment through a questionnaire. Then in the design part, I tried to show which interventions could contribute to enhance the current spatial conditions so they better meet the demanded needs found in the literature studies and the questionnaire. This approach can therefore be characterized as a quite straightforward case of demand and supply.

However, the proposed strategy and its design features do not only derive from this way of thinking. I can think of two reasons why this is the case. First, the findings from the research provided very useful input for design and planning, but still it did not allow for only one solution. Because of the space this offered, I included other consideration in the design process as well. The use of trees to improve the micro climate (shade, air quality) of the designed space is an example of such a consideration that does not directly derive from the research findings. In a way it is logic that the design is slightly broader in its scope than the general thesis, because overall quality of a public space off course goes beyond only the extent to which it provides for business activities.

Second, the pilot project which was used to show a concrete application of the planning part of the strategy did off course, because it is an upgrading of an existing feature, have a very specific existing context. This meant that the design was not only based on the demands found in the research, but also on the opportunities the specific location provided. A clear example is that in the design much attention is spent on utilizing the potential qualities of the canal. The primary reason to incorporate the canal in the design was because in its existing situation there was much underutilized space on its banks which could be used to create more integrated space

connecting the main car roads to the small streets of the urban villages. However, in the design I did not only focus on this connectivity aspect, but also on making this space attractive place to reside in. This explains the benches and the terrace at the sides of the canal and the water cleaning device inside it. Thus, the research has been an important input for the design and a way to evaluate its results, but not all design considerations derive from the research.

Because the specific location of the pilot project had a considerable influence on the design, there are also implications for the general applicability of the proposed strategy. The aim of the thesis was to make suggestions which can be used applied everywhere in the peripheral districts of Shenzhen. However, the produced images are not meant to show a standard solution which can be used in all parts of Shenzhen's periphery. Not everywhere a canal or river can be used to create more integrated space, this is just one form in which this could be done. Also the division of the space into movement space and activity space with vegetation and different paving is just one solution to dealing with the different purposes of a street: traveling through, traveling to (a shop) and as an activity space in itself (for street vending or leisure). Creating more integrated space which is comfortable to use for different purposes is the general planning aim that should be distilled from this design example. On the other hand the design case learns that designing with the specific project context can enrich the planning strategy in such a way that it not only enhances opportunities for small business, but also for activities more related to residence and leisure.

The distance from Delft to Shenzhen, both in physical as in cultural terms, has been at the same time a challenge, a handicap and an advantage. First of all, I was bound to one site visit, quite early in the process. This meant that the project was also shaped by and in some

way limited to the work I have been doing on site, without the opportunity to come back to do follow-up research. The language barrier made it difficult to directly communicate with local residents, although through translation much was still possible. I am also aware that because of my lack of skills in the Chinese language, I could not study publications like articles or government plans written in Chinese. The lack of available cartographic material of decent quality was also a challenge. On the other hand, the cultural and linguistic distance might have offered me a free perspective, because I could observe as an outsider.

9.5 Reflection of the relevance of the thesis to the research program

According to the MSc Urbanism Program 2014-2015 the concern of the Metropolitan Spatial Structure (MSS) research group is: 'understanding the evolution of metropolitan spatial structure, and the performance of different regional spatial structures in terms of economic competitiveness, environmental sustainability and social wellbeing' and 'linking planning strategy and practice positively with improved knowledge of spatial structure and performance' (MSc Urbanism Coordination, 2014). The performance of spatial structures can for this thesis be specified to socio-economic performance; how well do the spatial structures perform in supporting the establishment and operation of migrants' small businesses? When discussing spatial structures in Shenzhen, and in many if not all other big Chinese cities, we could distinguish two levels of structures. First there is the formal, planned urban fabric, which is mainly represented by widened roads in the peripheral districts of the metropolitan region. Then there is the level of informal settlements of dense urban villages and industry parks. Patterns with fuzzy boundaries of these types are dispersed over the whole metropolitan periphery. What this thesis has essentially

been about is the interrelation between these two levels of urbanization. The strategy could be summarized as way of better connecting the large scale of the widened roads and the narrow village streets and factory campuses in order to create better opportunities for small businesses. The interventions are used to create and enhance emerging centralities of migrant settlements. A reference already used in chapter four is a good illustration of this: the 'openness and transparency at the local scale' combined with the connectivity to the scales above determine whether a place can become a centrality (Read, 2002).

This project generally focuses on two scales: enhancing the connectivity (or the integration of space) on the scale of a city fragment (in between neighborhoods) and utilizing the potential of high integration by diversifying activities and redefining public space on the level of a single street. The link with the metropolitan scale, which is an intrinsic part of the research theme, might not immediately be clear. However, I believe it is especially the disconnection between the top-down, formally planned, metropolitan scale structures and the bottom-up, informal urbanization of the urban villages which is problematic in Shenzhen. This problem is not limited to a specific neighborhood, but present in the whole metropolitan region of Shenzhen. Of the two levels of structures, the informal structures are the least understood in this sense by planners and governments world-wide. In the Shenzhen case, this misunderstanding is the main reason why informal settlements are a target of disruptive redevelopment. The proposed strategy in this thesis tries to embed these structures better in the metropolitan structures. This should encourage and support villagers to invest in the upgrading of the villages. Whether this will actually occur is uncertain. A pilot project, like the design case in this thesis, could be carried out as an experiment to see what the effect over time will be on the spatial quality of the adjacent villages

overall. It is clear though that continuing with the current model of redevelopment, which displaces migrants further and further from central locations, jobs and facilities, is not sustainable.

10. CONCLUSIONS

This thesis set off from the problem observed with the current model of urban redevelopment of urban villages in Shenzhen. Shenzhen, a city that has known an explosive growth since its establishment in 1980, can to a large extent be contributed to the migration of many rural Chinese citizens to the city to work in the emerging export based industry sector. Since the migrants were not eligible to any social services like social housing due to the exclusive hukou-system, they depended on the urban villages for their affordable housing provision. These urban villages, once traditional rural villages, were confronted with a loss of their traditional livelihood when the planned urban development of Shenzhen encircled them completely. They responded to the high demand for affordable housing for the migrants by redeveloping their village to maximize rentable floor area. The urban villages turned out to be providers of a considerate share of migrant housing and also means of livelihood, since the urban environment of the villages offered a good base to start small businesses. However, the urban villages recently have become targets of formal redevelopments lead by the local government in cooperation with private developers. This has been justified by the lack of available open construction land, the need to upgrade Shenzhen's economic model (from industry towards services) and because of social and environmental problems associated with the urban villages. The current redevelopment model means complete villages get demolished and replaced by offices and condominiums, often organized as enclaves. The result is that migrants get displaced to increasingly peripheral parts of the city. To associated rise in commuting time and costs, social unrest and the loss of attractiveness of Shenzhen as a migration destination could eventually damage Shenzhen's productivity and competitiveness.

This thesis has made an attempt at offering an alternative strategy to this model of redevelopment of urban villages. This

alternative has to be more inclusive towards migrants, both those already in Shenzhen and future generations, and more attentive to their needs for permanent settlement in the city. The thesis' focus has been on enhancing the spatial conditions that support the establishment and operation of small businesses by self-employed migrant entrepreneurs. The literature review showed that self-employment and small business offer a recognized path of upward social mobility, increasing migrants' chances to eventually settle permanently in their city of destination. In addition, It showed self-employment is a serious and growing trend among Chinese migrants and is therefore relevant as a focus for spatial policy. In the second part of the literature review I looked for a theoretical perspective on the spatial conditions supporting small businesses. A tolerant attitude in spatial policy is necessary to make sure entrepreneurial behavior will not get nipped in the bud. Streets have a very important role in offering opportunities for small business, because a lack of permeable space also limits the occasions for interaction between people. Not every street has the same potential in this respect though. The theory of natural movement states that the configuration of streets in the total street grid in an urban system determines to a large extent the amount of traffic a particular street will carry. It is those streets that carry the most traffic (streets with the highest 'integration') in general turn out to be the most active places within cities. Especially the streets which are most likely to carry the most slow traffic, the most locally integrated streets, will be the best places to locate a small business. This is based on the assumption that business goes where the most people are present. The number of people in streets can further be increased by a mix of uses in and around those streets.

In the empirical part of the thesis, I tried to see to what extent the findings from the literature reviews matched with the actual situation in Shenzhen's periphery. The district of Dalang,

and its south-east section in particular, served as a research area for this. The results from a questionnaire, answered by 93 migrant workers of Dalang, mainly confirms the stereotype of the migrant worker: they are young, originate from all over China, most of them live in urban village houses and work in a factory. However, the majority has been living in Shenzhen for at least three years. This means policy should take into account a fair share of them will eventually settle in Shenzhen permanently. It seems that improving the living environment of the migrants, could encourage more of them to settle permanently in Shenzhen. The lack of good public space to spend the 'third eight hours' could work against Dalang, and Shenzhen in general, in migrants' eventual decision to stay or not. A big majority of the residents goes to work by foot. Spatial policy should therefore focus on facilitating slow mobility instead of prioritizing car users. Many of the respondents express the ambition to become self-employed in the future. Thus, spatial policy should respond to this desire for more small business opportunities and social activities.

The conclusion from the spatial analyses of Dalang also confirms the findings from the literature reviews. The found distribution of small businesses in the mapped urban villages in south-east Dalang shows quite a strong correlation with the local integration of its streets. Based on the high amount of small businesses found in the mapped villages, I can conclude urban villages offer a potent environment for business establishment. Even though there is enough street space in the quantitative sense, there is a lack of well integrated space, especially on the intermediate level between the big city road grid and the street nets of the urban villages. Thus, a lack of integrated intermediate streets means a lack of spatial opportunities for small businesses. This is further frustrated by the low walkability of the streets of Dalang. The result of this, is that these roads act as segregating elements,

that also do not bring much connectivity to the neighborhood level.

The strategy this thesis proposes contains three primary actions and a supportive planning framework. There need to be interventions that increase the number of well integrated, intermediate level streets connecting the urban villages and the city road grid. Slow modes of transport need to be prioritized on these streets, while the intersections with the city road grid become transitional nodes, offering parking facilities and public transport stops. The intermediate streets need to be designed in such a way that a diverse range of uses is possible both around and inside them. There needs to be space devoted to business, both inside fixed premises along the streets and mobile, outdoor commerce. In addition there should be space for more residential and leisure activities. All of this should not impede the traffic flows. When redevelopment takes place, there should be a limited size to the plots, to assure permeability and accessibility of the urban villages in the interior of the city road grid blocks. Still it would be wise to preserve a range of different sizes of plots and buildings, because of the traffic generated between them and because of the opportunities for expanding business to bigger premises. The new common space connecting several urban villages and factory areas should serve as a catalyst to come to a shared policy, or something like a village union. This would also give them a better position in negotiations with governments and developers and better possibilities to finance shared services.

A pilot project has been proposed as a test with the implementation of the spatial strategy and to review its impacts. For this pilot project, I chose to reuse an existing canal in south-east Dalang as a base for a new intermediate route. This route would connect several villages, some schools, parks and public transport stops. The leftover spaces along the canal offer enough space to facilitate business and

leisure activities, beside space for slow modes of transport (walking and cycling). When the canal itself also gets upgraded, the route could become a special destination in Dalang, and a provider of a shared identity for the adjacent villages. The evaluation of the effect the intervention has on the street integration shows quite a strong increase in integration. Many businesses can therefore be expected to establish along the canal.

The pilot project shows that the proposed strategy does not so much determine a future of the urban villages. Projects like the reused canal serve more as tools the direct the redevelopments in a more preferable direction: a direction in which the livelihoods and social lives of migrants can be safeguarded. It provides a new constant element in moving towards an uncertain future of the urban village as an urban pattern in Shenzhen's periphery. However, before a strategy like the one proposed in this thesis can become relevant as an alternative for the current redevelopment model, some changes in attitudes among the powerful stakeholders in necessary. A change is needed in the business case of redevelopments, which are now aimed at short term profit without taking into account the societal costs of the displacements. The dominant position of the car in Chinese planning, typical for the modernistic planning paradigm, will need to change too, otherwise the potential value of space devoted to slow modes of transport will not be realized. And finally, the migrant worker need to be recognized as people who seek to become real urbanites. Entrepreneurial people who can contribute to the liveliness of Shenzhen, to completing the transition from world's factory to a world city.

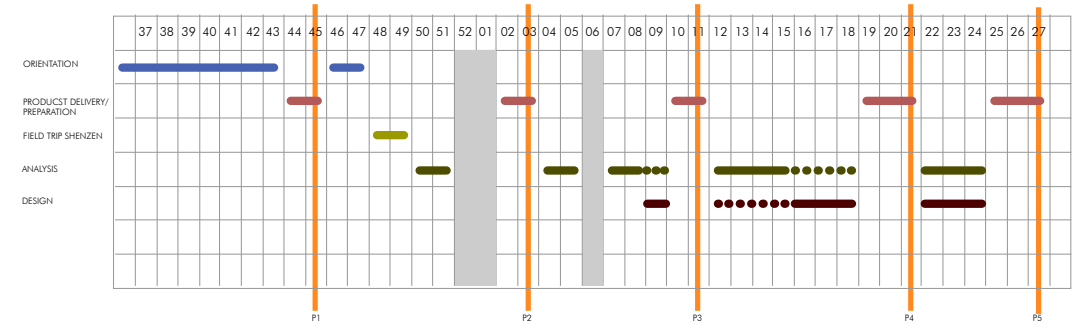
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APPENDICES

Appendix 1: planning



week 36-43: orientation on project theme and topic.
 week 44-45: delivery theory abstract and preliminary thesis plan, prepare P1 presentation
 week 46-47: preparing field trip to Shenzhen
 week 48-48: Fieldtrip to Shenzhen: empirical research on site
 week 49-50: Formulating main findings from field trip
 week 02-03: Delivery theory paper, thesis plan, preparation for P2 presentation
 week 04-05, 07-08: Process findings from field trip, analyzing current spatial structures
 week 09: Formulating implications for design after spatial analysis
 week 10-11: Preparation for P3 presentation
 week 12-15: Analyzing trends in supply and demand

for spatial adaption
 week 16-18: Preliminary redevelopment strategy design
 week 19-21: Preparation for P4 presentation
 week 22-24: Finalize redevelopment strategy
 week 25-26: Deliver final product

Appendix 2: example of filled in questionnaire

Hello, we are students of Delft university in the Netherlands and we are in Dalang to study what people think about the space they live and work in. By answering our survey you would help us a lot. Thanks in advance!

您好，我们是来自荷兰代尔夫特理工大学的学生。我们在大浪做关于青年工人工作和生活空间方面的调研。如果您能回答下面的问题，我们将非常感谢！

Place of origin (籍贯): 广东

Age (年龄): 21

Gender (性别): 女

In Shenzhen since (哪年来深圳): 2011

1. Have you already known someone in Shenzhen before moving here?

在您来深圳之前，您在深圳有熟人吗？ 有

2. What kind of work do you do?

您从事的工作是什么？ 外贸

3. How much do you earn per month?

您每个月的收入是多少？ 1900

4. Have you had other jobs before this one? If so, what kind of job?

您有换过工作吗？如果有，之前的工作是什么？ 刚出来工作

5. What are your daily working hours? How many days per week?

您每天工作多少个小时？一周工作多少天？ 8 5天

6. In which neighborhood do you live?

您住在哪里？(请写上地址并在地图上标注) 龙峰

7. In what kind of house do you live? (eg. in a dormitory or a room in an urban village)

您住在哪种类型的房子（比如工厂宿舍或者城中村）？ 出租屋

8. Do you share your house with others?

您是和别人一起合租吗？ 不是

9. How much do you pay for the rent per month?

您每个月的房租是多少？ 360元

10. Do you like the place you live in? Why?

您喜欢您住的地方吗？为什么？ 还好 自己住方便

11. How do you travel from your house to your work and how long does it take you?

您平时是怎么上下班的？花多长时间？ 走路 20分钟

12. What do you like to do in your free time?

您平时业余时间做什么？ 散步

13. Do you think there are enough activities to do during your free time? What is lacking?

您觉得您的业余活动丰富吗？如果不丰富，缺少什么？ 不丰富 没有朋友

14. Do you feel lonely in Dalang?

您在大浪感到孤独吗？ 不会

15. Do you meet new friends?

您在大浪认识了新朋友吗？ 会认识

16. Do you meet them outside? And where?

您会和朋友在工厂外面见面和玩耍吗？一般在哪儿？ 会 罗湖

17. Do you need more places like that?

您觉得您需要更多的见面和玩耍的空间吗？ 需要

18. Would you like to stay in Shenzhen in the future? Why?

您有打算将来留在深圳吗？为什么？ 不会 会回家 在家附近找

19. What would be your dream job in the future?

您未来理想的工作是什么？ 开一间属于自己的店

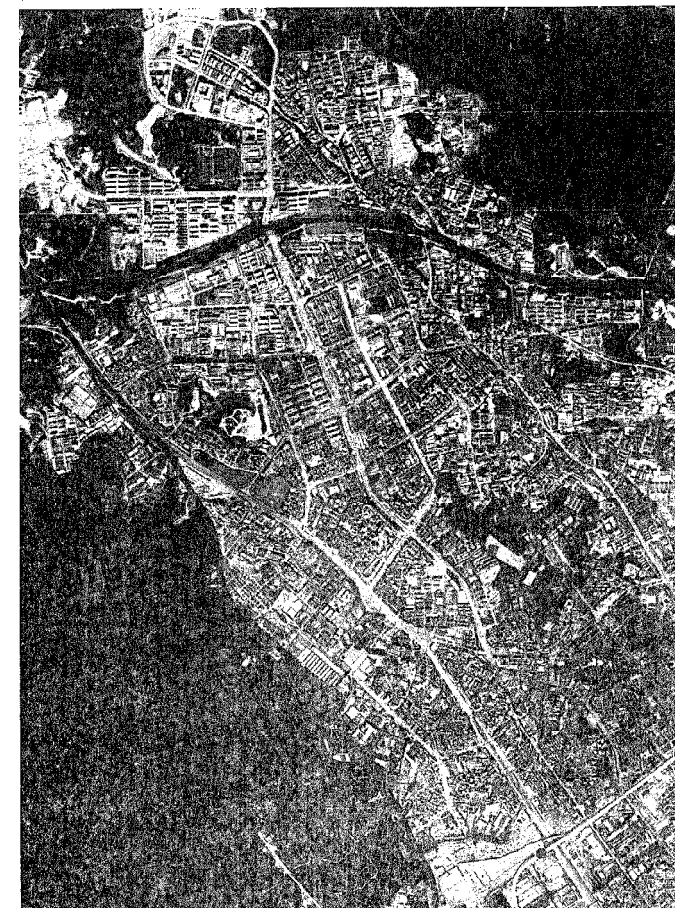
20. In what kind of house would you like to live in the future?

您未来想住什么样的房子？ 独栋房子

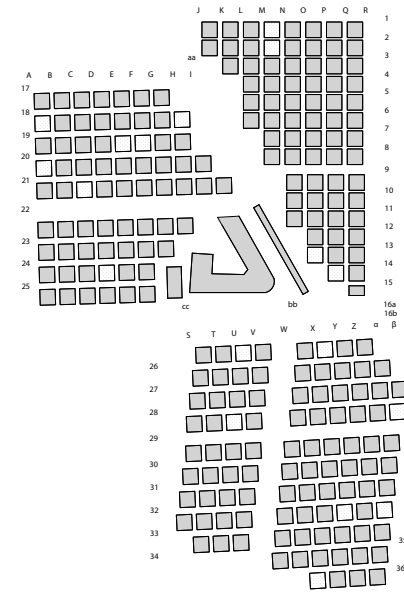
21. Would you like to learn new skills? If so, why and which one?

您有打算学习一些新的技能吗？如果有，为什么学和学什么？ 想 学英语

您未来想住什么样的房子？ 独栋房子



Appendix 4: Mapping of businesses & local street integration values



Unknown businesses



Services



Retail & restaurants



Workshops

street ref.	shops	services	unknown	workshops	total businesses unused	businesses + unused	length	businesses/10 Om	value R3	
A	3	1	1	0	5	4	9	187	2,673796791	2372,36
B	1	1	2	0	4	6	10	187	1,069518717	667,681
C	3	0	3	0	6	3	9	187	1,604278075	664,965
D	1	1	1	0	3	6	9	187	0,802139037	664,916
E	0	0	3	0	3	4	7	187	0,802139037	664,867
F	3	2	0	0	5	6	11	187	1,336898396	664,818
G	0	1	0	0	1	4	5	187	0,267379679	664,77
H	2	0	0	0	2	6	8	102	0,980392157	700,915
I	0	0	0	0	0	2	2	58	0	687,991
J	0	2	0	1	3	0	3	32	4,6875	694,178
K	1	0	0	1	2	3	5	46	2,173913043	949,329
L	0	0	0	2	2	0	2	88	1,136363636	895,451
M	0	1	0	1	2	5	7	115	0,869565217	892,371
N	4	0	1	2	7	10	17	162	2,160493827	848,281
O	2	1	0	3	6	6	12	187	1,604278075	812,207
P	0	4	1	1	6	10	16	205	1,463414634	784,615
Q	1	4	0	0	5	4	9	213	1,17370892	785,195
R	22	3	1	0	26	1	27	221	11,76470588	2379,66
S	9	1	0	0	10	1	11	155	6,451612903	1715,26
T	1	3	0	0	4	5	9	170	1,176470588	555,798
U	0	2	0	0	2	4	6	170	0,588235294	477,761
V	0	2	0	0	2	5	7	170	0,588235294	545,891
W	6	1	1	1	9	10	19	190	2,368421053	1802,99
X	2	3	0	0	5	5	10	190	1,315789474	391,707
Y	0	1	0	1	2	9	11	205	0,487804878	473,19
Z	2	2	1	0	5	0	5	205	1,219512195	379,391
α	3	2	0	1	6	5	11	210	1,428571429	379,349
β	4	0	0	0	4	4	8	190	1,052631579	379,449
γ	4	2	0	0	6	3	9	175	3,428571429	490,568
aa	3	3	0	1	7	3	10	187	3,743315508	696,553
bb	28	1	3	0	32	0	32	103	15,53398058	1855,98
cc	7	1	1	0	9	0	9	70	6,428571429	2060,81
1	3	1	0	4	8	2	10	136	2,941176471	1874,27
2	0	2	1	0	3	4	7	136	1,102941176	1136,82
3	2	1	0	2	5	6	11	136	1,838235294	1031,83
4	2	0	0	0	2	5	7	119	0,840336134	1035,06
5	2	2	0	0	4	5	9	105	1,904761905	1104,38
6	0	1	0	0	1	2	3	105	0,476190476	1017,73
7	0	0	1	0	1	0	1	105	0,476190476	1017,41
8	1	1	0	0	2	4	6	87	1,149425287	1032,51
9	5	4	1	1	11	2	13	87	6,32183908	1385,07
10	1	0	0	0	1	2	3	68	0,735294118	1037,64
11	3	1	0	2	6	0	6	68	4,411764706	1038,4
12	2	1	0	1	4	0	4	68	2,941176471	1051,54
13	2	0	0	0	2	1	3	53	1,886792453	990,883
14	2	0	0	0	2	0	2	53	1,886792453	1070,66
15	1	0	0	0	1	0	1	32	1,5625	1063,31
16a	23	7	1	2	33	0	33	270	12,22222222	4528,20
16b	7	0	0	1	8	0	8	142	5,633802817	3148,96
17	1	0	3	0	4	7	11	114	1,754385965	787,458
18	0	0	1	0	1	5	6	134	0,373134328	808,898
19	2	1	3	0	6	5	11	134	2,23880597	808,676
20	0	0	1	0	1	8	9	148	0,337837838	862,547
21	0	1	0	0	1	1	2	159	0,314465409	863,44
22	9	3	2	0	14	14	28	162	4,320987654	1266,53
23	1	0	1	0	2	4	6	113	0,884955752	881,677
24	2	1	0	0	3	5	8	98	1,530612245	880,233
25	0	0	0	0	0	3	3	98	0	896,421
26	3	2	0	0	5	4	9	161	1,552795031	562,295
27	4	1	0	0	5	6	11	176	1,420454545	546,53
28	3	0	0	0	3	6	9	180	0,833333333	555,4
29	3	6	0	0	9	12	21	180	2,5	546,532
30	2	0	0	1	3	8	11	180	0,833333333	552,342
31	2	2	1	0	5	6	11	180	1,388888889	615,406
32	2	2	0	0	4	5	9	180	1,111111111	546,961
33	3	2	0	0	5	7	12	180	1,388888889	546,197
34	5	4	1	1	11	3	14	193	5,699481865	1076,35
35	2	1	0	0	3	2	5	98	1,530612245	537,911
36	1	1	0	0	2	1	3	72	1,388888889	547,842

