LOCALIZATION OF GUANGMING NEW TOWN

Integrating the new town development in Shenzhen metropolitan periphery

Ningxin Tan
4329694
Graduation Project, Msc Urbanism
Faculty of Architecture, TU Delft

Research group: Metropolitan Spatial Structure
Mentor group: Qu Lei, Evert Meijers

Master Thesis

Localization Of Guangming New Town

Integrating the new town development in Shenzhen metropolitan periphery

MSc Thesis

Ningxin Tan
ningxintan095@163.com
Student number 4329694

Keywords
metropolitan peripheral new town, passive urban renewal, social-spatial interaction, complementarity, border area, network thinking, strategic planning

Faculty of Architecture, Delft University of Technology
MSc Architecture, Urbanism and Building Sciences
MSc track Urbanism

Metropolitan Structure Studio

This thesis is downloadable for free from the TU Delft library website:
http://www.library.tudelf t.nl/collecties/tu-delf trepository/

Cover photo taken by author

LOCALIZATION OF GUANGMING NEW TOWN

CONTENTS

PART 1. INTRODUCTION
Motivation / Background / Project Aim / Research Question / Methodology
/ Theoretical Framework

PART 2. CONTEXT & PROBLEM FIELD
Context / Problem Statement / Relevance / Intended End Products /
Time Schedual

PART 3. NETWORK ANALYSIS
REGIONAL SCALE
DISTRICT SCALE
LOCAL SCALE

PART 4. GENERAL STRATEGY
Border Area Concept / Border Area Analysis

PART 5. SCENARIOS
SCENARIO BACKGROUND
BUFFER-ZONE CONCEPT
TRANSITION-ZONE CONCEPT
EVALUATION
STARTING STRATEGY

PART 6. CONCLUSION
Conclusion / Reflection

PART 7. APPENDIX
Theory paper / Bibliography

PART 1
INTRODUCTION

1. MOTIVATION

1.1 MOTIVATION

In China, there is going on a dramatic urbanization which is characterized by its scale and the uneven development. This process results in a steady migration from rural to urban areas mainly absorbed by the large cities and cities in rich coastal areas. Every year, more and more cities are feeling the devastating impacts of this situation. Especially in large cities, urban problems such as traffic congestion, environmental pollution, exploding populations, inner city deterioration and soaring housing prices are becoming more and more serious. During last two decades, new town construction has been growing exponentially in China to disperse the overcrowded population and industries in the central cities and to promote coordinated development between the central cities and their surrounding regions as well as to solve urban problems. This massive wave of new town movement fosters both great opportunities and challenges. On the one hand, this movement can be a regional development strategy to form new centrality to deal with city expansion, migration and new developments. On the other hand, new town construction in China is currently characterized by a top-down

Figure 1. A farmer scavenged his former village for building materials in Liaocheng. Source: The New York Times

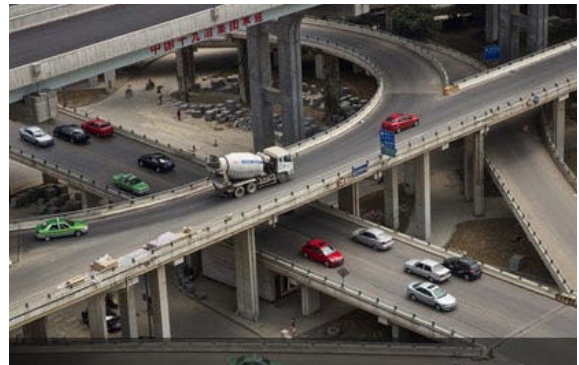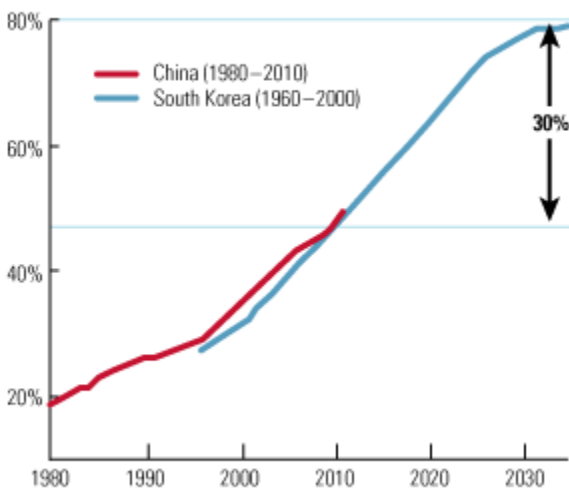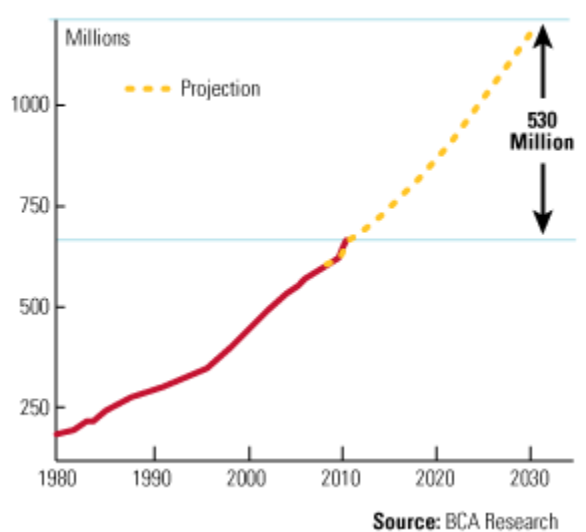Figure 2. A highway interchange in Chengdu. Source: The New York Times

Figure 3. Urbanization data in China. Source: BCA Research

Urbanization Rate

China (1980–2010)
South Korea (1960–2000)

Chinese Urban Population

Projection

Source: BCA Research

1.2 STUDY SITE

approach and high density development. In this top-down new town approach developers pay more attention on the urban form, regional connectivity and profit instead of social-spatial resilience and local contexts. In this sense, although the new town development as regional balance and modernization strategy sounds make sense in various aspects, there are still lots of failed cases of new towns during the localization and implementation process. In this view, in order to reach a more sustainable future, it is necessary to study the existing top-down new town planning models and identify the advantages and potential risks investigate as well as the existing local context in order to make the new town be more integrated in different scales.

Therefore, in this project, I would like to explore the factors that influence the localization of the new town in the context of fast-growing metropolitan periphery, where various issues and conflicts meet together such as rural versus urban and modernity versus locality. I hope the understanding of the local role of new town could help to achieve a more sustainable vision and both of the new town and the local could benefit from it.

As a major city in the southern China and special economic zone, Shenzhen attracts thousands of immigrants every year. Due the history, Shenzhen was used to be separated into two parts: the outside and inside special economic zone area. Nowadays, because of the city expansion, the government is working out new strategy plan to integrate these two parts and build new towns for new increased population. Guangming new town is a new town in Shenzhen outside of the Special Economic Zone (SEZ).The new town development began in 2007, and was driven by construction of a station of the regional high-speed railway which connects Guangzhou and Hong Kong. To utilize the opportunity, Guangming new town intends to attract high-end industries so that they can play a strategic role in industrial upgrading in Shenzhen.
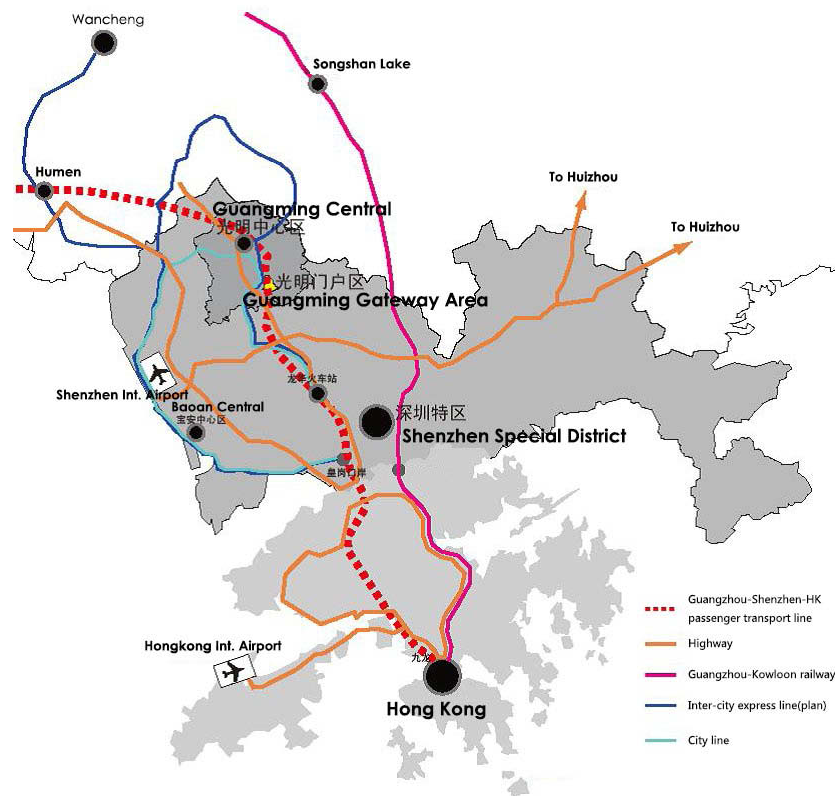

Figure 4. Regional high-speed railway and the location of Guangming new town.

2. BACKGROUND

2.1 Role of new town in China

New town as modernization strategy

New town as a modernization strategy in China is mainly manifested in two aspects: urbanization and urban new image building.

Urbanization

As asserted by the Nobel-prize-winning (2001) economist Joseph Stiglitz, urbanization will be Chinas biggest challenge in the twenty-first century. The urban population is 52.6% of the overall population in 2012, doubling the number of 1990. Besides being a way of stimulating economic growth, Chinas urbanization process is trying to provide modern qualities of life to all city dwellers, reduce urban and rural segregation, and regional discrepancy (Zhou, 2012). In this sense, creating new towns has been one of China's solutions to absorb rural population in order to encourage urbanization. On the other hand, large cities and some new cities in the eastern areas have played important roles in urbanizing migrant populations. And to facilitate the out-migration of people in large cities in order to relieve urban crowding is also a way to encourage urbanization and can provide better modern qualities of life for people.

New image building

Figure 5. New urban image building, Guangming new town, Shenzhen.

In China, the research shows that urban expansion or new town construction creates an opportunity for building up a new modern urban image which is a visible form to project the economic strength and the presence of capable local government leaders (Han 2010). In this sense, it is believed by the local officials that building a modern urban image could improve the competitiveness of the locality, and thus could help to attract more investment from the outside. In addition, a modern urban image is also believed to have an effect on the behavior of citizens. Which means carefully planned and designed cityscape, such as clean streets and artificially shaped trees and shrubs would make people think twice before they litter or spit (Han 2010).
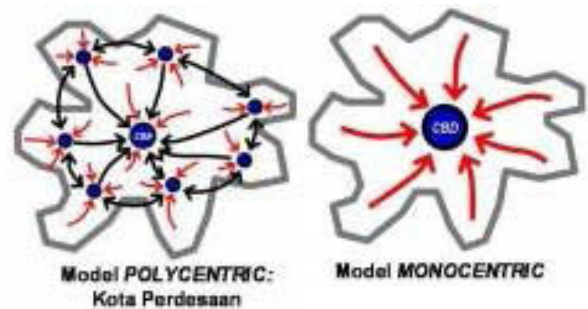
Figure 6. Monocentric and polycentric model

Uneven development

The primary goal of new towns is to create a new regional magnet and centrality, in order to disperse the overcrowded population and industry of large cities and promote regional development and spatial economic balance. The uneven development pattern has crucial impacts on urban spatial patterns in both national and regional scale in China. As mentioned above, due to the uneven development, large cities and cities in rich eastern areas absorbed most urbanized migrant population. After decades' rapid growth both in economy and population,

however, the tendency shows that many large cities in China need to transform their spatial structure from super dense monocentric cities to polycentric metropolis to accommodate its population and economic activities, as well as to boost new development of the metropolitan peripheries in search for a more balanced and sustainable regional development.

2.2 Top-down planning approach New town in China

Institutional system

City-leading-county system

The city-governing-county system refers to a governing structure that takes a central city within relatively developed economy as the primary regime to govern the surrounding counties (BaiduPedia). This system is designed to enhance the integration of a central city and its surrounding hinterland (Shen 2007). In general, the implementation of the 'city-leading county' during last decades gave central cities greater administrative and economic powers, at the expense of the subordinate county-level administrations (Chung & Lam 2009). County officials were 'obliged' to follow

TOP-DOWN

nation/province
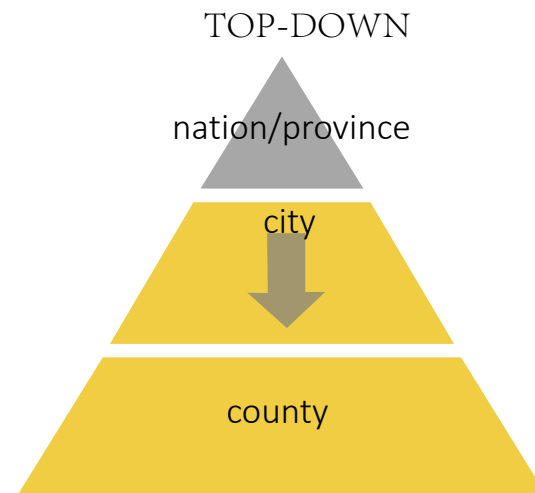
city

county

Figure 7. Monocentric and polycentric model

the orders and commands of their superior city leaders. However, after decades of development and adjustment, this system is becoming more flexible and counties gain much more autonomy but the central city still acts the regional leading role both in economy development and administration management in metropolitan region. Consequently, the formulation of metropolitan development strategies and plans also have

hierarchies and normally the priority is given to superior cities that subordinate cities or towns have to passively react or obey these decisions.

Local authority competition
Since the open-door policy in 1979, due to the increasingly fiscal pressure, the central government began to decentralize its financial right to the local authorities. After that, fiscal decentralization enabled

Generally, it is believed in China that most development strategies launched by the local authorities are GDP oriented, because GDP is an important criterion used by the central government to evaluate the performance of local officials. In order to get promoted, the local officials need to prove that the GDP of the locality is ahead of the same-level cities in the same region. In this sense, the competition among local governments is fierce, which results in somehow 'localism' that focus too much inner the territory especially in the infrastructure construction.
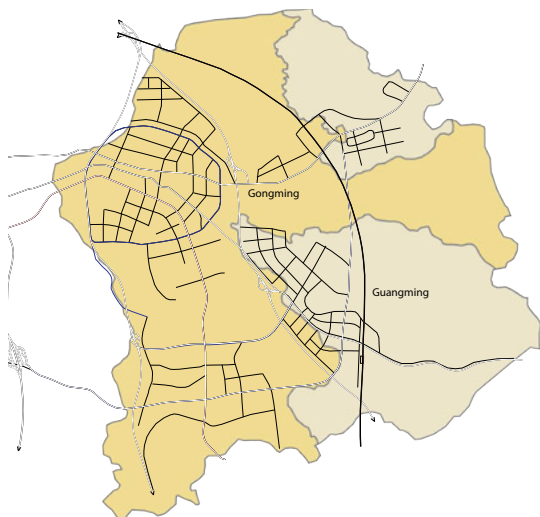

Figure 8.Guangming new district has two local authorites: Gongming and Guangming: localism resulted in seperated infrastructure.

New town as a regional strategy in metropolitan peripheral area: a regional hub

As for new towns, generally speaking, they are the internal demand of the city when its development reaches a certain stage. This stage usually refers to that the original town cannot carry the existing population, industries and relevant functions and requires a new area to expand and reorganize its existing urban layout as well as functions. However, in the metropolitan region, normally it is the central city that reached this stage and need new towns to disperse the overcrowded population and economic activities and promote regional development and
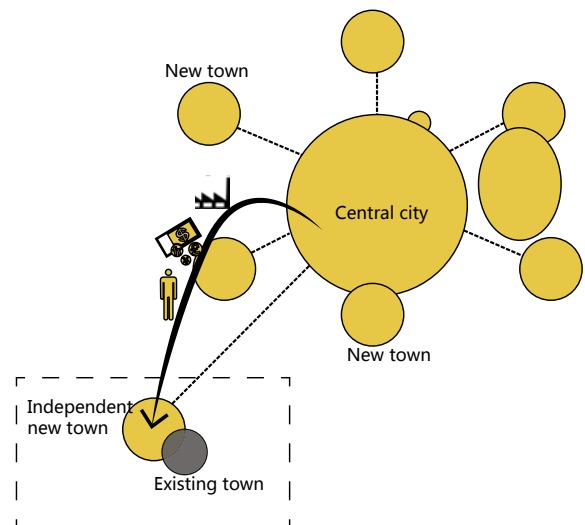
Figure 9. The independ new town in metropolitan periphery uasually undertake the economic and resource flows from the central city and locates close to the existing town.

spatial economic balance. Moreover, metropolitan peripheral new towns in China are generally located close to the existing towns in order to utilize the existing infrastructure and boost the development of the metropolitan peripheral areas, as the existing peripheral towns normally

the least developed parts of the whole region. In this sense, it might be concluded that the new town acts as a regional public good to benefit the whole region.

On the other hand, the development of new towns to decentralize and re-centralize seems to be an obvious regional planning strategy, promote regional development and spatial economic balance. Apparently, the new-town policy is a form of population-redistribution policy that could change the condition for spatial population distribution. Essentially, the new-town policy falls mainly into the category of economic policy, possessing the three essential elements of an economic policy (Friedman 1984) In this sense, it might be concluded that the new town acts as a regional public good to benefit the whole region.

Blueprint planning

In areas where cities grow rapidly, like many developing countries, long-range comprehensive planning based on blueprint approach is often used to guide the rapid urbanization (Mubvami et al., 2006). The top-down new town planning approach in China is also featured with blueprint approach. Blueprint is a complete or total design aiming to show a comprehensive and detailed vision of the area. Deterministic as it is, the outcome and the process is usually fixed (Carmona, 2010). When the whole

circumstances change, the out-dated plan need to be replaced by another comprehensive plan. For instance, in China, the duration of the master is normally 20 0r 10 years long. As many cities in China are growing quite rapidly now, this kind of rigid master plan normally could not adapt to the changes in the long run. Therefore, the master plan needs to be modified or even replaced.

Besides, due to the rigidity of the master plan, the continuity is also difficult to be fixed in smaller scales as well as disables local adaptation according to local conditions. For example, In the blueprint, details like land use, neighborhood streets are also designed. As comprehensive as it is, a fixed outcome is likely to be delivered, in which complex conditions in smaller scale are generally neglected. Additionally, It is also a direct design, which means limited actors are involved in and the process is also ignored.
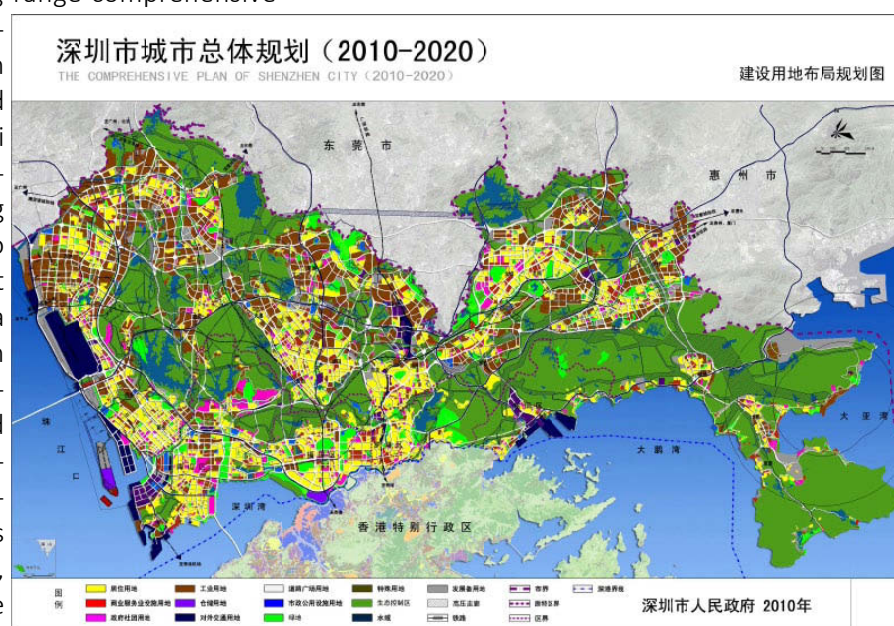
Figure 10. The land use planning map from the comprehensive plan of Shenzhen city(2010-2020).

3. PROJECT AIM

The main aim of this project is to question the current role of new town and old town in the current planning and study the existing contexts in search for a process-oriented, relational and flexible planning framework to optimize the whole town and fulfill the role of both the new town and the old. I hope what I do could be the complementarity for the existing plans to help understand the local context and emerging risks which might be ignored by the existing plans for the future development of Guangming new town.

Figure11: A more synergic situation between the new town and old town

LOCALIZATION OF GUANGMING NEW TOWN

4. RESEARCH QUESTION

As mentioned above, during last two decades, new town construction has been growing exponentially in China to disperse the overcrowded population and industries from the central cities and to promote coordinated development between the central cities and their surrounding regions as well as to solve urban problems. However, although the new town development as regional balance and modernization strategy sounds make sense in various aspects, there are still lots of failed cases o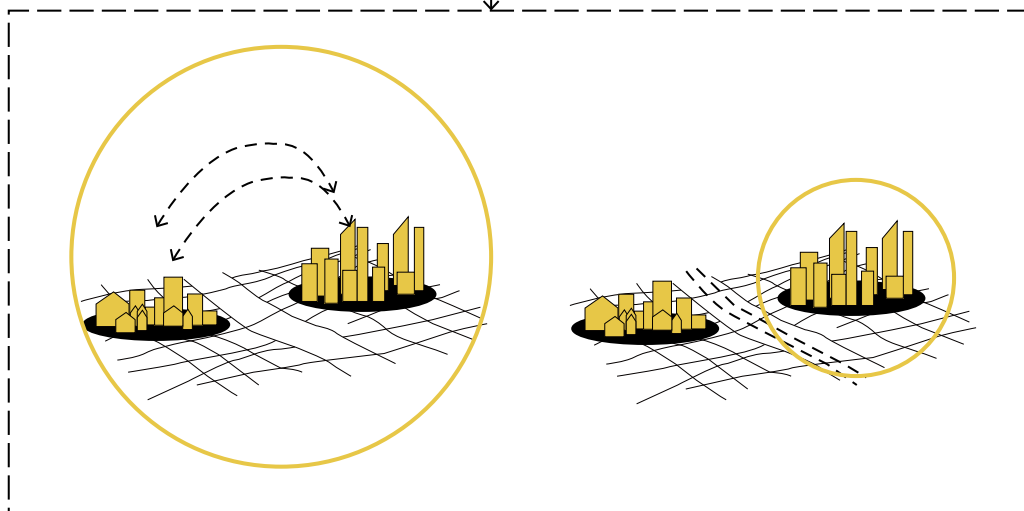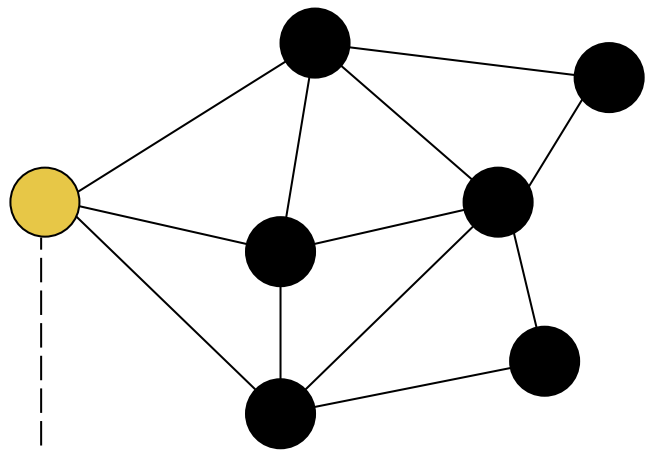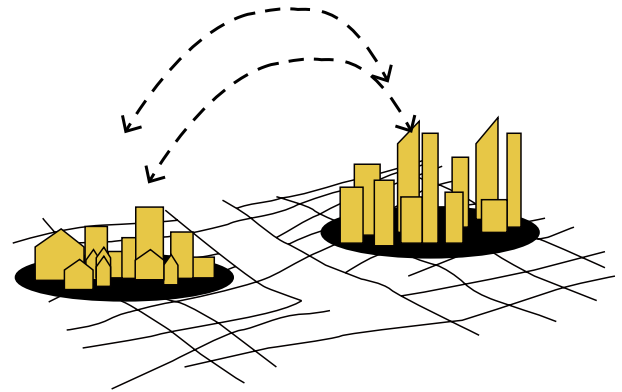f new towns during the localization and implementation process. In this sense, this project mainly addresses the local role of new town in quest for synergy with the old town.

I pick the old town and new town of Guangming new district as my study area which is a fast-growing periphery in Shenzhen metropolis, to explore the factors that can influence the dynamics and interactions between the old town and new town without expenses of the local quality and identity. The **main research question** of this thesis is

How Guangming new town and old town could mutually benefit from each other?

Sub research question

In order to answer this main research question, there are five sub research questions formulated. The first three sub research questions are categorized under the analysis part of the research project. The last two sub research question consider the strategic and design part of this thesis. The sub research questions are described and explained below.

How do new towns as a modernization strategy work in China?

What's the problem in the localization process of metropolitan peripheral new towns?
These first two research questions are aimed at getting a detailed view on the current functioning of the new town planning systems and the localization processes in the research area. For this purpose, relevant theory on the existing role, driven forces and planning approaches of the new towns will be detailed reviewed, both from Western and Asian scholars. Then zoom in to the new town in metropolitan periphery to see its specific characteristics and functions as well as the integration to the local scale.

What kind of urban system can be helpful to the interaction between new town and the existing one?
This sub research question is answered by conducting a thorough network analysis within the area both on a regional scale and local scale. The network analysis should conclude in revealing the functioning or non-functioning of (parts of) the study area. The conclusions and recommendations leading from this network analysis would form the basis in developing the strategic proposal.

What kind of identities that deserve to be maintained as well as promoted within both the new and the old town?
This sub research question will be answered by conducting a local site analysis including mapping and stakeholder interview. The context based framework for creating or evaluating 'place-makings' -created out of the literature review- is used as a basis for analyzing. The local sites in the focus area are analyzed and valued according to the elements defined by the theoretical review. Moreover, the opinions of the local residents and outcomes of the
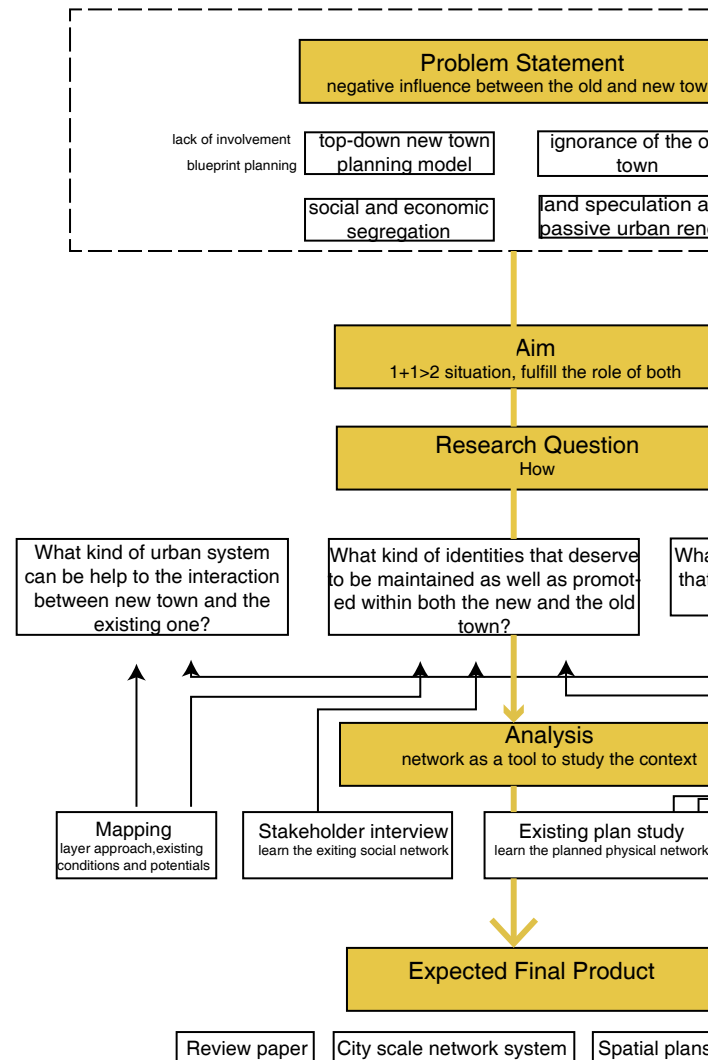
5. METHODOLOGY

mapping analysis should also be taken into consideration. Answering this sub research question will result in a clear evaluation of the conditions of local sites in the area especially the positive ones.

What is the alternative stratgic planning framework that can facilitate cross-boundary collaboration?

This sub research question will be answered based on the empirical study of existing network and context, relevant case study on strategic planning in search for social-spatial interaction as well as the theoretical study based on network urbanism. Then to implement strategic thinking into the project which goes beyond mere physical conformation for the place, which involves the process triggered by time and the consensus social and economic impact, etc. The idea is that an action, however slight, may trigger substantial and progressive changes. Therefore it is important to figure out the starting point which would have an essential impact on the whole project.

Key words

modernization strategy, metropolitan periphery new town, passive urban renewal, social-spatial interaction, complementarity, network thinking, strategic planning

The methodology of this research is mainly set up around the conditions that can be made to enable new town and old town mutually benefit from each other in the metropolitan periphery context in China. Generally, in new town development in China, new town is a regional priority and act as a regional public good to boost economy and balance the whole region. It is the old town and its local conditions that are usually to be ignored and also need research. In order to tackle this problem, I need to figure out the

How could Guangming new town and old town mutually benefit from each other?

1+1>2 situation, fulfill the role of both

interactions and dynamics
top-down planning models - process

at is the alternative planning framework t can facilitate cross-boundary collabo-ration?

What's the problem in the localiza-tion process of metropolitan periph-eral new towns?

Fieldwork
Observation and data collection

Case study
cooperation and complementarity

Theory study
strategic, synergy, top-down model

s and design

Process oriented-planning framework

mechanism that lead to this situation, as weill as what I could do to help integrate the old and new area of Guangming in search for a 1+1>2 situation. In my methodology I combined five principle methods; literature study, fieldwork, stakeholder analysis, mapping and existing plan study.

Literature study
As for the topic that how new town and old town could mutually benefit from

each other in China involves various aspects to be taken into consideration like Chinese institutional system, government policies, local traditions, economics and synergy mechanism, network urbanisms,etc. Literature study also helped to translate my research questions into more detailed ones that I could better understand and answer them. The literature that I used can be divided into academic literature, government work and existing plans.

Stakeholder interview

In order to make a feasible project it is very important to involve in the stakeholders to be aware of the dynamic issues. This part can shed light on the actual decisions and considerations that different stakeholders make. Due to its unique history , Guangming has distinctive stakeholders : the returned Vietnamese Chinese which makes up over certain percent of the total population. In this sense, the project will focus on types of stakeholders: the local government, the migrant workers, the local residents, and the local vulnerable residents such as , the new comers of the new town.

Fieldwork

The fieldwork in Shenzhen totally took two weeks and can be divided in two parts. First part is the first week that we explored different areas of the city helps to create a sense of place and a sense of scale. By looking not only at the project site, but also at other districts of the city, I gained a better understanding of not only my project site, but the whole Shenzhen. Moreover, in the first week the fieldwork will include interviews with several famous scholars studying in different

areas from which I learnt a lot. Secondly, the fieldwork includes an on-site observation of the specific conditions on the site. In these observations I will need to alternate between a very specific look at some aspects of the area and a more general look at the area to find aspects that my theoretical framework was not prepared for. I also did some interviews with the local stakeholders which gave me some new ideas to think about the social issues

Mapping

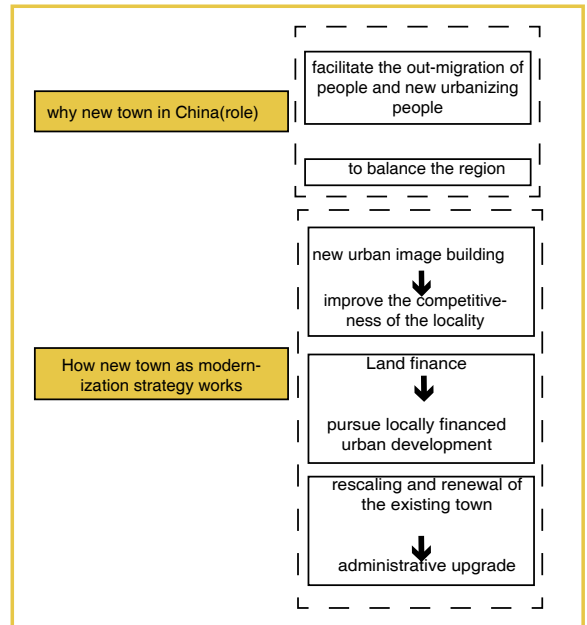In order to be more objective and find spatial potentials, firstly mapping is used as a method in order to process and arrange gathered information. Different aspects of the local sites are mapped out to make them visual and accessible for further analysis. The compiled maps of the local sites form the basis for the local site analysis. Then I would like to use space syntax to map the existing physical network and find the spatial integrated potentials through layer approach.

Case study
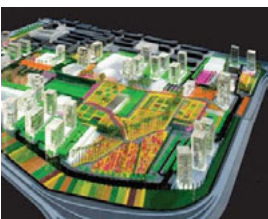
To study the relevant projects on social-spatial interaction and synergy could provide me some former perspectives and experience to think about and analyze the existing situation. Besides that, former projects review could also result in a recommendation for the use of certain strategies as well as design principles in the upcoming strategy and design parts.

why new town in China(role)

facilitate the out-migration of people and new urbanizing people

to balance the region

How new town as modern-ization strategy works

new urban image building

improve the competitive-ness of the locality

Land finance

pursue locally financed urban development

rescaling and renewal of the existing town

administrative upgrade

New town as regional public good

Problems of new town strategy in metropolitan periphery

Dynamics of a specific area now largely depend on decisions elsewhere, with no involvement by the local authorities, and which are sometimes hard to reconcile with local problems.
Manuel Castells

mismatch the role of local public good

Perspectives: call for dynamics and interaction between new town and old town in synergy process.

dynamics

inherent quality and identity maintaince

old town: transition zone-small town way of life

new town: suburban housing and new employment centers

interaction

mutual benefits: complementarity

economic functions
urban facilities
residential and business environ-ments
public service
open space
recreational facilities
labors

6.THEORETICAL FRAMEWORK

whole metropolis, and search for a process-oriented planning framework which could lead to synergic and complementary situation between new town and old town.

New town as strategy

New towns have been part of the development strategy guided by visions of modernization in China. It means that even the n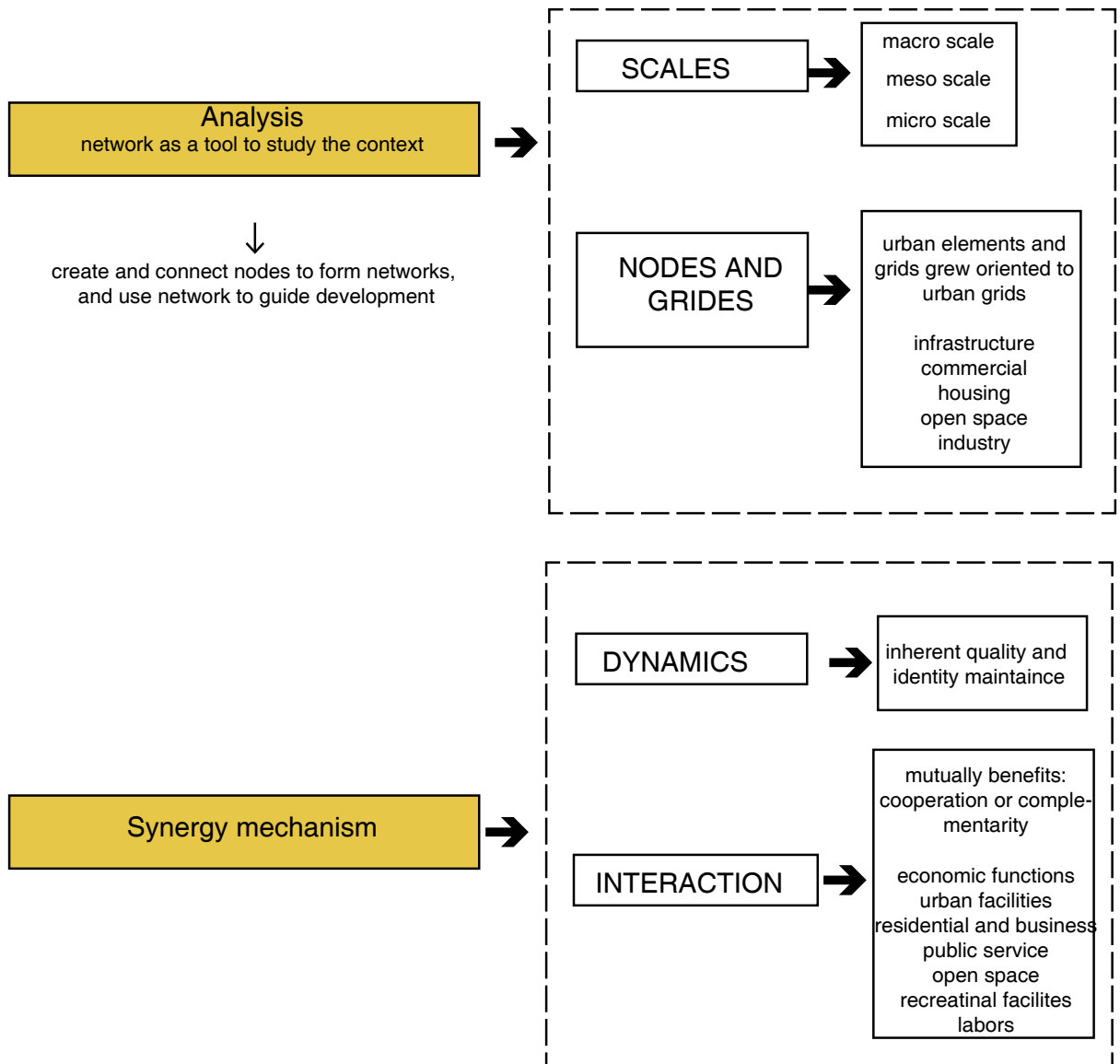ew town strategy originated as a solution to tackle the urban problems of over-congested and fast-growing large cities. It is also utilized as a development tool to attract new industries and external invests, as well as to upgrade its regional position.

Role of new town in China

The primary goal of new towns is to create a new regional magnet and centrality, in order to disperse the overcrowded population and industry of large cities and promote regional development and spatial economic balance. After decades' rapid growth both in economy and population, however, the tendency shows that many large cities in China need to transform their spatial structure from super dense mono-centric cities to poly-centric metropolis to accommodate its population and economic activities, as well as to boost new development of the metropolitan peripheries in search for a more balanced and sustainable regional development.

In the book *Restructuring the Chinese city: Changing Society, Economy and Space*, the author examines what has happened to the Chinese city undergoing multiple transformations during the reform era, with an emphasis on new processes of urban formation and the consequent reconstituted urban spaces.

In this part the theoretical framework, which forms the basis for the research project is outlined. There are a number of different theories that relate to the different stages and scales of the project. The literature review could be structured in four parts: how existing new town planning system functions, network urbanism analysis, synergy mechanism and the process-oriented planning framework. The purpose of the literature review is to figure out how new town as a strategy works in the context of China in order to understand the relations between the new town and the old town as well as the

```
┌─────────────────────────────────────────────────────────────────┐
│                                                                   │
│  ┌──────────────┐      ┌──────────────────┐                       │
│  │    SCALES    │ ───► │  macro scale     │                       │
│  └──────────────┘      │  meso scale      │                       │
│                        │  micro scale     │                       │
│  ┌──────────────┐      └──────────────────┘                       │
│  │  Analysis    │                                                 │
│  │ network as a │                                                 │
│  │ tool to study│      ┌──────────────┐    ┌──────────────────┐   │
│  │ the context  │      │ NODES AND    │──► │ urban elements   │   │
│  └──────────────┘      │ GRIDES       │    │ and grids grew   │   │
│                        └──────────────┘    │ oriented to      │   │
│         ↓                                  │ urban grids      │   │
│  create and connect                        │                  │   │
│  nodes to form                             │ infrastructure   │   │
│  networks, and use                         │ commercial       │   │
│  network to guide                          │ housing          │   │
│  development                               │ open space       │   │
│                                            │ industry         │   │
└─────────────────────────────────────────────────────────────────┘
```

Analysis
network as a tool to study the context

↓

create and connect nodes to form networks,
and use network to guide development

SCALES → macro scale / meso scale / micro scale

NODES AND GRIDES → urban elements and grids grew oriented to urban grids

infrastructure
commercial
housing
open space
industry

Synergy mechanism →

DYNAMICS → inherent quality and identity maintaince

INTERACTION → mutually benefits: cooperation or complementarity

economic functions
urban facilities
residential and business
public service
open space
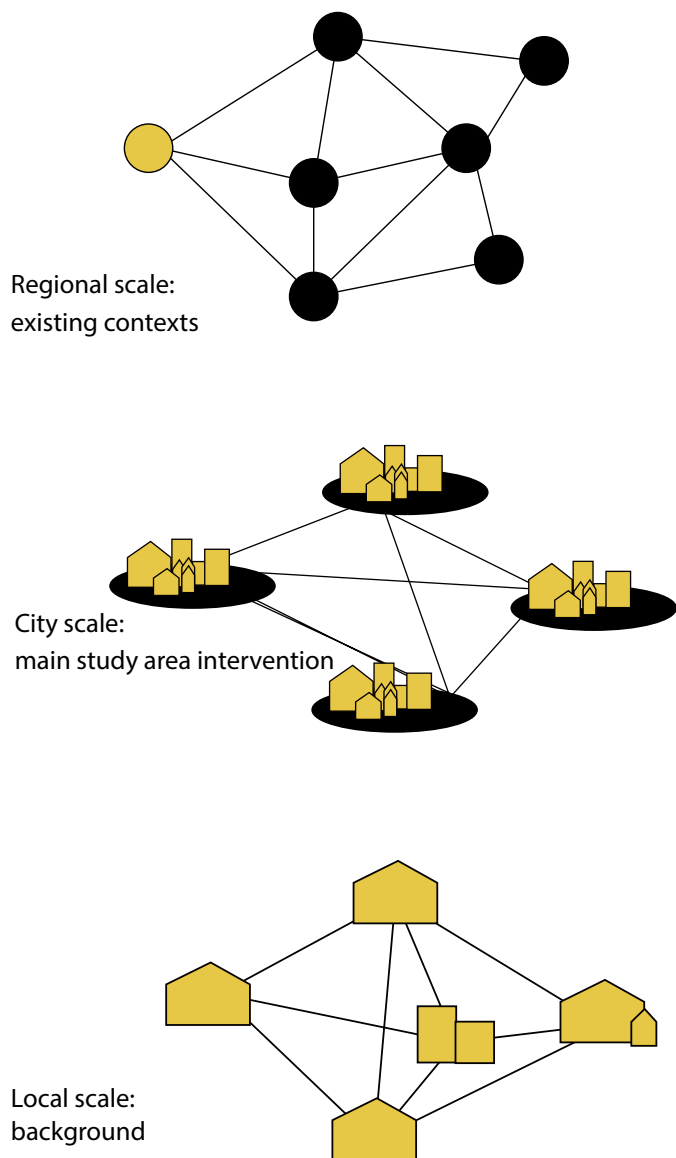recreatinal facilites
labors

How new town as modernization strategy works New towns have been part of the development strategy guided by visions of modernization in China. It is also utilized as a development tool to attract new industries and external invests, as well as to upgrade its regional position.

The effect of economic and spatial restructuring and social fragmentation

Entangled with the process of globalization is economic restructuring, which involves a shift away from manufacturing industries towards a more service based economy, and the geographic redistribution of manufacturing jobs on a national and international scale (Sassen 1990).

However, Musterd and Ostendorf (2008) also note that economic restructuring is leading to not only increased social polarization, creating growth in service jobs that require high skilled labor, but also low skilled jobs. This according to Mingione (2008) is because the transition from an industrial economy to one based on knowl-

Regional scale:
existing contexts

City scale:
main study area intervention

Local scale:
background

cial fragmentation and integration of the public realm' (Musterd & Ostendorf 2008, p.170).

Space of flows space of place

Manuel Castells states in his book ***Space of Flows, Space of Place*** that dynamics of a specific area now largely depend on decisions elsewhere, with no involvement by the local authorities, and which are sometimes hard to reconcile with local problems. He argues that mega cities have external connections to global networks, while the internal connections to local populations are lacking. Castells states that: 'It is this distinctive feature of being globally connected and locally disconnected, physically and socially, which makes mega cities a new urban form.'

Castells describes this external connection to the global networks as 'space of flows'. This 'space of flows' is formed by several elements. One of the elements is the electronic circuits which make the global exchange of information possible. Next to this 'space of flows' there is the 'space of places'. The 'space of places' can be described as places which embody form, function and meaning in its local setting. Different cultures and histories are interacting in these places giving these places their own distinct meaning. People use this 'space of places' for a variety of activities and expressions. This makes that within the 'space of places', the separate places show distinct characters, aimed at the local scale.

Network urbanism & sprinter urbanism

As Overall, the new urban world seems to be dominated by the double movement of inclusion into trans-territorial networks, and exclusion by spatial separation of places. The higher

edge and services, particularly disadvantages those without education or skills, and this transformation 'confines large groups of immigrants in an assortment of service and informal jobs that are badly paid, unstable and isolated socially' (2008, p.82).

Thus, we see the gap between those with public facilitates and opportunities, and those without widening. The economic structure of the city, and its associated processes, 'are regarded to be among the most powerful forces behind so-

the value of people and places, the more they connected into interactive networks. The lower their value, the lower their connection. In the limit, some places are switched off, and by-passed by the new geography of networks, as is the case of depressed rural areas and urban shanty towns around the world. Splintering urbanism operates in the basis of segregated networks of infrastructure, as empirically demonstrated by Graham and Marvin (2001).

Multi scalar methodologies

A multi-scalar analysis and approach is utilized in this project. The criteria has been developed from the use of the layering approach (Van Schaik 2005). How the sit functions in relation to the existing site actors and criteria at the local, urban and regional scale will be analyzed in relation to the existing conditions, and in relation to the proposed development and the proposed redevelopment. In the second part, attempted to apply the network thinking in the analysis part of my project.

In the book *Urban Networks: Network Urbanism*, the author Gabriel Dupuy provides theoretical groundwork, historical perspective, detailed arguments and explanatory case descriptions for network-oriented thinking in developing urban and regional spatial strategies. Gabriel Dupuy on the relation between urban infrastructure networks and urban development.

Another book named *The Connected City* focuses on three levels of urban networks: micro, meso, and macro. These levels build upon one another, and require distinctive analytical approaches that make it possible to consider different types of questions. At one extreme, micro-urban networks focus on the networks that exist within cities, like the social relation-

ships among neighbors that generate a sense of community and belonging. What makes this book unique is that it synthesizes the insights and tools of the multiple scales of urban networks, and integrates the theory and method of network analysis.

Synergy mechanism

This part aims to explore the factors that can influence the dynamics and interactions between the old town and new town in the localization process of the new town in the context of fast-growing metropolitan periphery. In this part I read some articles and books about complementarity and synergy in regional scale from European experience.

One main research questions of the book *Synergy in Polycentric Urban Regions: Complementarity, organizing capacity and critical mass* discusses the value that should be attributed to complementarity, 'in other words, to what extent are they more than the sum of the parts (Meijers, 2005)'.

Complementarity often leads to spatial interaction. One of the ideas behind the polycentric urban region concept is that it is not one city that provides a complete array of economic functions, urban facilities or residential and business environments, but rather the whole system of cities within a region. Such a situation would provide for externalities (Meijers, 2005). This book gave me a lot of ideas to consider the relationship between new town and old town as well as what kind of conditions could be made to reach a situation that can provide more externalities both for old town and new town.

Process-oriented planning framework

In order to deal with the rigidity and uncertainty of the existing blue-print master plan, a more process-oriented planning framework is aimed to work out.

In Europe, urban area development has witnessed an increased role and influence by the private sector, and is no longer dominated by the public sector. The book *Management of Urban Development Processes in the Netherlands* describes the changes taking place and the shared governance approach to urban development, it provides a management view on urban area development from Dutch experience. Specifically, It describes the process of managing urban development and covers the full life-cycle of urban areas, from the initiation and planning of development projects to realization and maintenance. Process architecture, financial engineering, market influences and spatial quality are covered since they all affect the level (and perception) of success. From this book, I got an overview of current practice, acquired knowledge and instruments developed in the Netherlands.

PART 2
CONTEXT&
PROBLEM FIELD

1. CONTEXT

1.1 Shenzhen: SEZ expansion and 'world factory' upgrade

Roughly thirty years ago, Shenzhen was a small fishing village on the east coast of China. The village housed only 30.000 people back in the end of the 1970's. This population was spread over a total area of approximately 10 square (Craciun, 2001). More over, being one of the first Special Economic Zones in China, Shenzhen is also the first city in which limited suitable green field can be provided for urban development. Of a territory of less than 2000km2, only 58 km2 in Shenzhen is available for development by 2020 (Hu, 2012).

In 2010, China's State Council has approved the expansion of the Shenzhen Special Economic Zone (SEZ) to almost five times its current size in a move aimed at accelerating the city's development. Besides that, the Shenzhen government also issued the newly Shenzhen master plan (2010-2020) with a time span of ten years in order to control the flows of capital and growth of the city. . Because of the competitiveness of modern cities
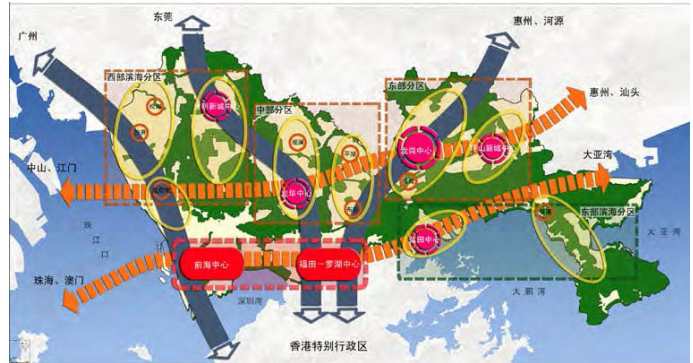
Figure 1. Restructuring Shenzhen: emerging new centers linked by infrastructure. The structure plan of Shenzhen (2010-2020).

Figure 2. Restructuring Shenzhen: development of new regional infrastructure. The comprehensive transportation plan of Shenzhen (2010-2020).
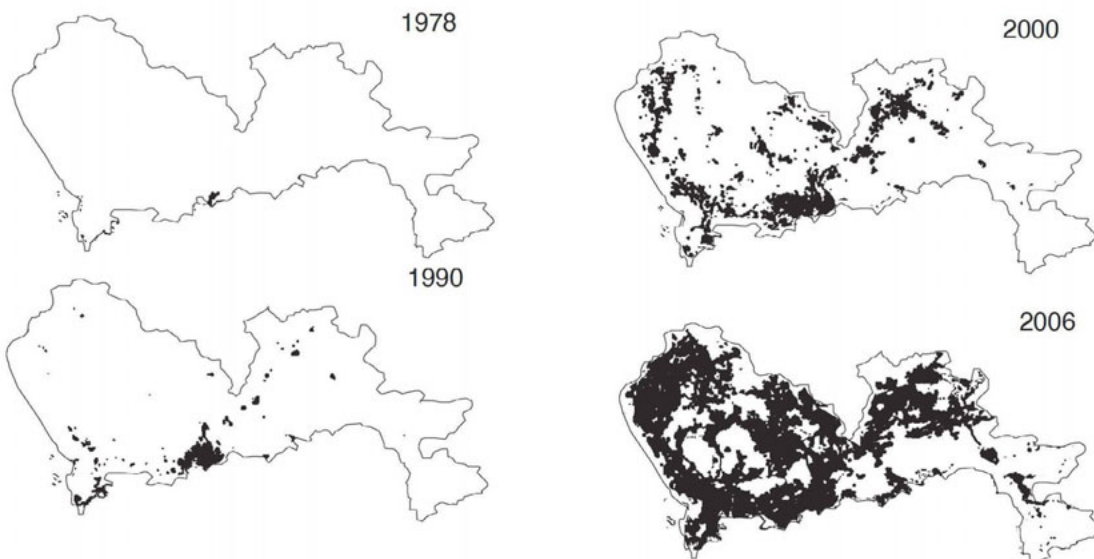
Figure 3. City expansion of Shenzhen from 1978 to 2006
Source: Zacherias and Tang, 2010:241

LOCALIZATION OF GUANGMING NEW TOWN

nowadays, this new master plan mostly focused on generating even more growth, which points out certain cores of development in the city which are functioning as key centralities within the bigger network of capital flows. Figure show the development centres in Shenzhen according to the Shenzhen Master plan 2010-2020. There are different types of centralities in the system. The centralities are connected through regional infrastructure.

In this sense, currently Shenzhen attempts to adopt the polycentric urban development model that was put forward by Peter Hall (Zacharias & Tang, 2010, p. 219). The employment of the polycentric model in Shenzhen means that different parts of the city will specialize in economic clusters. One of these new sub-centers is the Guangming new district that will focus on high-technology with an emphasis on green technology and ecology.

Aditionally, the city is also making great effort to upgrade itself into a 'world city' now, which involves industrial upgrading and creating new urban images. This is reflected in the new strategic plans, focusing on upgrading strategic areas within the metropolitan and regional scales. This is supported by development of regional infrastructure, such as high-speed railway lines, changing spatial structure and scale relations within the whole territory of Shenzhen.

Composition of GDP by three industries
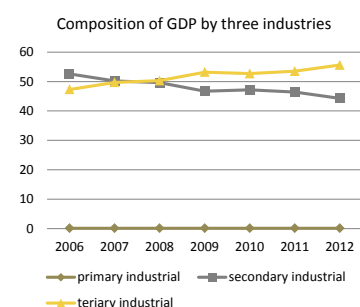
Figure 4. The composition of GDPby three industries: the percentage of teriary indstry is increasing Source: 2013 Shenzhen Statistical Yearbook
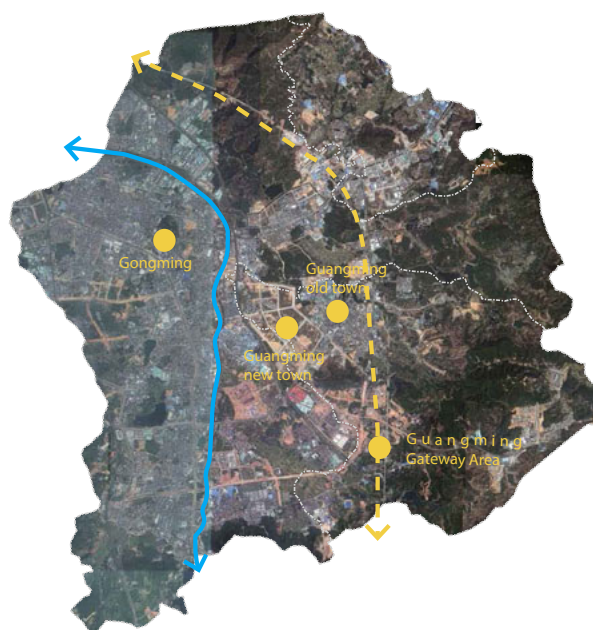
1.2 Guangming new district: old town and new town rescaling

Figure 5. Satellite map of Guangming new district. Source: Google earth

The study case of this project is the Guangming new district, an agricultural base of Shenzhen and

Guangming New District

Figure 6. Location of Guangming new district in Metropolitan Shenzhen

Hong Kong since 1980s, located on the northern edge of the Shenzhen SEZ boundary. Currently a peri-urban area, it is projected to undergo rapid changes in the near future. Important developments that will accelerate the development of the area are new highways, a new high-speed train connection and new metroline connections. Guangming new district, is now being transformed into a gateway area of Shenzhen in the North. The development of Guangming new district is driven by regional economic interests, led by infrastructure, aiming to attract high-tech industry, and designed with the Green City concept. This new district also used to be an important agricultural base for both Shenzhen and Hong Kong. The undergoing transformation from agriculture-based as well as manufacto-
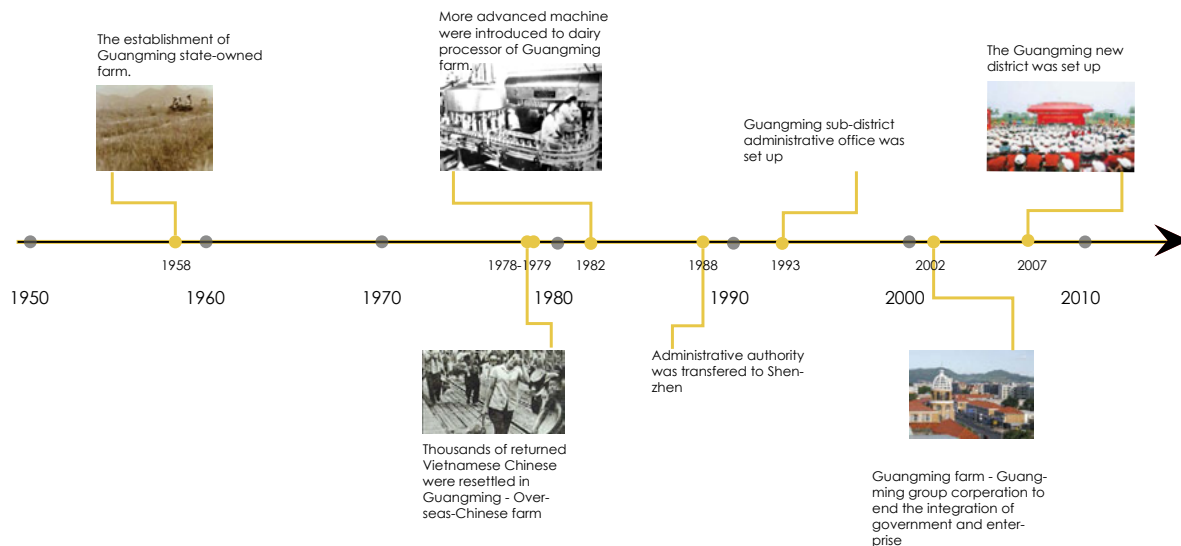
The establishment of Guangming state-owned farm.

More advanced machine were introduced to dairy processor of Guangming farm.

Guangming sub-district administrative office was set up

The Guangming new district was set up

1958   1978-1979   1982   1988   1993   2002   2007

1950   1960   1970   1980   1990   2000   2010

Thousands of returned Vietnamese Chinese were resettled in Guangming - Overseas-Chinese farm

Administrative authority was transferred to Shenzhen

Guangming farm - Guangming group corperation to end the integration of government and enterprise

Figure 7. The history and development process of Guangming

ry-based economy to knowledge-based economy in Guangming enables me to investigate the dynamic interactions between the existing context and new urban development in the new town development process.

History

Gongming and Guangming Farm both used to be agriculture-based society, like most places in China. Settlements were located near rivers as farming needed water and fertile land. At that time, settlement, soil and water were closely connected through agriculture activities.

In 1958 Guangming Farm was founded as a state-owned farm, and afterwards it focused on agricultural production and processing until the new town development. Due to the deterioration in China-Vietnam relationship, the Sino-Vietnamese War broke out in 1970s which resulted in the discrimination and consequent emigration of the country's ethnic Chinese, many of whom fled as "boat people". From 1978 to 1979, more than 450,000 ethnic Chinese left Vietnam by boat (mainly former South Vietnam citizens fleeing the Vietcong) as refugees or were expelled across the land border with China. In order to deal with these refugees, Chinese government set up dozens of stated-owned factories and farms in coastal provinces like Guangdong, Guangxi and Fujian provinces to help settle down these overseas Chinese. In this process, more than 4300 returned Vietnamese Chinese were settled down in Guangming stated-owned farm until 1979. In 1980s, Gongming also began to industrialize, with funds from abroad and collectives. Many manufactories appeared since then, mostly located along main roads and around existing settlements. It is the reason why most industries are located in the west of Guangming before the new town development. As a former state-owned farm, most of the land in Guangming used to be reserved for agricultural use. Besides that, Guangming farm used to build infrastructures, facilities and housings for production and its staff, including built reservoirs, water supply, sewage system, schools and hospitals, etc. Unlike the adjacent suburban districts that experienced rapid rural industrialization process in past decades, spontaneous industrial development was strictly controlled here. As the consequence, economic development in Guangming lagged behind other districts in Shenzhen. In 2002, the functions of government were final-

ly separated from those of the enterprise in Guangming Farm.

Demography

Until 2013, the permanent population of Guangming new district is 496400, with 54600 (11.2%) registered residents and 436700 (88.8%) transient population respectively. From this we can see that majority of the existing population of the whole new district are migrant people. However, as for the population who live in Guangming downtown area represents a different situation. It suggests that in the Guangming old down town area, the percentage of registered population is much higher than other areas which suggest a stronger attachment and belongs to the old town. Moreover, as a former state-owned farm and its metropolitan periphery location , the old town acts as stabilizing forces along the rural-urban continuum (Knox & Mayer 2009). Modernization in old town had limited success, communities in these old towns usually have stronger sense of belonging and identity, which forms the base of the small-town way of life. Additionally, labor resources in Guangming new district mostly concentrated in labor-intensive enterprises, which means the low quality of the whole population, less personnel, College personnel 3% per cent of the total population, large primary education, talent density was significantly lower compared to the average Shenzhen metropolis.

	Registered population	Migrant population	vietnamese-Chinese(registered)
Guangming community	8958(58.6%)	6316(41.4%)	1939(12.7%)
Cuihu community	4424(20.8%)	16835(79.2%)	N/A

Figure 8. Population of the main communities inGuangming down town area.
Source: Year book of Guangming

Figure 9. Strong community attachment and community feeling in Guangming old town

Economy

Due to the built of new town in the year of 2007, a lot of new invests came in, and result-

Gongming 2.26%   Guangming 3.93%   Shenzhen 8.06%

College degree or above   the rest   College degree or above   the rest   College degree or above   High school   Middle school   Primary school   the rest
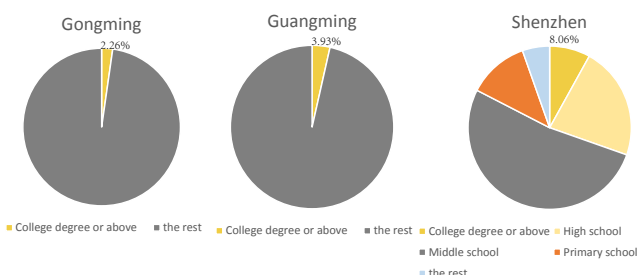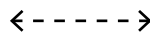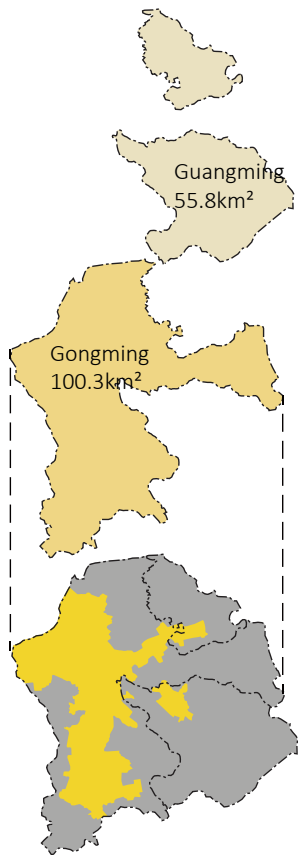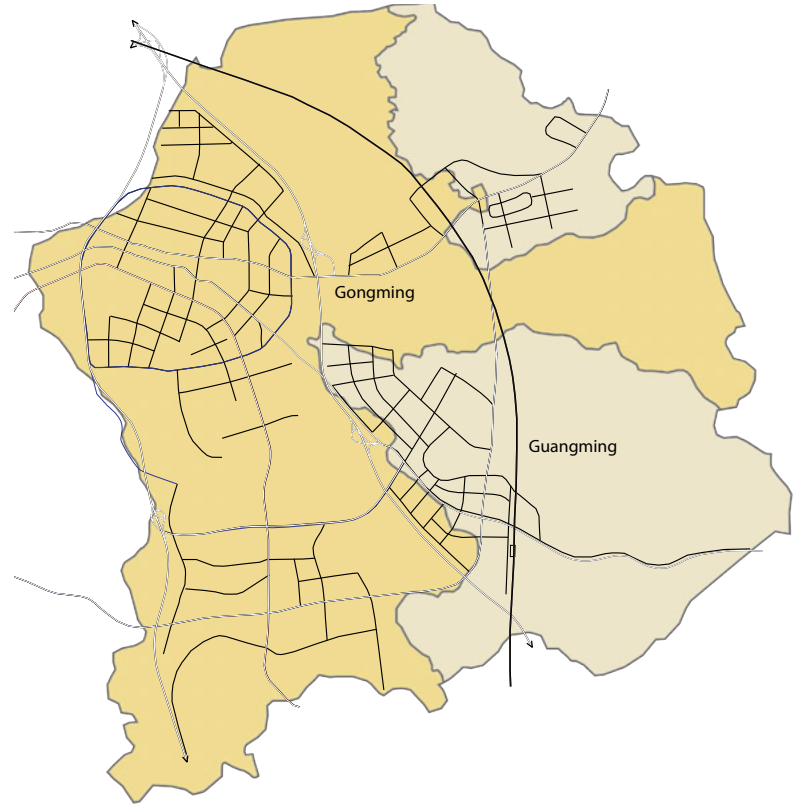
Figure 10. Education level of the population

ed in high-speed development of Guangming new town. From the year 2010-2013, the GDP growth figure of the whole Guangming new district is much higher GDP than that of average Shenzhen. From this point we can say Guangming new district benefit a lot from this top-

2009-2013 GDP of Shenzhen and Guangming new town

Shenzhen   Guangming new town

Figure 11: Territory and population comparison between Guangming New District and Amsterdam

Gongming

Guangming

Guangming
55.8km²

Gongming
100.3km²

Amsterdam
166km²

Population:
801200
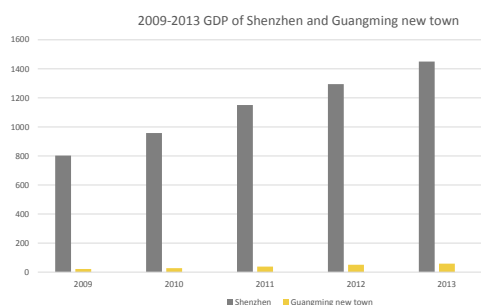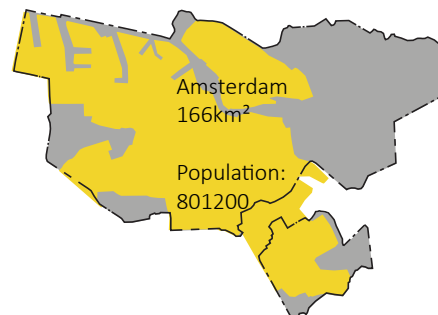
Guangming new district: including Gongming and former Guangming, refers to the whole territory Guangming new town: newly planned area driven by high-speed railway station which is still under construction.

The square surface of Guangming New District is 156

km² (for comparison, the Amsterdam municipality has a land surface area of 166 km²), which already houses close to a million people (the municipality of Amsterdam has close to 800.000 inhabitants).

LOCALIZATION OF GUANGMING NEW TOWN

Figure 13. Newly planned infrastructure network being imposed on the existing urban fabrics in Guangming. Source: google maps image.
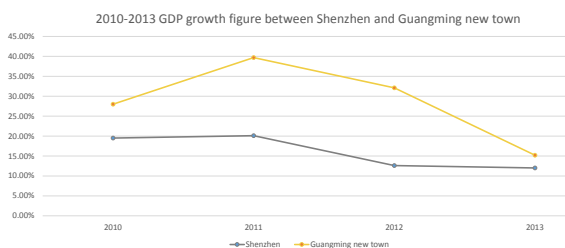
Figure 12. 2010-2013GDPgrowth figure between Shenzhen and Guangming new district

down new town planning model. Driven by the regional high-speed railway station, the new town has already attract lots of advanced and sustainable industries such as biomedical and electronic industries and high-end services, and these industries have already formed the Guangming high-tech zone. Besides that, these advanced industries can also provide thousands of new jobs which require high-skilled or high-educated workers.However, the education

level in Guangming is much lower than the average Shenzhen, in that way, the newly coming advanced industries will find some difficulty employing enough qualified workers from the town and the local residents and migrant workers can hardly benefit from these new industries.

Morphology

Every phase of expansion and transformation is building on and extrapolating from existing fabrics. Changes are therefore not just about simply adding the new fabric but explicitly also about (re)evaluating the position of each phase, element, line or location, whether preexisting or new, within the network as a whole (Buurmans, 2008).

From figure 13 we can see that due to the slow growth of the urban area, the existing urban fabric of the Guangming old town is organic and human-scale , on which local people's social network and daily life is bounded. However, since the start of new town scheme in 2007, urban expansion in Guangming happen in a much more organized and rapid way. Large scale Infrastructure is built in advance to divide land for sale and also to ensure regional mobility, especially for cars and trucks. Generally speaking, implementation of infrastructure before development of buildings is common practice in Chinese urban planning. Especially in those metropolitan peripheral areas, where there are little obstacles for the construction, this kind of new large grid structure is usually implemented in a very short period to drive new construction and development.

In the particular case of Guangming, as the newly built infrastructure in new town is huge and the grid is designed for cars and parceling instead of people, directed at he industrial growth and high-end uses, the dimensions of the roads often feel out of scale, since most of the buildings are not yet there. It might be that when development and traffic comes, the size of the roads makes more sense. However, the current situation is that these 'super paths' are an indicator of movement through the whole area and moving to the old town, without taking care of the existing contexts. In other words, the newly planned infrastructure network is being imposed on the existing urban fabrics
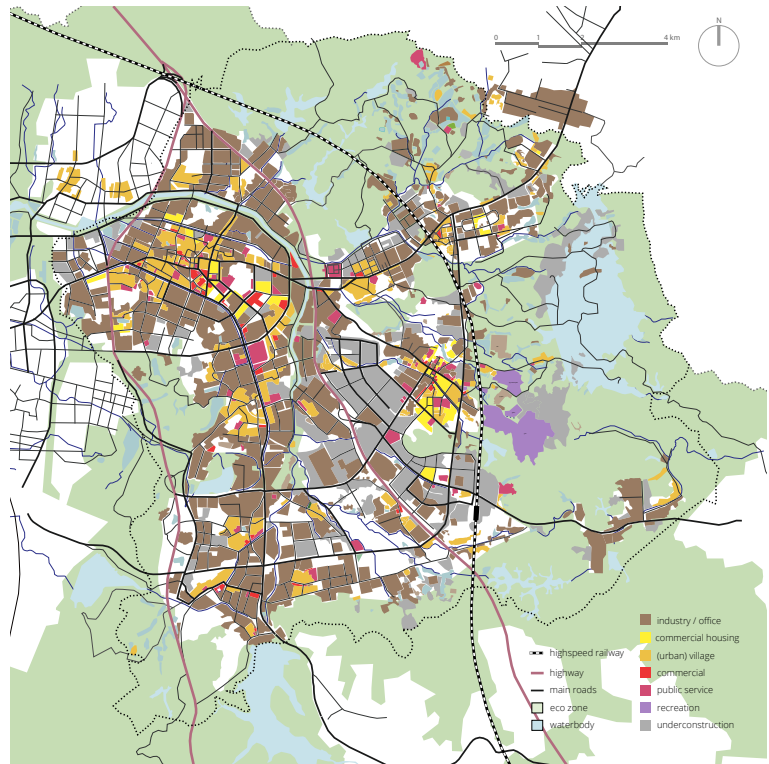
Figure 14: Urban land use in 2010.
Source: Based on Googlesatellite map of 2010, elaborated by J. Liu

in Guangming on which a lot of local activities are bounded on. This kind of trend threatens to destroy the fragile balance of elements that structure the existing built environment as well as street-level liveliness and continuity of local life.

Blueprint plan

In the case of land shortage, available land in Guangming is precious for Shenzhen. Combined with the opportunity brought by the high-speed railway station, Guangming is considered as a strategic area for industrial upgrading in Shenzhen. Therefore, the new town construction is pushed by the municipality as well as the government of Guangming, so speed is an important factor. The existing land use map is quite dif-
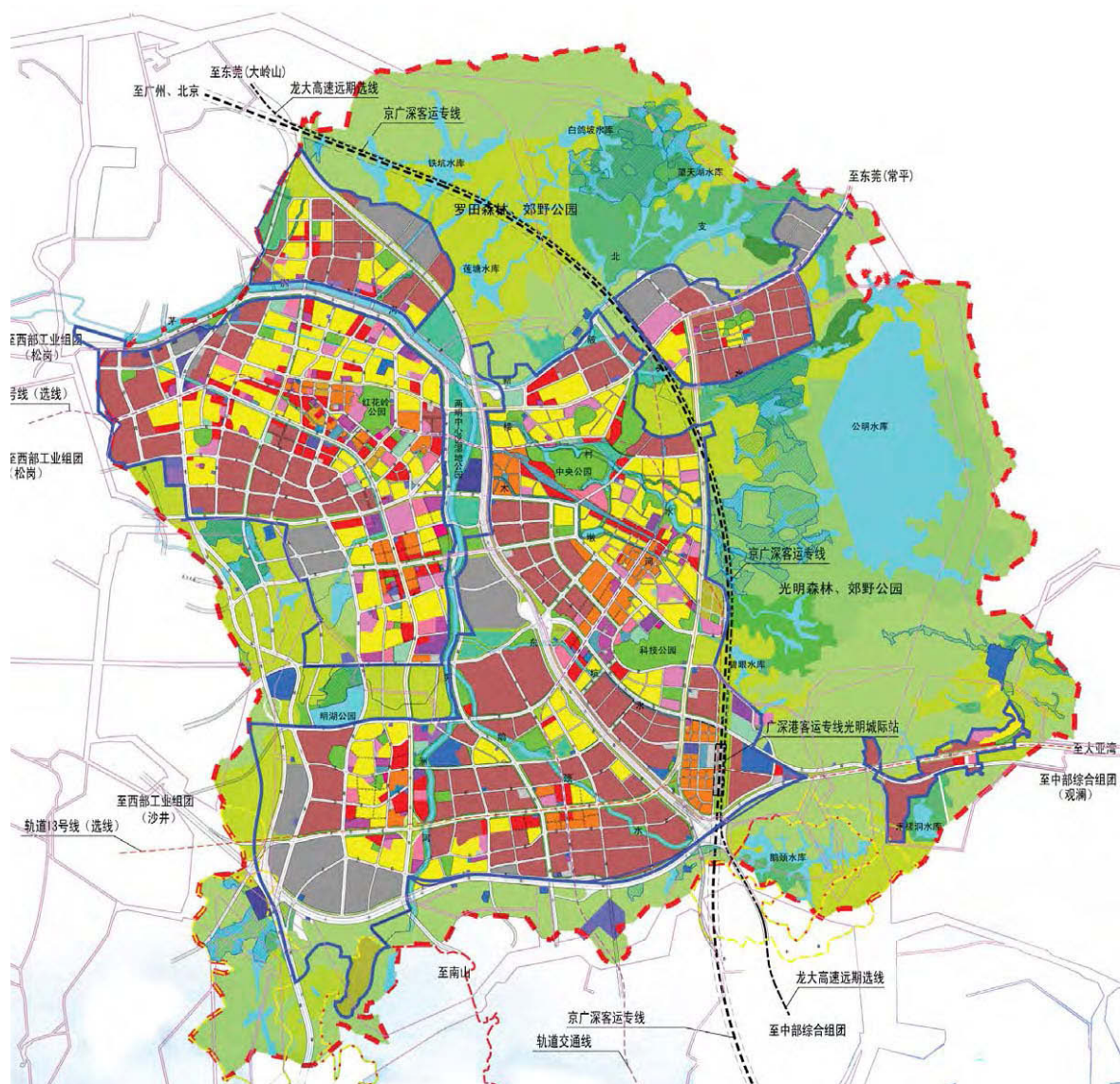
Figure 15: Master plan of Guangming new district(2007-2020).

ferent from the master plan, which means there would be a lot of changes and constructions. For example, Before the new town scheme, industries expanded along existing roads and around urban villages, usually in an unorganized way, while the master plan utilizes road network for land parceling and structuring the new town. These industries will be relocated to certain industrial parks or transformed as business parks according to the master plan. On the other hand, the new planned urban fabric is also to-

tally different from the existing one. Wherever the grid goes, urban construction follows. In this way, the gaps between existing built-up areas are being filled rapidly. This might influence the lives of the existing population, especially the vulnerable groups, whose social networks are bounded to physical networks in the local scale.

Street views in
Guangming old town

Figure 16. Commercial street in old town

Figure 17. A street park beside a primary school

Figure 18. Main road in old town with a lot car traffic

Figure 19. Danwei housing of the former state-owned farm

Figure 20. New commercial real estate projects in old town

Figure 21. Traditional Vietnamese-Chinese community
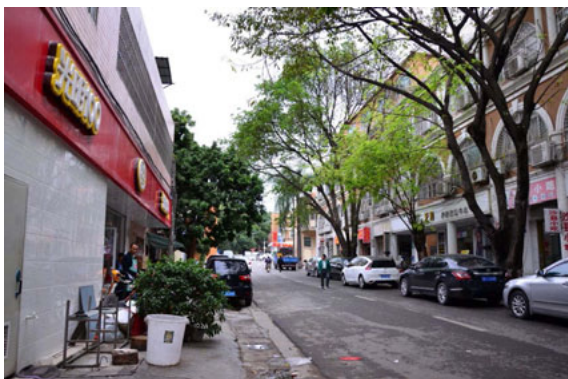
Figure 22. A walkable and human-scale street in old town

Figure 23. Left-over farmland at the edge of the old town

LOCALIZATION OF GUANGMING NEW TOWN
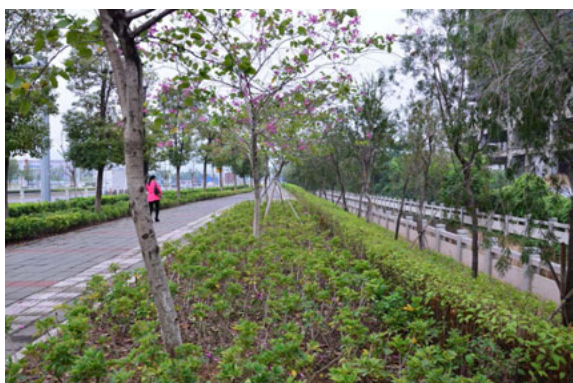
Figure 24. Green space along the main road with few pedistrains

Figure 25. New badminton hall at the edge between old town and new town
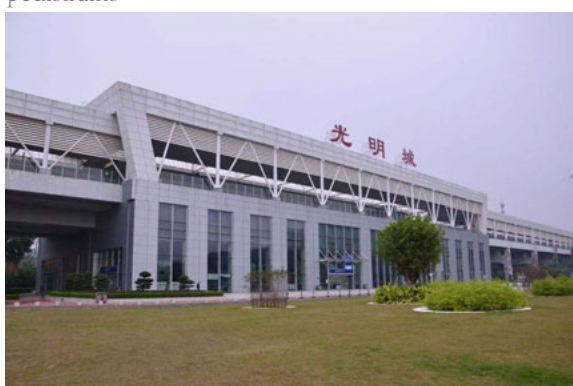
Figure 26. High-speed railway station

Figure 27. A lot of projects are still under construction

Figure 28. Greenery main road with few traffic

Figure 29. Public space in lack of use and maintainance

Figure 30. Car-oriented wide road

Figure 31. Birds-view of the new town

2. PROBLEM STATEMENT

Manuel Castells stated the following(2004):

Dynamics of a specific area now largely depend on decisions elsewhere, with no involvement by the local authorities, and which are sometimes hard to reconcile with local problems.

Ignorance of the old town

In terms of the old town, it tends to be the carrier of urban culture, economic activity, social life and administrative services as well as the main market and service center in the existing metropolitan periphery. However, in the large scale new town development that China is experiencing now, the priority is normally given to the new town and central city, and the importance of the old town is largely ignored, resulting in the functional and vitality degradation in old town. In general, city is a local public good, providing welfare mainly for its residents. In this sense, Guangming new town failed to fulfilling its role.

Social and economic segregation

Many surveys in recent years show that the people movement in new town in metropolitan area usually presents a typical "pendulum" feature: they go to new town for work in the day and leave after work. Therefore, the new town becomes a literally "ghost town" during the night, which is not conducive to the population agglomeration and the cultivation of urban vitality. This is actually happening in Guangming new town where few of the employees live in the new town or old town. It indicates that as a dispersed part from the central city, new population in the new town is closely tied to the central city in social and economic aspects. Specifically speaking, in metropolitan region, although
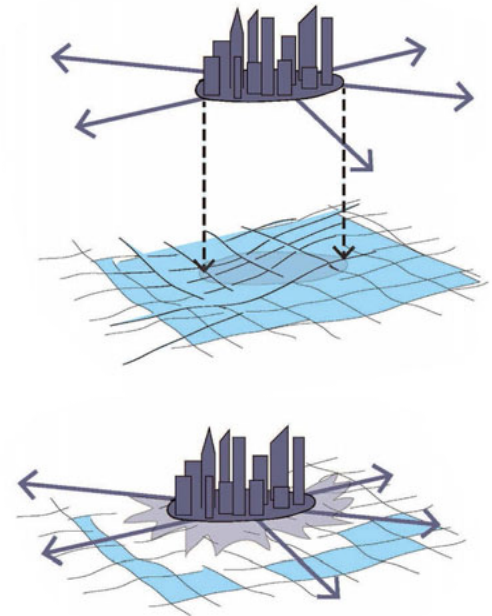

Figure 32. New town construction ignores local context
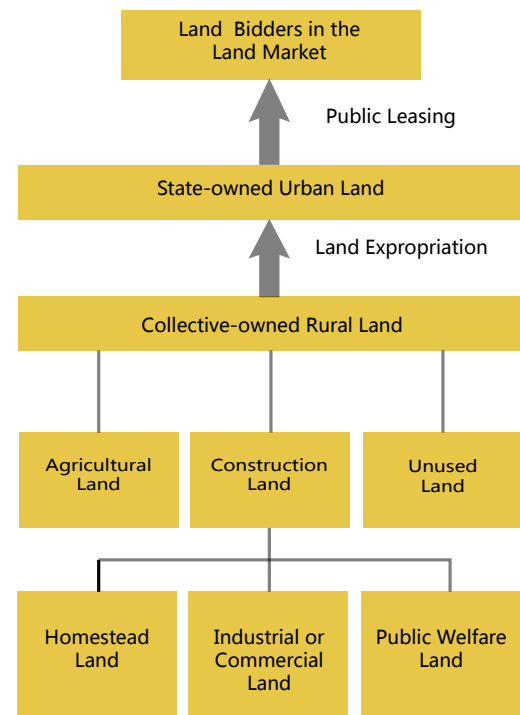Source: Andrew Reynolds

Figure 33. Land leasing process in China

the new town and old town are close to each other, they have different and disconnected economic structures and demography, in which there seems few chances they can interact with each other. Moreover, entangled with the process of new town construction is economic restructuring, which involves a shift away from agriculture and manufacturing industries towards a more service and high-end technology based economy requiring more high-educated population. Consequently, within these kinds of dramatic modernization and urban renewal process happening in the old town, local residents are facing to be forced out as well as gentrification.

Land speculation and passive urban renewal: destroy the existing identity and social network

Land speculation is a financial activity that involves the purchase of real estate with the hope that the price will increase (wiseGEEK). It is recognized that land speculation is a widespread phenomenon across China where local governments are keen on to resolve their temporary financial difficulties through the land finance. In general, this movement fosters great risks especially in new town development. Specifically, land speculation could result in land accumulation, a large number of repeated constructions and intensive resource consumption which are the potential factors of ghost towns and do harm to the sustainability of the economy and social development.

On the other hand, rapid urbanization process and pressures to modernize also influence the built form and sense of place of existing towns. Because of the ignorance and deficient in theoretical guidance, the old town usually carries on an urban renewal in a passive and blind way. New housing departments are built to uniform

Figure 34: New town development has brought a lot of real estate projects in Guangming.

Figure 35: Guangming old town, Shenzhen, China. Modernization and development in China often go along with large-scale destruction of existing housing stock and urban fabric.

Figure 36: There are still a lot of construction sites in Guangming new town without any people.

styles like the new town and do not take local lifestyles and development stage and urbaniza-

tion level into account. Local residents are displaced by the new developments. The existing urban fabric and social networks are in danger of being destroyed.

Top-down planning approach: blue print planning

To start with, the existing blueprint planning methods pay much attention on the final visions and outcomes instead of the concrete development process. Moreover, due to the fierce local competition and the respect of administrative territory, normally the blue-print plans lack of the consideration of the whole situation. In this sense, before the completing of the whole project , the new town seems as a huge construction site that could be better utilized. Furthermore, in this system architects and planners are obsessed with simplicity to try to diminish urban complexity, but this did not lead to better solutions and such plans also lead to social-spatial fragmentation as has been the case in many other large cities around the world (Friedmann, 2004).

In addition, the existing blueprint planning methods adopted by Guangming is not flexible enough to deal with the complexity and uncertainty of the new town development. It is a rigid plan, so if a certain kind of land use, is not included in the plan, then it is difficult to integrate them in the implementation (Mubvami et al., 2006). Especially for the city with large population of migrants, where the government and official market cannot provide enough resources, various informal urban service and urban villages as complement emerge in a self-organized way. However, these kinds of informal urban service and the informally organized urban villages are not integrated into the urban structure of the municipal plans which somehow lead

to social-spatial fragmentation inner the city. Besides, the current plan is based on given circumstances, but if the situations change, which always happens in China, the system can hardly adjust its structure to the new circumstances.

To conclude, lacking of integrative development sense, the relationship between the old town and new town is often fragmented, affecting the overall development of the whole.

3. RELEVANCE

Societal relevance

In the wake of the urban problems that the city of Shenzhen is facing, there are government undertaken visions to transform the city from world manufactory into a world class city. These visions are clearly targeted towards new sources of economic growth and form new centrality in the regional level, while ignoring the existing local context and people. The disconnection between the local needs of residents and the ambitions of higher levels of government is not unique to Shenzhen. In fact, particularly as a result of the development of large urban projects, this friction between local scale demands and regional and national economic ambitions can be observed in many countries. The project intends to integrate the local contexts and the demands of the existing local residents in the new town development in order to facilitate a more liveable and resilient town. Moreover, this project also aims to find and keep the inherent quality and dynamics of the existing town in order to protect the exiting social and spatial network from being destroyed.

Compared to other global cities in the world, Shenzhen shares lots of common social and spatial problems although they are influenced by different context. The study of similar global cities has contributed to the understanding of Shenzhen, and on the other hand, this project in Shenzhen may also remind people of similar problems in other cities and offer a suggestion of how to understand and react.

Academic relevance

This project will rethink about the existing "modernization" new town methods to develop new centrality in order balance regional development. There are already various researches to study the regional role of new town. However, this project takes an eye on new town from the role of 'regional public good' to 'local public good', aiming to explore the factors that can influence the dynamics and interactions between the old town without expenses of the local quality and identity in the context of fast-growing metropolitan periphery like Shenzhen. In this sense, the goal is to work out a strategic approach to rebuild a more interactive and dynamic relationship between the old town and new town in metropolitan periphery, which remains relatively unexplored in the metropolitan peripheral small town context.
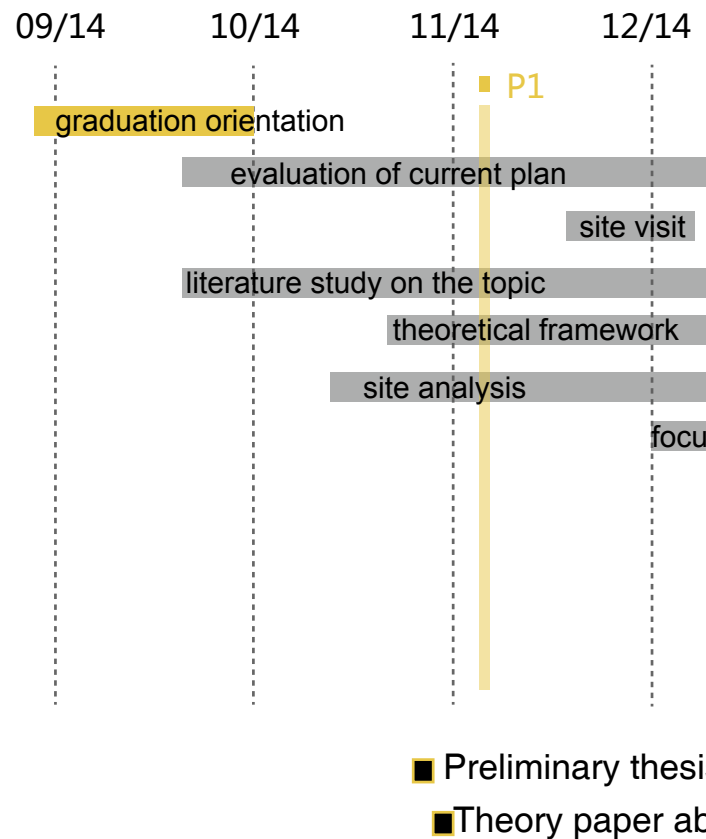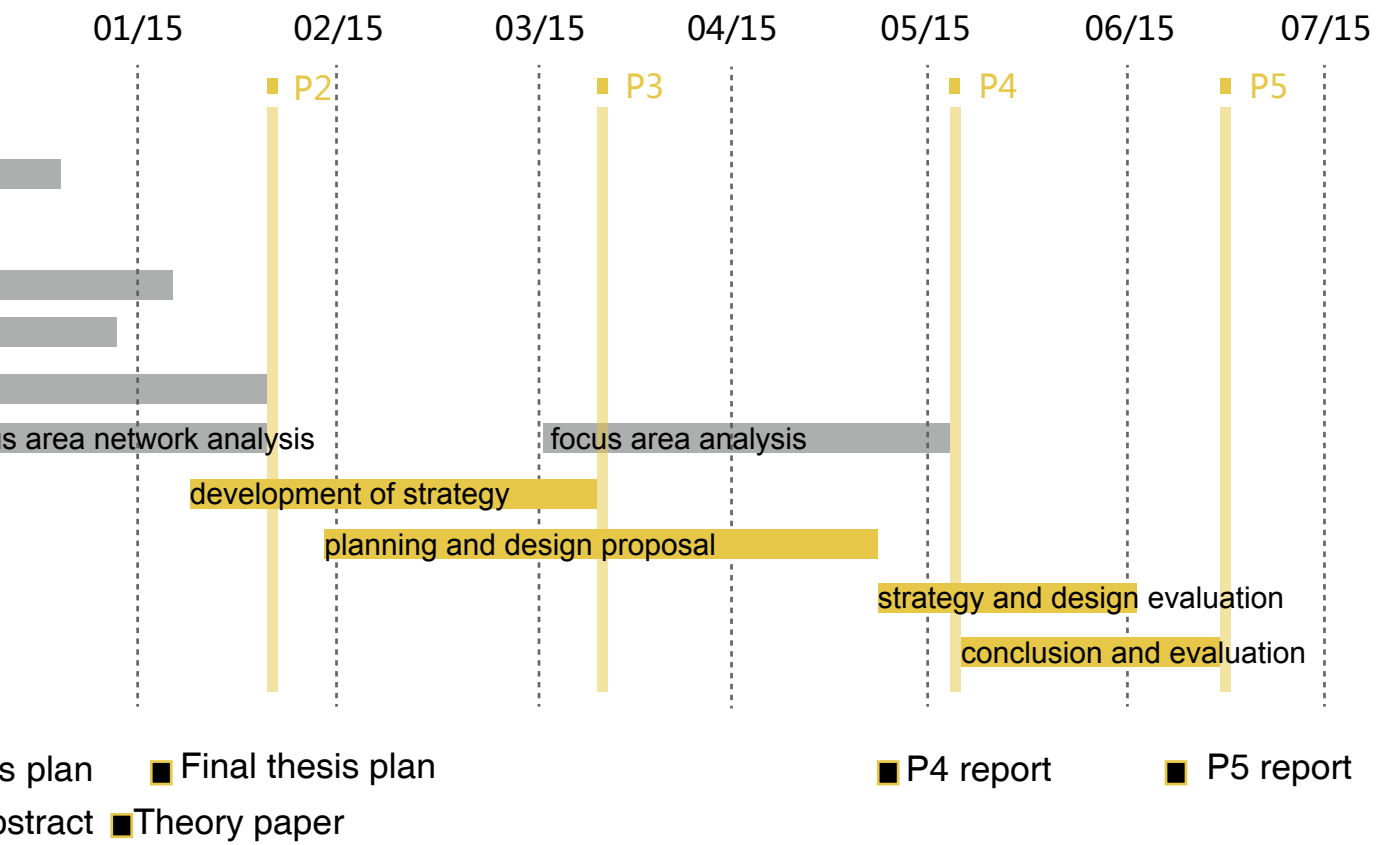
4. EXPECTED END PRODUCT

5. TIME SCHEDULE

The main aim of the the graduation project will be to formulate process oriented planning framework: this planning framework that clearly defines objectives and focus on the process in order to have more positive consequences of each individual decision or project. Besides that, and this framework is more flexible that make adjustments as necessary to stay on track.

This project does not intend to provide a perfect and comprehensive solution for the whole area, but create conditions for a gradual and continuous development and synergic process that in a strategic and innovative way. Maybe the final strategy and plan is not that smart, but still I just would like to suggest the attention might could also paid to the existing built environment and the relevant context bounded on it. I am not against new development, but suggest more respect and attention to the continuity of urban space and life in the transforming area. The physical environment needs time to adjust changes and so do people living on it.

As reflections, the spatial plan will be evaluated to see whether it matches with the aim, and a generalized process will be discussed so as to formulate an integrative and multi-disciplinary planning principles.

09/14	10/14	11/14	12/14

P1

graduation orientation

evaluation of current plan

site visit

literature study on the topic

theoretical framework

site analysis

focu

■ Preliminary thesi

■Theory paper ab

01/15 · · · · 02/15 · · · · 03/15 · · · · 04/15 · · · · 05/15 · · · · 06/15 · · · · 07/15

P2   P3   P4   P5

s area network analysis

focus area analysis

development of strategy

planning and design proposal

strategy and design evaluation

conclusion and evaluation

s plan   ■Final thesis plan   ■P4 report   ■ P5 report

ostract ■Theory paper

PART 3
NETWORK
ANALYSIS

1. NETWORK THINKING

It is this distinctive feature of being globally con-nected and locally disconnected, physically and socially, that makes mega cities a new urban form.

Manuel Castells

Cities are not just dense clusters of peo-ple. They are also dense clusters of all sorts of human activity including work-ing, commerce, tourism, and culture (Z. Neal, 2013). City itself is a kind of network to organize dense clusters of people and activities, and deliver relative urban services. However, this kind of network is not only the result if a single centralized plan. Moreover, this kind of complex network is self-organized that allow providers to join forces through collaboration, or to domi-nate through competition (Z. Neal, 2013).

The network as a structuring and connecting system for the urban or social space is a con-temporary development. Networks are generat-ed as a result of relationships existing between points, and the essential characteristic of these reticular connections is that they are dynamic, they are in motion, and so we are talking about flows, whether of transport, information or en-ergy. These are manifested materially through the physical network structures. As Michael Bat-ty argues that in order to understand cities we must view them not simply as places in space but as systems of networks and flows.

Overall, the new urban world seems to be domi-nated by the double movement of inclusion into trans-territorial networks, and exclusion by spa-tial separation of places. The higher the value of people and places, the more they connected into interactive networks. The lower their value, the lower their connection. In the limit, some places are switched off, and bypassed by the new geography of networks, as is the case of
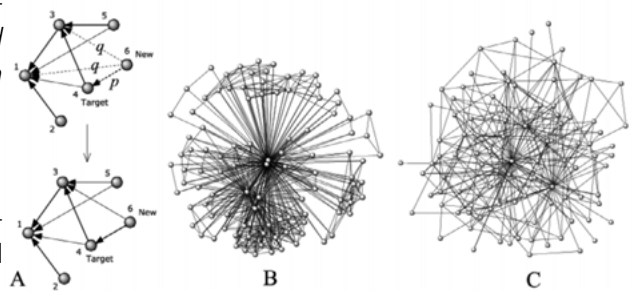
Figure 1. Network thinking
Source: http://urbanohumano.org/agency/lectures/sentient-city-y-network-thinking/

depressed rural areas and urban shanty towns around the world. Splintering urbanism op-erates in the basis of segregated networks of infrastructure, as empirically demonstrated by Graham and Marvin (2001).

Every urban proposition has to be seen as part of a large whole. While satisfying its internal goals, it should at the same time be capable of supporting the wider urban structure of which it forms a part. Without such an approach, cites dissolve into little more than an accumulation of discrete projects, sharing nothing and unable to support the continuum of the city of which they form a part. Moreover, a city must be con-sidered as a whole, where its past and present are revealed in its physical structure. Everything comes from the past but co-exist at the pres-ent. It consists of fragments ascribed from the past, from a choice of specific fragments or from fragments recomposed in a new context (Allies,2010. But these elements, compositions and contexts are linked in an unbreakable chain of continuity which defines the place uniquely. In this sense, we must understand networks—the relations between objects that comprise the system of the city. The following part will discuss the networks in three different scales.

2. REGIONAL SCALE
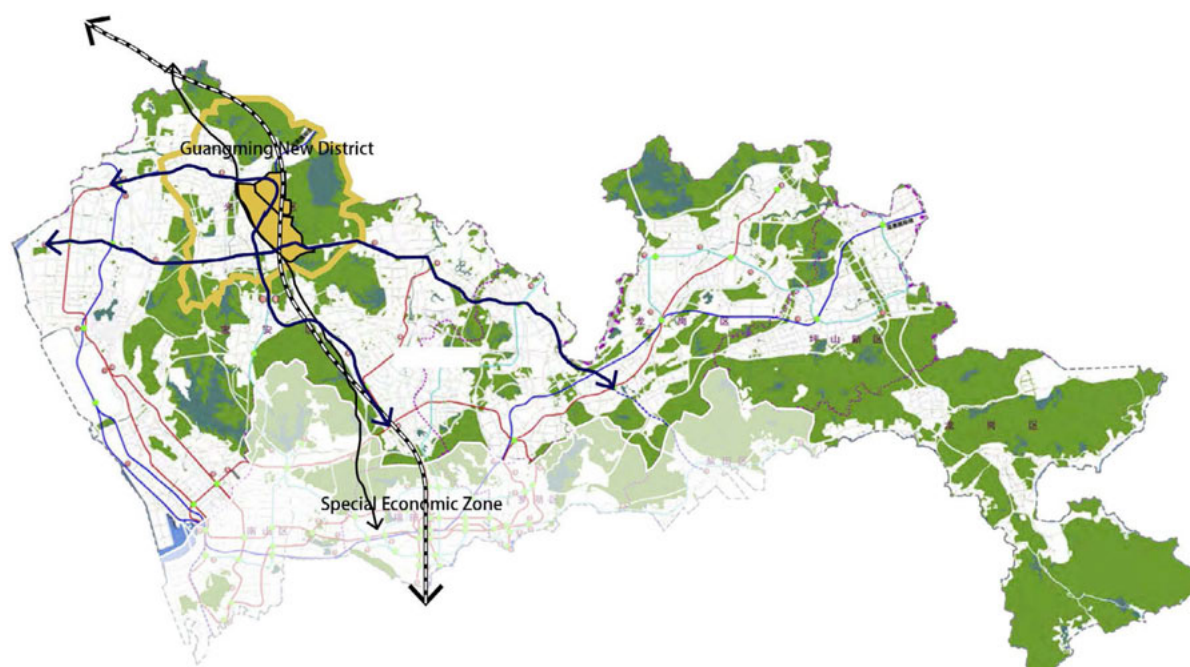
2.1 INFRASTRUCTURE

Figure 2. Metropolitan infrastructure

In the 2030 strategic plan for Shenzhen that was launched in 2004, Shenzhen attempts to adopt the polycentric urban development model that was put forward by Peter Hall (Zacharias & Tang, 2010, p. 219). The employment of the polycentric model in Shenzhen means that different parts of the city will specialize in economic clusters. Four new towns outside of the Special Economic Zone (SEZ), Guangming, Longhua, Dayun and Pingshan (figure 23), have already been established by the municipality as strategic locations for industrial upgrading and restructuring the Shenzhen city for better regional connection (figure 22). Developed in a top-down approach, new towns require a huge amount of investment from the municipality at the first stage to build infrastructure and supporting facilities.

The implementation of infrastructure is one of the most important tools in the Chinese planning system. The formal expansion of the city is usually preceded by new highways or

Figure 3. Four new towns in Metropolitan Shenzhen
Source: http://www.fwwwd.com/

high-speed train connections. In the case of Guangming, there are three types of new infrastructure are introduced to attract investment: a large grid road structure, a metro connection and a high-speed train connection. The planned metro system follows these newly developed grids and do not follow the existing concentrations of population. The new high speed train station, which is already constructed and functional allows for a quick connection to the downtown Shenzhen 8 times a day. However, the train station is still disconnected from the planned metro system.

2.2 INDUSTRY

2.3 HOUSING
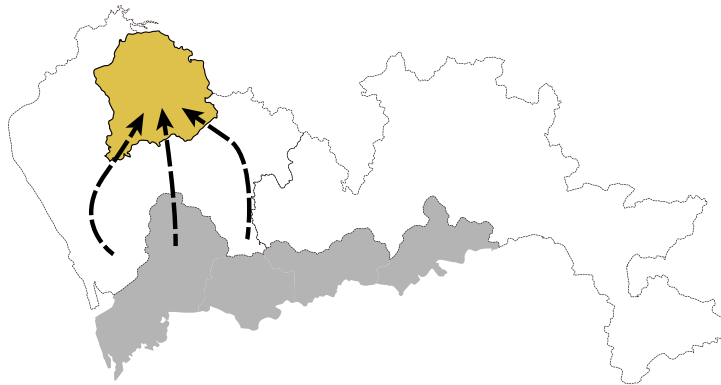
As a new sub-center of Shenzhen, the municipal government states that Guangming new town is 'a pilot project for scientific urban development' , aiming to develop knowledge-based industries for industrial upgrading of Shenzhen. The new master plan proposes a large part of the land for industrial developments. The government is trying to attract investors from the central city to finance industrial compounds around green industry. These larger compounds will deliver the local government with the necessary funds they need for their own budget as well as more jobs.

Shenzhen is the city in the transitional period followed the feature of great demand of affordable housing as well as commercial housing. However, as the land scarcity problem in Shenzhen becomes severe in recently years, Shenzhen governments are unwilling to provide expensive land in central districts for social housing projects. The Shenzhen social housing scheme during this period reveals that many social housing projects are located on the urban fringe (Fig 31), where land is cheap. Within enough land storage, Guangming new district is one of the main districts that

will provide large amount of affordable housing as well as commercial housing. This also means that besides industry transfer, Guangming new district will receive more population from the central city in the future.
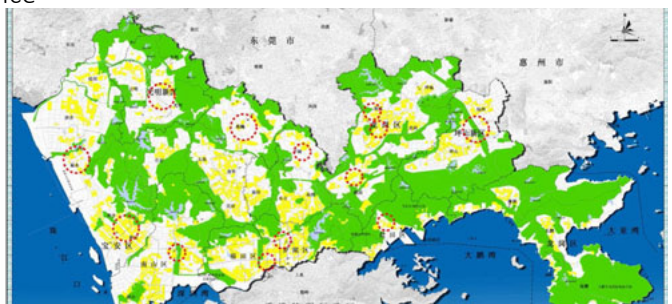
Figure 5: Important area for commercial housing supply (2011-2015).

Figure 6: Important area for affordable housing supply (2011-2015)

LOCALIZATION OF GUANGMING NEW TOWN

3. DISTRICT SCALE

3.1 SOCIAL DAILY ROUTES
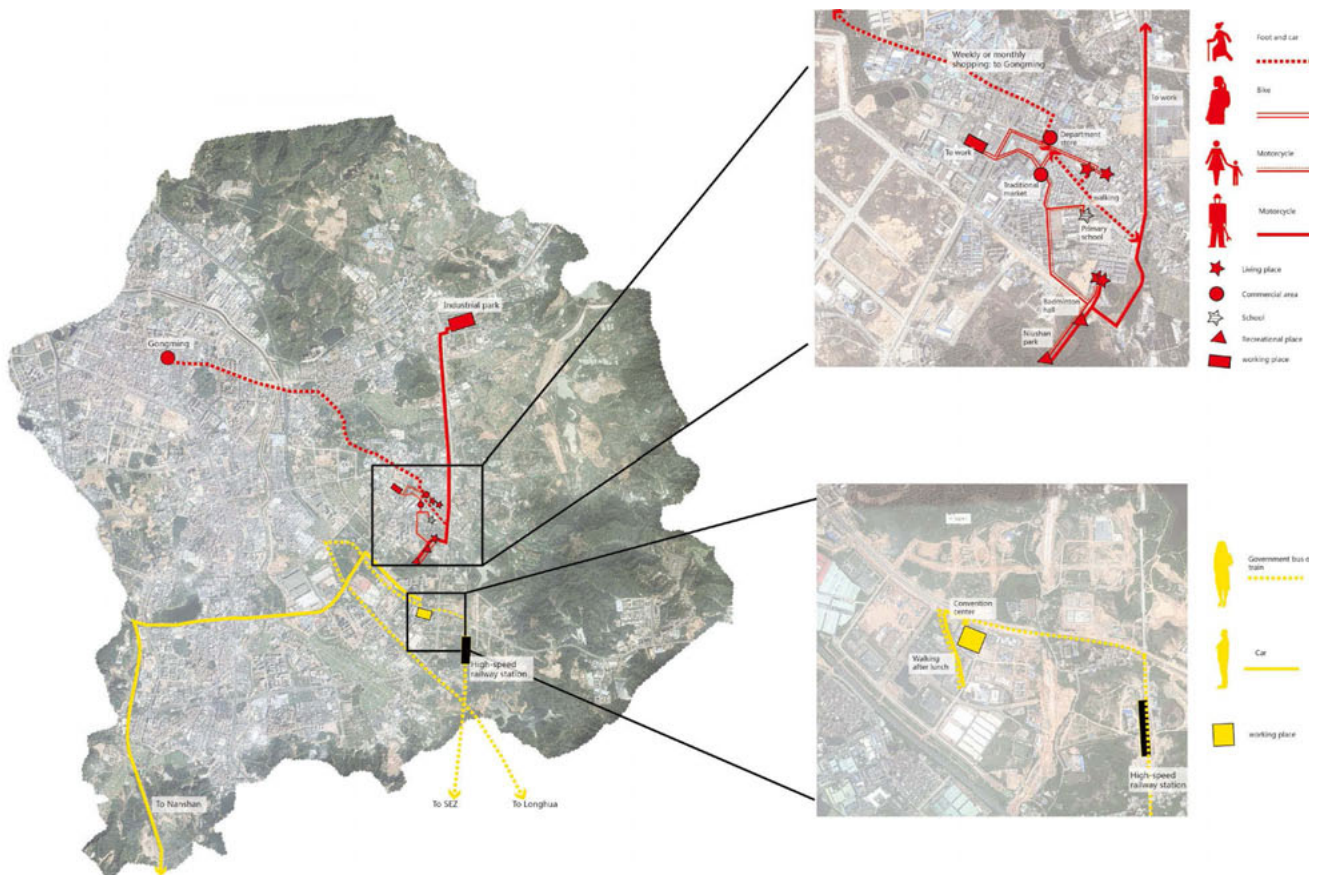
Figure 7: Social daily routes of residents in old town and new town
Source: Interviewed by auther

As mentioned above, due to the transfer of the industry and set-up of new town government, a large number of employees are moving to Guangming new town from the central city. However, as the new town is still under construction within not enough public facilities, a large amount of new comers still choose to commute between new town and other districts. In the figure 7, a map with daily routes of people both in new town and old town are presented from several interviews. Through these interviews I have established several actors using different means of transport.

We can see that the daily routes of residents in exiting old town are strongly bounded on the local parts. These people covering all age groups are working and living here, they are more connected to the existing built environment. In high contrast to old town, people working in new town are almost young professionals who are located far from their daily workplaces and activities, which results in long commutes. Moreover, as the new town is still under construction within not enough public facilities, these new young professionals working in new town disconnect themselves from all the activities in both new town and old town and use new town only to work. These people feel more connected towards Special Economic Zone.

3.2 URBAN GROWTH

Figure 8. Urban growth of Guangming new district
Source: The base map is from the Master thesis 'Farming Guangming' by Jiayao Liu

8a. Before industrialization

8b. Before new town development (2004)

Guangming Farm
urban expansion before 2004

8c. After new town development (2010)

Guangming Farm
urban expansion 2004-2010
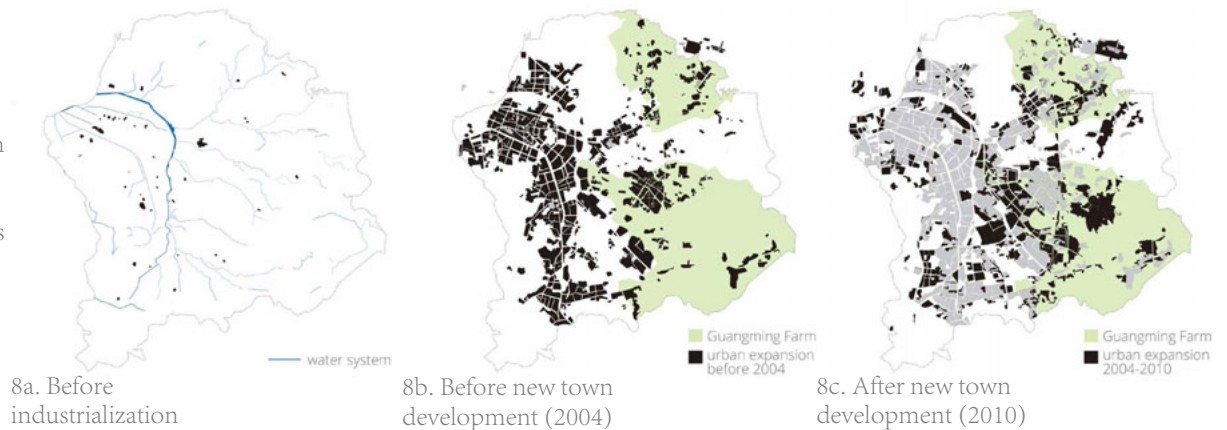
Figure 9. Infrastructure extension of Guangming new district
Source: The base map is from the Master thesis 'Farming Guangming' by Jiayao Liu

9a. Before industrialization

9b. Before new town development (2004)

9c. After new town development (2010)

In the era of agriculture, Guangming new district used to be agriculture-based society, in which settlements were developed to manage the farmland. As the alluvial area has most fertile soil, so villages were mostly located along rivers, but with a distance away from the rivers to prevent settlements from flooding. In this way, settlement, soil and water were closely connected through agriculture activities.

Before the new district set-up in 2007, the expansion phase relates to the growth of the villages from the 1990's onwards. Following the structure laid down by the regional network the expansions fit the existing loose and organic grid. The market halls are situated at the cross-

roads of major connections in the network, usually at the intersection of a parallel road and a perpendicular road (Matthijs, 2013). The market hall acts as a pivotal hub in the commercial system. The commercial activity is especially strong along the perpendicular roads(Matthijs, 2013).

Since the start of new town scheme in 2007, urban expansion in Guangming happen in a much more organized and rapid way. In current new town development, infrastructure plays a dominating role in shaping the city structure to facilitate regional mobility. Specifically, infrastructure is built in advance to divide land for sale and also to ensure regional mobility, especially for cars and trucks. In this way, the dimensions of
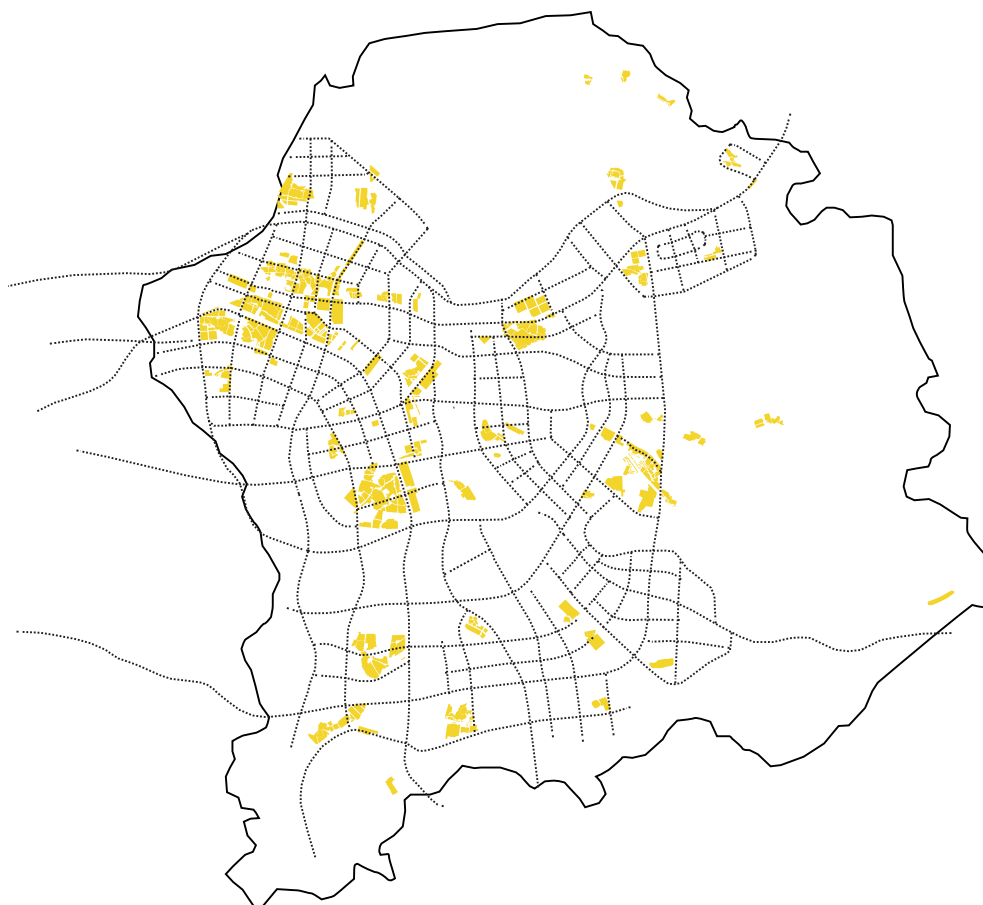
Figure 10. infrastructure driven mode takes little account of the existing urban structure

the roads often feel out of scale, since most of the buildings are not yet there. Moreover, this new grids usually follow the trend and shape of the regional highway, choosing the shortest distance to connect the regional infrastructure which leads to the fragmentation of the existing structure as well as contexts.

A new master plan is developed to illustrate the scenario of the new town in 2020 and provides a comprehensive solution for the rapid urban growth of Guangming. The primary structure defined in the master plan is the road structure, of which regional connectivity and continuity are the main focus. The construction of a large uniform grid of main roads across the Guang-
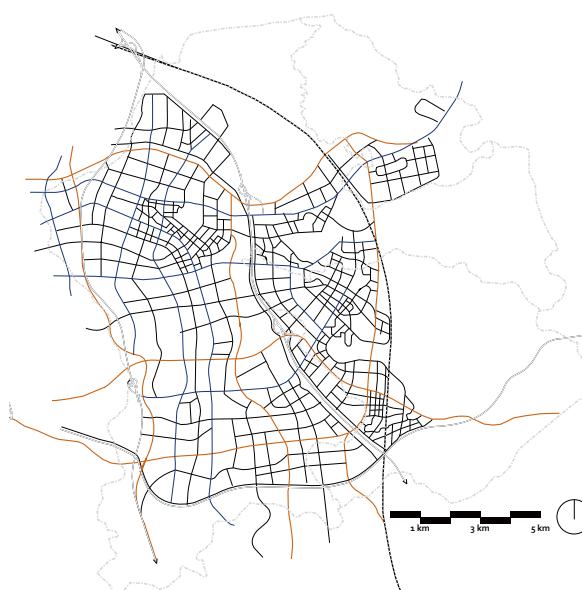
Figure 11. The road network in the Guangming master plan (2007-2020).

1 km   3 km   5 km

ming district is proposed in this plan. However, the continuity and spatial quality of existing old town network is generally neglected in the city-scale master plan. In order to pursue future connectivity and potential activities might happen, I use space syntax map to test and explore the local integration of the planned infrastructure.

Space syntax is an approach that investigates the relationships between spatial layout and a range of social, economic and environmental aspects. Connectivity, patterns of movement, interaction, awareness, density, land use and value, urban growth and societal differentiation, safety and crime can be mapped with this information system. It is an useful tool for the study of urban network structures and patterns of activities. "Shops locate themselves where most people move." (Van Nes, 2008, p.30) The most vital shopping areas are situated along streets which are globally and locally well-integrated. Globally integrated streets are mostly well-accessible by car, while the locally integrated are also well-accessible for pedestrians, the most vital streets are well-accessible by car, bicycle and by foot as well as by public transport. Spatially segregated streets by the way tend to be residential streets and are mostly situated in dwelling areas.

We have to keep in mind that movement and attractors influence each other in both ways actively. So locating activity at a certain spot can lead to liveliness. Yet not every location is suitable for the development of commercial activities. In order to search for locations that have, apart from the program, the physical properties to become a lively and vital commercial and economic success, research by the use of space syntax has proven to be very useful(Saskia, 2014).

From the figure 12 we can see that the in the

Figure 12. The space syntax map of the road network in the Guangming master plan (2007-2020). Local Integration [R3]; The integration of Guangming New District when the direction is changed 3 times.

future, the most accessible local part of Guangming is the border between the old town and new town where the uniform large grids and the existing organic grids meet. This road is also where different functions and neighborhoods meet. This area might need to be paid attention to in the later study.

ning

4. LOCAL SCALCE

4.1 INFRASTRUCTURE NETWORK

*T*he ideal way of development would be that *infrastructure follows planning or functional change of land use, growth or shrinkage. However, most of the time it is the other way round.*
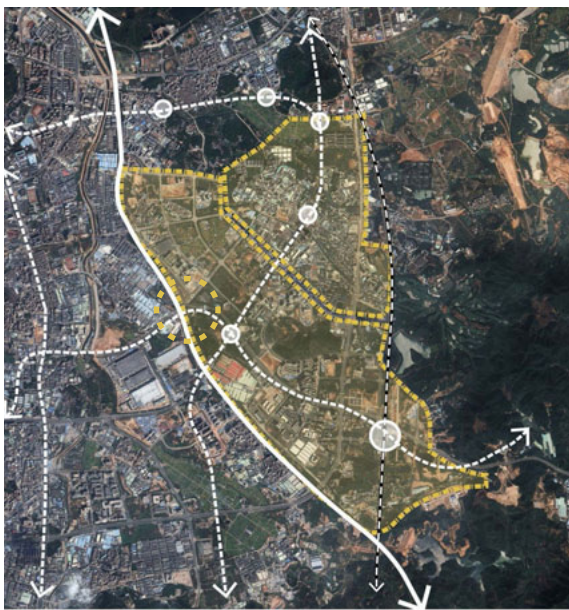
A. van Timmeren, 2014

Figure 13. Location of the Guangming new town and old town within regional infrastructure. Source: The base map is from Google earth

Figure 35 shows the location of the site: Guangming old town and new town. Besides highway and high-speed railway, two new planned regional metro lines also pass through this area connecting the central city.

Implementation of infrastructure before development of buildings is common practice in Chinese urban planning. Newly acquired land is divided in large urban blocks that then become available for leasing to developers. Other than in European practice the road system is not a part of the urban design plan, but rather a tool to chop the land up in buy size chunks. The dimensions of the roads often feel out of scale, since most of the buildings are not yet there.

The urban grids of the Guangming new town also show this trend.

The urban grids override not only the planned open structure, but also the existing network and landscape. Figure 40 illustrates the comparison between original network and planned infrastructure. To implement the plan, existing residence and road network have to be re-

LOCALIZATION OF GUANGMING NEW TOWN
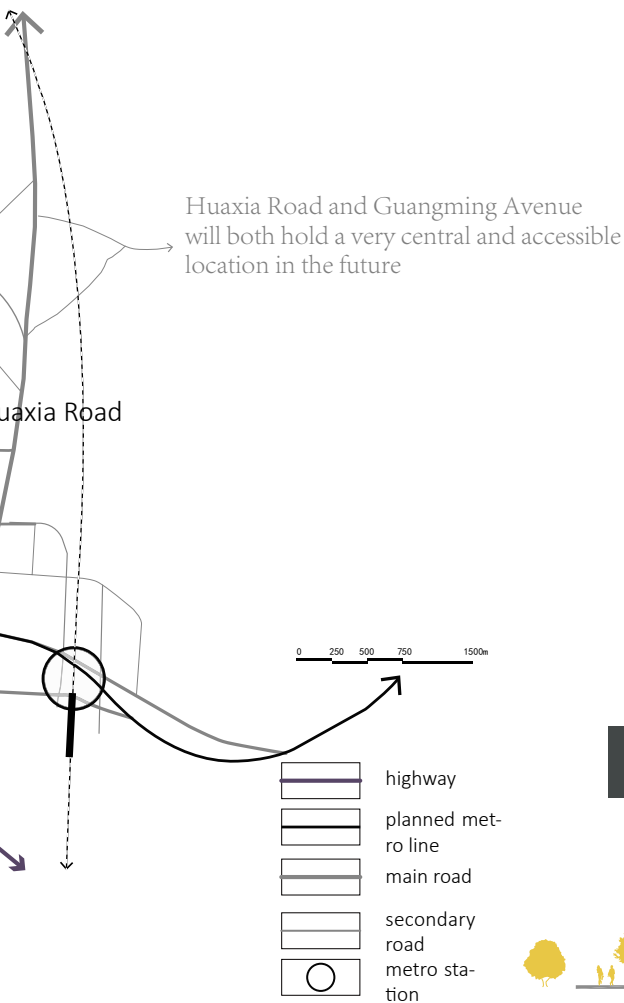
moved mostly. The disrespect results in a complete change of the ecosystem and excessive investment on new town development.

The old town represents an effectively and organic functioning urban structure. Situation of pattern is based on the summation of individual circuits that closely follow those elements of the urban fabric that interconnect the top-down "super grid" and the bottom up district and neighborhood fabrics.
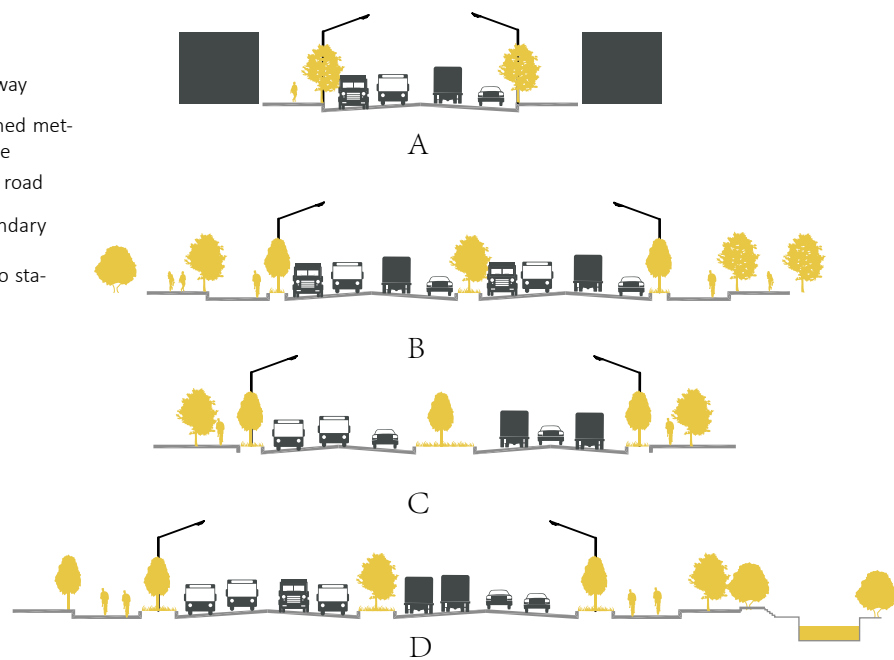
Huaxia Road and Guangming Avenue will both hold a very central and accessible location in the future

uaxia Road

0   250   500   750   1500m

highway

planned met-
ro line

main road

secondary
road
metro sta-
tion

A

B

C

D

Huaxia Road and
Guangming Avenue
will both hold a very
central and accessible
location in the future

Integrating the new town development in Shenzhen metropolitan periphery

4.2 SLOW TRAFFIC NETWORK
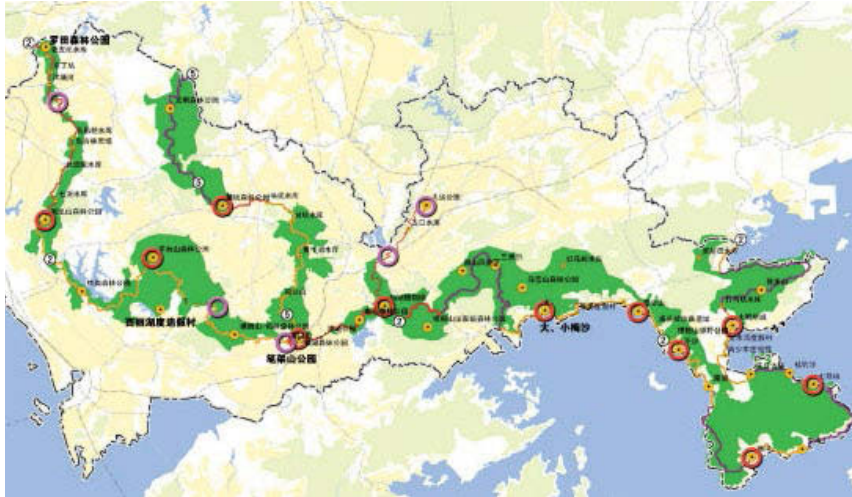
Figure 14: Metropolitan green way plan

Figure 15: Regional 'Four Belts & Eight Rings 'green-way structure
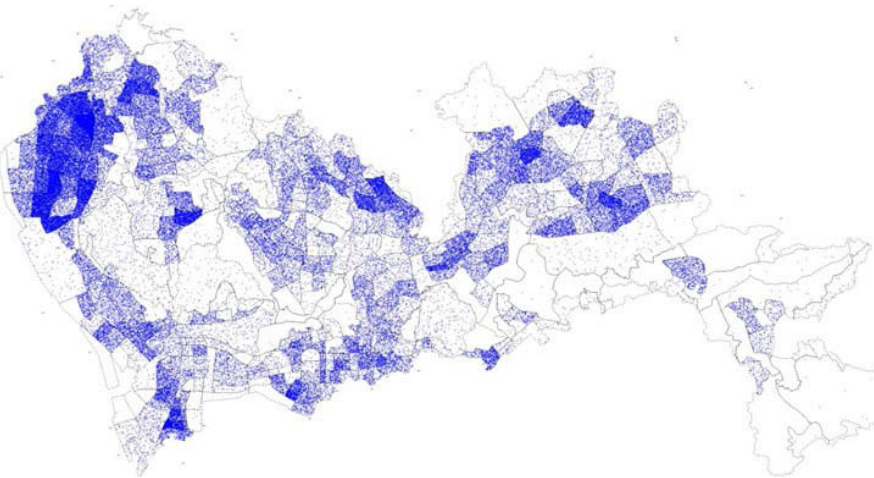
Figure 16: The level of bike use in metropolitan Shenzhen.

In regional scale, the metropolitan government has planned a 'Four Belts & Eight Rings' green-way structure, connecting over 1000 interesting scenic spots(including natural reserves, parks, reservoirs, tourism spots,coastal areas, historical and cultural area, etc)in metropolitan Shenzhen. This plan aims to reduce the urban traffic emission, promoting the construction of pedestrian as well as bicycle transportation system, in order to encourage the development of more sustainable urban green transport model. There is also one 'green-way', i.e. cycling path, passing through the eastern hilly part of Guangming, being an important part of the regional green way network. In a previous study, green-way in urban fringe area is normally considered as a tool to attractive the visitors for inner cities, stimulate the local economy, and meet the demand of local citizens. In case of Guangming, this path has very good spatial quality, yet badly connected with other networks.

	urban park
	forest
	cycling routes
	planned met-
	gated com- munity
	urban village

and dense cluster of users.

Chinese people traditionally walk or use a bicycle to get around. In terms of Guangming, however, since large roads were constructed and cheap cars and scooters entered the market, the walkability of the city decreased immensely. Moreover, lacking of attention to local residents' daily travel and recreation, the embedding existing slow traffic network is based on the newly planned super grids structure, which is still fragmented and disconnect the existing destinations

4.3 PUBLIC TRANSPORT NETWORK

gated community

urban village

bus line

bus stop
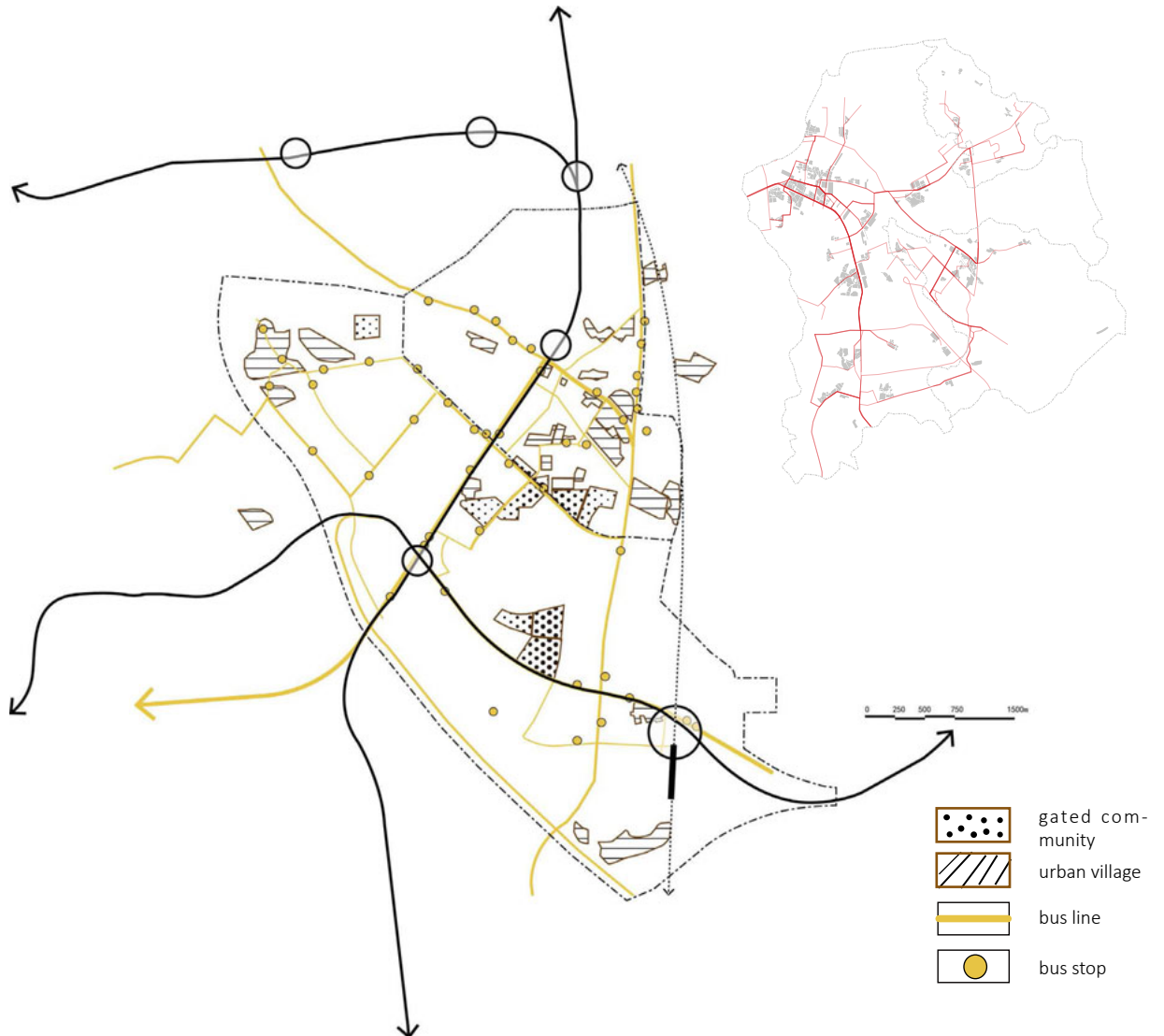
The existing public infrastructure in Guangming is limited to buses. These buses run mostly along the regional road and only 2 lines have a connection to downtown Shenzhen. In contrast to the systems of education and welfare, public infrastructure is accessible and affordable to the migrant population. The daily urban system is thus confined to the Guangming district. Most people do not even leave their village during a normal day. The new master plan for Guangming indicates that new infrastructural connections (especially the metro) and new centers will be located outside the main centers of population. This means that the metro system will be implemented in the new developments, where the people are far more likely to travel by car(Matthijs, 2013).

Compared to local scale, the connection between Gongming and Guangming needs to be improved. To be more specific, the connection between which does not satisfy the basic transport needs of the local people.

4.4 WATER NETWORK

1

2

3

water system

People's activities and new town development have changed the water system in Guangming massively. Besides water pollution in Maozhou River, the amount of fish ponds is also decreasing rapidly since the new town development. More than half of the fish ponds along the river have been covered for farmland, urban construction or water restoration.

Dams where constructed near the hills, so that a reservoir was created at the very beginning of the river arteries. These reservoirs allow for a very controlled flow of the water. Many parts of the river system have been polluted and used as an area to dump waste. This pollution threatens the agricultural production and also limits any possibilities of recreational use of the river system.

4.5 GREEN NETWORK

2003

2007

2011

2014
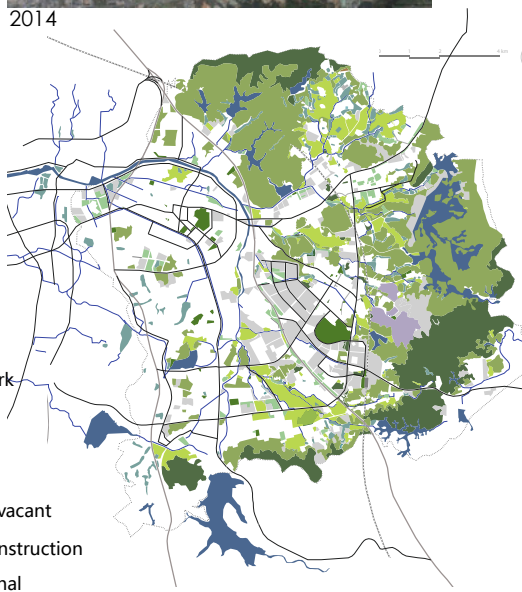
Figure 18. Open space land use in Guangming New District

- urban park
- forest
- orchard
- farmland
- wetland/vacant
- under construction
- recreational

The Green Network is a network of high quality connected green and open space which delivers a range of multiple benefits. The green network is in essence a range of types of green and open space and the paths and links which connect them. The development of Green Network Stepping Stones can provide in-complete corridors linking larger areas of green space.

Large areas in north, east, and west of the old

LOCALIZATION OF GUANGMING NEW TOWN

Figure 19. Gated Guangming agricultural tourism park

Figure 20. Gated Guangming golf club

	urban park
	forest
	orchard
	farmland
	gated park
	bus line

0   250   500   750   1500m
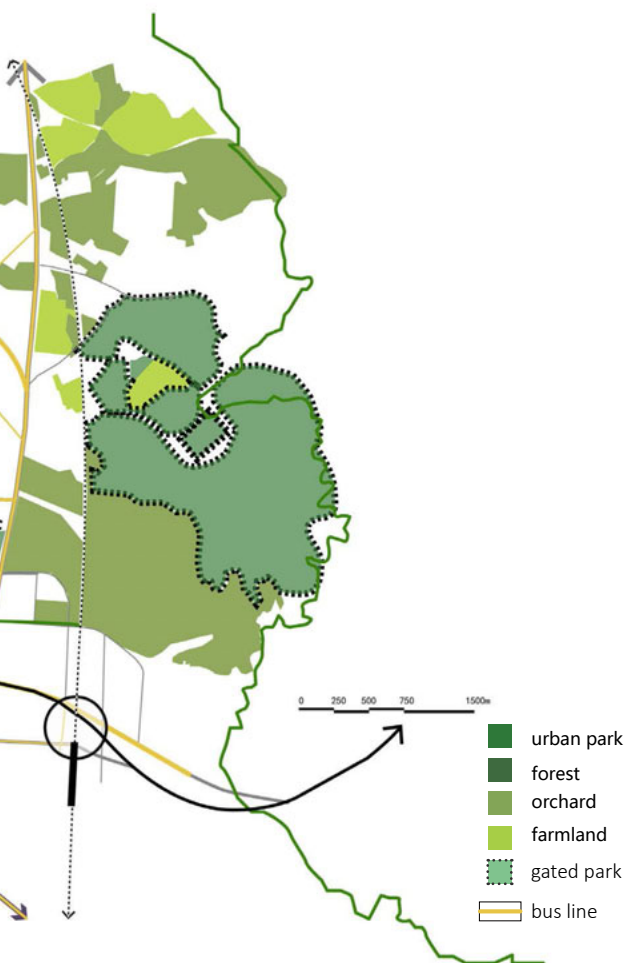
town are ecologically preserved. This area enjoys rich mountainous and river resources. The highest hill(126m) is located in the north east of the old town. Guangming old town and new town area was used to be characterized by a belt of continuous gentle hills with beautiful scenery and thick vegetation. North art of the new town used to have a lot of low-laying level farmland, vegetable farms and fish ponds. After the start of the new town construction, this area was transfered to be new developed

area, the natural landscape has undergone dramatic changes. Of course, much of the agricultural land as well as natural green space have been transformed to industry and the construction of new town, but there also have been changes in the water system. The continuity of the former green corridor was destroyed. Moreover, after new town set-up, a lot of green space in the east part was developed into suburban leisure space which is gated green space for golf or tourism agriculture.

4.6 HOUSING TYPES

The proposed program for Guangming consists of high-tech factories and residential high-rise. The plots inside the grid can be leased and developed by a single company. Much of the development consists of gated communities, which have no relation with the existing informally grown network. New high-rise neighborhoods have been designed entirely for vehicles. The result is mega cities full of large scale, mono-functional zones devoid of human life.

The urban life of the existing old town is characterized by urban village,traditional housing and Danwei housing, in which much of the city's social activities take place. And these neighborhoods play an important role in characterizing the identity of Guangming old town as a livable small town. Strengthening the old town part with a human-scale and neighborhood-like character of their own would explore this potential even further.

The border area is well situated in the multiple neighborhoods. Now they are changing into more gated area due to the new town construction.

urban villages in new town
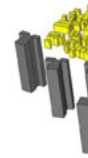
Comme

The new town=
a collection of enclaves
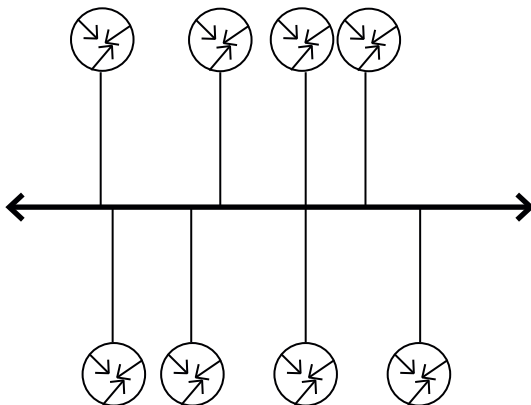
LOCALIZATION OF GUANGMING NEW TOWN
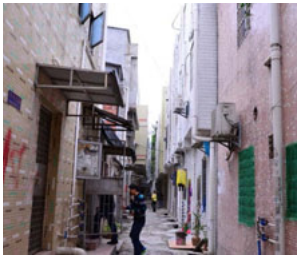
New urban village

Danwei housing
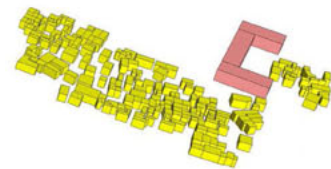
Old urban village

rcial housing in new town
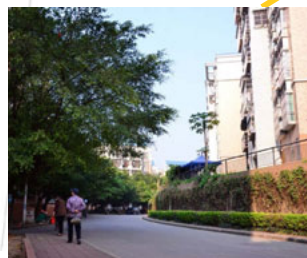
Social housing

Commercial housing

Format	Density/F.A.R	Access	Green space ratio

5

Urban village — Porous — **0.1** Sky garden

1.5

Box warehouse — Porous

2

Danwei housing — Green in between **0.2**

2

Social housing — Gated — **0.2** Green in between

6

Towers — Gated Underground parking — **0.4** Central park

LOCALIZATION OF GUANGMING NEW TOWN
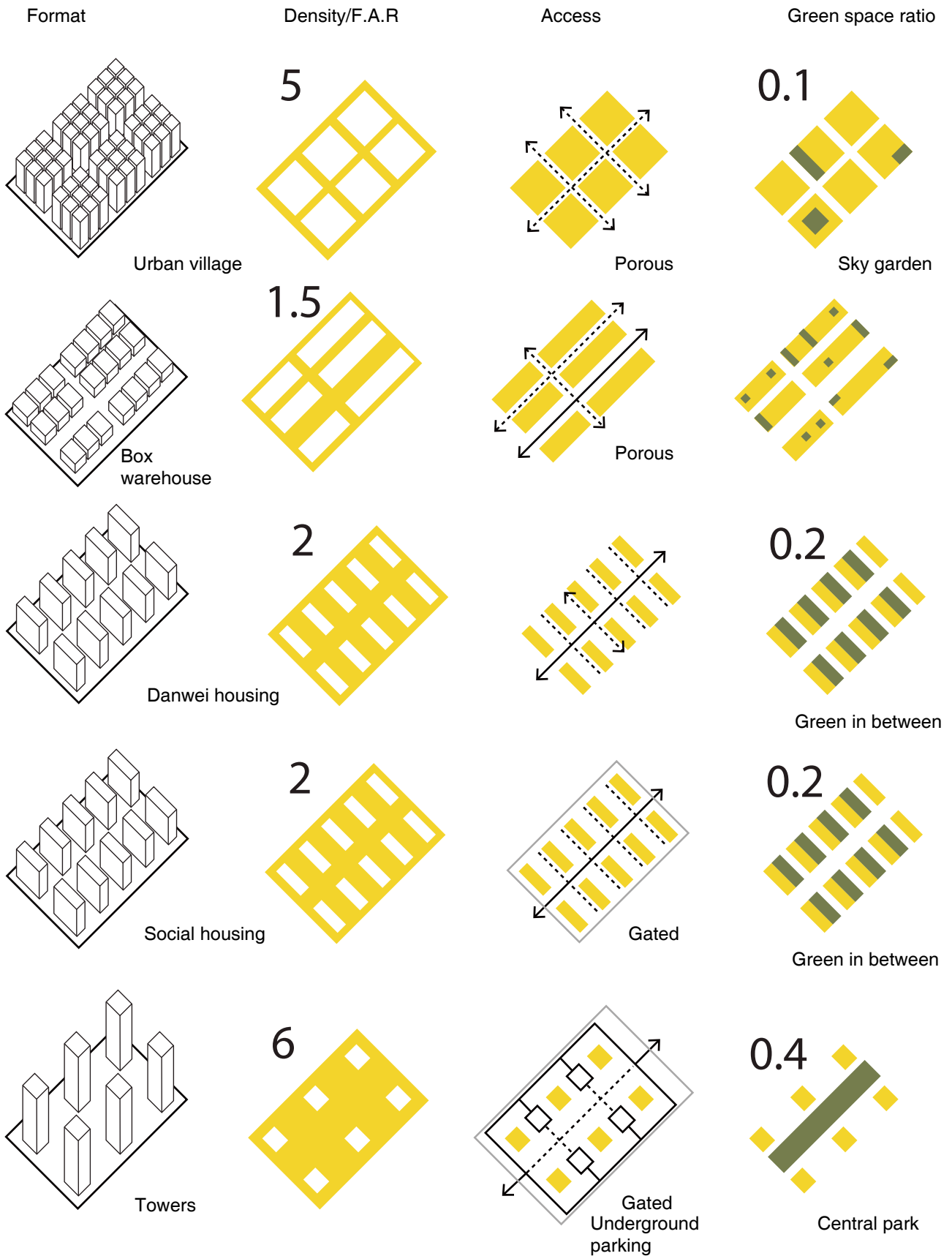
Before the new town development, residence types include rural village, urban village, Danwei housing and workers' dormitory. People in rural villages mostly worked in the agriculture, while people who worked in state-own enterprises lives in Danwei housing, which are mostly six-floor-height apartment blocks. For migrant workers in the factories, they may either live in dormitories offered by their employers, or urban villages built by local people.

In the process of new town development, real states are booming in Guangming. Most of the housing projects are large-scale commercial gated neighbourhoods developed by a single developer. Others are social housing offered by the municipality to low-income registered residents of Shenzhen. The potential residents of the emerging housing types are not only people who work in Guangming, but also people with a job outside of Guangming with different social statuses. Encouraging social interactions between different groups is a challenge for Guangming to achieve social cohesion.

The grids sturcture and the human scale of the urban village makes it easy to orient oneself and forms a good base for a potential culture of walking and cycling. The official strategy is to develop the area's on the very boundary of the agricultural land of the villagers in order to avoid high compensation and the relocation of the original villagers(P. Hao et al., 2011, p. 215). Anything that still exits on this land is demolished or being isolated. This strategy brings another advantage for the government, namely that they do not have to deal with the social and spatial problems of the villages on the short term. As becomes clear from the city beautiful strategy, avoiding the urban villages is much easier than a mutually beneficial urban dialogue.

Here, the presence of the large grids is already dominant. Existing villages will be demolished, to make room for new privately owned factories and high-rise development. The urban villages in the east of the old town has many nice single-family houses owned by the local residents such as the Vietnamese-Chinese families.

4.7 COMMUNITY AND COMMERCIAL NETWORK

Figure 21. Traditional commercial street in old town

Figure 22. The central agricultural market of Guangming

Figure 23. Newly built shopping mall in old town

Generally speaking, we often think of communities in place–based terms, like Jane Jacobs' beloved Greenwich Village. But, whether or not a place like Greenwich Villagse is really a community has more to do with the residents' relationships with one another — their social networks – than with where they happen to live or work. In terms of Guangming, as mentioned above, the urban life of the built environment of Guangming is characterized by urban village,traditional housing and danwei housing, in which much of the city's social activities take place. Communities in these areas usually have stronger sense of belonging and identity, which forms the base of the small-town way of life.

These urban villages still have commercial activities along the main road. The regional connections are fragmented. To the east of the village

Figure 24. Structure categories.

gated com-
munity

school

urban village

factory

industry park

Figure 26. Human-scale and walkable street in old town.

Integrating the new town development in Shenzhen metropolitan periphery

Figure 27. Subjective pedestrian feeling catogories of the structure
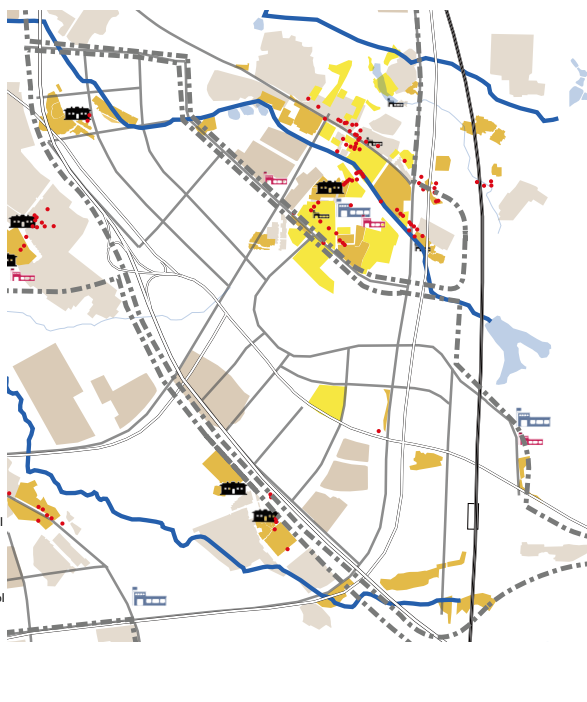
Figure 28. Small business spots in Guangming

industry
new residential
old residential
primary school
middle school
kindergarden
market

new development have erased all signs of old structures.

In Guangming, newer areas are generally X-XL structures, in which there are a lot of extra large scale spaces. And older areas are generally XS-M structures. However, extra large spaces with little consideration for the human scale, each city only needs a few of these spaces for particular events or functions.

However, as for these human scale spaces, which are often organic structure, connecting spaces in local areas of small scale and many variations in the built form and structure. Normally good walking cities have an abundance of these spaces. Moreover, in Guangming, many small businesses including both formal and informal ones are embedded on this organic structure, which also play an important role in the economic integration of the migrants in Guangming. The businesses can take the form of shops, workshops, restaurants, etc. Additionally, these small businesses in Guangming are organized around markets (Matthijs, 2013).

The new master plan neglects the exiting commercial streets as well as the existing communities bounded in the organic human-scale structure. If the area of Guangming would follow the same development path as other parts of the city, new commercial functions will be concentrated in large shopping malls. Due to the location of these malls, near traffic arteries instead of the pedestrian network, it is difficult for small businesses to development. Much more serious is that the social and commercial networks local residents and migrants lived on will also be demolished.

LOCALIZATION OF GUANGMING NEW TOWN

4.8 CONCLUSION

OLD TOWN

human scale street
community feeling
street life
place attachment
affordable housing
place attachment

⬇

Keep the existing social network and identity, fix infrastructure networks

NEW TOWN

car-oriented grid,
ignorance of existing contexts,
good metropolitan connection,
lack of local social and economic exchange and vitality,
isolation of urban village

⬇

Fix and form new local social and economic networks to generate vitality

The information from the network analysis is the input for the further strategy. These networks directly shapes how we experience cities and can give different cities their distinctively different characters. In this research the analysis focuses on different existing networks to see how the existing built environment operates in order to find synergy patterns between the new town and th old. For this purpose, the analysis above compared natural structures, structure of the built form, commercial patterns, infrastructure networks and social interactions to see what kind of potentials of the existings can be cultivated and evoked for the further development. In this way, the relation between spatial elements, socio-economic upgrading and the development typologies, form the basis for my strategy proposal. To conclude, based on the network analysis, for the old town, the existing networks and identity need to be fixed and cultivated to ensure the continuity of the social life; for the new town, new local and social economic networks needed to be formed to generate vitality and synergy without ignorance of the existing contexts.

PART 4
STRATEGY

1. STRATEGIC FRAMEWORK

Existing network analysis
City is a product of network
to organize people and soc

Metropolitan network

| Infrastructure network | Industry network | Social network |

Infra
Existing n
networ

eating

New town

Goals

Good metropolitan connection,lack of local social and economic exchange and vitality

Interaction/synergy & Identity keeping

Strategic intervention

Form new local social and economic networks to generate vitality

Starting point -- boundary area: to fix and protect the existing networks, and foster new ones

Boundary theory (Richard Sennett): more attention shoul be paid to the borders in order cultivate complex interaction

More networks connecting new town and old town

New town principles:
Centrality,
transit-oriented,
public transport oriented

Long-term strategy

LOCALIZATION OF GUANGMING NEW TOWN

Local network

astructure as basic facilities

| road k | Slow traffic network | Public transport | | Housing and commercial network | Social network | Green network | Water network |

Old town

human scale
community feeling
street life
place attachment

Based on local
physical, social and
economic networkd

Keep the existing
social network and
identity

Scenarios

buffer zone concept

mix-use concept

Key words

Connectivity

Liveliness

Identity

Biodiversity

Priority

Connectivity
Green-ways

Old town principles:
Scattered destination,
small-grid street pattern,
mixed use pattern,
from trees to networks,
housing affordability,
slow traffic oriented

Integrating the new town development in Shenzhen metropolitan periphery

2. STRATEGY CONCEPT

2.1 EXPECTED FINAL GOAL

Figure 1. Expected new town vision
Source: Whitechapel Vision London, http://www.e-architect.co.uk/london/whitechapel-vision

New town: modern, fast, green and vitalized

Figure 2. Expected old town vision
Source: Rebuild Christchurch project, http://www.rebuildchristchurch.co.nz/

Old town: local, slow and human-scale
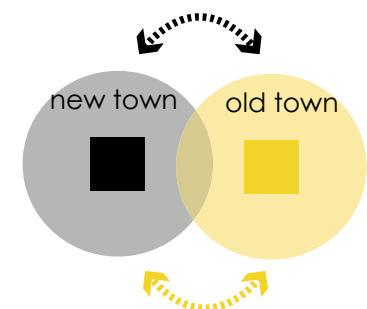
*H*uman settlements - cities, towns,villages - are in some ways the most enduring of man's artefacts. Sometimes they die; they lose their reason for existence and their populations abandon them. But on the whole they persist, continuously evolving as they accommodate the changes in role and use that are imposed upon them.*

Bob Allies

Cities are in many respects remarkably fragile, and interventions that are damaging to their fabric, new insertions that disrupt rather than support their continuity, can cause irreparable long-term damage (Allies, 2010). I guess this is also true for Guangming. As analysed above, lacking of integrative development sense, the relationship between the old town and new town is often fragmented, and the ignorance of the existing networks, affecting the overall development of the whole. The main goal of this project is to create conditions for a more synergic situation between old town and new town without expense of the existing identity and quality. In the strategy part, in order to make sure the continuity of the existing networks and the cultivation of new development, the strategy is aimed to create a possibility

Dynamics: keep its inherent identity and quality
Interaction: complementary to each other

that both new town and old town could gradually accommodate the changes in role and use that are imposed upon them.

These factors objectively require an overall perspective that could optimize the whole town to get rid of the development based one one-side tendency and reach a more synergic situation.

New town – the green modern city concept

In the official plan, Guangming new town has been branded as green eco-city in order to attract investors. The apparent definition of ecology and sustainability seems to be one that is strongly related to technology and high-end functions. In practice this definition results in very technical solutions such as rainwater recycling techniques, solar panels, green buildings and hybrid buses. The formal plans do not mention anything on community involvement, existing vitality or the isolated urban villages. The

final goal of the new town would be a modern, fast, green and vitalized vision without ignorance of the existing contexts. To find a solution that new development can gradually In this way, the new development and the existing contexts can gradually fit in each other. .

Old town – the slow city concept

In the formal plan, the old town is an ignored part. So in this proposal, the final vision would be a local, liveable, slow and human-scale town with revitalized street life.

Actually, a slow city is a city with a slow "pace of life and the capacity of urban settings to facilitate the routine encounters and shared experiences" (Knox, 2005), which will lead to a more vital and social living environment. The slow city movement originates from the ideal to promote this slow pace of life of rural settlements, but in a sustainable way. As Harry Lash states that

'*Producing a plan and regulations would not be enough. We had to deal with long-term future livability, but also with people's ongoing satisfaction, their day-to-day experience of living in the region'.*

Figure 3. Expected synergy concept between old town and new town.

2. 2 CURRENT SITUATION

Old town

New town

$+$

Infrastructure-led development

Old town

New town

Current situation
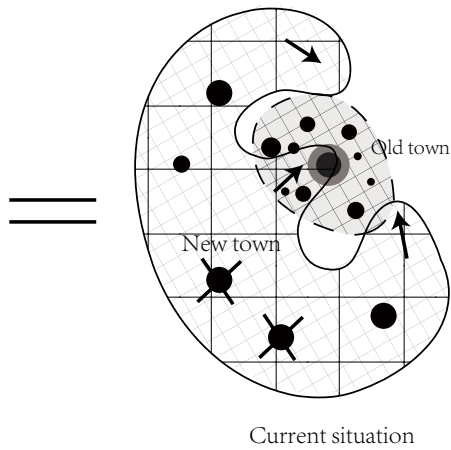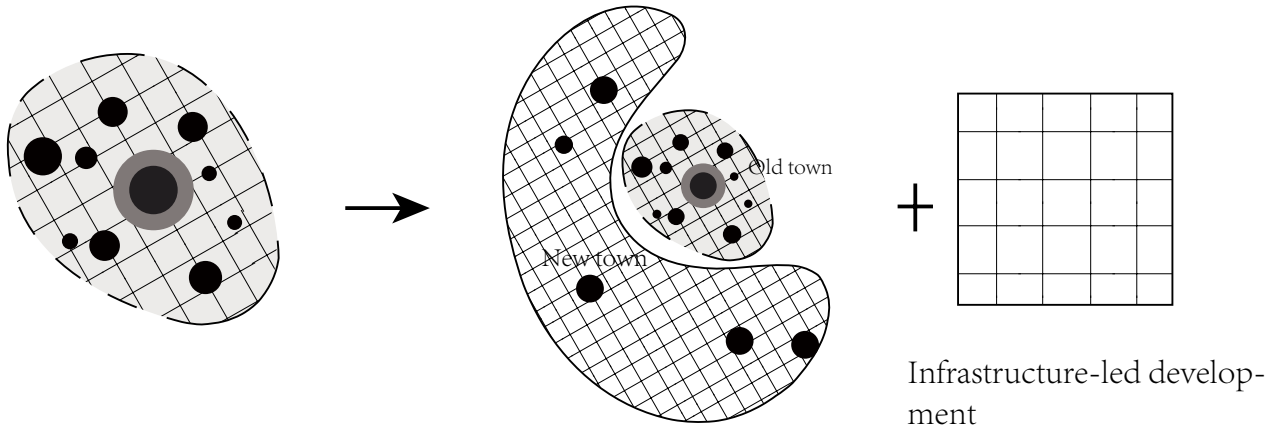
GOAL

Interaction/synergy & Identity keeping

Contemporary city planners put their focus too much on the center of a community rather than emphasizing the border conditions. These borders are supposed to 'create conditions' for a socially sustained collective life in cities which could cultivate complex interaction.

Richard Sennett

3. STARTING POINT: BORDER AREA

3.1 BORDER AREA CONCEPT

As mentioned above, in recent years, this Chinese city is suffering the economic, social and spatial restructuring and rescaling. This kind of restructuring and rescaling have resulted in major urban transformation and, in particular, the progressive urban expansion and urban renewal. Cities are in many respects remarkably fragile, and interventions that are damaging to their fabric, new insertions that disrupt rather than support their continuity, can cause irreparable long-term damage (Allies, 2010).

Bob Allies defines that as urban plan is not a graphic pattern, it is a definition of relationships. He argues that what a master plan has to do is to describe as urban hierarchy, one that is both sufficiently practical that it can guide the subsequent implementation of the project. In this sense, our job as urban planners or designers is to think about how one piece connects to another, whether these pieces are materials or activities, rooms or buildings. It is a fundamental part of our role. In this sense, when we take a decision to embark on a project of city or town scale is extraordinary hard when you know that your first move, in on corner of the site, will define what your last move will have to be, in the opposite corner, some 20 or 25 years later.
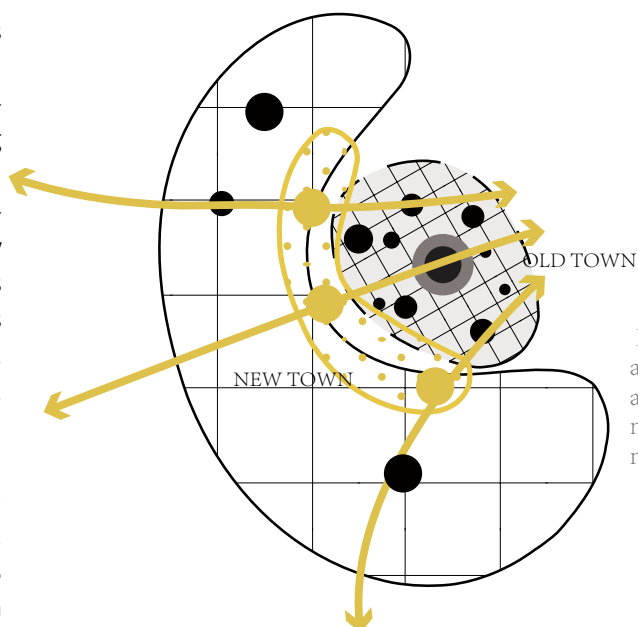
Figure 4: Border area : as a starting point to fix and protect the existing networks, and foster new ones

In terms of Guangming, from the network analysis above we can see that in the current situation, both the existing new town and the old town have its own urban system, and they are kind of mutually independent and incomplete. In order to protect the quality and identity of as well as cultivate new possibilities of the old town, I turn my eyes on the 'border area' where different scales and types of networks meet together. And due to this character, this 'border area' has the potential to cultivate complex in-
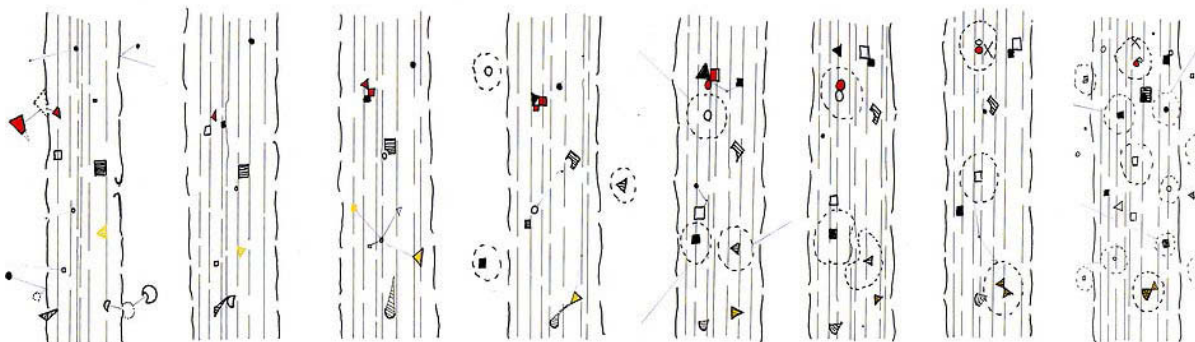
Figure 5: Image of exploring the idea of boundaries
Source: https://thesleepofrigour.wordpress.com/2014/06/26/richard-sennett-the-public-realm-borders-and-boundaries/

teraction between new town and the old one, leading to a more synergy situation.

In this sense, in addition to keeping and cultivating the existing networks as well as dealing with the mew town extension, as my strategy, is to work on the 'border' piece between the new one and the old, a piece which is able to mediate between the networks of the old town and that of the new town extension. I think It could not only guides the whole implementation, but also create conditions to enable new town and old town continuously be more evolving as they accommodate the changes in roe and use that are imposed on them. Just like human body, the city organism can recover by focused treatment of specific areas. By gradually improving the

LOCALIZATION OF GUANGMING NEW TOWN

most vital parts of the whole organism and using the same recipe on similar challenged areas, a gradual improvement can occur.

I hope the strategy framework starting from 'border area' strategy could enable these two different types of towns to be more synergy with each other and cultivate new future developments, which can also draw out the benefits of the new development into a much wider area.

Why border area

integration of different systems and morphology
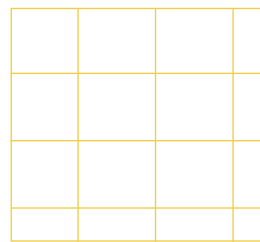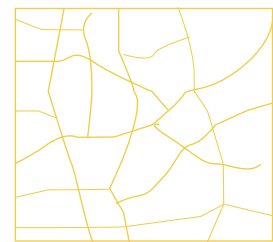
new town   old town

from regional scale to local scale
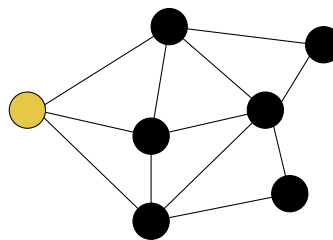
Regional scale   Local scale

complex interaction potential
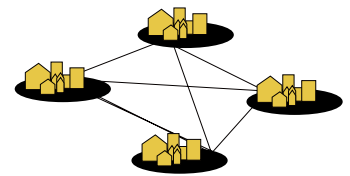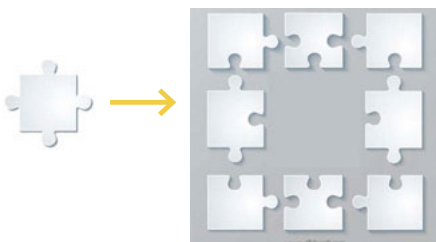
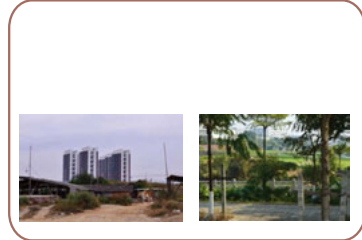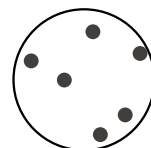How one piece connects to another? Which is the first piece that can guide the subsequent implementation?
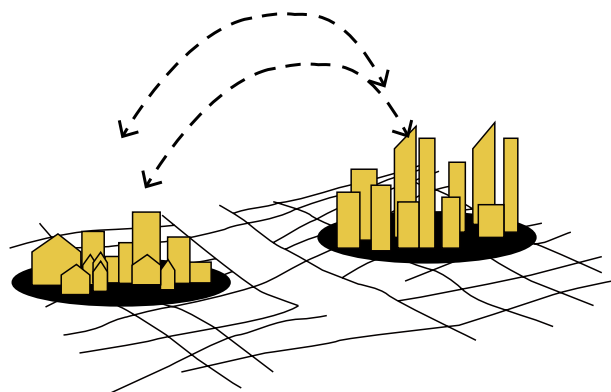
3.2 SECTIONS: BORDER NORTH

?

Leisure

Commercial — Green

Traffic — Hospital / School

Former Ponds
Commercial

Leisure

Commercial — Green

Traffic — Hospital / School

Leisure

Commercial — Gre

Traffic — Hospital / S

PUBLIC
SEMI-PUBLIC
PRIVATE
AGRICULTURE
CONSTRUCTION

HIGH DWELLING'S DENSITY

MEDIUM DWELLING'S DENSITY

LOW DWELLING'S DENSITY

LOCALIZATION OF GUANGMING NEW TOWN

Leisure

Commercial   Green

Traffic   Hospital / School

Leisure

Commercial   Green

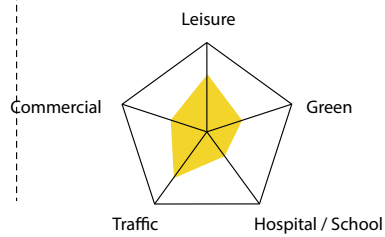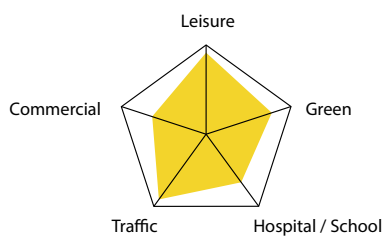Traffic   Hospital / School

Integrating the new town development in Shenzhen metropolitan periphery

3.3 SECTIONS: BORDER MIDDLE

?

Leisure
Commercial — Green
Traffic — Hospital / School

Leisure
Commercial — Green
Traffic — Hospital / School

Leisure
Commercial — Gre
Traffic — Hospital /

- - - PUBLIC
|||||||| SEMI-PUBLIC
PRIVATE
|||||||| AGRICULTURE
CONSTRUCTION

HIGH DWELLING'S DENSITY

MEDIUM DWELLING'S DENSITY

LOW DWELLING'S DENSITY

LOCALIZATION OF GUANGMING NEW TOWN

Leisure

Commercial   Green

Traffic   Hospital / School

Leisure

Commercial   Green

Traffic   Hospital / School

Integrating the new town development in Shenzhen metropolitan periphery

3.4 SECTIONS: BORDER SOUTH

Leisure

Commercial — Green

Traffic — Hospital / School

Leisure

Commercial — Green

Traffic — Hospital / School

Leisure

Commercial — Gre

Traffic — Hospital /

PUBLIC
SEMI-PUBLIC
PRIVATE
AGRICULTURE
CONSTRUCTION

HIGH DWELLING'S DENSITY

MEDIUM DWELLING'S DENSITY

LOW DWELLING'S DENSITY

LOCALIZATION OF GUANGMING NEW TOWN

Leisure

Commercial · · · · · · · · Green

Traffic · · · · · · Hospital / School

Leisure

Commercial · · · · · · · · Green

Traffic · · · · · · Hospital / School

Integrating the new town development in Shenzhen metropolitan periphery

3.5 EXISTING CONTEXT

Maozhou
River

High-speed
railway

The existing urban development plan that is proposed for the border area consists of three parts. The first part tries to organize and prepare the existing elements to fit the new plan, normally the existing contexts will be demolished. The second part is the implementation of infrastructure. The third part is the infill of the grids that are formed by the new infrastructure (Matthijs 2013).

In the current sitation, most parts of the border area have finished the second part - the implementation of large infrastructure, the south-east and north-east parts which are at the stage of 'infill grids',where large construction is undergoing. However, due to the ignorance of existing elements such as urban villages at the first stage , some parts of the newly built infrastructure are still fragmented. In further development, these issues need to be paid more attention to.

4. LONG-TERM STRATEGY PRINCIPLE

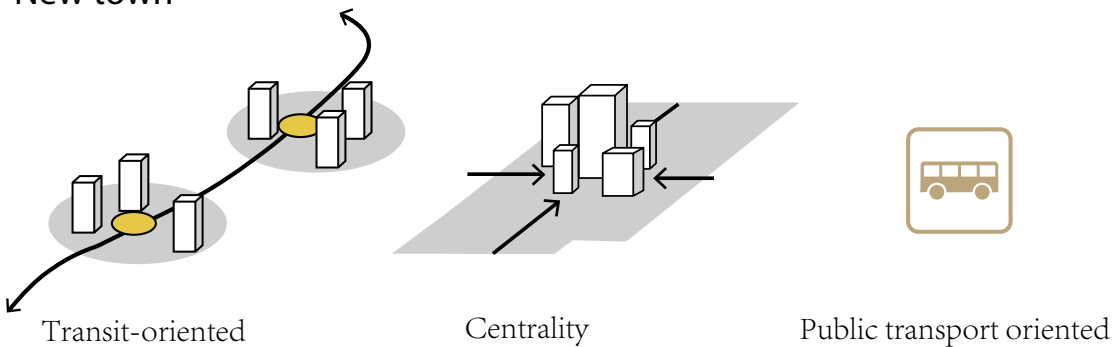New town: modern, fast, green and vitalized
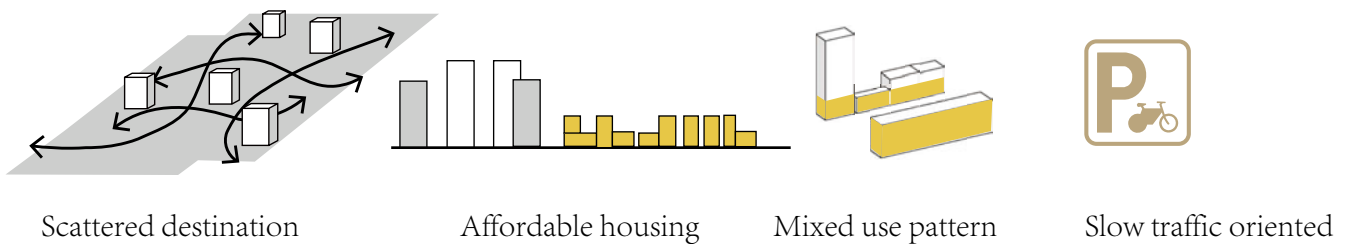

Old town: local, slow and human-scale

Figure 6. Expected new town vision
Source: Whitechapel Vision London, http://www.e-architect.co.uk/london/whitechapel-vision

Figure 7. Expected old town vision
Source: Rebuild Christchurch project, http://www.rebuildchristchurch.co.nz/

New town

Transit-oriented

Centrality

Public transport oriented

Old town

Scattered destination

Affordable housing

Mixed use pattern

Slow traffic oriented

5. BORDER AREA ANALYSIS

Connectivity

Biodiversity

Synergic border area

Liveliness

Identity

OVERAL GOALS AND KEYWORDS

Connectivity
Accessibility
Reach
Orientation

Biodiversity
Water: Flooding & Pollution
Green

Liveliness
Diversity of Use and users
Interaction of
Urban dynamics
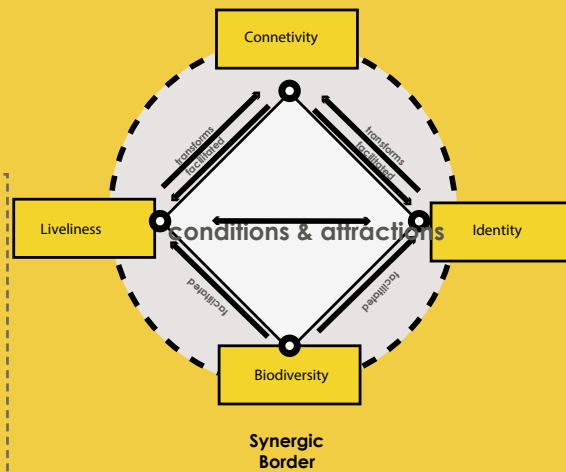
Identity
Authenticity
Unicity
Multiplicity

➔

Infrastructure

Green

Culture

Commercial

Residential

Connetivity

Liveliness

conditions & attractions

Identity

transforms / facilitated

transforms / facilitated

facilitated

facilitated

Biodiversity

Synergic Border

LOCALIZATION OF GUANGMING NEW TOWN

In order to explore the potential 'hard values' and 'soft values' of the border area, four conceptual categories are worked out to develop explicit knowledge on the relationship between the urban form (as to the spatial structure and composition) , urban operation (as to underlying the spatial and functional mechanism) and urban performance (the effect and impact on the perceiver) of existing networks in the border area. In doing so, it is possible for me to explore the interventions which could improve the performance of border area, addressing critical and urgent issues aimed at 'the synergic situation between new town and old town'. These four main defined conceptual categories are: connectivity, liveliness, identity and biodiversity. Each of these categories is subdivided into several performance of public space(see the diagram on the last page), which is represented by a specific set of mapping techniques.

In the perspective of the analysis of these four key words, I think of **connectivity** in the urban structure as to condition the centrality and accessibility of different spaces in relation to as well as the possibility of coincidence in encounter. In case of **liveliness**, it is a way to see the interactivity and overlap between usage patterns and land zoning patterns, which could reflect the levels of diversity of use and the possibility of social, economic or cultural exchange between different user groups, zones as well as functions. As to **identity**, it is a conditioning aspect of spatial experience such as the orientation of the public space as well as reflection of cultural value, historic value, aesthetic value and value in collective memory. The last key word is **biodiversity**, the association of biodiversity and urban ecosystems has usually concerned the impact of urbanization on biodiversity. Concepts related to biodiversity management such as scale, hierarchy, species identity, species values,

fragmentation, global approaches can be used to manage urban biodiversity. Application of these concepts in such artificial ecosystems may yield important insights for the management of natural ecosystems (Mennechez, 2000). To conclude, these four key words can thus be used to evaluate and compare the existing situations in order to have a clear overview of further critical interventions, through abstracting those situations according to the key points.

Properties of each theme are specified further in the following part.

3.1 Connectivity

Being connected means more nowadays than some years ago. In this sense, my first perspective on the border area planning, starts from the point of view of the structure of target site as well as the nodes, and relates these to the performance of accessibility, reach and hierarchy of different spaces (Buurmans, 2008). The theory says that, the better a point is connected to other points in the street or road network, the more opportunities it has to develop a public domain - a place where people coincide in time, where an overlap of different activities can take place, and where encounters are possible. The quality of the connection between an anchorpoint and its context, influences its reach and accessibility and hereby its performance as public domain(Buurmans, 2008).

Hierarchy

Guanngming new district has made many impressive efforts to improve the regional-scale and city-scale large infrastructure including the high-speed railway station.

The figure 42 shows the highway connection to the main city network. Mostly these main roads are newly planned which are used to divide large urban blocks that then become available for leasing to developers. In the current situation, on the level of the districts and neighbourhoods streets are generally short and local, do not form a whole system. Detecting and mending strategically vital "missing links" in the existing segmented infrastructure towards completion by issuing continuity and connectivity. Thus the system as a whole can be transformed relatively easily into a coherent and interconnecting network that facilitates the currently lacking layer of multi-functional urban axes.
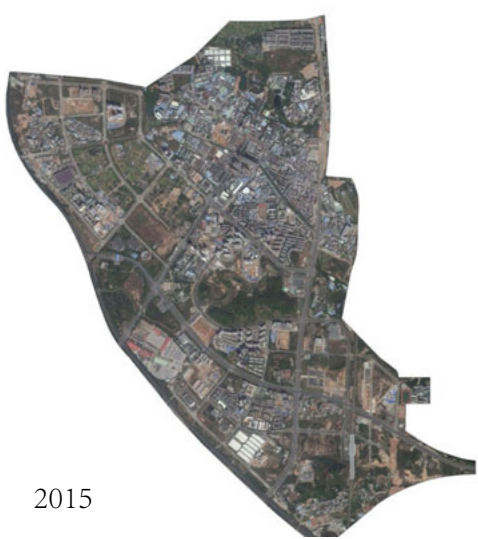

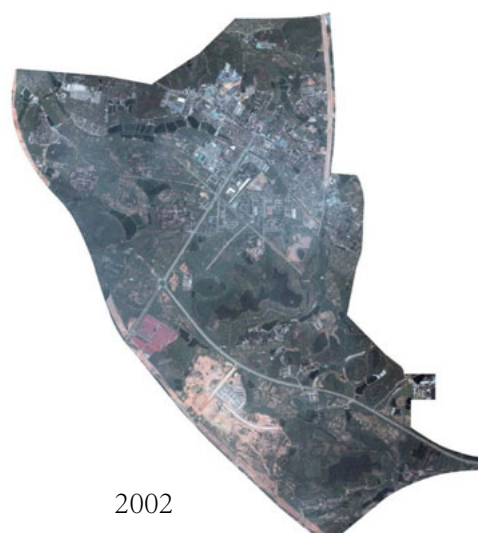Figure 8: Border area : Highway connection to city network.

missing links

Car

Train

Bus

Bicycle
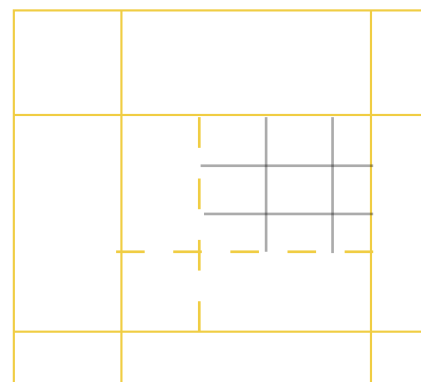
Bottom-up
netwokrs

Figure 43: 9 : bottom-up connection
before new town deveopment

2015

2002

Integrating the new town development in Shenzhen metropolitan periphery

Figure 10: Guangming avenue: mixing global and local movement
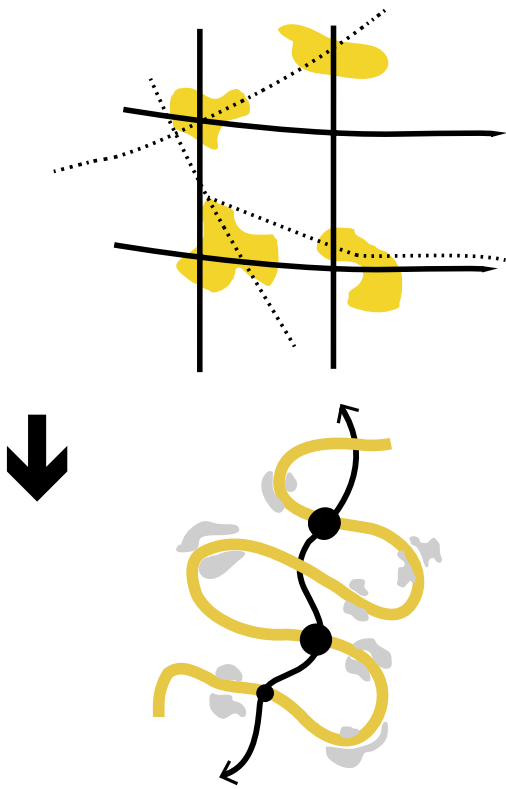Source: Google maps

Figure 12: Border area : Slow traffic connection to city network.

Figure 11: Longda highway: seperating global and local move-ment
Source: Google maps

city fragments

LOCALIZATION OF GUANGMING NEW TOWN

Car
Train
Bus
Bicycle
Bottom-up
networks

Figure 13: Original structure: gradually growing leaf structure
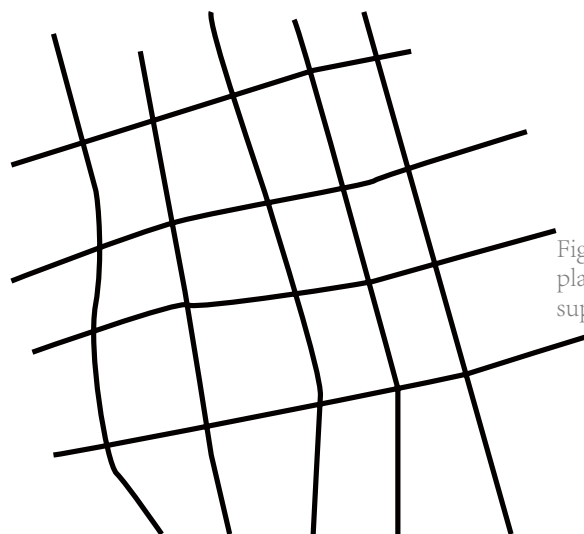
Figure 14: Newly planned structure: super grids

Moreover lacking of the gradual development of the new town and old town in the course of time and the continuous process of transformation have resulted in a frame that optimally mediated between external accessibility and internal connectivity.

Accessibility

As discussed above, the planned super grids destroy the existing physical and social networks.

Figure 15. Infrastructure extension before new town development (2004) Source: The base map is from the Master thesis 'Farming Guangming' by Jiayao Liu

These grids are large and straight, following the shortest distance to link the regional infrastructure, destroyed the existing physical and social networks. The space between the lines have to be broken into fragments.

Moreover, these straight and large grids have resulted in car-oriented new situation. Guangming new district has made many impressive efforts to improve the regional-scale and city-scale large infrastructure including the high-speed railway station. The green-way for cycling was also introduced in Guangming connecting SEZ and the along open space. However, there is still lack of enough good and systematic considerations in relation to the slow traffic routes and pedestrian environment providing both good and continuous surfaces, relevant amenities and green elements .

Reach and Orientation

When looking back at the old map from Guangming before the new town construction. The typology has almost totally changed without taking the local needs and existing networks into consideration. The former structure in

Guangming old town uses a organic leaf structure to divide the land, where small enough pieces to develop and to allow easy accessibility to the around area and intended destinations through slow traffic and walking. Moreover, this structure represents an effectively functioning urban frame. Situation of fabric is based on the summation of individual routes that closely follow those elements of the urban fabric that interconnect the top-down "super grid" and the bottom up district and neighborhood fabric. Based on this gradual developed struture and linking the exsting human settlements and vitalized areas , a lot of local social networks and infromal activities are rooted on it. In this sense, the gradual development of the old town in the course of time and the continuous process of transformation have resulted in a structure that optimally mediated between external accessibility and internal connectivity, sorting effect throughout all levels of scale.

3.2 LIVELINESS

Liveliness is the quality or state of being lively or animated and refers to habitual feeling of life and interest (B.Jonson, www.answers.com). Liveliness, in case of public space, means the whole spectrum of possible social activities and behaviors which cannot be separated from the physical space. Lively space can be described as a space providing proper conditions for social life, which is caused by individual needs and interest. In this concept, liveliness, next to connectivity and identity, is one of the most important determinants defining value of public space as a place of many possible social activities and behaviors performed within the urban space.

Some of them are related to common functions, typical for most people like; walking to the place of work, school or for daily shopping, standing and waiting for a bus or tram. Other ones are more or less related to the uncommon activities, caused by individual needs and interests, not obligatory but resulted by individual wish, like: sauntering, jogging, riding a bike or skateboard, standing and waiting for anybody, sitting and resting on the bench, having a coffee on the street garden or performing street conversation. These activities have been described as a necessary and optional Both of them when appear together lead to social interactions and make a mix of reactions of ones for the others called social activity (J.Gehl, 1971, 2006).
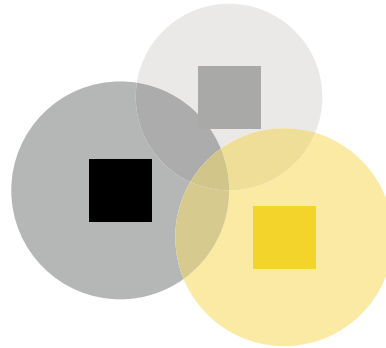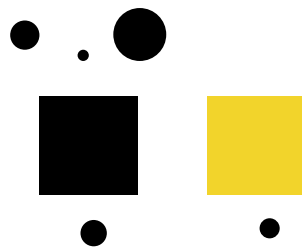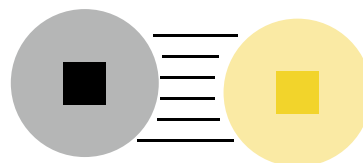
Interaction

Diversity

Multifunctional

Alternatives

Dead zones

Infrastructure
Green
Commercial
Residential
Cultural

formal   informal

Infrastructure
Green
Commercial
Residential
Cultural

liveness

Industries and farms

0   250   500   750   1500m

Integrating the new town development in Shenzhen metropolitan periphery

Figure 15. Liveliness map: where interaction and activities happen most.
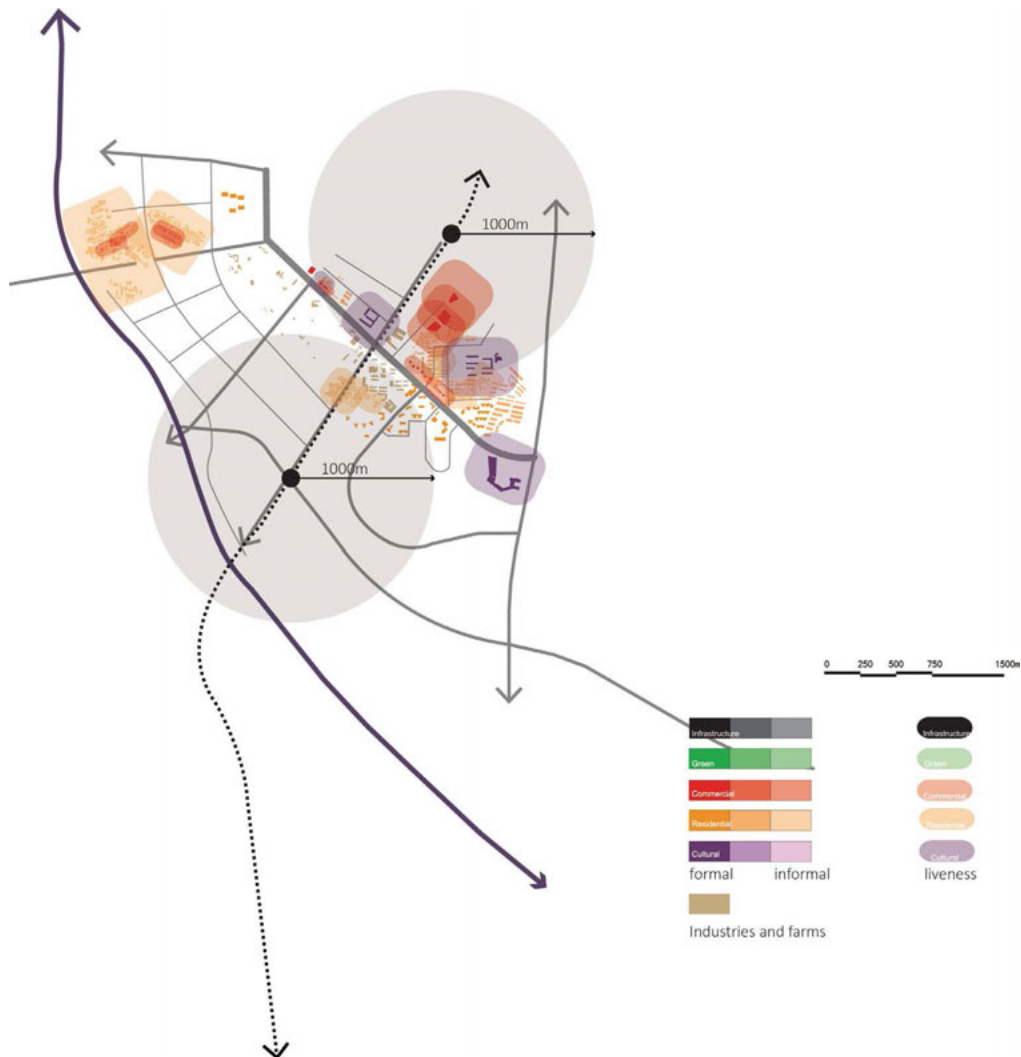
To understand urban liveliness, we need to understand the relationship between cities and people. Liveliness normally relates to the people's activities, as liveliness involves levels of activities, uses, interactions and their representation. The activities taking place in a city can be divided into 3 categories: necessary activities, optional activities and social activities.

When a urban space with poor quality and limited access, the number of social or optional activities are low. People limit the activities they do in the city to necessary ones, such as going to working or shopping. Monitoring the number of optional and social activities taking place is a good way of accessing the liveliness of an area.

Figure 15 presents the existing most vitalized areas in Guangming new town and old town where interaction and activities happen most. Except school areas, markets, shopping centers and station these public facilities where necessary activities happen most, urban villages, mixed-use community are most lively parts where many restaurants, bars and shops are located long the main routes.
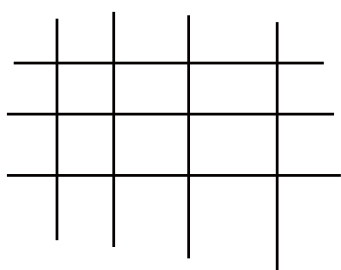
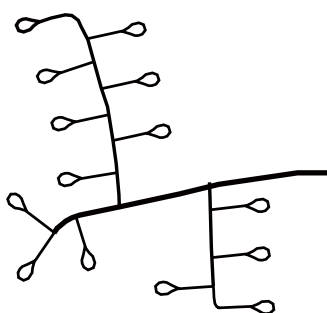Figure 16: Original form of neighborhood: grid structure

Figure 17: Tree structure of new community: each part of the fabric is only accessible through its connection to the part higher in the hierarchy
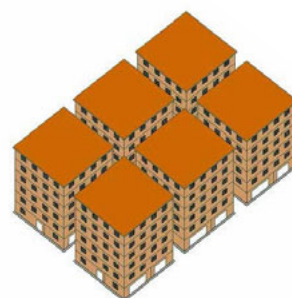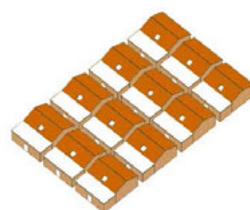

Figure 18: types of urban villages in border area Source: Master thesis 'The Cultivation Of Urban Villages' by Matthijs van Oostrum

The urban villages and traditional housing in Guangming use a grid structure to divide the land is small enough pieces to develop and to allow easy accessibility to all. The strong rectangular shape of the old core offers a natural alignment for the expansion of the neighborhoods and offer opportunity to for interaction. Grid structures allow for an overlap of functional systems. The strong rectangular shape of the old core offers a natural alignment for the expansion of the neighborhoods. The small public spaces within the urban village are not designed, but are organically formed through informal development of residential houses. However, the newly built residential houses are generally gated within a tree structure, each part of the fabric is only accessible through its connection to the part higher in the hierarchy.
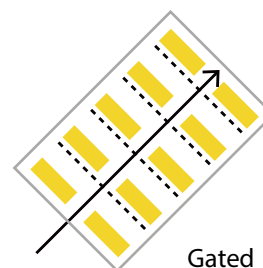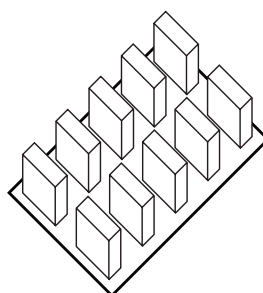

Gated

Figure 19: Newly built social housing or commercial housing are all gatedOostrum

3.3 Identity

U rban identity, as far as the design and functioning of public spaces is concerned, balances between the requirements of: generic recognizability" and "distinguishing characteristics". It is intrinsically tied to the image of the city we obtain – be it through personal experience or through hearsay – which greatly determines the way we regard and operate the urban system.

Identity can mean a number of things for an urban area and the people that live and work there. It relates to tangible and intangible heritage: buildings, history, memories. Identity helps citizens become attached to their environment and confirms that it belongs to them, individually and collectively (Scheffler, 2009). This increases their willingness to advocate for a place. Identity can also help to improve the image of an area, supporting social transformation by positively marketing a place. The perceived identity of a place or a town by its citizens can also be used to identify and detect improvement measures towards the desired image and environment quality (Scheffler, 2009).

In terms of Guangming, old town with their distinctive agricultural tourism attractions and green space provide this distinct identity. Most often they engrave the image and the identity

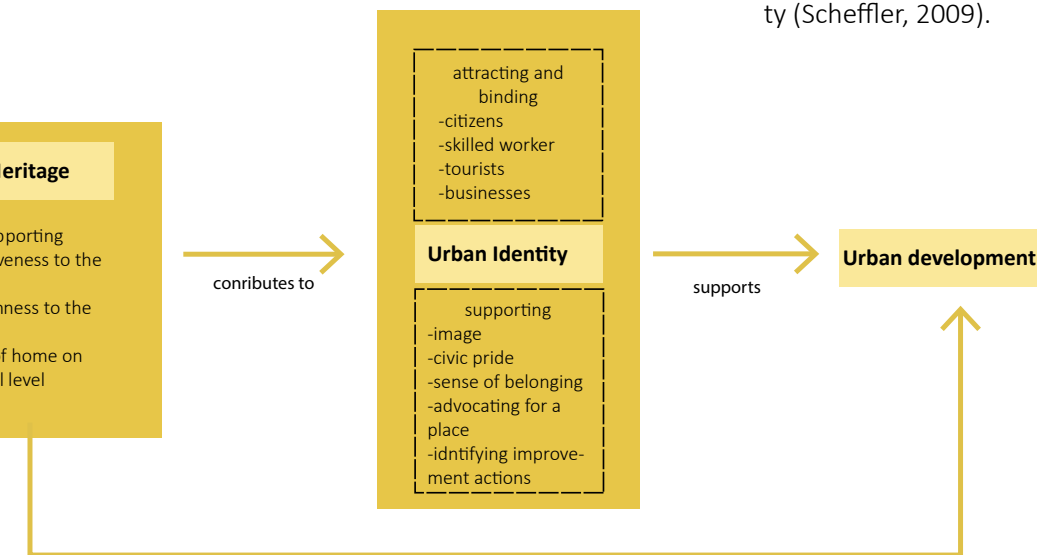| "IDENTITY FORCES"	FORMAL (OBJECTIVE)	INFORMAL (SUBJECTIVE)
External(global/top-down)	"city branding", urban policy, labeling	Public option, outsider/non-user's impression
Internal(local/bottom-up)	"genius loci", community spirit/ initiative	Insider/user's impression, individual circuits

of the town, effusing a feeling of home, likeness and appreciation. The identity is also strongly related to the personal identity of citizens and that of the local community.

However, in the current situation, thanks to the new town construction, Guangming and its some neighborhoods struggle to cast away various legacies and their identities of the past that are no longer relevant, desirable, nor even practicable. They are struggling to develop new identities branded as new and modern with their urban development actions . For them, a new identity is a vision and the image of that new identity serves as a marketing tool to attract new global sources. This identity strategy is more for the external attractions, maybe for the built areas, we should also remember the existing internal identity.

As analyzed above, in the old town, for some places it means that identity is an anchor, providing continuity for development, preserving rich traditions of communities, and making sure that changes brought about by time do not carry away essential qualities of the neighborhood or the city. For the process of urban rehabilitation and development, it means to respect and even build on the positive local identity as it provides sense of home, security and community (Scheffler, 2009).

infrastructure

green

commercial

residential

cultural

attracting and
binding
-citizens
-skilled worker
-tourists
-businesses

Urban Identity

supporting
-image
-civic pride
-sense of belonging
-advocating for a
place
-idntifying improve-
ment actions

conributes to

supports

Urban development

eritage

porting
veness to the

nness to the

f home on
l level

Integrating the new town development in Shenzhen metropolitan periphery
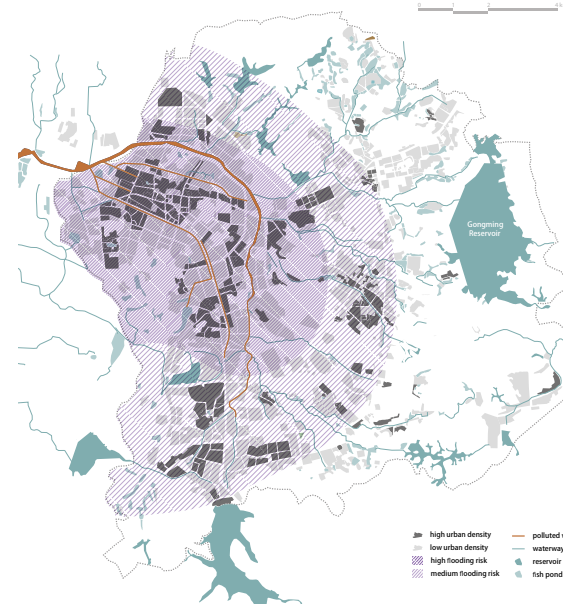
2.4 Biodiversity

Figure 19: Environmental hazards in Guangming
Source: Jiayao Liu

Maozhou rivier in the main stream that goes through the territory of Guangming. The pattern of the river is shaped by the topography of the land. It originates from Yangtai Mountain and enters into the mouth of the Pearl River, and Guangming is located in the upper side of the river.

The environmental issues of Maozhou have become severe. In 1960s, water in Maozhou River was still drinkable, but now some claim that it is now the most polluted river in the Pearl River Delta. The main sources of pollution come from industries along the river developed since 1980s,
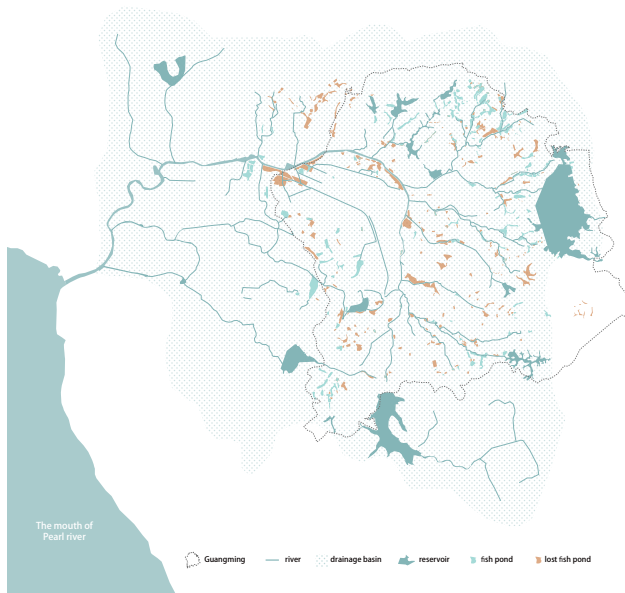
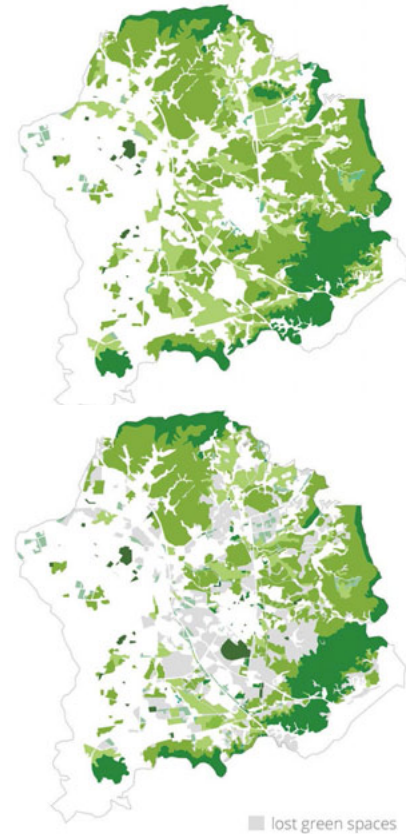Figure 20: System of Maozhou River. Source: Shenzhen Hydrology, 2001

Figure 21: Green space of Guangming new district before and after new district construction.

industrial livestock farms (Guangming Farm) and domestics wastewater. The strong smell of the river, especially in summer time, has massively influenced the livability of the region. However, there is still some small farmland along the river in which vegetables are still being cultivated by local citizens. Another issue is flooding. Along Maozhou River, especially in Gongming downtown, the level of flood risk is very high. Intensive rainfalls in summer often cause flooding problems in various locations along the river. As the river goes through dense urban area, it is estimated that 3 million of population are impacted by the environmental problems of the river.

People's activities and new town development

have changed the water system in Guangming massively. Besides water pollution in Maozhou River, the amount of fish ponds is also decreasing rapidly since the new town development. More than half of the fish ponds along the river have been covered for farmland, urban construction or water restoration.

LOCALIZATION OF GUANGMING NEW TOWN

Integrating the new town development in Shenzhen metropolitan periphery
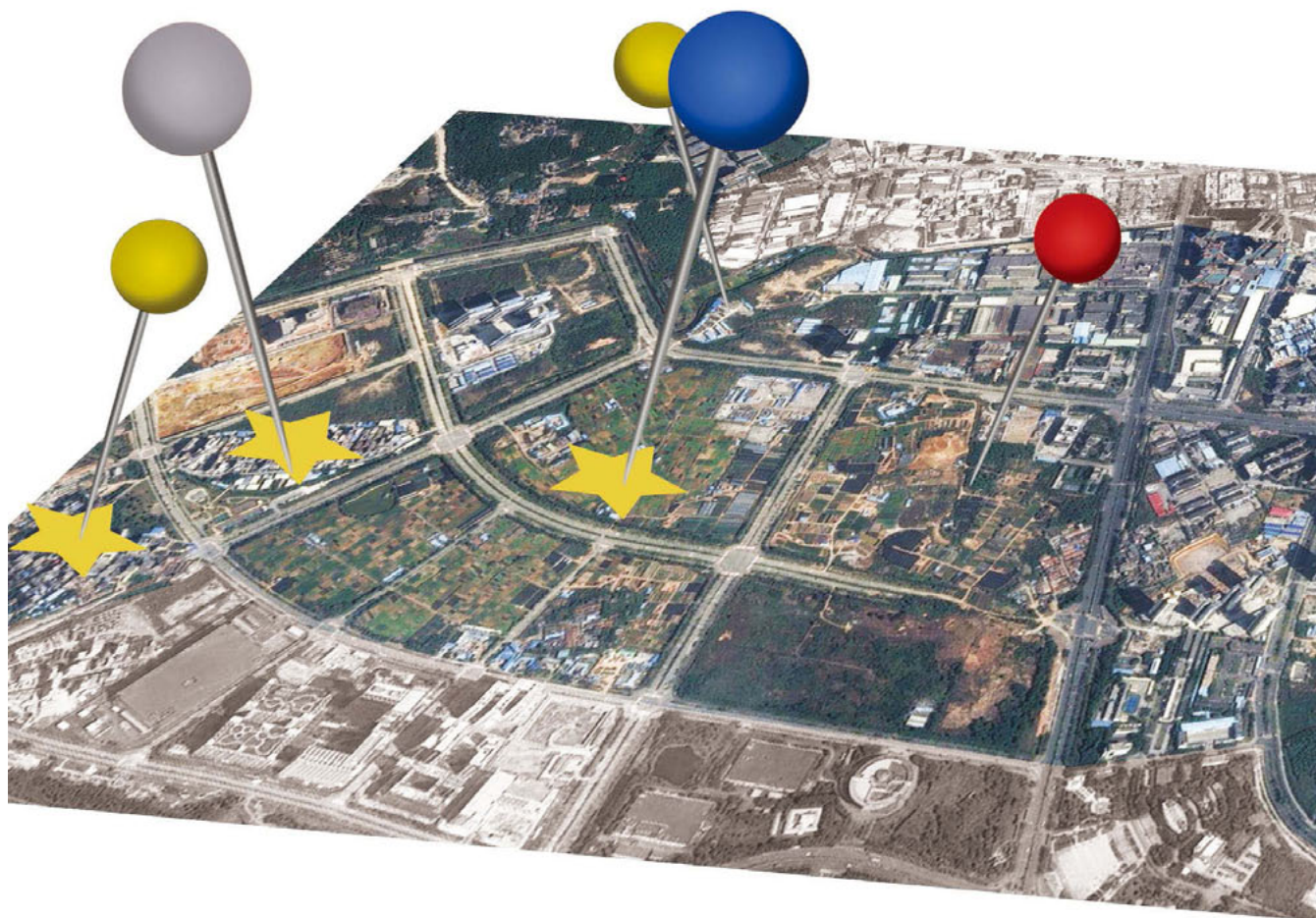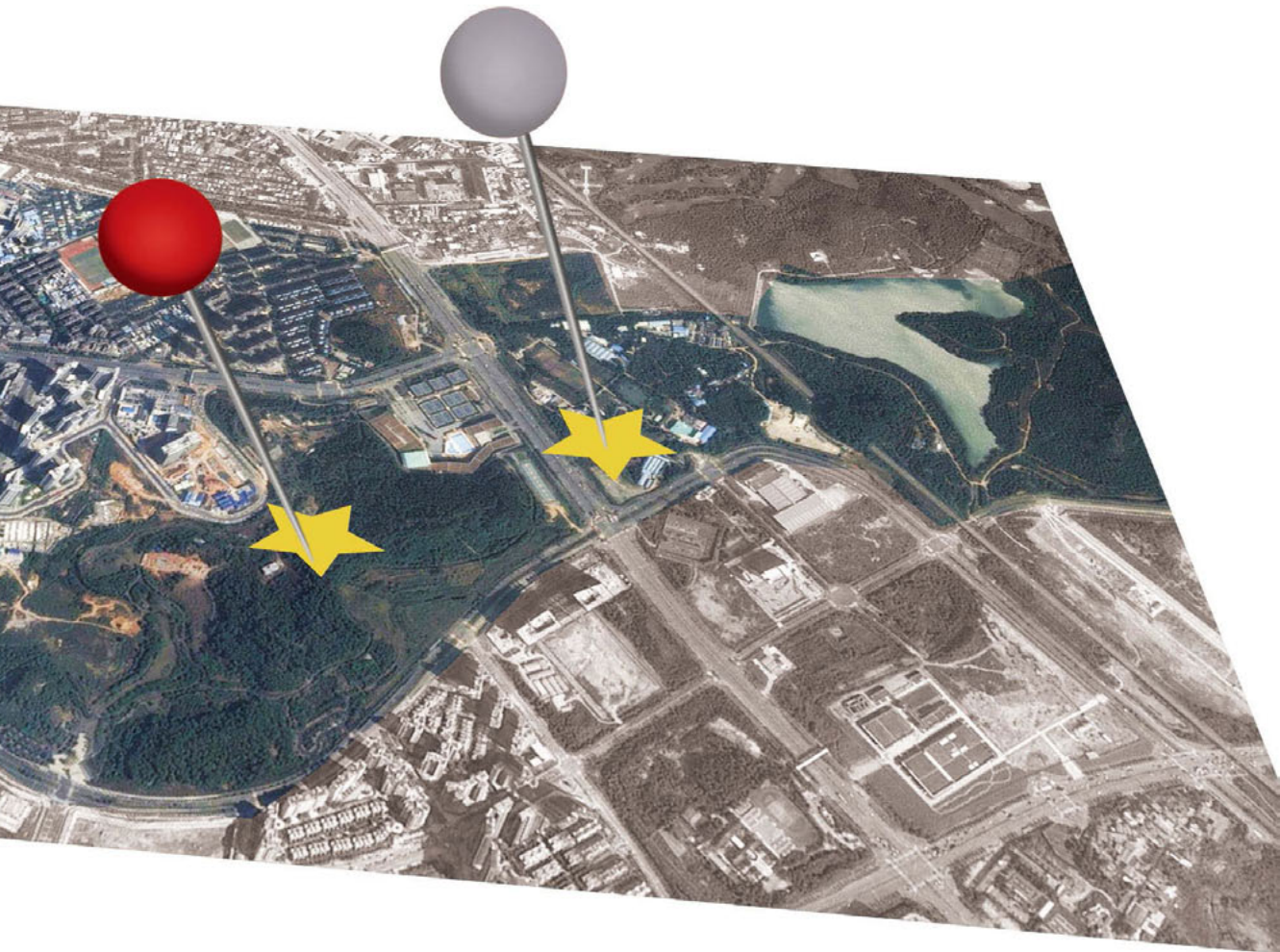
4. CASE STUDY

To study the relevant projects on social-spatial interaction and synergy could provide me some former perspectives to think about and analyze the existing situation. Besides that, former projects review could also result in a recommendation for the use of certain strategies as well as design principles in the upcoming strategy and design parts.

4.1 Deep Ground: Longgang Masterplan

The projects radically expands the scope of urbanism in order to deal with the contemporary challenges of modern China – rapid urbanization, huge development pressure, highly polluted landscape, and their local implication in the metropolitan Shenzhen, China.

Longgang River is located at the heart of Longgang city but is radically separated from the it with no interaction or relation apart from
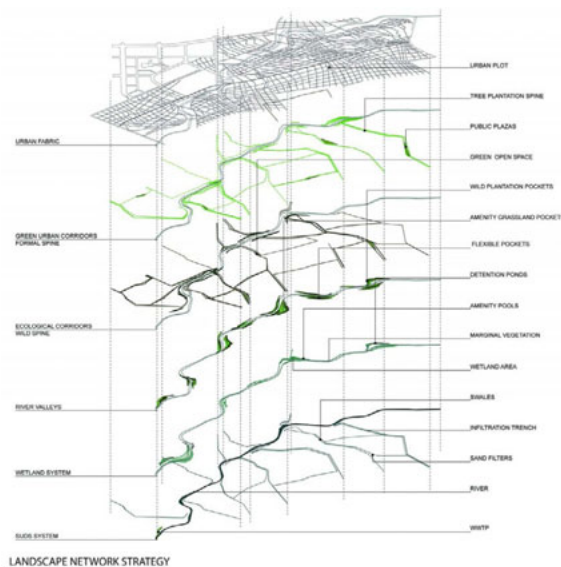
Figure 22: landscape negtwork strategy Source: http://www.e-architect.co.uk/china/longgang-city-deep-ground

being used as a back yard and wastewater sewer The infrastructural landscape project used this contradictory condition to propose the recovery of the river triggering the revitalization not just of banks and surrounded areas but of the whole city , driving the landscape strategy, greenery and river as one interactive and interconnected system. The infrastructure designed along the river will serve as an anchor point to deploy cleansing strategies, rainwater collection and flooding defence while creating green areas, ecological corridors, public open spaces, sports fields and leisure areas. The landscape network creates a major framework to articulate the urban fabric, the public areas and the infrastructural equipment of the city and will be able to generate a great variety of programmes which do not exist or are in poor conditions, linking the river to the neighbourhoods and with the city. This in fact will generate ecology inside the city, highlighting the presence of the river in the city not just as an aesthetic element but as a strategic, active and vital for the present and future viability of the city.

The design for the infrastructural landscape incorporates a number of principal elements: River and waterscapes, ecological corridors,

river valleys, as well as others in relation with them: biodiversity, connectivity, use and activity and character. These elements are combined to produce an inspiring, hardworking, accessible, safe, sustainable and contemporary landscape.

Urban villages
The concept of the urban villages is key in the project, as is an urban typology which clearly defines the character and history of many cities in China and Longgang in particular. There is a set of urban villages which have been identified as potentially interesting to be preserved. The project proposes the use of these areas as part of a strategy for generation of various brands across the site, providing certain characteristics and differentiation which will be the key for the success of the city as a whole.

Urban villages tend to show an extraordinary character which in many cases attracts visitors due to its distinctiveness. This is the case of the so called the Dafan Oil Painting Village, also in ShenZhen, where an industry of production of painting replicas has generated an unprecedented interest from tourists, which in turn has sparked the arrival of different kinds of artists and creative professionals.

In the case of this project, the villages show different characteristics which make them unique, like the presence of a market or prominent historical building. This fact is key in the management strategy of the urban villages as this can be an important point to anchor the urban life around them.
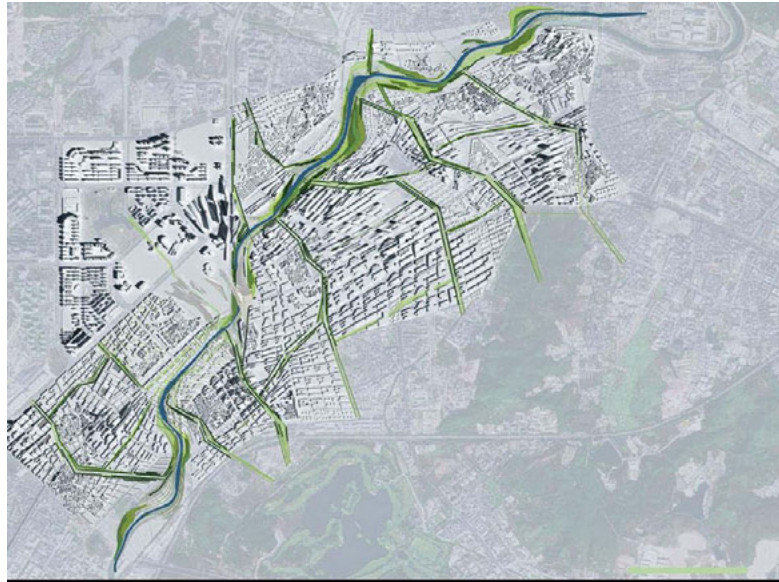

Figure 23: Mater plan. Source: http://www. e-architect.co.uk/ china/longgang-city-deep-ground

Integrating the new town development in Shenzhen metropolitan periphery

4.2 Sociopolis

The Sociopolis project came into being to explore the possibility of creating a 'shared habitat' that would encourage a greater social interaction between its inhabitants, proposing new housing typologies in keeping with the new familial conditions of our time, in a setting of high environmental quality.

The question to be answered was simple: if we live in the age of knowledge, and if in order to act the world has to invest in research, should we not devote part of our production of public housing to researching and developing new kinds of buildings that respond to our present needs and prefigure future situations? This elementary question has been formulated dozens of times, but only very rarely has there been sufficient cultural and political support for the response to be affirmative. In Valencia it was decided to make the Biennial of the Arts an opportunity for generating a project that would provide a basis for this universal reflection.

The Rurban Project

The project, as a piece of generic research, was located on a site on the edge of the city of Valencia, in the huerta, in order to address a common situation in the process where urban growth comes face to face with the natural environment. The Valencian huerta has for centuries been an area of arable cultivation, with an

important network of irrigation channels of Arab origin that takes water from the river Turia and effectively structures the territory.In the European urban tradition, whenever the city has grown, nature (and agriculture with it) has disappeared.

The urban and the rural have been two opposed concepts.

However, Valencia and many other Mediterranean territories have a different history. For the Arabs, the huerta was their garden, a productive fertile territory that they inhabited, in which they built their palaces and which always incorporated the surrounding landscape. The monasteries and the mediaeval city learnt from this culture, developing the concept of the hortulus.

One way of breaking out of the city-country dichotomy is to generate places of transition between the two, to create 'rurban' territories with a view to integrate the culture of the huerta into the city, guaranteeing that certain values of the same are assumed as own of our culture and our time.

In the Valencia of the 21st century, at a moment in time when cities and territories are seeking to assert their differential characteristics in the face of globalization, the fact of having a landscape and a culture of the huerta in the city can be a key differential factor in favour of urban and cultural progress.

In the post-industrial era a new techno-agricultural society is emerging, in which as citizens of the planet we participate in its culture and economy through the information technologies, we travel to distant places by high-speed transport systems, but at the same time we affirm the quality of the local, of the immediate habitable environment; of a new intelligent balance between what we generate and what we consume.

PART 5
SCENARIOS

Scenario planning is a disciplined method for imagining possible futures char companies have applied to a great range of issues. It helps expand the range of possibilities we can see.

I worked out two scenarios that suggest two different thinking in the interaction and identity-keeping issues between new town and old town. I guess both the two scenarios in my project are more about to give some suggestions that could somehow contribute to keeping or changing the existing networks gradually based on the understanding of the existing contexts and qualities. Most of the interventions in the border area that I propose are either recovering, maintaining existing systems or complementing these systems, hoping to offer more flexibility for the uncertainty of the future development. However, this project does not intend to provide a perfect and comprehensive solution for the whole area, but create conditions for a gradual and continuous development and synergic process that in a strategic and innovative way.

Buffer-zone scenario: the core of this concept is to set a sustainable limit that to stop the disorder spreading of the new town in order to keep the existing identity and quality of the existing built area. Moreover, in this limit, trying to recover the destroyed networks and ecosystem.

Transition-zone scenario: this one comes into being to explore the possibility of creating a 'shared and mixed-use border' that would encourage a greater social interaction between new town and the old one, proposing a smooth transition from the modern and large-scale new town to the human-scale old town through the border area in a setting of mix-use functions and appearance.
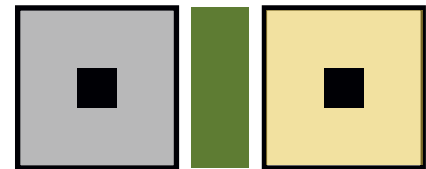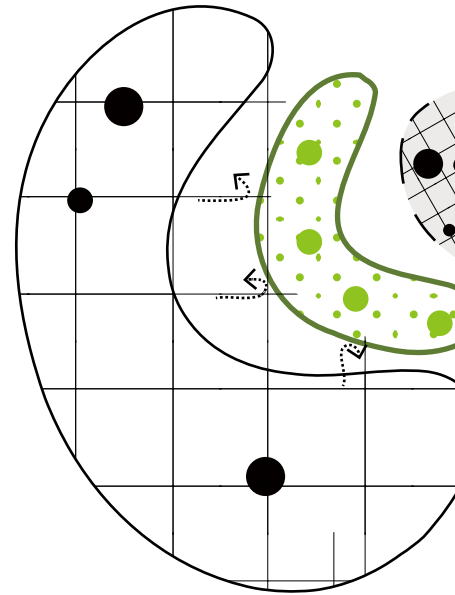
Buffer-Zone Concept: identity keep
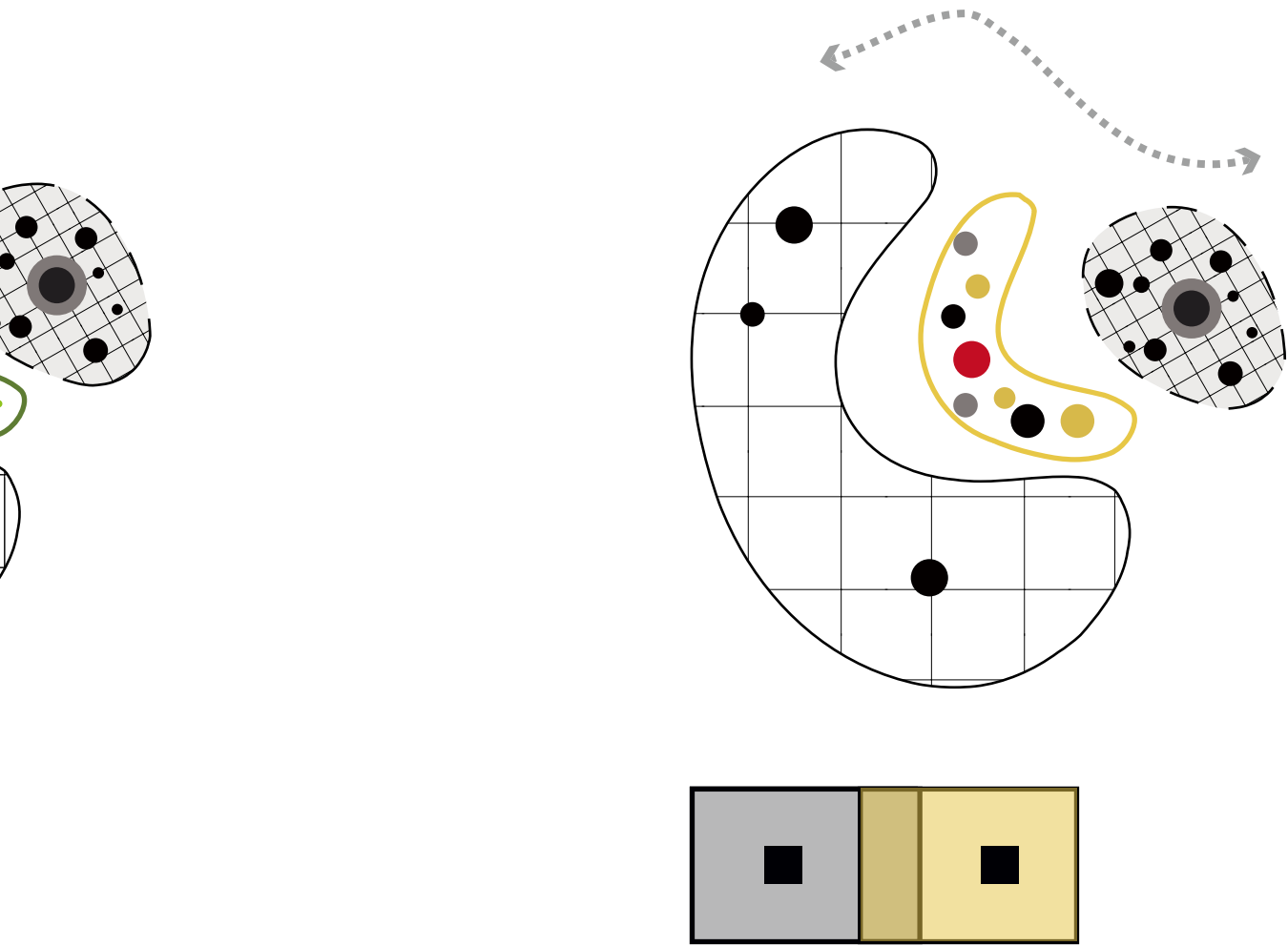
bing

Transition-Zone Concept: synergy by mix-use functions

Integrating the new town development in Shenzhen metropolitan periphery

1. SCENARIO BACKGROUND

No economy has ever risen so rapidly and no place has ever built so much so quickly. This rapid growth has resulted in peculiar side effect: boomtowns, everywhere in China. Until now, many cities doubled or even tripled their size within relatively short spans of time. In recent years, many problems are appearing due to the slowdown of the economic development.

Heavy debts

In accordance with the GDP growth requirements of the central government, the local government normally promotes the GDP growth through local government investment in fixed assets such as roads, subway, airport, real estate and other large scale infrastructure projects. Generally speaking, nowadays instead of directly issuance of government bonds or taking a bank loan, local governments choose to indirectly borrow money through so-called financing platforms of local governments. However, in order to repay debts, according to relevant reports, many cities in China heavily rely on land leasing.

In consideration of the increased public discontent over land acquisition and the falling of real estate market, developers are cutting back their businesses. Due to these kinds of uncertainty of land leasing, local governments in China are faced with high risk in debt repayment. As a result, large construction in cities is kind of slowing down, resulting in an uncertain situation of the newly planned area or extension area.

Slow realization process

Moreover, the realization process of the promised public projects is rather slow, probably because the plans are too ambitious and too much about urban images. This leads to a difficulty in finding sufficient public subsidies and investment partners. Public enthusiasm on new town planning has waned over time. It should be noted that the concept of a central district could improve the sense of urban quality for residents, and attract business agglomeration. However, the idea of building a cluster of modern architecture projects in advance of office developments would be risky for suburban new

Figure 1: The change of the hot spot areas in Guangming.
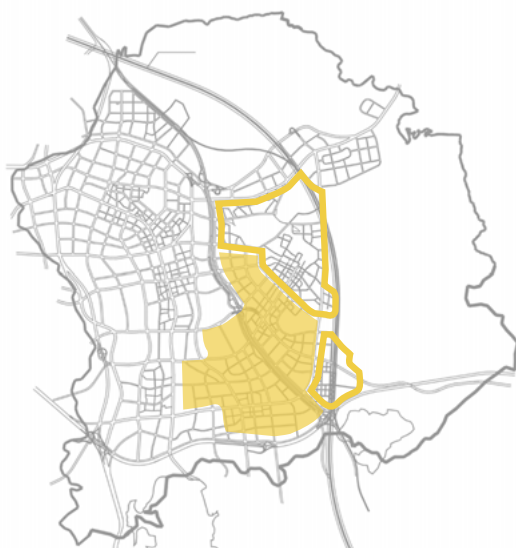
hot spot in 2007 master plan
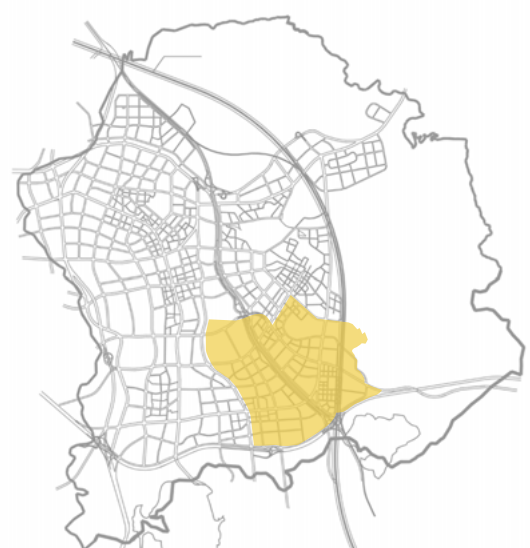
new hot spot in 2015 master plan

LOCALIZATION OF GUANGMING NEW TOWN

towns, especially under the current economic condition. It is not rare for office spaces to remain vacant and be transformed to other uses in the future (Zhou, 2012).

Changing location of the hot spots

Firstly, the construction of the metro station, can bring both opportunities and uncertainty.
In Guangming, there are planned two metro stations located both in new town and old town. These areas around the metro station become a new investment hot spots where a lot of investment flowing in and forming new clusters with high density. In some parts of this kind of hot spot area, forming new hot spot means tearing down of the existing environment to make way to new development, which can affect the communities as a whole and displacement of the local residents.

To continue, as even among the already leased lands, there are still risks and uncertainties. Specifically, In terms of Guangming new town, according to the changing reality and investing interests, there are many changes proposed by the new town planning scheme. More specifically, in the new master plan 2015, the new hot spot named 'Phoenix City' was worked out. In this plan, several leased land parcels belonging to the border area were not taken into the new 'Phoenix City' area due to the bankruptcy of the relevant companies.

Therefore, in response to the uncertainty and difficulty to predict and plan the future, I guess the scenario planning could allow us to chart a middle ground between under and over-prediction in decision making.

2. BUFFER-ZONE SCENARIO

2.1 POTENTIAL RISK

The physical design of cities and their economic functions are secondary to their relationship to the natural environment and to the spiritual values of human community.
-Lewis Mumford

New town is deveoping at astonishing speed, which brings in crowding and related insufficiency of basic amenities, resulting in modern planning institution of zoning and other regulations. These planning interventions have resulted in crafting a city that is ever hungry for land for fulfilling any of its physical requirements, leading to environmental degradation, further resulting in more planning intervention subjecting the city to this vicious circle and putting more pressure on land.

In the case of Guangming, the combination of the current new town development model – infrastructure driven and high-end orientated- takes little account of the existing urban structure and the means of socio-economic upgrading it provides to the local and migrant population. Therefore, I will propose an alternative development model, which is to set a sustainable limit that to stop the disorder spreading of the new town in order to keep the eixsting identity and quality of the exsting built area. Moreover, in this limit, trying to recover
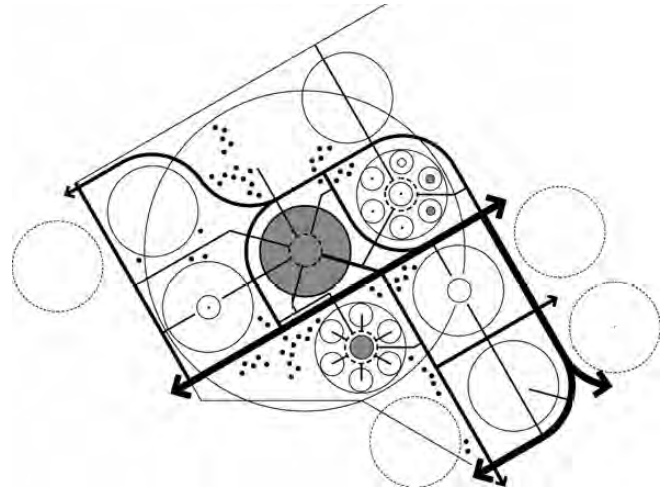

Figure 3: Almere， amalgam of different models, a selection of: Garden city of tomorrow and the segmented city.
Source: De Bois P., Buurmans K., (2005), Genesis of urban frame – case study: New town Almere., CZASOPISMO TECHNICZNE, Cracow.

There is also a potential risk with the implementation Green buffer-zone that it might separate rather than connect. That is this green buffer might enlarge the segregation of the new town and old town.

In the case of Almere, overal ideological theories that contributed to the resulting town plan but where only partly implemented: (a) "Garden City" whithout the required autonomy; (b) "Green Belt"that separate rather than connect; (c) "Polycentrism" that largely omits interconnections; (d) the "Neighborhood Unit" and (e) "Segmented City" concepts, both commercial rather than social. The factual problems of the new town are corresponding: the new town is a collection fragments, enclaves, a series of unilaterally connected districts and neighborhoods that are decidedly introverted, each separately linked to the main road but not to each other and therefore, in a way, comparable to "gated communities". And the implementation of the

Figure 2: Boundaries between city and nature
Source: http://www.rex-ny.com/work/low2no

LOCALIZATION OF GUANGMING NEW TOWN

2.2 CONNECTIVITY

green strip actually enlarge the segregation between different neighborhood.

As one of the goals of the project is to contribute to the synergy between new town and the old one. Being aware of the potential separation, the programs, functions and public facilities in the green buffer zone need to be paid more attention.

Disconnected or extended-scale street patterns make traveling between locations less direct and less convenient for pedestrians and bicyclists. When long distances separate destinations, or when land use is sprawling rather than compact and mixed, active transportation is not an attractive choice.

To reduce the segregation of the existing lands as well as different kinds of networks causing by the construction of large or regional infrastructure.

To foster new slow traffic or public transport networks and green networks to reconnect the existing isolated areas segregated by large or regional infrastructure.

Figure 4: the segmented city.

Figure 5: The bottom-up connections before new town construction.
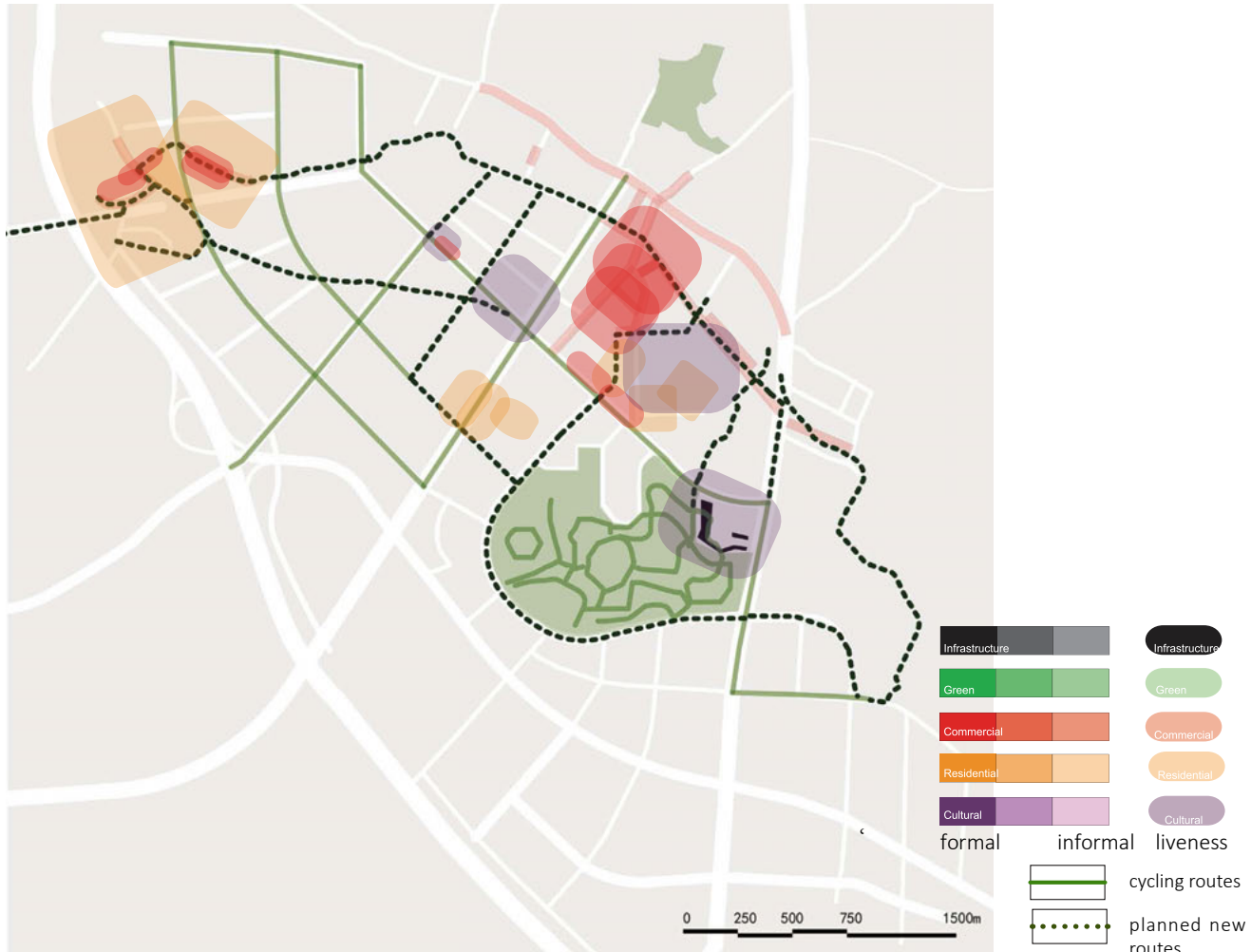
Figure 7: New routes plan

Green-ways are a step towards crating safer and moving inviting streets for people to walk and bike. Neighborhood green-ways could provide new options for mobility and public spaces that could enhance the community feeling and urban vitality as well as encourage slow traf-fic. Moreover, it could reconnect the existing isolated areas segregated by large or regional infrastructure as well as create conditions to re-structure the green system.

These proposed new routes probably include almost all the important destinations and many potential or existing public centers both in old town and new town, while each has unique features. To make sure that the local residents could be better accessible to the existing various public facilities and create conditions that more optional activities could happen.

2.3 LIVELINESS

Gated   Open
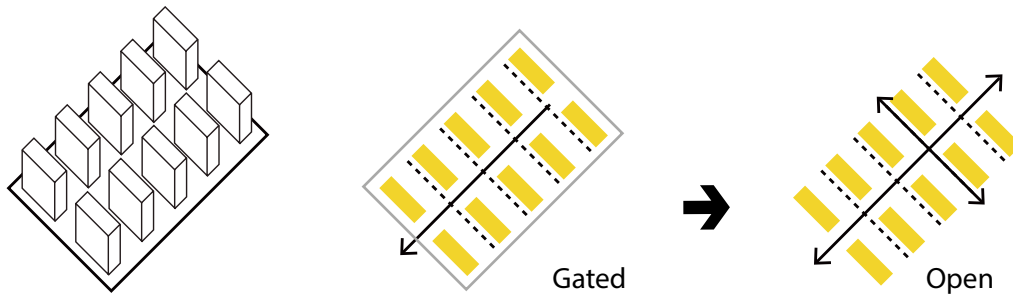
As analyzed above, except school areas, markets, shopping centers and station these public facilities where necessary activities happen most, urban villages, mixed-use community are most lively parts where many restaurants, bars and shops are located long the main routes. Figure 8 shows that in gated social housing community, jobless Vietnamese-Chinese living here selling food on th main routes. However, as the existing gated situation, the south and north connection is blocked which prevent more passers-by and potential buyers.

Figure 8: Jobless Vietnamese-Chinese selling food in their gated community.

My proposal create conditions to make existing have e better accessibility to the communities like social housing and Danwei communities which need to be open internally. To enable the existing tree structure to change into networks in order to evoke more optional activities which can bring more liveliness.
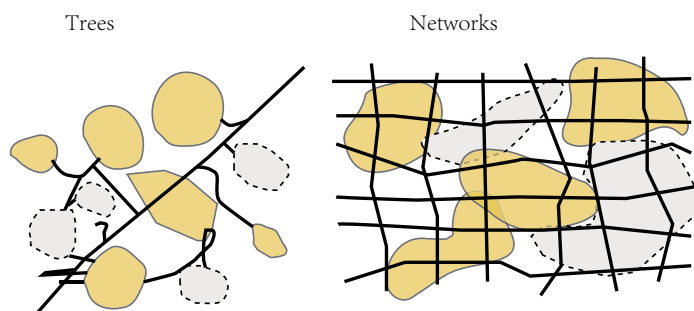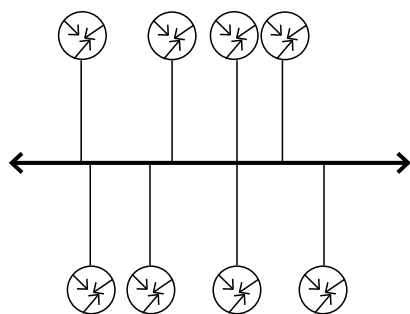
Trees   Networks

Figure 36: From trees to networks

2.4 BIODIVERSITY

GREEN SPACE

Figure 9: Rec...
water system

AVERAGE RAIN

HEAVY RAIN
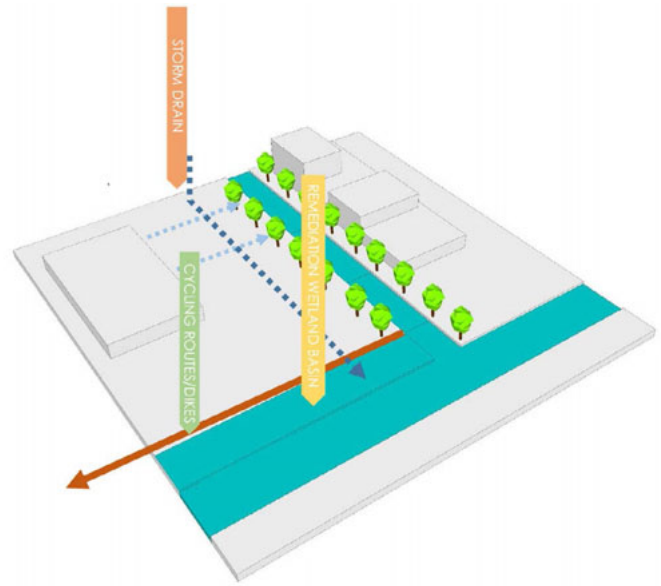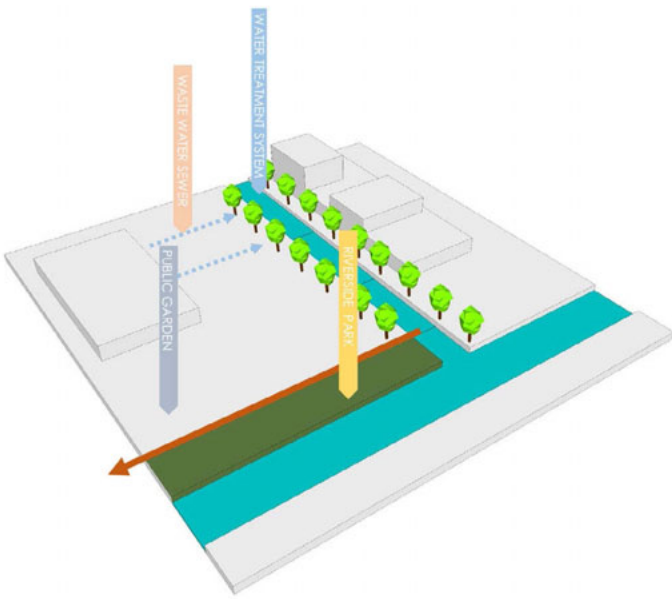
In an average rain, both waste water and rain are captured by the purification sponge system to be cleaned. The remediation wetland is used as public space.

In a heavy rain storm, water reaches the river edge by flooding and overflowing through the remediation wetland where the dike can block the water out the park. In addition, an under dock cisterns release excess rain water to the river.

WATER INTAKE AND SCREENING

WATER SETTLING AND PRECIPITATION

TERRACES FOR AERATION AND BIO-PURIFICATION

SUBSURFACE FILTRATION

HEAVY MEATAL REMOVEL AND BIO-PURIFICATION

NUTRIENT REMOVAL

AERATION AND BIOLOGICAL PURIFICATION
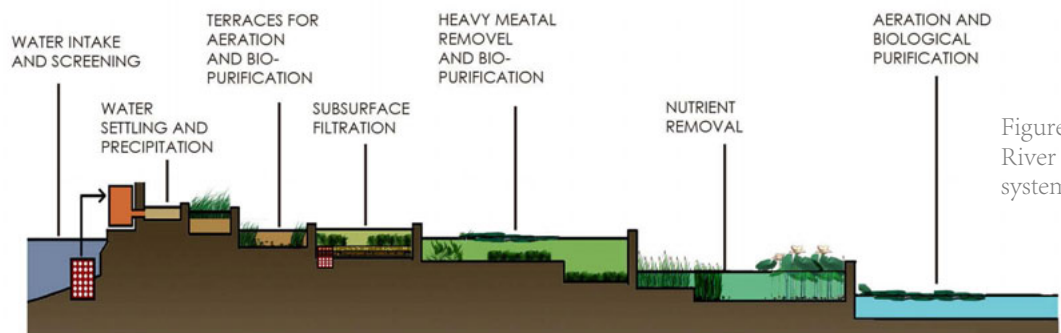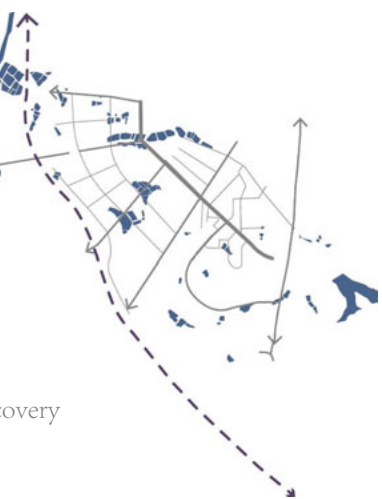
Figure 10: River cleaning system
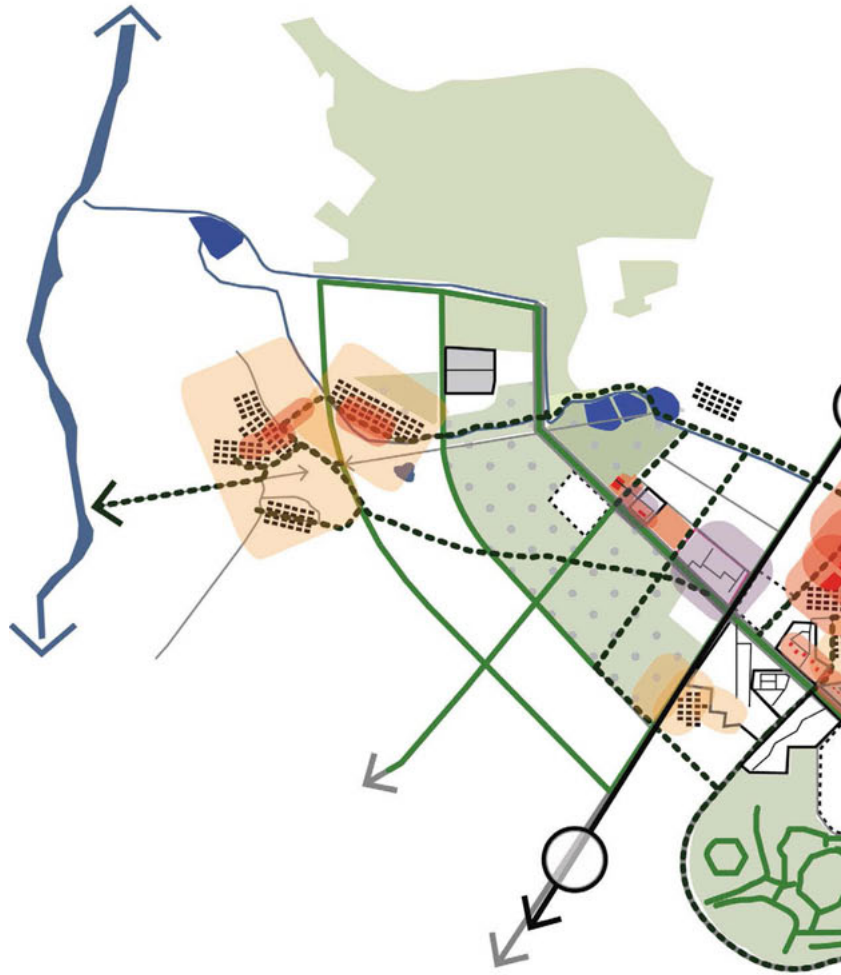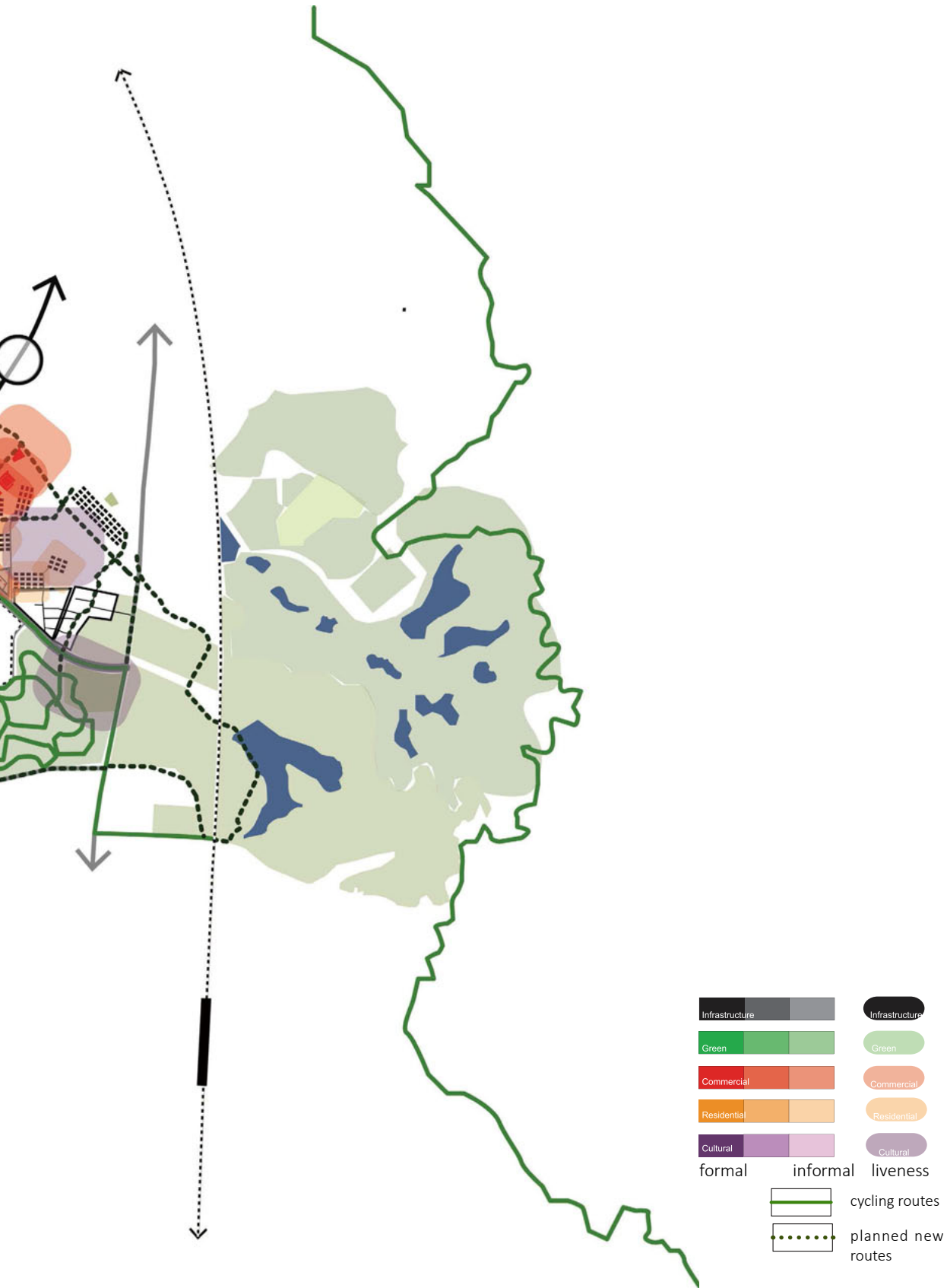
Integrating the new town development in Shenzhen metropolitan periphery

2.5 PLAN

Infrastructure

Green

Commercial

Residential

Cultural

formal   informal   liveness

cycling routes

planned new
routes

Integrating the new town development in Shenzhen metropolitan periphery

2.6 FINAL VISIONS

Figure 7:
stockholmsporten
master plan - winning
design
Source: http://
blackbadbear.

LOCALIZATION OF GUANGMING NEW TOWN
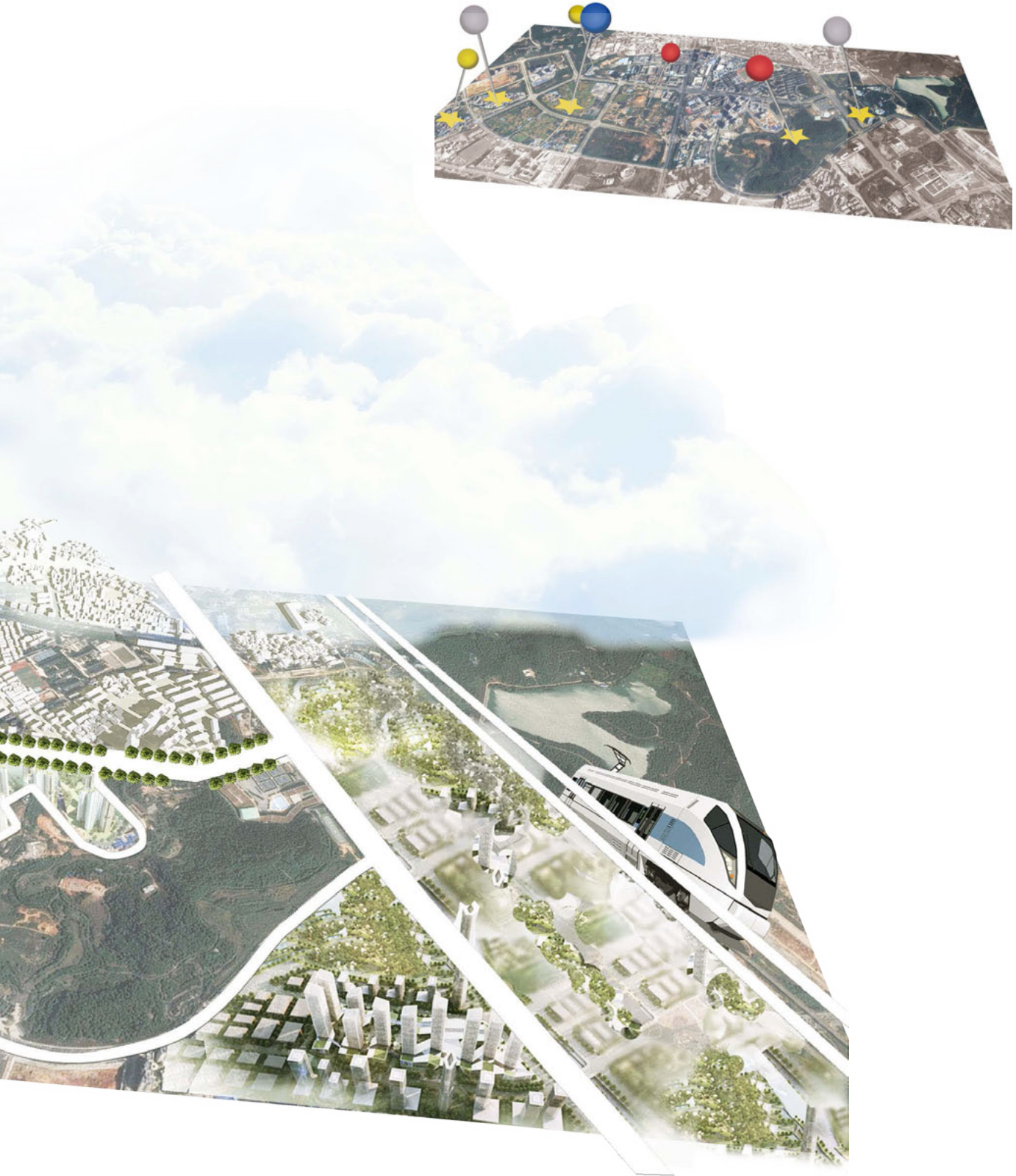
Integrating the new town development in Shenzhen metropolitan periphery

3. TRANSITION-ZONE SCENARIO

Generally speaking, in this scenario, I would like to explore an approach in which the programs are designed to mostly encourage social interaction, as well as allow new development opportunities in the border area,and the decisions to implement these programs obey unconventional criteria, where the mixing or overlapping of programs or the fact of making many social programs, such as sports programs, public and open, seek to provoke the merger, the unexpected.

The transiton-zone scenario came into being to explore the possibility of creating a 'shared and mixed-use border' that would encourage a greater social interaction between new town and the old one, proposing a smooth transition from the modern and large-scale new town to the human-scale and slow-life old town through the border area in a setting of mix-use functions and appearance.

Figure 11: The existing fnctioning
system in border area.

Integrating the new town development in Shenzhen metropolitan periphery
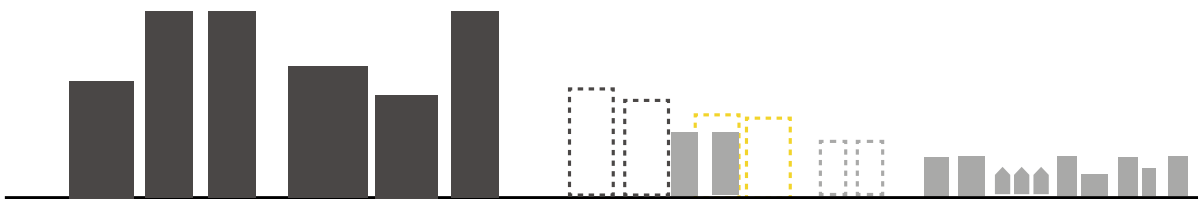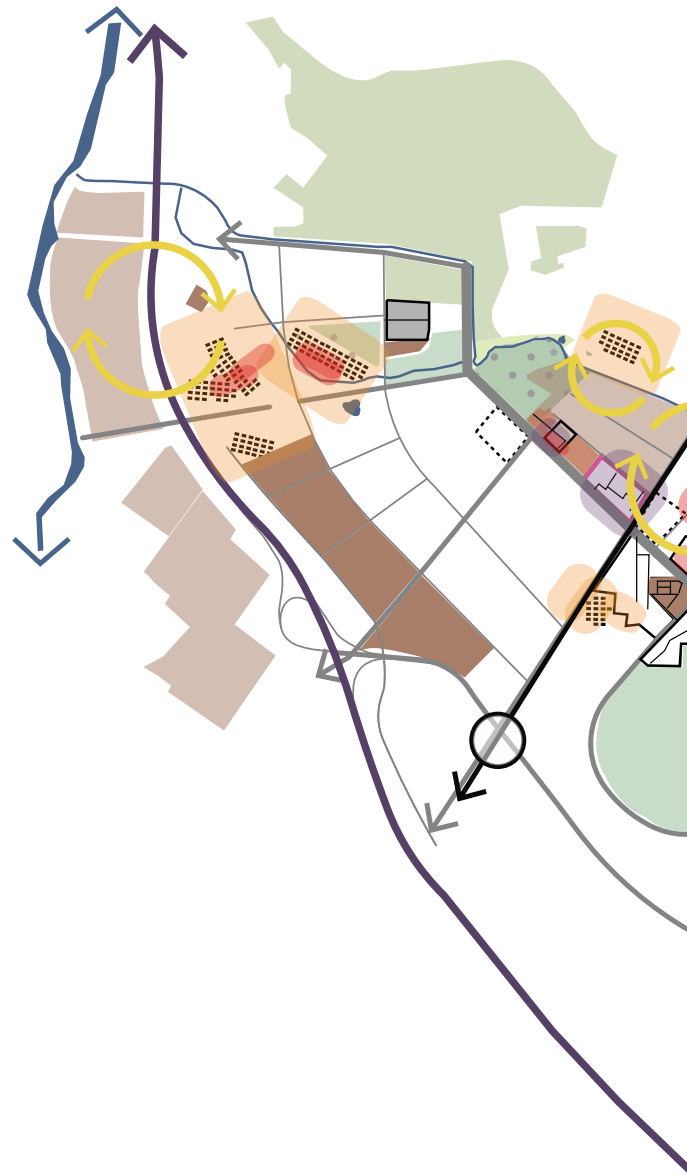
3.1 ACTOR ANALYSIS

Government – Local Metropolitan and National

Needs: Economic development, regional competitiveness, improved public service provision

Influence in development process: High

The People's Government of Guangming District (Local) and the Municipal Government of Shenzhen (Regional) have initiated the new town development process. The aims of the government are complex and varied, but include increased economic development (GDP, land prices), improving regional competitiveness, and improving local conditions (improved public services). In terms of power, the local new district governments are the most powerful actors, determining almost every aspect of the development process. The government's desires as being:

Higher land prices,
Improved public facilities,
Enhanced city appearance (green city),
High GDP,
More high-end business and industries
Attractive investment environment.

Developers
Needs: maximum profit
Influence in development process: High

The developers have a lot of financial and political power in the new development as well as redevelopment process. They aim to maximise profit from a development, and 'usually expend a lot of energy trying to increase the technical indexes of plot ratio and buildable area, while

hoping to ignore costs required to solve potentially serious issues including inadequate public facilities, increased traffic, and sufficient car parking' (X. Wu et al. 2012, p.4). Their desires are:

Realize the appropriate profit in order to get the funds back,
Develop in close partnership with the government

Local Residents
Needs: More affordable housing, better public services.
Influence in development process: Low

The types of housing located in the study area vary from gated residential areas, danwei housing and an urban village. However, generally, there is a growing demand for improved public service provision from all urban residents (Ye 2012) as well as improved and more affordable living conditions (Xiaoli et al., 2012). The group that have the least power in the development process are the migrants from rural areas who are without urban Hukou. These migrants without urban hukou make up a large proportion of residents in the urban village (Hao 2012).

Migrants

Needs: More affordable housing, better public services.
Influence in development process: Low

Reasons that the migrants live in the urban village include the flexibility of housing and contracts, the relatively good accessibility of the villages, and the lower rents Hao (2012). In addition, due to institutional barriers (hukou) and because of financial reasons, the migrants are unable to access the formal housing system,

so often have no choice but to live in the urban villages.

· **Go into the scope of the core stakeholders**
· **Ensure their legitimate living rights**
· **Still live in the city**
· **Need to integrate into the city**
· **Jobs**

The effectiveness of new construction or redevelopment is determined by whether or not it can meet the multiple needs of various groups in a dynamic environment, and by whether or not it can recreate new values for the stakeholders and the society. The involvement of people and organizations allows them to gain true information, have their opinions heard through communication and debate. And ultimately apply decision-making power could be adequately, in order to contribute to the group and public interest as a whole (Zhou, 2012). In this way, the regular control and adjustment of the plan could be on he feedback of the actors, which could be an effective approach in reducing the risk of uncertainty of the large-scale and long-term planning endeavor.

3.2 LIVELINESS: INFILL CONCEPT

U rban infill is defined as new development that is sited on vacant or undeveloped land within an existing community, and that is enclosed by other types of development. The term "urban infill" itself implies that existing land is mostly built-out and what is being built is in effect "filling in" the gaps (wikipedia). Infill development has the potential to have dramatic effects on urban density and urban form. Through this concept, when filling in new development, the existing contexts and structures will be taken care of, which means that when think about to infill new function or construction, the continuity of the existing situation and networks should be taken into consideration.

To apply this concept in the border area could make conditions to slightly adapt the existing networks and add new constructions as well as functions without demolishing everything.
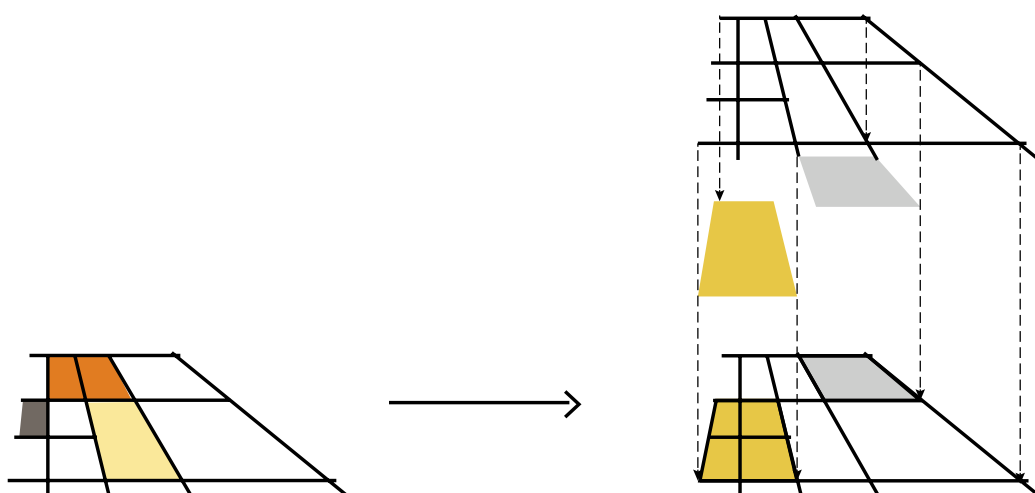

Figure 12: urban infill concept: structure kept, new functions gradually filled in.

3.3 IDENTITY: TDR CONCEPT

Transfer of development rights (TDR) is a market based technique that encourages the voluntary transfer of growth from places where a community would like to see less development (called sending areas) to places where a community would like to see more development (called receiving areas). The sending areas can be environmentally-sensitive properties, open space, agricultural land, wildlife habitat, historic landmarks or any other places that are important to a community. The receiving areas should be places that the general public has agreed are appropriate for extra development because they are close to jobs, shopping, schools, transportation and other urban services." (Source:Pruetz, AICP, 1999).

Sending Sites

Parcels that have productive agricultural or forestry values, provide critical wildlife habitat or provide other public benefits such as open space, regional trail connectors or urban separators. Preservation of these types of areas has been identified as a goal of King County. By selling the development rights, landowners may voluntarily achieve an economic return on their property while maintaining it in farming, forestry, habitat or parks and open space in perpetuity.

Receiving Site

Development rights that are "sent" off of a Owning a development right means that you own the right to build a structure on the receiving parcel. Development rights may be voluntarily separated and sold off from the land (sending site) and placed on a receiving site. A receiving site is a parcel of land located where the existing services and infrastructure can accommodate additional growth. Landowners may

place development rights onto a receiving site either by transferring them from a qualifying parcel they own, by purchasing the development rights from a qualified sending site landowner, or purchasing them from the King County TDR Bank. With transferred development rights a landowner may develop the receiving site at a higher density than is otherwise allowed by the base zoning.
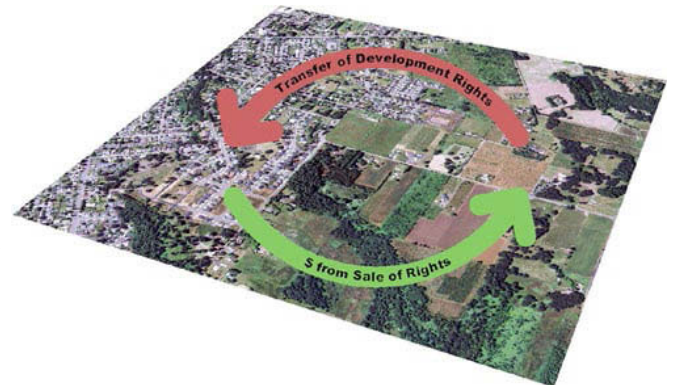
Figure 13. Conceptual diagram of transfer of development rights
Source: http://www.oregon.gov/LCD/pages/tdr_pilot_program.aspx

under 20m

under 45m

under 100(be-
low highest hill)
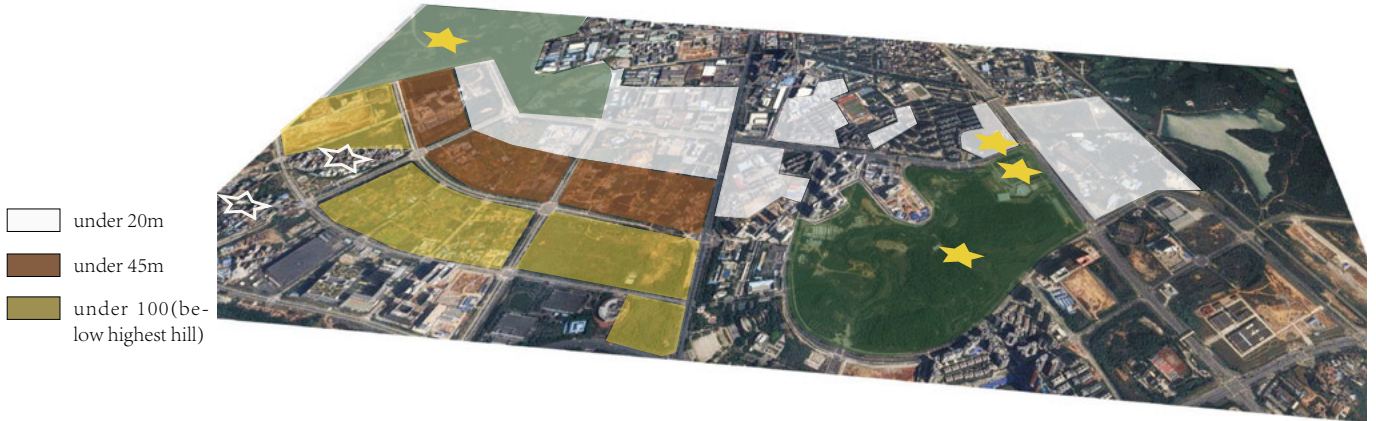
Figure 14: Appearance
control map

West side
bus lines

Max distance
600m

M New Metro

Max distance
400m

B Caopu station and east
side bus lines

M

mixed use
area

sending site

receiving site

quality keeping area

0   250   500   750   1500m

Integrating the new town development in Shenzhen metropolitan periphery
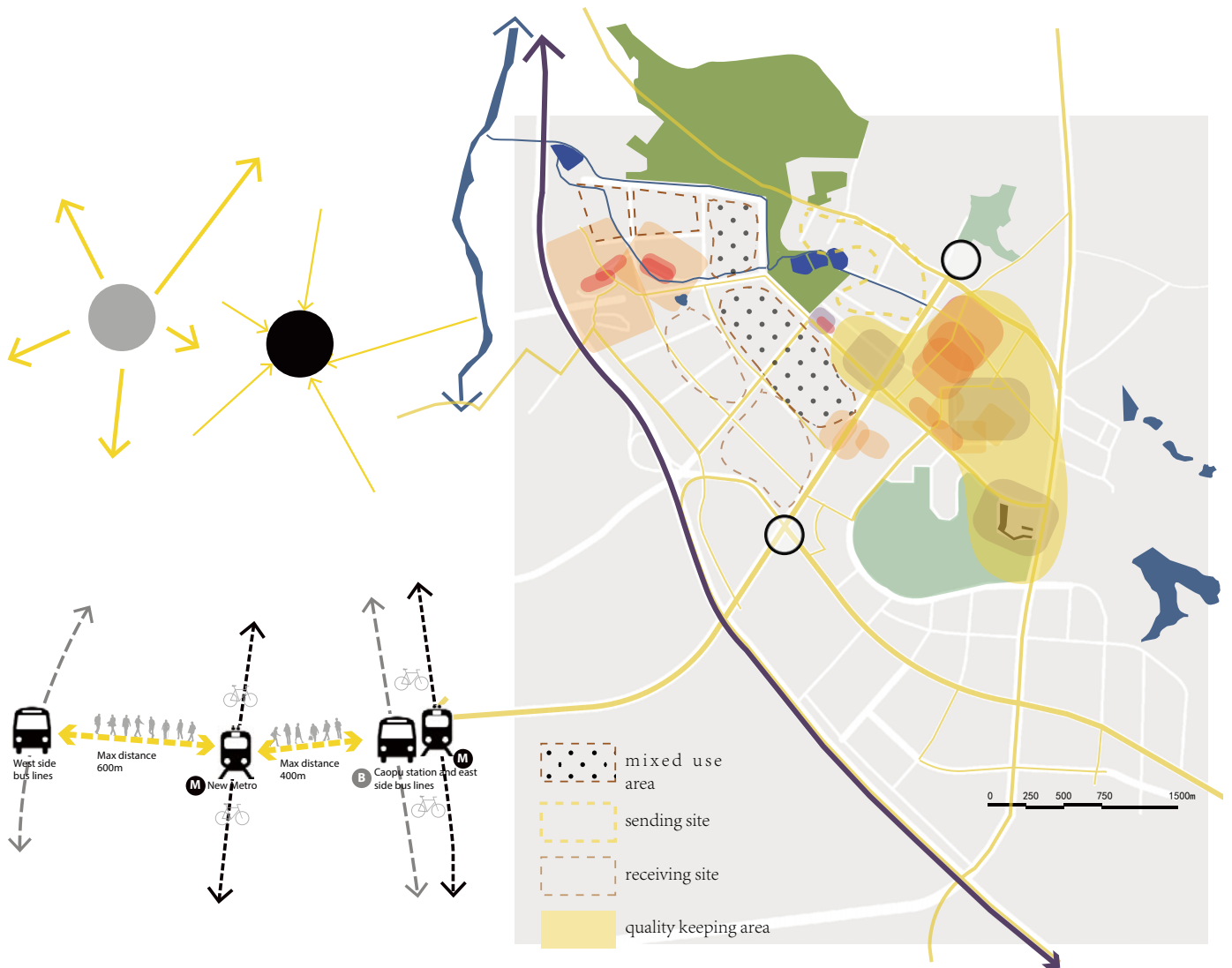
2.6 FINAL VISION
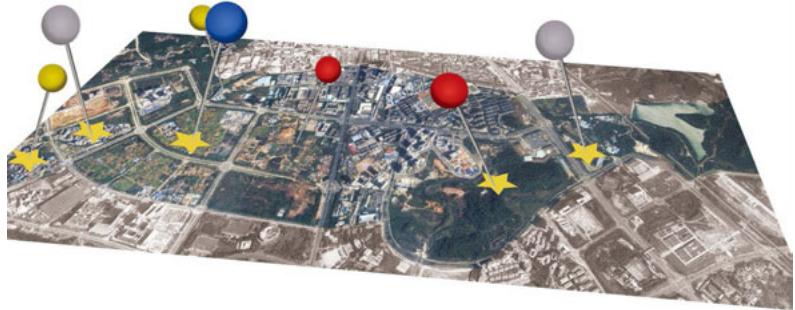
Integrating the new town development in Shenzhen metropolitan periphery
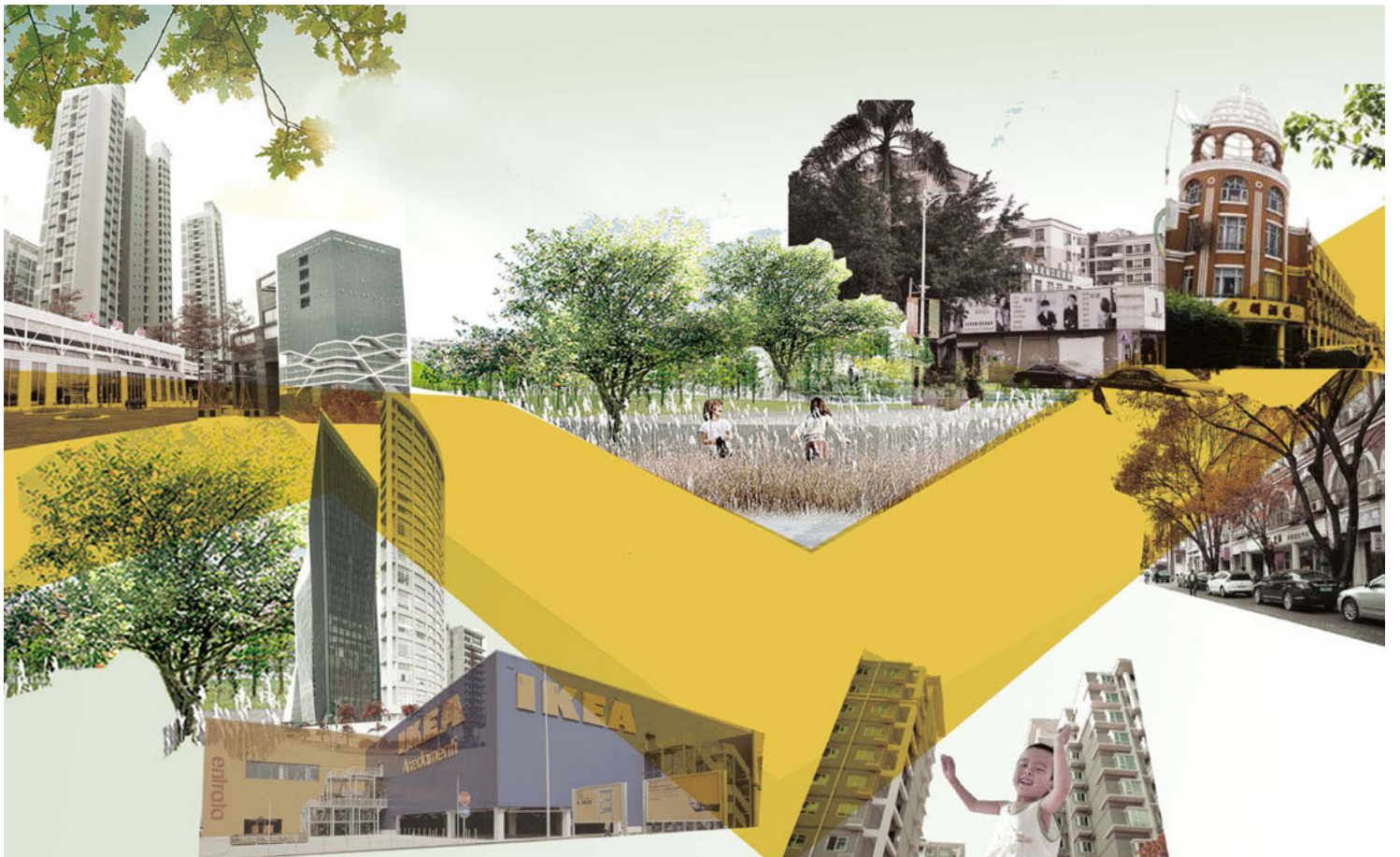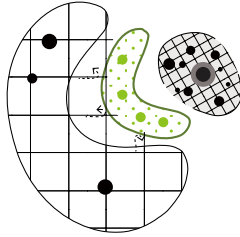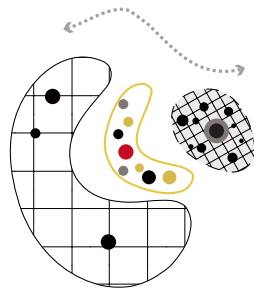
LOCALIZATION OF GUANGMING NEW TOWN

4. SCENARIO EVALUATION

SCENARIO EVALUATION

Main research question
How Guangming new town and old town could mutually benefit from each other?

	BUFFER-ZONE	TRANSITION-ZONE
OLD TOWN INTEGRATED	By ecosysem	By mixed-use areas
SOCIAL INHERENT	sense of community and belonging kept	Some parts kept, some parts re-structured, new functions groups filled in
COMPLEMENTARITY	Difference enhanced,	Functional complementarity and connection
APPEARANCE	Appearance keeping	Most qualified area kept , most changing
PROCESS	Gradual	Less gradual

LOCAL SCALE PRIORITY: CONNECTIVITY > LIVELINESS > IDENTITY / BIODIVERSITY

5. STARTING STRATEGY

5.1 WHY CONNECTIVITY

In the analysis part, I used 4 conceptual categories: connectivity, liveliness, identity and biodiversity to explore the relationship between urban form, urban operation and urban performance (the effect and impact on the perceiver) of existing networks in the border area. In doing so, it is possible for me to explore the interventions which could improve the performance of border area, addressing critical and urgent issues aimed at 'the synergic situation between new town and old town'. Compared to other three categories, I give priority to connectivity to explore the starting strategy, because connectivity could be the base-stone of other three key words.

Specifically, as transport infrastructure plays a crucial role in the functioning of today's network society, they connect both people and places. In case of liveliness, connectivity could make conditions for interactivity and overlap between different usage patterns and user groups. Also it can promote optional activities which also could bring liveliness. As for identity, connectivity could bring external resources to enhance the city brand and promote the internal interaction. In terms of biodiversity, connectivity also can help the existing green and water system to be recovered and reached, it is a conditioning aspect to combine several different networks to evoke new possibilities.

Liveliness

Interaction / overlap
Optional activities

Identity

Global(external)
Local(internal)

Biodiversity

Green and water system to be
reached and fixed.
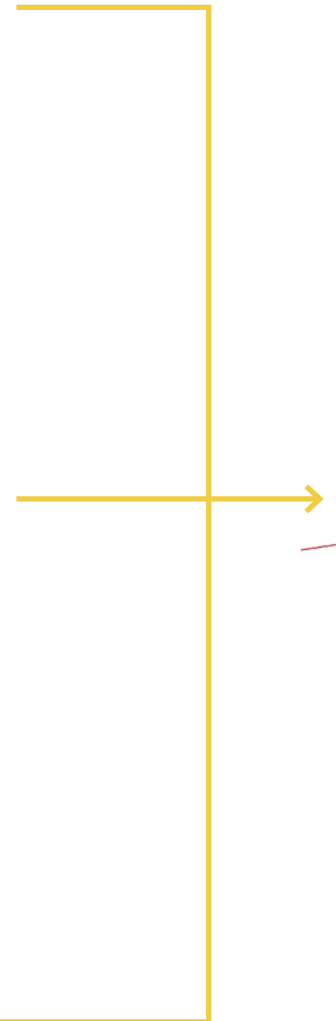
5.2 HOW TO CONNECT

In the formal intervention, broad city boulevards connect the different amenities to the gated middle-class high-rise blocks and industrial parks. These amenities, like school, stadiums and hospitals, are inaccessible to the people living in urban villages. For a multitude of reasons, many of the high-end functions are gated and their entrances follow the logic of the car-orientated city boulevards, thus becoming disconnected from the slow traffic system.

Moreover, the loss of street life is a negative factor in Guangming. So the focus point will also be to bring back the traditional street life and the places of interactions and meeting. Public space is the great factor for this strategy. By creating a network of spaces, connecting specific important anchor points in the neighborhood, we can establish a fixed framework of squares, playgrounds and parks.

The intervention is proposed to create these conditions:
-Creating a better balance between car traffic and slow traffic
-Improving road safety
-Revitalize the street life
-Developing a coherent pedestrian policy
-Improving conditions for cycling
-Enhancing the walking experience by introducing streets with greater pedestrian priority
- Enhancing the connectivity(slow and public traffic) between regional infrastructure and local ones

Green-ways are a step towards crating safer and moving inviting streets for people to walk and bike. Neighborhood green-ways could provide new options for mobility and public spaces that could enhance the community feeling and urban vitality as well as encourage slow traffic. Moreover, it could reconnect the existing isolated areas segregated by large or regional infrastructure.

The proposal is to plan green-ways with different characters: commercial, leisure, cultural and riverside. It is important to realize that each line in the network is not be seen as fulfilling a singular function, but rather as having a focus on a particular function. Moreover, this proposal is to integrate the new metro and formal amenities into the new green way routes structure. The regional structure that was explained in the first section of this chapter plays an important role in the integration of the metro and amenities. The secondary public infrastructure supports the metro-system. The secondary system follows the lines from the regional structure. Each lines make numerous connections with the metro system.

Connectivity

Starting point

5.3 ROUTES PLAN

green routes
commercial routes
riverside routes
cultural routes

0   250   500   750   1500m
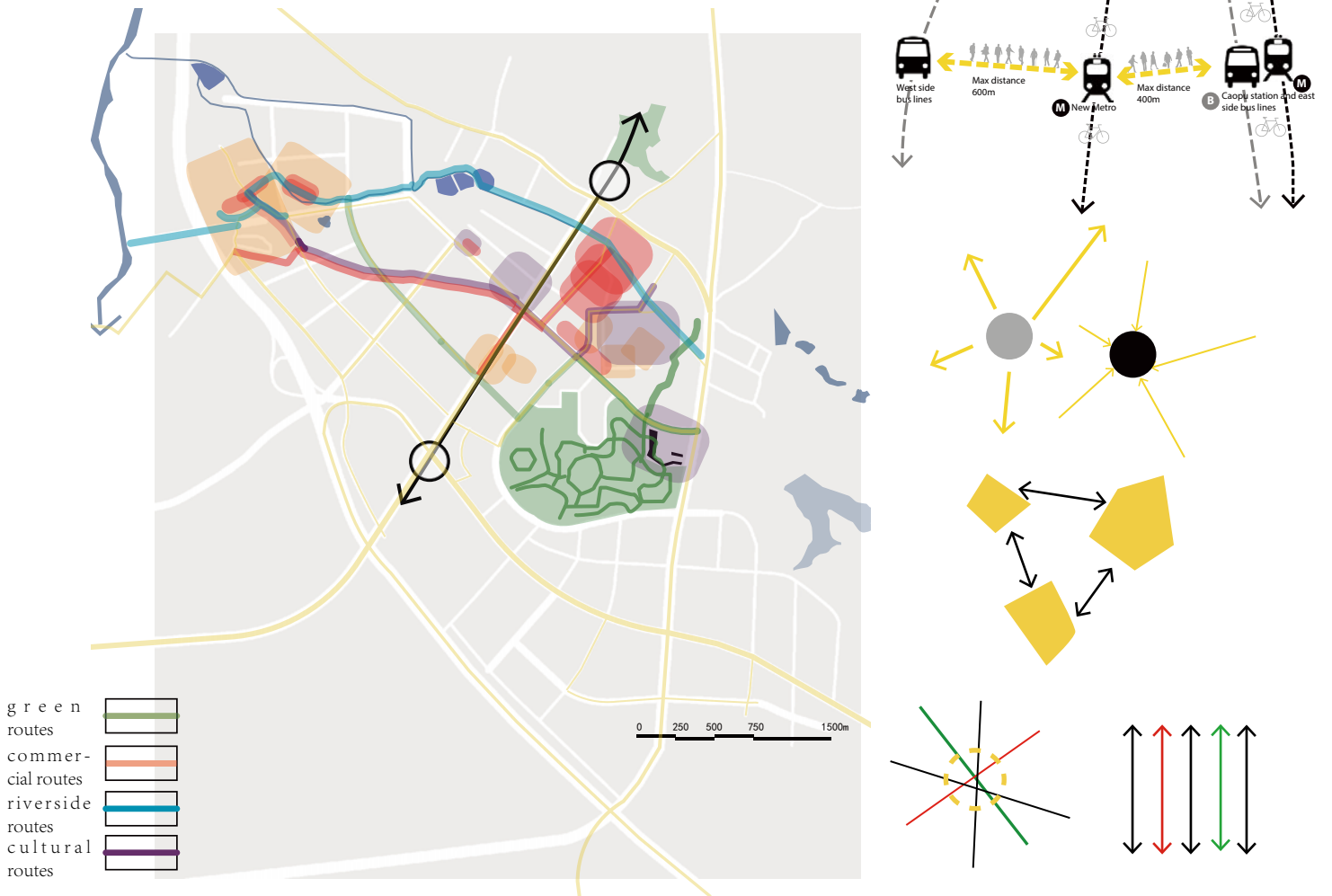
These new routes probably include almost all the important destinations and many potential or existing public centers both in old town and new town, while each has unique features. For instance, Route 1 is connecting many essential sites including central market, which is the largest market in the old town and hosts a lot of important events. Route 2 is a leisure one connecting newly planned parks and Niu Mountain, which used to be the highest point of the town and has a great view of both the urban part and the natural as well as the rural area.

Route 3 is a relatively local route compared to

the former two. It connects mostly residential neighbourhood , urban villages and related infrastructure and public facilities, such as Park Hospital, Dongzhou Primary school and Guangming high school, etc. It begins at the future Guangming metro station, which will be a major transportation node of Guangming old town as well as the starting point of Route 1.

5.4 ROUTES VISIONS
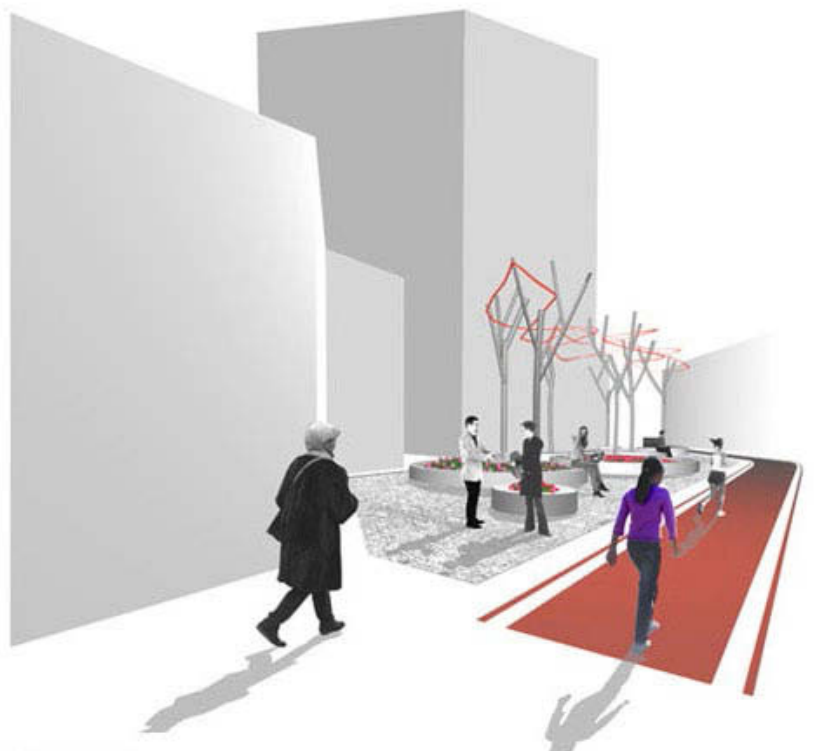
Integrating the new town development in Shenzhen metropolitan periphery

PART 6
CONCLUSION

CONCLUSION / REFLECTION

The core issue of this project is to discuss the relationship between the new town and old town in the fast-growing metropolitan periphery. The main research question of my project is how Guangming new town and old town could mutually benefit from each other, aiming to formulate a process oriented and strategic planning framework to rebuild a more interactive and dynamic relationship to integrate the regional new town into the local demands and conditions in a mutual-benefit way. And this issue still remains relatively unexplored in the metropolitan peripheral small town context.

The research of this project starts with the understanding the segregation between the new town and old town in various aspects. As the construction of the new town is the internal demand of the central city, so the new town and the old town seem do not have any overlapped network originally. Therefore, at the beginning I always asked myself this basic question: do the new town and the old town really need a more synergic situation? As Manuel Castells defines that dynamics of a specific area now largely depend on decisions elsewhere, with no involvement by the local authorities, and which are sometimes hard to reconcile with local problems. During the field trip, I had a very emotional but strong feeling that obviously the old town has already been influenced by the new town, maybe both negatively and positively, but in a very passive way. This phenomenon was reflected in many aspects, for example the large amount of demolishment of the existing communities and the newly built large-scale and high commercial housing. Also several newly-built well-equipped public facilities constructed at the edge of the new town benefit the residents in the old town. These kinds of demolishment and new constructions happening in the old town mostly on account of the external flows(money, infrastructure etc.) brought by the new town, the existing context of the old is almost ignored. Generally speaking, in responding today to the challenge of reclaiming areas, there are two approaches which might be taken. The first idea to treat the prospective development as something completely new, a discrete urban proposition unrelated to its surroundings. The second is to understand it as part of a physical and historical continuum, to seek to extend, or to cultivate, the existing city. Obviously, the development mode of Guangming is the first one. Is it possible that to reach a mutually benefit situation both to new town and old town? Maybe to be more synergy could be one of the answers that both new town and old town can be developed in a healthier and more sustainable way.

Many questions arise when talking about this issue. What kind of synergic situation? What is the relation between fast, unpredictable development and the quality of life in the town? Without understanding the complexity and the existing functioning of the system, any proposal is doomed to fail. When I zoomed in to observe the existing built environment and people's everyday life happen in it, I started to understand the functional system of the context both in regional, district and local scale through the analysis of the existing networks. Based on the network analysis, the quality, identity and the vitality of the built environment came out.

The most remarkable parts I learnt through this project are the network thinking and strategic thinking when analyzing the situation and proposing a plan, and how to make a complete story when explaining the project. With the help from mentors and the studio, I could better understand the complexity of the city, read the functional system and networks

behind the chaotic and complex surface that organizing the city. My goal of this project is to work out a plan framework that that could call for a more gradual process that the new town and old town could be more synergy without demolishing everything existing. Because people's cognitive feeling of the urban space is continuous, also the invisible social and economic networks are bounded on the space, which physically and mentally requires a sense of continuity. In the strategy part, after doing several case study and theory on the strategic planning, I decided to put my starting point at the border area between the new town and the old town where more interaction could happen, expecting to explore innovative and strategic possibilities. In the end, I worked out two scenarios that suggest two different thinking in the interaction and identity-keeping issues between new town and old town. I guess both the two scenarios in my project are more about to give some suggestions that could somehow contribute to keeping or changing the existing networks gradually based on the understanding of the existing contexts and qualities. Most of the interventions in the border area that I propose are either recovering, maintaining existing systems or complementing these systems, hoping to offer more flexibility for the uncertainty of the future development

However, this project does not intend to provide a perfect and comprehensive solution for the whole area, but create conditions for a gradual and continuous development and synergic process that in a strategic and innovative way. Maybe the final strategy and plan is not that smart, but still I just would like to suggest the attention might could also paid to the existing built environment and the relevant context bounded on it. I am not against new development, but suggest more respect and

attention to the continuity of urban space and life in the transforming area. The physical environment needs time to adjust changes and so do people living on it.

This project is under the urbanism research theme of Metropolitan Spatial Structure. Based on the studio's understanding on the complexity and organization of the metropolitan spatial structure, I would like to first figure out how the existing regional structure and networks perform and then think about how to integrate the new town in the local conditions. Moreover, in Metropolitan Spatial Structure, researchers develop models of urban and regional structuring and transformation, and formulate methods and guidelines for sustainable cities and metropolitan. These existing researches and methods could help me a lot to better understand the existing social and economic contexts, to identify the existing inherent quality and dynamics in search for a more sustainable and complementarity future. Additionally, this studio deals with processes, rather than projects, with comprehending complexity, rather than ruthless simplification, with achieving socially inclusive development, rather than financial gain.

The existing built environment of Guangming, or any other small towns or urban villages for that matter, are dynamic local environments that have a lot of knowledge on society to offer. The disconnection between the local needs and the ambitions of higher levels of government is not unique to Shenzhen. In fact, particularly as a result of the development of large urban projects, this friction between local scale demands and regional and national economic ambitions can be observed in many countries. However, I am not going to blame

the government or any institutions. Actually, at least the local government of Guangming, the officials there are very open-mind and ambitious. There are many technical issues and institutional barriers to achieve more modest and gradual urban growth in China, like the fast-changing economy, administration periods, land ownership, utility supplies. And China is still a developing country, still need to develop. Especially in the region of the Pearl River Delta, economic growth is of enormous importance to the politicians, planners and also the people living there. In their efforts to pursue economic growth, humane and socially involved behavior is not always their first priority. The fact is that the issues in Chinese cities are not like those of the established cities of Western Europe. The Chinese cities are for large parts new cities, with new urbanites. They are facing various new challenges that never happen in the history and require new approaches. Therefore, I also hope less offensive but more understanding attitude to the development of China. Do not judge, but to understand and suggest.

光 明

PART 7
APPENDIX

1. THEORY PAPER
From Regional Public Good to Local One
Rethink the new town development strategy in metropolitan periphery China

Paper abstract –From the beginning of twentieth century, many new towns or districts are constructed especially in China and form new regional centrality. New towns, the concentrated decentralization of the overcrowded population and urban functions from the uncontrollably sprawling large cities, have been part of the development strategy guided by visions of modernization. However, much more attention is paid to the role of new towns in balance regional development, but the existing fast changing local demands and conditions, and interactions between existing and new urban centralities are usually ignored. This paper is limited to discuss the role of the new town from regional public good to local one, as well as the interaction and influence with the existing town in the fast-growing metropolitan periphery context.

The main research question that the paper address is what factors and conditions that can influence as well as promote the dynamics and interactions between old town and new town in metropolitan periphery in order to confront the potential social-spatial fragmentation and achieve an 1+1>2 situation.

Key words – modernisation strategy, metropolitan periphery new town, passive urban renewal, social-spatial interaction, complementarity

1 Introduction

China has been experiencing rapid urbanization since the country's transformational reform into a socialistic market economy in 1978. After that, thousands of cities boosted, and urban problems, accompanied with the pace of urbanization, has been increasingly troubled these cities. Especially in large cities, urban problems such as traffic congestion, environmental pollution, exploding populations, inner city deterioration and soaring housing prices are becoming more and more serious. During last two decades, new town construction has been growing exponentially in China to disperse the overcrowded population and industries in the central cities and to promote coordinated development between the central cities and their surrounding regions as well as to solve urban problems. This massive wave of new town movement fosters both great opportunities and challenges.

Although the new town development as regional balance and modernization strategy sounds make sense in various aspects, there are still lots of failed cases of new towns during the localization and implementation process. In this sense, this paper mainly addresses the local role of new town in quest for synergy with the old town. It aims to explore the factors that can influence the dynamics and interactions between the old town and new town in the localization process of the new town in the context of fast-growing metropolitan periphery. The structure of the paper is as follow. First summarizes the role of new town in China in urbanization process and balancing regional development to answer why there are so many new towns. Then describe how new towns as a modernization strategy works in China, this may also shed light on why Chinese local governments

are so keen on new town construction. The third section mainly discusses the in the localization problems and potential risks of the new town construction process in metropolitan periphery China. Then the last part gives the perspectives to deal with the dynamics and interactions between old town and new town.

2 The role of new town in China

2.1 Urbanization

China's urbanization is characterized by its scale and the uneven development pattern. The size of China's urban population and the speed of urban population growth are unprecedented. By the end of 2012, the mainland China had a total urban population of 712 million or 52.6% of the total population, rising from 26% in 1990 (Wikipedia). It is the large scale rural- urban migration that pushes rapid urban population growth and contributes to urban economy boom by providing cheap labor. As asserted by the Nobel-prize-winning (2001) economist Joseph Stiglitz, urbanization will be China's biggest challenge in the twenty-first century. Besides being a way of stimulating economic growth, China's urbanization process is trying to provide modern qualities of life to all city dwellers, reduce urban and rural segregation, and regional discrepancy (Zhou 2012). In this sense, creating new towns has been one of China's solutions to absorb rural population in order to encourage urbanization. On the other hand, large cities and some new cities in the eastern areas have played important roles in urbanizing migrant populations. The excessive size of established large cities, aggravated even further by fast population growth, has always been a problem for metropolitan administrators (Tan, 2010). Therefore, to facilitate the out-migration of people in large cities in order to relieve urban crowding and improve the overall environment is also the role of new town.

2.2 Regional balance: From monocentric city to polycentric metropolis

The new town concept originated from the ideal city model of Ebenezer Howard and expanded from Europe to America in the 1900s. The primary goal of new towns is to create a new regional magnet and centrality, in order to disperse the overcrowded population and industry of large cities and promote regional development and spatial economic balance. When Paris was formulating its new town planning, its purpose was to ease the overcrowding in the central city and develop the relatively backward suburbs. The vision was more balanced regional development with both the central city and new towns getting what they needed (Tan, 2010). It goes the same in China. The uneven development pattern has crucial impacts on urban spatial patterns in both national and regional scale. As mentioned above, due to the uneven development, large cities and cities in rich eastern areas absorbed most urbanized migrant population. After decades' rapid growth both in economy and population, however, the tendency shows that many large cities in China need to transform their spatial structure from super dense monocentric cities to polycentric metropolis to accommodate its population and economic activities, as well as to boost new development of the metropolitan peripheries in search for a more balanced and sustainable regional development. If the direct goal of new town is to expand the size of the existing urban area to attract population from rural area and over-crowed central city through new town construction. The final goal of new town, we can conclude, would be the more balanced population distribution, and reduction of regional disparities (Tan 2006c).

3 New town as a modernization strategy

New towns have been part of the development strategy guided by visions of modernization in China. It means that even the new town strategy originated as a solution to tackle the urban problems of over-congested and fast-growing large cities. It is also utilized as a development tool to attract new industries and external invests, as well as to upgrade its regional position. The following part discusses about how new town as a modernization strategy works in China.

3.1 New urban-image building

In China, the research shows that urban expansion or new town construction creates an opportunity for building up a new modern urban image which is a visible form to project the economic strength and the presence of capable local government leaders (Han 2010). In this sense, it is believed by the local officials that building a modern urban image could improve the competitiveness of the locality, and thus could help to attract more investment from the outside. This can be done in two ways. First, a modern image of the town could enhance the economic well-being of the county. Local officials believed that tall buildings and wide streets were symbols of a more advanced economy, and thus more attractive to investors (Han 2010). Second, it is also believed that "the growth or decline of a locality has much to do with the ability of the top local leaders" (Ma, 2002). A modern urban image would be a good indicator to show that local governments are able to deal with complex organizational issues. For potential investors, this would be an important guarantee towards a successful investment.

In addition, a modern urban image is also believed to have an effect on the behavior of citizens. Which means carefully planned and designed cityscape, such as clean streets and artificially shaped trees and shrubs would make people think twice before they litter or spit (Han 2010).

3.2 Land finance

Why are local governments in China so enthusiastic about expanding urban space such as building new towns? In order to answer this question, one issue cannot be missed is the special Chinese land based finance.

'Land finance' normally refers to the revenue creation relying on selling new land by local authority, in other words, it means the income through new land selling is used to cover the local public financial requirements. In general, local governments expropriate collective-owned rural land, sell or lease land use rights to commercial users, and transfer rural agricultural land to the stock of urban land for construction. In this process, local governments lease out the land use rights for commercial uses (industrial, commercial, and residential projects) in the form of conveyances through public tender, negotiation, and auction at market prices. The net profits through multiple land circulation hidden in the land market are taken as the income for local public finance. Consequently, those areas such as new towns with a faster growth rate of land for urban construction tended to have a high inflow of land-based revenue. In this process, land has acted as a "pro-growth" instrument for local governments to pursue locally financed urban development (Cao, Feng & Tao 2008).

3.3 Rescaling and renewal of the existing town

Theoretically, the expansion of the urban space for urban development can take two forms, namely the sprawl of existing cities and towns or the establishment of totally new cities and towns. In general, land-use development in China has been dominated overwhelmingly by the sprawl of existing cities and towns especially in eastern China like Guangdong province in recent years (Lin 2009), since the infrastructure and public service in the existing cities and towns could be utilized.

After many years of construction and development, there would form some built–areas inner the city within relative economic decline, old buildings in poor quality, poor infrastructure and deteriorating environment. These declining economic and environmental factors seriously affect the general development of the existing city or town. However, new town as a modernization strategy could disperse the overcrowded population and industries, then the existing town could be able to be rescaled and renewed. On the other hand, new town construction can expand the existing authority boundaries and attract more invests as well as population, which could enable the town to become more competitive compared to before and upgrade its regional position. In that sense, that town could acquire greater administrative power and gain much autonomy.

4 New town strategy in metropolitan periphery: regional spatial integration and local social and economic differentiation

4.1 New town as a regional public good and the ignorance of the old town

Manuel Castells found the following(2004): Dynamics of a specific area now largely depend on decisions elsewhere, with no involvement by the local authorities, and which are sometimes hard to reconcile with local problems.

The city-governing-county system refers to a governing structure that takes a central city within relatively developed economy as the primary regime to govern the surrounding counties (BaiduPedia). This system is designed to enhance the integration of a central city and its surrounding hinterland (Shen 2007). In general, the implementation of the 'city-leading county' during last decades gave central cities greater administrative and economic powers, at the expense of the subordinate county-level administrations (Chung & Lam 2009). County officials were 'obliged' to follow the orders and commands of their superior city leaders. However, after decades of development and adjustment, this system is becoming more flexible and counties gain much more autonomy but the central city still acts the regional leading role both in economy development and administration management in metropolitan region. Consequently, the formulation of metropolitan development strategies and plans also have hierarchies and normally the priority is given to superior cities that subordinate cities or towns have to passively react or obey these decisions.

As for new towns, generally speaking, they are the internal demand of the city when its development reaches a certain stage. This stage usually refers to that the original town cannot carry the existing population, industries and relevant functions and requires a new area to expand and reorganize its existing urban layout as well as functions. However, in the metropolitan area, normally it is the central city that reached this stage and need new towns to disperse the overcrowded population and economic activities and

promote regional development and spatial economic balance. On the other hand, as mentioned above, metropolitan new towns in China are generally located close to the existing towns in order to utilize the existing infrastructure and boost the development of the metropolitan peripheral areas. In this sense, it might be concluded that the new town acts as a regional public good to benefit the whole region. In general, city is a local public good, providing welfare mainly for its residents. In this metropolitan new town construction process, due to different development of stages and exclusion of local authorities and conditions, there usually suggests a gap between the new town and the existing one. It is hard to reconcile with the local problems in the localization process of the new town.

In terms of the old town, it tends to be the carrier of urban culture, economic activity, social life and administrative services as well as the main market and service center in the existing metropolitan periphery. However, in the large scale new town development that China is experiencing now, the priority is normally given to the new town and central city, and the importance of the old town is largely ignored, resulting in the functional and vitality degradation in old town.

.
4.2 Land speculation and passive urban renewal

Land speculation is a financial activity that involves the purchase of real estate with the hope that the price will increase (wiseGEEK). It is recognized that land speculation is a widespread phenomenon across China where local governments are keen on to resolve their temporary financial difficulties through the land finance. In general, this movement fosters great risks especially in new town development. Specifically, land speculation could result

in land accumulation, a large number of repeated constructions and intensive resource consumption which are the potential factors of ghost towns and do harm to the sustainability of the economy and social development.

on the other hand, rapid urbanization

Figure 1. Guangming old town, Shenzhen, China. Modernization and development in China often go along with large-scale destruction of existing housing stock and urban fabric.

process and pressures to modernize also influence the built form and sense of place of existing towns. Because of the ignorance and deficient in theoretical guidance, the old town usually carries on an urban renewal in a passive and blind way. New housing departments are built to uniform styles like the new town and do not take local lifestyles and development stage and urbanization level into account. Local residents are displaced by the new developments. The existing urban fabric and social networks are in danger of being destroyed.

In addition, after decades of development and expansion, a large number of cities in China are facing land shortage. The available land for new development is becoming less and less. In this sense, new town development and old town regeneration need to be taken more

seriously and innovatively.

4.3 Local social and economic differentiation

Many surveys in recent years show that the people movement in new town in metropolitan area usually presents a typical "pendulum" feature: they go to new town for work in the day and leave after work. Therefore, the new town becomes a literally "ghost town" during the night, which is not conducive to the population agglomeration and the cultivation of urban vitality. It indicates that as a dispersed part from the central city, new population in the new town is closely tied to the central city in social and economic aspects. Specifically speaking, in metropolitan region, although the new town and old town are close to each other, they have different and disconnected economic structures and demography, in which there seems few chances they can interact with each other. Moreover, within the dramatic modernization and urban renewal process happening in the old town, local residents are also facing gentrification to be forced out.

5 Perspectives: dynamics and interaction in synergy process

In terms of the new town, lacking of integrative development sense, the relationship between the old town and new town is often fragmented, affecting the overall development of the whole. These factors objectively require an overall perspective that could optimize the whole town to get rid of the development based one one-side tendency and reach a more synergic situation. However, In particular the idea of synergy, or'being more than the sum of the parts' is a central objective in many policies for polycentric urban regions, and often popularly formulated as 1+1>2 (Meijers 2005).

5.1 Inherent identity maintaining

Generally, the existing small town located in metropolitan periphery acts as stabilising forces along the rural-urban continuum (Knox & Mayer 2009). Modernization in these towns had limited success, simply because the gravitational economic pull of the large cities and their surrounding towns was just too powerful. Therefore, communities in these old towns usually have stronger sense of belonging and identity, which forms the base of the small-town way of life.

On the other hand, in order to help balance of the metropolitan region, new towns usually play a different role: suburban housing and new employment centers, integrated into a larger metropolitan context. In this sense, as describes above, the existing old towns are facing serious issues related to social, spatial and economic drastic restructuring process.

However, as various European small towns, they normally have both traditional center and modern center and each maintains its own inherent identity and complement functions with each other. It might give some ideas to new town planning and old town regeneration in China that to keep the existing dynamics could also enhance the sustainability and quality of the whole town. Specifically speaking, for example, maintaining the inherent identity of the existing town, could keep the existing social-spatial networks and its role as stabilising forces along the rural-urban continuum, which could lead to a more sustainable and gradual urban regeneration process that local residents could benefit. Because new town or old town as a local public good should provide welfare to its residents instead of destroying everything.
.

5.2 Complementarity in search for mutual benefits and interaction

Complementarity refers to the presence of a demand or deficit at one location and a supply or surplus at another without which there is no economic rationale for any movement (Edward L 1980). Complementarity often leads to spatial interaction. Ullmann (1956), who describes complementarity as differentiation, argues that complementarity is the main explanation for the development of spatial interaction. In this sense, in the polycentric urban region, it is not one city that provides a complete array of economic functions, urban facilities or residential and business environments, but rather the whole system of cities within a region (Meijers 2005). Such a situation would provide for externalities. In terms of the complementarity as the synergy mechanism between the old town and new town in metropolitan region, when they complement each other, then the residents and industries in one place can take advantage of the various functions the other that has to offer (Meijers 2005). However, complementarity doesn't only mean the difference, it more refers to a mutual benefit to both new town and old town that there could be more interaction between each other to reduce social and economic segregation. That means, in such a way, not only the existing identity, more diverse collection of urban functions can be achieved to reach an 1+1>2 situation at less expenses.

6 Conclusions

As discussed above, much attention has been paid to the new town as a regional public good in metropolitan region in China by many researchers, with the focus on the role of new town as new urbanization container and regional balance promoter.

From my reviewing theories process, the emphasis is given to the localization and synergy mechanism of new town in the particular metropolitan periphery context. Taking existing local context especially the identity into consideration, to understand the local role of new town could help to achieve a more sustainable vision and mutual benefit to both new town and the old one.

Bibliography

CAO, G., FENG, C., & TAO, R. (2008). Local "land finance" in China's urban expansion: challenges and solutions. China & World Economy, 16(2), 19-30.

CASTELLS, M. (2005). Space of flows, space of places: Materials for a theory of urbanism in the information age. Comparative planning cultures, 45-63.

CHUNG, J. H., & LAM, T. C. (Eds.). (2009). China's local administration: traditions and changes in the sub-national hierarchy. Routledge DOBER, R. P. (2000) Campus landscape: Functions, forms, features, New York, John Wiley.

EDWARD L. ULLMAN, "Geography as Spatial Interaction" in Geography as Spatial Interaction by Edward Ullman edited by Ronald R Boyce (University of Washington Press, 1980), 13-27.

HAN, S. S. (2010). Urban expansion in contemporary China: What can we learn

from a small town?. Land Use Policy, 27(3), 780-787.

HEALEY, P., 2006, Urban Complexity And Spatial Strategies: Towards A Relational Planning For Our Times. Routledge.

KNOX, P., & MAYER, H. (2009). Small town sustainability: Economic, social, and environmental innovation. Walter de Gruyter.

LIN, GEORGE CS. "Scaling-up regional development in globalizing China: Local capital accumulation, land-centred politics, and reproduction of space."Regional Studies 43, no. 3 (2009): 429-447.

LIN, GEORGE CS, & FANGXIN YI. "Urbanization of capital or capitalization on urban land? Land development and local public finance in urbanizing China."Urban Geography 32, no. 1 (2011): 50-79.

MA, L. J. (2002). Urban transformation in China, 1949-2000: a review and research agenda. Environment and planning A, 34(9), 1545-1570.

MA, L. J., & WU, F. (2004). Restructuring the Chinese city: Changing society, economy and space. Routledge.

MEIJERS, E, 2005, Polycentric Urban Regions And The Quest For Synergy: Is A Network Of Cities More Than The Sum Of The Parts?. Urban studies, 42(4), 765-781.

NEAL, Z. P., 2012, The Connected City: How Networks Are Shaping The Modern Metropolis. Routledge.

SHEN, J. (2004). Space, scale and the state: reorganizing urban space in China (No. 146). Chinese University of Hong Kong-Hong Kong Institute of Asia-Pacific Studies, The.

SHEN, J. (2007). Scale, state and the city: Urban transformation in post-reform China. Habitat International, 31(3), 303-316. TAN, X. (2010). New-Town Policy and Development in China. Chinese economy, 43(3), 47-58.

ZHANG, T. (2007). Urban development patterns in China: new, renewed, and ignored urban spaces. Song Yan et al., Urbanization in China: Critical Issues in an Era of Rapid Growth, Cambridge, Lincoln Institute of Land Policy, 3-27.

ZHOU, J. Urban Vitality in Dutch and Chinese New Towns.

2. BIBLIOGRAPHY

ALLIES, B., HOEKS, H., & KLAASSEN, L. (2010). Cultivating the City: London before and after 2012. SUN architecture Publishers.

AUGÉ, M. (2008). Non-Places: An Introduction to Supermodernity, trans. John Howe. London and New York: Verso.

CAO, G., FENG, C., & TAO, R. (2008). Local "land finance" in China's urban expansion: challenges and solutions. China & World Economy, 16(2), 19-30.

CASTELLS, M. (2005). Space of flows, space of places: Materials for a theory of urbanism in the information age. Comparative planning cultures, 45-63.

CHUNG, J. H., & LAM, T. C. (Eds.). (2009). China's local administration: traditions and changes in the sub-national hierarchy. Routledge DOBER, R. P. (2000) Campus landscape: Functions, forms, features, New York, John Wiley.

DUPUY, G. (2008). Urban Networks: Network Urbanism (Vol. 7). J. Van Schaick, & I. T. Klaasen (Eds.). Amsterdam: Techne Press.

EDWARD L. ULLMAN, "Geography as Spatial Interaction" in Geography as Spatial Interaction by Edward Ullman edited by Ronald R Boyce (University of Washington Press, 1980), 13-27.

GRAHAM, S. & MARVIN, S., (2001). Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition, Routledge.

HAJER, M. A., REIJNDORP, A., & May, A. (2001). In search of new public domain: analysis and strategy. Rotterdam: NAi Publishers.

HAN, S. S. (2010). Urban expansion in contemporary China: What can we learn from a small town?. Land Use Policy, 27(3), 780-787.

HEALEY, P., (2006), Urban Complexity And Spatial Strategies: Towards A Relational Planning For Our Times. Routledge.

HOEK, M. V., & WIGMANS, G. (2011). Management of urban development. Management of Urban Development Processes in the Netherlands, 53-76.

HULSBERGEN, I. KLASSEN, & I. KRIENS, EDS. Shifting sense: Looking back to the future in spatial planning. Techne Pres.

KNOX, P., & MAYER, H. (2009). Small town sustainability: Economic, social, and environmental innovation. Walter de Gruyter.
KOOLHAAS, R. (1995). The generic city. Sikkens Foundation.

LIN, GEORGE CS. "Scaling-up regional development in globalizing China: Local capital accumulation, land-centred politics, and reproduction of space."Regional Studies 43, no. 3 (2009): 429-447.

LIN, GEORGE CS, & FANGXIN YI. "Urbanization of capital or capitalization on urban land? Land development and local public finance in urbanizing China."Urban Geography 32, no. 1 (2011): 50-79.

MA, L. J. (2002). Urban transformation in China, 1949-2000: a review and research agenda. Environment and planning A, 34(9), 1545-1570.

MA, L. J., & WU, F. (2004). Restructuring the Chinese city: Changing society, economy and space. Routledge.

MCCONNELL, V., & WILEY, K. (2010). Infill development: Perspectives and evidence from economics and planning. Resources for the Future, 10, 13.

MEIJERS, E, 2005, Polycentric Urban Regions And The Quest For Synergy: Is A Network Of Cities More Than The Sum Of The Parts?. Urban studies, 42(4), 765-781.

MUMFORD, L. (1938). The culture of cities.

MUSTERD, S., & OSTENDORF, W. (Eds.). (2013). Urban segregation and the welfare state: Inequality and exclusion in western cities. Routledge

NEAL, Z. P., 2012, The Connected City: How Networks Are Shaping The Modern Metropolis. Routledge.

NES, A. VAN, (2008). Introduction to space syntax in urban studies. Delft: Faculteit Bouwkunde, TU Delft.

SASSEN, S., 2001. The Global City: New York, London, Tokyo, Princeton University Press.

SAVARD, J. P. L., CLERGEAU, P., & MENNECHEZ, G. (2000). Biodiversity concepts and urban ecosystems. Landscape and urban planning, 48(3), 131-142.

SCAGLIONE, P. (2012). Cities in nature: ecourban design, landscapes, slow cities. B. Breda (Ed.). LISt.

Scheffler, N., Kulikauskas, P., & Barreiro, F. (2009). Managing urban identities: aim or tool of urban regeneration?. The Urbact Tribune, 9-13.

SCHOEMAKER, P. J. (1995). Scenario planning: a tool for strategic thinking. Sloan management review, 36(2), 25-50.

SHEN, J. (2004). Space, scale and the state: reorganizing urban space in China (No. 146). Chinese University of Hong Kong-Hong Kong Institute of Asia-Pacific Studies, The.

SHEN, J. (2007). Scale, state and the city: Urban transformation in post-reform China. Habitat International, 31(3), 303-316.
TAN, X. (2010). New-Town Policy and Development in China. Chinese economy, 43(3), 47-58.

VAN OOSTRUM, M. (2013). The cultivation of urban villages: Integration of informal development in the formal planning proces of Shenzhen, China. Master, TU Delft.

ZHANG, T. (2007). Urban development patterns in China: new, renewed, and ignored urban spaces. Song Yan et al., Urbanization in China: Critical Issues in an Era of Rapid Growth, Cambridge, Lincoln Institute of Land Policy, 3-27.

ZHOU, J. Urban Vitality in Dutch and Chinese New Towns.