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Faculty of Technology, Design and Environment

Department of Planning

Locally Responsive Public Open Space Design

Special Reference to Beijing, China

Huiming Liu

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Abstract

Foreign design ideas and the impact of globalization have long played a strong role in creating and reshaping local urban forms in the past few decades in China. This is especially evident in public open spaces in many Chinese cities due to rapid economic development. Recent urban projects in Beijing specifically have shown limited responsiveness to local context and needs of users. This is due to a political focus on financial returns, and has resulted in the proliferation of homogeneous 'anywhere places'. Therefore, the aim of this research is to develop a conceptual framework and methodology for defining principles for locally responsive public open spaces in Beijing.

The conceptual framework developed for this study is based on a review of key literature from both global and local sources, to define locally responsive public open spaces in the context of Beijing. Furthermore, the methodology establishes the relationship between traditional philosophies and contemporary thinking, and integrates urban morphology and other methods into the process. Eleven areas were visited and three neighbourhoods were chosen to study local perceptions of public open spaces across historical, early modern and contemporary scenarios. 90 residents and key decision makers were involved for identifying the needs and interests of various urban actors that make them possible to explore relevant topics through case study and different stages of developments in the city. By employing an Inquiry by Design approach, the proposals were developed and tested with key decision makers in order to formulate final recommendations.

The research findings define the intrinsic meanings of public open space in the specific case of Beijing. They provide a set of recommendations to achieve local responsive public open spaces at different morphological layers and types of open spaces. Finally, they establish new conceptualisations of local responsiveness and methodologies based on the unique Chinese context. Therefore, the main contributions to the knowledge are the conceptual framework for exploration of locally responsive public open space design, and a

methodology for investigating the qualities and levels of local responsiveness in these spaces. Both of which are potentially transferable to other Chinese cities that seek guidance on addressing issues in similar urban forms.

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DECLARATION

The candidate, I Huiming Liu, while registered as a candidate for the University's research degree, was not registered for any other award of a university during the research programme.

The candidate, I Huiming Liu, while registered as a candidate for the University's research degree, has the permission of the Research Degree's Committee to submit research for the degree of Doctor of Philosophy

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Chapter One - Introduction to the Research

The purpose of this thesis is to develop a theoretical framework and methodology for identifying principles for locally responsive public open space design. Beijing, the historic capital city of China, has been taken as a representative case for studying people and place in relation to local responsiveness, using contemporary neighbourhood developments. From the literature and analysis of this case study, this thesis identifies multi-dimensional influences affecting the meanings people associate with the use and experience of place, and uses various design qualities to evaluate the level of local responsiveness with the purpose of balancing urban development and regeneration in the future.

This introduction is organised in eight parts. 1] '***The Current Issues***' presents the key research problems and reasons for selecting the topic and the development of the subject matter in relation to locally responsive public space design. 2] '***The Terms of Local Responsiveness'*** identify the general terms of local responsiveness in the urban design field. 3] '***Gaps in Knowledge***' explains research gaps where less local responsiveness has been involved in contemporary developments. 4] '***Background of Beijing***' provides a brief introduction to the context of the case study. 5] '***Learnings from History***' positions the use of different types of communities for defining transferable lessons from history to contemporary development. 6] *'**The Research Questions**'* section formulates the overarching questions used to guide the inquiry and tackle the problems. The overall '***Aim*** and ***Objectives'*** section presents the focus, interests and sequence of the investigation. 7] '***The Relevance and Scope of the Research***' section explains the uniqueness and the scope of the research. 8] '***The Research Strategy'*** summarises the reasons why a case study strategy has been selected and discusses the qualitative methodologies which have been adopted. In addition, this section explains the process of the inquiry and the stages of the methodology which have been followed to achieve the objectives of the research. '***The Structure of the Thesis'*** details the chapters and their role within the overall document. Graphics are included to clarify the research process, to connect the research questions, objectives and chapters, and to explain the sequence of this document.

1.1 Current issues in relation to locally responsive public space design

1.1.1 The impact of globalization on Chinese urban development

In the last few decades, China's economy has grown, moving beyond a locally focused economic programme to one that is globally competitive (Blanton & Kegley, 2011, Zhang, 2014). As a consequence of this globalization process, a large number of cities have been transformed with much of their historical urban layout having been altered and replaced by modern designs (Zhang, 2014). Public spaces in Chinese cities can be said to have lost their original identity which was rooted in traditional Chinese culture and they have now become common 'anywhere' places which are often described as 'placeless' (Entrikin, 1991; Carmona et al., 2012; Chang, 2015) or 'non-places' (Faure and Liu, 2016). As a result of these changes in the built environment, the historical traditions of place making and the culture of how people use these spaces have similarly been altered (Crang, 1998; Faure and Liu, 2016). Critics are concerned, fearing local and authentic built environments are being radically transformed through the introduction of mass-produced materials and commercial processes, which have been imposed on the locality with the intention of achieving progress and modernity. This is particularly evident in the design solutions from the early Socialist era (1950s-60s) through to the period of the Cultural Revolution (1966-1976). These programmes and policies were created in an attempt to smash the 'Four Olds' (customs, culture, habits, and ideas) and re-establish them as the 'Four News' (Zhang, 2009). Concepts and ideas from the Modern Movement (Jencks, 1993; Heynen & Henket, 2002; Zhang, 2014) and Functionalism (Trancik, 1986; Bahrainy and Bakhtiar, 2016), which assumed that the uniformity of human needs in a global context became attractive for establishing new and modern customs, culture, habits, and ideas. With these concepts and ideas being accepted, their principles have been applied to urban construction with building types influenced by the International Style (Hitchcock & Johnson, 1992; Johnson, 1997; Jodidio, 2009; Zhang 2014; Faure and Liu, 2016). During this period, a large number of ill-defined, modern and standardized public spaces were created to replace traditional built environments. Norberg-Schulz (1980) calls these modern environments 'flatscapes', denoting standardized landscapes which are all of a similar nature (Chang, 2016).

1.1.2 Ignored local context and culture in public open space design

In light of the aforementioned historical background, local context and culture have been ignored in the design of public spaces in Chinese cities, resulting in the emergence of many standardized places (Xu, 2000; Pan, 2015; Wang, 2016) that have affected the traditionally and locally rooted lifestyles of the people. As Carmona notes, 'with globalization has come mass culture, emerging from the process of mass production, marketing and consumption, which homogenize and standardize culture and places, transcending, crowding out, even destroying, local culture' (Carmona et al., 2010, pp.101). It is clear that considerations of the local context not only concern the physical dimension of place, but also the people that create, occupy and use the built environment (Carmona et al., 2010; Faure and Liu, 2016). Understanding local socio-cultural contexts and cultural differences allows urban places to be read and understood, revealing much about the culture that creates and maintains them (Butina Watson and Bentley, 2007). Therefore, as Lang (1994) suggests, cultural and social factors should be considered when designing the urban environment (Adam, 2012; Short, 2014, 2016).

1.1.3 Influences of foreign cultural ideas

The impact of globalization and mass culture on Chinese cities brought about by the inflow of foreign cultural ideas has created two major problems:

- Firstly, during the modernization of the cities, local cultural values and traditional uses of public spaces have been largely ignored (Pan, 2015). Furthermore, due to a lack of awareness of local culture and traditions, foreign design companies engaged in consultation failed to generate designs that considered and valued local traditions in the design of public spaces (Pan, 2015; Wang, 2016). Foreign design companies tend to export their own culture (Watson & Bentley, 2007) and ignore local culture. As a result, these public spaces may be able to accommodate the necessary daily activities of the people, but they fail to consider the ways in which traditionally and locally rooted activities can be accommodated. As Gehl (2010, 2013) argues, in poor quality public spaces, only strictly necessary activities occur.

- Secondly, in the Chinese context, expectations of good public spaces are ill-defined so the design qualities used for evaluating whether the public space design is 'good' are based on western design principles while local Chinese design qualities are ignored in most public open space designs (Wang, 2016). Bull et al., (2007) note public space design should accommodate local values, conditions and expectations. Understanding local needs and incorporating traditional usage of public space are essential in the design process in order to deliver locally responsive public spaces. 'Welcom[ing] users into the process of design as allies, rather than excluding them from it' (Bentley 1999, p.239) may offer insights for delivering socio-culturally responsive built environments capable of accommodating rich traditional activities and representing qualities embedded in the Chinese cultural context.

1.2 The terms of local responsiveness in urban design

The concept of 'local responsiveness' stems from the field of economics and refers to multinational companies operating across global geographies adapting to local circumstances (Prahalad and Doz, 1987; Bartlett ad Ghoshal, 1999). The principles of local responsiveness in urban design and the built environment require consideration of the interactional influences from both global integration and the local context in order to deal with socio-cultural diversity (Knox and Pinch, 2010; King, 2004). This means: involving different user groups to adapt and respond to various choices and activity scenarios (Carr, 1992; Carmona, 2007, 2011); responding and balancing political and economic interests in a sustainable manner in urban developments (Giddings et al, 2005; Pugh, 2000); and adapting to local socio-cultural and physical conditions from the transformation over time (Norberg Schultz, 1980; Bunting, 1995; Craik, 1975; Caserio, 2001; Butina Watson, and Bentley, 2007).

1.3 Gaps in knowledge

As previously stated, societal structural transformation has seen the urban environment being replaced by foreign designs in order to provide the basis for fast economic growth and modernization in urban areas, with examples including public transportation and retail facilities such as shopping malls, while the local context and traditions have been ignored in public space design (Faure and Liu 2016). This has changed people's lifestyles and ways of interacting especially in residential developments (Hui, 2013; Hong 2016). Many Chinese

scholars have tried to restore historical identity and local cultural design philosophies, for example, Liangyong Wu in his Ju'er hutong project (Wu, 1999) tried to increase the density of traditional courtyard houses by restructuring them to adapt to contemporary uses. However, ignoring economic responsiveness has meant that his idea cannot be realized in an urban environment with high population density, public transportation needs and commercial activities. Faure and Liu (2016) focused on the development and distinctions between urban and rural life and the effect on the Chinese sense of identity. Kongjian Yu (2005, 2006, 2009, 2012) looked at the urban environment from natural perspectives and tried to increase the ecological functions in the living environment, in order to improve the quality of the built environment and users' experiences of social interactions and activities.

On the other hand, many scholars have recently tried to study traditional Chinese cities from morphological and typological perspectives in relation to political, economic or socio-cultural influences, in order to identify appropriate physical urban environments for contemporary developments (Chen and Thwaites, 2013; Hui, 2013; Liang, 2014; Zhang, 2015; Yu, 2015; Wang, 2016; Zhang and Ding, 2018). However, they have focused on large-scale city developments without taking holistic consideration of socio-cultural, political and economic influences during the design process. More importantly, none of these studies look at local political, economic and socio-cultural responsiveness comprehensively in the public space design and design process in residential developments. Therefore, the challenge for this research is to identify ways to enhance local responsiveness in public space design for different urban actors in a manner that maximizes and balances their interests and needs in contemporary and future urban developments. In addition, the research will need to explore local traditions, local beliefs and preferences from users' perspectives; understand whether they are transferable to future residential developments; and examine how urban design qualities associated with public open spaces contribute to local socio-cultural needs in Chinese cities. Based on these questions, it is clear to that these issues are not currently being studied in depth holistically.

1.4 Background of Beijing

Beijing has been the capital of China since AD. 1271. Its historical development, characterised by imperial power and a traditional urban design philosophy, formulated its

basic urban texture. The socialist ideology then took over and further developed the city into a socialist city and the heart of politics and culture in China. After the market reforms, the process of globalization transformed the city into a global metropolis approaching twenty million inhabitants. Therefore, Beijing has been identified as a representative case study for examining how open spaces should adapt to the interests of local actors in residential areas in the Chinese context. This selection was based on the city's strong historical characteristics, leading role as an urban centre in China, accelerated economic growth, strong image and political influence and increasing cultural diversity.

In recent years, growing numbers of experts have appealed for traditions and local culture to be immediately protected, and their loss prevented. In 2005, the government created the 'Historical and Cultural City of Beijing Protection Ordinance' (BCPC, 2005), and on 1st October 2008, the chief of Beijing Municipal Bureau of Cultural Relics, Ninghua Mei reported that the protection of courtyard houses would be one of the most important missions in the '11th Five Year Plan for National Economic and Social Development' (NPC, 2006). Meanwhile, several courtyard houses regeneration projects were initiated, such as the Shu hutong new courtyard houses regeneration project, Juer hutong regeneration project (Zhou et al, 2001, Lim et al, 1998, Wu, 1999, Zhang, 2009), and the Nan Chizi hutong regeneration project (Pan, 2004).

1.5 Learnings from history

Beijing has experienced several periods of transformation as a result of changes in political ideology, economic development and socio-cultural evolution. Under the influence of globalization, the city has been strongly affected by cross-culture as well as a changing world view and changing life-style preferences. As discussed in the current issues section (section 1.1), the local identity and physical built form have mostly been designed in an 'anywhere' modern style, and people's lifestyles have been changed by the modern high-rise built environment and global economic and social influences. Therefore, in order to understand the original local social use pattern, it is necessary to study the historical areas to identify the local socio-spatial pattern, preferences and social interaction, and notions around the use of open spaces under influences of local vernacular architecture and built forms, and the philosophies and theories beyond that. Based on the results, the findings can provide

transferable lessons to be integrated with contemporary development, which can be carefully tested and implemented as a guideline for contemporary and future public space design in order to achieve local responsiveness in the use of public spaces in Beijing.

1.6 Research questions, aim and objectives

Based on the context discussed above, the following research questions have been identified:

- *What kind of urban spaces and urban design qualities contribute to the development of local public life in Chinese cities – with a special reference to Beijing?*
- *Are there any transferable lessons from traditional Chinese urban areas which can enhance public life in contemporary urban spaces?*

In order to answer the research questions within the context of Beijing, the following overall aim and objectives are proposed.

The **overall aim** is:

> *To develop a theoretical framework and a methodology for defining principles for locally responsive public space design.*

The **objectives** are:

1. To develop a conceptual framework to understand the interrelationship between the quality of built form and public use
2. To use the conceptual framework to develop an analytical method for identifying the characteristics of open spaces and public use in traditional and modern areas in Beijing
3. To use the analytical method
    - To understand the quality of the built form
    - To understand the public use of public spaces
    - To understand the interrelationship between the quality of the built form and public use
4. To use the results from the previous stages to develop preliminary theoretical concepts and urban design principles
5. To test the acceptability of the design principles with the key actors
6. To contribute new design principles and a new methodology that is locally responsive to public space design

1.7 The relevance and scope of the research

For thousands of years, Chinese public space design has followed the needs of the imperial power, and it has since experienced significant sociological transitions and rapid transformation under the influences of multi-culturalism and globalization. Identifying the usage patterns as well as the underlying meanings and socio-cultural preferences in urban transformation beyond the evolution of the physical environment is uniquely important in understanding political, economic and socio-cultural factors in relation to local responsiveness in public space design. This research is relevant to providing a framework and methodology for assessing local responsiveness based on various factors of public spaces in order to analyse and define locally responsive public open space design in the contemporary context.

The scope of the thesis is to study the local socio-spatial process in public open spaces under the influences of political, economic and socio-cultural dimensions during the globalization process, then to identify the factors that balance the interests and needs of different urban actors in order to develop urban design principles for contemporary and future public space design.

1.8 Structure of the thesis and research strategies

1.8.1 Research Strategies

The research strategy for this study is to define and identify the local responsiveness of public open spaces by studying social continuity in the use of public open spaces from traditional developments through to the contemporary built environment. Bryman (2015, p.17) contends that 'social phenomena and their meanings are continually being accomplished by social actors', which suggests that usage of public open spaces is produced through social interaction and therefore it is in a state of constant revision (ibid). Therefore, in order to understand and grasp the subjective meaning of social action in relation to physical built form and its political, economic and socio-cultural influences, deductive and inductive research strategies (Bryman, 2015) have been employed through a literature review of current theories

and practices, which has then been used to develop a conceptual framework to analyse the reality.

A case study approach (Yin, 2014) has been selected for this study because it offers adequate depth of understanding in terms of the context and the process of interaction between people's social usage and the physical environment through the transformation of political, economic and socio-cultural influences over time (Flyvbjerg, 2011). In order to do so, this research focuses on one specific city using multi-layered analysis (at city and neighbourhood level) to identify key changes occurring over time (Yin, 2014). The city of Beijing was chosen as it represents the historic and cultural centre of Chinese cities, which are currently experiencing rapid and globally influenced urban development. As the three neighbourhoods for analysis highlights, the local social usage of public open spaces has been shaped and transformed in relation to morphological patterns over different periods of time, so morphological analysis has therefore been selected as the primary methodological approach used to understand the formation and transformation of public open spaces in this context.

Three neighbourhood communities were analysed using urban morphological and typological analysis as these allow an understanding of the direct relationship between social usage and physical built form under different political, economic and socio-cultural influences through the production process of public open spaces (Gauthier and Gilliland, 2006; Kropf, 2009; Watson and Bentley, 2007). Furthermore, urban morphology contributes beyond the physical dimension of the morphological levels of the built environment, allowing connections with time, culture, and other overarching frameworks (Moudon, 1997; Birkhamshaw and Whitehand, 2012; Oliveira, 2016)..

During the investigation of the case study, a qualitative research strategy (DeVaus, 2001; Creswell, 2007) was selected for the data collection and analysis because: a] it emphasizes an inductive approach; b] it shows the way in which individuals interpret social patterns; and c] it embodies a view of constant changes in social reality (Bryman, 2008). In addition, various data collection strategies have been applied, involving an analysis of the original evolution of the city, archival and historical information and an analysis of urban plans, observations of usage patterns in public open spaces using photography and annotated drawings and maps, and semi-structured interviews with key actors.

To summarise, this research has five stages; each of the stages is described individually as follows:

Stage 1 – Development of a conceptual framework

In order to develop a conceptual framework to analyse locally responsive public open spaces, a literature review of the key theories is required, which include a] social usage in relation to the physical built form under political, economic and socio-cultural influences through the production process; and b] design qualities for assessing locally responsive public open spaces.

Stage 2 – Development of the research methodology

A methodology was developed for analysing locally responsive public open spaces in Beijing based on the conceptual framework conceived in stage one. Different data collection methods and types of data were also identified.

Stage 3 – Data collection and analysis

The methodology for analysing locally responsive public open spaces was used at two different scales in order to collect and analyse data at city level and at neighbourhood level (specifically in three neighbourhoods in Beijing). Three neibourhoods were identified representing different time periods and existing morphological patterns in order to identify 1] social usage in relation to different types of physical built form; and 2] local perceptions of usage experiences in public open spaces for accessing local responsiveness

Stage 4 – Development of the research propositions

The results and the key findings from the previous stages were critically interpreted and consolidated through an 'inquiry by design' approach to develop preliminary research propositions for enhancing local responsiveness in public open space design

Stage 5 – Testing the research propositions

The applicability of the proposed research propositions developed during the previous stages was tested with key actors in the context of Beijing. The results of the testing were used to refine the developed research propositions to produce the final recommendations for locally responsive public open space design for Beijing.

1.8.2 Structure of the Thesis

The thesis is organized in three parts with nine chapters in total. The first part consists of the conceptual framework and the research methodology chapters. The results of the first part are used to develop the second part that involves city level analysis and detailed neighbourhood level analysis. The third part and the conclusion review the overall research process, outline the new contribution to knowledge and recommend further research.

Part One: Theories

- Chapter Two: Conceptual Framework

This chapter intends to address the first research objective. It reviews relevant international and local literature and key concepts to develop the conceptual framework for the research. It establishes the relationship between the physical built form and social usage patterns under different perspectives and dimensions of local responsiveness, and it evaluates the level of local responsiveness of public open space design by identifying different urban design qualities.

- Chapter Three: Methodology for Analysis

This chapter addresses the second research objective. It uses the conceptual framework to develop a research methodology that incorporates a case study approach, different types of data, a strategy for data collection and a framework for carrying out the data analysis. A strategy for data verification and validation is also discussed.

Part Two: Case Study Analysis

Each chapter in this part consists of city level analysis and detailed neighbourhood level analysis to address the third research objective. The conceptual framework and research methodology were applied to carry out the data collection and analysis.

- Chapter Four: Analysis of Historical Development in Beijing

This chapter examines urban transformation under different social formations from the imperial period to the contemporary era in order to establish the sense of continuity and change of various urban socio-spatial components. Ethnography was applied and an urban typo-morphological study was implemented to analyse the transformation process.

- Chapter Five: Analysis of Agency Role in Production Process of Public Spaces

Based on the social and urban transformation, key urban actors were identified as well as their roles, responsibilities and interests in the production process of public open spaces. Three detailed neighbourhoods have been selected on which to carry out further in-depth analysis, based on the historical transformation study.

The next three chapters analyse local responsiveness from political, economic and socio-cultural perspectives in specific types of neighbourhood. A similar structure has been applied to all neighbourhoods' analysis in order to produce comparable findings, and also to identify the transferable learnings from historical and early modern neighbourhoods to contemporary community and future developments. The structure is 1] summary of data introduction; 2] urban typo-morphological analysis; 3] quality of local responsiveness in the neighbourhood study area.

- Chapter Six: Historical Neighbourhood

This chapter analyses the physical transformation of a historical neighbourhood from its original design purpose to contemporary uses, and the types of public spaces available in relation to social use patterns. It also identifies the users' satisfaction with the quality of the public open spaces and the responsiveness of these spaces from political, economic and socio-cultural perspectives.

- Chapter Seven: Early Modern Neighbourhood

This chapter analyses the transformation of physical settings, from socialist to contemporary, and types of public spaces in relation to social use patterns. It also identifies the users'

satisfaction with the quality of public open spaces and the responsiveness of these spaces from political, economic and socio-cultural perspectives.

- Chapter Eight: Contemporary Neighbourhood

This chapter analyses the physical settings affected by both contemporary international and local cultural interpretations, the modern type of public spaces and facilities, and different usage patterns. It also identifies the users' satisfaction with the quality of public open spaces and the responsiveness of these spaces from political, economic and socio-cultural perspectives.

Part Three: Findings and Conclusions

- Chapter Nine: Findings and Test Results

This chapter addresses the fourth and fifth objectives. It begins by identifying the transferable lessons from the historical and early modern neighbourhoods, proceeding to developing preliminary proposals for enhancing the local responsiveness of public spaces, and then finally to testing the principles with key actors in order to understand their feasibility and whether they are locally responsive or not with commends regard these principles.

- Conclusions

This chapter addresses the final research objective. The findings of all the chapters are revisited to answer all the research questions. The conclusion also reviews the overall research process and critiques the conceptual framework and the research methodology. In addition, it outlines the contribution of this research study to new knowledge and its value in different levels and contexts. Finally, recommendations for further research are discussed.

The thesis structure and its link to the objectives can be seen in the following table (Table 1.1):

Table 1. 1 Relationship between the research questions, aim and objectives and chapters. Source: author

Research Question What kind of urban spaces and urban design qualities contribute to the development of local public life in Chinese cities – with special reference to Beijing?	
Overall Aim To develop a theoretical framework and a methodology for defining the principles of locally responsive public space design	
Research Objectives	**Chapters**
	Chapter 1 - Introduction
To develop a conceptual framework to understand the interrelationship between the quality of the built form and public use in terms of local responsiveness	Chapter 2 – Conceptual Framework
To use the conceptual framework to develop an analytical method for identifying the characteristics of open spaces and public use in traditional and modern areas in Beijing	Chapter 3 – Methodology for Analysis
To use the conceptual framework and analytical method to understand the socio-spatial patterns in the context of Beijing	Chapter 4 – Historical Transformation Analysis Chapter 5 – Agency Role Analysis in Beijing
	Chapter 6 – Socio-spatial Analysis in Historical Living Community Chapter 7 – Socio-spatial Analysis in Work Unit Community Chapter 8 – Socio-spatial Analysis in Contemporary Development
To use the results from the previous stages to develop preliminary theoretical concepts and urban design principles	Chapter 9 - The Design Principles and Test Results with regards to Locally Responsive Public Open Space Design
To test the acceptability of the design principles with the key actors	
To contribute to new design principles and a new methodology that is locally responsive to public space design	Chapter 10 – Conclusion

Conclusion

This chapter has introduced the research problem and has highlighted that developing a conceptual framework and methodology for the study of locally responsive public open spaces in the context of Beijing will address a gap in the existing literature and can be seen as a potential contribution to new knowledge. Therefore, the overall aim and research objectives were developed to enhance local responsiveness in public open space design in Beijing. Then, research strategies were outlined with the key stages and approaches to the research. Finally, this chapter concluded with a description of the thesis structure and a summary of the purpose of each chapter.

The next chapter analyses and integrates the key theories of locally responsive public open spaces and design qualities for evaluation from both western and local literature in order to develop the conceptual framework.

Chapter Two - Conceptual Framework

Introduction

It has been argued in the introduction chapter that there has been a strong market-driven response to global influences in the design of public open spaces in Beijing instead of the city responding to the local socio-culture and physical conditions. The objective of this chapter **is to develop a conceptual framework for analysing locally responsive public open spaces**, in order to answer the research question: what kind of urban spaces and urban design qualities contribute to local public lives in Chinese cities? This chapter corresponds to stage one in the methodology and plan of work discussed in the introduction.

In order to develop the conceptual framework, this chapter is structured in three sections (Table 2.1). First, it conceptualises the definition of a locally responsive public open space and its characteristics. It begins by examining definitions and terms; it follows by identifying the physical and social aspects as well as their interactional processes; and then explores the economic and political influences of the globalisation process; and finally, it defines the process involved in the production of public open spaces. Second, both international and local theories are reviewed in order to identify key urban design qualities that can be used as evaluation measurements to contribute to local public lives in Chinese cities. Third, a theoretical framework is developed for analysing locally responsive public open spaces.

Table 2. 1 Stages for developing a conceptual framework for analysing locally responsive public open spaces. Source: author

Developing A Conceptual Framework for Analysing Locally Responsive Public Open Spaces		
1	Characterising and conceptualising the key concepts	Conceptualising the theoretical connections: a] examining the definitions and terms; b] clarifying the interactional relationships between physical settings and socio-cultural usage; c] understanding global influences in the economic and political dimensions through national, regional, city and local level; d] identifying the production process and key urban actors
2	Identifying urban design qualities from both western and local perspectives for evaluation	Identifying the theoretical links between global and local urban design qualities in order to evaluate the local responsiveness of public open spaces
3	Developing a conceptual framework	The framework for analyzing locally responsive public open spaces is developed, and the dimensions and components of interactions are identified.

2.1 Locally Responsive Public Open Spaces

2.1.1 Definition of locally responsive public open spaces

The term 'local responsiveness' originates from the field of economics and refers to the process of multinational companies adapting their international operations to fit local circumstances (Prahalad & Doz, 1987, Bartlett and Ghoshal, 1999). When applied to the field of urban design, the definition of the term is much broader. The definition of a locally responsive public open space, combining multiple theories, is:

A locally responsive public open space is a space that needs to be identified within a framework defining the needs of different user groups (Carr, 1992; Carmona, 2007, 2011),

accommodating both global integration and the local context (Knox and Pinch, 2010; King, 2004), **responding to political and economic interests** (Giddings et al., 2005; Pugh, 2000), **and adapting to local socio-cultural and physical conditions during periods of transformation and over time** (Norberg Schultz, 1980; Bunting, 1995; Craik, 1975; Caserio, 2001; Butina Watson and Bentley, 2007).

2.1.2 Public open spaces part I: morphological approach

As proven by many theorists, public open spaces consist of both the physical and social aspects of the environment (Poulantzas 1973, Miliband 1973, Frankel 1983). While the physical aspects vary from natural ecological factors to the elements of the built environment, the social aspects are the spatial implications of social interaction. Therefore, by studying urban morphologies, spatial typologies and patterns of land use, key components of the urban form and the process of urban transformation are identified, which can further define and examine how the built environment, on a morphological level, supports socio-cultural interactions and patterns as well as how it affects economic activities in the urban environment (Bentley, 1999).

The objective in this section is to develop an understanding of space, to discuss whether its physical qualities are responsive to the local socio-cultural and political context, and based on this, to identify it as a negotiation tool for maximising satisfaction with economic growth through global integration.

The structure of this section includes three parts: 1] the physical setting of public open spaces is discussed in part I, 2] social usage of public open spaces will be studied in part II, and 3] the interrelationship between them will be understood in part III.

It is essential to understand the morphological and typological evolution of the physical built environment as it defines one city from another (Kropf, 2014; Oliveria, 2016), and represents how the physical built environment has responded to unique local usage patterns. Therefore, this section discusses the concept of urban morphology and different morphological layers as fundamental to understanding the physical transformation of a place in relation to local responsiveness.

Urban morphology as an approach is important for understanding the evolution of place in respect to character and distinctiveness, as it identifies repeated patterns in the formation and transformation of the built form (Oliveira, 2016). Within urban morphology, it is significant to understand local spatial patterns, specifically in relation to how the physical built form was created and how it transformed though dynamic political, economic and socio-cultural processes (Gauthier and Gilliland, 2006; Kropf, 2009).

Urban morphology is defined by Oliveira as 'a science that studies the physical form of cities, as well as the actors and processes shaping it' (Oliveira, 2016; p.106). It is the study of a city and its spatial texture (Birkhamshaw and Whitehand, 2012; Kropf, 2013), and how this texture emerges as a result of complex political, economic and sociocultural influences (Guaralda, 2014).

As Conzen (1980, p.130) states, 'Morphological change takes place within an outline or morphological frame inherited from earlier periods'. Planning the future of a city is best achieved by acknowledging and respecting the past (Maretto, 2013). Butina Watson and Bentley (2007) stress the interdependence between the physical form and spatial structure components of space, and their relationship with time or history. Whilst the historical-morphological analysis of the physical components of the urban form provides general information on the land subdivision patterns, spatial structure analysis defines the qualitative aspects of the urban form by identifying the usage of particular buildings and open spaces. Thus, spatial structure analysis can explain the historical relationship between permanent physical built form elements and the more transient ones which are embodied in the social, political and economic organisation of various towns and cities (Butina Watson, 1987). As urban design intervention is a historical process in itself, the paramount value of studying urban form from the historical perspective is obvious (Butina, Watson, 1987, p.7). This is the reason why urban morphology allows a comprehensive understanding of past and present through the historical transformation of the urban form (Muratori, 2013). Kropf (2013) believes that urban morphology can be used as a tool to address and create the built environment as a craft, noting that it localizes the development process. Thus, understanding the morphological patterns of a place is necessary, as it identifies how the spaces were shaped and which actors were involved in the creation process, so then the local morphology can be managed in future urban development (Kropf, 2011).

In order to understand the formation and transformation of a place over time, it is best to study its morphological patterns and layers (Gauthier and Gilliland, 2006). Kropf (2009) supports this argument as he believes that cities are diverse and complex products, formed and transformed over time by various processes; therefore, to understand the different layers of a city, it is necessary to understand how these layers fit together coherently in relation to the dynamic process that shaped them.

Various schools of thought have studied urban form to understand the complexity of a city in different terms and aspects (Moudon, 1997; Darin, 1998; Whitehand, 2001; Cataldi, Maffei and Vaccaro, 2002). Researchers often need to combine different approaches to support each other in order to analyze urban form (Birkhamshaw and Whitehand, 2012). In this research, a mix of Italian and British concepts of urban morphology have been implemented, and a historico-geographical and process typology approach have been selected to study the urban form in order to identify local responsiveness. The reasons for this mixed approach are as follows:

Historico-geographical approach – this is an approach originally developed by Conzen and further developed by Samuels, Larkham, and Whitehand (Kropf, 2009; Oliveira, 2016; Oliveira, Monteiro and Partanen, 2015). This analytical approach focuses on investigating the various layers of history that characterize a city through the historic process (Alizadh and Irandoost, 2017; Nasser, 2003). Within this approach, Conzen (Kropf, 2009, 2013) identifies the city using different spatial hierarchies for analysis, in terms of which 'building pattern is contained within the plot pattern, which is in turn contained within the street pattern' (Kropf, 2014, p.44).

Process typology approach – this is an approach devised by Muatori and further developed by Caniggia (Kropf, 2014). It uses buildings with their structures as elements to understand forms, in which 'forms found at different levels are identified as types which are conceived as cultural entities rooted in, and specific to the local process of cultural development' (Kropf, 2009, p.112). As Gauthiez (2004) argues, the process typology approach can be seen as a tool for the historical analysis of the urban fabric, to understand patterns of use, cultural values and the social actions of agents within the typological process of transformation of the built form (Gauthier, 2005; Mortada, 2003).

Various scholars have studied urban morphology and classified morphological layers and components differently (Lynch, 1960; Hillier and Hanson, 1984; Levy, 1999; Buina Watson, Bentley and Roaf, 2004, Oliveira, 2016). The built environment layers are shaped and transformed individually and in relation to each other by relating part to part and part to whole. Meanwhile, the morphological layers are part of the transformation process of urban history as they represent distinctive characteristics of the city environment (Kropf, 2011; Oliveira, 2016; Whitehand, 2012). Kropf (2011) argues that a djistinguishing feature of urban morphology is the types of form and the ways in which they interrelate in the hierarchy of scale. This includes: street patterns, plot patterns, patterns of use, and building structures (Kropf, 2011). These elements are sometimes categorised as urban tissue and the combination illustrates distinctive characteristics of the built form (Moudon, 1997; Choi, 2011; Oliveira, 2016). Therefore, based on the two approaches chosen and the above discussion of morphological layers, three morphological layers were identified for inclusion in this research: open space networks/street patterns, plot patterns/block patterns, and buildings.

In terms of local Chinese literature, several scholars have tried to establish theoretical connections between local interpretations, values and notions of morphological studies in relation to international understanding. This starts with the Chinese scholar, Qi Kang (1982), who proposed a conceptual composition of urban elements of Chinese urban form, such as jia (frame), he (core), zhou (axes), qun (cluster), and jiemian (interface), which have been intensively employed in his research and practiced in several Chinese cities, but it is based on the city scale (Chen, 2006; Li, 2007). Another Chinese scholar, Wu Jin (1990), considers street networks, blocks, nodes, land use and development axes as important components of urban form in Chinese cities, which are the most commonly used. However, the relationships among elements are often weakly established so the focus frequently remains on specific elements as isolated entities. Chen and Thwaites (2013) go further; they identify seven elements as part of a more inter-related framework from small to large scale in order to study the Chinese urban form. These elements incorporate both local theories such as Fengshui and the social order in the general plan as well as typo-morphological theories such as skyline studies from both an international (Attoe, 1981; Kostof, 1991) and local perspective (Liang, 1998). The elements are: the general plan, silhouettes (skyline), street networks, urban blocks (plots), public spaces, public buildings and houses.

In this research, the focus is on public open spaces in residential areas, which is at neighbourhood or district level, although the study of influences and impacts from the city, regional and national level are also considered. In terms of a morphological study at neighbourhood and district level, the components of the built form have been identified based on previous discussions; they can be categorised as **public open spaces**, **block/plot patterns**, and **buildings** (Lynch, 1960; Kropf, 1993, 2011, 2013; Schneekloth, 1994, 1997; Moudon, 1997; Choi, 2011; Oliveira, 2016; Wu, 1990; Liang, 1998; Deng and Mao, 2003; Zhang, 2014). In the following part, the social usage of public open spaces will be discussed to understand the theoretical connections between social interactions as well as activities and public open spaces.

2.1.3 Public Open Spaces Part II: Social Usage Approach

As a soft aspect compared to the hard, physical setting of public open spaces, social usage represents the socio-cultural needs in relation to public spaces as well as the level of local responsiveness in a socio-cultural context. As stated by Carmona et al (2010), the social usage approach aims to understand how people use and facilitate the built environment, how the form of the space responds to human behaviours and what are the cross socio-functional connections (Alexander, 2015; Jacobs, 1993).

As Shaftoe (2008) states, 'we are a sociable species (on the whole!) and therefore feel at home with other people around (Whyte, 1988; Lennard, 1995).' Therefore, social interaction has become the most fundamental function of public open spaces. Loukaitou-Sideris & Banerjee (1998) believe that public spaces are neutral or common ground, used for **social interaction**, intermingling and communication. Local uses occur in what might be referred to as 'social space'. The space-making process is a social process, which is a process of adapting social relationships and interactions when transforming a physical space into a social space (Tonkiss, 2005, 2013; Rotengerg, 1993; Butina Watson, 2016). It is also the relationship between the social and physical shaping of space, between how people use, create and live in social spaces, and the formal and informal materials and embodied production of the urban environment (Tonkiss, 2013). In practice, Tailen (2000) suggests that interaction among residents can be influenced by design strategies which provide opportunities to increase the frequency of interaction because urban spaces need the presence of people to attract others for social interaction as well as for safety reasons (Whyte, 1980).

Based on the social interaction in public open spaces, various ways of interacting between different groups of people are formed in different types of spaces based on their social needs and context. In general usage, Gehl (1996, 2011) has classified three types of **activities** in public spaces, ranging from necessary activities to optional activities and resultant activities.

These activities, usage and interaction are based on **social and human needs**. According to Maslow's (1968) studies, from a psychological perspective, a five-stage hierarchy of basic **human needs** can be identified based on human motivations, which are a] physiological, b] safety and security, c] affiliation, d] esteem, and e] self-actualisation. When applied to the construction of public open spaces, these needs are manifested and presented based on the local socio-cultural context. To define people's needs in relation to urban functions, the meaning of places becomes the key debate (Tibbalds, 2007). Cooper (2000) goes further, stating that the place-making tradition includes two aspects: the visual-artistic tradition (Cullen, 1961, 1971; Sitte, 1976; Carmona, 2010) and the integration of elements making up a place. In this sense, the place-making approach can be identified as a synthesis of the visual-artistic approach and the social usage approach, searching for visual and social qualities which are rooted in the socio-cultural context of a given place. Based on the use of public space, Carr et al (1992) identified a six-part classification of what people tend to do in and need from public spaces. These are: comfort, relaxation, passive engagement with the environment (Whyte, 1980), active engagement with the environment (Gehl, 1996; Whyte, 1980; PPS, 2000; Stevens, 2007), discovery (Hajer & Reijindrop, 2001 Sennett, 1990, Shields, 1991; Zukin, 1991, 1995; Lovatt & O'Connor, 1995; Worpole & Knox, 2007; Frank & Stevens, 2007) and display. Therefore, they argued that, as well as being **meaningful** (i.e. allowing people to make strong connections between the place, their personal lives, and the larger world), and **democratic** (i.e. protecting the rights of user groups, being accessible to all and providing freedom of action), a public space should be **responsive** (designed and managed to serve the needs of its users).

This section has determined the structure of social usage of public open spaces. The following section will study the interrelationship between the physical setting and social usage in order to understand how the social and spatial can be correlated and integrated.

2.1.4 Public Open Spaces Part III: The Socio-spatial Process

Based on the discussion of public open spaces in parts I and II, it can be seen that public open spaces are formed by the interaction between physical built form and social usage. It is not a one-off construction, but keeps transforming and changing over time based on changes in political, economic and socio-cultural factors. Therefore, public open spaces can be understood as a politically- and economically-driven socio-spatial process. The objective of this section is to identify how the physical built form and socio-cultural usage interact and respond to each other in the socio-spatial process.

2.1.4.1 Physical responsiveness to socio-cultural usage

As identified in public open spaces parts I and II, physical space is defined by the spatial enclosure of the physical built form. By attaching the local values, preferences, perceptions and aspirations of different user groups based on their socio-cultural context, physical space becomes a social space for local interaction and activities, and then it becomes a 'place' (Tonkiss, 2005, 2013; Rotengerg, 1993; Shaftoe, 2008; Sideris & Banerjee, 1998; Tailen, 2000). As Lovell (1998 p.25) writes, '[t]he notion of "place" is seen as the notion of 'localised space.'' It can also be seen as a process whereby people experience places beyond their physical or sensory properties and they can feel an attachment to the spirit of a place (Carmona et al, 2010). Coleman and Collins (2006) go further, stating that a connection between culture and place is deeply problematic. The territoriality of place is influenced by what we think about local space and place and what power we have to control it (Storey, 2001). Therefore, place can be seen as not only socially defined space, but also locally politicised space, beyond simply bounded spatial properties and more like a fusion of local space, meaning and power.

By applying socio-cultural usage and local context to a physical space, the space begins to distinguish between one to another, forming a unique identity for the space and its users (Butina Watson and Zetter, 2006). This identity not only represents how people use the spaces, but also represents how the space gives meaning and memories to people (Butina Watson and Bentley, 2007). In addition, Carmona et al (2010) and Lovell (1998) argue that the emotional gravity of identity for a place is stressed by a 'sense of belonging' and a 'sense

of rootedness' which are fundamental to people's experiences and are a phenomenology of locality providing perceived ideals surrounding place. Therefore, **place identity** can be seen as the set of meanings attached to the multi-sensory process of human beings inhabiting a place and making sense of the places they use, which is instrumental in delivering place responsiveness in design.

In order to understand the responsiveness of physical space to socio-cultural usage, one needs to understand the relationship between culture and physical setting, which is a two-way process as stated by Carmona et al. (2010). People's choices create distinctive local cultures that both shape the spaces they use and are symbolised within the spaces, with the spaces created both reinforcing and representing that culture over time. Combined with people's motivations and choices based on their goals, values (both individual and social) and preferences, the socio-context has been created.

By giving a town, city or another type of space a strong sense of place, **vernacular buildings and architecture** can be seen as physically responsive to the socio-cultural context (Porter, 1982; Lange, 1997; Moughtin et al, 1995). These vernacular buildings are manifested through two dimensional spatial structures and layout and three dimensional vertical scales and facades, which are responsive to socio-cultural needs and preferences (Oliver, 1986, 2000, 2003, 2006).

2.1.4.2 Socio-cultural responsiveness to physical settings

Rapoport (2005 p.77) points out that 'culture' is not a 'thing' but an idea, a concept, a construct which is 'a label for the many things people think, believe, and do and how they do them.' Three expressions of culture are: 1] shared **world view** which is the way members of a particular culture or group see the world; 2] the **values** which are expressed though ideals, images, schemata, meanings and the like, playing an important role in how people evaluate their environment; and 3] **lifestyle**, which is the outcome of choices leading to the specific activity and activity system in given locations (ibid, p.96). Based on this, culture can be summed up as a system which creates a set of social expressions such as, on the one hand, social networks and connections, while on the other hand, specific cultural expressions

including worldviews, values and lifestyles, both have influence over and are responsive to public open spaces in local areas (Rapoport, 2005).

As Netto and Krafta (2001) point out, the social network manifests itself temporally and spatially as a geographic network of appropriation of space, that is, the use of space when one is performing his or her routines. Based on the social network and social connections, socio-cultural needs are represented as requirements of **social cohesion** and **lifestyle** in the public space. In sociology, cohesiveness is considered an attribute along with other processes operating within and between small groups (Hogg, 1992). **Social cohesion** relates to the members of a group sharing emotional and behavioural characteristics with one another and with the group as a whole (Bruhn, 2009). In urban design, **social cohesion** is understood as providing 'social space' that people can use to engage in various forms of socio-cultural and economic exchanges (Carmona, 2010), and contribute their identity and sense of place by demanding different social and economic requirements (Verma, 2011). Therefore, how well the physical setting supports users' socio-cultural needs can be evaluated as a level of socio-cultural responsiveness to the physical setting from a local context over time (Norberg Schultz, 1979; Bunting, 1995; Craik, 1975; Caserio, 2001).

To conclude, based on the discussion of public open spaces in parts I, II and III, a theoretical understanding of public open spaces and their spatial interactional process can be clarified, which are that the physical built form consists of the urban layout, public spaces, block or street patterns and buildings, while social usage can be divided into social interaction, social activities and human needs. The physical form and social usage are integrated, which can be identified by attaching social usage to the physical form, place identity and vernacular architecture, while by re-influencing the physical form to social usage, the transformation of lifestyles and social cohesion can be achieved (Figure 2.1). In the following section, the qualities of local responsiveness to public open spaces from a global and local perspective will be studied.

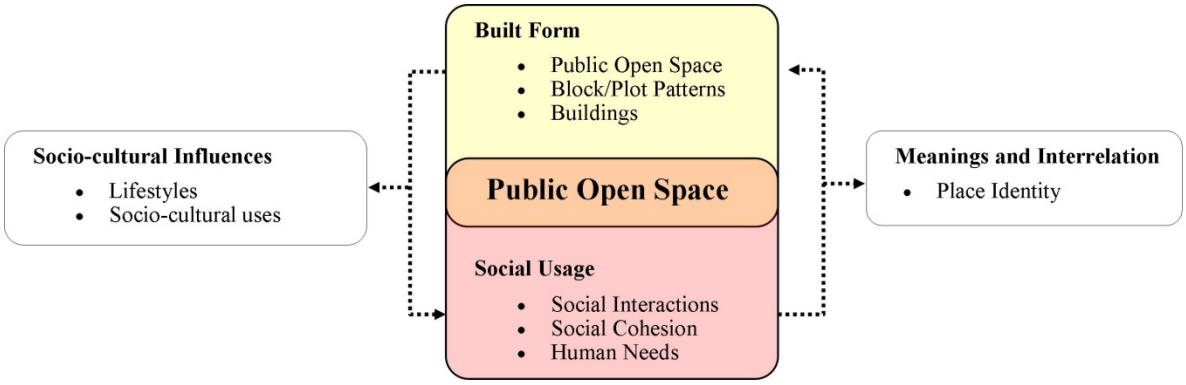

Figure 2. 1 The aspects and components of public open spaces, and physical settings and socio-cultural influences to public open spaces. Source: author

2.1.5 Political responsiveness to public open spaces

As previously mentioned, the political dimension is one of the key aspects of the formation of public open spaces. Therefore, in order to define the political dimension involved in the production process of public open spaces, a discussion and literature review will be carried out as follows.

The concept of **control** lies at the heart of any social system (Cuthbert, 2008). Societies differ with regards to the nature and form of control exercised over individuals, both physically and mentally, via the childhood socialisation process, education, religion, language, urban policies and other important elements (Carmona et al, 2010). As Giddings et al. (2005) argue, how cities provide 'quality of life' depends on the ways in which cities are **funded and governed**.

Human, civil and political rights are conferred through the state, which administers the allocation of space and is responsible for its surveillance (Dandeneker 1990, Bogard, 1996, Parker, 2000). As Cuthbert (2008) expresses, the national power in this sense represents the ability to control subject populations through a multiplicity of meanings: 'first as an ideological mechanism implementing the dominant prevailing ideologies, second in its command over repressive state institutions, and finally over the production of information and disinformation' (p.84).

Rights are not universal and fixed but are formed within social systems and are dependent on the society and the environment of their meaning (Cuthbert, 2008). The concept of rights is also tied into a complex value system that necessarily addresses concepts of democracy, justice, civil society, equality and social control (Castells, 1992, Clark and Dear, 1984, Yiftachel and Alexander 1995, Cloke and Johnston, 2005). Lynch (1965) goes into further detail by saying that 'open' spaces were open to the '… freely chosen and spontaneous actions of people.' He later argues that free use of open spaces may '… offend us, endanger us, or even threaten the seat of power', but is also one of our 'essential values' (Lynch, 1972a).

Therefore, by responding to public rights and justice as well as social equality in order to enhance political control over public open spaces, policies and regulations, and public engagement are framed and applied based on the political ideology. Carmona et al (2010, pp.65) refer to the fact that 'an important part of the governmental context is the balance between the public and private sectors'.

2.1.5.1 Political ideology

The term '**political ideology**' refers to a 'set of beliefs about the proper order of society and how it can be achieved' (Erikson and Tedin, 2003, p.64; Adorno et al. 1950; Campbell et al. 1960, 1965; Kerlinger, 1984). It can be seen as a shared framework of a mental model that provides both an interpretation of the environment and a prescription as to how to structure the environment (Jost et al., 2008). Therefore, political ideologies can be seen as a fundamental basis for the common beliefs that affect local preferences in the transformation of social formation and which influence economic development. They represent and mediate the intersection between the economic and social dimensions. In the meantime, they require efficient control and management as well as achieving political and economic development goals in the production and development of public open spaces (Gordon, 1980; Smart, 1983).

In conclusion, in order to achieve political responsiveness in the production of public open spaces, government policies and regulations should involve public engagement and should be based on political ideology through all levels of the political system (national, regional, city and local) (Figure 2.2).

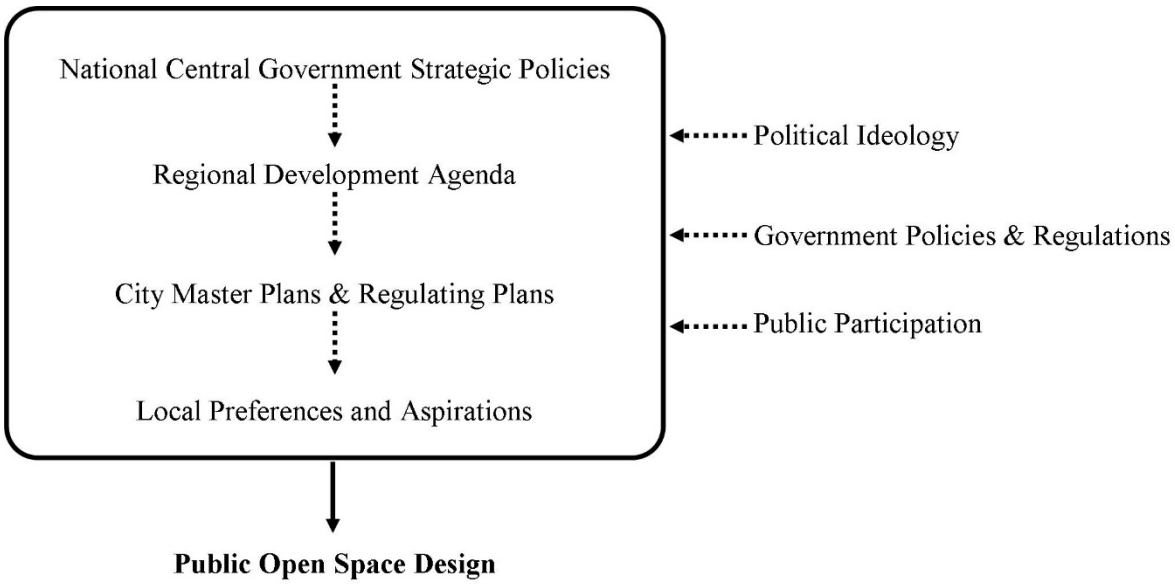

Figure 2. 2 Process of political influence on public open spaces. Source: author

2.1.5.2 Government policies and regulations

As driven by the global movement of designing the political agenda, local and national administrations have increasingly been searching for appropriate tools both to overcome critiques of public sector intervention and to deliver better places. Most systems of governance have extensive powers to ensure private sector design proposals serve the public or collective interest by framing **policies and regulations**. These systems usually operate through the interrelated processes of planning, conservation and building control (Carmona et al 2010). Therefore, in order to correspond with the national political agenda and regional development policy, city master plans (Garreau, 1991; Brand, 1994) and regulatory plans are framed, which Parolek et al (2008) explain have the following functions:

- Administrative - by identifying on a plan the boundaries or areas to which different regulations apply, such as different elements of code
- Layout design - by establishing the two-dimensional layout of the urban form in terms of street layout and frontages, ground floor uses, building types, etc.
- Zone character - by identifying the form and character of the different development zones and thereby also establishing the public realm

In terms of policy actions (instruments), Tiesdell & Allmendinger (2005) and Adams et al (2003) classified them by how they affect the decision environment – and hence the behaviour – of key development actors:

- those intended to shape behaviours – that is, setting the context for market decisions and transactions, by shaping the decision environment
- those intended to regulate behaviour – that is, controlling and regulating market actions, by defining the parameters of the decision environment
- those intended to stimulate behaviour – that is, lubricating market actions and transactions, by restructuring the contours of the decision environment
- those intended to develop the capacity of development actors/organisations – that is, enhancing the ability of actors to operate more effectively within a particular opportunity space.

Regulation is the primary means by which design policy and guidance are implemented. Regulation does not actually produce high quality design; its function should be more correctly understood as increasing the probability of creating better places (Carmona 2001, 2010). Regulatory processes usually reflect administrative decision-making based on a fixed legal framework, or they are discretionary (Reade, 1987).

Overall, **government policies and regulations** are developed in order to ensure that the private sector delivers plans or designs that serve the interests of the general public as well as corresponding to the political and economic development goals of decision makers (Carmona et al., 2010; Garreau, 1991; Brand, 1994).

2.1.5.3 Public participation

The term 'governance' does not only refer to the exercise of governmental authority, but includes "collective decision making, formal and informal, participatory and representative, at national as well as local level" (Harpham and Allison, 2000, p.115). According to Lafferty (2001) and the Local Agenda 21 (UNCED, 1992), any strategic programme, plan or policy has to be delivered through a consultative process incorporating all local stakeholders so that an achievement of sustainable development can be defined. In the meantime, democratic

participation can be seen as a way to exercise public rights in the development process (Blowers, 1993; Healey, 2006).

In order to understand local preferences and aspirations and enhance the level of local responsiveness from political as well as socio-cultural, physical and other perspectives, public participation is necessary (Lynch, 1984; Baker, 1996; Bosselmann, 1998; Knox, 1987; Haughton & Hunter, 1994; DETR, 1998).

Public participation and engagement can take many different forms, but can be broadly conceptualised as top-down, bottom-up (Carmona et al, 2010) or partnership approaches:

- Top-down approaches tend to be instigated by public authorities and/or developers, usually as a means of gauging public opinion and gaining public support for proposals. Development options or policy proposals will already be prepared as the focus for an arranged participation exercise. The danger of such approaches is that the agenda may already be largely set, leading to manipulation of local opinions, or simple acquiescence, rather than genuine involvement and engagement. On the other hand, such approaches may offer effective deployment of resources by engaging professional expertise to mobilise, co-ordinate and interpret community opinions.
- Bottom-up approaches are instigated and led from the grassroots level, usually in response to some perceived opportunity or threat. While these exercises offer highly effective means of influencing the political decision-making process, they suffer from being time-consuming in nature given the time and commitment required to develop appropriate expertise, as well as the frequent failure to connect aspirations with the resources needed to put them into effect.
- Partnership approaches aim for collaboration. They allow local government to collaborate with stakeholders or other organisations such as designers and investors on a development project. These approaches involve collective decision-making and strategizing in order to incorporate the ideas of multiple stakeholders into development projects, so as to ensure the success of the development plan that may manifest itself in a variety of ways in order to meet the individual needs of the development project (Clarke and Erfan, 2007; Clarke, 2011; Clarke and Macdonald, 2012).

To summarise, on the one hand, **public participation** is a way of ensuring the achievement of sustainable developments by delivering plans, policies, and strategic programmes through a consultative process with all local stakeholders; while on the other hand, it is a means of democratic participation to exercise public rights in the development process (Blowers, 1993; Healey, 2006). Therefore, to achieve success when progressing plans and policies, the consultative process should involve both top-down and bottom-up approaches (Carmona et al., 2010).

2.1.6 Economic responsiveness to public open spaces

In most parts of the world, the economy has been driving the design of towns and cities, and influencing public lifestyles (Carmona et al, 2010). During the process of globalisation, local markets have become a part of the global market and, as a result, various new lifestyles and functions of public spaces have been brought into the local context. People's thoughts and lifestyles have changed and, in turn, these changes have stimulated the development of the economy (Figure 2.3). Kashef (2008, pp.416) describes an attitude within social science that sees space '…as a backdrop or a neutral container for economic and social activities (i.e. urban space may be configured and reconfigured by societal and cultural changes but not vice versa).'

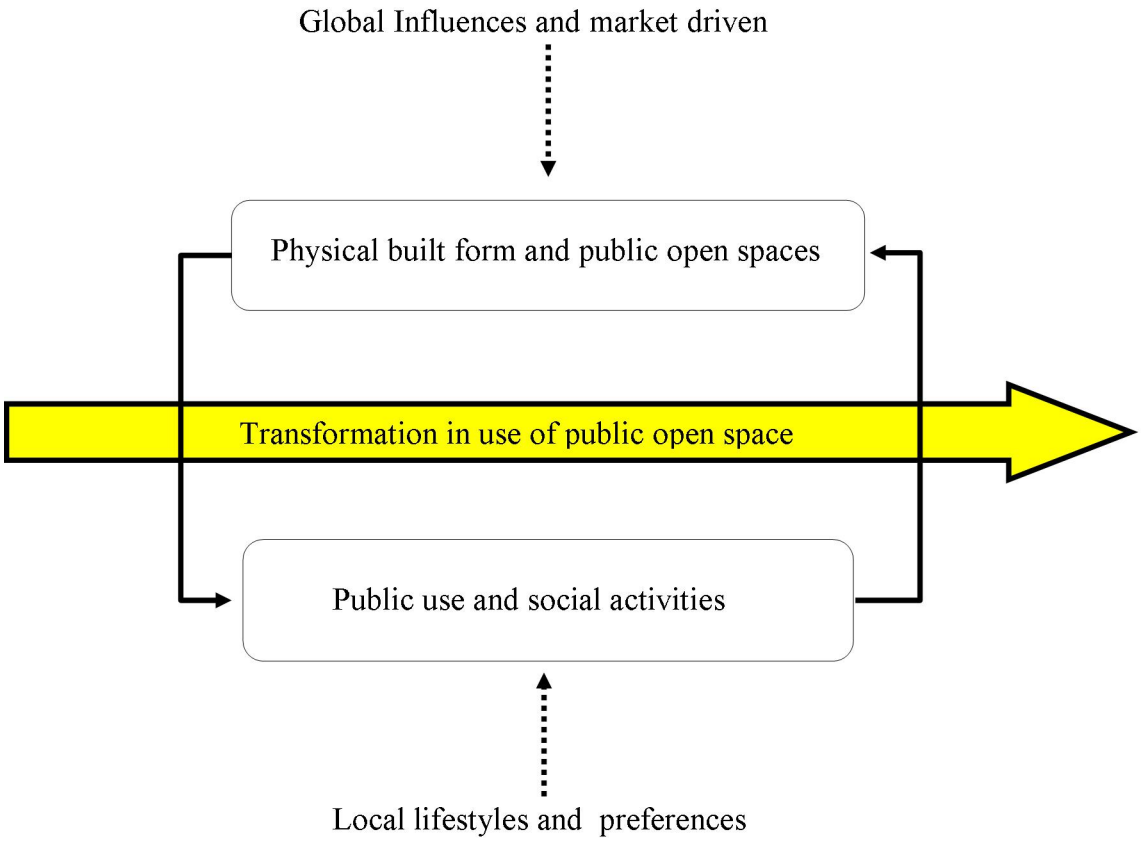

Figure 2. 3Transformation of public open spaces under globalisation. Source: author

Throughout globalisation, economic development can be seen as a relationship of conflict between the global and the local. As Zukin (1991) argues, the immobile 'local community' needs to adapt to the mobile global capital over time, which means the fate of local places is determined in some ways from afar by anonymous and impersonal economic forces (Harvey, 1997). The style and outlook of public open spaces are thus designed and created based on the influence of economic interests or ideologies (Kashef, 2008).

By considering local socio-cultural needs as well as local political control, the market becomes the negotiation platform involving the interests and proposals of both economic and political actors (Healey, 2006) (Figure 2.4). Carmona et al (2010) identify two concepts of form-production. These are: the 'hands-on' role of government in controlling the actions of public agencies to fulfil the public interest and to contextualize development projects into the local context and conditions; and the 'hands-off' role of the government leaving urban transformations with a financial asset. Thereby, in this sense, political control and power can

be seen as tools to localize spaces (under global economic influences) to adapt to local socio-cultural needs and context.

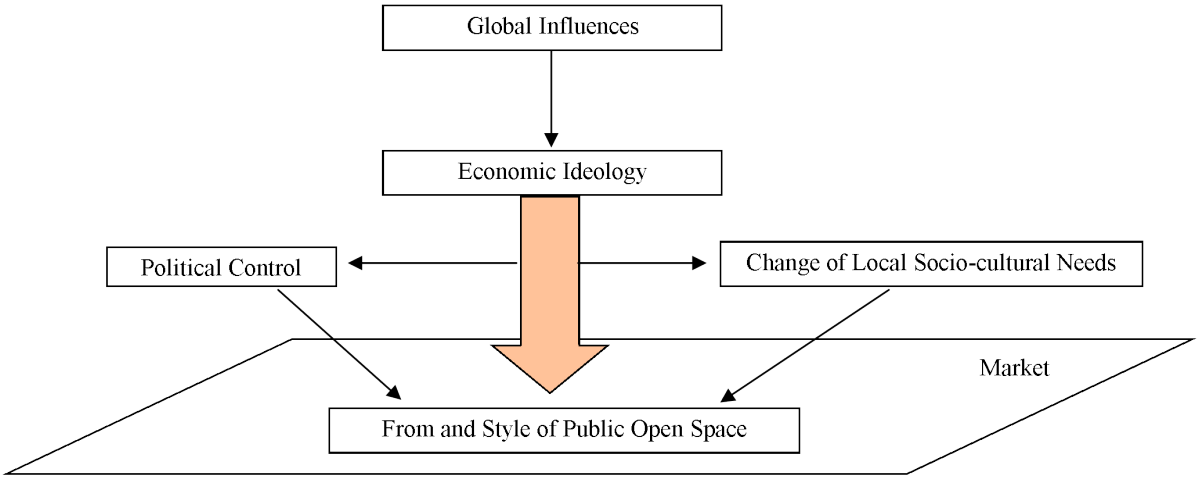

Figure 2. 4The market as a negotiation platform involving economic, socio-cultural and political interests for global and local actions. Source: author

2.1.7 Production process of public open spaces

In order to identify the production process of public open spaces, the key actors involved as well as their roles and interests need to be identified. At the same time, influences from different dimensions also need to be identified to understand how local public open spaces are shaped and reshaped as the result of political, economic and socio-cultural influences.

Different urban actors are involved in the production process of public open spaces and they express their preferences, interests, goals and motivations through the production process (Knox and Ozolins, 2010). McGlynn (1993) defines three key agent groups in the urban development process. These are: suppliers, including landowners and funders; producers, consisting of developers, public authorities and designers; and the consumers who are the everyday users. CABE (2009a, 2009b and 2010) goes further, specifying six main groups involved in the development process: local authorities, developers, design teams, home and community agents, regional development agents and local clients.

However, some actors might play more than one role at a time (Knox and Ozolins, 2000). Adams (1994), Carmona et al. (2010) and Knox and Ozolins (2000) identify the key agents as

follows: 1] land owners, 2] investors, 3] developers, 4] public authorities, 5] development professionals, and 6] users and communities.

In terms of the production process, Carmona et al. (2010) define public spaces as the consequences of a] the design context including the local, global, market and regulatory environment; b] the design process in relation to perceptual, social, visual, functional, temporal and morphological dimensions; and c] the design implementation which involves development, control and communication with key actors. Giddens (1984) argues that a structural and an agency-component are in the duality of structure (Elliott and Lemert, 2014). In this case, the development process should be identified not only as the sets of transformation relationships organized by social systems but also as the relationships between actors and constraints upon human agency.

To conclude, the production process of public open spaces can be identified as the result of global and local integration with attached economically driven, political control as well as the involvement of socio-cultural needs and physical morphological functions (Figure 2.5).

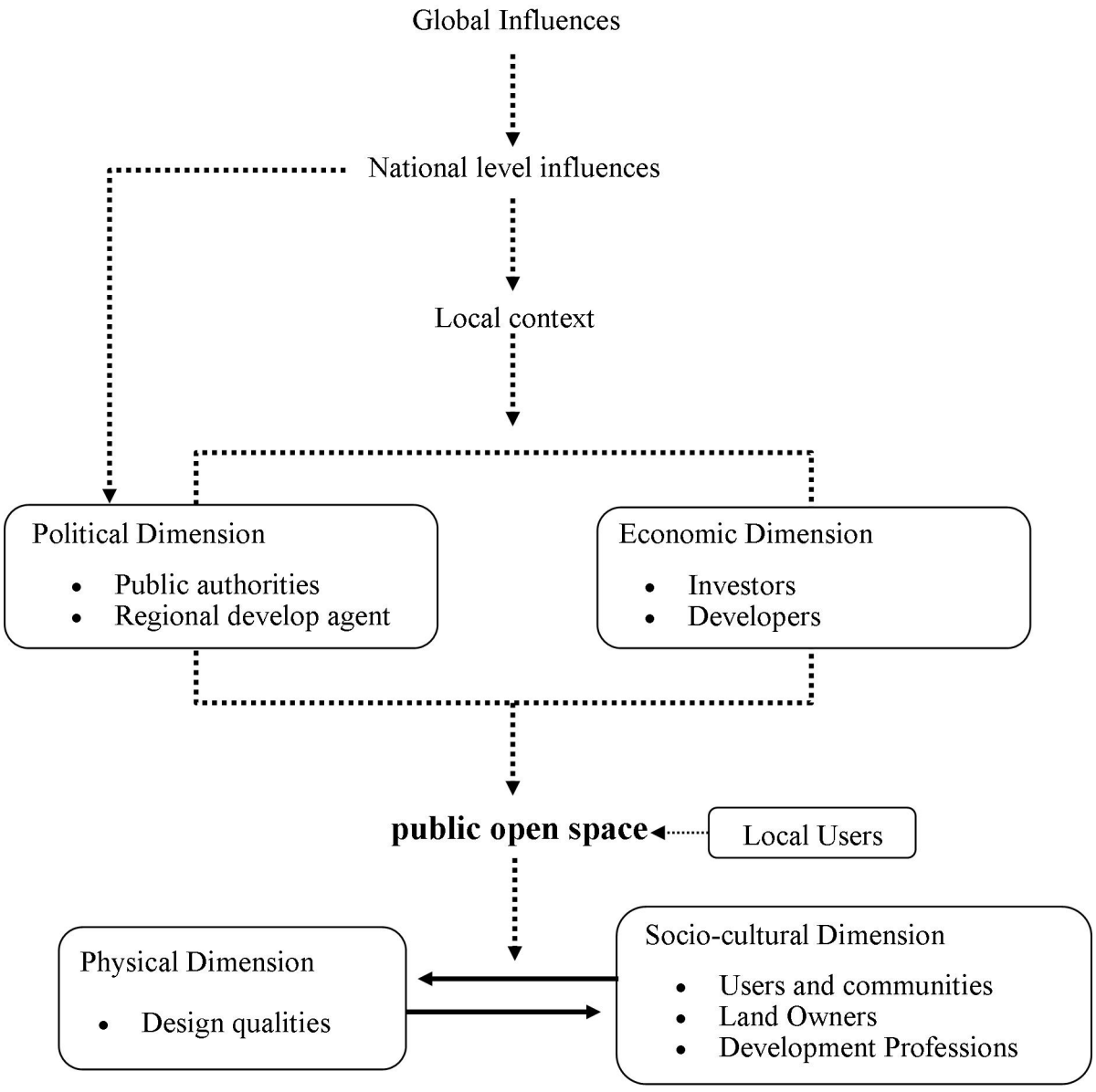

Figure 2. 5Production process of public open spaces with key dimensions and components. Source: author

2.2 Design Qualities of Local Responsiveness in relation to Local Perceptions of Public Open Spaces

In order to identify whether a public open space is locally responsive to socio-cultural usage or not, design qualities can be used as an evaluation tool to analyse the level of local responsiveness. Both western and local Chinese literature have been reviewed in order to answer the main research question which is ***what kind of urban spaces and urban design qualities contribute to the development of local public life in Chinese cities?*** Therefore, this

section is divided into two parts, which are the design qualities for locally responsive public open spaces a] from the western literature, and b] from the local Chinese literature.

2.2.1 Design qualities for locally responsive public open spaces in relation to local perceptions – western literature

Much of the literature has already contributed to various research studies in regards to the urban design qualities associated with locally responsive public open spaces encompassing socio-cultural, economic and political concerns (Butina Watson and Bentley, 2007; Bentley et al., 1985; Carmona et al., 2003; Tiesdell and Carmona, 2007; Carmona, 2010; Lynch 1960; Nasser, 2015). Jacobs (1993) provides and discusses her considerations based on social interaction in the configuration of the built environment (Wheeler, 2007) Alexander (2015) presents a range of patterns and rules followed by people in society when interacting with one another in order to build urban fabrics. In addition, Lynch (1960) developed a systematic method of understanding and evaluating users' perceptions and cognitions of the built environment based on his coding of the socio-semantic elements in spaces.

By considering the responsiveness of the built environment, Bentley et al (1987) argue that 'the built environment should provide its users with an essentially democratic setting, enriching their opportunities by maximizing the degree of choices available to them'. In order to do that, they propose seven qualities, which are (Carmona, 2010): 1] **permeability**, the extent to which an environment allows people a choice of access through it; 2] **variety**, places with varied forms, users and meanings; 3] **legibility**, the quality which makes a place understandable and readable; 4] **robustness**, places which can be used for different purposes; 5] **visual appropriateness**, the detailed surfaces of the place which can be understood in relation to its available choices; 6] **richness**, an enjoyable place with a variety of sensory experiences; 7] **personalization**, a place which fits the user's own values and preferences. Going further, by considering political and cultural values, Bentley (1999) defines a responsive city typology as one which contains such features as a grid, complex user pattern, robust plot development, positive privacy gradient, perimeter blocks, and a native biotic network. These qualities can also be traced back to a set of experiential qualities such as: **variety, accessibility, legibility, robustness, identity, cleanliness, biotic support**, and **aesthetic richness**. Compared with his early work (Bentley et al, 1985), Bentley (1999) later

emphasizes the importance of cleanliness, biotic support and nature, which presents tidiness and the variety of nature as increased qualities for a responsive built environment (Moughtin, 2003). According to the Urban Design Compendium by UDAL (2013), the quality of place has to be delivered through a balance between the natural and the man-made environment.

In order to respond to people's social needs, Haughton and Hunter (1994) point out that a high level of diversity within the city is important to respond to a variety of activities and a wide range of desired lifestyles among the people who live and work there. The research conducted by PPS (2000) goes further; they identify four key qualities of successful public spaces: **sociability**, **uses** and **activities**, **access and linkages**, and **comfort and image**.

Based on the discussion above, from the general literature, the key qualities for locally responsive public open spaces can be consolidated and summarised as **accessibility**, **amenity**, **legibility**, **variety**, and **sociability**. These design qualities are most relevant to this research as the ways in which they contribute and support local responsiveness are explained as follows:

Accessibility – is a substantial factor as it impacts the basic needs of people who live, work and visit places. In other words, choices should be accessible. The grain of built forms, the linkage between centres of high activity, multi-modes of movement and walkability are necessary to support the design quality (DETR, 2000; Rudlin and Falk, 1999; Carmona, 2008; Bentley et al. 1985; Robert, 1989; Walker 2001; Coles et al., 1995Trancik, 1986).

Amenity – comprises the resources, convenience, facilities or benefits continuously offered to the general public for their use and/or enjoyment based on **comfort, safety**, **cleanliness**, and **greenery**, with or without changes (Idea, 2001; Marcus, 1998; Carmona, 2008; Whyte, 1980, 1988).

Legibility – is a degree of simplicity, predictability and contrast, identifying a place that is easy to read (Cooper, 2000). The visual permeability through a settlement and accessible public space networks, landmarks and space disposition, and the design of visually interesting buildings are central in indicating the quality of legibility (Bentley et al., 1985; Carmona et al., 2003; Lynch, 1960 and 1981).

Variety – is widely recognised as a key aspect of urban quality, and is a feature which maximizes the degree of **choice available** and responds to the users of public open spaces (Bentley et al., 1985; Whyte, 1988; Cooper, 2000; Jacobs, 1961; Butina Watson and Bentley, 2007).

Sociability – is considered to be the combination of a robust community, neighbourhoods, districts, suburbs, free-standing towns and forms of social lives that occur in public spaces (Montgomery, 2006; PPS, 2000). It also concerns whether or not spaces adapt easily to future changes in terms of function and use (Lynch, 1981; Bentley et al, 1985).

Co-dwelling with nature – where the city is seen as an integrated bio-region, where residents live in harmony with nature (Butina Watson and Bentley, 2007). It suggests that nature is an important component of the city that connects the human network to supporting micro-climate improvement for the quality of life, meanwhile, it also has psychological benefits that improve the users' experiences of public activities in public open spaces (Butina Watson and Bentley, 2007).

2.2.2 Qualities for locally responsive public open spaces in relation to local perceptions – Chinese literature

In order to achieve locally responsive public open spaces, design qualities in relation to local perceptions, cognitions and interpretations have been reviewed. Based on the different types of built environment constructed during different historical periods that are all being used today, local urban design qualities can be categorised into three groups, which are: qualities based on imperial theories, socialist theories, and contemporary theories.

2.2.2.1 Imperial Period (B.C. 475 - 1840)

During the Imperial period of China, imperial political control was the most significant aspect of Chinese society. All disciplines such as sociology, astronomy, sciences, technologies,

philosophy, urban design and planning were developed based on the demands and requirements of political control and management. In this sense, balance and harmony were perceived by key political figures to maximise the ruling time and efficiency (Li, 2006; Qiu, 1992; Yang and Ouyang, 2005; Guo, 2006; Sun and Feng, 2010; Wang, 2010).

Balance was the key philosophy across all disciplines during the imperial period. In terms of urban design, harmony (balance) between mankind and Nature was seen as a guide for ancient Chinese city plans and designs. The main idea of local cognition and perceptions of the built environment originated from Taoism which then influenced China. Taoism believes Man and Nature have a cosmological connection and balance (Hu, 2002; Zhao, 2006; Wang, 2014). Nature, in this theory, not only represents the natural environment, but also the interpretation and understanding of **naturality** from different disciplines. **Taoism** believes Nature refers to 1] the non-man-made natural environment (Zhao, 2006), and 2] Qi (air/breath) (Xing, 2004). **Confucianism** understands Nature to mean regulations and rules (Shi, 1989; He, 1996). **Buddhism** considers Nature to be Heaven and the Gods (Zhang, 2013; Wu, 2004), and **The Monarch** interprets Nature as the controller of the empire (Yu, 2014; Xu, 1981; Shi, 1989; He, 1996).

Based on these beliefs and the study of Qi (air/breath), by integrating the theories of Yin-Yang, Five Elements, and Eight Trigrams, Fengshui was understood to be the best tool to evaluate, recreate and analyse the Qi of the physical environment for human habitation (Zhang, 2013). Qi is understood as the energy of the breath of Nature. It was explored in detail by Guo Pu (2015) in *Zang Shu* as 'living breath'. He suggests that Qi (air/breath), the vital cosmic current which runs through the universe, can be scattered once it meets wind, and can be stopped when it meets water (Hwangdo, 1999). By integrating a large amount of Qi (air/breath), it can form Shi (momentum or inclination), which is the essence and power of place, and the inclination of Nature (Zhang, 2013), referring to a position that has superiority and a latent dynamic force or power. Thus, the city could be designed and planned based on the movement of Qi (air/breath) and Shi (momentum or inclination) as the borrowed power of Nature that achieves harmony between mankind and Nature as well as improving political domination (Tang and Heath, 2008). On the other hand, it can also be understood that local Chinese **naturality** believes Nature and humans are an indivisible body, that mankind must have a connection to Nature not only from the point of view of the visible built environment

(Butina Watson and Bentely, 2007), but also from that of the spiritual system, such as the understanding of Qi (air/breath) in residential housing types, spatial planning and Chinese medicine (Xing, 2004).

Heaven and the Gods represent another understanding of the harmony between Nature and mankind. This originally developed from ancient Chinese astrology and **cosmology**, which believes mankind is connected with Heaven but mediated by the king, and therefore, the king in the human world is connected to the king in Heaven in a father-son relationship (Liu, 2014; Chen, 2008; Hui, 2009; Gao, 2002). The palace of Heaven is located in the centre of the ancient Chinese constellation map, and thus central locations in a city are priority positions offered to those of a high social class (Concept of Zhong (Centre)) (Liu, 2009). Having integrated with Buddhism when it was spared in ancient China, Heaven took on an added attached meaning, where it was interpreted as 'pure land', and people then started to believe in karma (cause and effect) and the cycle of samsara. Therefore, the connection with Nature does not only refer to heaven, but also represents another layer of space and time (Wu, 2004). Based on this discussion, the **understanding of local cosmology** is fundamental to developing local beliefs, cognition and world views, which attach meaning to activities, traditions, celebrations and behaviours; meanwhile, traditional settlements were created based on these thoughts and patterns of use (Gelebet, 1986;).

In terms of social management, the social order was created by classifying the social hierarchy and different social classes, and it was managed by developing social ties. Confucianism improved the social order in relation to control and management. It developed the Three Cardinal Guide and the Five Ethics Principles (Laozi, Tao-Te Qing) as key theories, which built the **social and spatial hierarchy** (Chen and Wang, 2014). The Three Cardinal Guide focuses on the roles of people in the society; as the theory states. 'Ruler guides subject, father guides son and husband guides wife' (Zhu, 2015, p. 27). It created a detailed social hierarchy with associated roles, duties and responsibilities. Meanwhile, the Five Ethical Principles (benevolence, righteousness, propriety, wisdom, and fidelity) focus on building moral rules to manage citizens and improving the harmony and balance of the society (Chen and Wang, 2014).

2.2.2.2 Early Socialist Period (1949 - 1984)

During this period, socialism and collectivism created a special social phenomenon, which is what Spira called 'qun-sim' (Spira, 2015), Spira (2015) defines **qun-ism** as having positive connotations in the sense of **interdependent social relationships** (Jin and Liu 2001), where individuals rely on each other to form a group for social life. This social phenomenon is seen as an important social constitution in Chinese society (Chen, 2006; Li, 2007; Dou, 2008). The reason for this social phenomenon is that Collectivism led people to adapt to a collective lifestyle, and they began to rely on each other, not only in terms of their working relationships, but also in terms of sharing their life and living spaces (Yang, 2004).

2.2.2.3 Contemporary Period (1984 - Present)

Based on the influence of the globalisation process and the spread of multiculturalism, a wide range of studies have focused on the influence of urbanisation and globalisation on city development since the Post Reform period (1978), in the fields of human geography, history, anthropology, sociology, up to urban planning and architecture (see for example, He et al., 2006; Ma, 2002; Ma, 2006; Pannell, 1990; Wei, 1995; Yan, 1995; Yeung and Zhou, 1991; Zhang and Pearlman, 2004). International theories became the prevailing guidelines for Chinese urban development around this period. Since then, local scholars have tried to bring back historical and cultural design philosophies and concepts, such as the *Ju'er Hutong Regeneration Project* designed by Liangyong Wu (1999), where he restructured the traditional spatial elements to adapt a traditional living environment to contemporary use by increasing the density of traditional courtyard houses. Others, such as Kongjian Yu, tried to integrate international and local urban theories to improve the existing urban built environment from an ecological perspective, including agricultural urbanism (2005, 2009), landscape urbanism (2006), water urbanism (2012), and the latest theory and practice of the sponge city (2015). While these theories have incorporated local culture in their understanding of the harmony between Nature and mankind, they seem more concerned with ecological aspects rather than socio-cultural responsiveness in terms of public open spaces in neighbourhoods. As previously discussed, Nature is extremely important in the local understanding of the world, interpretations of the built environment and the notion of cosmology. Therefore, based on Chinese shan-shui paintings (A traditional Chinese painting

style which uses natural mountains and water as elements for presenting art), the ideal shan-shui city was created by Xuesen Qian in 1990 (Sun and Heath, 2016). Following this, the concept has been studied and integrated with other disciplines such as sociology, history, architecture, urban design, urban planning and studies of traditional Chinese garden design, in order to respond to the socio-cultural needs of Nature, both physically and psychologically through urban development (Wu, 1993; Bao and Gu, 1994; Zhu, 1994; Qian and Bao, 2001; Wang, 2002, 2009; Fu, 2006; Gu, 2014; Sun, 2013, 2014; Sun and Heath, 2016).

Based on the discussion above from the local literature, the key qualities for accessing locally responsive public open spaces can be categorised and summarised as follows (Figure 2.6):

Naturality (自然观) is the traditional cosmological understanding of the universe from Taoism, which can be studied as the integrated theories of Qi (air/breath), Yi-Ching, Yin-Yang and Chinese medicine. Furthermore, Buddhism and Confucianism apply further meanings with regards to the regulations and beliefs of Heaven onto the understanding of Nature. Then, integrated theories form the fundamental cognition and interpretation of the Chinese in relation to Nature. It mainly concerns the relationship of balance and harmony to Nature.

Cosmology (宇宙观) is conducted by local beliefs and people's understanding of the distinctive local cognition and world view, which form the unique usage patterns of the place (Oliver, 2006). Based on this, place can be shaped and reshaped to respond to the transformation of uses and needs. The implementation of cosmology can be found in the arrangement of symbolic rituals, the structure of traditional activities, traditional settlement patterns, building designs and the arrangement of spaces in traditional buildings (Oliver, 2003).

Social and Spatial Hierarchy (社会和空间等级) are the spiritual regulations and rules for improving the social and spatial order, which create social ties and roles for different social classes, and then represent the social hierarchy in urban planning and traditional architecture.

Interdependent Sociability (Qun-ism 群体性) is recognised as the product of Socialism and Collectivism. It can be understood as social continuity, which enhances social connections and cohesion, and encourages people to share their lives.

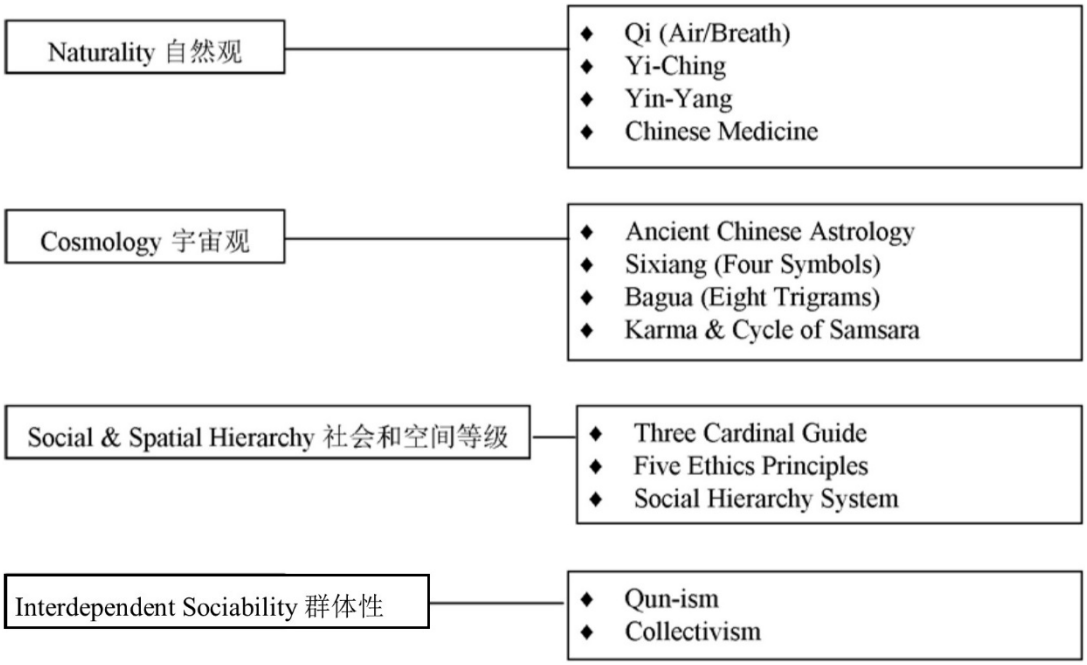

Figure 2. 6Local Urban Design Qualities for Public Open Spaces. Source: author

2.2.3 The Theoretical Framework of Qualities of Public Open Spaces

In order to comprehensively evaluate the local responsiveness of public open spaces, it is necessary to establish the theoretical connections between international and local urban design theories and qualities. While interpretation of these qualities and their purposes differ based on the socio-cultural and political context, there are similarities (Table 2.2) and theoretical connections (Figure 2.7) between international and local urban design qualities which allow them to be linked and integrated.

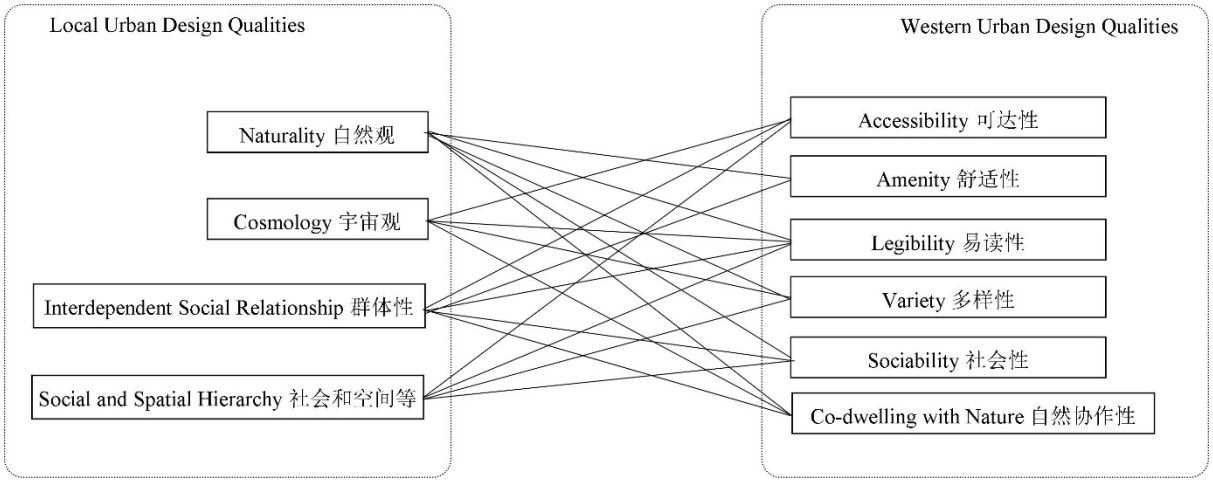

Figure 2. 7 Theoretical connections between international and local urban design qualities. Source: author

Table 2. 2. The theoretical similarities between global and local urban design qualities. Source: author

Western Design qualities / **Local Design Qualities**	Accessibility	Amenity	Legibility	Variety	Sociability	Co-dwelling with Nature
Natuality	None	Natural comfort, and relationship between nature and human	Spatial understanding of Qi (Air/ Breath) in Fengshui	Providing choices of using the spaces and enhancing the using experiences	Symbols regulations and rules by Confucianism	Harmony between nature and residents
Cosmology	The guide of spatial layout from the understanding of astrology	None	Cognitions of spatial directions	Variety of activities and events	Social order	Harmony between nature and residents
Interdependent Social Relationship	Spatial system	Social interaction and group activities	Social hierarchy	Roles of different actors in relation to functions of land use	Social order	Social activities, events and individual behaviours
Social and Spatial Hierarchy	Right to access the public owned places	None	Easy to understand the system of the road	None	Social network and connection	None

From Table 2.2 and Figure 2.7, most local qualities contribute to accessibility, sociability and legibility. There are two global qualities which minimally connect to local ones, which are variety and amenity. Variety is a quality that rarely appears in the history of China due to the economic levels, political control and military defence in Chinese society, while, 'amenity' has a two-part interpretation: 1] in imperial times, it could only be found in the understanding of Nature which mainly manifested in the private gardens of people from a high social class, private spaces in each courtyard house and in the spiritual vista from theories of Taoism. Therefore, amenity, particularly in residential areas, was only reflected in private spaces not

in publicly shared spaces; 2] in socialist times, due to a lack of resources (such as consumer goods) and a closed socio-economic structure, the notion of amenity was a result of the integration of traditional Taoist theories and early modern style. Greenery became the main element used to improve the amenity of public open spaces.

Based on all the literature concerning both international and local Chinese urban design qualities and the discussion above, a theoretical framework has been developed (Figure 2.8).

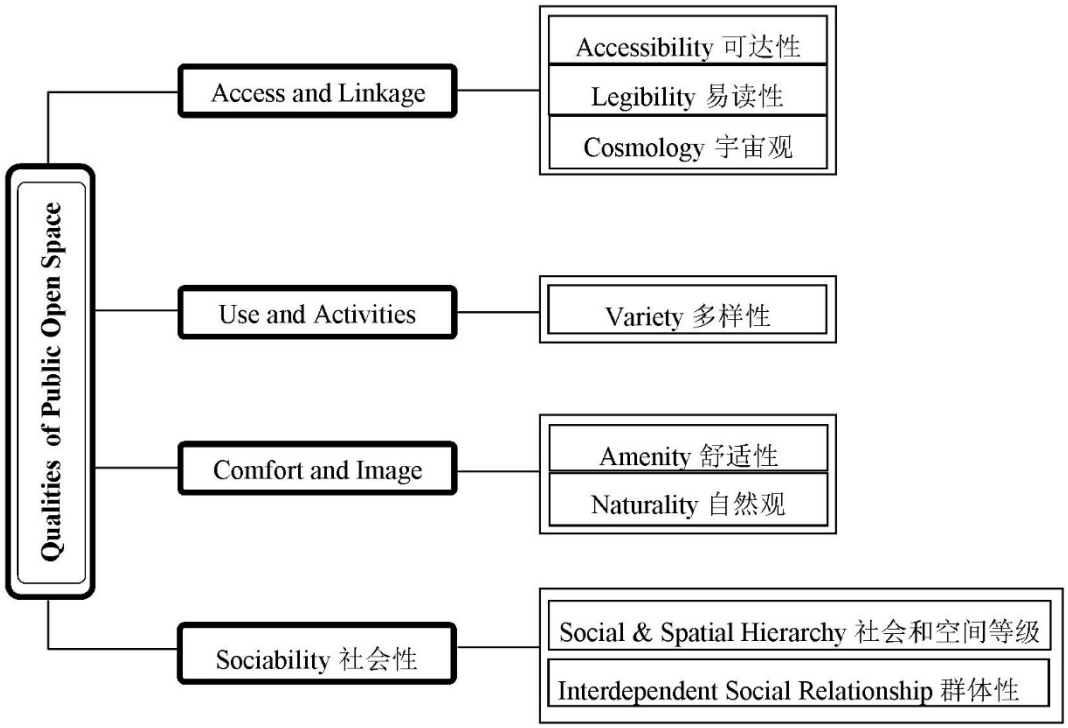

Figure 2. 8 Theoretical connections between international and local urban design qualities for public open spaces. Source: author

2.3 Conceptual Framework for Analysing Locally Responsive Public Open Spaces

This section develops a framework for analysing locally responsive public open spaces. In order to do so, the author has used the theories discussed in the previous sections. It is useful to present this conceptual framework as a process for explaining which qualities contribute to local public lives in Chinese cities, and how these qualities affect local responsiveness of public open spaces (Figure 2.9).

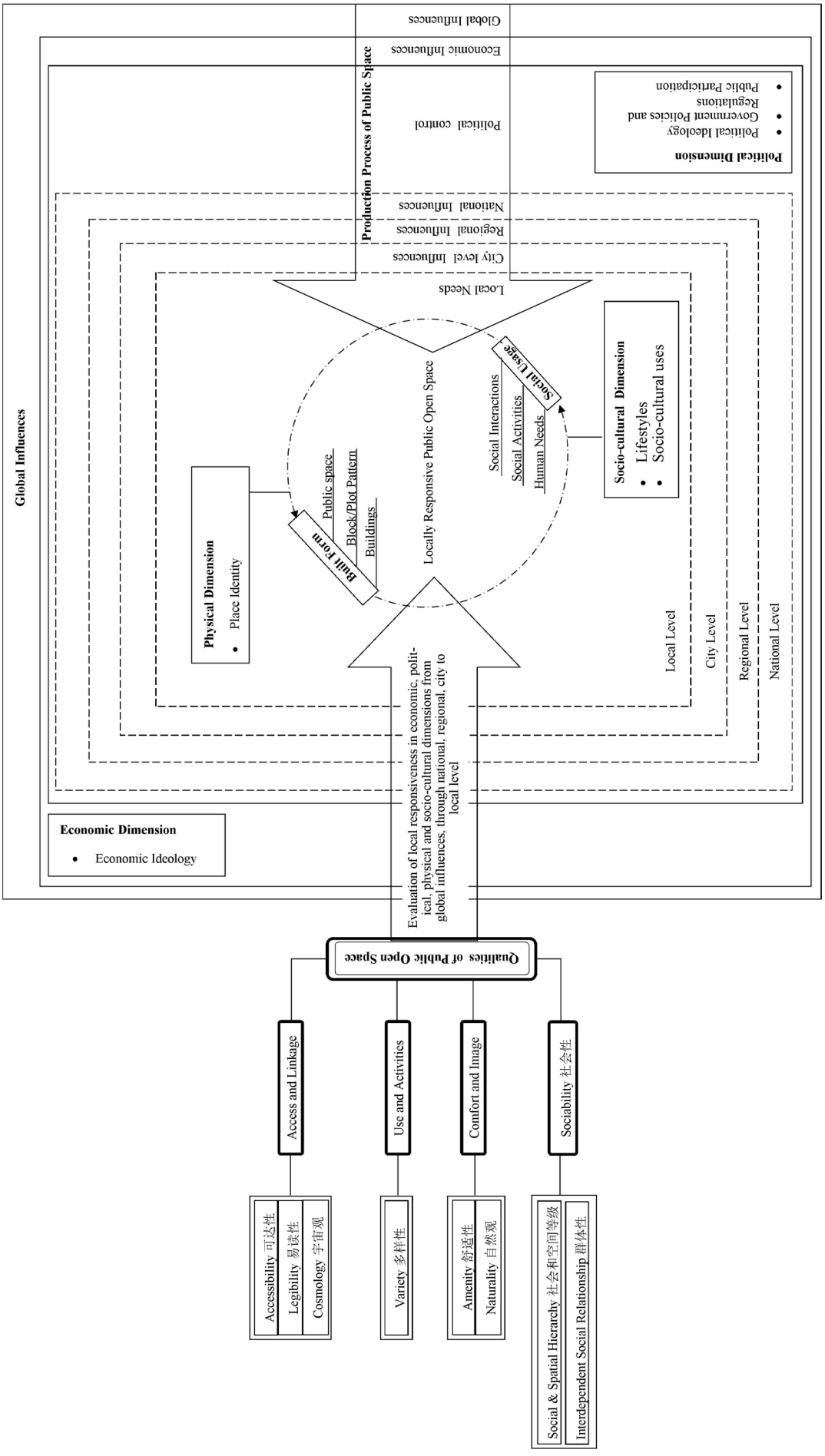

Figure 2. 9 Conceptual framework for analysing locally responsive public open spaces. Source: author

First, locally responsive public open spaces are formed by the socio-political production of the physical built form and social usage (Sections 2.1.1 and 2.1.2). **Second**, by interrelating them to each other as a circle, place identity and vernacular architecture and social lifestyles and the socio-spatial network are formulated based on physical and socio-cultural integration as a socio-spatial pattern (Section 2.1.3). **Third**, the socio-spatial pattern is concerned with the local level, city level, regional level and national level politically (local) and economically (local and global)(Sections 2.1.4, 2.1.5 and 2.1.6). **Fourth**, the production process is the platform for negotiating the different interests, preferences and values of the different urban actors (Section 2.1.7). **Fifth and finally**, by evaluating the level of local responsiveness across all aspects and dimensions of public open spaces, local and international urban design qualities have been integrated and interconnected, and used as measurements for evaluating the level of local responsiveness (Section 2.2).

Conclusion

The aim of this chapter was to develop a conceptual framework for analysing and defining locally responsive public open spaces. In order to do so, the chapter progressed through the following stages: 1] identifying key concepts, approaches and principles of public open spaces and their relevant dimensions and components; 2] reviewing both international and local theories in order to identify the key urban design qualities that can be used as evaluation measurements to contribute to public lives in Chinese cities; 3] developing the conceptual framework for analysis, including dimensions, components and interactions.

It has been revealed that the definition of locally responsive public open spaces is a framework defining the needs of different user groups, accommodating both global integration and the local context, responding to political and economic interests, and adapting to local socio-cultural and physical conditions during periods of

transformation and over time. The production process of public open spaces is a negotiating process among key actors in order to integrate their interests, roles and responsibilities.

The key elements at the core of the socio-spatial interaction are the built form and social usage. The interactional process between these elements forms the socio-spatial process, and creates place identity, lifestyle and socio-cultural usage. Studying this interactional process has facilitated an understanding of: a] how urban morphologies affect the use and perception of places; and b] how urban life, human needs, social interactions and activities influence and transform the physical settings.

The key dimensions and components in the conceptual framework for analysing locally responsive public open spaces are:

- Physical dimensions: urban morphologies, spatial typologies and patterns of land use
- Socio-cultural dimensions: use and experience of the place, meaning beyond the social interaction and activities as well as human needs
- Political dimensions: political ideology, legal, urban planning, institutional framework, and public participation
- Economic dimensions: economic ideology, global and local market influences

The key design qualities identified to evaluate the level of local responsiveness are used through all levels of all dimensions to shape and reshape public open spaces through time; these are:

- Access and linkage: accessibility, legibility and cosmology
- Use and activities: variety
- Comfort and image: amenity and naturality

- Sociability: interdependent social relationships, and social and spatial hierarchy

This framework will play a fundamental role in investigating the formation and transformation of public open spaces in Beijing, which starts from a city level analysis and will be followed by different detailed neighbourhoods analysis in order to comprehensively understand local responsiveness in different scales. In the following chapter, the conceptual framework will be used to develop a methodology for analysing locally responsive public open spaces in Beijing.

Chapter Three - Research Methodology

Introduction

Based on the conceptual framework established for defining and analysing locally responsive public open spaces in the previous chapter, this chapter addresses the second research objective: 'to develop an analytical method for identifying the characteristics of public open spaces and social usage in Beijing'.

This chapter is structured in six sections (Table 3.1). Firstly, the qualitative research approach is explained with theories as the grounds for the research. Secondly, a case study approach is discussed as this is the primary research method. The case study has been structured and interpreted at two levels of analysis: 1] the general context of the city in order to identify how political, economic and socio-cultural dimensions respond to the design and production of public open spaces over time; and 2] three neighbourhoods analysis corresponding to each detailed type of urban living environment in order to define the usage of public open spaces through different dimensions and through urban transformation. Thirdly, a methodological framework is established for identification of the types of data needed and the methods for data collection and analysis. Fourthly, the identification of methods for developing the research proposition and testing is explained. Finally, this chapter closes with the procedures used to validate the research findings, and a discussion of ethical research concerns.

3.1 Qualitative Research Approach

This research focuses on understanding the complex interrelationship between the quality of public spaces and social usage under the influence of various factors identified in the conceptual framework. In order to do so, a suitable research approach must be established and identified and, after due consideration, a qualitative research approach has been employed (Seale, 1999; De Vaus, 2001; Creswell, 2007, 2008).

3.1.1 An ethnomethodology approach

In order to identify local responsiveness in public open spaces, users' experiences and perceptions are significant (Carmona, Heath, and Tiesdell, 2010). Therefore, an ethnomethodological approach has been selected to understand the perceptions of local residents and phenomena based on their activities and behaviours (Carmona, 2010). The approach is relevant to frame the analysis because social properties are the product of individual interaction and are not phenomena 'out there' which are sterile from participant involvement (Bryman, 2004; 2015).

3.1.2 Deductive and inductive research approaches

The two main methods employed in this research are to use theory and hypotheses to reach specific conclusions through a deductive and an inductive research approach based on the development of a conceptual framework, which in turn is based on a review of theories and concepts. The conceptual framework is then unutilised to collect and generate data, which will then be complied and analysed.

A mix of inductive and deductive approaches have been selected for this research, beginning with the development of a conceptual framework which has emerged from reviewing theories and concepts. The conceptual framework has then been used to

collect and generate data, all of which have been compiled and analysed to identify patterns influenced by concepts of local responsiveness. The findings have then been used to develop propositions and inform theories on enhancing local responsiveness in public open spaces.

3.1.3 Inquiry by design approach

The Inquiry by Design method (Zeisel, 1984) (Figure 3.1), is implemented on the fieldwork to study the connection between people and their built environment. Methods of design inquiry are developed and used in this research to identify the reciprocal relationship between socio-spatial patterns that are influenced by local responsiveness. The researcher has interpreted the local responsiveness of public open space design by collecting data (perceptions and expectations of public open spaces) from key urban actors assuming political, economic and socio-cultural roles. The researcher's interpretation, with the findings of the analysis, has then been translated into development proposals with visuals and images. These proposals were tested with controllers and producers for: a] the level of acceptance and feasibility of the proposals; b] additional comments and inputs recorded and utilized in order to amend each proposal. Finally, the initial interpretation was refined.

Figure 3.1 has been removed from this version of the thesis due to copyright restrictions

Figure 3. 1The design development spiral of the inquiry by design procedure Source: Zeisel (2002)

3.2 A Case Study Approach

A case study approach has been employed in this research as the approach facilitates a complex understanding of the sum of all the components of a phenomenon under examination rather than a detailed analysis of a single component (De Vaus, 2001). Yin (2014) emphasizes that the case study design should reflect the situation under study. Further, he suggests the use of multiple case studies to provide a strong contribution to knowledge and to build theory. In addition, de Vaus and de Vaus (2001) argue that the use of a case study approach is justified when the collective analysis of different parts of a study can provide a more comprehensive and complex understanding of the context. Furthermore, case studies utilise different data collection methods that enhance the type of analysis used and strengthens the

construct as well as the external and internal validity, making a study more reliable and generalizable (Yin, 2014).

3.2.1 Analysis of the case study of Beijing

As discussed previously, a case study approach has been selected to investigate and understand the complex social phenomena of the quality of public open spaces in relation to built form and social usage. Beijing has been chosen as the case study city in order to investigate the phenomenon of dynamic urban growth through urban transformation under global influences.

As a typical contemporary Chinese city, there are various socio-cultural conflicts in relation to social usage affected by global influences; one of the challenges is defining the quality of the physical living environment for local social usage. Beijing, as a capital city for over 800 years, has experienced political, economic, social, cultural and physical environment changes. Various types of physical living environments built under different socio-cultural and political systems can be used to analyse and understand the complexity of change within a contemporary urban living environment.

The dimensions and the components identified in the conceptual framework are key points for analysing the case study, with the interaction between them fundamental for understanding the influence of contemporary urban transformation in relation to built form and social usage.

In order to fully understand the different scenarios of the contemporary urban environment, the analysis is divided into two levels. The first level mainly focuses on the city level, which characterises the historical transformation of the built form in relation to social usage, and also identifies key actors and their roles through historical

transformation analysis. This knowledge contributes to understanding local needs and the global influences affecting the quality of the built form in relation to social usage. The second level is to comprehensively evaluate different scenarios of contemporary urban growth in Beijing. The discussion will continue in the following section.

3.2.2 Selection of neighbourhoods for analysis

As discussed in the previous chapter, three neighbourhoods have been selected to help understand and analyse different types of neighbourhoods in terms of local responsiveness. In order to study them, the conceptual framework has been applied in the analysis of each neighbourhood in order to address the research questions.

Following a review of the literature (Chapter Two), which illustrated the variety, diversity and complexity of contemporary urban growth in Beijing, a reconnaissance visit to Beijing was carried out in total 11 communities and area in order to focus the research on the scenarios of the contemporary urban environment and to select the neighbourhoods for analysis (Figure 3.2). The visit was in September 2012, and the plan was made based on the typology of the community and area:

- a historical living zone, such as South Luogu Lane, Ya'er Hutong and Jiugulou Street;
- an early modern living community of medium density (mainly focusing on work units/ Danwei) such as Zhongji Road Unit and Heiyaochang Unit;
- an early modern living community characterised by high density tower buildings (family homes of work unit and commercial apartments) such as Yongle Unit;
- a post-modern living community such as Tianzhijiaozi community, Apple community and Back Modern community;
- a combined living area (with a minimum of three types of living community) such as the Taoranting and Niujie areas.

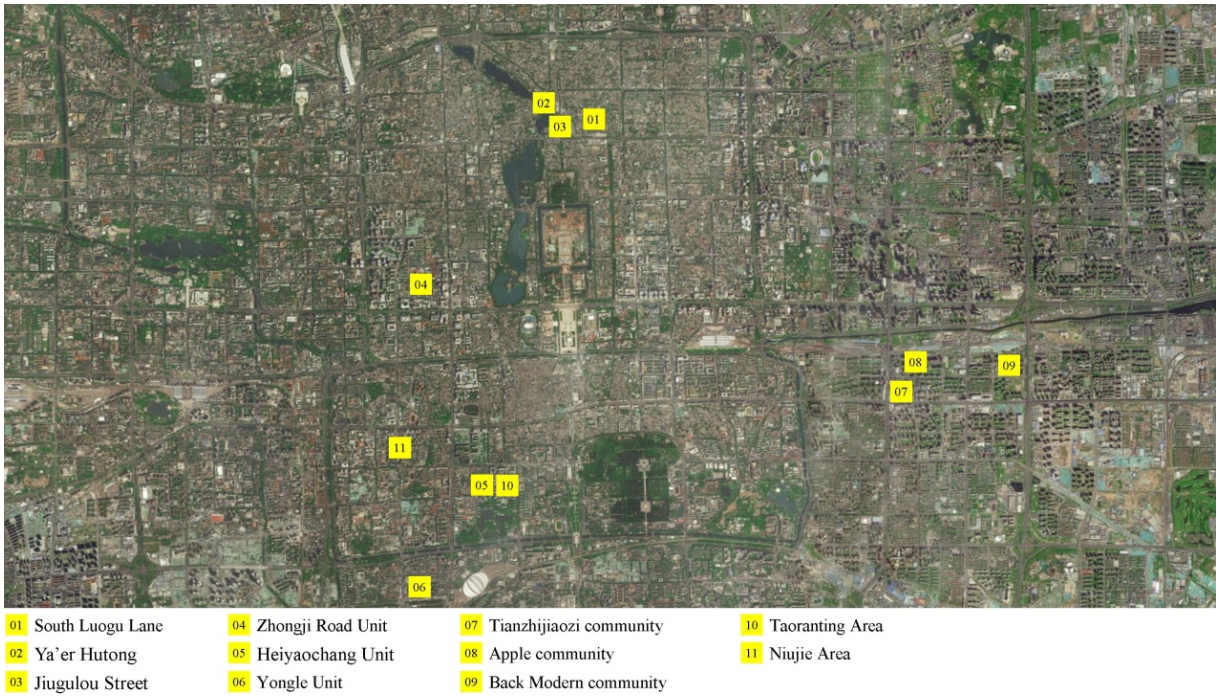

Figure 3. 2 The locations of reconnaissance visit in Beijing, Source: constructed by author based on Google Map Image

From the reconnaissance study, three neighbourhoods were chosen for analysis:

a) Qian Yuan'en Si area in South Luogu Lane, a historical living zone that is one of the best preserved traditional living areas with traditional socio-cultural living formation;
b) Heiyaochang Unit, a medium density modern gated work unit with typical communist modern morphology and building typology;
c) Back Modern Community, a modern living community that is one of the largest and success modern living communities with modern facilities and management in Beijing.

These areas were selected because firstly, they are the most common types of the contemporary urban living environment in Beijing in terms of their physical urban forms and community living; and secondly, the accessible of documents and plans; and thirdly, easier engagement with local residents. The reasons for not selecting the

other types of living environments were: a) among the high rise tower buildings affected by early Modernism, these living communities only appeared during the transition period of urban development within the post reform periods one (1978-1992); therefore, only a small number of such living communities built were seriously affected by the national development agenda at the time; b) in the combined living areas, medium to high density living communities have been proposed as the main goal of the 2004-2020 Beijing urban development plan (Beijing City Master Plan 2004-2020) due to population growth, immigration and economic-based development. Moreover, based on the Guide of Regeneration of Beijing Old Residential Area (2012), many older residential areas will be regenerated and rebuilt in the years to come. Therefore, modern high-rise residential buildings will become the main residential building type in future developments.

The detailed reasons for selecting the specific three neighbourhoods listed above were as follows:

Neighbourhood analysis – Qian Yuan'en Si Area in South Luogu Lane

Qian Yuan'en Si Area in South Luogu Lane is one of the most completely preserved historical living areas where vernacular building typologies and a historic urban layout coexist with contemporary morphologies (Figure 3.3 and 3.4). Academic research has previously been carried out to investigate the development of traditional building types in relation to the local community life in South Luogu Lane (Wu, 1987, 1989, 1991a, 1991b, 1992a, 1992b, 1994). South Luogu Lane contributes to the overall urban analysis because of its built form combined with a local community in a vernacular context.

Figure 3. 3 The location of Qian Yuan'en Si neighbourhood, Source: constructed by author based on Google Map Image

Figure 3. 4 Qian Yuan'en Si Living area. Source: author, photo taken from field survey in 2017

Neighbourhood analysis – Heiyaochang Unit

Heiyaochang Unit is a classic modern medium density living community, which belongs to a work unit community (the private living community of a government owned company) (Figure 3.5 and 3.6). The building typology has been affected by modernism, that is slab-type apartments with semi-public gardens around the buildings (Zang, 2010; China Real Estate Industry Association, 2010). The community is a classic Danwei gated residential unit, which is public housing originally built for several Danweis by The Government of Xuanwu District in the early 1980s for sharing by employees. However, since the government released The Guide for Selling Purchased Public Housing of Beijing City (北京市已购公有住房上市出售实施办法) (2003), the community has been transformed from public housing to commercial housing, so the relationship between residents has changed. In addition, the types of social interaction which take place in the public spaces have also changed as a result of the commercial activities. The contribution of this analysis is to investigate a transitional modern living environment in relation to social usage, which in this special case has been impacted by political factors in the contemporary urban environment.

Figure 3. 5The location of Heiyaochang Unit, Source: constructed by author based on Google Map Image

Figure 3. 6 Heiyaochang Unit, Source: author, photo taken from field survey in 2017

Neighbourhood analysis – Back Modern Community

The Post-modern community is one of the most successful and largest residential projects, affected by post-modernism and built in 2002 in Beijing (Figure 3.7 and 3.8). The community is located in the Central Business District of Beijing, and is based on a contemporary mixed-use design idea that includes offices, residential apartments, hotels, commercial facilities (such as restaurants, supermarkets and gym clubs) and service facilities (such as a gallery and cinema). The building typology of the community is high-rise high-density buildings, which are now the main residential building type in Beijing (Zang, 2010). The contribution to the research of this neighbourhood analysis is to identify the formation of social usage within a modern built environment, where the physical environment in relation to social usage is extremely different from traditional living environments and living communities within work units.

Figure 3. 7 The location of BackModern City Community, Source: constructed by author based on Google Map Image

Figure 3. 8 Post-modern community. Source: author, photo taken from field survey in 2017

3.3 Type of Data and Data Collection Methods

In order to carry out an analysis of the local responsiveness of public open spaces in different types of neighbourhoods, various types of data need to be collected, and a

mix of methods needs to be employed. Based on the research aim and questions, morphological and qualitative approaches were selected to understand and analyse local responsiveness through a mixed method approach, which provides rich details and in-depth interpretive analysis of different points of view (Creswell and Clark, 2007). Therefore, both morphological and qualitative methods are used in this research, the details of which are discussed in the following sections.

3.3.1 Types of data

Based on the conceptual framework developed in chapter two, and the approaches discussed in this chapter, the set of data required can be categorised as:

1. Morphological and typological data

2. Data related to the local perceptions of key actors (controllers, developers and local residents), which include, semi-structured interviews, mental mapping, annotations, photography etc.

The details are discussed below.

3.3.1.1 Morphological and typological data

As Moudon (1997) argues, a city can be read by using urban morphology to understand the historical transformation of its different components in relation to how they formed through evolving dynamic political, economic and socio-cultural processes (Gauthier and Gilliland, 2006; Krof, 2009; Irandoost and Alizadeh, 2017). Therefore, in order to understand how local responsiveness affects urban development through times of political, economic and socio-cultural transformation, the morphological layers identified in the conceptual framework have been applied to

analysis of three neighbourhood in Beijing for investigation. This investigation includes: the structure of public open spaces, block/plot patterns, typological analysis of the buildings, and how they were shaped and reshaped under the influence of political, economic and socio-cultural factors over time. In order to carry out this investigation, a wide range of data is needed for the analysis, which includes different periods of the city map and masterplans at varied scales, current aerial photographs, government archives, development plans, visual records and photographs, local histories and drawings. The data have been gathered by the researcher from reliable resources, publications, organisations and institutions. All data have been analysed to reveal local morphological patterns, urban planning and associated transformation, land subdivisions, building types and structures, patterns and transformation of land uses. All the data collected from the fieldwork are to be analysed based on the conceptual framework developed by the researcher.

3.3.1.2 Data related to the local perceptions of key actors

Local perceptions are an important measurement to understand how physical spaces are built to respond to the interests and needs of different actors, and what further demands users have for improving local responsiveness in terms of the qualities of public open spaces. Therefore, the researcher needs to collect and conduct primary data. As discussed in the production process of public open spaces (for details, refer to section 2.1.7), various key actors are involved, which include government officials (three planners from different departments), developers (two project managers from different companies) and local residents (90 participants across three neighbourhood communities). Therefore, the types of data required are data which contribute to a better understanding of the roles and interests of these key actors, and the usage perception of local residents. The data can be categorised as:

- National development agenda
- The planning system

- Institutions involved in the urban development process
- Urban design guidelines
- Land and housing policies
- The urban planning and institutional framework at the city level
- Narrative histories of the city
- Semi-structured interviews with key actors.

These data will help the researcher to understand the transformation of the city over time and in extreme situations such as political changes. This will assist the researcher in identifying how the built environment has been created and designed to respond to local political, economic and socio-cultural needs and interests. Meanwhile, studying local perceptions will also lead to an understanding of further needs for improvement in terms of local responsiveness.

3.3.2 Data collection methods

Based on the discussion of various types of data in relation to different scales of analysis for case study, this research combines multiple methods for data collection, including: archive reviews; morphological and typological documentation; observations of the use of public open spaces; mental mapping; building form surveys; and semi-structured interviews with key actors. Details of each method are discussed in the following section.

3.3.2.1 Morphological and typological documentation

Morphological and typological data were required for the analysis of the case study. All data were collected from personal fieldwork, government institutions, the national

online library and local libraries. The documentation included historic maps, masterplans from different historic periods, planning and design documents, architectural drawings, photographs and site observations.

In this research, the data for the morphological analysis can be categorised into four types that assist an understanding of the formation and transformation of public open spaces, which are:

a. Archive reviews

In order to carry out the morphological analysis, archived data were reviewed. The use of an archive review is important for analysing the content of documents through language, statistics, and non-verbal representations such as maps, development plans and architectural plans (Zeisel, 2006). These documents include: urban development and housing policies, urban planning regulations and legislation, conservation agendas, urban design guidelines, and institutional frameworks. These data provide information for analysing the roles and interests of key actors through the production process of public open spaces within the urban transformation process. In addition, literature regarding the history, urban planning, and development evolution of the city in relation to political, economic and socio-cultural contexts in different historic periods were also used. Furthermore, literature relevant to demographic changes, political changes, economic evolution and the socio-cultural traditions of the city were also reviewed.

In terms of non-verbal data, two-dimensional maps were widely used to present the form and distribution of urban spaces. Spatial analysis such as aerial photographs and satellite images were applied in order to understand the relationship between building forms and the surrounding areas (Moughtin, Oc and Tiesdell, 1999). Maps of

individual or groups of buildings and photographic documentation from the national online library and local libraries were used.

b. Observation of the use of public open spaces

Site observation was conducted in the neighbourhood fieldwork, and presented using annotation maps, drawings and photographs (Geilfus, 2008). This method was used to observe how people use their environment. Through this process, observers look at how the physical environment supports, or interferes with, the behaviour taking place within it, especially the relationship between individuals and groups (Zeisel, 2006, Guilfus, 2008). In this investigation, the observation was carried out in the three neighbourhood areas, focusing on how the public space responded to local activities, behaviours, traditional celebrations and social interaction.

c. Mental mapping

Mental mapping, also referred to as cognitive mapping, is an efficient method to understand the ways in which people visualize a place based on their own experiences and perceptions (Catney et al., 2019). Lynch (1960) started using mental mapping that to study people's perceptions in use of the spaces to identify the key elements in their using experiences for improving the quality of the spaces. Later, many scholars use this method for social studies to explore people's perceptions of using experiences in different type of spaces (Gillespie, 2010; Wridt, 2010; Doddridge, 2000; Gieseking, 2013). The method allows a researcher to understand the relationship between spatial structure and the generic function of movement, and also to identify the effects of spatial movement on spatial order and layout, and also on economic and socio-forces (Hiller and Hanson, 1984; Hill, 1996).

In this research, total 90 mental mapping drawn from participants (30 mental mapping per neighbourhood community), in order to identify the effectiveness of the design in response to local preferences for the use of public open spaces. Local inhabitants' daily movement routines were mapped for defining the level of local responsiveness, and specially focusing on the accessibility and legibility of the spatial design, and also any issues within it.

d. Building form surveys

Building form surveys were carried out to record in-depth the spatial and physical components of the city as well as specific types of living environment. A documentation study was required for the survey, especially in the historical neighbourhood. Building scale section drawings were carried out throughout the analysis of all three neighbourhoods.

3.3.2.2 Semi-structured interviews with key actors

Key interviewees were identified as individuals who hold an opinion or expertise in relation to the case being studied (de Vaus, 2001). The participant could provide valuable information about the social reality under investigation (Bryman, 2008). Open ended questions were asked to the key informants so that issues raised during the interview could be followed up.

In this research, each interviewee was selected based on the specific expertise they held. The interview covered a range of specific areas including governance, management and maintenance, city operations, real estate development procedures and the spatial and physical arrangements and forms in the context of Beijing. Planners and real estate developers were interviewed due to they are the main decision makers, and the interviews were carried out in order to identify how city

development decision-making and causes were affected by political dimensions, how real estate development were set up based on commercial value in the economic dimension, and how they co-operate with and respond to the usage needs of local inhabitants (see Appendix A for interview questions). A coding system was used to protect the confidentiality of the informants. For example, key informants at the city level have been coded 'P' (Planner) followed by a number e.g. P1, P2 and so on.

In terms of perception of local residents in use of public open spaces, it is a fact that a large sample can provide greater accuracy (deVaus, 1996), but if the research is one of 'discovery' rather than the testing of hypotheses, sampling can be used in small-scale research involving between 20 and 30 participants (Denscombe, 2003; Charmaz, 2006; Green and Throgood, 2009). In terms of ethnographical study, Morse (1994) suggested approximately 30-50 participants should be involved while Creswell (1998) recommend only 20-30. The size of the sample has to be kept as large as possible, while limited to secure the amount of detail required for in-depth interviews regards local responsive public open spaces. On the other hand, Arksey and Knight (1999) argue that time, cost and access of the research were also constrained in the fieldwork. Therefore, 30 interviews with local residents in the study of each community, 90 participants across three neighbourhoods were engaged, and the semi-structured interviews focused on local perceptions of the usage of public open spaces as a product (see Appendix A for interview questions). The topics were developed based on political, economic and socio-cultural factors identified in the conceptual framework, to evaluate the local responsiveness of public open spaces. From each neighbourhood, 30 residents were introduced and selected by community committee, and interviewed using the same list of questions. All interviews were conducted in the respondent's residence (a sample of the interview transcription for local residents can be found in the appendix A).

3.3.2.3 Translations of data

Due to large number of data are written in Chinese and used ancient Chinese measurement, which include local archive documents, government policies, historical literatures and maps. Therefore, translation works were carried out in literature review and case study analysis in order to interpret the data and analysis not only in readable English, but also explain the ancient measurement system. Furthermore, the interviews were carried out in Chinese due to preference and acceptance from interviewees, and thus, the translation works were undertaken by the author which to make sure the meaning and results were accurate in the analysis. All works of translation were carried out by the author alone because of 1] the local theories and archive documents need to be fully understand by establish links to global theories; 2] the ancient Chinese measurement system need to be explained with global measurement; 3] the language need to use based on urban design context; and 4] the author fully understand the meaning from interviewees.

3.4 Methodology for the Analysis

As discussed in the section on case study analysis, the methodological framework for the analysis is structured at two levels: city level and neighbourhood level, encompassing different scenarios of contemporary urban environments. At the city level, the study focuses on two aspects: 1) characterizing public spaces through political, economic, and socio-cultural dimensions in relation to the local responsiveness of public open spaces through the historical urban transformation of Beijing; 2) identifying the key actors with roles and interests in responding to public space design. At the second level, the contemporary neighbourhood in Beijing is identified and studied in detail. In order to develop the methodology for the analysis, an analytical framework and associated methods and techniques of inquiry were

established for each stage of the analysis. The details will be discussed in the following section.

3.4.1 Analysis Methods

3.4.1.1 Content analysis

In order to understand the national and city context regarding the formation and transformation of public open spaces under political, economic and socio-cultural influences, content analysis was used to review and analyse sets of data, which included the legal basis and institutional framework of urban planning, housing policies, and the national development agenda. This provided an important understanding of the national and city agendas as well as the historical background of various neighbourhoods in relation to the production of public open spaces. Therefore, the analysis of each neighbourhood started with content analysis of relevant documents, which was then followed by morphological analysis and finally, qualitative interviews.

3.4.1.2 Historical transformation analysis

In order to achieve the second research objective of identifying the characteristics of open spaces and social usage in traditional and modern areas, a historical analysis of urban transformation in relation to social usage is necessary. As Moughtin et al. (1999) argue, an understanding of historical transformation and structuring elements is required in order to detect the patterns of urban development. Moreover, Perez de Arce (1980) saw the city as a cumulative process that allows continuity in space and time.

Through the historical transformation analysis, the relationship between open spaces in relation to social usage and socio-cultural, economic, political and physical dimensions can be identified. In addition, these relationships are not always influenced to the same degree, but are always changing throughout urban transformation due to national effects and global influences.

In this study, the historical transformation analysis was supported by content analysis, visual analysis and urban morphological analysis in order to understand the process of development and transformation of public open spaces in Beijing. Examination of historical maps and relevant data was required to understand the formation and transformation which took place in each era of urbanization. Therefore, the findings from archaeological studies were also included. Urban planning documents were another important resource; these have been reviewed in order to identify policies that have affected urban development.

3.4.1.3 Urban morphological and typological analysis

Urban morphological analysis is a basic framework for understanding the relationship between the social aspects, economic forces, historic movements and symbolic components of society (Butina Watson, 2008). Samuels (1985) states that cities can be 'read' socially and culturally, therefore, the existing morphology can reflect the urban development process (Moudon, 1997). Noghsan-Mohammadi (2001) considers that every present situation has a past, and that this is also the starting point of the future. Furthermore, learning to interpret the city becomes a significant part of the process of urban morphological analysis. It involves observing and decoding physical traces by systematically studying the physical surroundings to find reflections of previous activity (Oliveira, 2016).

As previously discussed, the case study have been divided into two levels, that of the city level and of detailed neighbourhood s for analysis. Therefore, various research approaches have been implemented within the study (Table 3.1). A spatial analytical and process typological approach have been applied at the city level, to study its evolution and types of culturally specific built forms in order to identify the characteristics of the physical environment in relation to social usage under political, economic and socio-cultural influences. In terms of the contemporary scenarios of urban transformation, configurational and historico-geographical approaches have been implemented in order to identify the spatial usage in particular types of built form with its socio-economic effects; and the geographical structure, character of the place, and its relationship to the surrounding areas.

Table 3. 1 Approaches for city level analysis. Source: author

APPROACHES FOR ANALYSIS	PURPOSE OF APPROACH
HISTORICO-GEOGRAPHICAL APPROACH	To explain the geographical structure and character of the place by understanding its function and socio-economic context based on the relationship of use and activities between humans and the built form (Conzen, 1969; 1981; Kropf, 2009; Oliveira, 2016).
PROCESS TYPOLOGICAL APPROACH	Through the urban transformation of local responsiveness, different types of building structure can be identified, which are conceived as cultural entities rooted in, and specific to, the local process of cultural development (Caniggia and Maffei, 2001; Gauthiez, 2004; Gauthier, 2005; Oliveira, 2016;).

SPATIAL ANALYTICAL APPROACH	To understand the spatial structure and dynamics of the city as complex, emergent phenomena, in which the global structure develops from local processes through urban transformation (Batty, 2007; Jacobs, 1961).

In terms of the process of urban morphological analysis, the basic components include reviewing: a) morphological elements, such as the structure of open spaces, block/plot patterns, buildings at different scale levels; b) the morphological structure, such as the underlying regulations or principles that appear to regulate the organization of a place and the way changes occur within it; c) morphological changes, such as all aspects of human action which have led to the formation and transformation of the built environment (Noghsan-Mohammadi, 2001). Moreover, another very important part of the process of the analysis is observing physical influences, which means systematically identifying the physical surroundings to determine whether or not previous activities are reflected there. From observing physical influences, designers and researchers infer (Zeisel, 2006): a) how an environment came to be the way it is; b) what decisions its designers and builders made about the place; c) how people actually use it; d) how they feel about their surroundings, and e) how environments meet the needs of their users.

Urban typo-morphological analysis was incorporated into this study as a fundamental tool for examining urban form. The first stage of the process is to map the site where historic evolutions and transformations of physical patterns are identified in order to characterise typologies and define regional differences and similarities (Butina Watson, 2008). Then, on arrival at the site, data collection is carried out to identify and characterise distinctive urban morphologies and architectonic typologies. These activities can be supported by the study of secondary data to analyse patterns of land use and population density, among other elements. Visual surveys are extremely

important for gathering data, and they can be supported by annotated plans and mapping, sketches and photographs.

In terms of the process of the analysis, two main additional methods were used:

Mental mapping analysis –used to identify the effects of spatial movement on spatial order and layout, and also on economic and socio-cultural forces.

Figure-ground analysis –selected to understand the relationship between solids and voids in order to identify the textures and patterns of the urban fabric as well as problems in its spatial order (Trancik, 1986).

A review of urban plans and projects was used to understand the policies and strategies of urban development. The study of urban projects, even of those which have not been implemented, provides clues for exploring urban production processes (Moughtin et al., 1999). Visual surveys were used to check the information provided in the documents in the field, and this process was supported by photographs. Two dimensional maps were used to show the form and distribution of public spaces.

3.4.1.4 Qualitative interview analysis

As discussed in the conceptual framework, social usage and local perceptions are another important part of defining the level of local responsiveness in public open spaces. This means evaluating physical spaces from the user's perspective, which includes their perceptions, aspirations and preferences. Qualitative analysis was employed and analysed based on the concept of coding, where a researcher goes through the data to identify particular objects of interest (Bryman, 2015). Coding categories were developed based on the conceptual framework and reflected the different theories involved in the process and how they are connected. The analysis

was conducted based on morphological layers such as public open spaces, block/plot patterns and buildings, in order to understand political, economic and socio-cultural influences. All the collected data were identified by specific characteristics and codes and were then categorised to reveal the roles of key actors in the production process of urban development and their interests in relation to the local responsiveness of public open spaces in this specific context.

The semi-structured interviews were conducted and recorded in Chinese, then relevant sections were translated into English and transcribed by the researcher. All the interviews with government officials and developers were recorded, which helps to correct the natural limitations of memory and allows a more thorough examination of the responses (Bryman, 2015)

3.5 Methods for developing and testing the research propositions

Design propositions are a method of communication between designers and users and draw upon existing basic theory and research as a starting point for the design process (Hodgkinson and Healey, 2008). In this research, the design propositions were developed in order to provide recommendations based on issues identified in the case study for improving local responsiveness in public open space design in both contemporary and future development. A three-step process was established for developing the research propositions (Figure 3.9), as follows: 1] identifying the key issues (Chapters four and seven), and 2] establishing connections between the historical (Chapter five) and early modern neighbourhoods (Chapter six) as well as identifying related key issues by applying the conceptual framework, and 3] developing transferable lessons by tracing back. The integrated results were used to develop preliminary propositions for testing.

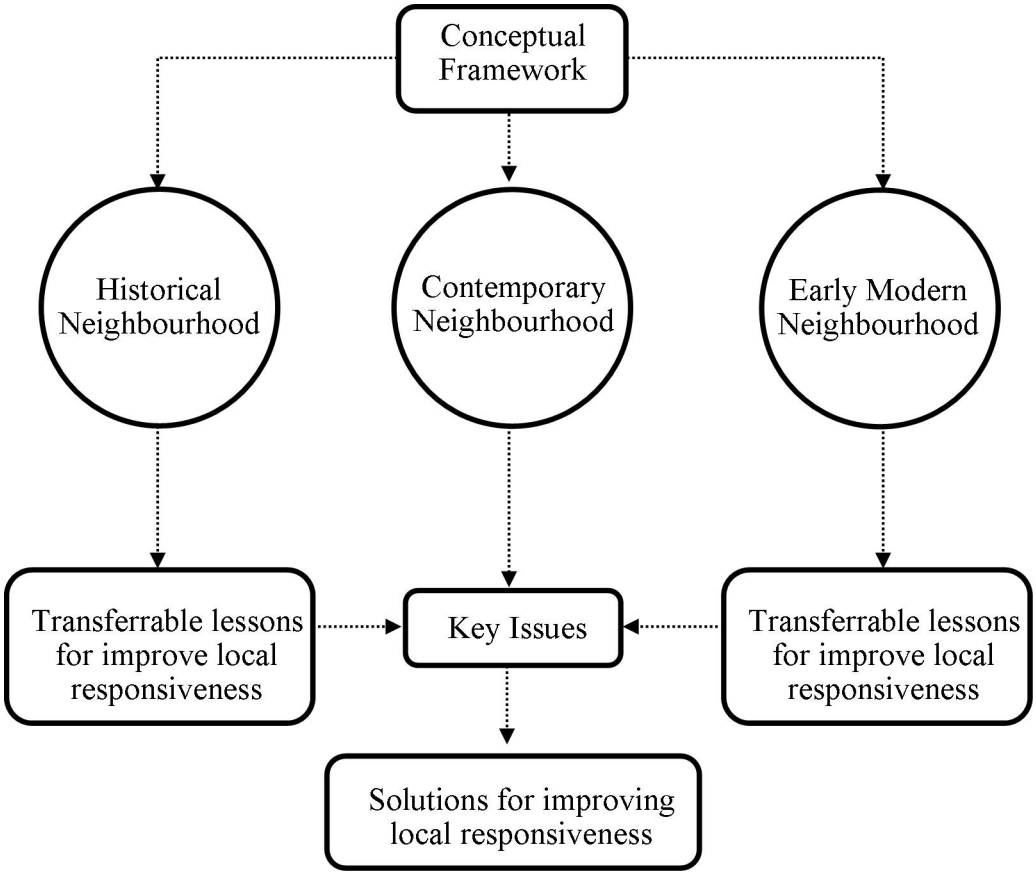

Figure 3. 9 Development process of transferable lessons and relationships between neighbourhood. Source: Author

As Dunbar and Starbuck (2006, p.171) point, 'research must develop concepts and propositions that suggest design options. ' in order to do so, inquiry by design method is employed for identifying the reciprocate relationship between people and urban form (refer to section 3.1.3). Firstly, based on the results of the analysis of the contemporary neighbourhood community (Chapter seven), key issues regarding a lack of local responsiveness in public open spaces in relation to political, economic and socio-cultural aspects are identified. By linking these issues back to the conceptual framework and the corresponding findings from the city level analysis, these issues can be categorized and compared to understand the difference between the theories and reality. Secondly, the results of the analysis of the historical (Chapter five) and early modern communities (Chapter six) are used to establish the connection with the key issues identified in the contemporary neighbourhood, which allows for comparison of issues in relation to the political, economic and socio-cultural

responsiveness of public space design and adaptation of public use in each type of community, and to develop the transferable solutions and recommendations corresponding to each key issue. Finally, by using inquiry by design method (Zeisel, 2006), the integrated results are used to develop preliminary propositions for testing with key actors (government officials and developers) who are involved in the production process of public open spaces by presenting them to them. The reason for not testing the propositions with local residents is that the propositions are based on residents' perceptions of using public open spaces and their preferences and needs when using these areas.

The testing process used illustrated design sheets developed for this research (Figure 3.10). It included: a) evaluating the level of acceptability of the concepts and urban design principles with key actors and eliciting modifications to achieve more effective implementation; and b) identifying any missing points that it might also be important to include in order to achieve more comprehensive concepts and design principles. Face-to-face semi-structured interviews were conducted to test the propositions and design inquiry methods were employed to refine them in a real-world context (Zeisel, 2006). More importantly, the testing enabled evaluation and consolidation of the research propositions in order to ensure that local aspirations and development dimensions could be accommodated. The results from the testing and refinement can then be used to design theoretical concepts and recommendations for future development.

Figure 3. 10 The samples of testing proposals. Source: author

3.6 Methods of Validation

3.6.1 Validation

As Bryman (2015) argues, reliability, replication, and validity are the main methods used to evaluate social research and a study, in order to be valid, must demonstrate trustworthiness and credibility (Guba and Lincoln, 1994). Unlike quantitative research which prioritises measurability as the main component, qualitative research has more flexibility in its reliability, validity and generalizability and so it is not as rigid (Mason, 2002). In this research, a mixed method methodology resulting in multiple sources of data validated the resulting research findings and propositions. Through triangulation, the different methods increased the reliability of the data and enhanced its credibility. In addition, the entire research process was documented and the researcher took into account the possibility of bias that might adversely affect the validity of the data and analysis. The research findings were tested with government officials and developers to ensure the validity of the study.

3.6.2 Ethical concerns

All stages of the data collection process received the full approval of the Research Ethics Committee at Oxford Brookes University. The data provided by participants such as government officials and developers used codes instead of names as some of the participants were not comfortable with being quoted or recorded. In terms of confidentiality, on the one hand, government officials were advised that their names would not be mentioned in the research, but some readers might recognise the name of government institutions or persons through their companies and projects. Furthermore, the data were managed confidentially and were only used for academic purposes, and never used without respondents' authorisation. On the other hand, the data collected from local residents were aggregated so anonymity was guaranteed. In addition, there were no potential risks for participants, as all translations and transcriptions were carried out by the researcher alone. Finally, all of the information collected during the fieldwork was placed in a private locker.

Conclusion

This chapter has developed the methodological framework for analysing locally responsive public open spaces in the context of contemporary scenarios of the urban environment in Beijing. It has established research strategies based on the conceptual framework. In addition, the development of the methodological framework for analysis started with an explanation of the qualitative investigation in which this research is grounded, employing a deductive and inductive approach. It then discussed the case study approach, indicating that case studies were chosen at different levels to provide an opportunity to extract patterns of urban form and social usage in the analysis. A city-level case study was chosen based on various political, economic and socio-cultural factors in order to provide a contextual understanding of the formation and transformation of public open spaces. Three neighbourhoods analysis were also employed based on different time periods within the development process of the city. The

neighbourhood analyses were chosen to investigate different morphological layers associated with social usage as well as local perceptions and aspirations in terms of the local responsiveness of public open spaces.

In order to analyse the multiple dimensions and components of the conceptual framework, the methodological framework established multiple data types and data collection methods, different levels and aspects of approaches, and data analysis for the case study. First, in order to address the historical transformation of the built form in relation to social usage, the study required a review of the literature and document analysis as the main methods and historical transformation and urban morphology analysis as methodologies for the data analysis. Second, in order to address the political and economic dimensions of locally responsive public space design, the study employs documentation analysis and semi-structured interviews as the main methods and agency role analysis as the methodology for the data analysis. Third, in order to address the physical responsiveness of public open spaces, a literature review analysis of relevant documentation and policies, spatial mapping and visual surveys are used as the main method; and urban typo-morphological analysis is the methodology used for the data analysis. Fourth, in order to address the socio-cultural responsiveness of public open spaces, the study required semi-structured interviews and observation of public spaces as the methods and techniques of inquiry and environmental behaviour analysis as the methodology for the data analysis. Finally, this chapter concluded with a discussion of the validation of the findings and the ethical concerns associated with the research. Validation was achieved by testing the findings through the use of design sheets with key actors (government officials and developers). The process of the research can be understood from Figure 3.11.

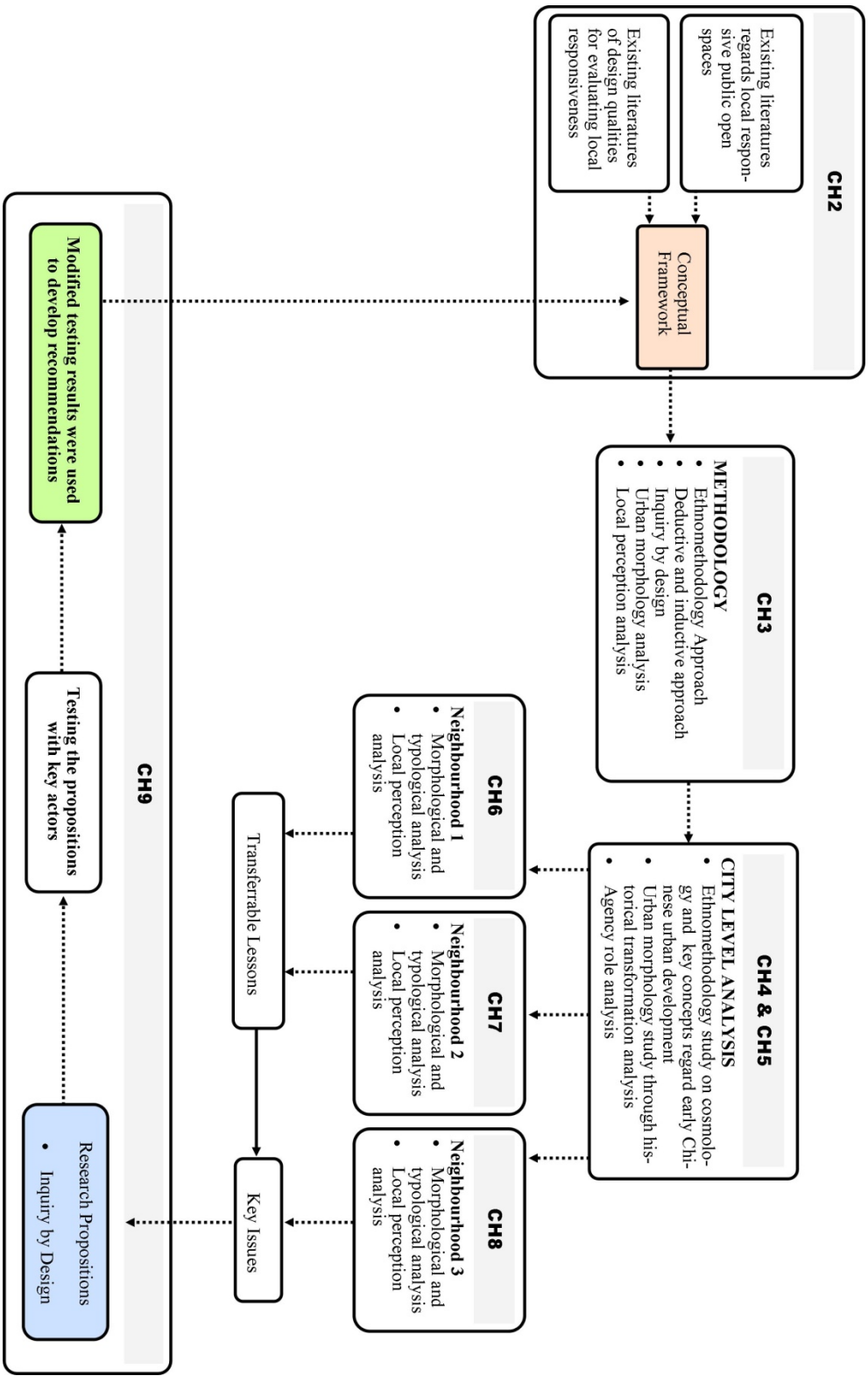

Figure 3. 11 The process of the research. Source: author

The next four chapters use the methodology developed in this chapter to carry out the data collection and analysis at two levels. The city level data collection and analysis is

covered in chapter four and the data collection and analysis of the neighbourhoods analysis is covered in chapters five, six and seven.

Chapter Four – City Level Analysis (Part I) – Historical Transformation Analysis

Introduction

In order to answer the research question '**what kind of urban spaces and urban design qualities contribute to the development of local public life in Beijing**?', the objective of Chapter Five is **to use the conceptual framework and the methodology to analyse locally responsive public open spaces, in order to identify the level of responsiveness to public open spaces over time under the influences of transforming political ideologies and multiple dimensions in the context of Beijing city**.

The research methodology established two levels of analysis (section 3.4.2): one at the city level and the other at the level of specific neighbourhood (Chapters 6, 7 and 8). This chapter is orientated towards accomplishing the first level of the analysis – city level analysis – which is organized in two parts. First, in order to answer the second research question '**are there any transferable lessons from the traditional Chinese urban areas which can enhance the quality of public life in contemporary urban spaces?**', it is necessary to analyse the formation and transformation of space to understand how public open spaces have been influenced, formed and transformed by different political and social ideologies, political structures, economic systems and social beliefs as well as how they have responded to political, economic and socio-cultural needs. Secondly, in next chapter (Chapter 5) in order to understand the local responsiveness of public open spaces in contemporary urban development, it is necessary to identify the roles, responsibilities and interests of various urban actors in the production process of public spaces.

This chapter is structured based on the conceptual framework, which starts from key urban design theories at a national level that influence the general urban development of Chinese cities, followed by historical transformation analysis to understand how political, economic and socio-cultural needs have transformed and changed over time in relation to responsive public open spaces. Finally, this chapter identifies roles of urban actors in the production of public open spaces and analyses their responsibilities and interests are in order to understand how they respond to the production of public open spaces, and vice versa. Table 4.1 explains local vocabulary employed in this and the following chapters.

Table 4. 1 Terms and definitions of vocabulary. Source: author

Terms and Definitions	
Bagua (eight trigrams, 八卦)	Bagua (English known as eight trigrams) are used in Taoist cosmology to represent the fundamental principles of reality, seen as a range of eight interrelated concepts (Hao, 2007). The principle has been widely used in geography, astronomy, astrology, geomancy, anatomy, Chinese medicine etc. In urban design and Fengshui, bagua serves as one of the main tools considered as the “energy map” which analyses energy from nature (or physical settings) in any given space (Hao, 2007). Through understanding the bagua, we can improve focus where needed by redirecting energy flow, increasing the positive chi (气, air of nature) and correcting the negative chi and thereby achieve the balance of nature and human.
Wuxing (five elements, 五行)	Similar to Bagua theory, the concept of five elements, referring metal, wood, water, fire, and earth, is also widely applied across many disciplines. Developed by Taoists, the concept maintains everything in the universe are consist of the five elements, which are mutually generated and mutually overcoming to

	achieve balance and stability (Hao, 2007).
Sixiang (four symbols, 四象)	Four symbols are four mythological creatures in ancient Chinese constellation understandings. They present four orientations and seasons corresponding to the five elements. The concepts are commonly used in urban planning and architectural design of ancient Chinese cities to represent orientations and symbolise balance connecting to mysterious beliefs (Hao, 2007).
Yin and Yang (阴阳)	The concept of Yin and Yang represents contrasting attributes or energies in the universe, in example, death and life as well as negative and positive. Traditional Chinese cosmology believes everything shares the same origin (Tai Ji) where Yin and Yang were born and evolved and when Tai Ji moved. Yin and Yang can be transmuted through movement and connected as a whole.
The concept of Zhong (centre) (中)	In the Chinese language, Zhong (中) refers to the centric location or position. The concept originally represents the location of Ziwei Star (star of the monarch) on ancient Chinese constellation map, which symbolises the distinguished and honourable (Hao, 2007). In traditional preference, the location of Zhong (centre) always offer to the highest social class, or the eldest people in order to present respect (Yi, 2007).
Hutong (ally)	Hutong is a type of narrow alley commonly seen in northern Chinese cities, especially Beijing. It is usually formed by lines of siheyuan (courtyard house) (Li, 2017) (Details of analysis is located in section 4.2.1.3.1).
Siheyuan (courtyard house)	Siheyuan is a historical type of residence commonly found across China, most famously in Beijing and rural Shanxi province (Li, 2017) (Details of analysis is located in section 4.2.1.3.2).

4.1 Key concepts of early Chinese urban development

In order to identify local responsiveness in Chinese public space design, it is necessary to understand key concepts and philosophies behind urban design, construction and urban transformation within the context of China. Based on the conceptual framework (section 2.1.2 to 2.1.6), this section categorises key theories and philosophies affecting urban design as political responsiveness, economic responsiveness, and socio-cultural responsiveness of spatial development and design, which assist to identify how physical design responds to political, economic, and socio-cultural influences. These theories and philosophies are the essence of urban development in China, which explains why Chinese cities have been designed in certain morphological pattern, how they have ethnographically shaped the relationship between physical setting and human needs, and how the physical design have responded to political, economic and socio-cultural needs. These concepts and philosophies were mainly discovered during the imperial times of China (B.C.465-1840), which as mainstream culture have spread and influenced general city design of the rest of the country. Though some of them are no longer directly implemented in contemporary urban design, they are still rooted in ethnographical notions of socio-cultural activities, which indirectly affect the design of the spaces.

4.1.1 Political responsiveness – the city as political symbolisation

In imperial China, the critical pieces to a city plan were always driven by political and military defence needs as well as political will of the power, to improve efficiency of the ruling. As discussed in conceptual framework (section 2.1.3), the concepts of control lie at the heart of any social system (Cuthbert, 2008). This clearly explains the significant role of political power in Chinese city design, in which all disciplines were developed based on the need to enhance political control. Thus, the political ideology (political needs in imperial China) have formed the fundamental basis of the society

that structure the environment (Jost et al., 2008) (section 2.1.3). In this section, key theories will be analysed in order to understand how political needs were responded from various aspects which have influenced the design of ancient Chinese cities.

4.1.1.1 The symbolization – The meaning behind ruling

Di 帝 – The Son of the Heaven

In the early imperial period of China, the cities were built for administrative purposes because agriculture was the foundation of society, while commercial activities were deliberately suppressed (Gaubatz, 1998; Xu, 2000, Chen and Thwaites, 2013). As a result, the Chinese characters for 'monarch' and 'stem' were created similar in the Chinese language (with identical pronunciation) in order to present the cosmological understanding and connections between the two (Figure 4.1). As Gu Ban states in Da Bin Xi (Zhang, 1991), the relationship between the emperor and the public can be understood as the relationship between the stem and food. He said 'the root cannot grow without the stem, one stem can grow hundreds of foodstuffs, so the stem is the most important', indicating the connection between nature (Heaven) and the emperor. All of this evidence presents the reason why imperial Chinese cities served as political symbols of the absolute power of the emperor, whose ideology was to pursue the eternity of governance by abiding by the natural principles which were believed to be followed by all living creatures. Self-endowed with the title of the Son of the Heaven and Divine Right, emperors regarded cities as the media through which to convey the power of Heaven to consolidate their governance on earth (Chen and Thwaites, 2013). A similar ideology was adopted by regional governors while developing their governing cities and therefore created the hierarchy of various levels for city governance.


Monarch

Stem

Figure 4. 1 The Chinese characters for ‘monarch’ and ‘stem’. Source: author

Ancient philosophy of cosmology in the Ideal City Model

As a prominent factor corresponding to and emphasising the political power of emperors, the philosophy of cosmology was presented throughout design, planning and construction process of Chinese cities to reinforce the emperor’s divine rights and unique power as Son of the Heaven, and spiritual connection with the Heaven. The main ideals in terms of the layout of the cities are summarised in the following passage of the Kao Gong Ji as the Ideal City Model in ancient China (also known as the Record of Artificers, Jun, 2014) (Figure 4.2):

‘The artificers (meaning the designers and builders), as they built the capital, demarcated it as a square with sides of nine li (a unit of length, 1 li equals 500 metres), each side having three gateways. Within the capital there were nine Jing Tu (north-south) and nine Wei Tu (east-west) avenues, each of the former being nine-chariots track wide. (Zhu, 2004 p.32) There was a Temple of Ancestors on the left (east) of the city and an Altar of Land and Grain on the right (west). There stood the emperor’s audience halls and government ministers in the front (south), and the market was located in the rear (north) (Zhu, 2004, p.32).’

The Ideal Early Chinese City Model can be seen as a comprehensive design guideline responding to political and military demands in the city design and plan. It involves

many disciplines such as astronomy, Heaven Trigrams (Bagua), numerology and the philosophy of social hierarchy in order to comprehensively involve and present the philosophy of political control in all aspects of people's lives.

None of the cities could be constructed exactly according to the guidelines due to various limitations in physical and environmental conditions, rather they were held as an overarching design philosophy above all disciplines to emphasise and enhance political control and the emperor's divine right in city developments.

Figure 4.2 has been removed from this version of the thesis due to copyright restrictions

Figure 4. 2 The Early Ideal Chinese City Model from Kao Gong Ji (Record of Artificers) Source: Record of Articers, Jun, 2014

In ancient China, it was believed that the earth was square and the sky enveloping the earth was round (the theory of Canopy-Heaven 天圆地方说) (Dai, 2002). Therefore, in understanding city as the essential component for human habitation on the earth, the city layout was designed to imitate the square shape of the earth (Figure 4.3) as a symbol of balance. Meanwhile, in understanding the earth was covered by the round sky, the star map was drawn into a round shape accordingly (Figure 4.3).

In order to achieve harmony between nature (interpreted as Gods, refer to Chapter 2 Section 2.2.2) and mankind as well as emphasise divine right of the emperor in the design of spatial urban layout, the imperial city has been planned to locate at the centre of the city in order to correspond to the position of Zi Wei star (locating at the centre of the star map and symbolising power and fortune of the monarch) in the Chinese horoscope (Wang, 2005; Li and Gao, 2006; Ru and Peng 1993), presenting the monarch as the Son of the Heaven as well as representing imperial power as the highest social position (Figure 4.3).

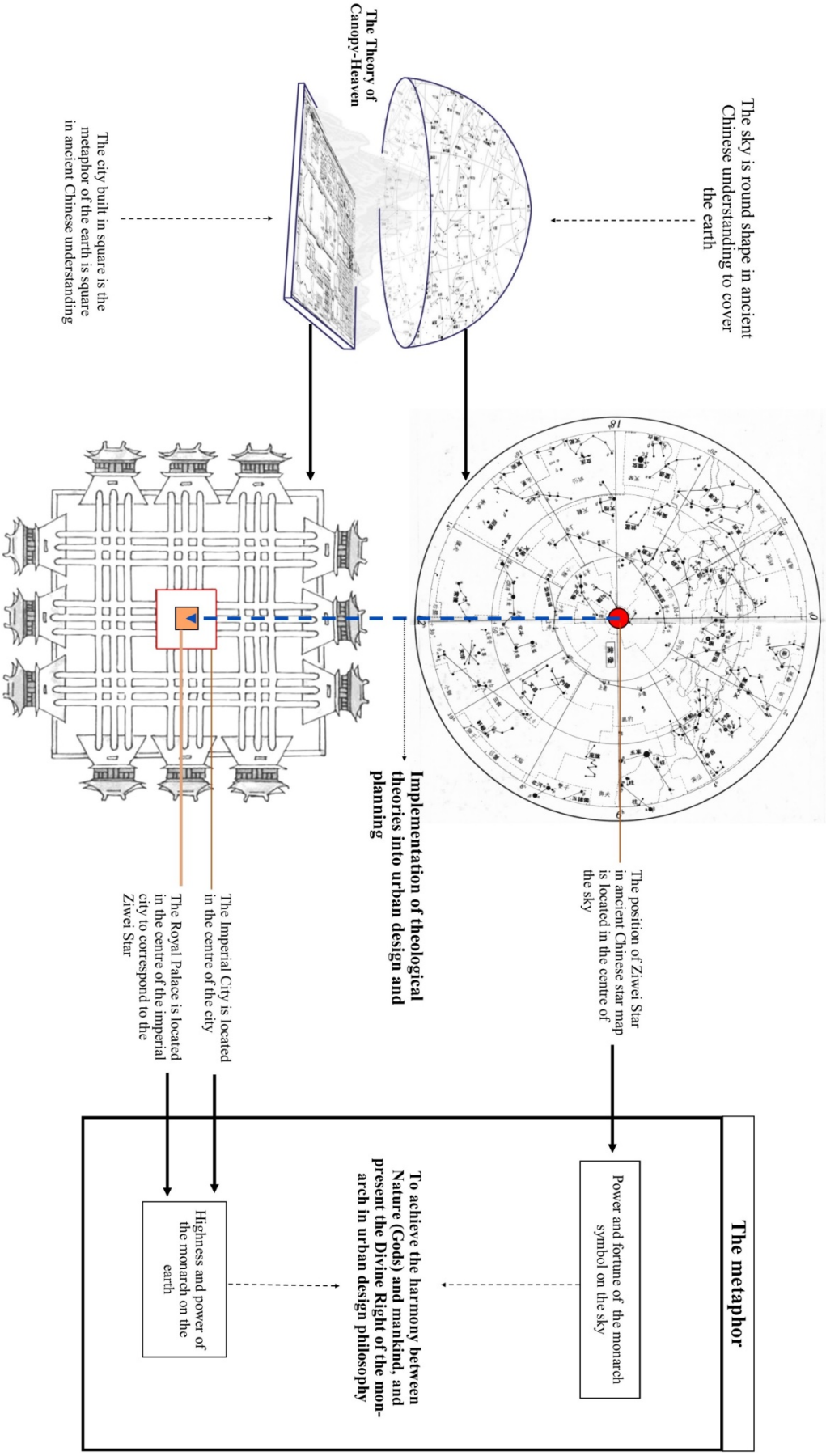

Figure 4. 3 The implementation of ancient Chinese astronomy in relation to city design. Source: redrawn by author

Based on both cosmological understanding and demands of political control, the centre position (Concept of Zhong) became more prominent than others in relation to spatial design and layout. The entire city model was designed to serve the central location in order to emphasise and respond to political and social priority, which was demonstrated as follows (Figure 4.4): a] there were walls enclosing the city, the imperial city and the royal palace, which were built from larger scale to smaller scale, public to private (royal family), surrounding areas to the centre; b] the central position directly connected to the north, south, west and east by the road network, which created the spatial axis across the city; c] the spatial axis divided the city into a symmetrical network and layout, which re-emphasised the priority spatial position of the centre as well as creating the spatial order for political control and management. Overall, all the spatial designs and plans were used to underline prominence of the central location (social position of the monarch) in both political and social terms, which illustrated extremely high responsiveness to political power and ideology.

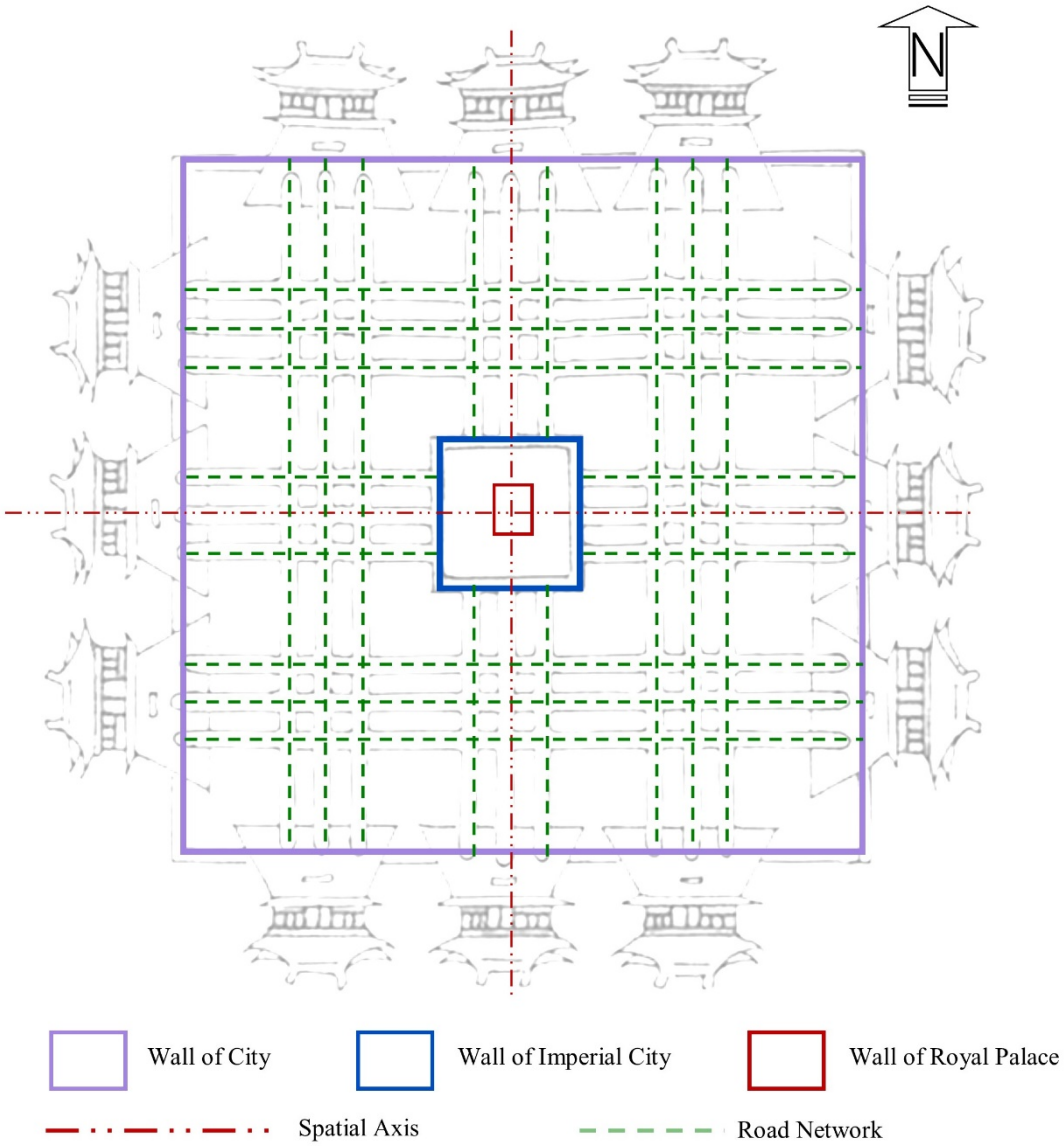

Figure 4. 4 Representing the Concept of Zhong (centre) in Spatial Design. Source: constructed by author based on Jun, 2014

To continue the understanding of ancient Chinese astronomy in urban design, there were Four Symbols representing the main constellations on the star map (Green Dragon to eastern group of constellations; White Tiger to western group of constellations; Vermilion Bird to southern group of constellations; Black Turtle to northern group of constellations) which corresponded to the four directions that emphasised the central palace of Heaven (Figure 4.5). In the meantime, the Five Elements symbolised the attributes of these five spatial positions. The first element

was water. The cold nature of water represented physical weather in northern China and therefore corresponded to the Black Turtle. The second element was fire. The warm nature of fire symbolised physical temperature in southern China and therefore corresponded to the Red Phoenix. The third element was wood, which was regarded as a symbol of origin and beginning, thus signifying the sun rising from the east. The fourth element was metal, and the transformation of its physical form, whether shrinkage or other changes, revealed sunset and implied transition from the sun to the moon. The fifth and final element was the soil, which was essentially a symbol of the earth and therefore located at the centre location, corresponding to Ziwei Star and representing the monarch (Yanagi, 2015). Therefore, the main roads in the spatial system were connected to the north, south, east and west (Figure 4.5), representing association with the Four Symbols. Based on the attributes of the four main directions and their corresponding constellations, the five elements were implemented to represent their characteristics (Ma, 1998; He, 1996; Wang, 2002). The crossed north-south and west-east road system has an organised grid spatial layout, which not only followed the interlaced track of longitude and latitude on the Chinese constellation map (He, 1985), but also corresponded to the movement of the sun and moon, and signified the connection between the north and the south of China (based on ancient understanding). Moreover, the spatial layout of the grid road network emphasized the central position by designing an emanative road network from centre to the edge of the city, corresponding to the 'element of soil (one of the Five Elements)' as a symbol of the monarch being located in the centre (Xue, 2009). In summary, **overall design and implementation of cosmological understanding emphasised the cosmological connections between the emperor and Heaven which addressed the divine right of the emperor and his political and social power.**

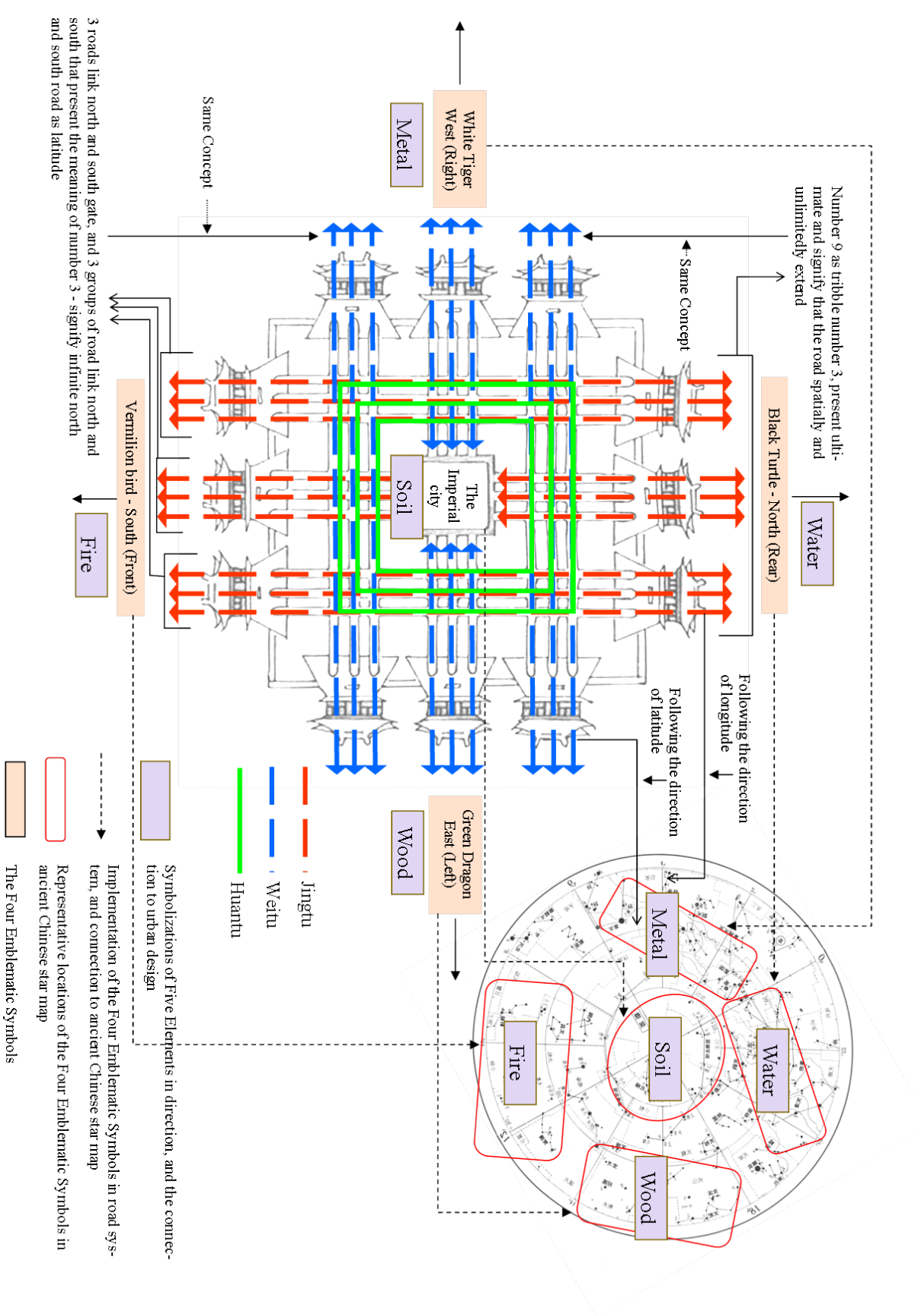

Figure 4. 5 Implementation of the Four Symbols in relation to the Five Elements, and numerology in the road network. Source: redrawn by author

In addition, numerology was another theory lying behind the road network design to achieve balance of Heaven and mankind, and serve political purpose of imperial ruling. The ancient Chinese believed everything could be understood by the principle of Yin-Yang, even numbers (Figure 4.6). According to Taoism, the process of the world can be understood by concluding that number 1 (chaos) generated number 2 (Yin and Yang), and number 2 (Yin and Yang or two poles) generated number 3 (the mediated point between two poles), then number 3 (two poles with a middle point) created everything else (Laozi and McDonald; 2010; Laozi, 2012). According to the theory, from numbers 1 to 9, the number 5 located in the middle, symbolising the centre while the number 9 was a multiple of number 3, representing the ultimate symbol (Zhang, 2015; Yang, 1998). Based on Taoist interpretations, odd numbers belong to Yang and even numbers belong to Yin (Zhang, 2015; Yang, 1998; Tian, 1992; Tian, 1991).

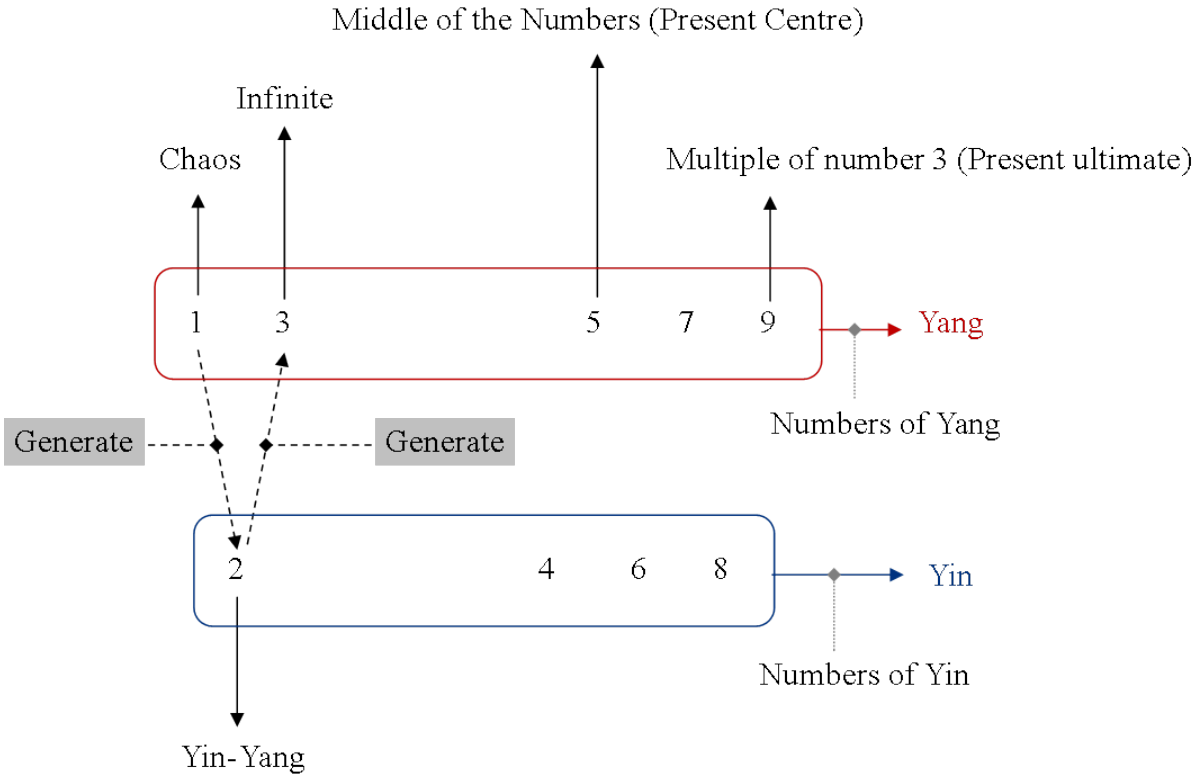

Figure 4. 6 Understanding ancient numerology. Source: author

The concepts of numbers 3 and 9 were applied to cities (Figure 4.5), whereby there were three gates and nine li (ancient Chinese unit of length, nine li equals to 4,500 metres) forming the length of the city wall on each side, signifying the size of the city was immense, and manifesting the grandeur and solemn nature of the capital city. Three roads in each group formed a total of nine roads, each connecting north-south or east-west, which implied an orderly and endless road system as well as referred to the theory of harmony between Heaven and mankind, where the city came from nature and is part of the universe (Dai, 2003; Ge, 2014). Also, the meanings behind the numerology have shown that 1] according to ancient Chinese understanding, the best way to rule was by achieving the balance so yin-yang was implemented to correspond with and symbolise the balance needed to signify goodwill towards the ruler; 2] the process of cosmological understanding was applied to present the city as the cosmos, which included ways of processing, generating and creating; and 3] infinite roads and ultimate cities were meant to symbolise the emperor's unlimited political and military power. Therefore, political responsiveness did not only appear in the use, management, design and construction of cities, but also symbolised the meanings behind the design, used to consolidate imperial ruling in the spirituality and mentality of the public which then reflected back to the spatial design and plan.

4.1.1.2 The rules and roles – The social and spatial hierarchy

Confucianism systematised early rites and ideas into a moral code of social behaviour in imperial China. It proclaimed rationality and authority established by the state, as well as the metempsychosis as Buddhism. It advocated that the order of the world consisted of the Heaven, earth, emperors, masters and common people as the positions descended in society. In terms of urban design and planning, it mainly presented the social and spatial hierarchy in the Ideal City Model.

Management of Confucianism in Ideal City model

As discussed previously, the spatial axes created the spatial order and addressed the central position as the political and social centre in order to respond spatially to the political control of this era. Therefore, land use was designed based on the axes to strengthen the central position spatially as well as to present the order of the social hierarchy in the urban planning and spatial layout. As the emperor was the highest and the most powerful man in the country, the direction in which the city was designed was based on his viewpoint (Wang, 2007; Fu, 2004). As Figure 4.7 shows, the view of the emperor was based on the sitting in the centre and facing towards the south, and thus, the south became the front and the north became the back; meanwhile, the emperor's left became the east and his right became the west. Based on these directions, the Halls of Audience and Government Ministers (the inner court and outer court), were located directly in front of the emperor. Further in front, the Temple of Ancestors and the Altar of Land and Grain were planned in a symmetrical layout along the side of the central axis, which manifested the concept of the 'Family-Governed Monarchic Country' (He, 2007; Shen 2006; Shan, Yu & Zhu, 2007). The emperor's harem was located at the back, which represented the privacy of the emperor's life (through the spatial relationship between the inside and outside). Overall, the spatial layout of the royal palace shows that all its main constructions were located symmetrically or along the central axis to emphasise the central spatial order, as well as representing privacy, from the back (inside) to the front (outside), and social hierarchy, from higher social class to the general public. As the market economy formed the lowest social class in the ancient imperial period, the Shi (the market) was located far behind the emperor and outside of the imperial city.

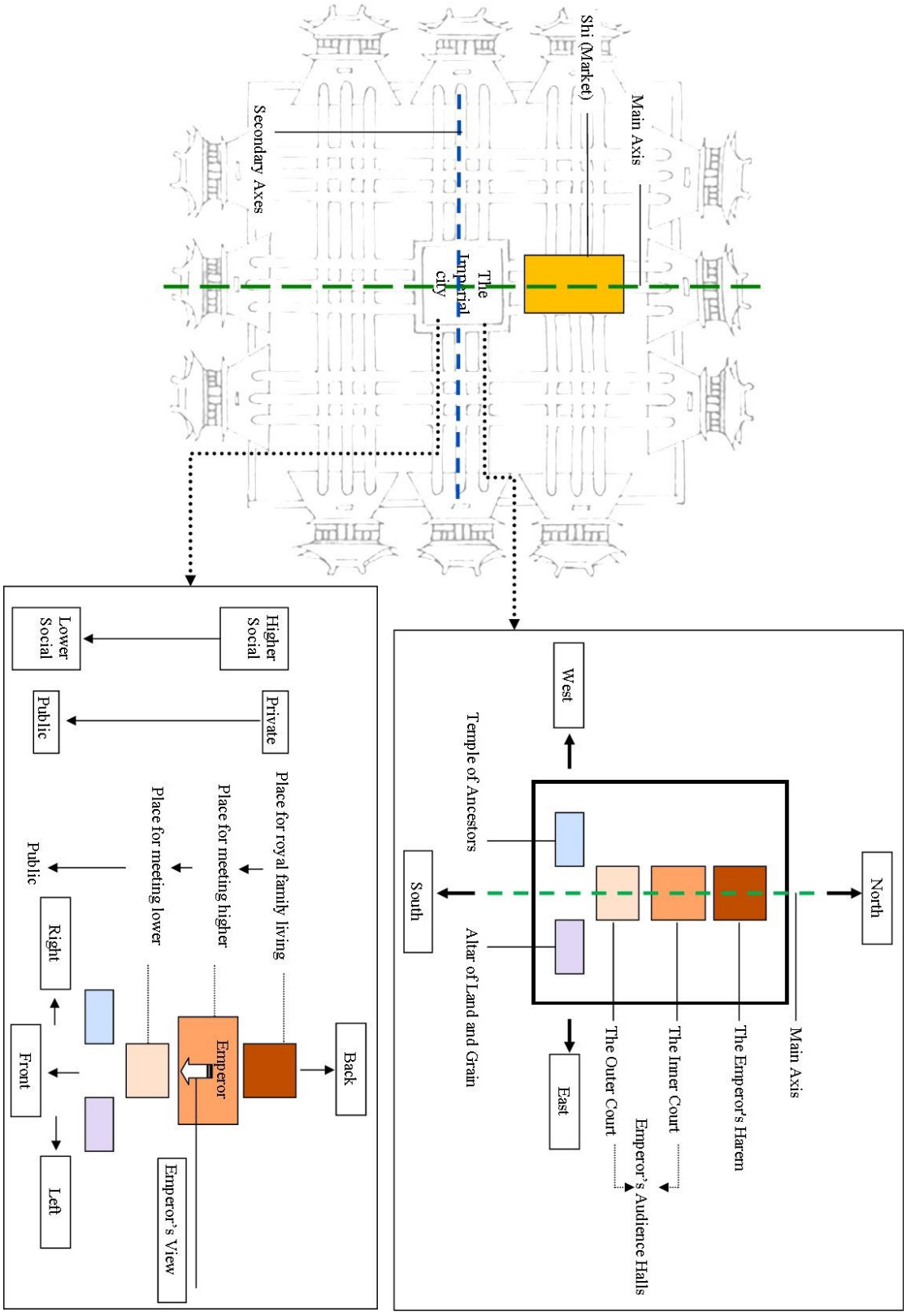

Figure 4. 7 Social hierarchy in relation to privacy and spatial design concepts. Source: author

4.1.2 Economic responsiveness – the city as a socio-economic mechanism

Different as contemporary economic formation discussed in conceptual framework (section 2.1.4), the economic activities in ancient China were developed mainly based on political needs. Although the construction of imperial China was mainly dictated by political demands and ideology, there were still commercial and trading demands as well as social relationships involved in the urban development, in order to satisfy the complex demands of human history (Dai, 1992; Wang, 2007). Particularly from the period of the Tang dynasty, trading and commercial demands reached a peak in Chinese history and foreign trading started to gain a foothold in the Chinese market from both the sea and the Silk Route (Chen and Thwaites, 2013).

In terms of the socio-economic responsiveness of the ancient Chinese cities, this was mainly presented in the layout of the city and its management. The following discussion will detail how the economic dimension shaped and influenced the city.

The form of the dual city

The Ideal City model was discussed in 4.1.1.1 as being mainly a product of political symbolisation. However, due to the impact of war and trading as well as commercial demands, the dual city appeared, although the purpose of this layout was created for more complex demands (Figure 4.8). Steinhardt (1986) claimed that the purpose of the dual city layout was population control: one for the Han Chinese and other non-native residents and the other for natives of the ruling dynasty (Chen and Thwaites, 2013). On the other hand, the outer city was used as the main trading area where the main market was located.

Figure 4. 8 Dual city design of Guangzhou in Qing dynasty. Source: Jun, 2014

Lifang - the management and economy of early Chinese cities

From the Tang dynasty onwards, due to increased commercial and trading demands and as a consequence of the transformation of cities from administrative centres to commercial and entertainment conglomerations, Lifang (blocks) were created as a way of socio-spatial management to the city through wall-enclosed block to clarify responsive areas. Lifang gradually phased out until it was completely abandoned during Song dynasty, leaving only some symbolic gates marking the boundaries of the Lifang (Figure 4.9) (Li, 2007). The transformation of urban blocks (Lifang) from introverted to extrovert was an important turning point for the urban morphology of historic Chinese cities. Since then, diverse types of mixed-use buildings have emerged; the sense of the public realm has awakened; cities function more for common citizens rather than symbolising political wishes; and the social classes have been enhanced

(Chen and Thwaites, 2013).

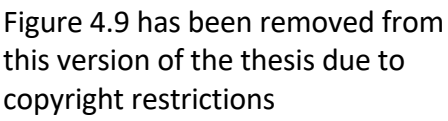

Figure 4. 9 Spatial layout of Lifang in Chang'an in Song dynasty. Source: Jun, 2014

4.1.3 Socio-cultural responsiveness – the city as a socio-cultural representation

Chen and Thwaites (2013) state that, if the layout of cities on a large scale was designed and planned for political symbolisation, then streets and blocks on a medium scale responded more to socio-economic organisation and small-scale urban forms as well as non-physical elements were shaped mainly by the socio-culture and technologies. As they formed the majority of housing types (for minority types refer to Liu, 1957), the layout of courtyard houses represented the social hierarchy within

the extended family as the basic unit of society, which followed the order of: the elders, the first son's family, other sons' families, the younger generation and servants (Blaser 1995; Hu, 2008; Chen and Thwaites, 2013). It is not essential to focus on how the physical spaces of a Chinese house were defined by the patriarchal articulation of family and the functions of daily lives in detail here, as this has been widely studied in the literature (Knapp, 2000; Liu and Wang, 2000; Long, 1990; Wang and Zhang, 1994; Zhang, 2006). Therefore, in this section, the main focus is on how socio-cultural elements were reflected at the neighbourhood scale, and it is structured in two parts: the importance of nature from a socio-cultural point of view and then how Fengshui influenced people's lives. The reason why these two parts are discussed here are 1] the term 'socio-culture' in this section is defined as collective social values and beliefs, as well as popular lifestyles; and 2] based on this, Taoism (naturality) and Fengshui are the two most important ancient philosophies, in addition to Confucianism and Guanzi (who established the Ideal City Model), contributing to the synthesis of Chinese culture. These analyses of theories are based on conceptual framework (section 2.1.7), firstly, to identify how world view, value as well as lifestyle were formed in ancient China which have influenced physical design, and secondly, to identify how to balance the relationship between physical natural environment and human needs.

The importance of naturality

Chinese naturality was mainly established by Taoism, which was originally more related to Zhouyi (Yi-ching), and the search for harmony between human action and the changing universe through Tao (the way), the inherited pattern of nature. In contrast to Confucianism, Taoism was anti-rational and anti-authoritarian due to its acceptance of the negative side of being and its attitude to leaving completion to nature (Change, 1981). The central theory of Taoism employed the concepts of yin and yang as the principle forces, and qi or shi as the cosmic breath or hidden potential

force which was essential for confining the natural law, and it used sacred numbers such as 3 and 9 to symbolise the order in physical form (De Bary and Bloom, 2000). In other words, Taoism basically tried to identify the balance or the most appropriate way of life between the nature (including the meaning of the cosmos, Gods, superstition, mystery and the unknown physical environment) and humankind, and establish the mental and physical connections with it. Therefore, the ancient studies were carried out with respect for nature to find an appropriate way to make harmony with nature, such as implementing the natural science theories of yin-yang, the five elements, Fengshui and anthropology within Chinese medication, social relationships, social structures, housing design, garden design and city plans.

Fengshui

Fengshui, as the integrated product of Chinese natural science and superstition, which were discussed in the previous section, presents the way in which humans can read nature and then use its Shi (the natural physical pattern and its potential force) to achieve harmony between nature and humanity (Lip, 1995). In Zhong's argument (1986), he explains that Fengshui was a result of the 'adaptive behaviour of Chinese people' through their long experience of studying natural law. It investigated and adjusted the surface features of the earth, which were different from place to place and time to time, to be the most advantageous to man-made objects in terms of qi or shi (Wheatley, 1971) and of water supply, sunshine, breezes and natural beauty. Site selection, orientation and cities' and buildings' relationship with their natural settings often fell into the scope of Fengshui (Chen and Thwaites, 2013).

In conclusion, I have discussed how imperial and political rule, the economy and the socio-culture were reflected in the different layers of Chinese cities. In the following section, the analysis will continue in order to identify how these general principles and theories were applied in Beijing, how the city was transformed and how these key

theories led to the city's transformation over time that adapt the changes of needs in use of spaces.

4.2 Historical transformation analysis at city level

In this section, key ancient Chinese urban design concepts, theories and philosophies are used to analyse how they were implemented in Beijing city throughout different periods. By applying the conceptual framework, the analysis is carried out in order to identify 1] how the city responds to the political, economic and socio-cultural demands in physical design, and 2] how the spaces adapt uses through changes of political, economic and socio-cultural needs in transformation.

4.2.1 The imperial city

In this section, as the ideal Chinese city model was previously analysed in order to understand the essence of Chinese urban design and planning theory, the analysis will study how the model was implemented in the case study city – Beijing, in order to identify how public open spaces responded to the uses and functions during the imperial period.

The city was established in 1420 (Zhu, 2004) during the Ming dynasty (Figure 4.10), when it was regenerated based on the city of Dadu, and it was further developed during the Qing dynasty. The entire city occupied the area within the boundary of the second ring road in the contemporary city, which laid the foundation for the current urban development as well as the spatial tissue. The city was designed based on the concept of the Ideal City Model, but was further developed and integrated with the knowledge and established theories from Taoism, Confucianism, Yin Yang theory, traditional astrology and Fengshui (Tan, 2005; Xiao, 2006).

Figure 4. 10 Beijing city growth from Jin dynasty to current. Source: constructed by author based on Baidu Map Image and Jun, 2014

4.2.1.1 The political responsiveness

As discussed in 4.1.3, the ancient Chinese revered nature and have studied the natural science to try to identify connection and achieve harmony between the mankind and nature. Large scale Fengshui studies were applied to establish symbolic connection between nature and mankind, which were presented in ideas that the imperial power was connected with nature (the Gods). Therefore, this section starts with how Fengshui and the natural science were applied within the city plan in order to respond to the symbolisation of political power and ruling.

Implementation of City Scale Fengshui and natural science in City Development

Working with resources and limitations of the natural environment, Fengshui was applied on a large scale to orientate the location of the city. On this scale, it focused on adjusting the orientation and spatial design of the city in order to create a city which achieved harmony between nature and mankind.

Firstly, based on this large scale Fengshui (national geographic scale), in Figure 4.11 and 4.12 the spatial position of the sky, earth, sunrise and sunset were identified according to Bagua (Heaven Trigrams) (Luo and Luo 2008; Zhu, 2008), whereby, in order to worship Heaven, the Qian trigram was positioned in the south (in front of the monarch) where the Temple of the Sky was constructed; the corresponding opposite spatial position in the north, as defined as by the Kun trigram, was used to signify the earth so this is where the Temple of the Land was built; as mountains overlooked the city to the north protect the city from cold winter winds, the Gen trigram (symbolize mountain) was identified in the north-west; and the warm wind flowing from north to south in the summer representing the Dui trigram (signifying wind) was located in the south-east. In the meantime, in order to achieve harmony

between nature (Heaven) and mankind according to ancient Chinese understanding, the theory of Canopy-Heaven was also implemented, corresponding to the trigrams of Qian (Sky) and Kun (Earth), which the outer city (south) has built in the abstract shape of circle to surround the inner city that is square shape in the north from its spatial structure (Figure 4.12) (Xiao, 2006; Yi, 2002), to respond to natural beliefs and political considerations – harmony and balance between Heaven and earth, between nature and humanity, and between the monarch and the public that they ruled.

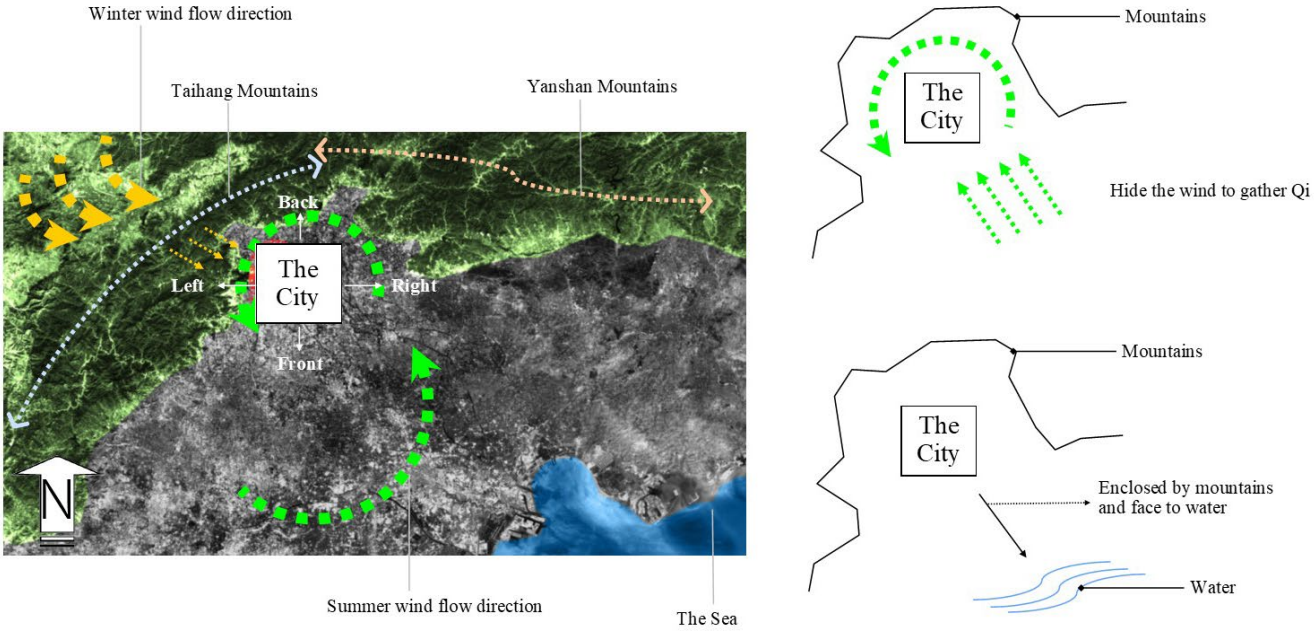

Figure 4. 11 City scale Fengshui in Beijing. Source: constructed by author based on Google Map Image

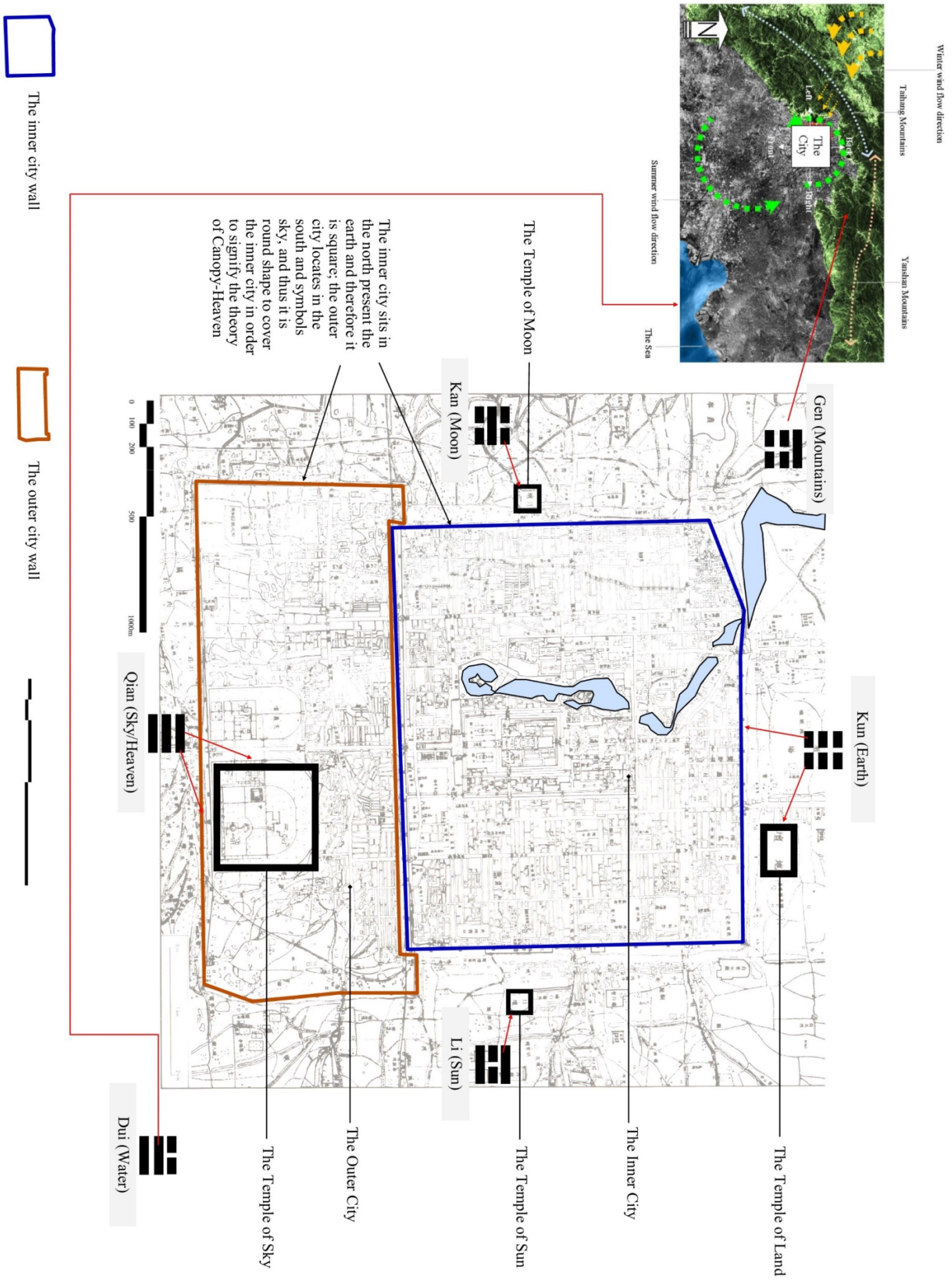

Figure 4. 12 The implementation of Heaven Trigrams in relation to theory of Canopy-Heaven in city scale Fengshui. Source: constructed by author based on Jun, 2014

Second, following the philosophy of ancient Chinese astronomy and the position of the Qian and Kun trigrams, four symbols were applied in order to emphasise the directions of the city which corresponded to Heaven (as well as the cosmological connection which will be discussed in a later section), which reflected the fact that the capital city was protected by the monarch who was the man chosen by Heaven to rule (Figure 4.10) (Yanagi, 2015). At the same time, based on the positioning of the four symbols, the concept of the five elements was designed to match the ancient understanding of geography, which exactly matched concepts from Ideal City Model. The water in the north represented cold weather and the natural environment; fire in the south signified hot weather and natural settings; wood in the east symbolised the sunrise so this is where the Temple of the Sun was built; metal in the west represented the sunset, thus, the Temple of the Moon was constructed there; and finally, the soil located in the middle symbolised the monarch as the emperor of the earth corresponding to the Ziwei Star (the star of the monarch) in Heaven (Yi, 2002; He, 1996; Dong, 1999), thereby, the imperial city and the royal palace were designed to sit in the centre of the city to manifest imperial political power and control, which were the most significant parts of local responsiveness.

Third, according to Taoism, Yin and Yang were born from chaos, therefore, everything in the universe has attributes of both Yin and Yang in order to achieve balance (Wang, 2003; Lin, 2010). Therefore, this theory was applied in the spatial design of imperial Beijing (Figure 4.13), whereby the Qian trigrams and the Temple of the Sky located in the north represented Yang, which also matched the nature of fire (the nature of Yang) from the five elements and the Vermilion Bird (the nature of Yang) from the four symbols. As a result, five (the number of Yang) gates were designed in the outer city wall in order to address the nature of the outer city. Meanwhile, the Kun trigrams and the Temple of the Land were positioned in the north to signify Yin, also corresponded to the nature of water (the nature of Yin) from the five elements and the Black Turtle (the nature of Yin) from the four symbols. Thus, to

emphasise the nature of the inner city, six (the number of Yin) gates were planned for the inner city. It was not only the north and south of the city, but also the east and west sections which showed consideration of the Yin-Yang balance. As the wood (the nature of Yang) from the five elements and the Green Dragon (the nature of Yang) from the four symbols appeared in the east, the Temple of the Sun (the sun belongs to the nature of Yang) and the Temple of the Ancestors were planned in this area. Also, the Temple of the Moon (the moon belongs to the nature of Yin) and the Altar of Land and Grain were located in the west, corresponding to the nature of Yin based on metal from the five elements and the White Tiger from the four symbols.

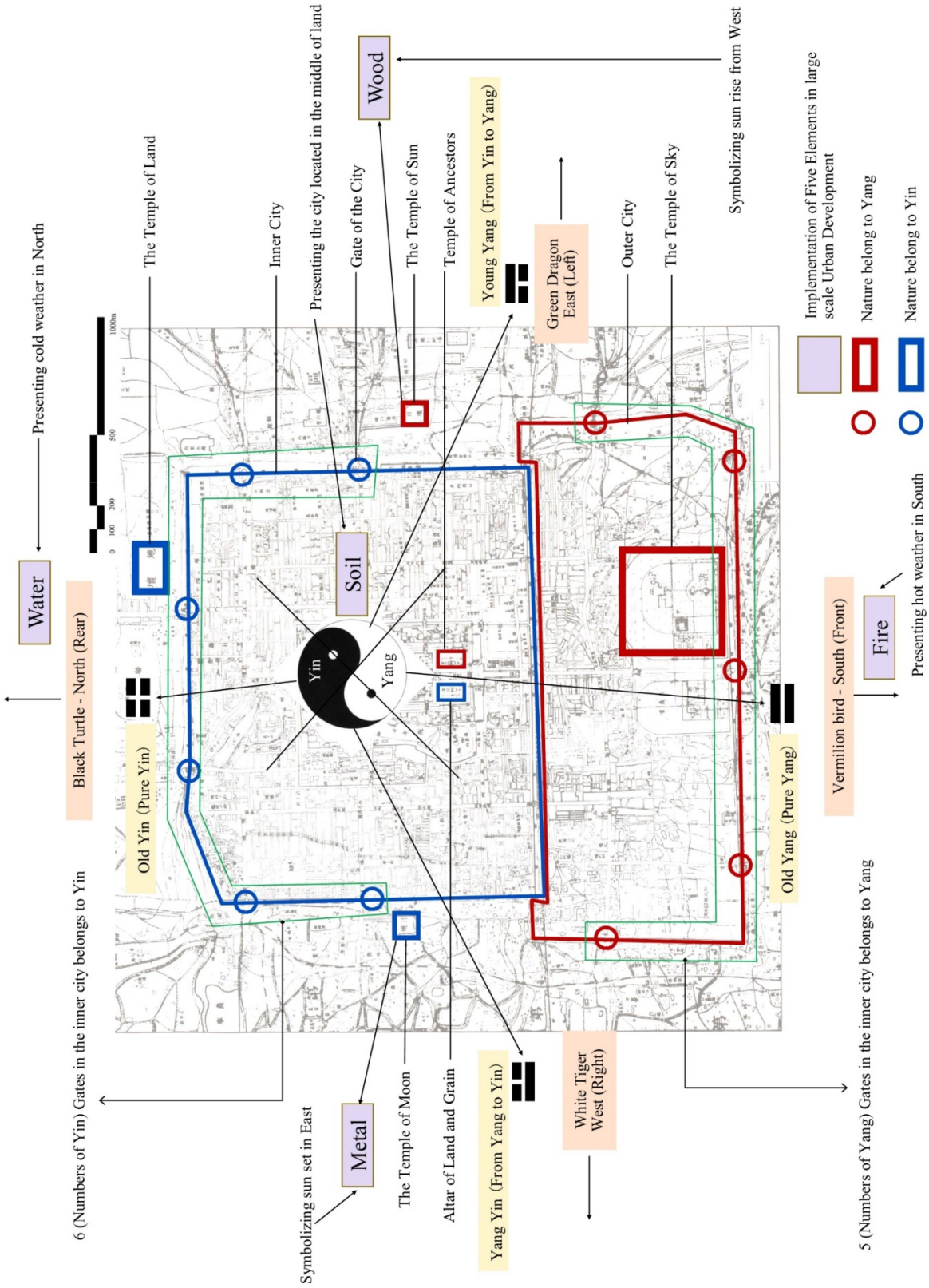

Figure 4. 13 Implementations of Yin-Yang, Five Elements and Four Symbols in Urban Design and Panning, Source: constructed by author based on Jun, 2014

In terms of the spatial layout of the city, the morphological layout of the main buildings followed the spatial sequence of Jiugong (one of the ancient Chinese numerology sequences) (Huang, 2005; Hui 2011; Yu 2006), which, as shown in Figure 4.14, meant that the three most significant halls for the monarch were located in the centre of the palace corresponding to the central position of the Ziwei Star. These three halls were the Hall of Central Harmony (representing chaos), the Hall of Supreme Harmony and the Hall of Preserving Harmony (signifying Yin and Yang) which constituted the main working area. The spatial strategy of designing main buildings refer to Figure 4.7. In addition, the main gate of the royal palace, the three main halls of the working area, and the three halls of the emperor's harem formed a visual spatial line across the royal palace, which formed a view axis. The spatially symmetrical design placed other key halls on both sides of the main halls to emphasise the visual axis, and constitute spatial sequences numbers one, five and nine (Luo, 1982; Zhang 2015). On this larger scale and by extending the visual line across the main gate and other key iconic buildings of the city, the visual axis was emphasised and finally form a visual spatial axis across of the city.

The spatial axis and symmetrical layout have always been used in Chinese city plans, to create a solemn and majestic physical built environment (Tang and Heath, 2008). It has spatially emphasised the central position, which not only have corresponded to the highest position of social hierarchy with the key iconic buildings, but also matched ancient philosophy of cosmology, with key constructions extending on both sides of the spatial axis (Figure 4.15).

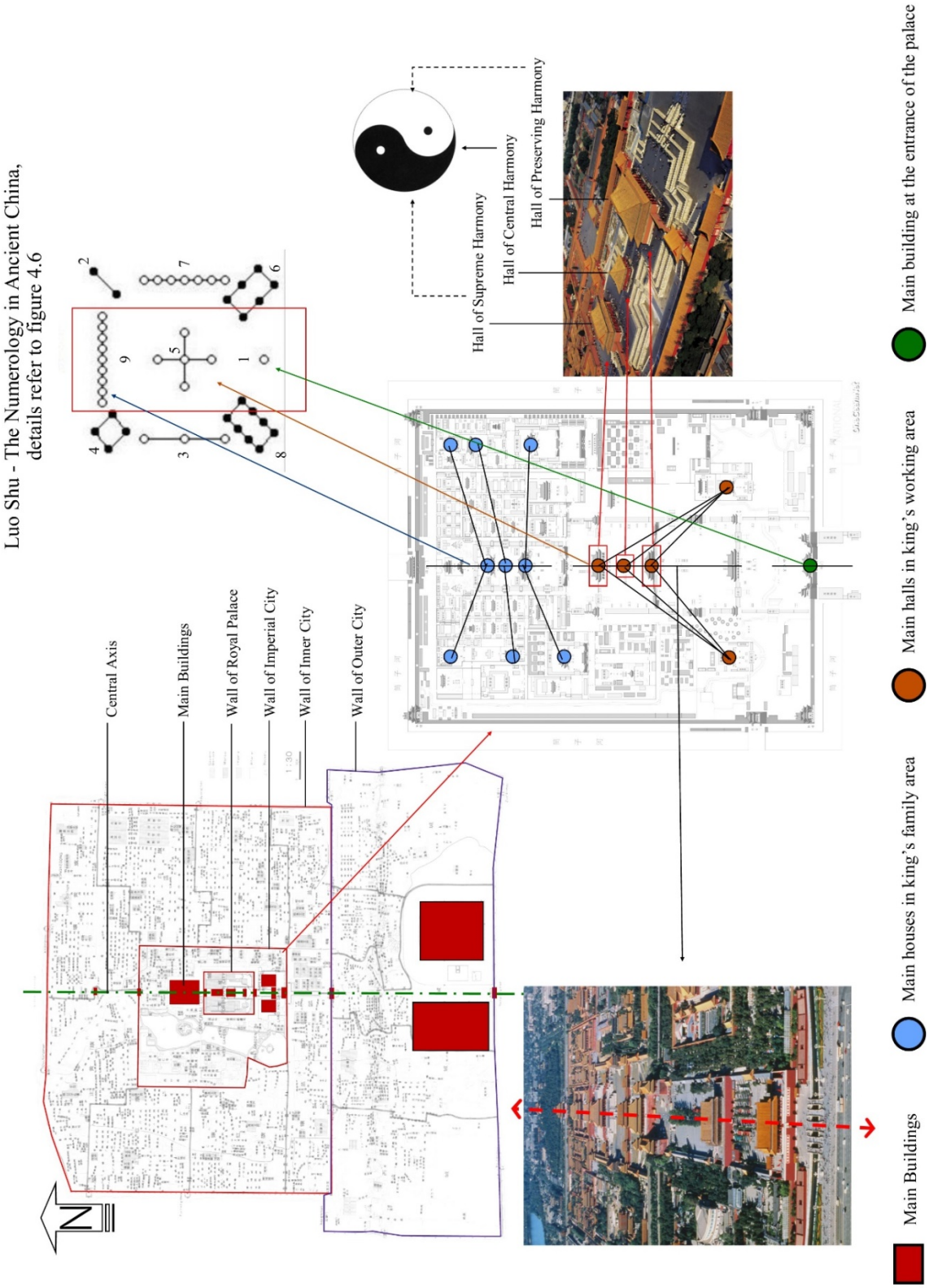

Figure 4. 14 Numerology in Relation to the Spatial Design of the Royal Palac, Source: constructed by author based on Jun, 2014

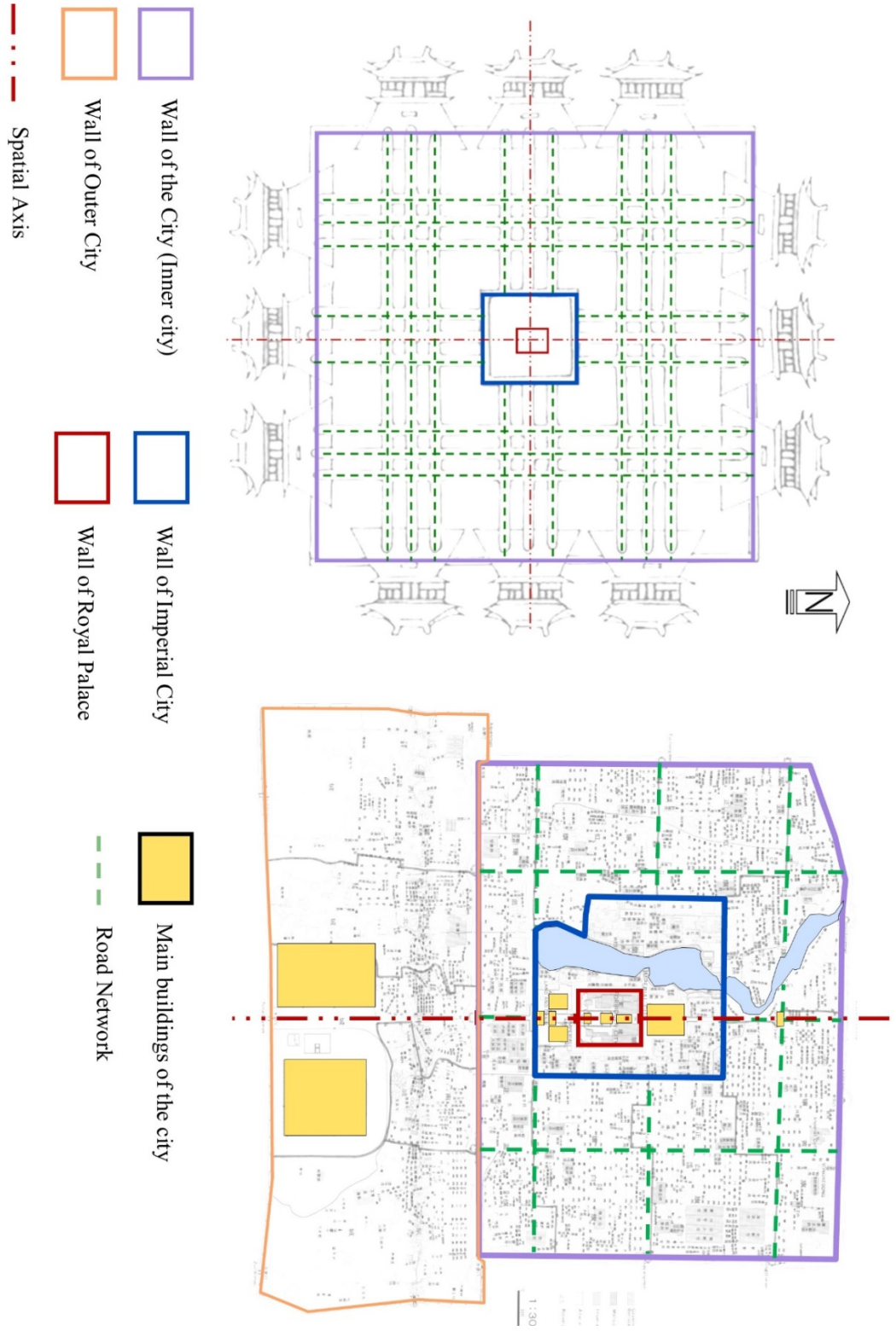

Figure 4. 15 Implementation of spatial strategy from Ideal City Model to imperial Beijing city design, Source: constructed by author based on Google Map Image

In summary, the political responsiveness was reflected across all disciplines while designing the capital city, especially at the city scale, which also symbolised the political influence on the rest of the country. Therefore, the city plan of imperial Beijing can be seen as a political symbol used to emphasise political power as well as the ruling influences on the development of all the ancient disciplines.

4.2.1.2 The economic responsiveness

Urban Management (Fang System) and Commercial Support

During the Ming and Qing dynasties, there was a growing emphasis on economic activities due to political considerations. This was especially true in the Qing dynasty. (Ge, 2014; Wang, 2007; Dai, 1992). Centralised business areas and commercial streets were established in order to supply the considerable everyday needs of the ordinary consumers as well as to satisfy interests of the ruling classes. Thus, as illustrated in Figure 4.16, centralised business areas were formed close to the north gate (mainly supported by canal transportation) and south gates (to facilitate delivery from South China and imports from overseas via Tianjin Bay). Valuable goods were usually delivered to commercial areas within inner city, as well as the east of the Forbidden City, to supply the monarchy, while street shops (primarily restaurants) emerged alongside the Fang to serve ordinary consumers from various social classes on a daily basis. The growth in commercial activities has progressively formed the overall economic hierarchical system and enhanced social position of the merchants.

As one of its key improvements, the ancient Ideal City Model has catalysed expansion of commercial areas in the city, from originally locating at the back (north) of the palace, to the front (south) of the palaces and then across the entire city. Meanwhile, to meet the variety of consumer demand, street shops have emerged on the outskirt of each block (Fang) which

have enriched the public's lives as well as enhanced the area. These improvements demonstrated that the social level of the economy improved due to overall increase in consumer demand, expansion in trading activities across China, and especially, transformation of economic ideology.

Figure 4. 16 The Commercial Areas in Beijing during the Imperial Period. Source: the diagram produced by author, images modified by author after Li (2017)

In order to address spatial-political responsiveness in spatial and social management, Figure 4.17 shows that the concept of spatial axes was only applied to the city level spatial plan, but also to various scales of neighbourhood level layout in order to emphasise social hierarchy in the overall city design and plan. In terms of the road network, the main roads were designed symmetrically and horizontally (refer to the analysis of the Ideal City Model in section 4.1) alongside the spatial axis and vertically across the spatial axis to connect the north to the south and the east to the west, which formed the spatial network grid of the city.

Similarly, at a neighbourhood level, the main street was designed alongside the spatial axis to emphasise the main road's priority in the overall road system, while other roads were placed spatially and vertically across the main road in order to form the symmetrical morphological layout. More broadly speaking, the spatial axis have created the spatial order, which only intended to create an aesthetically solemn spatial design, but also corresponded to the social hierarchy. For each neighbourhood, the axis readdressed the symmetrical road system, clearly identified the size of each block, and establish boundaries for the main road system. In this way, the Fang system was implemented for urban management for the purpose of enhancing efficiency of political control (refer to section 4.1.2) (Xiao, 2006; Zhang, 2000; Wang and Xu, 2004; Fu, 2005).

As shown in Figure 4.17, each block was identified as one Fang. The South Luogu Lane Block has been used as an example for analysis in order to understand the urban management in both social and spatial terms.

In order to respond to political control, as well as safety, privacy and accessibility considerations, there were normally four entrances to each Fang, which spatially connected the north-south and east-west axes and involved the central spatial axis. The block was enclosed by buildings, boundaries and archways, with commercial

shops facing externally to the main streets and residential entrances facing the interior of the block. The clear edge of each Fang accurately defined political, social and economic responsibility (Xiao, 2006; Zhang, 2000). The residential interior of the block clearly defined purposes and usages of public spaces for each Fang as well as users' social position and roles (Zhang, 2000). As the central location was reserved for the highest position in the social hierarchy, the social class order for each Fang was represented by having the higher classes in the centre, along the main axis road and the secondary axes roads (if applicable), through to the lower classes in the smaller roads, while at the city scale the social order moved from highest to lowest moving outwards from the palace to the edge of the city and from the inner city to the outer city (Xiao, 2006).

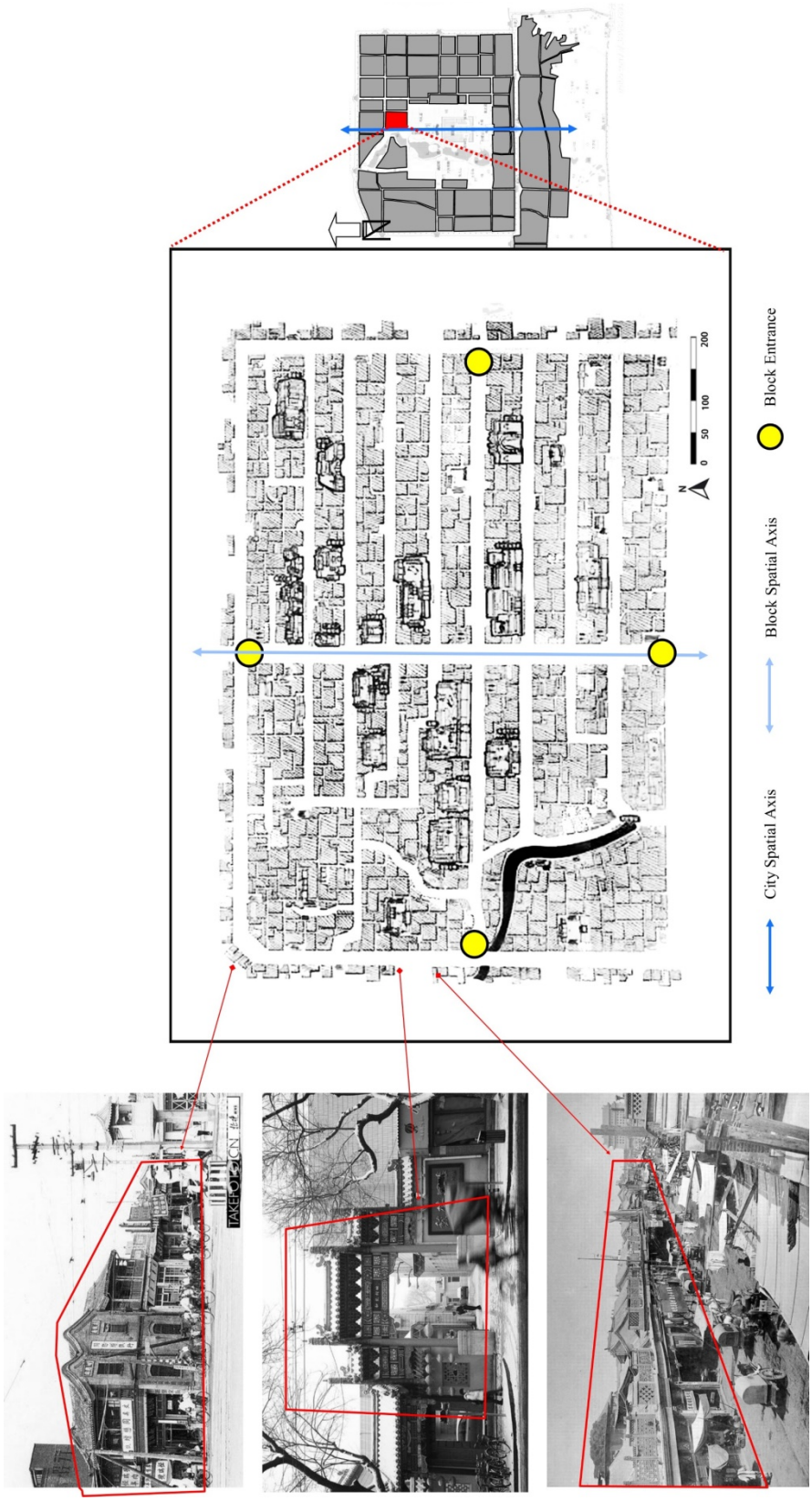

Figure 4. 17 Road network in relation to patterns of blocks and commercial shops in relation to urban management. Source: the diagrams produced by author, photos modified by author after Li (2017)

In conclusion, economic responsiveness have improved as a result of increased trade demands and consumer interests. These has also led to improvement of the merchant's social level. In terms of the urban plan, the commercial market was located in front (south) of the palace, close to the south gates of the city in order to receive goods from the south of China, and the commercial streets were considered within the urban plan and design, becoming an important factor for political control.

4.2.1.3 The socio-cultural responsiveness

As discussed in 4.1.2, the Fang system was implemented in urban management to reflect the roles and order of social hierarchy, demands of political rule, and at the same time, respond to consumer's commercial needs. Meanwhile, the Fang system have also reflected socio-cultural needs to effectively maintain and enhance the social order. In light of this, the structure of public spaces inside each Fang (block) and buildings (courtyard house) will be analysed in order to identify socio-cultural responsiveness in relation to urban shaping and transformation, as well as how key local theories were applied to the traditional Chinese built environment in the imperial Beijing.

4.2.1.3.1 Public Space Structure – Hutongs

Based on overall development of the economy and Fang (block) management, the structure of the public spaces can be spatially categorised into three levels (Zhao, 2014). The first level was the Jie (street), which were the main streets of the city between each Fang (block), shown in Figure 4.18 in brown. These were the main areas for public activities in the city, both commercial as well as public and social interaction activities. The second level was the Xiang (the main streets inside the Fang or block), usually running in a north-south direction (although some of them may have streets running east-west as secondary main streets) connecting the main gates of

the Fang (block), as shown in a lighter orange on Figure 4.18. The higher social class usually lived in the main streets of the block in large houses easily accessible to the main streets of the city. The third level of the streets were hutongs (narrow roads within the block), shown in blue in Figure 4.16. These were the largest group of streets in each block where the lower social class resides, typically with smaller houses and less accessibility to the main streets. According to socio-cultural influences of Confucianism, key function of the streets and roads inside each block were to provide a high level of privacy for the families. Therefore, figure 4.18 clearly have demonstrated public and social interaction activities mainly happened in the main streets of the city outside the blocks, while the streets and roads inside each block were mainly used for access.

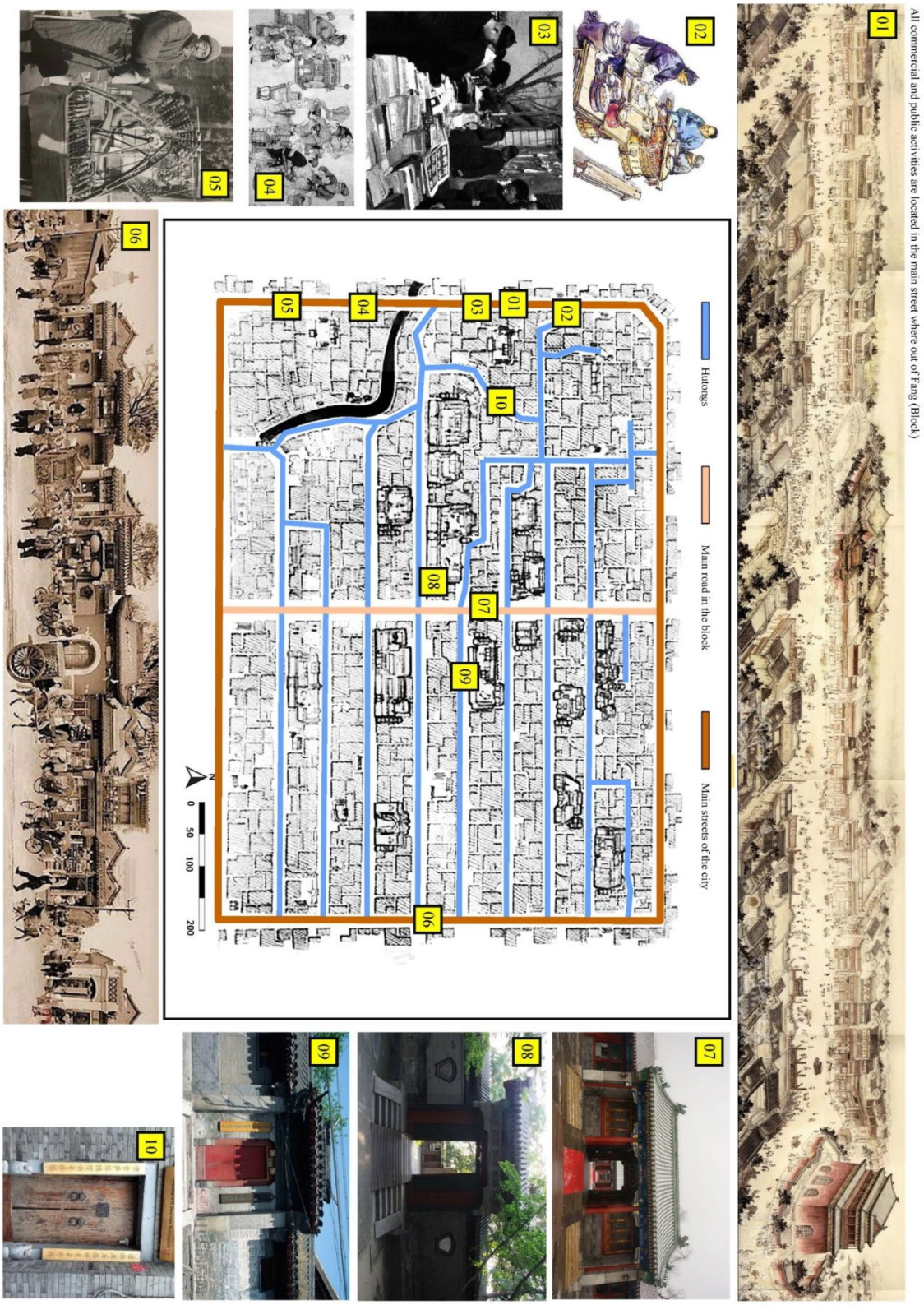

Figure 4. 18 Functions and social hierarchy in relation to public space system. Source: diagrams produced by author, photo images 01, 02 and 04 modified by author after Liu (2009), 05 modified by auther after Li (2007)

Therefore, as explained in Figure 4.19, the windows of the courtyard houses were usually designed in a higher position on the wall to the side of public roads, and most of them were non-transparent in order to maintain a high level of privacy. Public and social interaction between neighbours mostly took place in the main streets of the city, and daily behaviour and activities among family members mainly happened in the shared space inside each courtyard house (Shan, 2003).

In terms of the structure of the hutongs, as Figure 4.20 shows, the spatial development of hutongs followed the design of courtyard houses (details are discussed in 4.3.1.3.2) in two design concepts, which are in social and physical terms (Shan, 2003). First, in terms of social influence, they followed the same principles of orientation as for the monarch, in terms of prioritising the visual view of the highest social position in the family – the senior family member. Therefore, the front of courtyard houses faced the south, and the back to the north. Secondly, the physical design principle was mainly based on the concepts of Bagua in Fengshui, following the same principles in terms of facilitating cool winds in the summer and preventing cold winds in the winter, which will be further discussed in the next section. Therefore, spatially, each hutong had one side to the front (the entry side for courtyard houses, entrance from the south) and one side to the back (the north side of the courtyard houses), which have maintained privacy for each individual dwelling as well as the temperature for the overall built environment.

Figure 4. 19 Privacy of the public space in hutongs. Source: diagrams produced by author, drawings modified by auther after Li (2007)

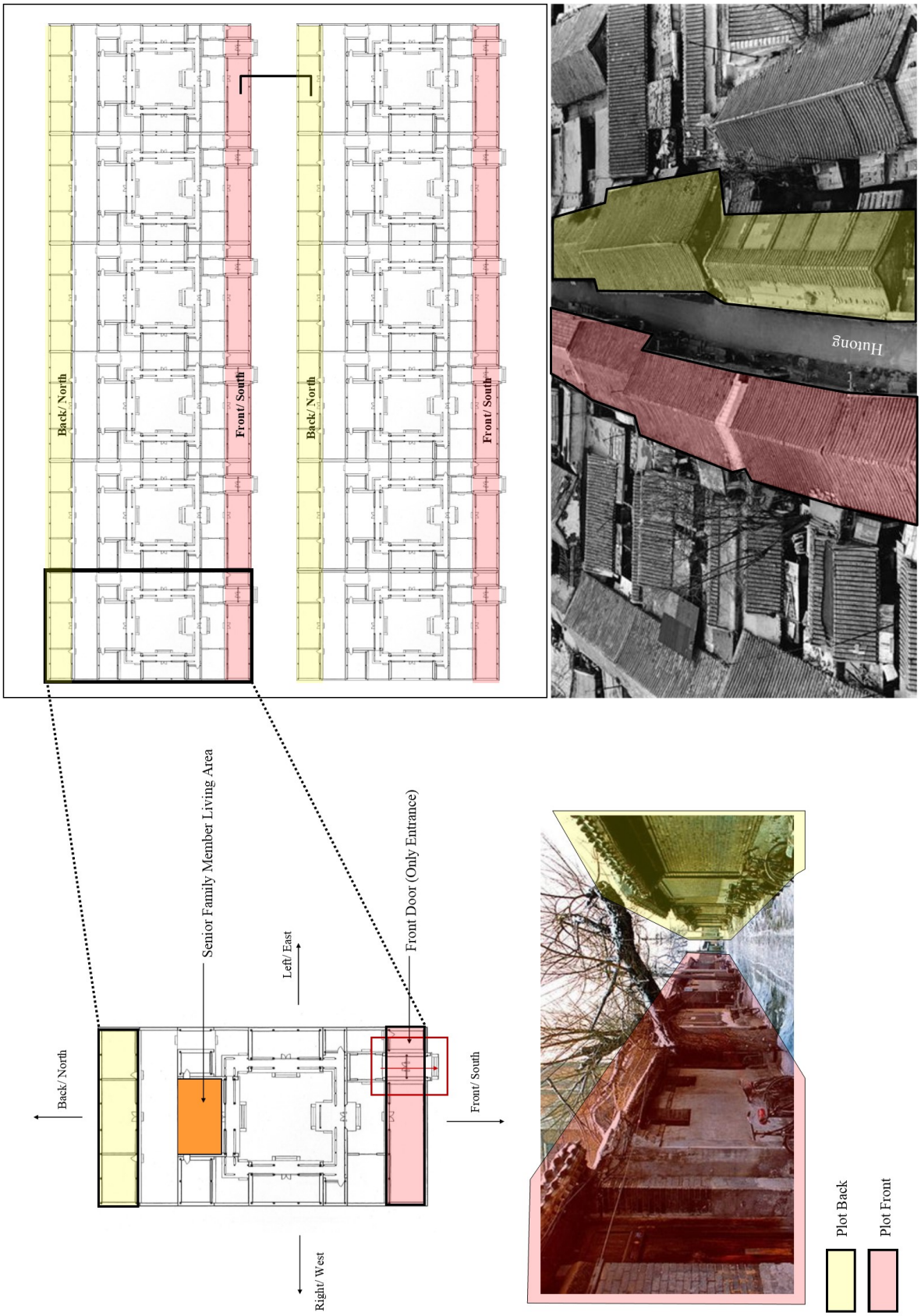

Figure 4. 20 The privacy design of courtyard house and spatial layouts of hutongs.
Source: diagrams produced by author, drawings modified by auther after Li (2007)

4.2.1.3.2 Building - Courtyard Houses

The Theory of Tian Yuan Di Fang (The Theory of Canopy-Heaven) in Relation to the Design of Courtyard Houses

As the ancient Chinese believed in the theory of Tian Yuan Di Fang (The Theory of Canopy-Heaven, He and Luo, 1995), the courtyard house was designed in a square to imitate the movement of nature and the cosmos, in order to achieve harmony between Heaven and mankind in the built environment. This corresponded with the design philosophy of Ideal City Model which emphasised the central position in the spatial layout as the most honourable location (Figure 4.21). Courtyard house used to be the ideal traditional living model in Beijing and the dwelling place included buildings as well as space between buildings rather than an individual architecture. Buildings were only the tool to represent space, and thus they helped to form and define space. Hence, space was the core of design in traditional urban design, with the entire living environment becoming the container for people's daily activities, and for the Chinese, this is more important than the physical buildings themselves.

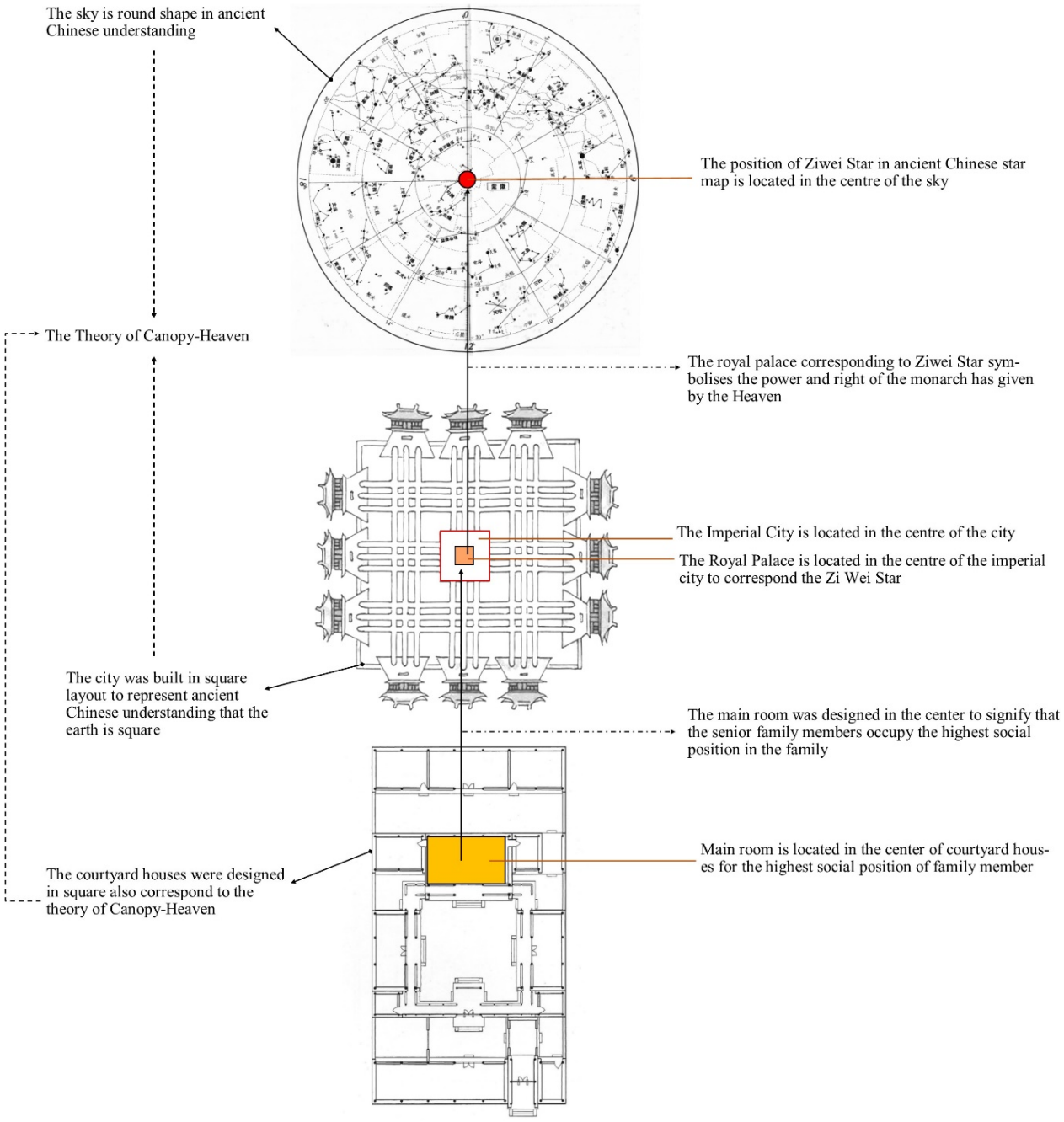

Figure 4. 21 Implementation of the Theory of Tian Yuan Di Fang (Theory of Canopy-Heaven) and Chinese astronomy in the design of courtyard houses. Source: constructed by author based on Google Map Image

Building Scale Fengshui in Relation to Design of Courtyard Houses

The main principles of Fengshui at the city level remained the same for courtyard houses design, which were: 'Hide the wind (positive wind could bring positive Qi) to gather Qi (air, energy and the breath of nature), and then form Shi (Momentum and Inclination of nature)'. Therefore, the principle of 'Kan Fang Xu Men' from Bagua (Heaven Trigrams, particularly the later version) was applied to the design of courtyard houses (Figure 4.22) (Zhao, 2014). 'Kan Fang Xu Men' referred to two trigrams from Bagua (Heaven Trigrams), the Kan trigram and the Xu trigram. The Kan trigram symbolised the north, based on four symbols from the star map, with knowledge from astronomy applied to determine its position. Since the city's spatial layout was designed based on the visual view of the emperor, the Kan trigram was used to guide direction of design for courtyard houses, which followed spatial direction of the imperial city and sat with its back to the north, facing south. The Xu trigram located in the south-east, corresponding with spatial position of the wind in Bagua (Heaven Trigrams). Therefore, the main door of the courtyard house was designed in a position to receive cool winds in summer, with the intent to enhance the quality of living conditions as much as possible (refer to Figure 4.22).

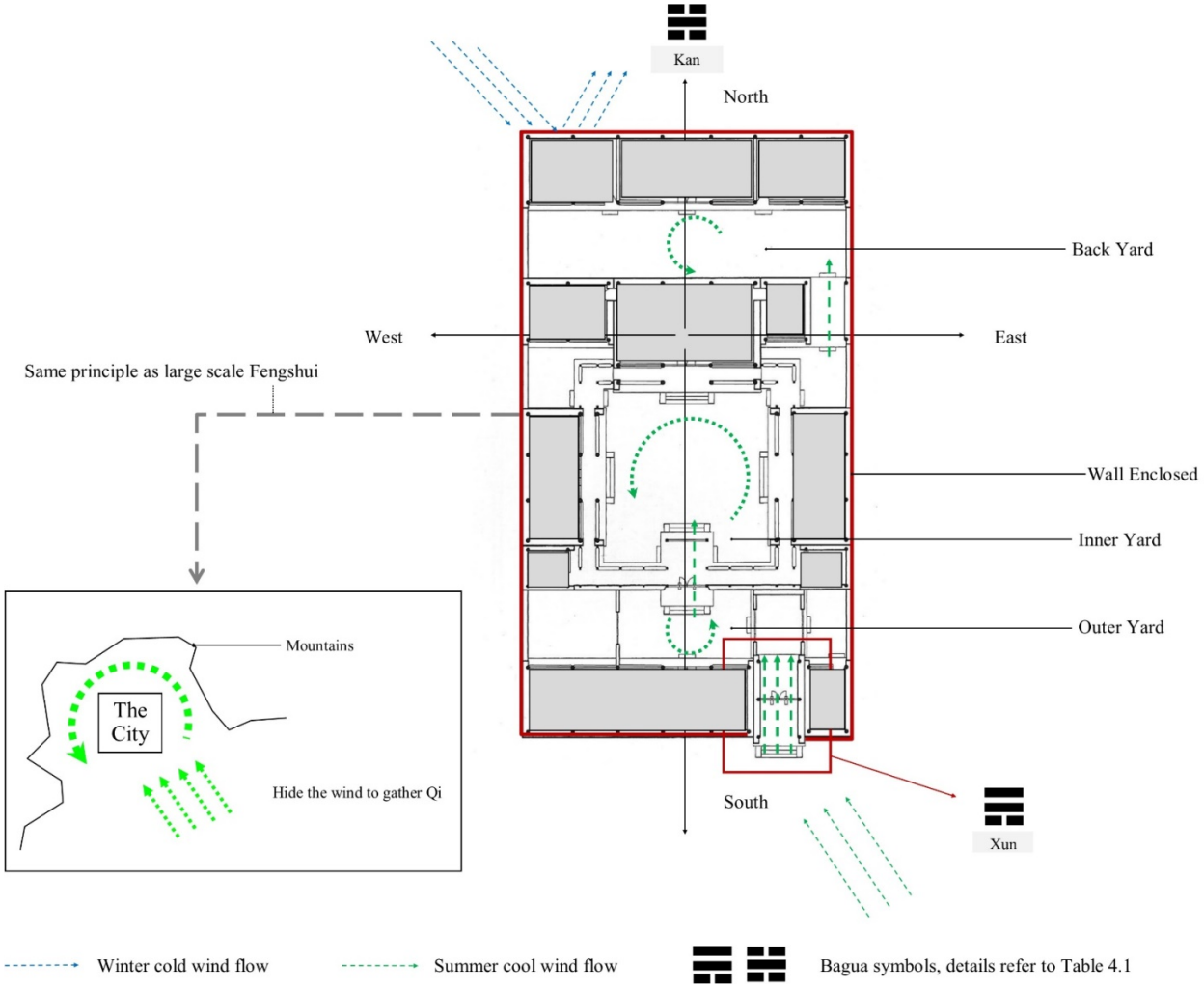

Figure 4. 22 Fengshui in the design of courtyard houses. Source: author

The Theory of Yin-Yang in Relation to the Design of Courtyard Houses

According to the theory of Yin and Yang, space belongs to Yin and buildings belong to Yang. Space is a virtual element which is difficult to view and measure. Contemporary Chinese scholars define space within the Chinese context as 'space is a harmonious unity of balancing a pair of contrasting forces in a dynamic process. The pair of forces, Yin and Yang, depend on each other, influence each other, promote each other and transmute to each other (Gu, 1989, p.59; Zhan, 2006, p21; Tang and Heath, 2008, p.7)'. Therefore, space is not an abstract concept, but rather represents the universal law of change based on the theory of Yi Jing (Yi Ching).

In order to understand the interaction, transmutation and influences between Yin and Yang in the design process for courtyard house (Figure 4.23), the buildings could be seen as solid and existent, while space could be understood as void and non-existent. The essence of space, movement, is represented by ingenious changes and transmutations between Yang (buildings) and Yin (space). As buildings and walls enclose space, which emphasises the void, this is one way to achieve balance; from an analysis of the land use, it is clear that buildings facing towards the street are Yang (more people use these for access), while the space between the paths and the inner yard is Yin (less people use this space and only for access into the inner yard). The inner yard is for senior family members and males who belong to Yang (old and male belong to Yang), and the last yard is for unmarried females who belong to Yin (females belong to Yin). In conclusion, the two-way understanding of the analysis has shown the ways in which Yin and Yang transmute, interact and influence within courtyard houses, representing the balancing process in Fengshui from a morphological perspective.

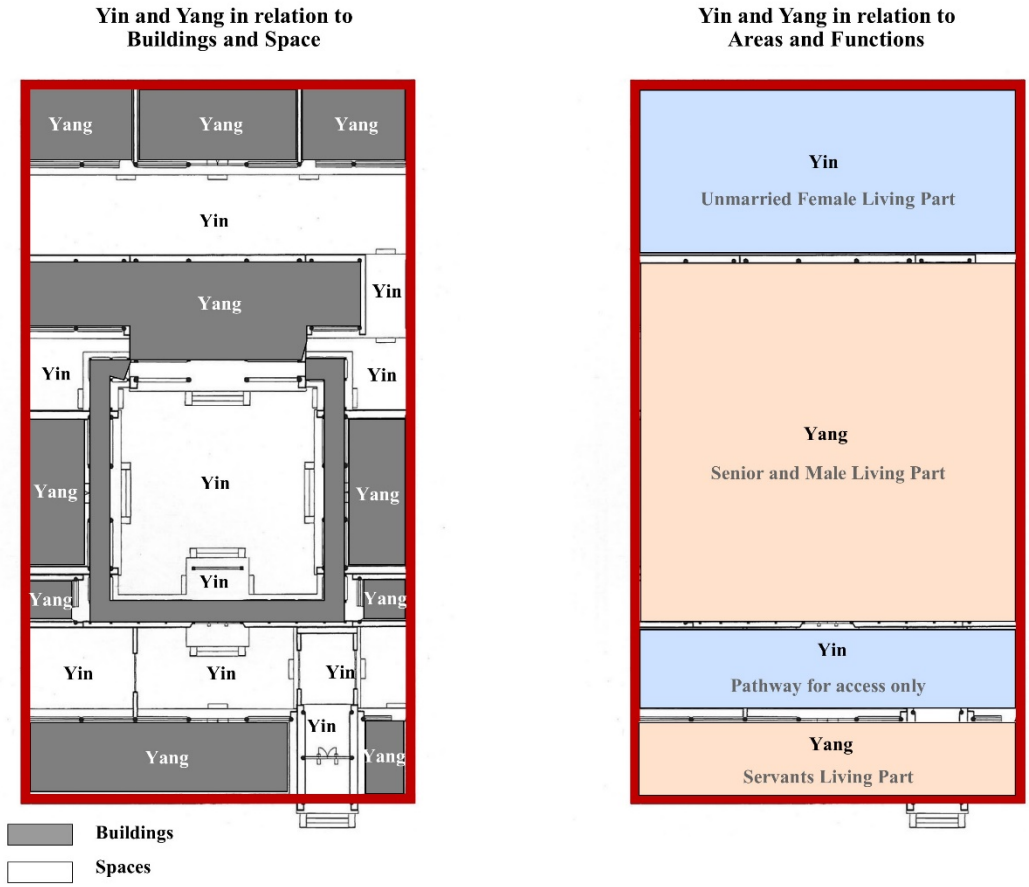

Figure 4. 23 Transmutation of Yin-Yang in relation to the design and plan of courtyard houses. Source: author

Social Hierarchy in Relation to Design of Courtyard Houses

As the overall Chinese social hierarchy including its roles and order were deeply influenced by Confucianism (see Chapter 3), the main theory implemented within architecture was that of superiority and inferiority, senior and junior, external and internal (Shan 2003). The courtyard houses were mainly designed to comprise three spaces: the outer yard, the inner yard and the back yard (Figure 4.24), representing order from outside to inside, external to internal, and public to private. The outer yard formed a spatial connection between the public street and the interior areas used for family activities; the inner yard was an activity area for everyday event celebrations for family members; and the back yard was a special activity area reserved exclusively for female family members, meaning only females would be

allowed in this area. This spatial sequence symbolised different levels of privacy from external to internal, and emphasised the role, gender and social position of each and every family member, forming a sense of social belonging (Shan, 2003; Zhao, 2014). Moreover, in terms of the hierarchical superiority and inferiority within courtyard houses (Shan, 2003; Zhao, 2014), presented by the central and secondary axes from internal to external, the centre of the courtyard houses represented the highest social position, usually occupied by the most senior family members (parents), followed by the eldest son who lived in the east room, and then the younger son who took the west room. Buildings and rooms closest to the main entrance and street were for servants, who were considered to be the lowest social class. Daughters, as female family members, belonged to a low social class; however, they need a high level of privacy so the back rooms were designed to be at the rear of the main rooms. The hierarchy of seniority, presented in the order of superiority and inferiority, only applied to the family members, not the servants.

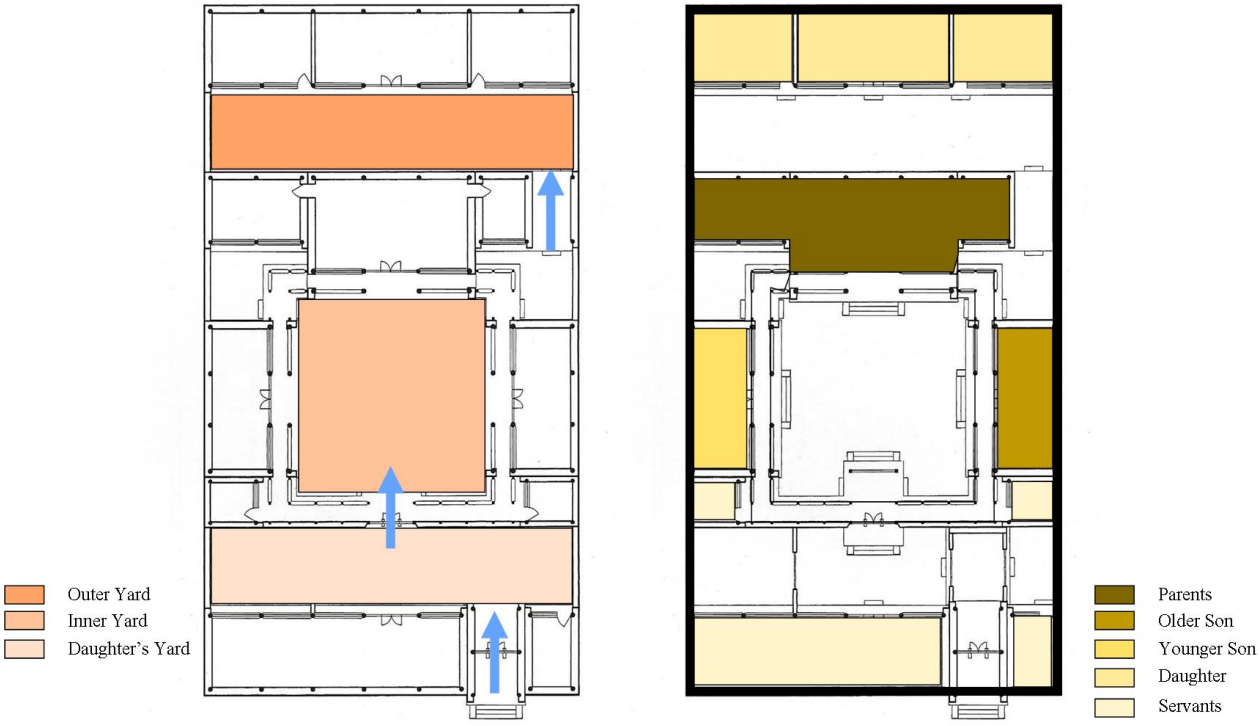

Figure 4. 24 The spatial design of courtyard house in relation to social hierarchy

In conclusion, the layout and design principles of courtyard houses and hutongs presented socio-cultural responsiveness in two aspects, which are: a] order – under the influence of imperial political power, socio-cultural responsiveness emphasises order, between the young and old, male and female, master and servants, buildings and spaces as well as Yin and Yang. Each person or physical element has a role to fit in and rules to follow; and this links directly to b] harmony – affected by multiple disciplines and political purposes, balance and harmony should be achieved in each level of social class and within the families, as well as physical buildings and the natural environment, which is mainly symbolised by Yin and Yang in the spatial layout and land use as well as the relationship between buildings and spaces in residential living settings, and Fengshui in the design and orientation of the courtyard houses.

4.2.2 The socialist city

Since 1949, the city of Beijing has experienced significant urban transformation. The old city and many of its landmarks have been demolished or regenerated due to the transformation of the political and social ideology from imperial to socialist (Wang, 2014). Therefore, an analysis will be carried out based on the different political, economic and socio-cultural needs of the city, to identify why and how the city has transformed based on responsiveness to different aspects of politics, economy as well as the socio-culture.

4.2.2.1 The political responsiveness

At the beginning of the new era, while the level of political influence has remained in urban development, the fundamental political structure has transformed from imperial rule to social equity and collectivism. In this transition of political ideology and adaptation towards a new society, all ‘old things’ were considered restrictive to new

developments from both a political and social point of view. At the same time, due to influences from Soviet Union countries to China, socialism became the primary political and social ideology, significantly affecting the overall system, concept and theoretical principles of urban planning (Wu, 2008; Hou, 2008; Zhao, Shen and Zhang, 2013; Han, Zhang and Gao, 2009). As a result of the Soviet influence, urban environment as well as building types have undergone significant transformation, meaning Soviet-style city plans and socialist-style modern multi-storage buildings were accepted, adopted and prioritised from a political and social point of view.

During this period, collectivism was the ideological foundation of the entire society, from the city plan to residential construction, social interaction to individual behaviours, and public infrastructure to service shops. Almost all facilities and urban development were designed and created in a way which emphasised collectivism and socialist ideology. Considering the national resource deployment required in urban development for construction and materials supply, and provide essential support to the peoples' everyday lives including property, education as well as public places and infrastructure for commercial and social activities, danwei (work unit) was created in order to better satisfy needs and solve issues from social, economic and political standpoint, and to enhance the political management, in order to maintain stability of the society (Yang and Zhou, 2009; He and Lv, 2007) (Figure 4.25).

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Labourers' Culture Place Labourers' Canteen

Figure 4. 25 Examples of Public Facilities for Labourers within the Danwei. Source: Wu, 2008

Before the economic reform in 1978, however, urban planning policies under the Communist Party followed slightly different guidelines (Ma, 1979; Kwok, 1981; Xie and Costa, 1993; Yeh and Wu 1999). Following the Soviet model, China accomplished its First Five Year Economic Plan (1953-1957), meaning achieving industrialisation through focused development of heavy industry by functionally converting key cities from consumption base to manufacturing centres (Chen and Thwaites, 2013). At that time, objectives of urban planning were subservient to the primary objective of achieving industrialisation and economic growth. However, site selection for industries was challenging for inexperienced Chinese planners, who merely considered climate and environmental factors, particularly wind direction, and have caused heavy pollution as a result. In terms of the urban form, the political ideology, with its centrally planned economy and urban planning policies, has restructured cities across the country in a way that was standardised, and individually identity-less. As Lin (2007, p.15) summarises the socialist cities in China as:

'… a system of cities whose size was determined not by free market forces but by the radio of the productive labour force to the total population; and urban economy

focused on production rather than consumption, an urban space arranged according to the principles of uniformity, standardisation, and classlessness; a highly developed bureaucratic system for the allocation of jobs and residences with high security and stability, a penetrating residential work unit organization system to ensure neighbourhood familiarity and citizen involvement in public affairs; minimal differentiation in income, consumption patterns, religious customs, and life styles; and rigid taboos on alternate forms of dress, expression, ritual life, and communication that did not conform to the socialist convention.'

4.2.2.2 The economic responsiveness

In 1949, a new Chinese government was founded, and replaced free trade with a centrally planned economy in which the economy was considered more of a tool to enhance political management and reinforce political ideology, instead of as production services. Chairman Mao's (the first Chairman of China) political ideology of self-sufficiency and self-reliance has led to the formation of the work unit, essentially production units directly managed by the state and with certain autonomy. Functionally, a work unit attempted to integrate working and living space in close territorial proximity, combining workplaces, houses and public services (Xu and Yang, 2009). Ideally, workers already had everything they needed inside the work unit and never needed to go outside. This coincided with the socialist notion that travel ought to be minimised, and no group should be more dependent on travel than others and public services should be equally accessible to all (Demoko and Regulska, 1987). Since all facilities and resources have been provided within individual work units, urban roads were not designed for workers' daily commute, but essentially for vehicles and bicycles, so then the road system in the city was financially unrealistic and functionally unnecessary (Chen and Thwaites, 2013).

4.2.2.3 The socio-cultural responsiveness

Given a socialist society aimed at representing equality and advocate collectivism against individualism, the work units aimed at fostering new social relations with a stronger sense of community among new socialist men and their families regardless of age, sex or cultural background. Therefore, the social culture from imperial times was mostly opposed by the socialist vision and it had to be abandoned. In this context, traditional housing and streets were regenerated in a socialist way. Due to large number of people returning to the city, who had been away as a result of the Up to the Mountains and Down to the Countryside Movement involving the educated youth in the 1970s, housing demand, which had been one of the main urban issues, significantly increased (Seybolt, 1977). Fortunately, courtyard houses survived, but they were regenerated in a collective way as new residential areas. In this section, socio-cultural responsiveness will be analysed and identified in two types of living conditions, namely regenerated hutongs with courtyard houses and work units.

Hutongs

In terms of the structure of public space in historical areas, there was changes of uses in courtyard houses from one family dwellings to muilti-family occupied based on the population increase between the 1950s to 1980s (Figure 4.26), in order to meet the increased housing demand and to emphasise collectivism in the living environment where everything was shared by the public (Wu, 2011). Therefore, the spatial order was transformed into an equally shared environment.

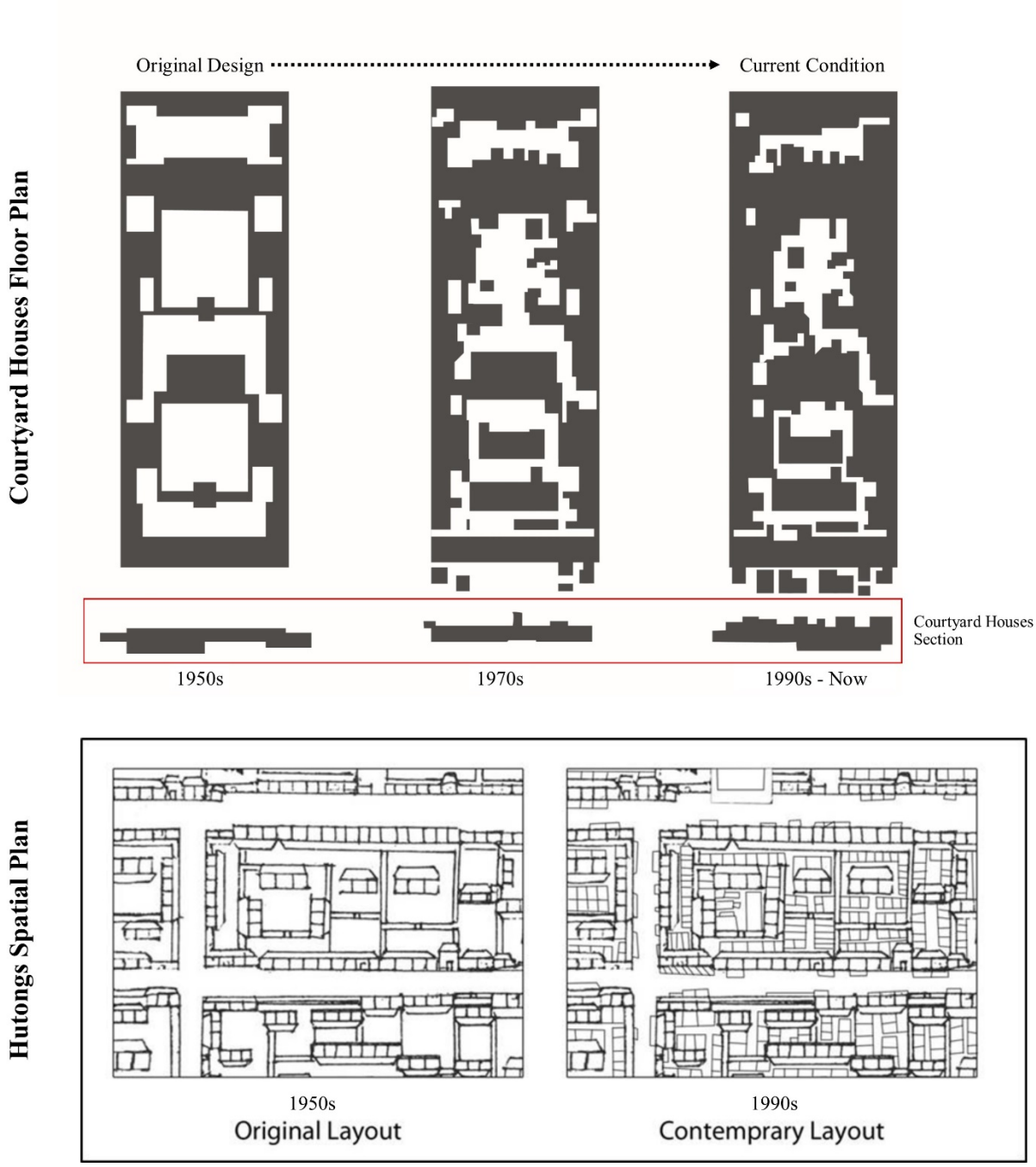

Figure 4. 26 Transformation of hutongs and courtyard houses between original layout and current situation. Source: constructed by author based on Wu, 1996

Firstly, the function and use of the space changed from the simple function of public access for hutongs, and private use by family members for courtyard houses, into public functions not only used for public access but also as extended areas for essential public activities, shared by all families resided within the hutongs; and not only as private space shared by family members but public space shared among all

residents living in the courtyard houses (Figure 4.27) (Zhang, 2015; Logan, 2011). As a result, Fengshui, privacy and the social order inherent in the design of courtyard houses were replaced by collectivism and sharing considerations. In addition, as a result of population growth, the physical built environment gradually deteriorated due to an uncontrolled management system and deregulated self-extended rooms, which were unavailable for improvement and upgraded living conditions in physical terms such as private toilets and kitchens (Wu, 2011).

Despite functional change of courtyard houses has deviated from original design purpose and spatial sequence, the fully occupied residents and the spirits from collectivism and socialism have enabled a highly utilised and friendly neighbourhood within courtyard houses and hutongs, and also significantly increased outdoor social activities due to limited indoor space. (Zhang, 2015). Further detailed analysis will be discussed in the neighbourhood analysis in the chapter Six.

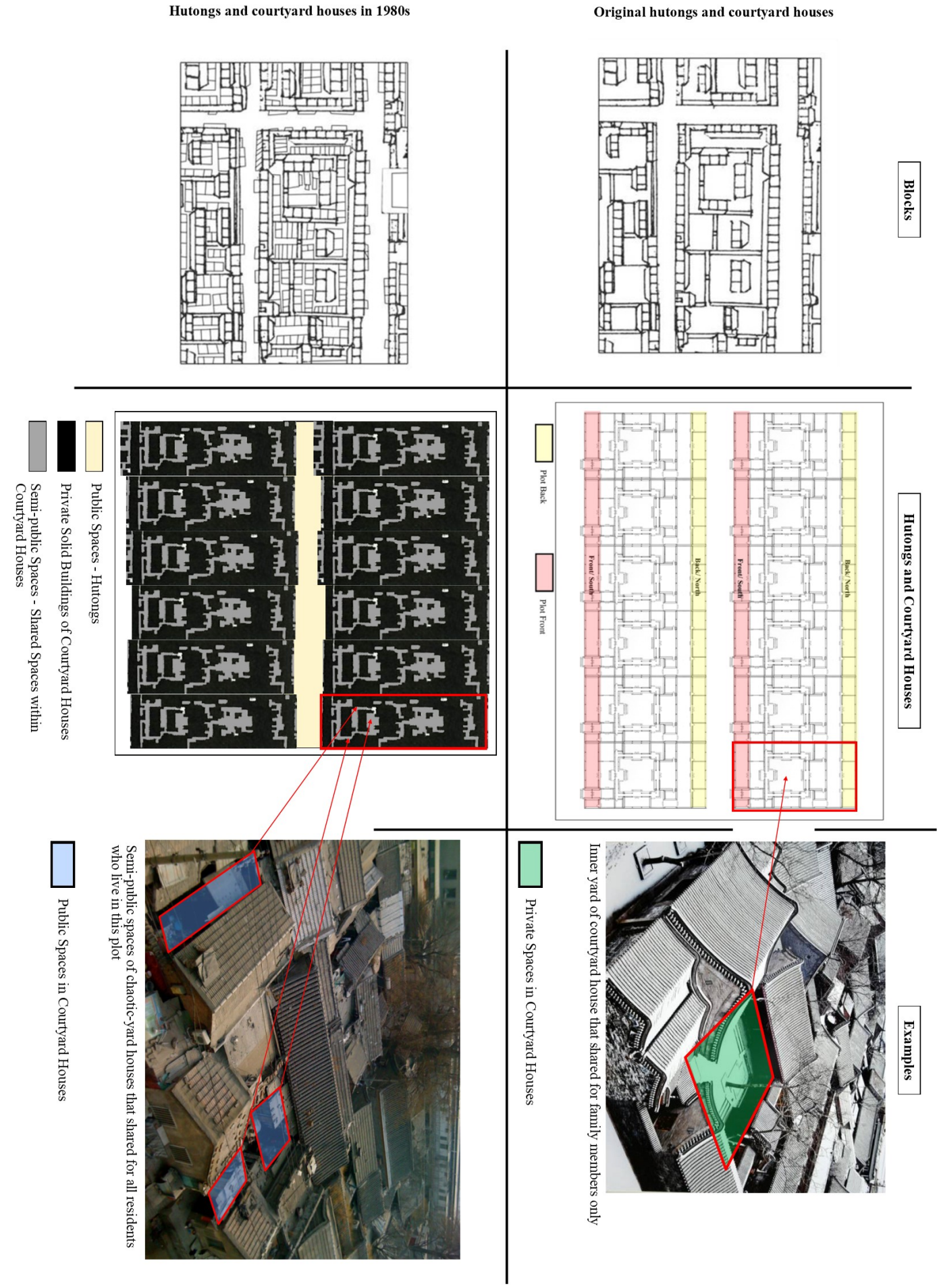

Figure 4. 27 Comparison of blocks, hutongs and courtyard houses between original design and current conditions. Source: diagrams produced by author, images modified by author after Wu (2008)

Danwei (Work Unit) (1950-present)

As previously discussed, in order to meet the rapidly increased requirements for accommodation in Beijing, re-used, adapted, and low density courtyard houses were nowhere near sufficient to meet the rising demand for housing. As a result of the spread of Soviet influences as well as modernization and demands of urban development, the work unit model (danwei) was implemented as the main method for urban development (He and Lv 2007; Yang and Zhou, 1999).

The danwei system included various population sizes, ranging from hundreds to thousands. All danwei were enclosed within walls for the purpose of controlling people's daily activities within the walls, as the design purpose of danwei aimed at facilitating the integration of spaces for work, live, entertainment, shopping as well as education, all within the units (He and Lv 2007; Yang and Zhou, 1999). The spatial layout of danwei typically consisted of at least two basic parts, the working areas and living areas (Figure 4.28). The spatial layout of danwei was not controlled by local government but rather was down to the autonomy of the individual enterprises, and therefore, conflict and fragmentation was inevitable in urban development process (He and Lv 2007; Yang and Zhou, 1999; Hui 2013). It was not surprising to find randomly distributed buildings or buildings in simple rows and columns behind the walls of a work unit.

In terms of the spatial plan, the key architectural elements were arranged along the central axis, with subsidiary elements arranged in groups on both sides of the central axis. The purpose of the axial arrangement was to symbolise the order of the socialist state. Usually, the working areas faced towards the main street with office buildings to process production, with the production areas located at rear of the main office buildings. The residential area was generally separate and divided, with secondary roads leading to and from the working areas. The residential area was planned for

multi-functional land use and public infrastructure so the communal facilities, such as public clubs and the canteen, were located at the centre and people had to regularly visit these locations to confirm their socialist beliefs.

In terms of residential spaces, the similarity between the work unit and courtyard houses was that the arrangement of the space and programmes were not merely for political purposes, they also promoted social cohesion by providing communal facilities and common spaces (He and Lv 2007; Yang and Zhou, 1999; Hui 2013). Social ties between family members, partners and neighbours established a collective lifestyle within these enclosed units. People living in the same unit would always share things in common, and this commonality reinforced social ties and formed circles of like-minded individuals. In order to emphasise the equality of collectivism, all the facilities were designed to be shared, such as laundries, bicycle sheds, gardens, hospital, bathhouse, sports ground, etc.

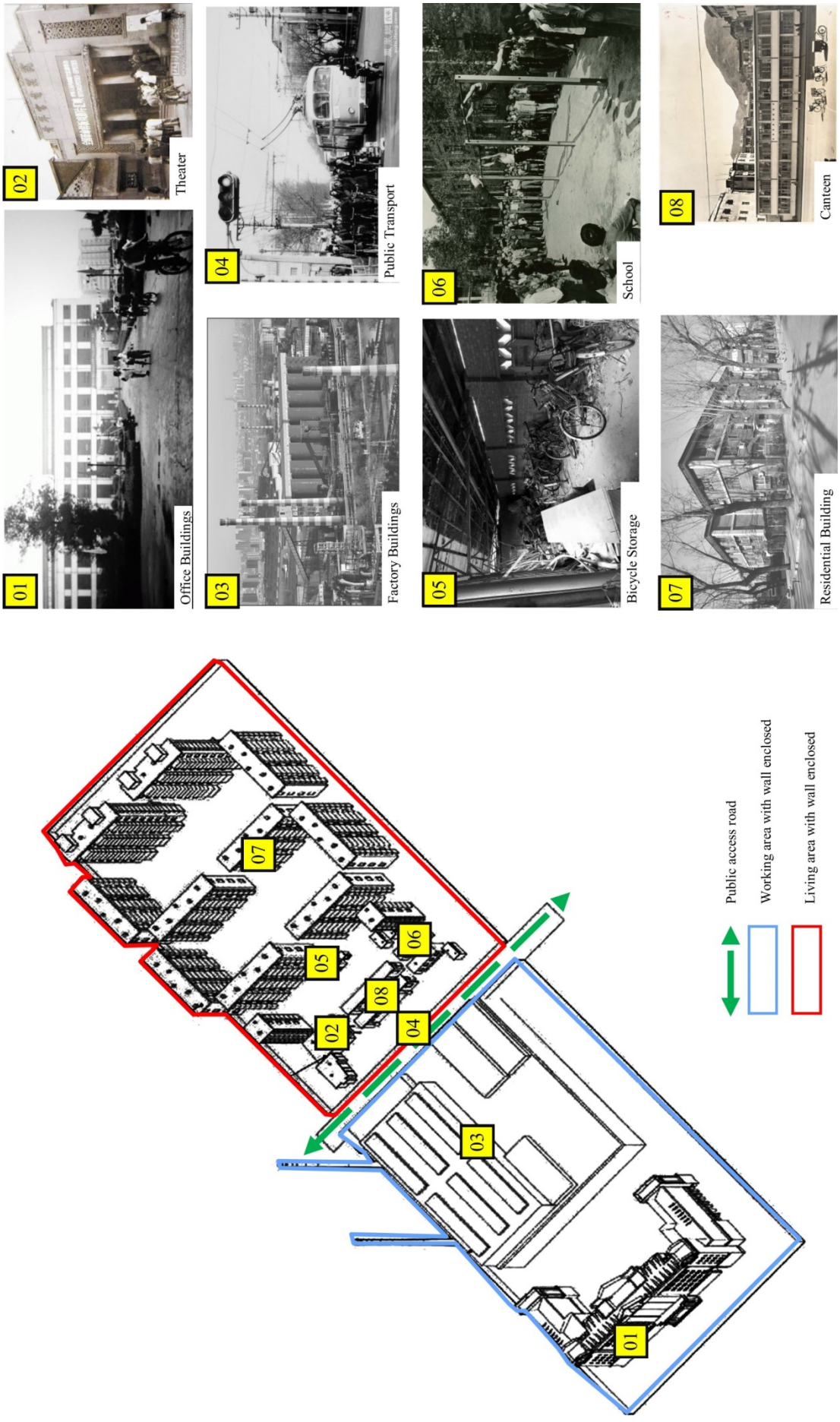

Figure 4. 28 A example of layout of a work unit. Source: author, photo images modified by author after Zhao et al (2013)

In order to create a shared built environment, enhance the sense of belonging to the danwei (work unit), and to deepen public understanding of collectivism and the socialist ideology, the essentials of daily life were organised centring around danwei (work unit). As Figure 4.29 explains, due to the competition among danwei (work units), the entire work unit was spatially enclosed to improve the psychological social superiority of workers. A well-established work unit with good income always return benefits to the workers, which were only shared among the people who worked within the danwei, such as abundant and quality housing, a variety of shared facilities, and well-equipped, good schools. At the same time, the spatial enclosure was a way of creating continuity with the traditional design concept in order to clearly define the edge of the responsive areas.

Influenced by collectivism and the socialist ideology, people enjoyed the above social interaction and activities because they believed they were empowered by the collectivism lifestyle, more than individualism, which would benefit the greater good of the entire society and across the country (He and Lv 2007; Yang and Zhou, 1999; Hui 2013). That's why in many danwei (work units), they helped build part of the facilities, grew the vegetation and so on by themselves (Figure 4.29) in their spare time.

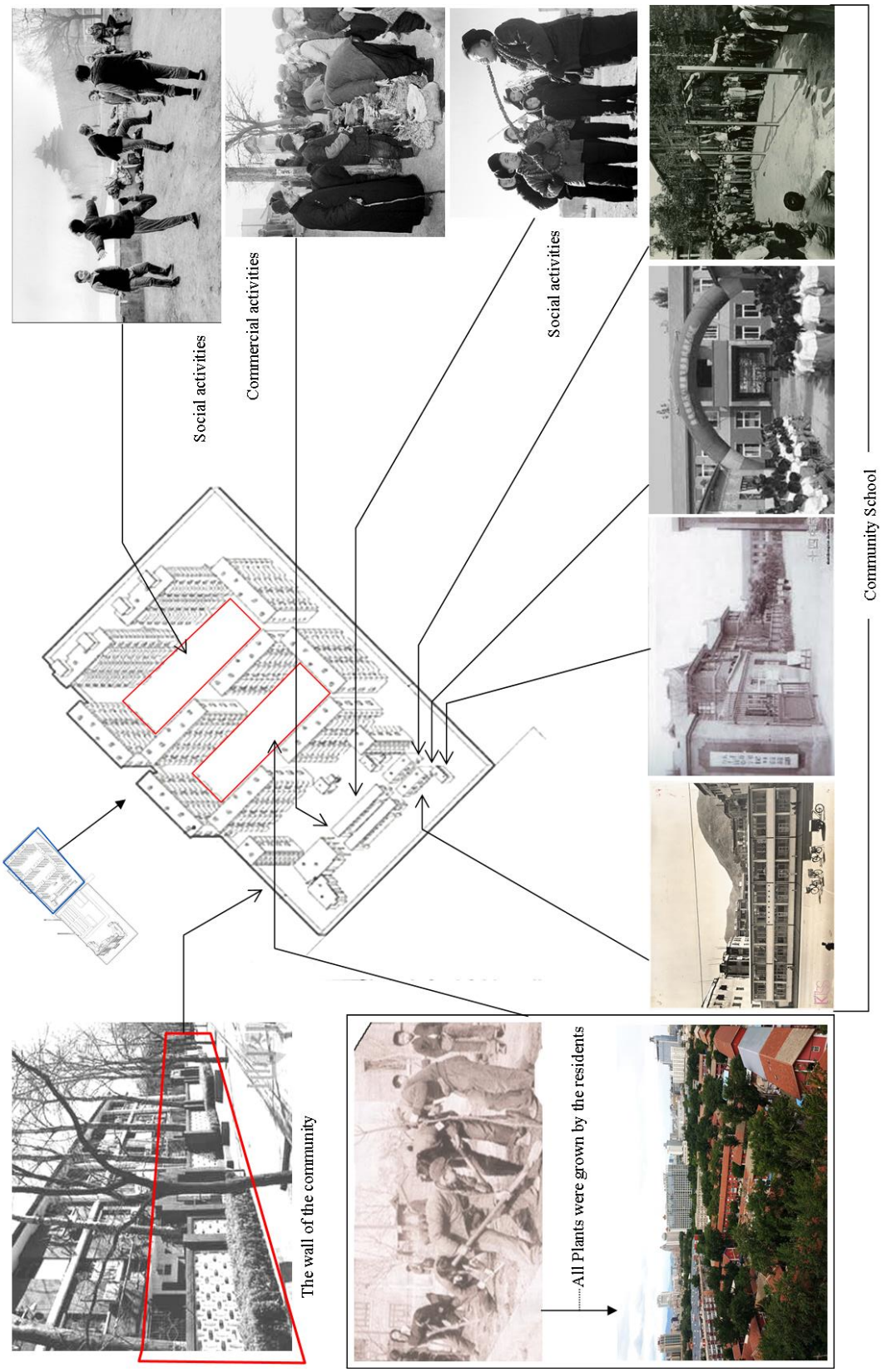

Figure 4. 29 Activities and functions within enclosed walls in the residential area of a work unit. Source: author, photo images modified by author after Zhao et al (2013)

During the period of centrally planned economy, urban planning was perceived as a tool to emphasise the socialist ideology of planned development and to translate the goal of economic planning into urban space, and the design and plan of the city from the large scale down to the individual danwei as a response to political demands. Later in the post-reform period, transformation of the political ideology have changed the formation of the economy into a market economy and resulted in significant changes in the urban built environment (Logan, 2011). The following section will discuss and analyse the global influences on the city.

4.2.3 The contemporary city

Due to the Post Reform movement, the Chinese economy has shifted from a planned economy into market-oriented economy and has seen accelerated economic growth especially starting from the 1990s. Economic growth became the top political priority of the entire country. As a result, economic responsiveness became the primary considerations in the urban development and planning agenda. In this context, an analysis will be carried out on the evolution of city design based on the changing political, economic and socio-cultural needs and to identify why and how the city was transformed based on responsiveness to various aspects politically, economically and socio-culturally.

4.2.3.1 The political and economic responsiveness

In 1978, the Chinese government published the Open Door policy, marking China's transition from a centrally controlled and planned economy to an economy focusing on economic growth. In 2000, the master plan for Beijing was released, with the ambition to develop the city into a global metropolis. However, due to a lack of established urban planning and design guidelines prior to the Post-Reform period, the overall urban structure, land use as

well as city functions were extremely underdeveloped. Urbanisation was essential in order to meet the ambitious economic development goal while globalisation was the main driving force behind changes in Chinese cities following economic reform. Chen and Thwaites (2013) stated that, in terms of the globalisation of Chinese cities, the international division of labour and the world's capitalist economy were explicitly reflected in people's daily lives in China through intensive international trade, global production, the diffusion of machinery technologies, investment, competition and the share of labour in the economy. It facilitated homogeneity in social practice, relationships, the organisation of social life and consumption, but, in the meantime, drew boundaries in contested cultures, regions and societies.

With influences of urbanisation and globalisation becoming apparent through the country's political and social transition, urban China has attracted great attention from scholars and there was a variety of literature on China's transformation across disciplines under these influences, ranging from human geography, history and sociology to urban planning and architecture (see, for example, He et al., 2006; Ma, 2002, 2006; Wei, 1995; Yan 1995). In summary, the consequences of urbanisation and globalisation on the transformation of Chinese urban life can be characterised into six points (Fei and Thwaites, 2013), which are:

- The establishment of central business district (CBD) in cities and changes in the land use pattern
- The creation of development zones, high-technology parks, cultural and education base etc.
- The transformation of housing forms, which have become the majority of the general urban fabric
- The construction of iconic, landmark buildings to enhance the city image
- The formation of migrant enclaves in urban areas
- Urban conservation and regeneration measures in respect of traditional urban forms

These six characteristics can be found in most Chinese cities. Following successes in urbanisation, which included development of urban facilities and infrastructure such as education, job opportunities and medical services, urban population significantly expanded, from 7.3% (39.49 million) in 1949 to 45.68% (6.07 billion) in 2008, and continued to rise by 5% annually from 1991 (National Bureau of Statistics of China, 2009). Private and foreign enterprises have emerged and flourished as a result of the urbanisation and globalisation trend, largely replacing work units. Housing provision was mainly driven by developers since the market reform. As a result, two land reform policies were introduced in light of the rapid real estate development in China to clarify ownership rights and usage rights for land and property (The Implementation Plan for a Gradual Housing System Reform in Cities and Town, 1988, further adjusted in the early 1990s; Notification to Further Deepen the Reform of Urban Housing System and Accelerate Housing Construction, 1998). The developers, meanwhile, in an attempt to meet demand for rapid developments and with minimum cost, adopted apartment layouts and high rise residential buildings as well as communities with shared communal open spaces as standardised design, while individual yards or gardens in this type of compact living area were impossible to provide (Chen and Thwaites, 2013). In this context, the standardisation of commodity housing modules has occurred on a national scale because good designs of apartment layouts were often shared by developers across the country, without differentiation for climates and lifestyle considerations. Meanwhile, based on the need for rapid development and dramatically increased property needs though urbanisation, local government often made compromises in respect of these types of standardised high-rise and high-density housing modules. As a result, the massive scale of these housing developments have not only decreased urban permeability and legibility, but it has also seriously threatened local identities and has ignored the local context (Fei and Thwaites, 2013) (Figure 4.30).

Figure 4. 30 Standardised city developments have threatened local identity. Source: first image from Li, 2017; second image from auther

With economic development became the top priority of the country, the city focused on its economic functions rather than other issues in terms of urban layout and city growth. Fei and Thwaites (2013) summarised that the layout of Chinese cities was transformed from cities enclosed by walls during imperial times through to danwei breaking out of city walls with

satellite towns around the city during early socialist times, then this expanded to development zones around the city in order to increase the efficiency of land use to maximise economic growth (Figure 4.31). With economic development becoming the most important political goal, the leading ideology of city development and construction transformed from a politically-driven to an economically-driven approach. Therefore, the process of city development after economic reform was highly responsive to economic purposes as a political target, but there was a lack of consideration for socio-cultural and local identity. As a result, the city become economically multi-functional and housing development was driven by the market, but there were serious threats to local traditions and cultural identity (Fei and Thwaites, 2013).

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to copyright restrictions

Figure 4. 31 Structural transformation of Chinese cities (1: the city in imperial times; 2: the city in the late 19th and early 20th century; 3: the city after the 1949 liberation and before the 1978 economic reform; 4: the city in the Post-Reform period) Source: Fei and Thwaites, 2013

In summary, based on population growth, national goal of economic development, the city development policies and regulations minimised socio-cultural considerations, and made compromises in order to achieve economic development goals, in particular, in relation to the transformation of housing forms, a large number of traditional courtyard houses and danwei communities were rebuilt or transformed into high-rise high density modern style buildings.

4.2.3.3 The socio-cultural responsiveness

As discussed in the previous section, due to the political emphasis on economic development after market reform, the economic structure became market driven. In this period, urban planning was heavily influenced by western planning concepts as well as western architectural designs, as Chinese cities deliberately shifted from consumption-focus to production focus. The key changes in urban form and public open spaces were largely attributable to the increase in modern high-rise building styles, especially in residential areas, in order to accommodate rapid growth of urban population. Through market reform and global influences on real estate develop, western lifestyles and culture spread alongside market growth. Therefore, high density centralised residential community types were largely applied to urban development, and local identity was replaced once again, shifting from work units to a modern, global identity (Figure 4.32).

Figure 4. 32 Typical Chinese residential communities in different cities. Source: author, image of Nanjing from Zhang 2015

There was a clear system to define above-mentioned residential community in terms of its scale. Dou's study (2008) concluded that according to the Code of Urban Residential Areas Planning and Design in China, first proposed in 1993 based on experience of Small District planning and design, 'there are three levels of residential developments which were defined based on facility-catchment population. The first level is called a "residential district", which accommodates a population between 30,000 and 50,000 which is similar to the population of Howard's garden city; the second level is called a "small district", which accommodates a school catchment-population between 7,000 and 15,000 which is similar to the population of a neighbourhood unit suggested by Perry; and the third level is called a "cluster" which

accommodates a population between 1,000 and 3,000 corresponding to the population-catchment of a residential committee (Dou, 2008, p.4, Figure 4.33).'

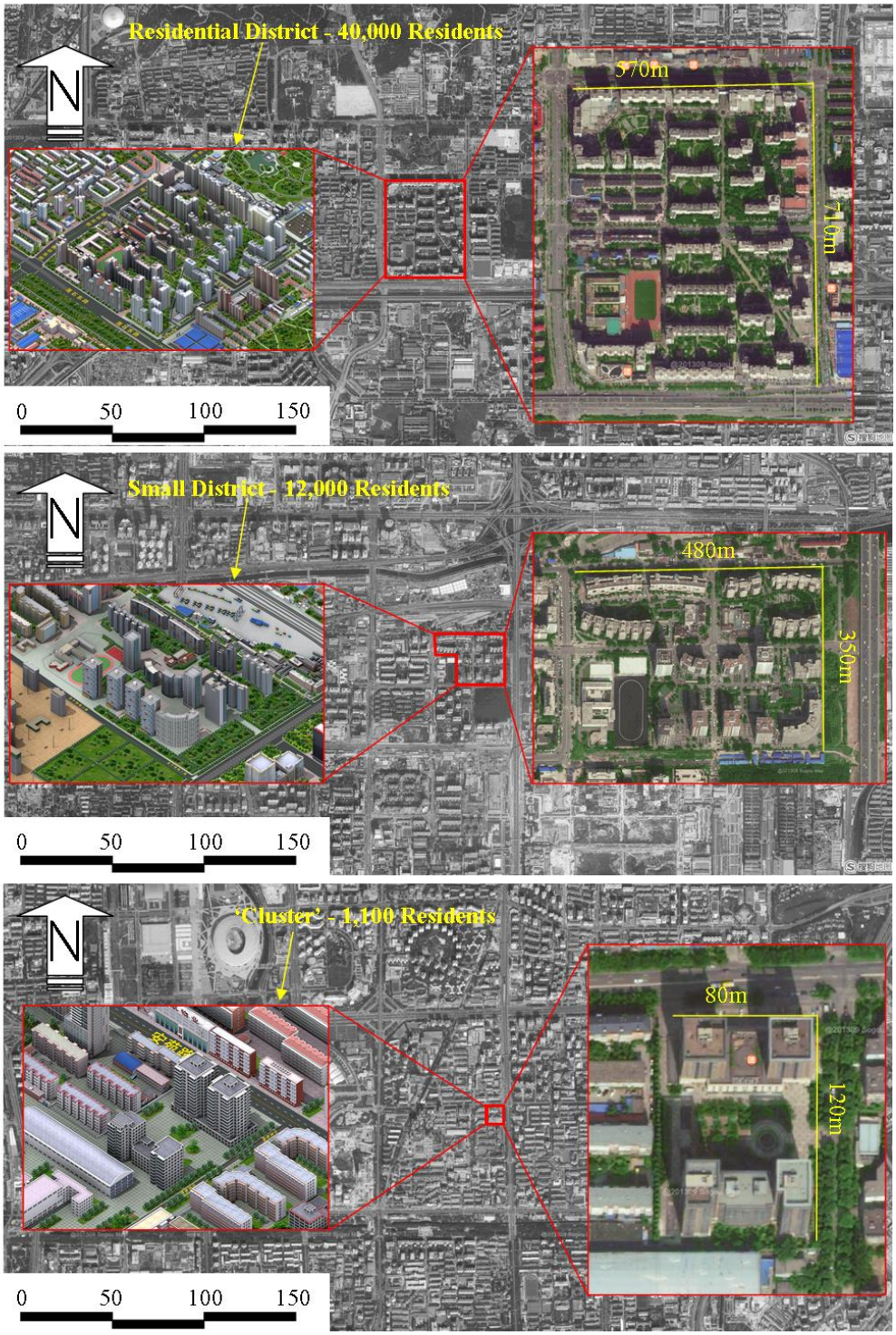


Figure 4. 33 Types of modern communities in contemporary Beijing. Source: constructed by author based on Google map image

In the residential plan in Figure 4.31, it is clear that traditional spatial concepts and social philosophy have mostly been lost in the contemporary neighbourhood residential designs and plan. While physical living conditions have improved, such as the provision of private kitchens, toilets and a gated public space for residents, the traditional social and spatial order in public space design has been abandoned. In terms of the spatial structure, the enclosed spatial strategy has endured, which not only relates to the concept of priority of social position from the traditional design philosophy (discussed in the imperial analysis) and social conventions from the danwei model, but also relates to safety issue regarding outward movement from the danwei.

In the structure of public space in the modern urban residential development, the spatial design has taken influences from both the traditional and the socialist design concepts (Figure 4.34). The community was enclosed by walls that represented the concept of spatial enclosure within the design of courtyard houses; however, although the form of the enclosure has been maintained, the meaning of the design has changed. The enclosed community now mainly represents the privacy required in public spaces as well as safety considerations. At the same time, it also represents the social superiority of residents who live in a high quality, secure community which signifies the social position of the residents (Pow, 2009). On the other hand, social relationships were changed by the transformation of the political ideology from collectivism to privacy through the economic reform and western design concepts which were implemented. Therefore, the spatial design was not based on traditional social networks and social connections, but local socio-cultural needs were adapted by importing design concepts and philosophies in order to be politically and economically responsive. This is the reason why the traditional space was replaced by modern developments.

However, based on global cross-cultural influences on the modern community, there were several improvements, such as public infrastructure and facilities, the visual quality of the landscape, mixed land use, and the management system. Further analysis of the modern community will be carried out in the analysis of the modern neighbourhood analysis in Chapter Eight.

Figure 4. 34 Urban morphologies and typologies of residential community in different population scale. Source: constructed by author based on Google map image

In summary, in the contemporary city, urban development and the designs and planning of residential settings were mainly driven by economic and political considerations rather than socio-cultural involvement. Being highly responsive to economic behaviours caused many issues, especially lack of consideration for the socio-culture which threatened the local identity and cultural traditions. More importantly, people's local interpretations, their world view, their notions and perceptions were continually changed throughout the development process, which threatened social traditions and cultural identity.

Conclusion

This chapter has analysed the morphological transformation of Beijing at city scale from political, economic and socio-cultural perspectives, and the roles of each urban actor have been identified as well as their interests and responsibilities.

By applying the conceptual framework to the historical transformation analysis, one can conclude that urban transformation is seriously affected by the transition of political ideologies. In imperial times, the city was designed to be a political symbol and it integrated all disciplines in order to emphasise imperial power; thus, the city's design and its functions were politically-driven as were the social structure and the economy. Following this, socialist ideas were reflected in the restructure of the city after the 1949 liberation. Work units and collectivist plans and designs were the products of socialist ideologies which aimed to address political responsiveness. In contemporary Beijing, where the political ideology has transformed from planned economy to one of market reform, the importance of economic growth has become the political target and policy-making has made compromises in relation to socio-cultural involvement in order to achieve economic development goals.

This chapter as first part of city level analysis, it discusses and analyses how public open space has been responding, in physical terms, under the influences from political, economic and socio-cultural dimensions. In the next chapter, the analysis is carried out from agent perspectives to define the key actors in relation to contemporary production process of public open space, in order to identify who make decisions for development agenda and plans, who drive the influence to the physical design of public open spaces, how they influence it, what are the interests as well as responsibilities of these key actors in terms of locally responsive public open space design.

Chapter Five – City Level Analysis (Part II) – Analysis of Agency Role in the Production of Public Open Space

To carry on the city level analysis, this chapter focuses on identification of key urban actors in relation to production of public open space in contemporary Beijing. In order to identify the level of local responsiveness in the production of public open spaces, firstly, need to identify who are the key actors in the production of public open space, and their roles and responsibilities. Secondly, how public open spaces are produced, and who are involved and participant in production process, and how they co-operated in between in the process. Thirdly, what are the interests and visions of these key actors in terms of production of public open spaces.

5.1 Urban actors, their roles and responsibilities

5.1.1 Controllers

The leading policy-making institutions of the public sector involved in the urban development process are (Figure 5.1) (refer to interview with planner in Appendix B): at national level, the Ministry of Housing and Urban-Rural Development (MOHURD); at city level, the Municipal Commission of Urban Planning, and the Municipal Commission of Development and Reform; at coordination level, the relevant municipal institutions and organizations.

Firstly, at national level, the Ministry of Housing and Urban-Rural Development (MOHURD), as the central government policy making department, is mainly responsible for researching and devising policies and guidelines for urban and rural

development plans, and real estate growth; designing legal framework for urban plans, designs and construction; managing urban and rural growth sustainably in ecological, economic and social terms; and proposing middle and long term urban development plan (From Government Web). At city level, the Beijing Municipal Commission of Development and Reform (BMCDR) is a municipal administration whose mission is to implement central government policies and establish the social and economic development plan for the city. It can be seen as a connecting administrator between the ministry department and the municipal department (From Government Web). The commission holds the responsibility for submitting development proposals to the national ministry, and then passes the permission and approved development proposals to other relevant municipal departments. In terms of urban development, the Beijing Municipal Commission of Urban Planning (BMCUP) is the main municipal department that deals with the creation of Beijing's urban master plan and the evaluation of design and planning legislation at city level. It controls and manages urban growth in physical, social, economic and environmental terms (r refer to interview with planner in Appendix B). When processing the new master plan or middle and long-term development for the city, the BMCDR will design a development agenda to negotiate with the MOHURD, and then they will pass the central development agenda on to BMCUP for implementing within the development plan. Then, the municipal coordinator departments will become involved to support various areas; that is the third level (refer to interview with planner in Appendix B).

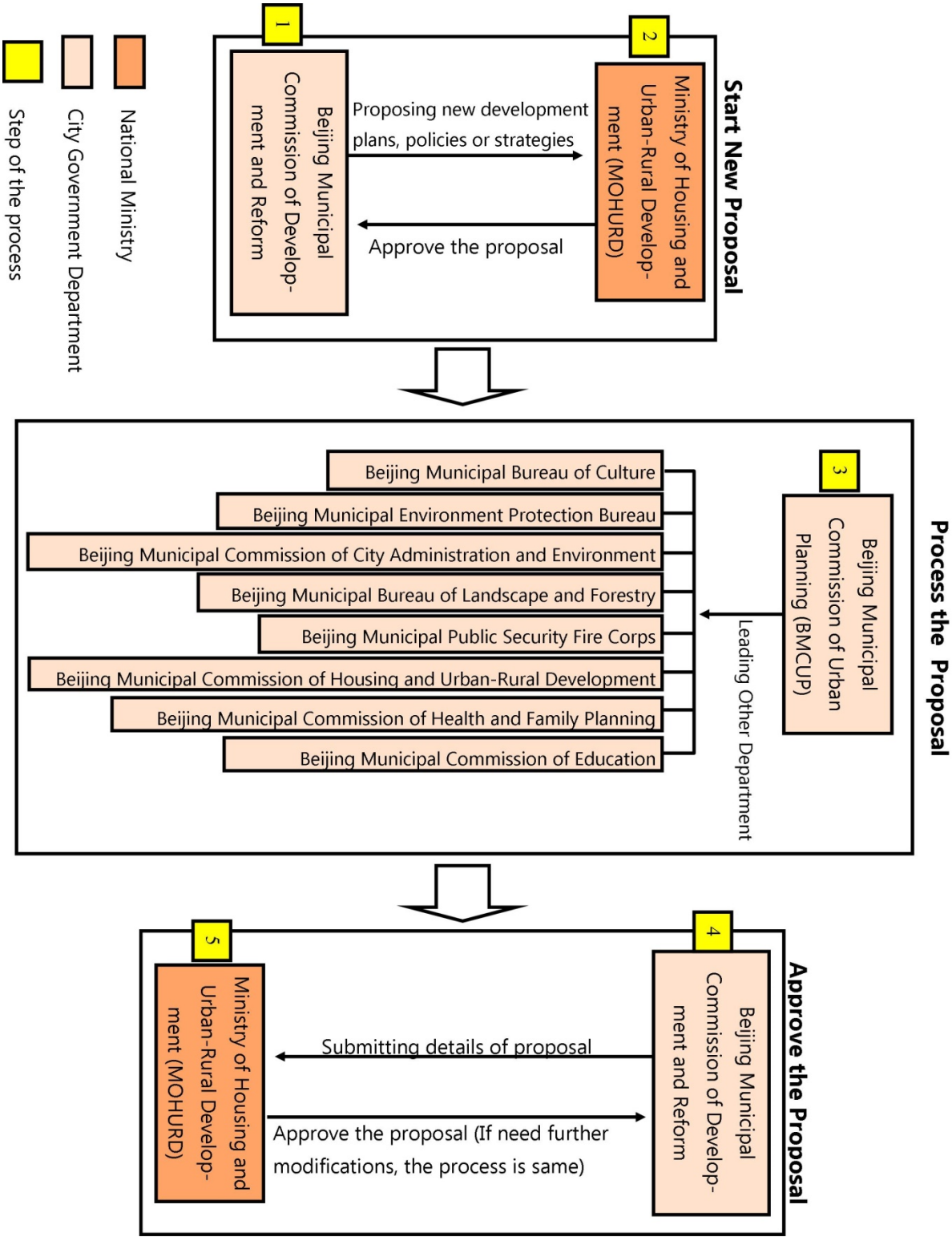


Figure 5. 1 Government Policy Making Process. Source: author

However, there are only limited urban design guidelines for the fundamental demands of public space design and management (such as tactile disable), and these guidelines are not legally required. Therefore, the design of public spaces is mainly based on the requirements of the developers (refer to interview with planner in Appendix B).

In terms of public consultation and engagement, the current methods are: a] arranging exhibitions of city development plans on site or online in relation to district or city level developments; b] arranging discussions with representatives of communities and other stakeholders involved in district or city level developments; c] setting up a government office mail-box to receive comments, information and feedback from citizens in relation to district or city level projects (refer to interview with planner in Appendix B). However, there are two gaps that can be identified 1] all actions are focused on large scale developments or regeneration projects instead of regular residential developments; and 2] the consultation and engagement methods are passive and inefficient, which means that citizens have to actively search for ways and platforms through which to submit their ideas. As a result, policy making in urban development and planning does not involve the user or consumer group sufficiently.

5.1.2 Developers

In the interview with the developer (refer to interview with developer in Appendix B), she states that the main role of the developer is as an inter-mediator who is responsible for reallocating different resources. She explains that the developer is responsible for creating a project based on the government agenda, policy and relevant regulations, factoring in management system based on the market and positioning the project based on market demands. Essentially, the developer actually builds a platform for different actors.

Based on the interviews, the project production process has been identified as having four steps (Figure 5.2), which are: a] establishing the development project based on the

company's development plan; b] positioning the project based on the overall annual commercial targets of the company, the main proposed annual government development plan, and the overall area value of the development; c] designing the project by integrating the consultant reports from marketing consultant companies (only the report for general market consumer appeal, but not data provided on living preferences) with legislation, regulations and design plans; and d] releasing the project to the market.

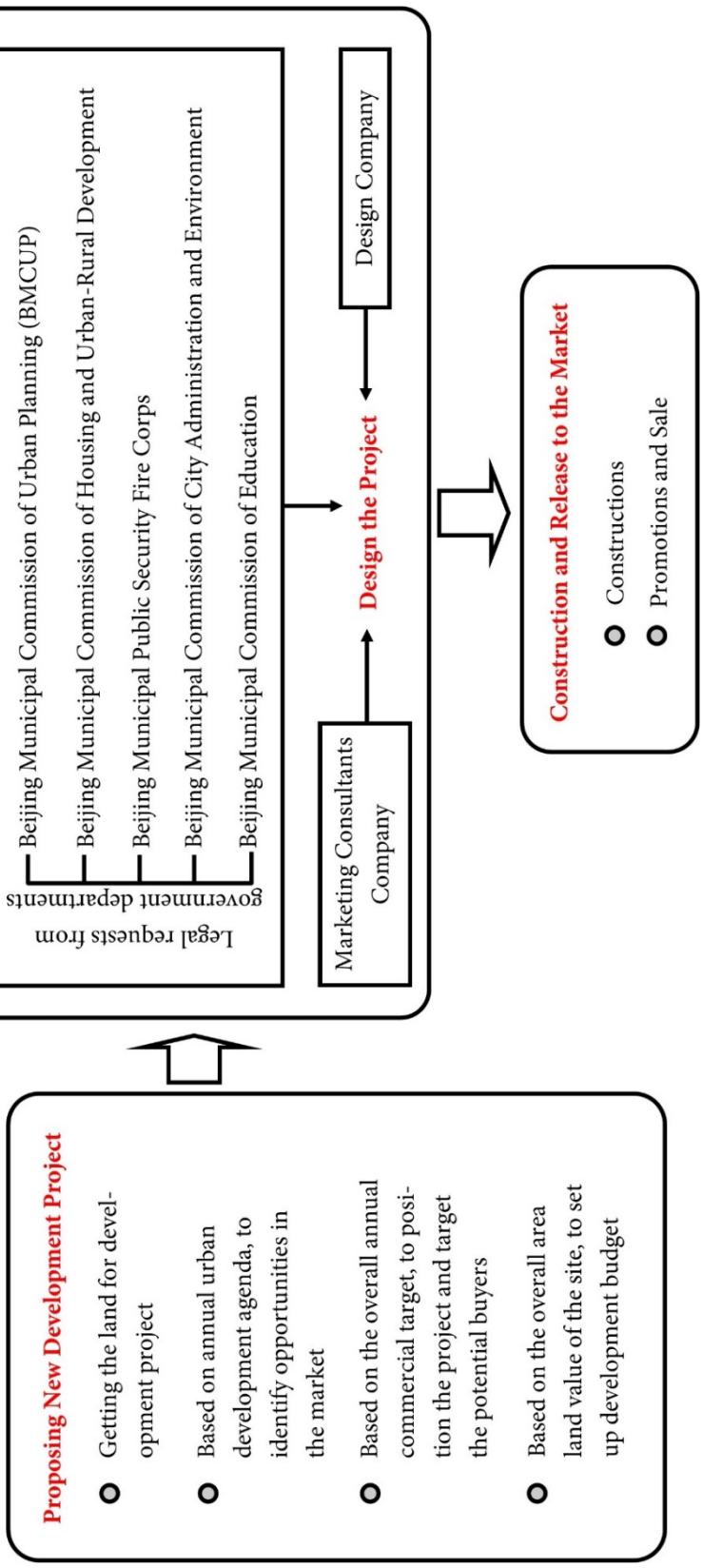


Figure 5. 2 Community Production Process. Source: author

In terms of the production of public space, the project manager of GEM Real Estate points out that the quality (from an artistic point of view) of public space is an additional value for the project. Except for the essential facilities such as dustbins and information boards, others such as greenery and the visual landscape all provide additional value to enhance the value to the community. Therefore, the quality (visual quality) of the public space mainly depends on the commercial position of the project.

5.1.3 Users

The 'users' are the main actors of using public spaces, but rarely involved in the production process in Beijing (refer to interview with developer in Appendix B). They have limited engagement in the decision-making process. However, the consumer focus of the users can slightly influence some parts of the community development.

In terms of decision making in the users' consumer process (Figure 5.3), larger scale demands are more important than smaller scale requirements (refer to interview with developer in Appendix B). In addition, the quality of building construction, inertial layout design and parking are most important for the consumers, and other issues in the smaller scale section all belong to the category of 'additional value' in both developers' and consumers' understanding (refer to interview with developer in Appendix B).

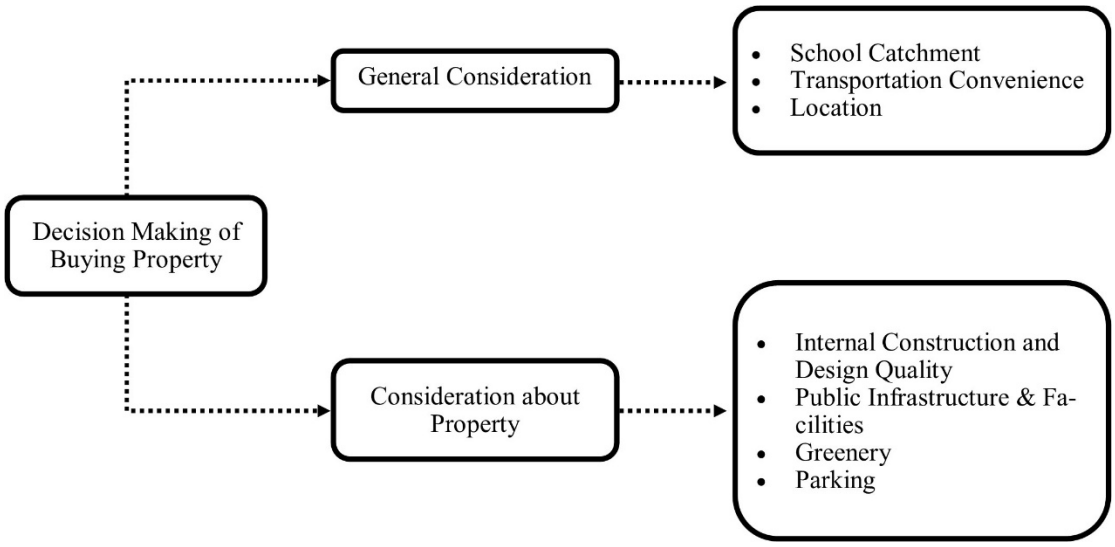


Figure 5. 3 Decision making factors associated with buying property by users

5.2 The production process in relation to the quality of public spaces

As shown in Figure 5.4, the quality of public space is affected by two factors, which are the position and design of the project before the construction and the maintenance of the space after it's released to the market. As discussed in the previous section, the position and design of the project are mainly controlled by the developers, while the planning office only controls the direction of the urban development on a larger scale. In terms of the maintenance of the public space, the developers stated that maintenance is the most important factor in enhancing the satisfaction of the use of the public space.

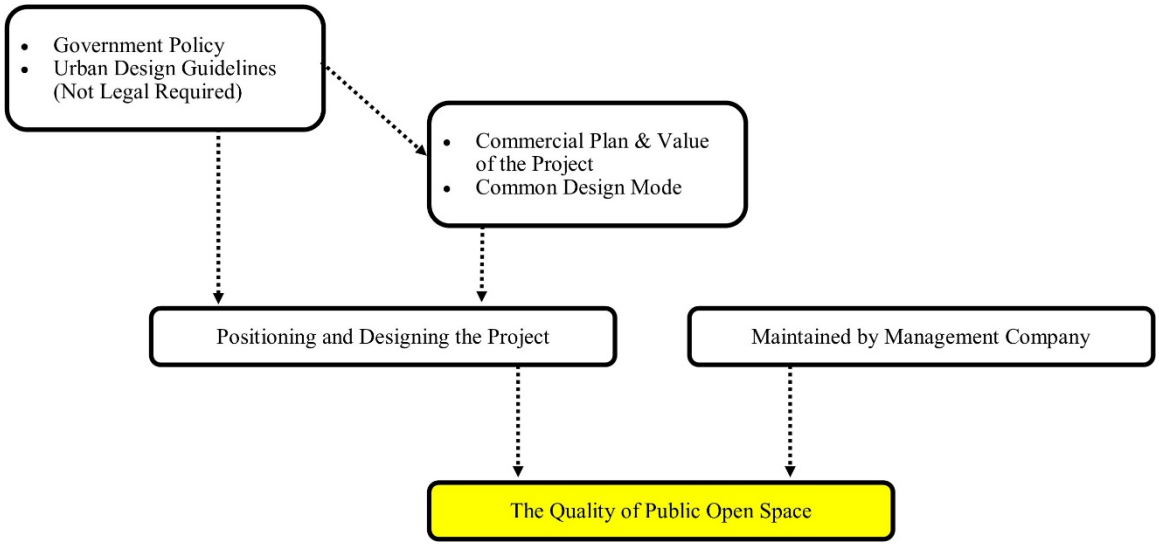


Figure 5. 4 Key factors affecting the quality of public open space

5.3 Interests of urban actors in relation to public spaces

5.3.1 Controllers

Planning and design legislation and regulations mainly focus on the large-scale development agenda (refer to interview with planner in Appendix B). At neighbourhood level, it only requires the fundamental aspects of architectural design, public facilities and greenery to be considered (refer to interview with planner in Appendix B). In terms of spatial design, there are no legal design guidelines for evaluating the morphological form and spatial layout (refer to interview with planner in Appendix B). The users and consumers tend to rely more on the enclosed community rather than open neighbourhoods (refer to interview with planner in Appendix B). However, the planning officers disagree, and they suggest it would be preferable for the community to focus more on an open spatial design rather than one which is enclosed by walls as the former would be better for transportation and accessibility because the contemporary neighbourhood developments in Beijing usually create large enclosed blocks, which create accessibility issues and inconvenience in relation to transportation. Therefore, a

smaller scale enclosed or a larger scale spatially open community could enhance the accessibility.

5.3.2 Developers

As discussed in the previous section, the quality of public space provides additional value in neighbourhood developments. In order to maximise profits, the design needs to achieve the maximum building capacity and spatial layout design, and minimise the public facilities and the quality of the public space, such as meeting the standard of 30 per cent greenery within each development (China Housing Industry Association Building, 2009), and providing essential facilities. In addition, based on the dramatically increased accommodation needs in Beijing, the quality of the public space design is not a priority in terms of market demand (refer to interview with developer in Appendix B). Therefore, the developers do not consider the quality of public space design to be of interest in their projects.

5.3.3 Users

The legislation and regulations around residential community development have required fundamental public facilities to be provided (e.g. greenery and health centres), therefore, the consumer focus has moved to the location, having access to good schools in the region, transportation and commercial facilities (refer to interview with developer in Appendix B). Thus, the quality of public space inside the community is not the main driving force for consumers.

5.4 Theoretical comparison between conceptual framework and city level analysis

In this section, Table 5.1 concludes the city level analysis in terms of local responsiveness in public open spaces in Beijing. A comparison is carried out between the

theories identified in conceptual framework and the reality in contemporary city in order to identify how public space has adapted changes of needs and interests from political, economic and socio-cultural actors through transformation.

Table 5. 1 The situation in reality in city level analysis compare to theories in conceptual framework. Source: author

Components in Conceptual Framework		In Theories in Conceptual Framework	The Realities In City Level Analysis
Political Responsiveness	Government Policies and Regulations	The government policies and regulations are developed in order to ensure the private sectors deliver plans or design that serve and correspond to the public interests as well as the political and economic development goal (Carmona et al., 2010; Garreau, 1991; Brand, 1994) (Details refer CH2, section2.1.3).	Under pressures of increased population and national economic development goal, the city level development policies and regulations has minimised the socio-cultural consideration, and made compromises in order to achieve economic development goal. Therefore, since the Chinese economic market have been opened, the high-density housing types from developed countries such as United States has been applied without local socio-cultural adaptations (Details refer to CH4, Section 4.1.2).
	Public Consultations	On one hand, any strategic programme, plan or policy has	Generally, the ways of public consultations and engagement

		to be delivered through a consultative process incorporated by all local stakeholders to ensure the sustainable development (Lafferty, 2001; UNCED, 1992); while on the other hand, it is a way of democratic participation to exercise public rights in the development process (Blowers, 1993; Healey, 2006). Therefore, the success of progressing plans and policies should involve both top-down and bottom-up approaches (Carmona et al, 2010) (Details refer to CH2, Section 2.1.3).	are processed by a] arranging exhibitions of city development plans on site or on internet in district or city level developments; b] arranging discussions with representatives of communities and other stakeholders in district or city level development; c] setting up a government office mailbox that receive the comments, information and feedbacks from citizens in district or city level project. However, all actions are focus on large scale developments or regeneration projects instead of regular residential developments (Details refer to CH4, section 4.1.3).
	Political Ideology	Political ideology is a 'set of beliefs about the proper order of society and how it can be achieved' (Erikson and Tedin, 2003, p.64; Adorno et al. 1950; Campbell et al. 1960, 1965; Kerlinger, 1984). It can be seen as a shared framework of mental model that provide both an	The political ideology cannot be seen directly in the city level development, but it covers all socio-cultural and economic development through the urban transformation and growth. It is a fundamental basis that build up people's cognitions, interpretations and preferences, which form local economic

		interpretation of the environment and a prescription on how to structure the environment (Jost et al., 2008) (Details refer to CH2, Section 2.1.3).	development, socio-cultural formation, structure of social network and relationship. When the political ideology changes, socio-cultural formation, structure of social network as well as social relationship will followed, then the economic formation will be reformed (Details refer to city level analysis in CH4).

Economic Responsiveness	Economic Ideology	The urban space should be created as a neutral container for economic and social activities, and the public open space as products are processed based on the economic ideologies (Kashef, 2008). In the meantime, the government policies should maintain the balance between economic growth and socio-cultural needs in both urban space productions and city developments (Carmona et al., 2010; Healey, 2006) (Details refer to CH2, Section 2.1.4).	Due to increased economic development demands since Post Reform, the power of real estate developers has dramatically increased compared with early socialist era (Details refer to CH4, Section 4.2), despite the developers see their roles like an inter-mediator responsible for interests and proposals from different urban actors. However, based on large housing demands, the focus of socio-cultural needs is mainly considered in general scale such as gated community, green spaces, floor layout of each apartment, and parking spaces. More importantly, public spaces have not received similar emphasis and value as the aspects mentioned previously (Details refer to CH4, Section 4.2 and 4.3).
Socio-cultural Responsiveness	Identity	Place identity can be understood as a key concept for making responsive places for human beings (Waston and Bentley, 2007). It can be seen as the set of meanings	The local socio-cultural inheritance of the development of urban spaces has been transformed by changes of political ideology, and in the contemporary city under global

		attached to the multi-sensory process of inhabiting a place, which create 'sense of belonging' and 'sense of rootedness' for delivering place responsiveness as well as sustainability in design (Carmona et al, 2010; Lovell, 1998).	influences, it has been compromised due to priority given to economic development, resulting in the original identity being replaced by modern global lifestyle.
	Vernacular Architecture	By giving a town or city as well as a space or place strong sense, vernacular buildings and architecture can be seen as a physical responsiveness to socio-culture context (Porter, 1982; Lange, 1997; Moughtin et al, 1995). It presents as two-dimensional spatial structures and layout and three-dimensional vertical scales and façade, which is responsive to the socio-cultural needs, preferences and notion (Oliver, 1986,2000,2003,2006).	The original imperial plan was regenerated and replaced by modern western learning plan. Except for historical conservation areas, new developments were mostly influenced by western style, with high density building plans for adapting to dramatically increased housing demand led by population growth.
	Lifestyle	Lifestyle is the outcome of choices which lead to the	The local world view is formed by political-social ideologies; the

		specific activity and activity system in given locations (Rapoport, 2005). In the meantime, the lifestyles is affected by the local value and preferences expressed through ideas, images, schemata, and meanings under local world view and global influences (Rapoport, 2005).	value is influenced and formed from local political-social formation to the market and driven by global multi-culturalism. Therefore, the choices of lifestyle are passively affected by market and global influences.
	Social Cohesion	Cohesiveness is considered an attribute along with other processes operating within and between small groups (Hogg, 1992). Social cohesion relates to the members of a group who share emotional and behavioural characteristics with one another and with the group as a whole (Bruhn, 2009). The social cohesion is understood by providing 'social space' that people could engage in various forms of socio-cultural and economic exchanges (Carmona, 2010). Also, it contributes to their identity	The social network and social connection are formed by transformation of political ideologies, then changed under global economic influences and modern import design due to increased housing demand as well as population. Therefore, it is not the space design based on traditional social network and social connection, but the local socio-cultural needs are adapted by imported design concepts and philosophies due to political and economic responsiveness. This is the reason why the traditional space is replaced by modern

		and sense of place by in order to fulfil different social and economic requirements in the production of urban environment (Verma, 2011; Tonkiss, 2013).	developments.

Conclusion

Chapter Four and Five have analysed the morphological transformation of Beijing at city scale from political, economic and socio-cultural perspectives, and the roles of each urban actor have been identified as well as their interests and responsibilities.

As a result, the lack of consideration of socio-cultural issues has threatened the local identity and cultural traditions, and, more importantly, people's local interpretations, their world view, their notions and lifestyles have been continually changed throughout the development process, which has led to social traditions and cultural identity being lost or partly discontinued. In addition, social relationships as well as ways of interacting and activities have changed or adapted according to global modern design. Therefore, in relation to residential developments or projects that are mainly driven by developers, consumers only have very limited influence on the designs and plans. Meanwhile, in order to achieve economic development goals, policy-making bodies only impose very minimum requirements in terms of the quality of spatial design, such as fire access, a minimum greenery coverage rate etc.

The analysis of chapter four and five only focuses on the city level. The different types of neighbourhood will be analysed in Chapters Six, Seven and Eight in order to understand a] the qualities of public open spaces from users' perspectives; and b] are there

transferable lessons from traditional urban areas which can enhance the quality of urban life in contemporary urban developments in the following chapters.

Chapter Six - Qian Yuan'en Si Living Zone, a Historical Residential Neighbourhood

Introduction

In order to answer the research question 'what kind of urban spaces and urban design qualities contribute to the development of local public life in Beijing?' the objective of Chapters Six, Seven and Eight is to use the conceptual framework and the methodology to analyse and identify how public spaces respond and adapt to usage, activities and experiences attached to different neighbourhood in Beijing.

The research strategy (Chapter Four and Five) established two levels of analysis, one at the city level and the others at the neighbourhood level of specific urban areas. Chapters Six, Seven and Eight are orientated towards accomplishing the second level of the analysis (section 3.4.2.2). In terms of the neighbourhood-level study of specific urban areas, there are two parts included. First, in order to answer the second research question ('are there any transferable lessons from the traditional Chinese urban areas which can enhance public life in contemporary urban spaces?'), the first two neighbourhoods analyses (Chapters Five and Six) will be analysed as learning cases to identify local responsiveness in public spaces, and what lessons are transferable. Second, the third neighbourhood (Chapter Seven) was selected to represent a typical residential community to identify how to improve the local responsiveness of space design in contemporary developments.

Using the conceptual framework and the research methodology developed in Chapters Two and Three, the analysis starts with, firstly, investigating how morphological layers

of the case study area transformed from its original design to contemporary circumstances, adapting to the transformation of identity, vernacular architecture, lifestyle and social cohesion, based on political, economic and socio-cultural influences. By applying analysis of metal mapping collected from site survey, typologies of public open spaces are identified, and morphological analysis is carried out in order to understand how physical settings respond and adapt socio-cultural usage, activities and interactions in different types of spaces based on political and economic impact on contemporary conditions.

Secondly, local perceptions are analysed in order to identify the level of local responsiveness in terms of using of public open spaces by carrying out qualitative questionnaires with local inhabitants.

Thirdly, a comparison between conceptual framework and findings of analysis is carried out in order to identify the differences and commonality between theories from conceptual framework and realities from neighbourhood analysis.

6.1 Urban transformation in relation to local responsiveness of public open space

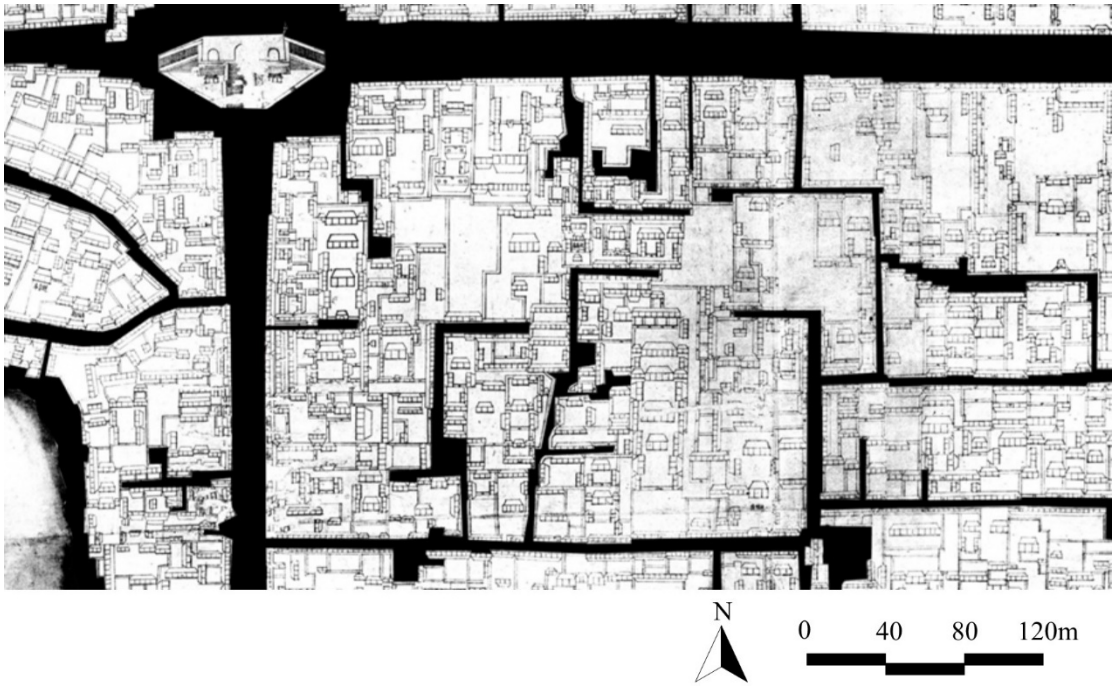
6.1.1 Morphological transformation of the neighbourhood

In order to understand the meanings associated with the public use of public space, the transformation of socio-spatial patterns need to be studied through urban development, which is affected by political, economic and socio-cultural factors.

6.1.1.1 Spatial Layout

The neighbourhood came into existence during the Ming dynasty. It was mainly developed during the Qing dynasty in terms of its morphological tissues. During the Qing

dynasty (Figure 6.1), the neighbourhood was mainly used for government institutions and government owned workshops. Due to the strong responsiveness to the political control of the city (section 4.2.1), the road network within the neighbourhood was characterised by one-way roads (cul-de-sacs) designed to have one entrance accessible to the hutong from the main streets, but all hutongs ended inside in order to maintain a high level of privacy.

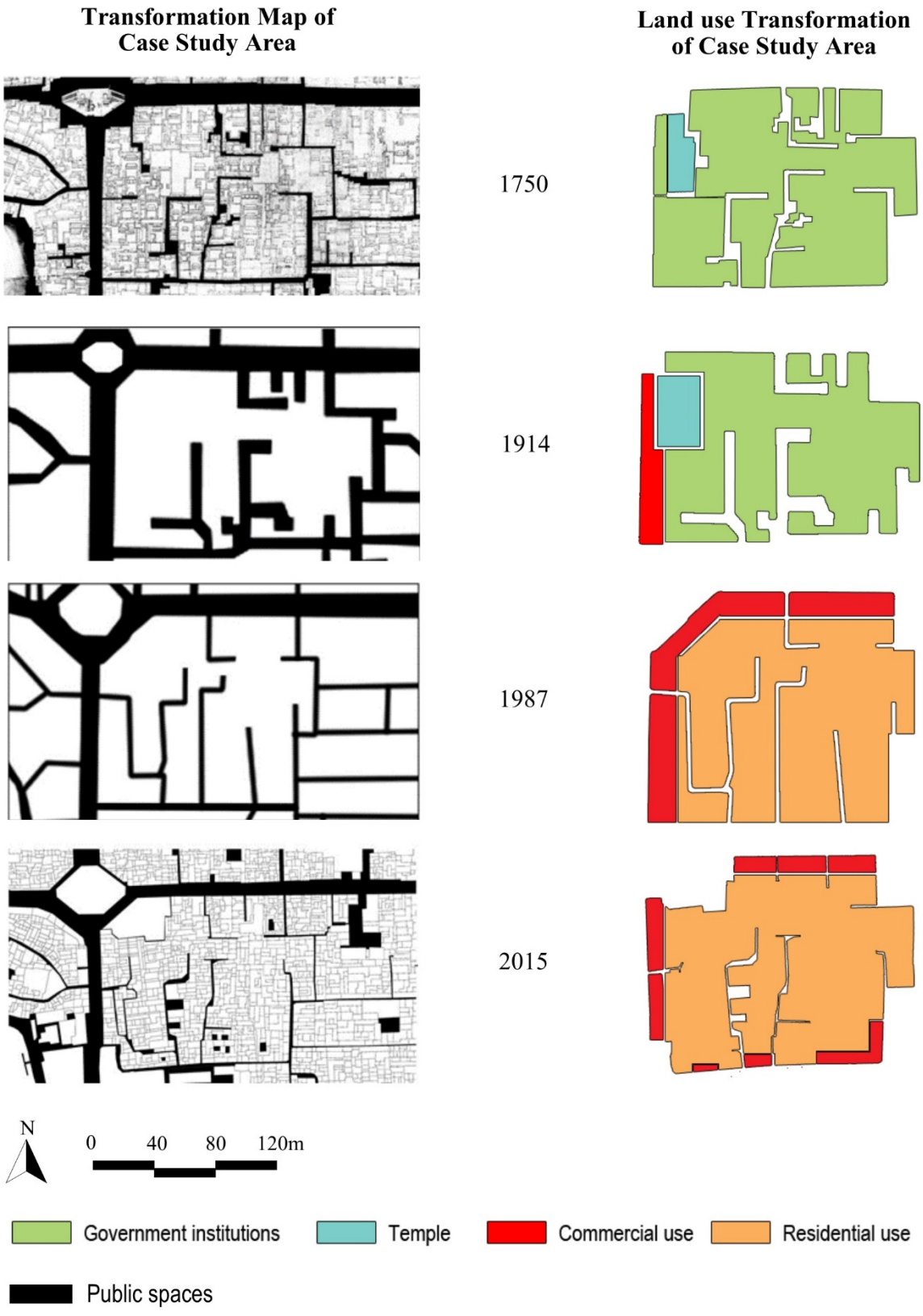


Firgue 6. 1 Neighbourhood in 1750. Source: author

During the late Qing dynasty and the beginning of the socialist period, political power was the main influence on the neighbourhood. The population density in hutong slightly increased due to immigrations from different countries by World War I, and the city was divided into several control areas, and managed by different country (Weng, 2017). Therefore, the traditional economy was altered by local political forces as well as new foreign culture, which meant that the economy was not only represented as Shi in settled locations in the city, but commercial streets were formed due to the changing needs as well as transformation of the formation and structure of society (for details, refer to section 4.2.1).

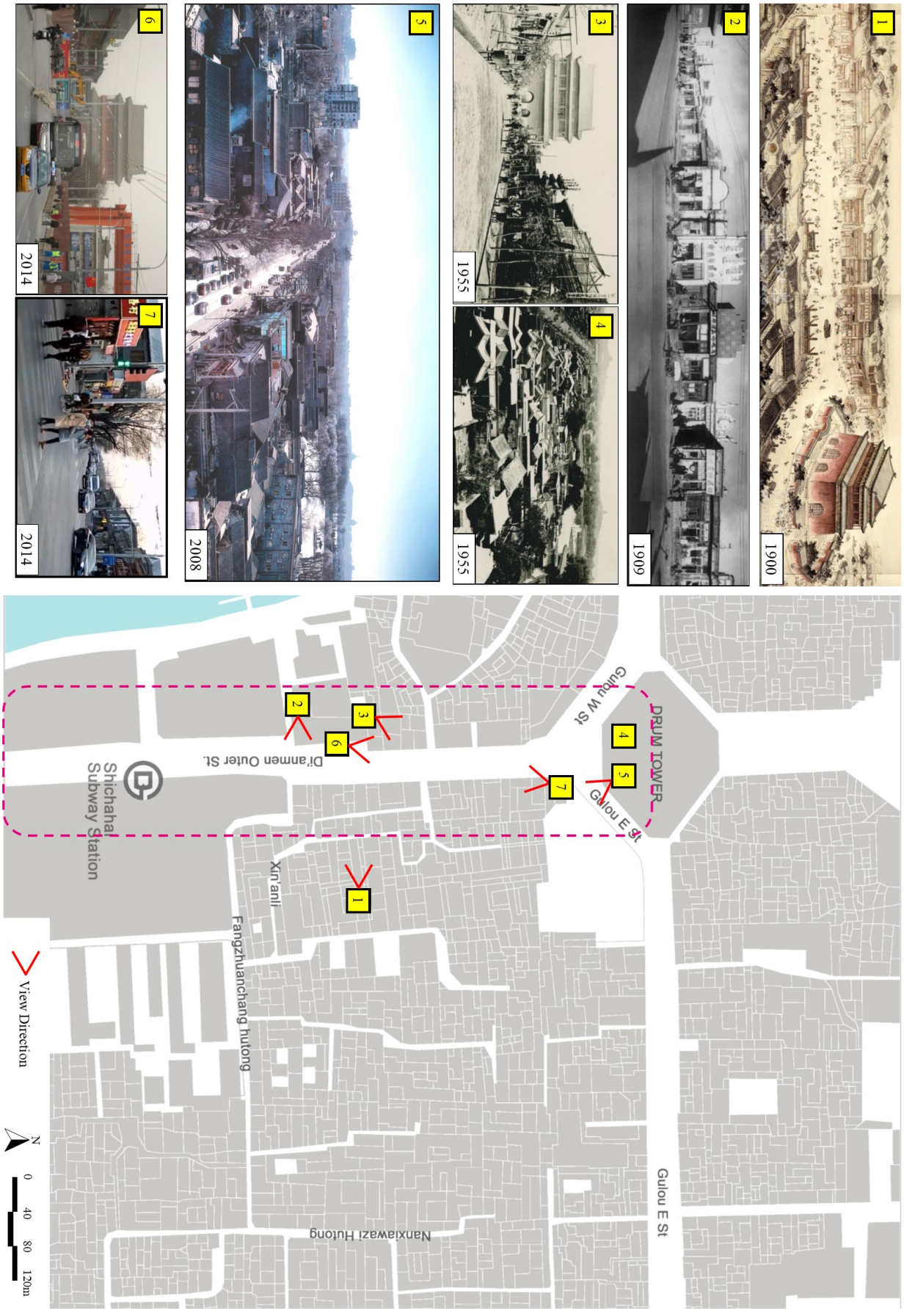
The significant transformation of the neighbourhood started during the Communist period (Figure 6.2), as discussed in section 4.2.2, when there was a movement to remove the 'Four Old' and the population dramatically increased, and therefore, the function of the neighbourhood completely changed from institutional and residential use to mostly residential use by adapting to the changes in the political and social environment in order to respond to political needs. Thus, the housing types and hutong network were regenerated (refer to section 4.2.2).

Before the Post-Reform period (1970s), due to population growth, the work-unit based social structure and resources allocation had had a serious effect on property allocation, so a movement to reform the political, economic and social structure was formed. However, before the City Planning Law of People's Republic of China (1989) was enacted, due to the dramatically increased population, the neighbourhood grew organically in order to meet the enormous demand for living spaces. Meanwhile, during the transformation process, economic influences started to play an important role because commercial needs increased due to population density growth as well as the cultural effects from globalisation, which meant the area started to engage with urban growth in a complex way (Figure 6.2).



Firgue 6. 2 Morphological transformation of the neighbourhood. Source: author

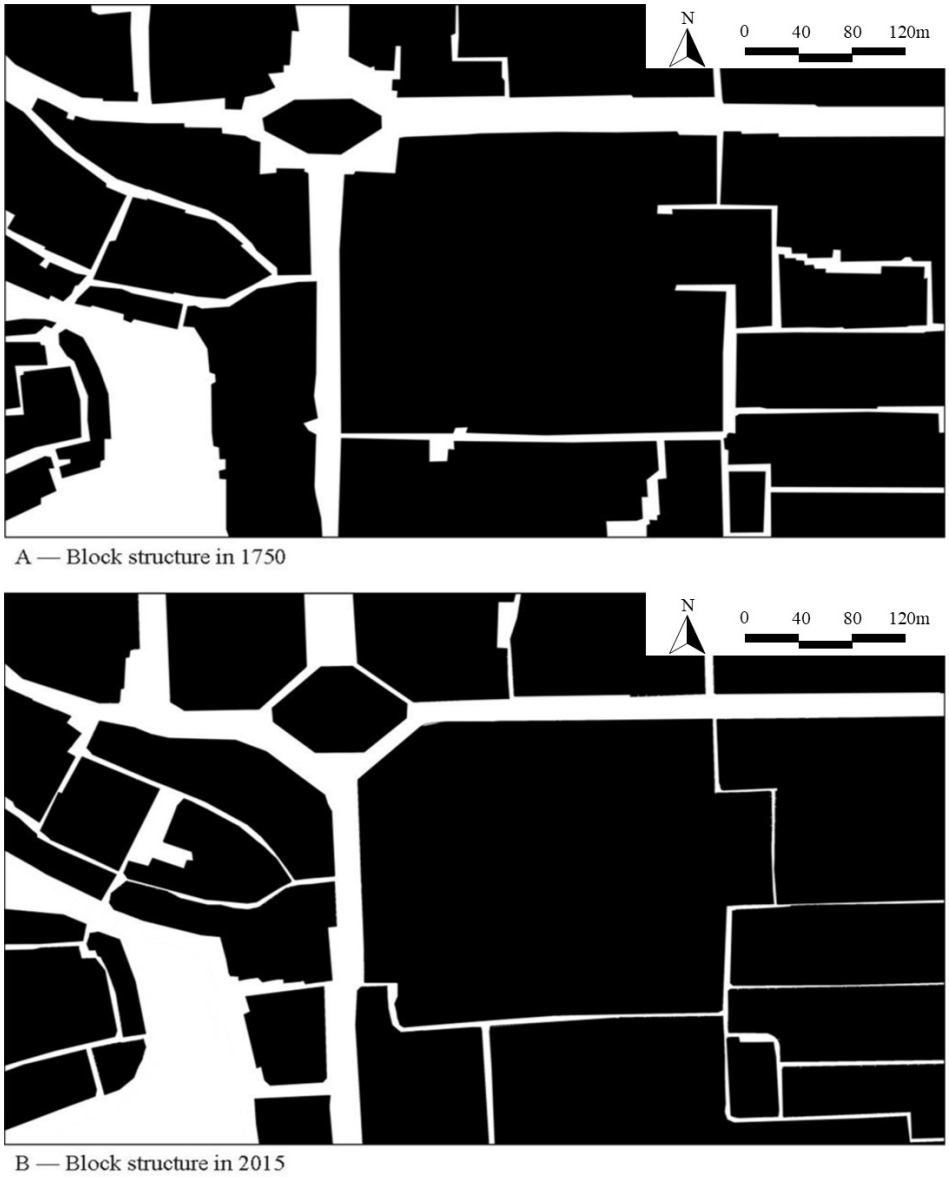
In this morphological transformation process, the main driver of changes in socio-spatial pattern was the shift in formation of the economy from a politically-controlled to market-driven mechanism. Although, horizontally, the original fabric can still be recognised in the current urban tissue, vertically, the building facades and high-rise plots show the dramatic changes (Figure 6.3 and further discussion is carried out in section 6.1.1.3, and Figure 6.1.2.2).



Firgue 6. 3 Street view through urban transformation. Source: author

6.1.1.2 Block pattern

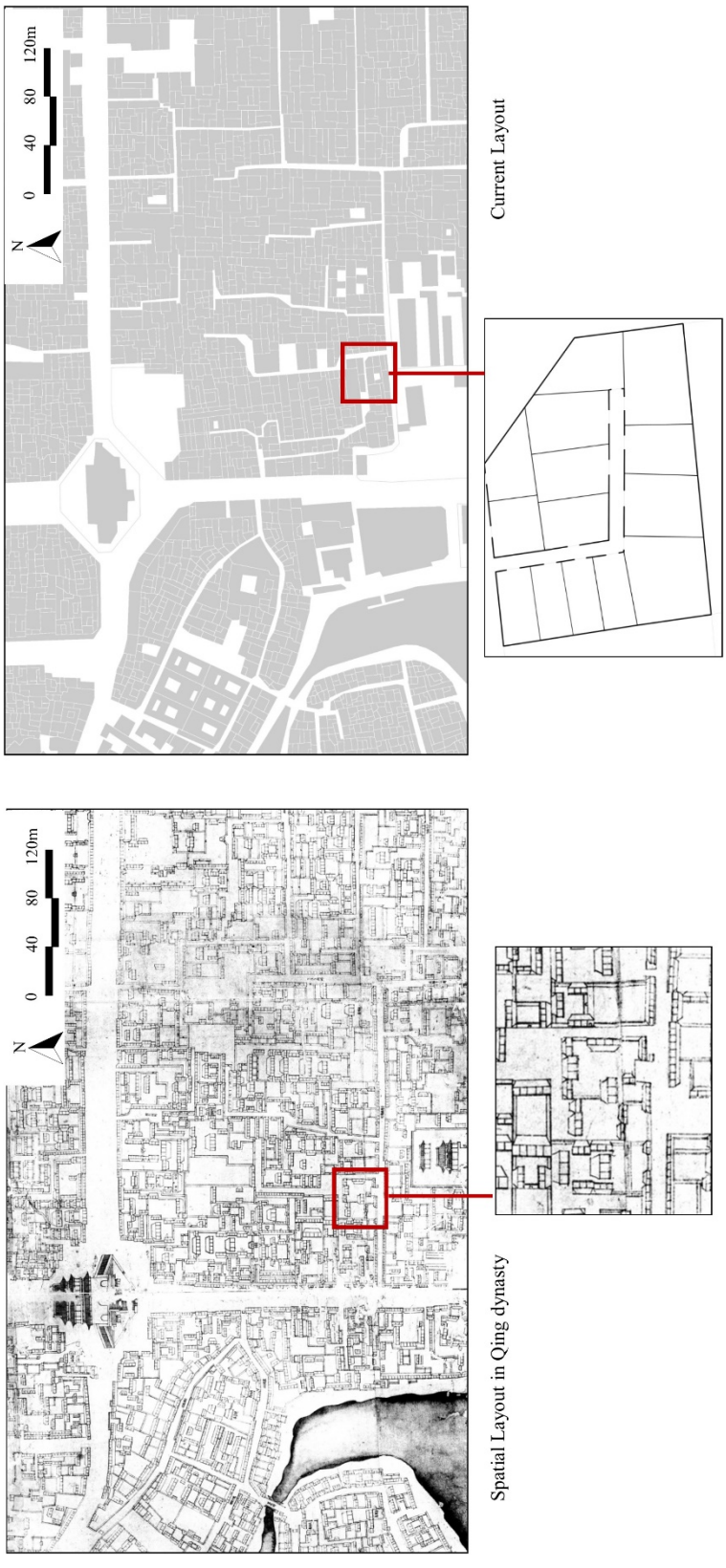
During transformation process, while block pattern changes were not obvious from the figure-ground maps in Figure 6.4, the land use has changed (Figure 6.2). The design of the original block pattern was mainly based on political needs; therefore, the sizes and shapes of the blocks followed politically-driven physical limitations, and the function of the land use.



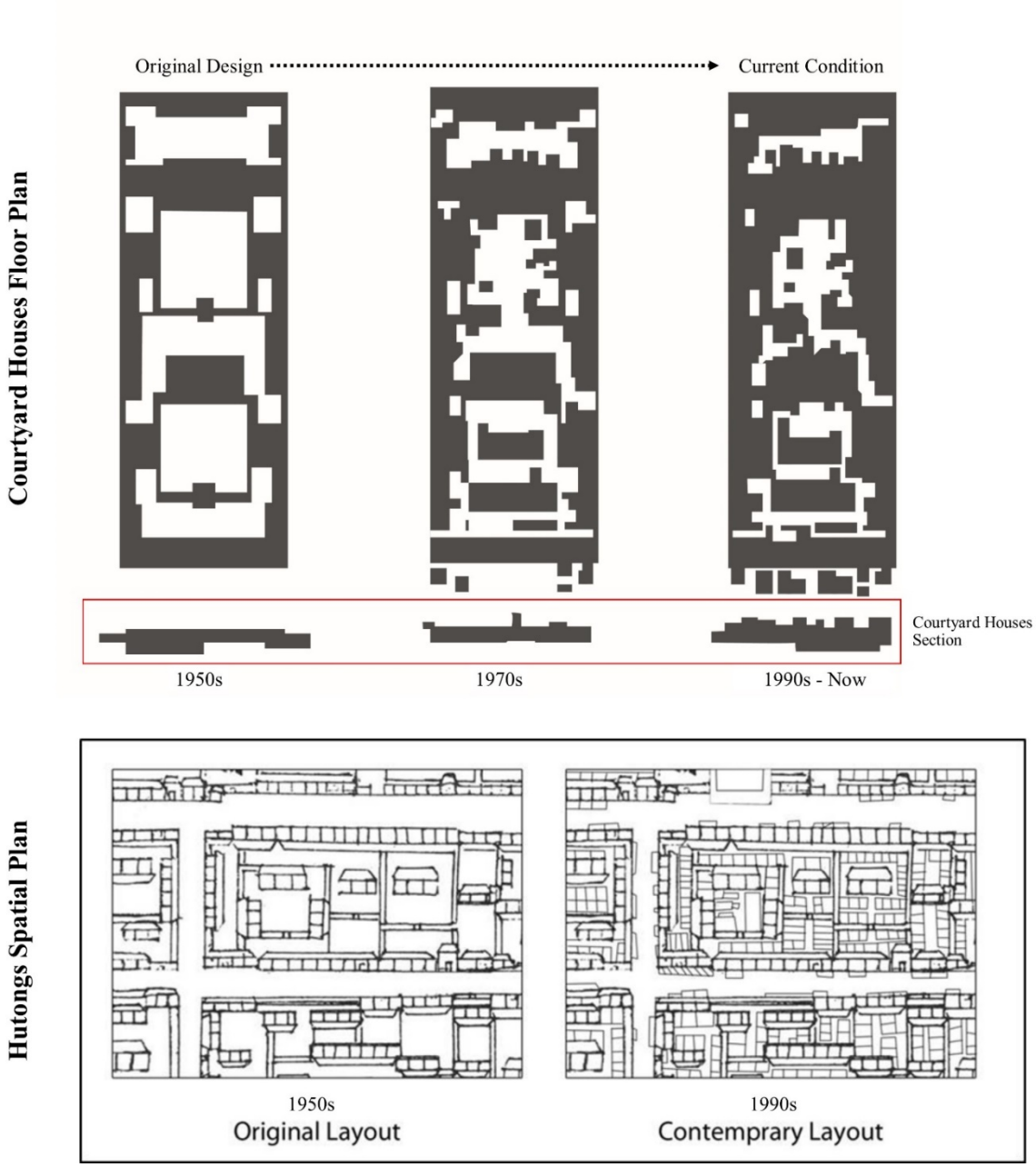
Firgue 6. 4 Block structure through urban transformation. Source: author

6.1.1.3 Plot pattern

Due to the influence of political responsiveness through social adaptation to economic market-driven urban development, the plot has undergone major changes in physical layout in order to respond to the rapid population growth (details refer to section 4.2.2.3). As presented in Figure 6.5, the original plots took up a large area for the use of government institutions, workshops and noble families. Each plot was designed to include different functional buildings and private spaces between buildings. As discussed in section 4.2.2, with the dramatic population growth during the Communist period, a large number of people moved into the area and the plots reformed into smaller formations. This situation continually worsened until each plot became a series of fully fitted smaller plots within a larger plot. As Wu (1992, 1999) stated, the traditional courtyard house type was the product of a particular historical situation; it no longer properly served contemporary living requirements in China. As a consequence, the transformation turned traditional courtyard houses into 'chaotic-yard' and then into 'chaotic-no-yard' houses (Figures 6.5 and 6.6).



Firgue 6. 5 Plot transformation i. Source: author based on Li, 2007



Firgue 6. 6 plot transformation ii (Not to Scale). Source: author based on Wu, 1996

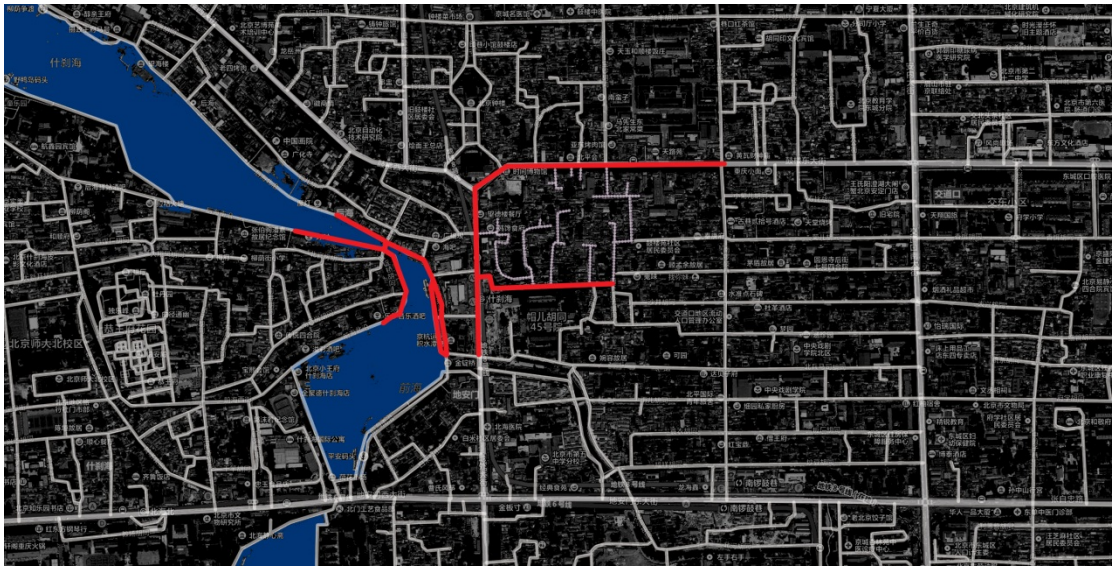
On the other hand, as a result of land use change and population density growth in courtyard houses, the traditional private plot turned into shared formation and the private space turned into shared space. This interesting consequence of the 'chaotic-no-yard' houses was that the physical limitations of the plots provided rich opportunities for social interaction among the fully occupied families who lived there. The original courtyard

house designs aimed to provide a high level of privacy to families, and the main interaction was only between family members living in the same courtyard house. The hutongs were mainly for access purposes only. However, when courtyard houses became 'chaotic-no-yard' houses, the internal shared space was available to different families and it provided extra room for families to extend into as their family grew, and so the space gradually became limited. Therefore, social interaction and activities moved from inside the plots to the hutongs, which was the reason why hutongs became essential extended living space for residents (Figure 6.7). The details will be discussed in the following sections from a topological view point as well as from a user perspective in order to identify the adaption of the space for socio-cultural responsiveness.

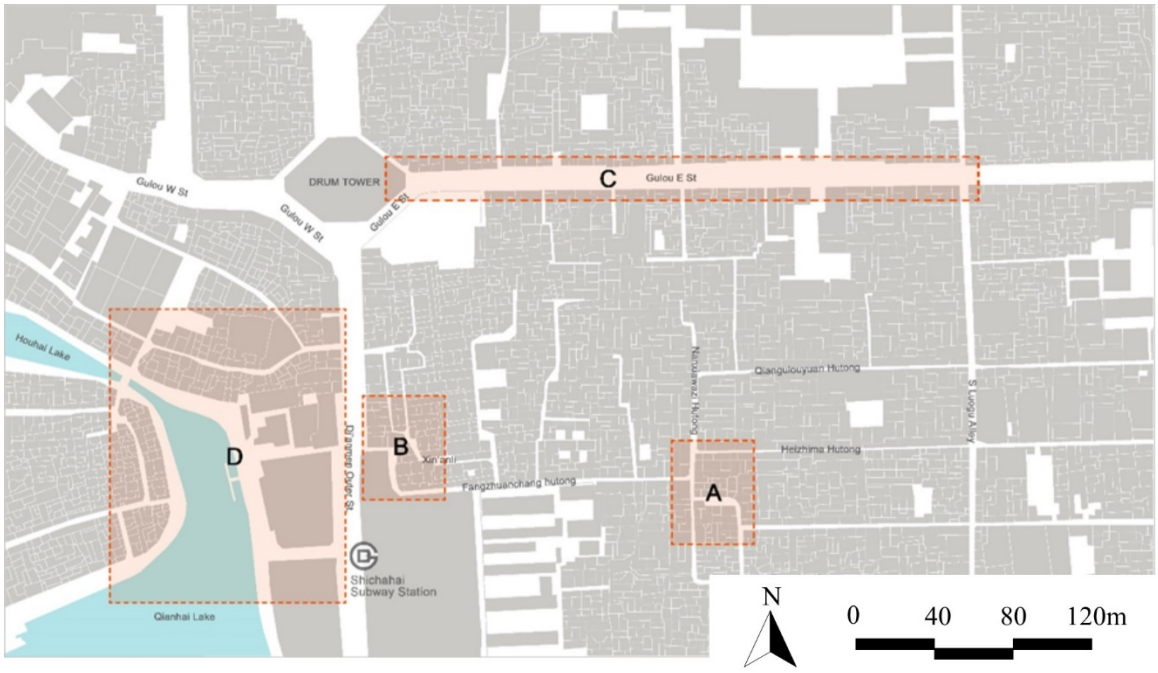
Firgue 6. 7 Example of activity in hutong – residents chatting while eating meal in hutong. Source: author

6.1.2 Typologies of public space in a historical living zone

Based on the visual survey, mental mapping and questionnaires, four different typological public spaces have been identified (Figure 6.8 and 6.9). These spaces were defined as the most commonly used and enjoyable spaces by users, which represented their different demands in terms of the use of public spaces and the meaning behind them. This section is structured in two parts. First, typologies of public open space, and second, typologies of buildings.



Firgue 6. 8Mental mapping from participants. Source: author



Firgue 6. 9The most commonly used spaces identified by residents. Source: author

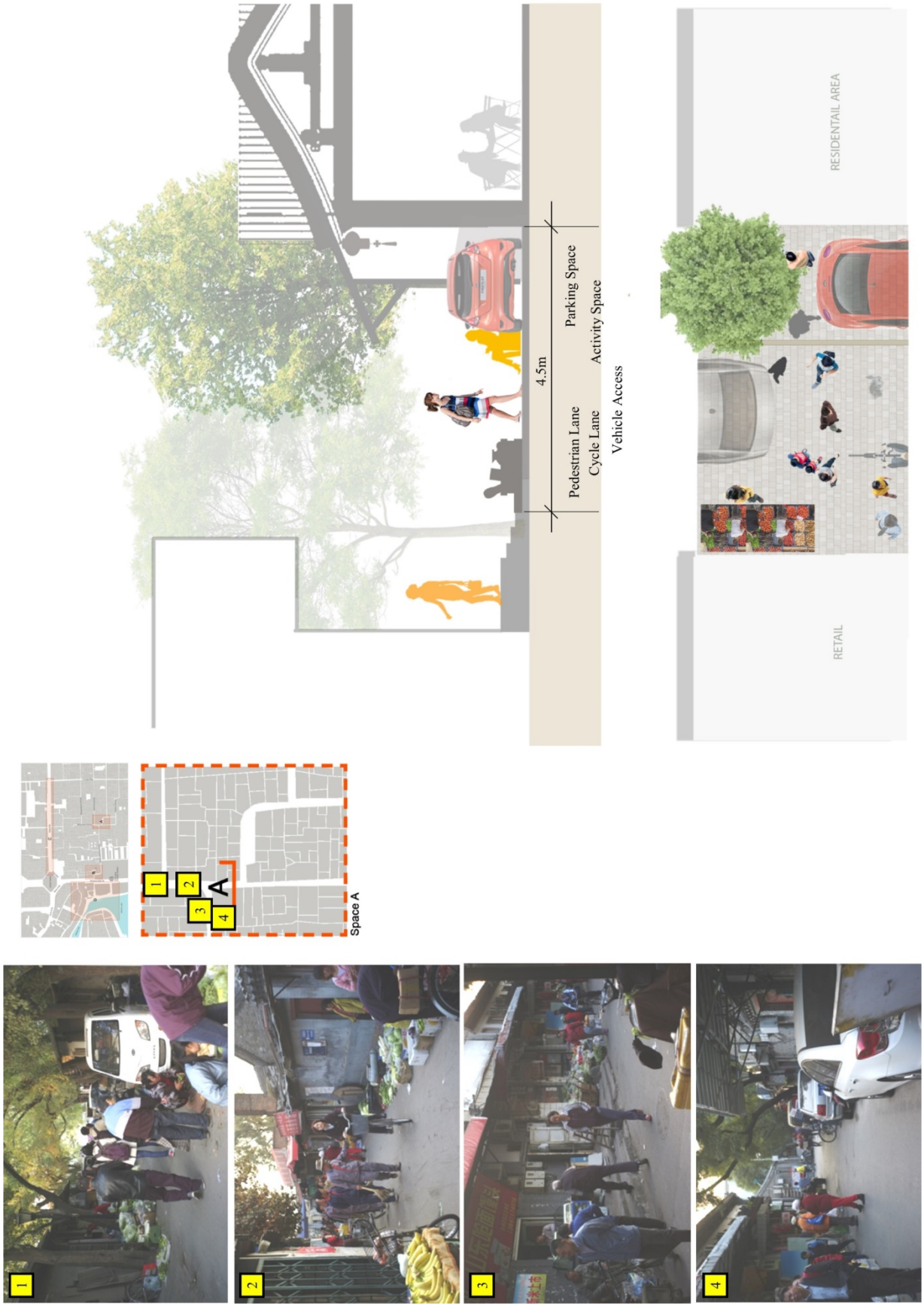
6.1.2.1 Typologies of public open spaces

6.1.2.1.1 Space A – commercial activities based space

Space A (Figure 6.10) is the local community centre, located at the corner of Nanxiawazi Hutong and Fangzhuanchang Hutong. It has a daily market in each morning and evening which sells essential vegetables and food. Several local small restaurants and the public baths also provide basic services for the community.

As the scale section shows (Figure 5.10), the road across the community centre is around eight metres across the widest area, which include interaction area for the shops, social communication by the residents, vehicle access and pedestrian movement, and a street parking area; while the narrowest area is around five metres wide, but it supports the same activities.

The photos presented in Figure 6.10 clearly illustrate the variety of commercial activities which maintain traditional way of trading formation as local identity, and meanwhile, highly responsive to local preferences and choices as well as daily commercial and social needs in lifestyle. In addition, shop front and vendors create an attraction for social connection and cohesion which enhance the social interaction. Furthermore, the mature trees create a good level of transparency as well as shade from the micro climate. However, parking causes some issues for activities for blocks on one side of the hutong and may create some safety issues for pedestrians. Moreover, cleanliness is another issue as the photos (particular photo 1 and 2) show that the environment is not as tidy as a residential area should be. In conclusion, the space is highly responsive to various commercial activities as well as socio-cultural needs to form a strong local identity, and commercial services have created positive appeal for users, which makes the place set to become one of the most important nodes in the whole residential area to support local lifestyle. However, cleanliness and traffic safety are the main issues in the place.



Firgue 6. 10 Space A plan, section and photo examples. Source: author

6.1.2.1.2 Space B – Social activities based space

Space B (Figure 6.11) is linked with a narrow pedestrian entrance to the community, and there are no major public facilities built to serve residents. The hutong (space B) is a narrow access alley for two of the hutongs in the community, and it is about 7 minutes walking distance to the community centre.

In the hutong section (Figure 6.11), there is physical diversity presented in the space, which multi-storey modern buildings and traditional courtyard houses line both sides of the alley. Therefore, the building types as well as the height and living conditions create a visual and psychological contrast for users. In terms of the space boundaries, there are some self-extended buildings which have taken over some public areas in the hutong. Meanwhile, because of the hutong is only about 4 metres wide, there is not enough space to construct more extended buildings; therefore, some spaces next to the wall have been taken and used to build storage.

The reason why Space B has become one of the most commonly used spaces for the residents, is not due to the effects of the physical setting or public facilities, but is due to social responsiveness. As shown in Figure 6.11, the shop owner provides facilities such as tables, chairs and games equipment, which attracts other residents to join in with recreational activities and, while in the process of entertaining themselves, the residents may display more consumer behaviour by purchasing from the local business. As both the consumers and the business owners are local residents, the process of interacting effectively increases the social connection between residents, which may be seen as an example of success in relation to adapting narrow spaces for social activities to improve the socio-responsiveness of hutongs.

As the physical layout of this space is not well maintained and designed for social activities and interaction. However, the local notion in the way of running local business has played important role in social cohesion, which provides opportunities for social interaction and activities to form an identity that makes the space become a lively place as well as form a type of lifestyle in choice of using the space.

Firgue 6. 11 Space B plan, section and photo examples. Source: author

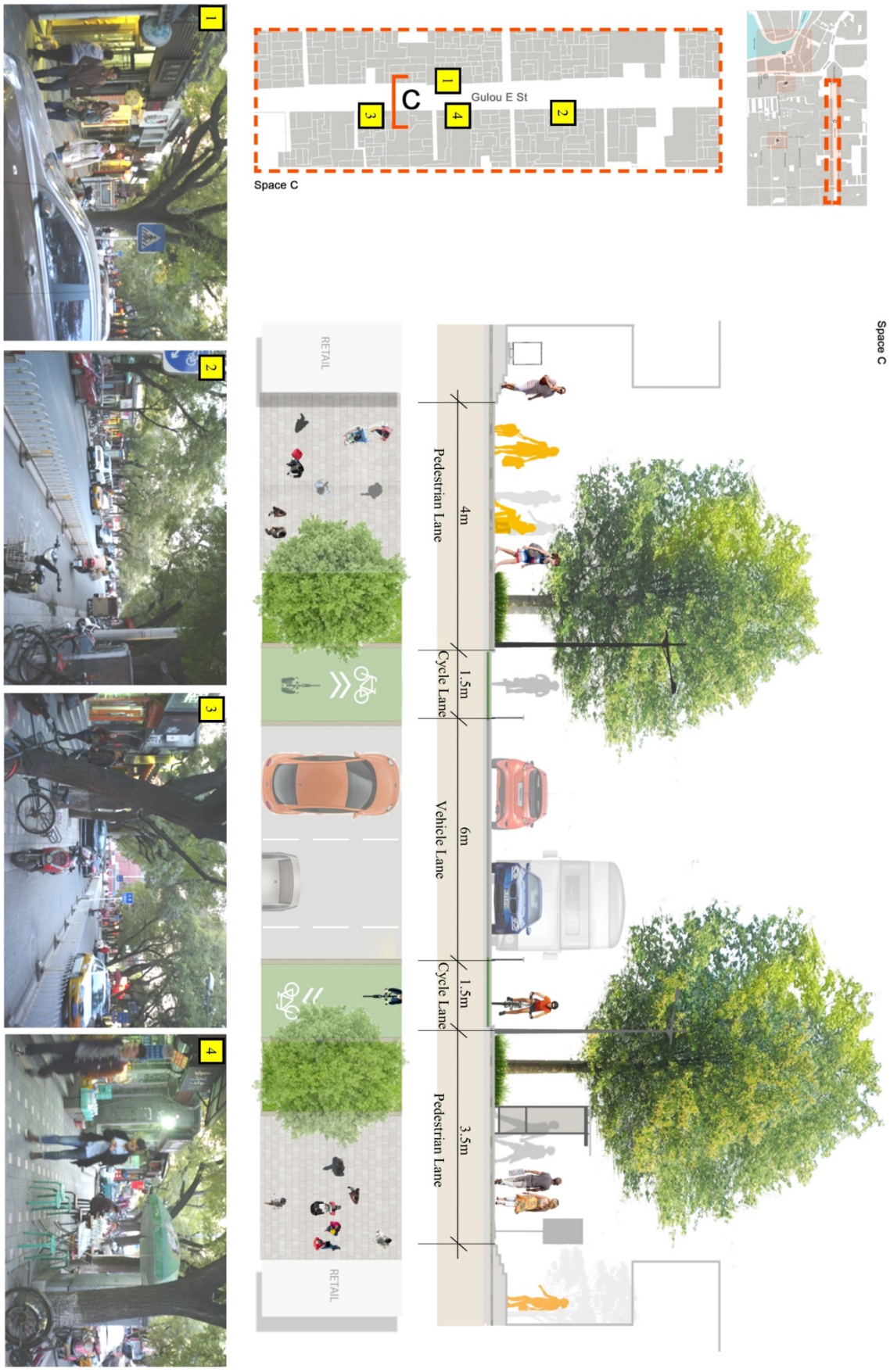
6.1.2.1.3 Space C – Shopping and communication space

Space C – Gulou East Street (Figure 6.12) – one of the main streets in the area, which has various commercial shops and restaurants along both sides of the road. Several bus stops and bus routes pass through the street, which provide convenient public transportation links to the city. In terms of the spatial layout, the road network has been regenerated based on the original hutongs, which has retained a grid network layout in order to maintain the sunlight and wind flow to keep people comfortably warm or cool depending on the micro climate (Theories refer to section 4.1.3).

From the street section, one can see (Figure 6.12), double vehicle lanes and independent cycle lanes for both directions, which are 16 meters wide in total, which comprise three meters for each vehicle lane, two meters for each cycle lane and three meters for each of the pedestrian areas. Single storey traditional converted buildings on both sides of the road enclose the space, and mature trees provide a clear edge for the pedestrian areas and the mobile lanes. The leaves of the trees provide a good level of transparency to the sky as well as shade for pedestrians in summer, and create a good sense for the public space as well as present local identity in traditional shopping street.

From the photos recording space C (Figure 6.12), the street maintains a clear spatial order, which has boundaries on the road to provide safety concerning bicycle riders as well as pedestrians (Figure 6.12, photo examples 2 and 3). The private chairs and tables outside the shops provide resting places (Figure 6.12, photo example 4), while encouraging consumers to browse and purchase goods, which addresses local lifestyle in commercial activities and improves social interaction in social cohesion. The shop fronts provide good transparency for presenting commercial products as well as lighting for pedestrians in the evening (Figure 6.12, photo examples 1 and 3). Mature trees provide cover from the sunshine in the summer to maintain a comfortable temperature for social and commercial activities and interaction. However, according to investigation in questionnaires (Appendix), the most important issue within space C is parking. It can

easily be seen in the photos that a) there are wide boundaries between the vehicle lane and the cycle lane. Although the purpose of this design is to create boundaries to try to keep bicycle riders and pedestrians safe and maintain a clear spatial order, the consequence is that there is no space for street parking, and there is even very limited street parking designed for the whole area (Figure 6.12, photo examples 2 and 3); b) Following on from point a), a number of vehicle owners have started to park their cars in any gaps between the boundaries and the corners of the road, such as bus stops and the entrances of the hutongs (the only areas with no boundaries) , which causes traffic issues at all time (Figure 6.12, photo examples 1 and 2); c) there are over ten bus routes across the road, with around 600 meters between bus stops, and an average three minutes per bus spent at each bus stop. Therefore, combined with the flow of private vehicles, this serious traffic issue creates pollution as well as noise problems all day on the streets, especially during peak times.



Firgue 6. 12 Space C plan, section and photo examples. Source: author

6.1.2.1.4 Space D – Leisure space

Space D (Figure 6.13) is the closest green space for the residential area, and it is the largest historical canal landscape area in Beijing, consisting of Qianhai Lake, Houhai Lake and Xihai Lake (Ji Shui Tan). Along the riverside, there are a large number of historical and cultural buildings and urban fabric. Therefore, the canal has become a popular tourist, leisure and commercial area in Beijing.

As shown in Figure 6.13, Space D is very close to the residential area and it is the only large green space available to the residents. According to the questionnaire (Appendix), over 70% of respondents use the space as the most enjoyable space. Most of them visit this area at least once per day for exercise and leisure activities (social activities).

Figure 6.13 shows that the landscape along the riverside is a no-vehicle zone, it only allows pedestrians and bicycles to enter and pass through. One side of the space is mainly historical buildings and commercial facilities, such as bars, restaurants and shops, while the other side is a riverside landscape.

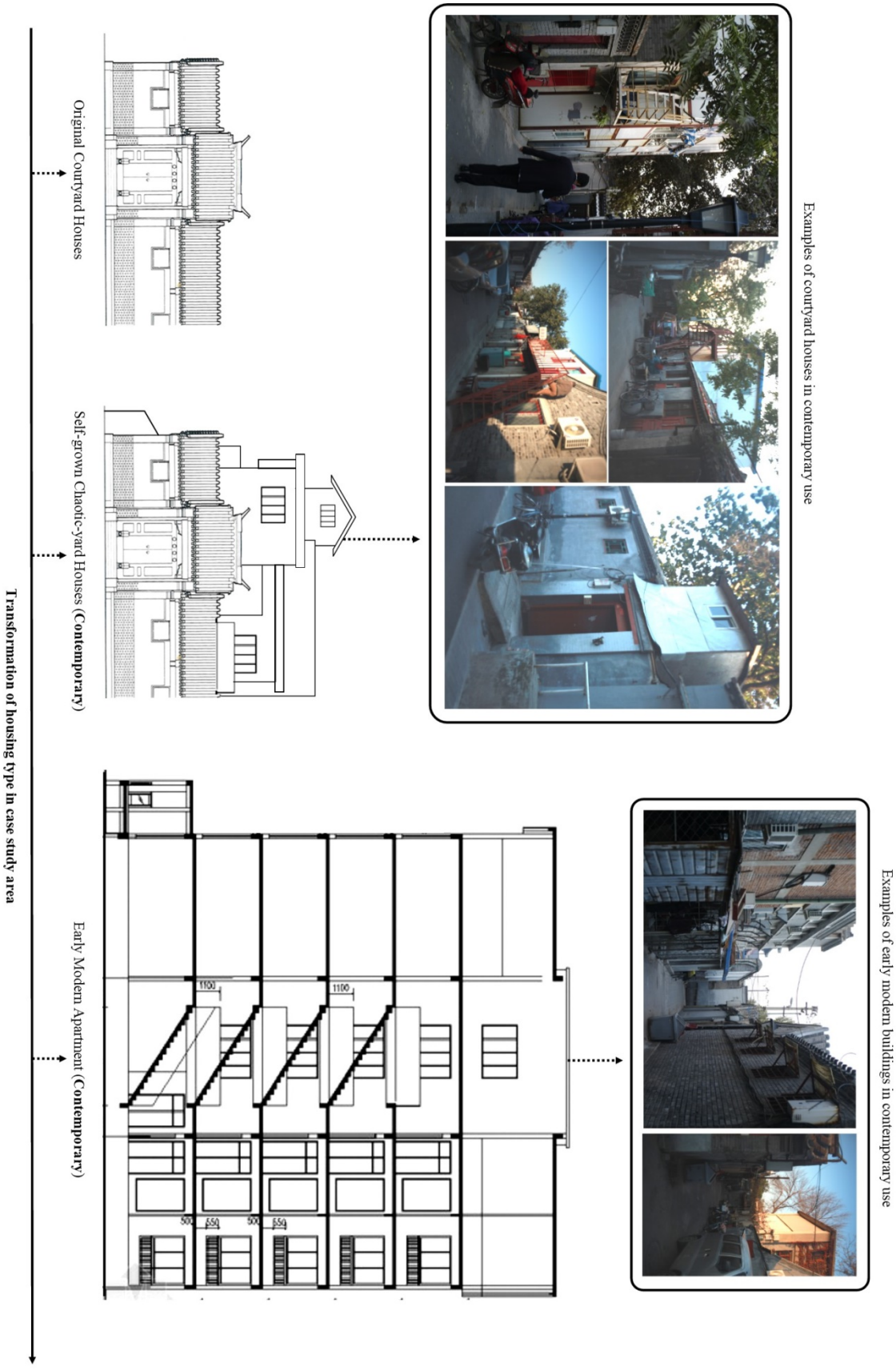
From the photo examples, one can see there is a large area of well-designed landscape which incorporates Chinese elements from traditional understanding of nature in social interaction as well as individual behaviours, enhances the local environment and provides local identity (Figure 6.13, photo examples 1 and 2). In the meantime, the open space allows a variety of social activities to take place at different times and also for celebrations which enhances the residents' enjoyment of the space not only from the natural scenery but also from social gatherings and cohesion. Therefore, the space is highly responsive to socio-cultural needs, and through the socio-cultural transformation that has taken place, it has been adapted for different activities and celebrations, including social activities as well as changes in the political and social structure. As the space has attracted more users, a variety of commercial enterprises has been introduced in order to satisfy the commercial needs of users, such as shared bicycles, snack shops, cafés etc, which respond to local lifestyle.

Firgue 6. 13 The location and morphological layout of Space D. Source: author

6.1.2.2 Typologies of building

As discussed in section 4.2.2, on one hand, due to increased population and political management needs, traditional courtyard houses became 'chaotic-yard' houses occupied by multiple families. Meanwhile, because of a lack of regulatory control and the population issues (details refer to section 4.2.2), families occupied courtyard houses started extending vertically and horizontally in an organic, unrestricted fashion (Figure 6.14).

On the other hand, based on the Soviet ideologies and modernism spread into China since 1950s, multi-storey buildings were built by danwei within historical areas free from regulatory control and without appropriate design and planning (details refer to 4.2.2). These buildings were constructed as an attempt to address population issues (details of indoor layout will be discussed in next chapter), and enhance the influences of political ideologies and control in people's public life. However, due to a lack of appropriate design and planning, these modern high-density buildings broke the spatial connections and relationship between historical courtyard houses as well as spatial layout, which formed a physical contrast in public spaces and created chaos in legibility of public open spaces (Figure 6.14). However, from photos we can see (Figure 5.16), the buildings are flexible to be extended by the local residents without regulatory control and management, which are highly responsive to the living needs from the residents.



Firgue 6. 14 Typologies and transformation of housing type in the neighbourhood. Source: author

In conclusion, four different types of spaces have been identified as socio-culturally responsive to users as they can enhance social interaction as well as the local identity in this historical residential area. These spaces represent the economic and socio-cultural needs of residents' local daily lives. Moreover, two types of buildings were identified as have broken the historical identity as well as spatial relationships due to lack of appropriate design and plan. Therefore, the buildings organic growth has not responded to political and economic control, needs and development agenda, but rather to local residents' needs by self-built rooms occupying public spaces. In the following section, the users' perspective will be analysed in order to comprehensively understand the needs and expectations as well as satisfaction with the use of public spaces in this historical residential area.

6.2 Survey Finding: local perception of public open space in relation to the level of local responsiveness

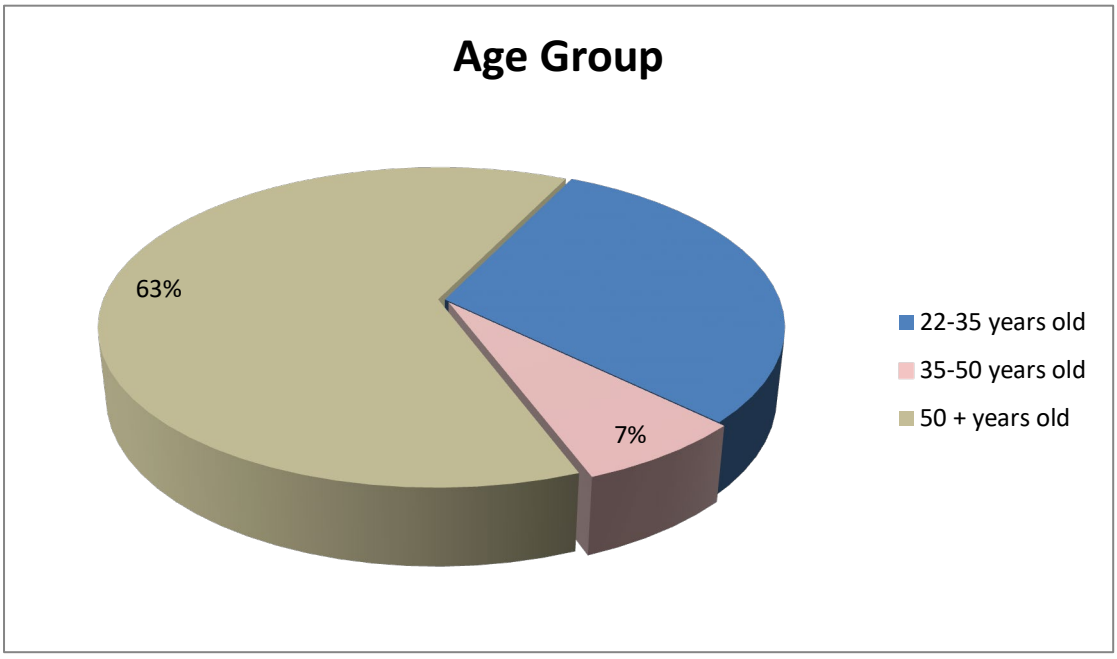
As explained in the conceptual framework, socio-spatial patterns are a process of interaction between use and the physical built form. The previous section has analysed how the physical space has adapted to socio-cultural needs, thus, the survey findings will be discussed based on users' perspective to understand how the users perceive the space in relation to their activities and behaviours. The relevant global and local theories discussed in Chapters 2 and 4 will be implemented into data analysis, which will help to identify the transferable lessons and theories in a historical living zone.

This section is consisting of three parts: firstly, the profile of participants is introduced with reasons for being chosen. Secondly, the local understanding of public open space is analysed including local cognitions and philosophies beyond. Meanwhile, the theoretical connection to the conceptual framework is established. Thirdly, the qualities associated with public open spaces in the conceptual framework will be applied as the structure to evaluate the level of responsiveness of the public spaces, in order to clarify people's perspectives of access and linkage, use and activities, comfort, image, and sociability. The local understanding (second part of this section), will facilitate understanding of the reasons why certain behaviours and activities

happened in the public open spaces, and why people need spaces for such activities and behaviours.

6.2.1 The profile of participants

Thirty participants were selected through recommendations of community committee to cover different age groups in this community for interview (see Appendix B for example transcript). In order to understand the perspectives from different generations, the age groups were selected based on the three main historical periods discussed in Chapter 4. The first group includes people who were born before 1964 (over 50 years old), the time of the Communist period. The second group involves people who were born after 1970 and experienced the Post-Reform period (about 35-50 years old) (Figure 6.15). The third group comprises residents who were born after 1985 (around 22-35 years old). Each group contained a mixed male and female composition.



Firgue 6. 15 Age group of participants. Source: author

6.2.2 The local understanding of public open space

6.2.2.1 Local understanding of public open space and its cognitions and philosophies beyond

Most participants, including consumers and producers, broadly agreed that public spaces are spaces which are freely accessible to everyone. However, a deeper understanding of public spaces comes from understanding its changing role in the socio-spatial process. The developers' perspective is mainly based on market value, whereby public places add value to the properties they promote. The quality of these outdoor shared spaces is based on the commercial values of the properties and their projected market position (refer to interview with developer in Appendix B s). From a user standpoint, the participants mainly explored the meaning and use of public spaces as they understand them, which were places for walking, communicating, playing, resting, watching and exercising (Appendix). In order to understand local philosophies and meaning beyond and the characteristics of socio-spatial patterns in the Chinese context, the connection to Chinese cultural philosophy has to be identified, as follows:

Walk (Liu Wan in Chinese 遛弯)

Within the ideology of Chinese philosophy, the term 'walk' has two levels of meaning: 1] access, same as the theory of accessibility in western theory, which means passing through from a to b; 2] a way to exercise, in the vernacular understanding of 'liu wan 遛弯', which means walking with no particular destination in mind, but as a kind of exercise which mainly happens after meals in order to digest food or to gather fresh qi (natural breath, refer to section 4.1.3). Yin-Yang Wu-Xing, the philosophy of traditional Chinese medical science, believes spleen and stomach belong to the earth, which requires constant nurturing and ploughing for the soil to stay fertile for growing agriculture produce and preventing it from growing barren . Similarly, it is essential to regularly exercise the body and free the mind, in order to keep a healthy state

(Shizhen Yi, Liang Huan Ji 琅环记, Tingdong Cao, Regimen Ramble 养生随笔, Li Hai Ji 蠡海集, Nan Hua Jing 南华经).

Communication (Engagement with people and nature)

There are three ways to understand 'communication' in the Chinese context, which are: a] people to people, interaction between people which, as discussed in 4.2.2, when courtyard houses became 'chaotic yard' houses under the influence of collectivism and socialism, indoor spaces were limited and external public spaces became an interactive platform extending people's lives, which formed a special relationship between people; b] human to nature, which was explained in the theory of Taoism (Refer to sections 2.2.2 and 4.1.3), which holds that nature exists beyond physical boundaries such as buildings, so engaging with external space is a kind of communication with nature; c] Inside to outside (private to public), which refers to a strong connection between the inside and outside of traditional buildings. Because it only take on step to go from inside (privacy) to outside (public) communication between mankind and nature has become easy and essential.

Play (Interaction)

In relation to social interaction, in Chinese society, there is a strong social orientation based on the formation of vernacular behaviour and social networking, which can be defined as 'gregariousness' or collectivism (Guoshu Yang, 1993, Xuewei Zhai, 2004, Jiade Luo and Jing Wang, 2010). Based on this theory and as discussed in sections 2.2.2 and 4.2.2, Chinese people need to live within a social niche within a broader society. The social niche provides a sense of company, and without it, people become isolated and disconnected from the broader social network. Therefore, 'play' is a way of engaging with people, which allows people to enter a social niche, have a social life and a sense of social belonging.

Rest

According to the discussion in sections 2.2.2 and 4.1.3, the theory of Tian Ren He Yi (the harmony between nature and mankind) states that a way to interact with nature is to engage with nature spiritually. Therefore, recreation and leisure in public spaces is a way to connect with nature. The term 'nature', as discussed in section 2.2.2, refers to the all-encompassing natural world which includes all physical elements, human activities and everything in between that are constantly interacting to become a whole.

Watching

Same as the meanings of 'rest', watching is also a part of the process of engaging with nature according to the theory Tian Ren He Yi. As Zhiling Bian (1935) wrote in his poetry, 'As you are enjoying the scenery on a bridge, upstairs on a tower people are watching you (断章).' People who watch the others have in turn become others' view, and this generates a process of spiritual interactions that become the context of nature-human integration and harmony.

Exercise

Based on the Ying-Yang Theory, the Qi of Six-Yang (three Yang of feet and three Yang of hands) form between 5am and 7am (Xian Shu Mi Ku 仙术秘库), and for this reason, Chinese people mainly exercise in the morning, whether walking or practicing Taiji. Another theory of exercise is Jie Di Qi (接地气), which, as explained in section 2.2.2, derives from the ancient Chinese beliefs and means Qi from the earth is important and beneficial to human and therefore, 'When human physically touch the earth (such as through walking and standing), health will prevail (Li Ji ·Yue Ling, Zhou Li ·Kao Gong Ji)'.

To summarise the Chinese belief system and traditional theoretical system, walking represents accessing places and a way to exercise; communication denotes the connection between people to people, people to nature, and inside to outside; playing

represents social interaction; watching and resting mean spiritually engaging with nature; and exercise symbolises the health system in Chinese understanding.

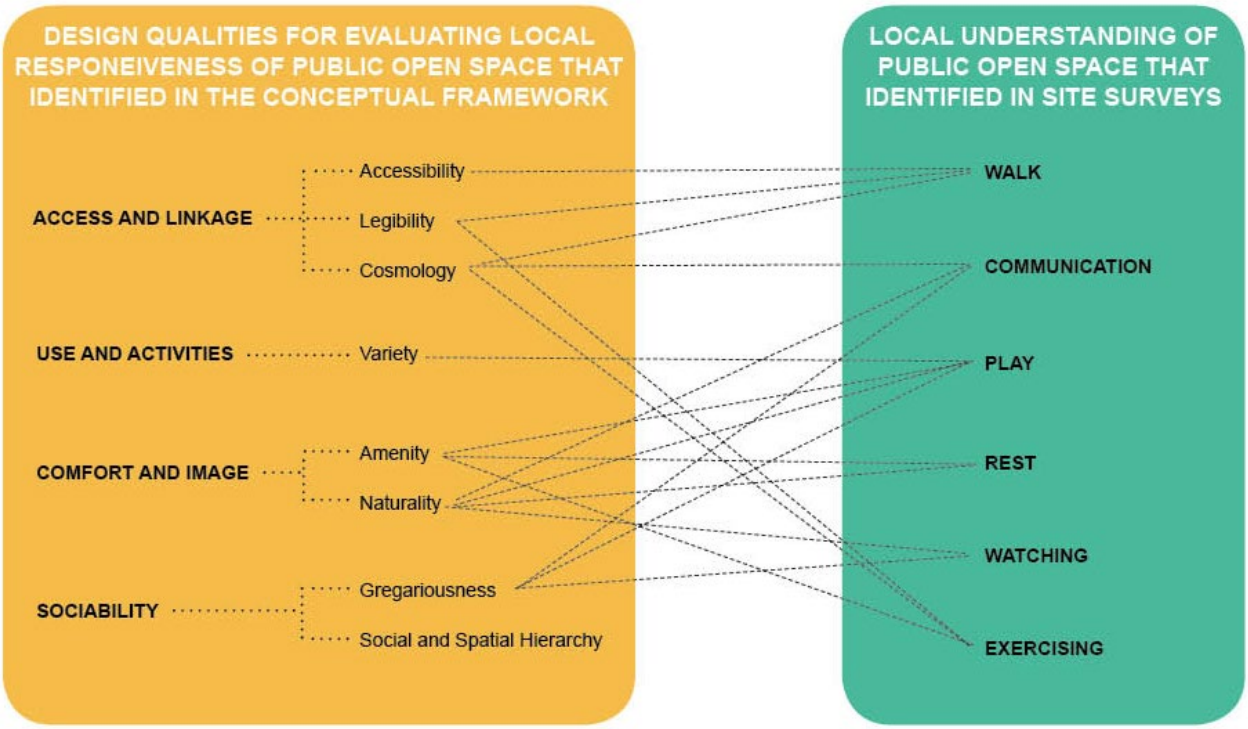
5.2.2.2 The linkage to theory

By identifying the local understanding of public open spaces and the meanings behind their use from a user's perspective, a theoretical connection can be made to link to the key qualities of public open spaces for evaluating the level of local responsiveness from the conceptual framework, including access and linkage, use and activities, comfort and image, and sociability. Overall, all the elements interact and are influenced by time, which is the level of adaptation through changing political, economic and socio-cultural factors. These understandings are not direct components that can be linked to the components of the conceptual framework, but they are the local cognitions framed by philosophies, sociologies and culture, etc. Therefore, these understanding frame certain behaviours and activities in certain times that happen in different public open spaces, influence architecture design, affect the choices of lifestyle, and in some level form social cohesions. Thus, these understandings can be linked to design qualities that evaluate the level of local responsiveness from users' perspectives, which identify the satisfaction of using the public open space based on their cognitions and understanding of the way to use the public open spaces. Based on the discussion, the linkage between the theoretical elements and Chinese characteristics are (Figure 6.16):

Local understanding of public open spaces identified in site surveys (refer to the statistical results of the questionnaire and the analysis of local perception in Chapters 5, 6 and 7) (appendix):

- Walking represents a] the efficiency of accessibility; b] the Chinese understanding of cosmology in relation to physical health;
- Communication signifies the interaction between a] people and people; b] people and nature; c] the inside and outside of buildings
- Play shows a] an evaluation of enjoyment in social interaction; b] social connections and social belonging

- Rest represents the enjoyment of a] facilities; and b] the natural environment from a local traditional perspective
- Watching symbolises visual enjoyment in a] the natural (physical) setting; and b] social belonging
- Exercising represents a] practices affected by the traditional cosmological understanding in terms of physical health; and b] the enjoyment of place



Firgue 6. 16 Theoretical connection between design qualities for evaluating the level of local responsiveness and local understanding of public open spaces. Source: author

Further explanations will be given in the following analysis, which from a user's perspective, aim to understand the intrinsic connection between theoretical components and the Chinese characteristics of public use.

6.2.3 Local perception of using public open spaces in relation to local responsiveness

In this section, design qualities for evaluating the level of local responsiveness regarding user experiences of public open spaces (refer to conceptual framework

chapter section 2.2.1 and 2.2.2) are applied in order to identify how public open space respond to the use of public spaces by users. The data analysed based on observations, interviews and mental mapping collected in the field, in order to fully understand how and why people likes or dislikes and chooses certain area for their interactions and activities.

6.2.3.1 Access and Linkage

As discussed previously, through urban growth, the original courtyard houses have organically transformed into court-no-yard houses, as the original plots have been divided into several small plots for use by each family (Figure 6.17).

However, the privacy of the building still remains from the courtyard houses, as shown in Figure 6.17, the pink arrow shows the main and strong connections from the inside to the shared space within the plots, and from the photos (Figure 6.17, photo example 3), the doors of each sub-plot are more transparent than the main door to the hutongs to provide a semi-private space. The blue arrows represent the passive connections to the hutongs, as the photos (Figure 6.17, photo example 2) show, the smaller, higher windows in the hutong are only there to get light from sky and allow wind flow. Therefore, although the shared space within a large plot is open to the residents to use, the space can be defined as a semi-private space as it is only shared by the residents who live within the shared courtyard houses.

From the photos (Figure 6.17, photo examples 1 and 3), we can see that the semi-private space within the large plot is well organised and tidy. The larger window provides a good view from inside the room, which provides a strong visual linkage from the inside to the outside (semi-private space). Although the shared space is limited, the space is used for many purposes, such as storage, access, seating etc., and it is well managed by all residents by a process of negotiation. Therefore, the social connection and cohesion between neighbourhoods is extremely strong.

Firgue 6. 17 Existing Plots and their access, space for sharing and privacy. Source: author

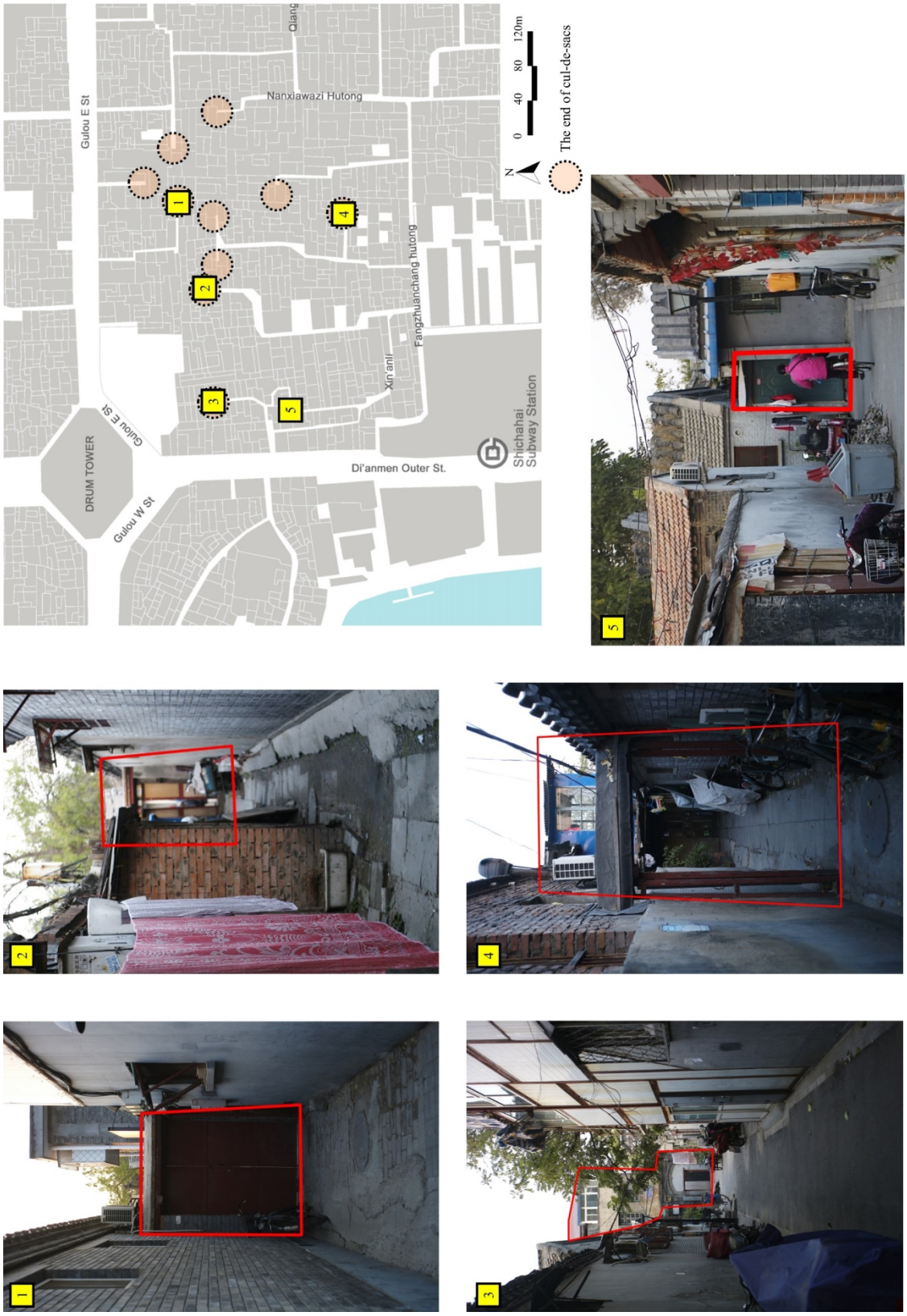
In terms of the indoor living conditions, the space can only be used for the essentials of daily living, such as sleeping and eating. Therefore, the external space can be understood as a means of extending residents' daily living activities (Figure 6.18).

However, there is easy access between the internal space and the external natural environment (refer to sections 4.1. and 4.2) that creates a cosmological connection between yin and yang, inside and outside (refer to section 6.3.2.1). Therefore, the cultural understanding of nature as well as physical health has been maintained and responded to.

Firgue 6. 18 Indoor spaces of the sub-plot. Source: author

As explained previously, the original use of the neighbourhood was for government institutions and private workshops belonging to the royal family. Therefore, the area was designed to be a highly private environment. Hutongs are cul-de-sacs, which demonstrate that the function of the hutong was mainly for access, not for social activities and leisure (Figure 6.19). When the land use and the purpose of the plots changed to residential use during socialist times (Land use transformation refer to section 6.1.1.2), and the space required better access in order to respond and adapt to the transformation of living and access needs, the one-way hutongs blocked the spatial connections, which caused access issues and less legibility. On the other hand, due to self-built and occupied external spaces, some of public spaces (mainly hutongs) are partly or entirely blocked as shown in Figure 6.19 (Photo examples 1, 2, 4 and 5). In addition, the same access blockage issue also exists in appropriate planned and designed modern multi-storey buildings built by work unit between 1950s and 1980s (Figure 6.19, photo examples 3) (details of historical context refer to section 6.2.2.2). As the result, these changes of physical settings might have responded to the social and political needs in the particular circumstances under its historical context, but it cannot respond or adapt to the needs in use of public spaces in contemporary context. Therefore, these are the reasons why 61 per cent of respondents stated that there were

insufficient (blockage of access) and complicated access routes (changes by inappropriate regeneration design of local housing) in the living zone.



Firgue 6. 19 Blockage and access points of the neighbourhood. Source: author

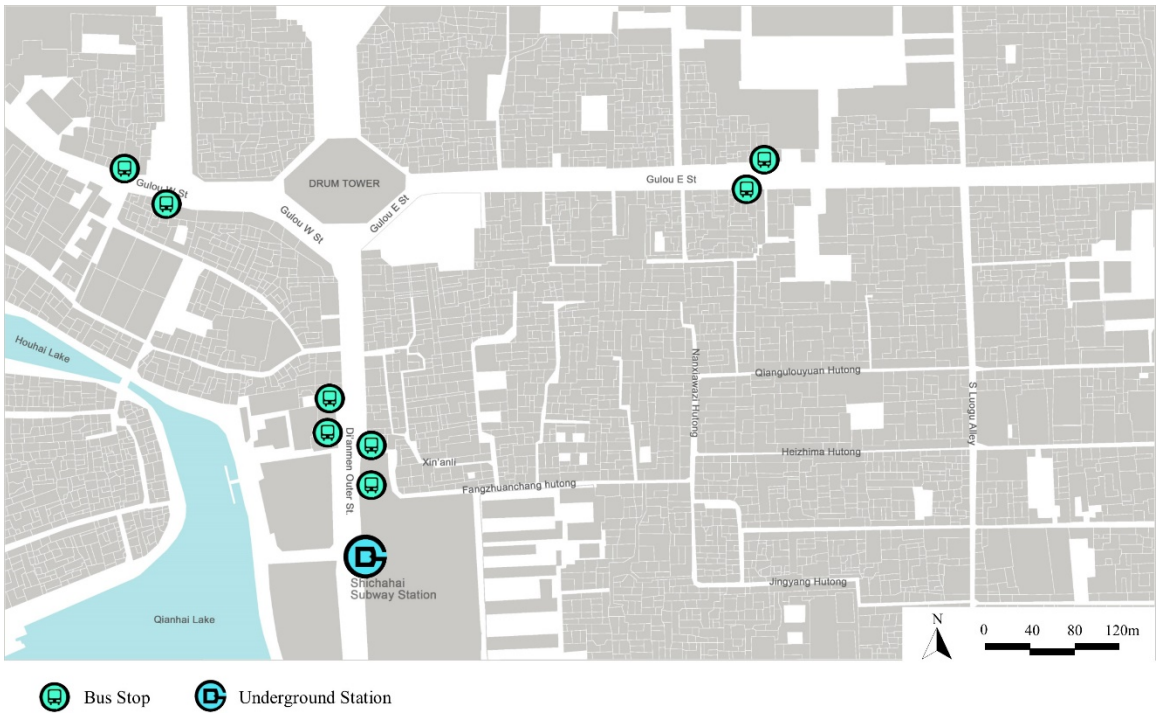
Additionally, 91 per cent of respondents pointed out that another problem for access in the living zone is lack of management. More specifically, a] 88 per cent of respondents stated that the area was over-crowded by tourists who visited on a daily basis (Figure 6.20); b] 58 per cent of respondents concerned that there was a lack of control in relation to vendors and parking (Figure 6.21); c] 61 per cent of respondents argued the private parking have taken large spaces in hutongs (Figure 6.22). All these figures show that a better management system is required, and further discussion in relation to greenery, public facilities and safety issues are carried out in section 6.2.3.3.

Firgue 6. 20Tourists in the neighbourhood area during day (left) and night (right). Source: author

Firgue 6. 21Vendors and their parking in public open spaces. Source: author

Firgue 6. 22Private parking in hutong. Source: author

In terms of connections and accessibility to the city, public transport provides extremely convenient services for the living zone (Figure 6.23). There is an average 8-10 minutes walking distance from any point in the community to a bus stop or underground tube station. Therefore, the community is well connected socially and economically to the rest of city.

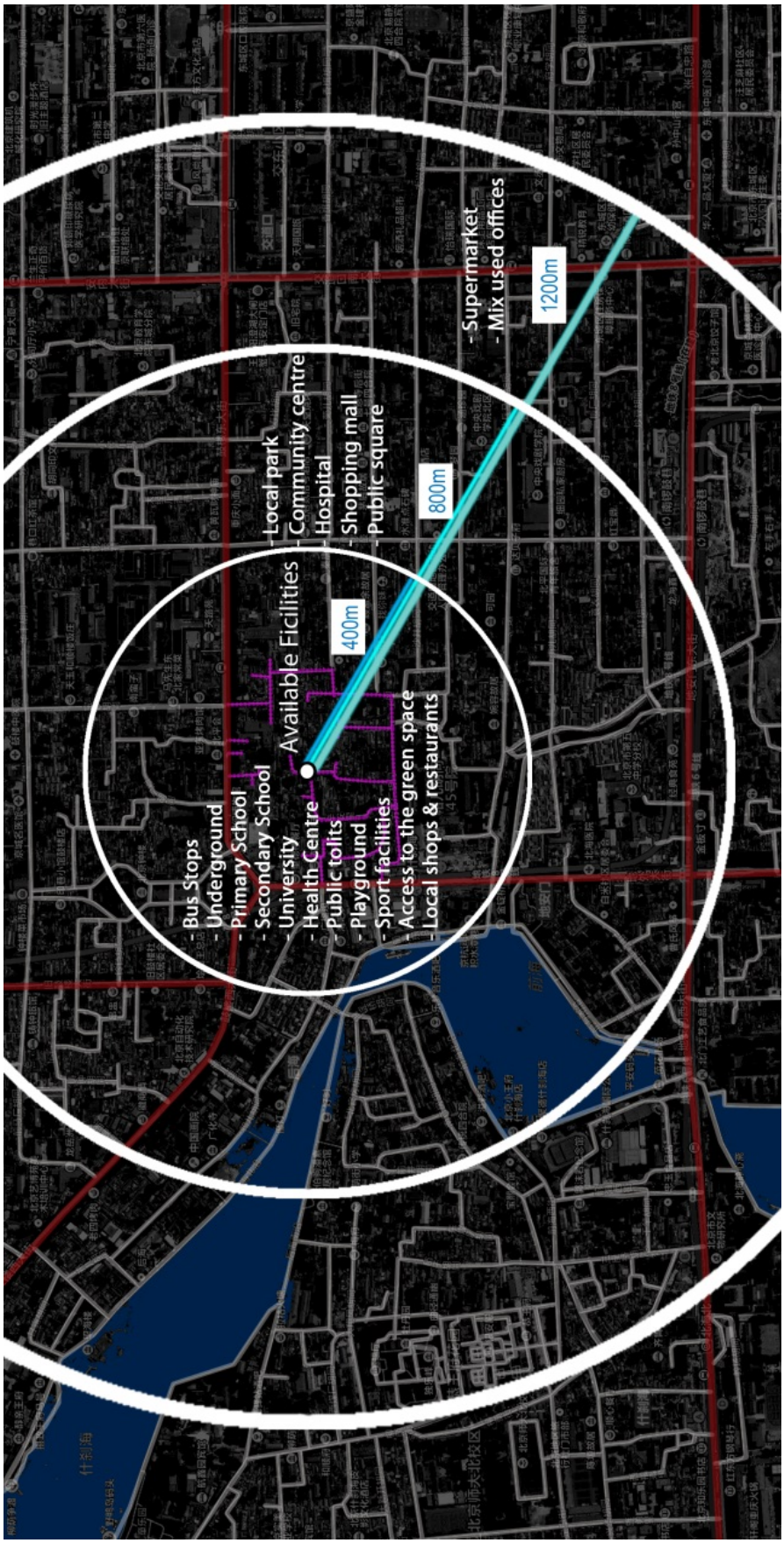


Firgue 6. 23Public transport services. Source: author

In terms of the traffic safety issue, 70 per cent of respondents expressed dissatisfaction towards vehicle safety in the living zone as 45 per cent of them claimed there was over-crowding in terms of cars; 45 per cent stated the access roads were becoming limited and narrow; and 42 per cent worried about car speeds. As discussed previously, the discontinued hutong network has limited the accessibility, and uncontrolled parking has manifested the lack of management and control in terms of parking regulations and policies in the historical living zone.

6.2.3.2 Use and Activities

Although there is dissatisfaction with the public facilities provided inside the living zone, various service facilities are located in extremely convenient locations surrounding the living zone, such as within 400 metres, there is good access to public transportation, education, parks and commercial support (Figure 6.24).



Firgue 6. 24Public facilities in walking distance. Source: author

However, from the user's perspective, the responsiveness to commercial services and cultural activities has only reached a basic level. For example, 63 per cent of respondents stated that there was merely basic commercial support; 63 per cent of respondents believed the space was extremely limited and might only be useful to serve fundamental needs; 43 per cent of respondents argued there were extremely limited number of spaces which can be used for celebration or cultural events within the overall residential space.

At the same time, given most local businesses are run by residents, shops are not only seen as places for commercial activities, but also as places or opportunities for social interaction, for example, Figure 6.25 shows writing on the facade of a shop which means 'if you feel you have nothing to do, please come in'. Also, in the remaining examples, there are businesses providing opportunities for people to participate in activities throughout the day and night (In Figure 6.25, the shop owner was playing card game with local residents in shop front).

Firgue 6. 25 Commercial activities in the neighbourhood. Source: author

In detail, although there are a large number of commercial shops around and within the living zone, they are simple in type and provide basic products and services, such as restaurants, food shops and local service shops (such as bath store and pharmacy).

In terms of the morning and evening markets, these have continued from ancient China (refer to section 4.1.2), and have become a part of local social cognition in terms of the daily routine. However, 64 per cent of respondents were dissatisfied with the vendors due to a lack of management, whereby it was the unmanaged vendors who caused most of the environmental and traffic issues.

Over 90 per cent of respodents were dissatisfied with the public spaces available for cultural activities and events in which, 80 per cent of them pointed out that there was not enough space, and 50 per cent believed there were a limited number and type of supporting facilities available. Therefore, 20 per cent of respondents claimed that only an extremely limited number of activities may take place in the public space, mainly culturally representative and celebration, such as prayers for luck and health as well as weddings (Figure 6.26). Therefore, limited public spaces has restricted some of traditional celebration (such as part of wedding celebration) and therefore casuing this way of social interaction and cohesion to phase out from people's life style. Meanwhile, the idetity of such local cultural celebration has changed fromoutdoor interactional activities to indoor private celebrations (mainly in restaurant). For example, the traditional wedding celebration aims to share the happeness to all people including families, friends, neighbours, and even strangers who are passing by the celebration, which is rarely seen in the Beijing in the present times (Figure 6.27). Today, wedding celebration is more commonly held as a private occasion in a restaurant only paticipated by family members and friends as private event (Figure 6.27).

Firgue 6. 26Cultural symbol representations in the neighbourhood

Firgue 6. 27 Tradition wedding celebration in public space (left) and common celebration of wedding in restaurant (right). Source: author

A major negative feedback received for the use of public space is un-managed public parking, an issue which none of the respondents are satisfied. One aspect is that, within these spaces, vehicle parking occupies a number of shared public spaces and also causes

traffic issues as well as inconvenience for residents. In addition, there are no planned parking spaces or legal parking space lines drawn on the ground, and car owners park their cars randomly on the side of roads. Another aspect is that bicycle parking remains an issue for the public spaces (Figure 6.28). Although the number of bicycle users in Beijing has reduced, to 16.4 per cent (Xu, 2013), a large number of bicycle users reside in these historical areas. Moreover, a considerable percentage of these bicycles are actually electric bicycles, with two or three wheels and are much bulkier than normal bicycles. In this aspect, although the public open spaces has adapted and responded to the increased needs for mobility, the situation has deteriorated due to a lack of policies guidance and regulatory control. Therefore, to improve the use of public open spaces, it is necessary to implement control and management of parking (both bicycle and vehicle) from a regulatory and legal standpoint (such as setting up paid parking spaces within and around the historical area).

Firgue 6. 28Bicycle parking (left) and vehicle parking (right) in the neighbourhood.
Source: author

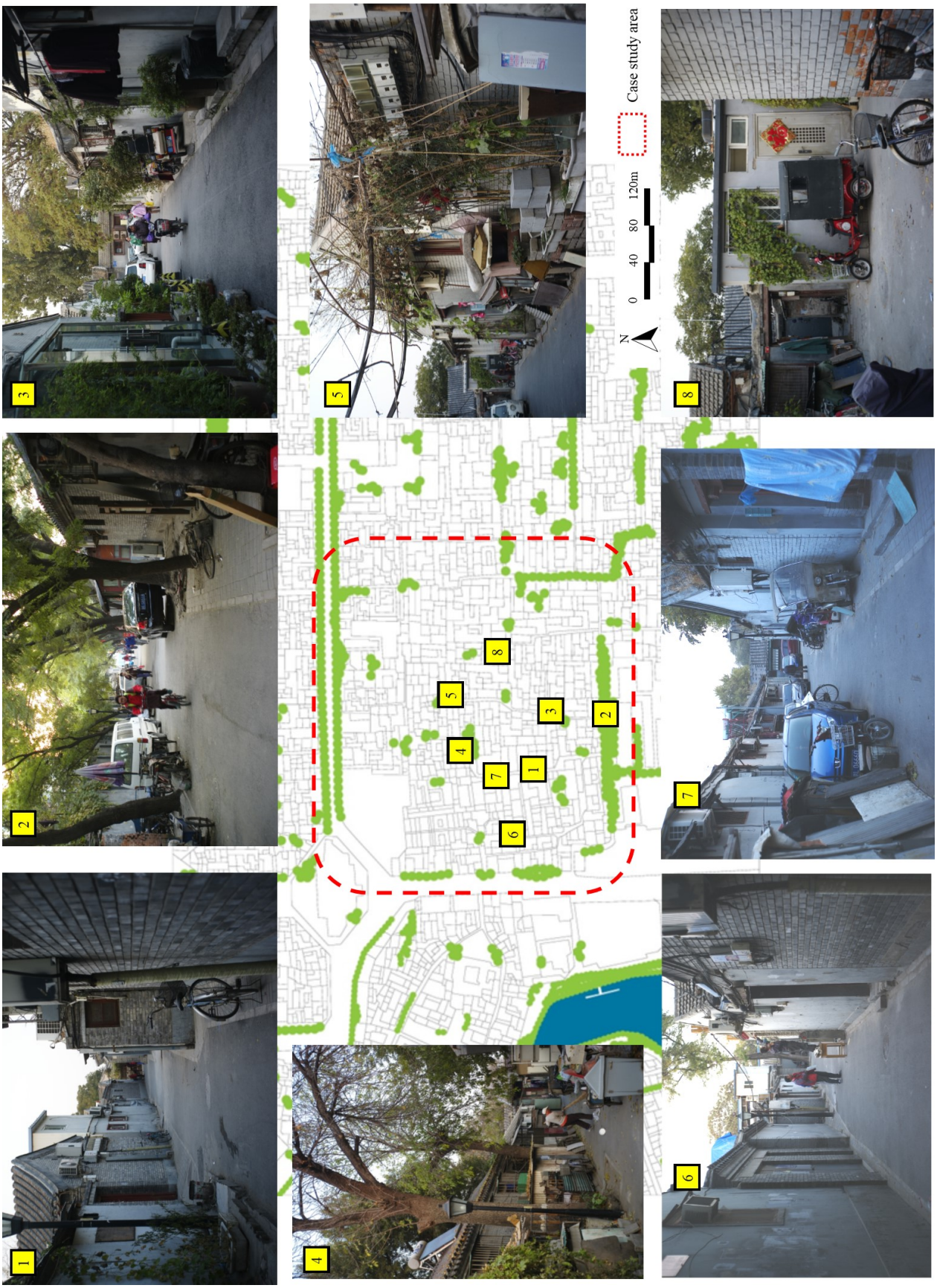
6.2.3.3 Comfort and Image

As defined by respondents, amenity is a significant part of the quality of public space, which links to all activities carried out in such spaces including: walking, communication, play, rest, people watching and exercise. Meanwhile, the level of enjoyment associated with these activities and interaction in public space is mainly based on local preferences for nature (Theories refer to section 2.2.2).

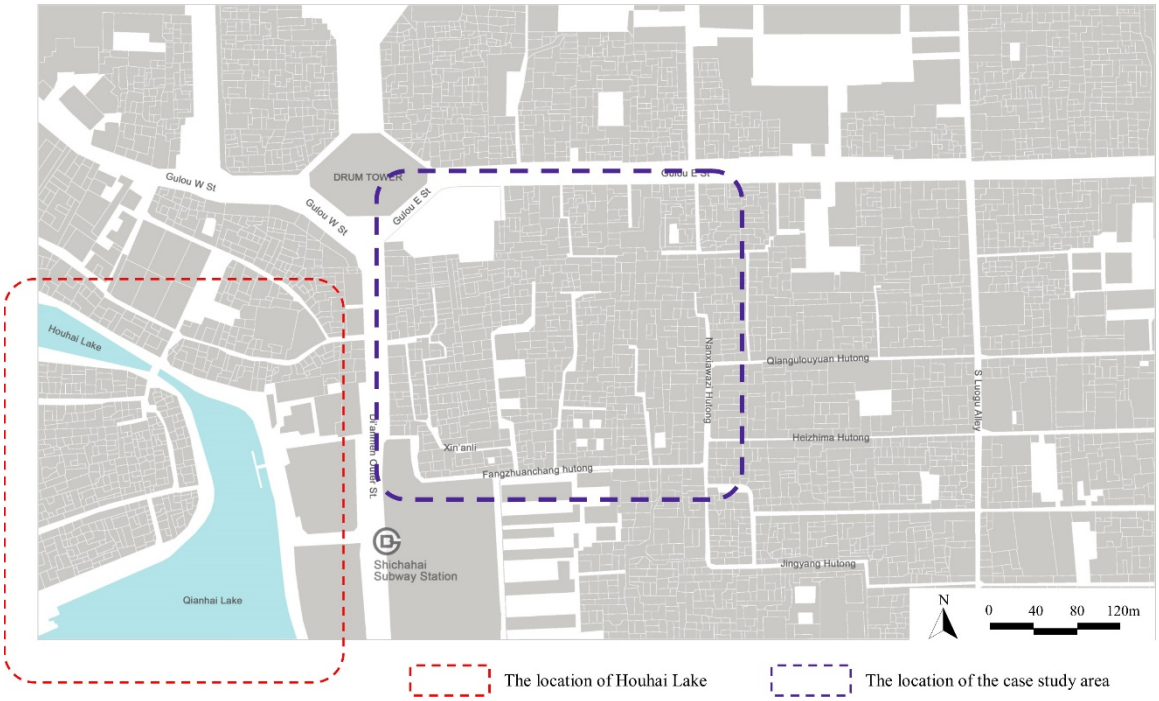
6.2.3.3.1 Nature and greenery

As discussed in section 2.2.2, the term 'nature' is a complex word which not only represents the non-manmade environment and greenery, but also symbolises local cosmological and superstitious beliefs and understanding. In the Chinese context, in terms of greenery, almost 80 per cent of respondents stated it was not available or in limited amount in the living area (Figure 6.29); 93 per cent of respondents were concerned that green space was important in terms of the quality of public space base on local cognition of nature in relation to activities and behaviours; 86 per cent of respondents agreed that greenery provided in public spaces could enhance the quality and amenity of the space; and 74 per cent of respondents normally used Houhai Lake daily due to it being a place which provides a green, natural environment (Figure 6.30).

The reasons for the results from the questionnaire are: a] based on organic growth through the rapid population increase in early socialist times, the courtyard houses were designed to respond the political needs, which fit in the maximum number of families, and thus, there was no available space for placing a large number of green spaces in the living zone (unless some survival trees from original courtyard houses); and b] the ideal living environment, according to local beliefs, represents a harmony between nature and mankind, and therefore, the use of space for activities such as communication, walking, resting, watching and exercise as defined by participants are based on interaction with nature (for theories, refer to 6.3.2.1). However, Houhai Lake (Figure 6.30) is not only a large green park in the inner city, but also a large well designed traditional Chinese Shanshui (mountain and water) landscape area (it was a part of royal garden in imperial time) as an landmark area to present traditional environmental identity. Therefore, the way to engage with nature is through the traditional Chinese landscape, based on the Chinese cosmological understanding of using public space and its meaning beyond that (details of analysis regard Houhai Lake can be found in section 6.2.2.1.4).



Firgue 6. 29 Green spaces annotations. Source: author



Firgue 6. 30 Location of Houhai Lake. Source: author

6.2.3.3.2 Public facilities

Public facilities are the media for enjoying the use of public space, and enhancing public activities and interaction, which not only provides the chance to use the space, and opportunities for social interaction, but also according to local beliefs, a way to communicate with nature. However, apart from public toilets with which 80 per cent of respondents were satisfied, other facilities in the living zone were perceived negatively (Table 6.1 and 6.2). The reason for this is due to the limited indoor space, and therefore, having facilities in external spaces are seen as necessary to improve the quality of the living conditions for residents, especially public toilets and chairs, which are essential facilities but lacking inside buildings. Nevertheless, 20 per cent of respondents found these difficult to use or in poor condition.

Table 6. 1 Satisfaction of public facilities. Source: author

Facilities	Good (% of users)	Bad (% of users)	Not Available (% of users)
Greenery	23	60	17
Landscape Furniture	3	43	50
Information Boards	20	50	30
Chairs	13	57	30
Sports Facilities	27	63	10
Pavements	3	80	17
Public Toilets	80	20	0
Rubbish Bins	47	50	3

Table 6. 2Importance of public facilities. Source: author

Facilities	Important (% of users)	Don't Really Care (% of users)
Greenery	93	7
Landscape Furniture	57	43
Information Boards	67	33
Chairs	83	17
Sports Facilities	87	13
Pavements	80	20
Public Toilets	93	7
Rubbish Bins	93	7

The point of view from the government officials and developers are: a] due to the fully occupied state of 'chaotic-no-yard' houses in the traditional areas, the outdoor space has become seriously limited, and it is therefore extremely difficult to improve the facilities such as by building more pipelines to connect toilets, water and gas. Also, the existing underground space in hutongs is almost fully utilised with fitted electric cables; b] due to limited space in the hutong, it is not possible to provide more facilities such as chairs and sport facilities without redesigning the space; and c] the historical residential areas are mostly located in the heart of the city, where the land values are extremely high. Therefore, except when considering a large regeneration project, it would be very hard to improve the living quality by modifying existing public amenities.

6.2.3.3.3 Safety

50 per cent of respondents did not feel safe in some of the areas within the living area because of several reasons, such as a] 74 per cent of respondents pointed out that there were large numbers of strangers such as tourists walking around in the area (refer to discussion in section 6.3.3.1 and Figure 6.20); b] 52 per cent of respondents stated that regular thefts have occurred; and c] 26 per cent of respondents argued that the perceived lack of safety was related to the fact that there were a great deal of dark areas at night.

The reasons for the perceived unsafe living environment are: a] as discussed previously, the external linkages have been blocked by the extended buildings and the original hutong network and traditional morphological fabric have been disconnected (refer to section 6.3.3.1 and Figure 6.19), thus, some of the hutongs have become less visited spaces (such as the end of alley); b] in order to maintain the privacy of the buildings, there is no clear visual sightline across the hutong, especially late at night (such as privacy discussion in section 6.3.3.1 and Figure 6.17); c] the lack of and irregularly maintained public facilities such as the street lighting means that dark corners can be found in some hutongs.

Based on the previous analysis, dissatisfaction with the lack of regular maintenance in public spaces is expressed by 74 per cent of respondents. The underlying cause is that the historical living zone is managed by a residential committee, which follows the policy of 'four self' that is 'self-managed, self-educated, self-serviced and self-monitored'. This policy has been used as the main policy for community management guidelines since it was first announced in 1954 (Organic Regulations for Urban Residential Committee, 城市居民委员会组织条例), and re-edited in 1989 (Organic Law of the Urban Residents Committees of the PRC, 中华人民共和国城市居民委员会组织法).

The terms of the residential committee were systematically transferred from the Baojia system, which was an invention by the Song dynasty, and is a community-based system

of law enforcement and civic control. The responsibilities of the residential committee cover the basic political duty to connect the residents to government, assist in communicating government policies to residents, managing and dealing with issues between residents, securing the community's safety, maintaining the public environment, and improving public services.

While the residential committee can be seen as a connector and mediator between residents and government, its role and power are only limited when it comes to mediation, so for regular maintenance, it has to report to the relevant government department, where the application process is slow and resulting in a long gap between regular maintenance and the public facilities remaining in poor condition, such as the non-working street lights in some areas.

6.2.3.4 Sociability

Since the socialist ideology changed the social and political structure in China, the contemporary society advocates social equality in city development. Therefore, the social hierarchy no longer exists in the current urban design. However, social gregariousness became key in the historical living zone. In the 'Educated Youth Back City Movement' and urban population growth in the socialist era (refer to section 4.2.2), due to the population growth, the residents in the historical living area started to extend their living space based on the original courtyard houses. These self-extended areas were built in a traditional manner in terms of materials and structure, which did not conform to contemporary professional building standards.

In the original courtyard houses, the owners were very much a participant in the design process, not merely a consultant with a vague idea about their preferred living environment. The 'ideal city model' was shaped by the symbolic systems of traditional times, together with the social and cultural values of the people. The style and features of the courtyard houses were thus the result of adjustments brought upon by various factors of local culture and nature (Chang, 1986).

However, in general, urban growth in the historical living zone mainly took place organically and public consultation was rarely carried out with residents to discuss their living conditions, which is the reason why none of the respondents agreed that appropriate public consultation has been carried out in the living zone, especially in terms of socio-culturally responsive spatial design.

6.3 Theoretical comparison between conceptual framework and historical neighbourhood analysis

Based on the previous analysis in this chapter, while the conceptual framework is applied in order to identify the level of local responsiveness in the use of public open spaces, a comparison is essential to assist explanation and understanding of sameness and differentiation between the theories and reality in the context of Beijing. The following Table 6.3 is structured based on the structure of conceptual framework, and details are:

Table 6. 3 Comparison between theories and reality based on the analysis of historical living area in the context of Beijing in order to identify the level of local responsiveness in the use of public open space. Source: author

Components in Conceptual Framework		In Theories in Conceptual Framework	The Realities in historical neighbourhood Analysis
Political Responsiveness	Government Policies and Regulations	The government policies and regulations are developed in order to ensure the private sectors deliver plans or design that serve and correspond to the public interests as well as the political and economic development goal (Carmona et al., 2010; Garreau, 1991; Brand, 1994) (Details refer CH2, section2.1.3).	The original design of the neighbourhood was the result of political development (refer to 6.1.1). However, because of lack of policies control and the population issues (details refer to section 4.2.2 and 6.1.2.2), families occupied courtyard houses started growing organically. On the other hand, based on Soviet ideologies and modernism spread into China since 1950s, multi–storey buildings were built by danwei within historical areas without regulatory control and appropriate design and plan (details refer to 4.2.2 and 6.1.2.2).
	Public Consultations	On one hand, any strategic programme, plan or policy has to be delivered through a consultative process	There are no public consultations in the design or plan of public open space in the neighbourhood.

		incorporated by all local stakeholders to ensure the sustainable development (Lafferty, 2001; UNCED, 1992); while on the other hand, it is a way of democratic participation to exercise public rights in the development process (Blowers, 1993; Healey, 2006). Therefore, the success of progressing plans and policies should involve both top-down and bottom-up approaches (Carmona et al, 2010) (Details refer to CH2, Section 2.1.3).	
	Political Ideology	Political ideology is a 'set of beliefs about the proper order of society and how it can be achieved' (Erikson and Tedin, 2003, p.64; Adorno et al. 1950; Campbell et al. 1960, 1965; Kerlinger, 1984). It can be seen as a shared framework of mental model that provides both an interpretation of the environment and a prescription on how to	The contemporary neighbourhood can be perceived as the results from implementation of political ideology because of the action of 'chaotic-no-yard' houses and construction of early modern residential buildings all emphasised socialism and equality for public (Section 6.1.1.3). It was therefore highly responsive to the political needs throughout the transformation of

		structure the environment (Jost et al., 2008) (Details refer to CH2, Section 2.1.3).	the entire historical neighbourhood.
Economic Responsiveness	Economic Ideology	The urban space should be created as a neutral container for economic and social activities, and the public open space as products are processed based on the economic ideologies (Kashef, 2008). In the meantime, the government policies should maintain the balance between economic growth and socio-cultural needs in both urban space productions and city developments (Carmona et al., 2010; Healey, 2006) (Details refer to CH2, Section 2.1.4).	The commercial activities are considered successful in the ` study area. While the service did not meet the quality and variety expected by the residents, these commercial behaviours and activities were formed based on local cognition and preferences, and has played an important role in relation to enhancing socio-cultural activities as well as increasing the opportunities for social connection and interaction (refer to section 6.2.3.2).
Socio-cultural Responsiveness	Identity	Place identity can be understood as a key concept for making responsive places for human beings (Waston and Bentley, 2007). It can be seen as the set of meanings attached to the multi-sensory process of inhabiting a place,	While the historical identity of vernacular architecture haves been mostly transformed into organically regenerated housing and part of socio-cultural identity of celebration and activities were lost in the neighbourhood (such as wedding celebration discussed

		which create 'sense of belonging' and 'sense of rootedness' for delivering place responsiveness as well as sustainability in design (Carmona et al, 2010; Lovell, 1998).	in section 6.2.3.2), the public open spaces have adapted to most of the needs in its flexible physical setting, and even formed new identity of self-designed and constructed buildings as well as strong social cohesions between residents (refer to section 6.1.2 and 6.2.3.2)
	Vernacular Architecture	By giving a town or city as well as a space or place strong sense, vernacular buildings and architecture can be seen as a form of physical responsiveness to the socio-cultural context (Porter, 1982; Lange, 1997; Moughtin et al, 1995). It presents as two-dimensional spatial structures and layout and three-dimensional vertical scales and façade, which are responsive to the socio-cultural needs, preferences and notion (Oliver, 1986,2000,2003,2006).	The original courtyard houses have been transformed into 'chaotic-no-yard' houses due to increased population and political needs since 1960s. Therefore, the original layout has been changed in order to fit more families (refer to 6.1.1.3), and the public space has been reframed in order to support contemporary use, such as shop front.
	Lifestyle	Lifestyle is the outcome of	The public spaces as well as

		choices which lead to the specific activity and activity system in given locations (Rapoport, 2005). In the meantime, the lifestyles are affected by the local value and preferences expressed through ideas, images, schemata, and meanings under local world view and global influences (Rapoport, 2005).	self-regenerated architecture are reframed based on the local political, economic and socio-cultural needs. Meanwhile, in the use of public open spaces, the form of local businesses as well as social interaction and activities have all adapted to local value, preferences and cognitions.
	Social Cohesion	Cohesiveness is considered an attribute along with other processes operating within and between small groups (Hogg, 1992). Social cohesion relates to the members of a group who share emotional and behavioural characteristics with one another and with the group as a whole (Bruhn, 2009). The social cohesion is understood by providing 'social space' that people could engage in various forms of socio-cultural and economic exchanges (Carmona, 2010). Also, it	Due to the form of living in shared spaces (both hotong and shared spaces within each courtyard houses), and the cognition of running local business, the entire life style are based on social cohesion and interaction. Therefore, the public spaces in the neighbourhood can be seen as a positively engaged 'social space'.

		contributes to their identity and sense of place by in order to fulfil different social and economic requirements in the production of urban environment (Verma, 2011; Tonkiss, 2013).	

Conclusion

This chapter has analysed the public open spaces in historical residential areas in terms of whether they are locally responsive from a user's perspective. The conceptual framework and the methodology have been implemented for the data collection and analysis. The data analysis of public spaces in historical neighbourhood was carried out in three stages, as detailed below.

First, the morphological transformation and the transition of land use in blocks and plots were identified as being highly adaptable through the changing political, social and economic structure and influences. As defined in the transformation analysis, the space has been responsive to socio-cultural traditions and lifestyles by adapting to extended spaces and social activities and behaviour, and this can be summarised in four points:

1. Generally, the development of public spaces in the historical living zone has been affected by the changing political formation. Therefore, changes in land use have followed socio-cultural, economic and physical demands under various political influences.
2. The morphological layout was originally built for political use. When the land use transferred to residential and economic use based on historical and social factors, the adaptation of public spaces for contemporary use still remained bound by the demands of the traditional belief system.

3. The existing urban layout provides an extremely good level of social connection and opportunities for interaction based on the changing shape of the plots. It has retained the highly private nature of the larger plots, but has increased the internal social connections between the smaller plots within the large plots.
4. Four main types of public spaces were identified from the typo-morphological analysis based on the user's perspective and their commercial, social and cultural needs.

Secondly, in terms of use of public open spaces, two parts include: A] the definition of public open spaces was identified from different key urban actors (controllers, developers and users) in the context of Beijing, China. The meanings behind the use of public spaces and local beliefs as well as cosmological theories were defined from the user's perspective; and then, theoretical linkages were established between local understanding and the conceptual framework. B] Based on the interview and mental mapping analysis, local perceptions of using public spaces have been evaluated by different qualities in order to identify how the spaces have adapted to meet users' socio-cultural demands as well as their commercial needs based on historical living settings. The findings can be summarised as follows:

1. The design of the courtyard houses has provided convenient access from the limited indoor space to the outdoor public space, which has enabled more potential for social interaction as well as enhancing the sense of ownership to the external spaces.
2. Local business owners have provided more opportunities for interaction among the residents, which has enhanced the variety of social activities based on the limited type and number of public facilities. However, the limitations of the physical conditions have narrowed the potential variety of commercial types.
3. Limited greenery within the community, but easy access to the Houhai Park, have atoned the cosmological and physical need for nature.

4. Inefficient management has caused a] maintenance issues; b] cleanliness issues, mainly from vendors; and c] safety issues in relation to both vehicle parking and crimes of theft.

Finally, a theoretical comparison between the conceptual framework and the historical neighbourhood was established in order to understand the differences between the theoretical guidance and the reality in the neighbourhood.

To summarise, the public open spaces in the historical area are locally responsive to the socio-cultural needs of users rather than adaptable to commercial activities due to the limited potential of the current physical setting. The political agenda is rarely applied because of historical issues (section 4.2.1), high land values and historical conservation.

Chapter Seven - Heiyaochang Unit, A Work Unit Residential Community

Introduction

This chapter is the second in the series of analysis of neighbourhood in Beijing. It continues examining the case study in order to answer the research question 'what kind of urban spaces and urban design qualities contribute to the development of local public life in Beijing?' and uses the conceptual framework and the methodology for to analyse and identify how public spaces respond and adapt the use, activities and experiences attached to different neighbourhoods in Beijing. The same analysis structure discussed above (Chapter Six) is carried out in Heiyaochang Unit, and the organisation of the chapter is similar.

7.1 Urban transformation of the neighbourhood

7.1.1 Morphological transformation of the neighbourhood

In order to understand local responsiveness associated with the use of public spaces, the morphological layout as well as the building structures need to be studied (block pattern is not analysed here due its extensive scale) to understand influence of political, economic and socio-cultural factors.

Heiyaochang Unit is situated inside the 2nd south ring road and next to Taoranting Park located in central Beijing. This location provides a good level of physical access to the city centre. The community is managed by a property management company and is in

charge of and supported by the street committee co-sponsored by a private company and a government institution on behalf of the community. As shown in Figure 7.1, the community is linked to one main road on the south side of the community and enclosed on the other three sides.

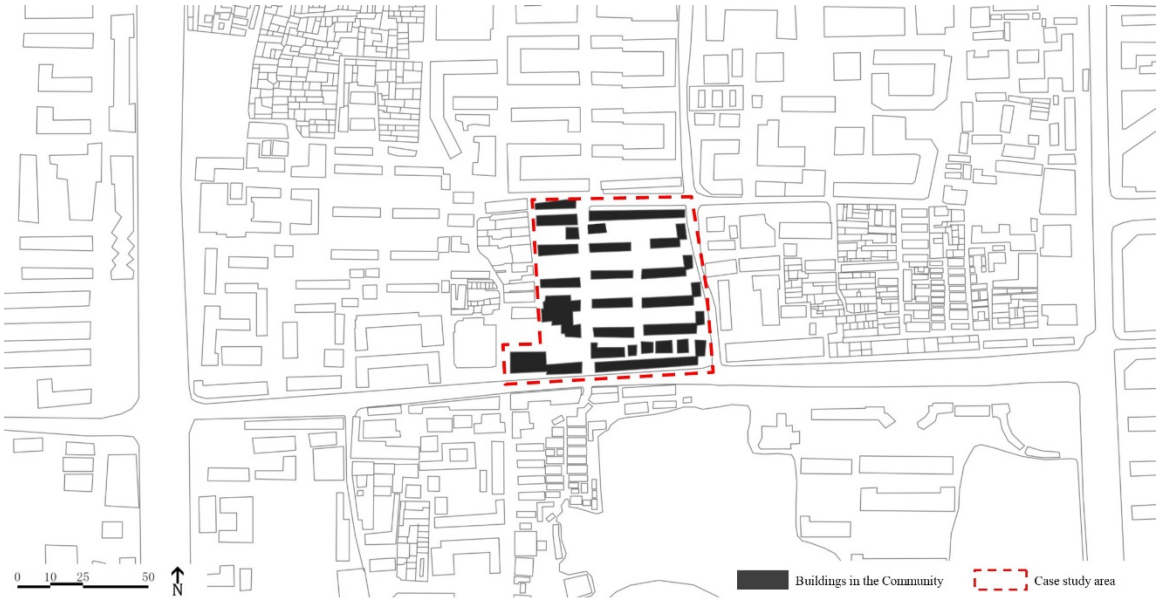


Figure 7. 1 The neighbourhood. Source: author

7.1.1.1 Spatial Layout

Built at the end of the 1970s, the neighbourhood was designed in a style that was influenced by socialism and collectivism ideology to address the collective lifestyle and social equality (for details, refer to section 4.2.2) as well as respond to political and social needs. As a typical work unit community, the characteristics of the community are (Figure 7.2):

- it is surrounded by walls, with public service infrastructure (such as schools, local market etc.) and facilities (such as sports facilities, chairs and waste disposal facilities) located within the community;
- a boulevard acts as the main street and entrance to the community;

- there are Soviet style, modern multi-storey buildings with shared spaces in between.

In addition, the community maintains a good scale for accessing commercial shops, public transportation and public parks within walking distance, which provides friendly social experiences for the residents. Furthermore, the open spaces between buildings are enclosed by solid buildings, which not only provide good visual connections between the buildings and the spaces to improve safety, but also enhance user experiences and convenience in serving their outdoor needs.

Figure 7. 2 Land use and spatial layout of the cast study community. Source: author

7.1.1.2 Building Structure

As discussed previously (details refer city level analysis, section 4.2.2), from the 1980s when real estate was established, modernist architecture started appearing in the city, especially in the work units. In light of the increased housing demand from a large number of labourers, medium density five or six-storey buildings were considered as ideal fit that address various constraints such as financial terms, land limitation and other social issues. From the previous morphological analysis, we can see that, compared to courtyard houses (refer to section 6.1.1.2 and 6.1.1.3), the quality of both the indoor and outdoor environment have improved considerably, due to the large public spaces between the buildings with green spaces and public facilities, and the indoor apartment private living space (between 70 and 90 square metres) which allows all essential indoor activities to take place (Figure 7.3).

Figure 7. 3 Floor plan of apartment from Heiyaochang Unit. Source: author

Extended rooms can be found along the facades of the buildings in the community, though they are not in the public open spaces, as commonly seen in historical areas, as

discussed in the previous chapter (section 6.1.2.1). The differences in the work unit community are that: 1] it commonly happens on the ground floor, as department owners found it easy to construct and regenerate the facade; 2] for the communities that were built during the 1990s, there are no specific or appropriate regulations, legal control or management of the residential communities, and therefore, if no one reports building extensions to the residential committee and the extended area do not disturb other residents, such as in the case of the limited extended spaces shown in Figure 7.4, the behaviour is usually ignored.

Figure 7. 4 Spaces extended by residents. Source: author

In addition, these extended rooms were not only built as an extended space, but also constructed as a cover to try to improve the security of indoor properties. As Figure 7.5 shows, a large number of residents built mental fences to cover the windows in order to strengthen security and safety for their homes. In this way, while the original building facades were altered due to a lack of policy and regulatory control, the extended space have responded to the socio-cultural needs and lifestyles, and formed a new identity in this early modern community.

Figure 7. 5 The mental fences cover the windows and extended rooms on the building facade. Source: author

7.1.2 Typology of public space in the work unit

7.1.2.1 Typologies of public open spaces

For those living in the community, there are five types of most utilised spaces according to mental mapping exercise (Figure 7.6 and 7.7) and these spaces cover all commercial activities, social interaction and daily essential needs of the community. In the following discussion, the analysis will study each place individually to identify the reasons why these spaces were the most utilised spaces by the residents.

Figure 7. 6 Metal mapping collected from participants

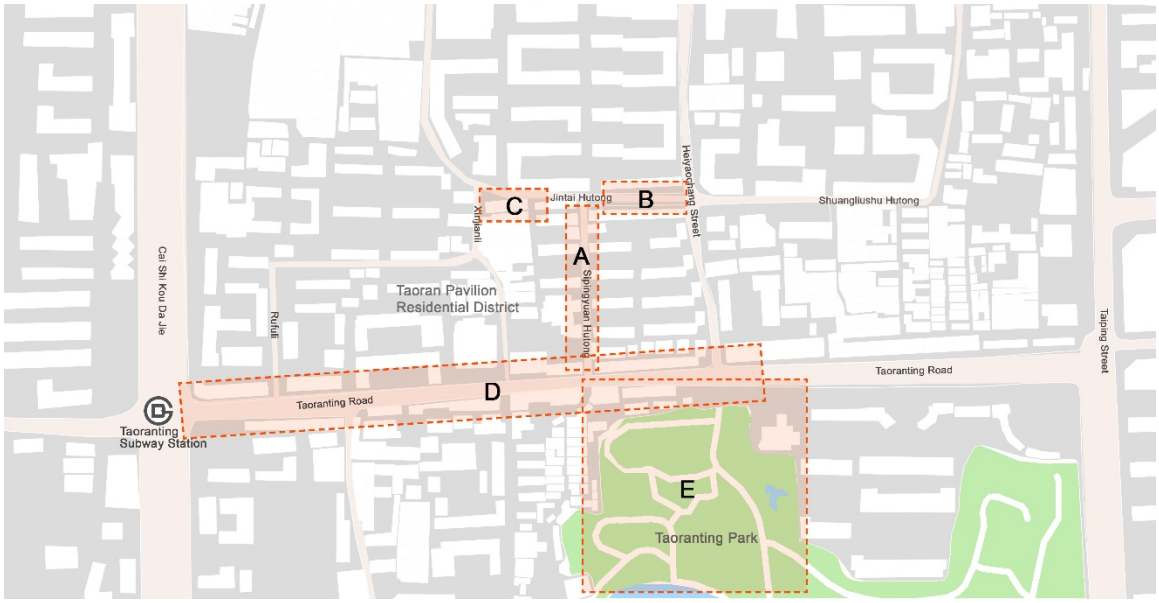


Figure 7. 7The most utilised spaces identified by users. Source: author

7.1.2.1.1 Space A – The main street of the community

Space A (Figure 7.8) – the reason why this space was chosen as one of the most utilised spaces is that it serves as the main street of the community. It provides access through the entire community and connects the north and south entrances for pedestrians and cyclists

and it is also the only area accessible for vehicles. In addition, all key facilities of the community locate alongside this main road, including the nursery school, the restaurant, local shops, and the bicycle shed.

As Figure 7.8 shows, the street section of the main road includes double vehicle lanes and pedestrian walkways on both sides of the street section, surrounded by five-storey modern buildings. Mature trees provide a clear edge for the pedestrian areas and the road, providing a good level of visual transparency to the skyline as well as natural greenery to the public space.

Meanwhile, Figure 7.8 clearly shows vehicle parking has taken up half of the vehicle lanes and most of the pedestrian walkway, meaning in reality, vehicles can only access the community through the remaining narrow space in the middle of vehicle lanes, and this is also true for pedestrians and bicycle riders. Moreover, the vendors have also taken part of the space to sell daily essential products, which provides socio-cultural responsiveness and opportunities for social gatherings and enhances the variety of commercial activities, but may also cause traffic and cleanliness issues. The nursery school is the biggest traffic node in the community, which causes heavy traffic problems every day. Furthermore, the restaurant and local shop enhance the variety of life and bring convenience to residents by providing daily essential products and food. The single-storey building next to the local shop is the bicycle shelter, which can house over 100 bicycles, and is monitored and managed by the local shop owner as a paid service. This makes the shop area one of the most commonly used spaces, which is not only for the essential use of the facilities and commercial products, but also because it enhances the social interaction and cohesion due to the increased social activities in this area.

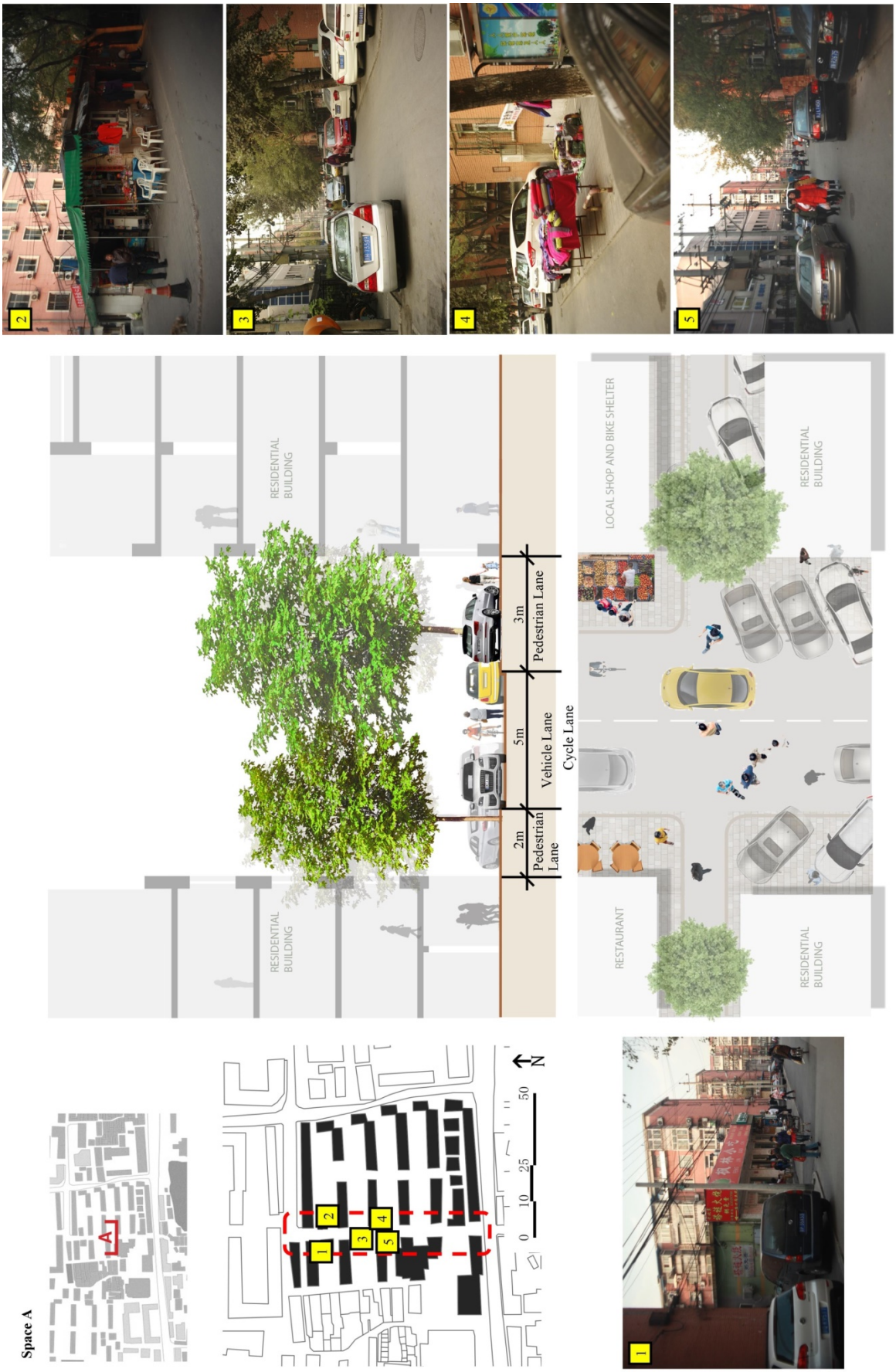


Figure 7. 8 Space A. Source: author

7.1.2.1.2 Space B – The social spaces

Space B (Figure 7.9) – the junction corner of Jingtai Hutong and Heiyaoshang Street is another highly utilised place located outside the community and next to the north entrance. The space is enclosed by two buildings, and it has been identified as a major place for social interaction among residents not only from Heiyaochang Community but also for people working or living in the surrounding areas.

From Figure 7.9, the section diagram shows that the space is spatially multi-layered, whereby one side has a pedestrian area and a road for mixed vehicles, bicycle and pedestrians on the same level with an array of mature trees, while the other side is raised to a higher physical ground level with a mixed landscape design for walking, social interaction and social events. In terms of spatial enclosure, the space is enclosed by two buildings on both sides with mature trees to cover the skyline, which provide good shade as well as transparency to let sunshine into the space in the summer, plus provide wind protection in the winter.

From the photos of the street (Figure 7.9), one can see that people use one side of the street more frequently than the other side due to the fact that car parking has almost taken up the entire pedestrian area, and people could only access the space by walking in the vehicle lane, causing safety concerns. On the other side, the space is well designed with facilities and seating areas, so a number of residents use the space as a place for interacting, exercising, playing games, chatting or sitting to watch the game activities, which forms a strong local socio-cultural identity as well as enhances the vitality of the public space which attracts more people to join in.

Figure 7. 9 Space B. Source: author

7.1.2.1.3 Space C – The local market

Space C (Figure 7.10) – the local market is the largest retail market for fruit, vegetable and meat in the entire area and runs from every morning to the evening. The market is one of the major traffic nodes in the area as it attracts a large steady flow of pedestrians, vendors along the roadside, and vehicle access.

As the street section shows (Figure 7.10), there are no clear areas marked out for pedestrians, bicycles, vehicles or vendor trading areas, making the place jumbled and disordered in terms of use. In addition, visually, the space is located between a six-storey high rise building on one side and a single-storey building on the other side, which form a visual spatial distinction and diversity that might increase the negative psychological effects for people. Meanwhile, the area lacks greenery area which might have responded to the commercial and part of social daily needs, but definitely not social interaction requirements.

In Figure 7.10, the photos show the disorder in the space: a] vendors are taking up spaces on both sides of the street; b] there is a large flow of pedestrians slowly moving through while shopping on the street; c] the façade of the market building is constructed in solid stone without windows, which loses connection to the space; d] there is no sign of management involved in controlling or maintaining the space. These matters cause heavy traffic issues during market opening times and, combined with the physical environment, make quick shopping people's only purpose for coming to the area. The poor relationship between the buildings and the space means there are no visual sightlines in some areas of the space which may cause safety concerns and, at the same time, street lights are not available on the street, which means space C has potential safety risks of crime issues and posts safety concern of pedestrians. In this case, lack of management and poor design qualities of public space produce a non-social interactional space, which only satisfy the daily essential needs but do not sufficiently respond to needs for social interaction and other socio-cultural needs.

Despite above disorders, the local market has become one of identity space for the area as a result of social and commercial activities, being one of social traditions kept and continued from imperial times (details refer to section 4.2.1.2), and responding to the preferences of local daily commercial needs for food supply. Therefore, the negative feedbacks received from the residents mainly centre around complaints about lack of management in spatial order (access), poor design in space qualities (safety concern) and cleanness issues of the spaces (further details are discussed in users' perception in 7.2.2).

Figure 7. 10 Space C. Source: author

7.1.2.1.4 Space D – The main public street running across the community

Space D – Taoranting Street (Figure 7.11) is the main public street connects to the community and there are various commercial shops, restaurants, institutions and public services such as a park, post office and banks on the street. The street is also the daily essential access point to the underground tube station, several bus stops along the roadside and the main bus routes across the community.

As shown in the street section (Figure 7.11), single-storey local shops locate (convert from courtyard houses) on one side of the street, while early modernist mixed-used high-rise buildings locate on the other side, forming a visual contrast in terms of the different height levels of buildings on both sides of the street. Mature trees cover the skyline of the space, which provides a sense of enclosure for the street and a good level of transparency of sunshine and shade. Meanwhile, it also reduces the visual impact caused by contrasted height levels of buildings on both side of the street. In terms of the pedestrian area, on one side of the street (high rise building side), the pedestrian area has a large space for people to walk through and sufficient space to allow for social activities and interaction. However, on the other side (single storey building side), the pedestrians area has limited access space because most of the access area are occupied by shops and food vendors. While this may provide opportunities for social interaction or short shopping trips, the access issue may cause safety concerns due to the vehicle flow nearby (Figure 7.11). For bicycle lane, the cycle areas are only designed to be on one side of the road, and during peak times, a large number of bicycles occupy the lane on both sides and cause major traffic issues as well as safety concerns for bicycle riders. Also, it can be seen on the other side of the road, the bicycle access is very close to other vehicles without any safety facilities for protection.

As the photos show in Figure 7.11, there is a large area designed for pedestrians on the high rise building side for access and activities, and photo 1 and 3 (Figure 7.11) show, the area is mostly occupied by parking, which causes pedestrians overflowing to the bicycle

lane, and increases the safety risks for pedestrian as well as bicycle riders. Therefore, due to lack of socio-cultural responsiveness in design of public open space (safety concern for vehicle and bicycle access), and also management in parking control (causing safety issue for pedestrian), the space is used only for shopping and access, but with limited social interaction and cohesion as well as social activities.

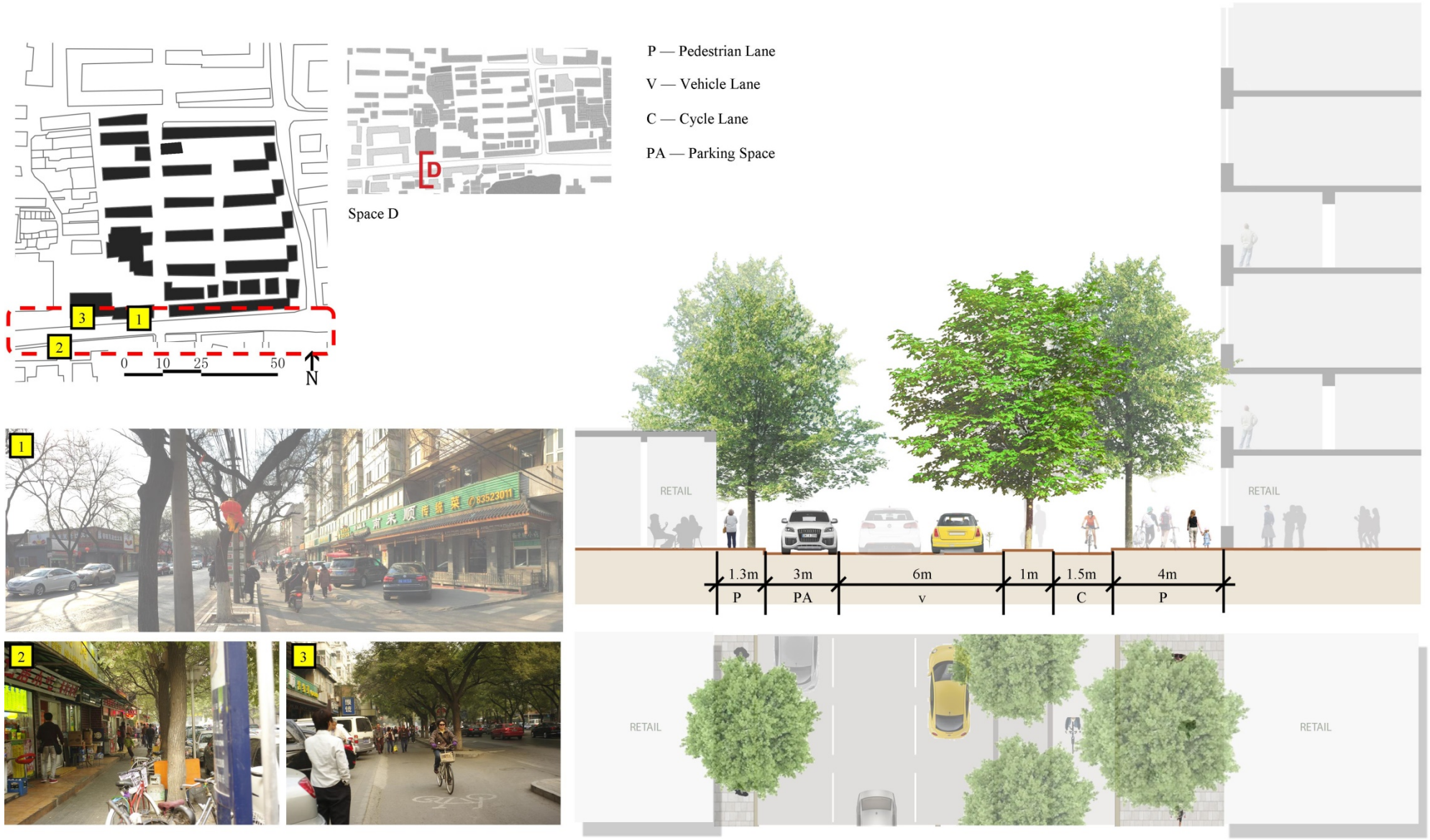


Figure 7. 11 Space D. Source: author

7.1.2.1.5 Space E – The traditional natural park

Space E – Taoranting Park (Figure 7.12) is one of the national historical conservation sites in China and also one of the largest parks in the urban areas in Beijing. From Figure 7.12 we can see that the park is opposite to the main entrance of the community and residents can access the park extremely easily. In the park, there are natural landscape, historical buildings and waterways that people can use and enjoy.

In Figure 7.12, the photos show that the park provides different spaces for various types of social activities, interaction and behaviours, such as the square which can be used for activities that increase social cohesion (photo example 2 in section 7.12), the avenue where people can walk at their leisure (photo example 4), lakes for water activities (photo example 5) and historical buildings for interactional and cultural activities that satisfy the local lifestyle and coincide with local cosmological understanding. Based on the community's ease of access to the park, a number of residents use the park as their main outdoor place for socio-cultural activities (Appendix). In light of the importance of nature in traditional Chinese beliefs as identified in conceptual framework (section 2.2.2) and city level analysis (section 7.1.3), a park with considerable natural landscape and canal does not only provide necessary spaces for local social activities which satisfy essential daily needs but also form a strong local social identity in the use of public open spaces.

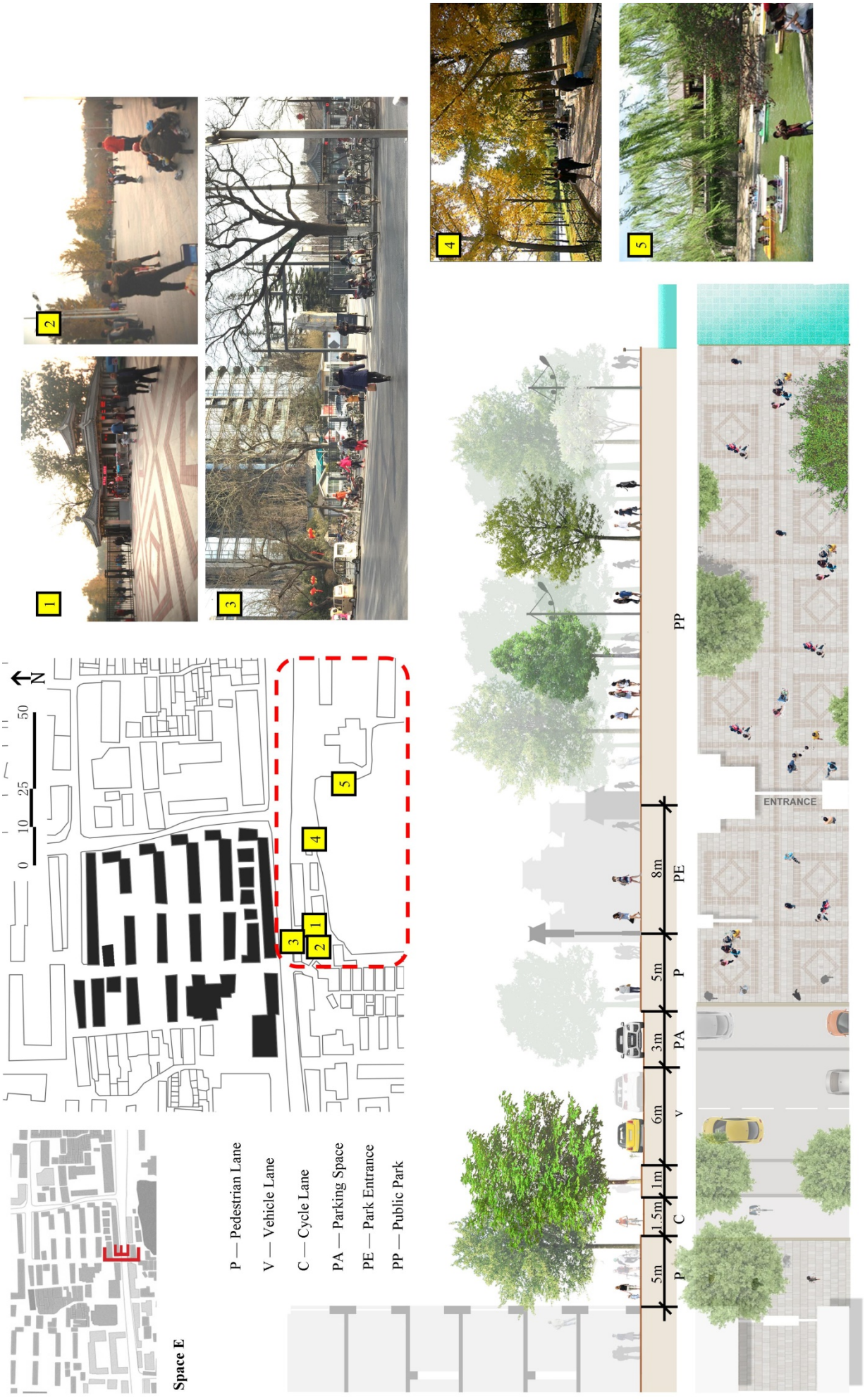


Figure 7. 12 Area E. Source: author

7.1.2.2 Typologies of buildings

As discussed in city level analysis (section 4.2.2), the early modernistic building designs in the community have improved the living conditions by providing better facilities and indoor rooms compared to courtyard houses in historical area. There are four types of buildings in the community (Figure 7.13), school, restaurant, local shop and residential buildings. Due to influences from Soviet socialism and early modernism, building designs focused on indoor functions (individual toilet and kitchen, refer to section 4.2.2) and emphasise social equality. However, due to changes of economic and socio-cultural needs, the buildings have transformed in order to respond and adapt to contemporary economic and social context, such as the school facade has been paint more colourful, with modern sign board on the top of restaurant buildings. More importantly, due to lack of management and policy control building facades, the residents have self-constructed safety cover outside the windows in order to increase security for their indoor properties. Therefore, the building has been adapting to the changing lifestyle and needs in contemporary use, and meanwhile, it also forms an identity based on the understanding and needs from some apartment in high rise buildings.

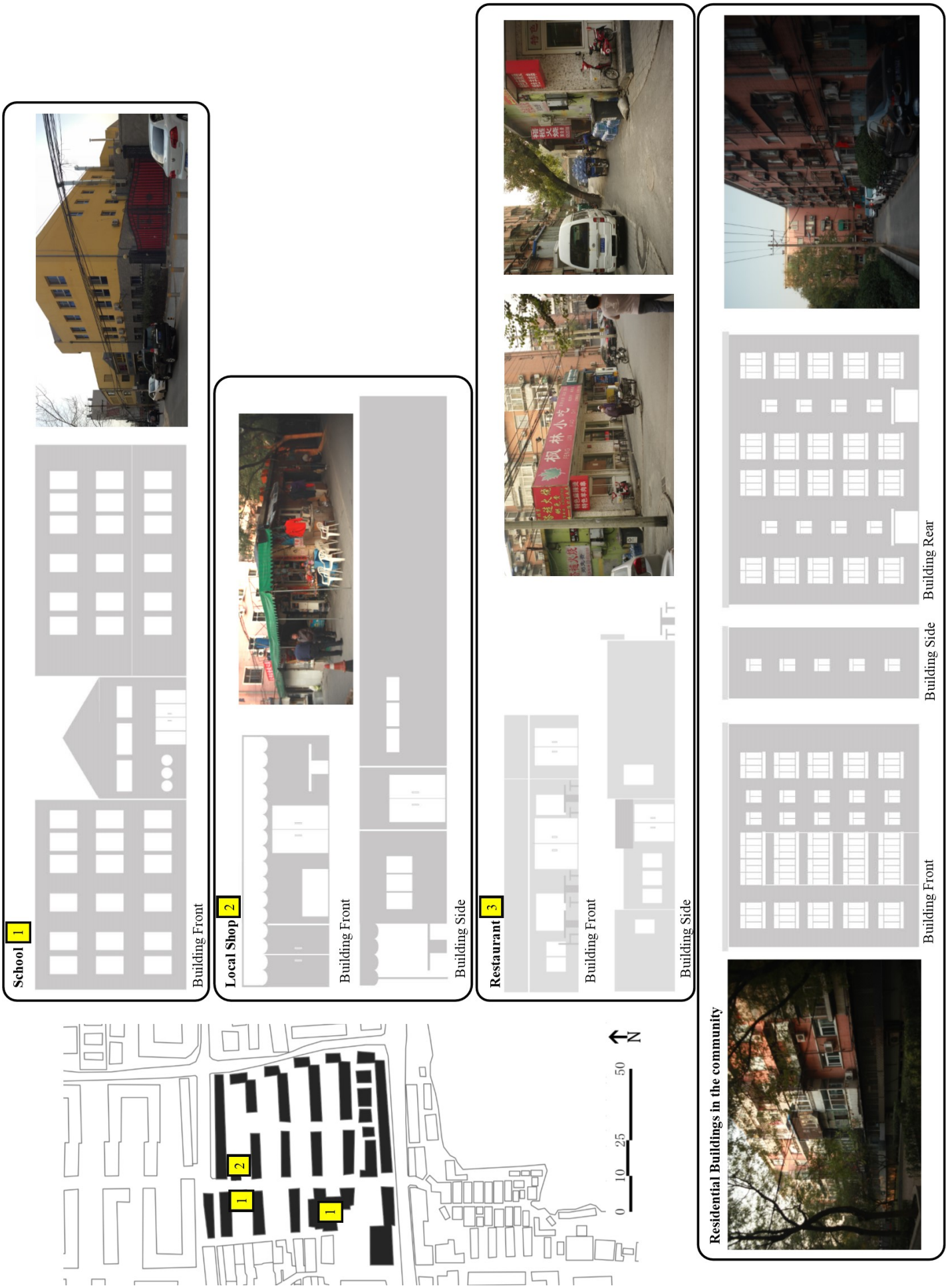


Figure 7. 13 Building typologies in the community

In conclusion, five different types of spaces are identified as the most commonly used spaces. Spaces B and E are highly responsive to socio-cultural needs for daily activities, social interaction and cohesions as well as individual behaviours based on local preferences and notions, which form a strong local identity. Space A lacks social and economic adaptation in its current use as well as not being sufficiently managed to maintain the cleanliness and safety of the open space. Space C provides convenience in relation to commercial activities, but lacks spatial connections between the buildings and the open space, while at the same time, management issues have become a major problem related to crime and vehicle safety concerns, but also the lack of cleanliness in the living environment. Finally, space D is the main access road and essential access to major public transportation, but a lack of consideration in the spatial design in relation to local use and social activities in the area have created serious traffic and safety concerns as well as impacts to local lifestyle in social activities. In addition, while there is a lack of policy control, management and maintenance for the building facades, the building typologies has been identified as responsive to local needs by using high rise buildings. In the following section, the users' perspectives will be analysed in order to comprehensively understand the needs, expectations and satisfaction with the use of public spaces in the work unit community.

7.2 Survey finding: the physical quality of the work unit

As explained in the conceptual framework, socio-spatial patterns are a process of interaction between use and physical built form. The previous section has analysed how the physical space has adapted to socio-cultural needs, thus, the survey findings will discuss the users' perspective to understand how the users perceive the space for their activities and behaviour. The associated global and local theories discussed in Chapters 2 and 4 will be implemented in the data analysis to assist identifying transferable lessons from the work unit community. The qualities of public open spaces identified in conceptual framework will be used to structure the evaluation of responsiveness of the

public spaces and to clarify people's perspectives of the access and linkage, use and activities, comfort and image, and sociability.

Qualitative methods were applied, such as interviews, mental maps, on site observation, annotations and analysing documentary evidence.

7.2.1 The profile of participants

Respondents are selected based on three main historical periods discussed in Chapter 4, to understand user perspectives from different generations (age groups) and genders. Thirty participants were selected through recommendations of community committee to cover different age groups in this community for interview (see Appendix B for example transcript). The first group of respondents were born before 1964 (over 50 years old) during the Communist period. The second group of respondents were born after 1970 and have experienced the Post-Reform period (about 35-50 years old). The third group of respondents comprises residents born after 1985 (around 22-35 years old). In this study, there is a higher proportion of middle-age participants from the community, compared to the historical neighbourhood where there was a younger participant profile, which may influence the respondents' needs and the type of choices made (Figure 7.14).

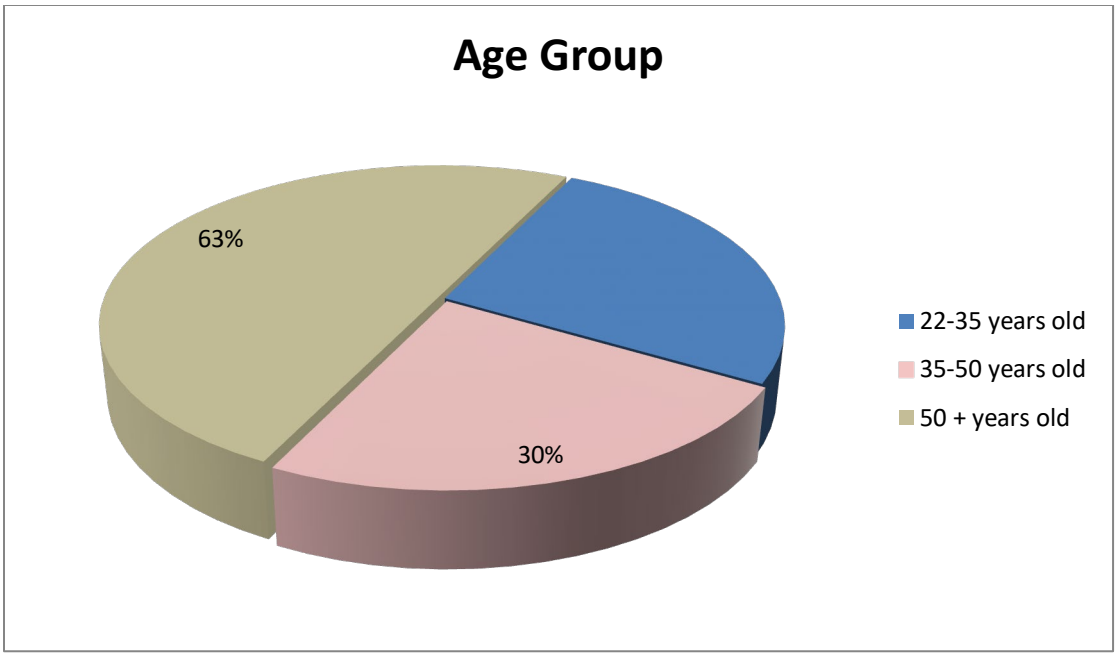


Figure 7. 14 Age group of participants. Source: author

7.2.2 Local perception of using public open spaces in relation to local responsiveness

In this section, design qualities for evaluating the level of local responsiveness regarding user experiences of public open spaces (refer to conceptual framework chapter section 2.2.1 and 2.2.2) are applied in order to identify how public open space respond to the use of public spaces by users. The data analysed based on observations, interviews and mental mapping collected in the field, in order to fully understand how and why people likes or dislikes and chooses certain area for their interactions and activities.

7.2.2.1 Access and Linkage

According to responses from the residents, 53 per cent of respondents argued there were access issues in the community. Furthermore, 94 per cent of residents emphasised that the main access road is over-crowded due to unmanaged vehicle parking; 52.4 per cent of

residents pointed out that uncontrolled vendors occupied much of the space; and 40 per cent believed the pedestrian access route was no longer sufficient based on above reasons. As shown in Figures 7.15, three entrances provide plentiful access points from inside any of the buildings to outside the community in five minutes walking distance. However, similar to the analysis discussed in section 7.1.2.1.1 (space A), vehicle parking occupies most of the access areas (Figure 7.16) and pedestrian areas which, combined with the mixed crowd of vendors, pedestrians and vehicles traffic during peak hours, makes the area extremely difficult to access. The underlying reason is that privately owned vehicles have started to play increasingly important road for people's mobility, according to the latest data from Beijing Statistical Information Net (2015), there are 5.43 million vehicles in Beijing, of which 4.26 million are privately owned. And because vehicle parking was not originally considered in the city design and plan, it has become a critical issue of this type of community due to crowding and safety concerns. Over half of respondents do not feel safe in the community, because: a] 86.2% of users argued that there was a large number of vehicles in the community; b] 20.7% of users' stated that such a large number of vehicles limited access to road and space; and c] 31% of users were concerned about the speed of vehicles. These concerns require two levels of response: 1] parking spaces need to be clearly marked and legally enforced in order to clarify the functions of each purposed users' group; and 2] design needs to consider socio-cultural transformation in adapting to the current use of the space.

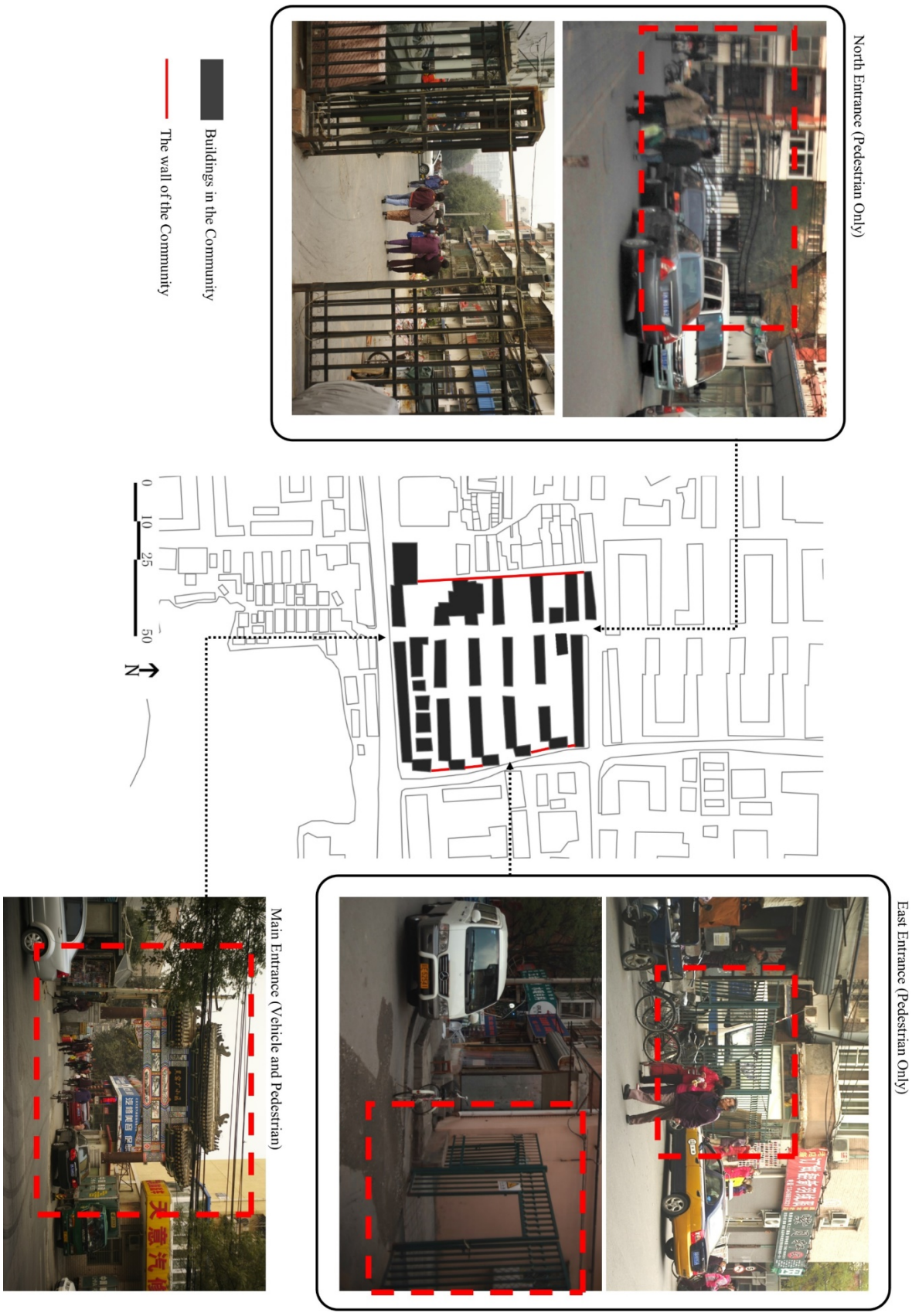


Figure 7. 15 Entrances and spatial layout of the community. Source: author

Figure 7. 16 Unmanaged vehicle parking and vendors on the pedestrian areas. Source: author

In terms of the legibility of the spatial layout, none of the residents found this to be an issue. As discussed in sections 4.2.2 and 7.1.1, the spatial layout emphasises social equality and collectivism and therefore, the boulevard were design to address the central point spatially with north and south entrances. In the meantime, the size of the community were designed to be small scale and spatially enclosed; therefore, the spatial node and direction within the community are clearly identifiable although the buildings are designed in the same style.

In terms of transportation services connecting the community to the city, as Figure 7.17 shows, the underground stations are reachable within walking distance from the main entrance of the community. At the same time, various bus routes along the public street provide convenient transportation services to the rest of the city.

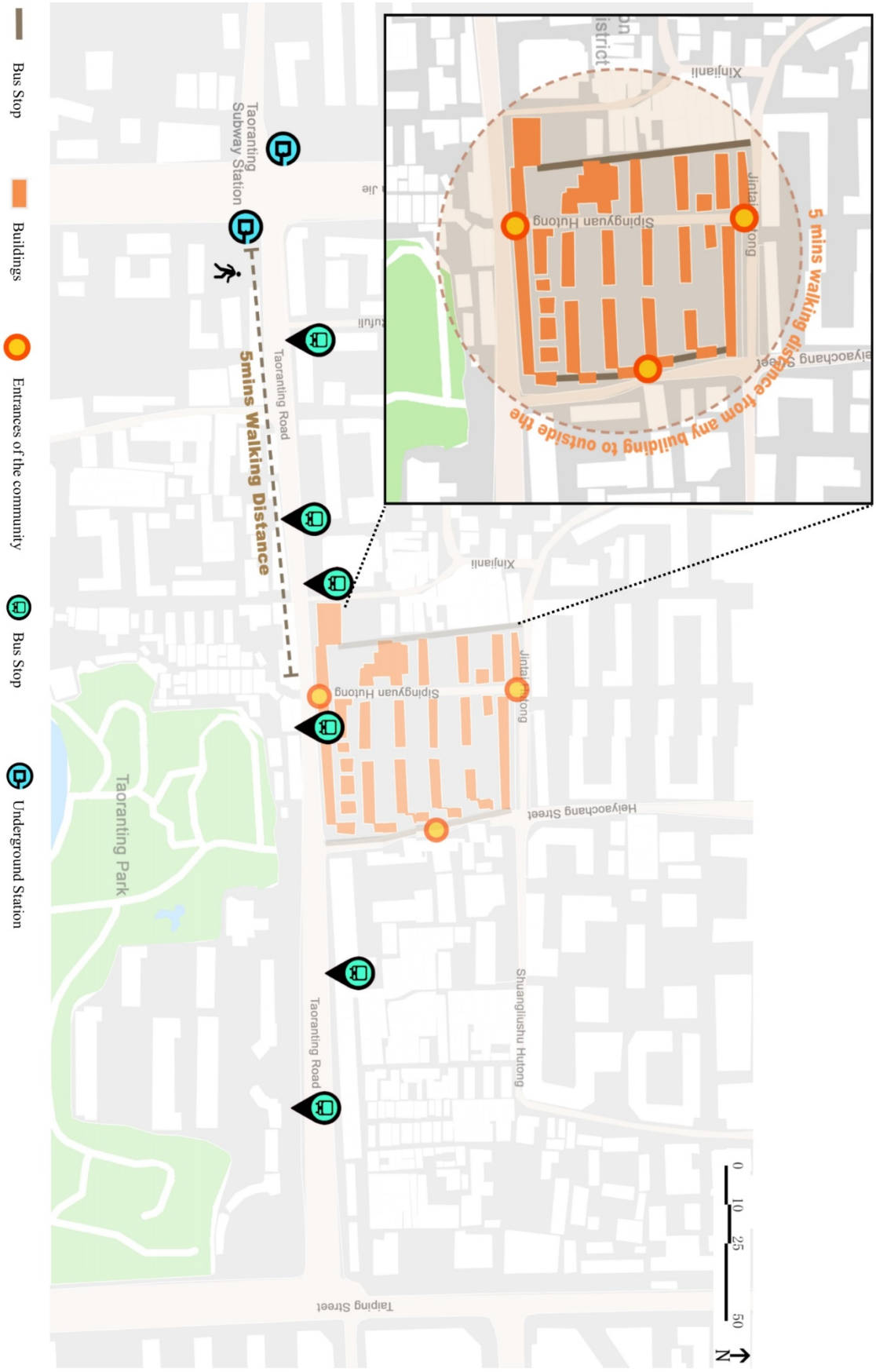


Figure 7. 17 Public transportation services around the community. Source: author

To conclude, the original spatial design of the community is influenced by the political and social ideology and is highly responsive to political, socio-cultural needs and the residents' lifestyle. As the residents' lifestyle evolved during economic development and urban transformation, the public open space adapted to the dramatically increased demand for vehicle parking, where uncontrolled vehicle parking appeared, as a result of a lack of management, control and maintenance of the space, and caused access issues, safety concerns, cleanliness issues, as well as limited space for social interaction and activities.

7.2.2.2 Use and Activities

As land use map (Figure 7.2) clearly shows, there are a good level of supporting facilities and services exists for the community (Figure 7.18). Public buses, schools, local shops and restaurants for daily essentials as well as local parks and places for social interaction are all reachable within 400 metres of walking distance, and additional facilities are available within 800 metres (roughly 10 minutes by foot) of walking distance, such as a supermarkets, university and hospital.

Figure 7. 18 Local services and facilities. Source: author

The community was originally designed to be a gated community. However, as the urban development transitioned from a planned economy to a market economy, most work units transformed from nationally owned to privately owned (see section 4.2.2); therefore, the management of the community passed to the sub-district office. As a result, unprofessional management combined with a lack of funding caused several issues, which were (Figure 7.19): a] vendors freely accessing the community and occupying space in order to provide services such as selling goods (photo 6 in Figure 7.19), repairing shoes and fixing bicycles, causing cleanliness issues (photo 7 in Figure 7.19) (supported by 75.9 per cent of respondents); b] the road and public spaces becoming disordered and difficult to access (supported by 82.8 per cent of respondents) because, although vendors were providing convenient services and selling fresh fruit and vegetables inside and outside the community, they were doing so without proper management and control (photo 1 in Figure 7.19), and c] low-priced products from vendors attracting more outsiders to come to shop in the community, which disturbed the privacy of the community and is considered a safety risk by the residents (supported by 92 per cent of respondents). Therefore, the privacy become an important aspect highly demanded by the residents due to safety, cleanness as well as access issues.

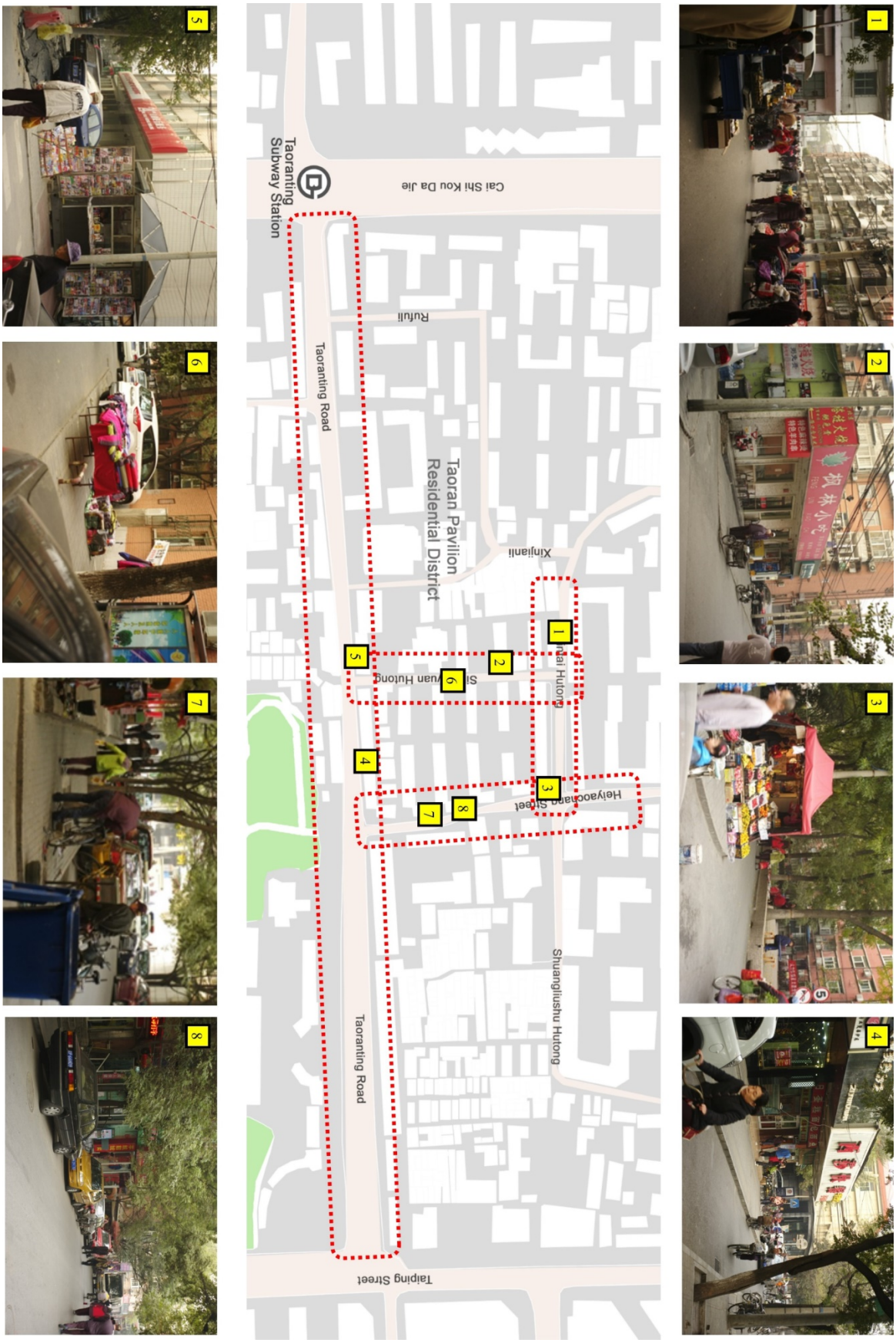


Figure 7. 19 Examples of local vendors. Source: author

Despite the abovementioned issues, 96.7 per cent of respondents were satisfied with the variety of commercial offerings available in the area (details refer to section 7.1.2.1.3), particularly, the respondents stated that the local market and shops provided extremely convenient, fair-priced goods that support their daily needs in various ways (Figure 7.20).

Figure 7. 20 Different activities and social interactions in open spaces. Source: author

In summary, a lack of management, particularly the uncontrolled vendor trading activities, is identified as the main issue of the community. This is related to another issue of the community, a lack of privacy due to a large number of people attracted by the vendors to the community, which needs to be clarified by design to define and enforce public use of the space, in order to improve ownership, safety and sense of belonging for the residents.

7.2.2.3 Comfort and Image

Amenity is a significant component of the characteristics of public space as defined by respondents, which links to all activities carried out in such spaces including: walking, communication, play, rest, watching and exercise. Meanwhile, the level of enjoyment

associated with these activities and interaction in public space is mainly based on local preferences for nature (for theories refer to section 2.2.2).

Nature and greenery

As discussed in section 2.2.2, the term 'nature' is a complex term which not only represents the non-manmade environment and greenery, but also symbolises local cosmological and superstitious beliefs and understanding. Although 76.7 percent of respondents agreed that there was a good coverage of green spaces within the community (Figure 7.21), 63 per cent of residents mentioned it was important to improve the quality of green spaces in some areas for the benefit of the overall community (Figure 7.21). Overall, green spaces in the area meet residents' socio-cultural demands in terms of their use for social interaction and various activities associated with greenery.

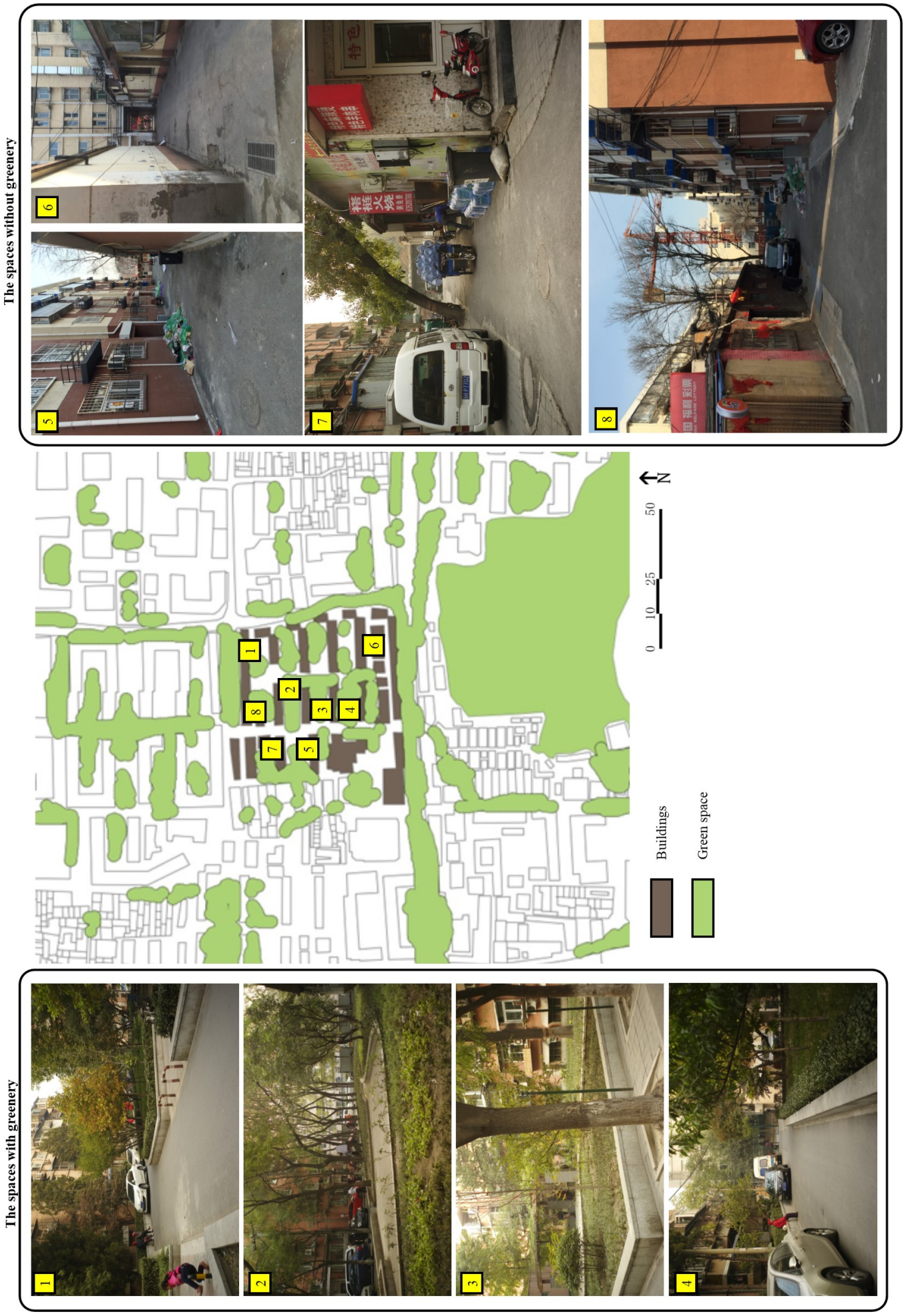


Figure 7. 21 Spaces with and without proper coverage of green spaces in community. Source: author

According to the respondents, the most commonly used places have been identified (refer to section 7.1.2.1) which are places used for such activities as engaging with other people or groups, exercising, using public facilities, shopping with vendors or in food shops, accessing public transport or for other purposes. The public spaces are mainly used at night, as 63 per cent of respondents use the public spaces and facilities between 7pm and 10pm. People finish work and shop for essentials such as food, fruit and vegetables on their way back home, or some of them go to public spaces for walking, exercising and leisure activities after dinner. 36.7 per cent of respondents use the public space for access and exercise in the morning and 30 per cent of respondents play and do leisure activities in the public space in the afternoon.

Public Facilities

Public facilities are important mediator facilitating public use, activities and interaction of public open spaces especially in the traditional local context of nature-human interaction. From the statistical results related to satisfaction to public facilities, apart from greenery and rubbish bins with which over 70 per cent of participants were satisfied with, the residents pointed out: a] the lack of information boards for conveying management notices and important information (supported by 46.7 per cent of participants); b] the lack of variety of sports and exercise facilities especially for elder residents (supported by 53.3 per cent of participants) as the existing type of facilities are simple and specific, and also insufficient for sharing in peak time (supported by 86.7 per cent of participants); and c] poor pavement design, as the pedestrian routes have been overtaken by increased vehicle parking (supported by 56.7 per cent of participants).

Safety

Almost half do not feel safe in some areas within the community, and there are several reasons for this, including a] 92 per cent of respondents pointed out that there was a large number of strangers accessing the community, attracted by vendors; b] 20 per cent of respondents stated that thefts have occurred regularly; and c] 28 per cent of respondents related that there are dark areas in the area at night (Figure 7.22).

Figure 7. 22 Space in the community without street lights. Source: author

Figure 7.23 shows the most undesirable places selected by respondents and also the fact that the respondents use the public spaces with a clear purpose. Overall, it is based on people's routine although commercial activities might have affected respondents' decision making and use of the public space. The key reasons are:

- 93 per cent of respondents' stated that vehicle parking on the road was chaotic and limited access to pedestrian areas which made them feel unsafe (photo

examples 2 and 3, in Figure 7.23);

- Due to the large number of vendors in and around the community, 66.7 per cent of respondents stated they felt both uncomfortable and unsafe in the community environment because of this reason (photo examples 1 and 6, in Figure 7.23);
- 50 per cent of respondents pointed out that gaining access to the community and surrounding areas is difficult, because of the parking issues and large number of vendors taking up space for commercial purposes (photo examples 1, 2 and 4, in Figure 7.23).

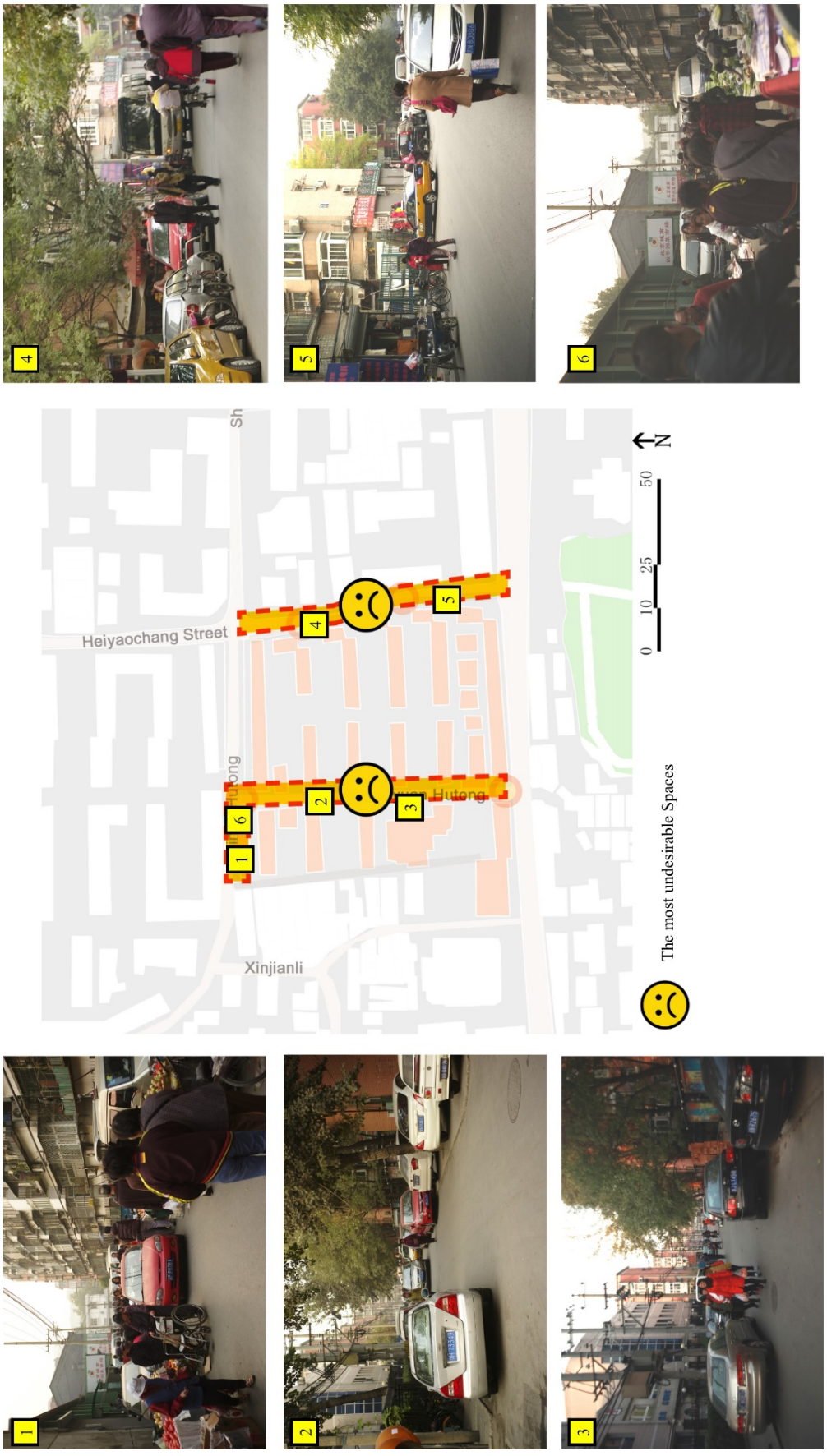


Figure 7. 23 The most undesirable places selected by residents. Source: author

The key reasons why the community environment is perceived to be unsafe are: a] the lack of privacy in the community caused by uncontrolled access through the community; b] the lack of and irregularly maintained public facilities such as the street lighting system, which then means that dark corners can be found in some areas. Thus, 75 per cent of respondents are dissatisfied with the maintenance of the services in public spaces. This is because the community is managed by a residential committee which, just as in the historical living areas, follows a policy of 'four self' that is 'self-managed, self-educated, self-serviced and self-monitored'. Therefore, professional management is needed in order to enhance the maintenance of public facilities in order to increase the social responsiveness.

7.2.2.4 Sociability

Contemporary Chinese society advocates social equality in city development due to transformation of social and political formation due to the influences of socialism ideology. While the traditional social hierarchy no longer exists in the current urban design, social gregariousness become the key consideration in the design of work units in order to emphasise collectivism. Through urban transformation over time, the work unit has managed to adapt to most changes, however, the main problem remains to be inefficient feedback collection from the residents and unprofessional management and maintenance of the public open spaces. This is supported by all participants who disagreed they had participated in planning, design and construction processes of the community although all of them said they were willing to be involved in the design and construction process, which was essential to improve the socio-cultural and economic quality and local responsiveness in public space design.

7.3 Theoretical comparison between conceptual framework and historical neighbourhood analysis

Based on the previous analysis in this chapter, although the conceptual framework is applied in order to identify the level of local responsiveness in the use of public open spaces, but a comparison is needed for better explanation and understanding of sameness and differentiation between the theories and reality in the context of Beijing. The following table 6.3 is structured based on the structure of conceptual framework, and details are:

Table 7. 1 Comparison between theories and reality based on the analysis of historical living area in the context of Beijing in order to identify the level of local responsiveness in the use of public open space. Source: author

Components in Conceptual Framework		In Theories in Conceptual Framework	The Reality of Historical Neighborhood Analysis
Political Responsiveness	Government Policies and Regulations	The government policies and regulations are developed in order to ensure the private sectors deliver plans or design that serve and correspond to the public interests as well as the political and economic development goal (Carmona et al., 2010; Garreau, 1991; Brand, 1994) (Details refer CH2, section2.1.3).	As discussed in city level analysis (section 4.2.2) that the development of work unit was a central government effort under the influences of socialism and collectivism and therefore design style represents early modernism influences and addresses social equality needs. However, through the process of market-driven property ownership privatization in 1980s (section 4.2.2), and also a lack of policy control (same as historical living area), the building facades are being extended to include extra storage space as well as

			security improvement by the residents (Section 7.1.1.2 and 7.1.2.2).
	Public Consultations	On one hand, any strategic programme, plan or policy has to be delivered through a consultative process incorporated by all local stakeholders to ensure the sustainable development (Lafferty, 2001; UNCED, 1992); while on the other hand, it is a way of democratic participation to exercise public rights in the development process (Blowers, 1993; Healey, 2006). Therefore, the success of progressing plans and policies should involve both top-down and bottom-up approaches (Carmona et al, 2010) (Details refer to CH2, Section 2.1.3).	There are no public consultations in the design and plan of public open space in the neighbourhood as the original design (produced by Soviet professionals) was made as a model and spread across the country (Section 4.2.2).
	Political Ideology	Political ideology is a 'set of beliefs about the proper order of society and how it can be achieved' (Erikson and Tedin, 2003, p.64; Adorno et al. 1950; Campbell et al. 1960,	The original design of the work unit community can be seen as a political production, as the entire design focused on exploring and emphasising socialism and social equality (the main political

		1965; Kerlinger, 1984). It can be seen as a shared framework of mental model that provide both an interpretation of the environment and a prescription that how to structure the environment (Jost et al., 2008) (Details refer to CH2, Section 2.1.3).	ideology) not only in the overall community plan (the boulevard, section 4.2.2 and 7.1.1.1), but also in the building typologies as well as public facilities (the original plan, such as school with the community, details refer to section 4.2.2).
Economic Responsiveness	Economic Ideology	The urban space should be created as a neutral container for economic and social activities, and the public open space as products are processed based on the economic ideologies (Kashef, 2008). In the meantime, the government policies should maintain the balance between economic growth and socio-cultural needs in both urban space productions and city developments (Carmona et al., 2010; Healey, 2006) (Details refer to CH2, Section 2.1.4).	The local market, shops, restaurants and vendors provide extremely convenient services for local residents, though due to a lack of management, has led to access issues, safety concerns (section 7.1.2.1.3), privacy demands (section 7.2.2.2), and cleanness issues in the public open spaces (section 7.1.2.1.3).
Socio-cultural	Identity	Place identity can be understood as a key concept	The public spaces in the work unit have adapted to the

		for making responsive places for human beings (Waston and Bentley, 2007). It can be seen as the set of meanings attached to the multi-sensory process of inhabiting a place, which create 'sense of belonging' and 'sense of rootedness' for delivering place responsiveness as well as sustainability in design (Carmona et al, 2010; Lovell, 1998).	changing preferences in use and needs and form a strong local identity. Firstly, the local market area as well as shops along the main street and inside of the community have responded to local commercial needs (section 7.1.2.1.3 and 7.2.2.2). Moreover, the green spaces satisfy the basic needs for social interaction and activities in public open spaces, though there is potential to respond to more activities and needs in the park (section 7.1.2.1.5 and 7.2.2.3). In addition, the building facades have transformed from the original design to adapt to needs for extended storage space as well as protection for safety and security (section 7.1.1.2 and 7.1.2.2).
	Vernacular Architecture	By giving a town or city as well as a space or place strong sense, vernacular buildings and architecture can be seen as a form of physical responsiveness to socio-culture context (Porter,	The early modernistic architectural design represents socialism ideology and addresses the needs for socialism and social equality (section 4.2.2). Meanwhile, the building facades respond to the changing needs of

		1982; Lange, 1997; Moughtin et al, 1995). It presents as two-dimensional spatial structures and layout and three-dimensional vertical scales and façade, which responsive to the socio-cultural needs, preferences and notion (Oliver, 1986, 2000, 2003, 2006).	indoor spaces as well as security concerns in contemporary use (section 7.1.1.2 and 7.1.2.2).
	Lifestyle	Lifestyle is the outcome of choices which lead to the specific activity and activity system in given locations (Rapoport, 2005). In the meantime, the lifestyles is affected by the local value and preferences that expressed through ideals, images, schemata, meanings under local world view and global influences (Rapoport, 2005).	The public spaces strongly respond to the changing needs in use of public open spaces in contemporary lifestyle, such as vehicle use and parking in the community (section 7.1.2.1.1). Meanwhile, local market and shops maintain local preferences in commercial activities (section 7.1.2.1.3). Meanwhile, the public open spaces have adapted to the preferred local lifestyle in terms of social interaction, activities and behaviours based on local cosmological understandings (section 7.1.2.1.2). Nevertheless, a lack of management remains the prominent issue in every

			analysis in this study.
	Social Cohesion	Cohesiveness is considered an attribute along with other processes operating within and between small groups (Hogg, 1992). Social cohesion relates to the members of a group who share emotional and behavioural characteristics with one another and with the group as a whole (Bruhn, 2009). The social cohesion is understood by providing 'social space' that people could engage in various forms of socio-cultural and economic exchanges (Carmona, 2010). Also, it contributes to their identity and sense of place by in order to fulfil different social and economic requirements in the production of urban environment (Verma, 2011; Tonkiss, 2013).	The traditional local market and vendor trading activities present strong identity and local preference for lifestyle which form social cohesions and enable interaction (section 7.1.2.1.3), though it has caused issues such as cleanliness and privacy issues as identified in this study. Moreover, the small square (analysis of space B in section 7.1.2.1.2 and analysis of space E in section 7.1.2.1.5) with public facilities and greenery, have responded to the socio-cultural needs in interactions, activities and individual behaviours, thereby forming strong social cohesions as well as identity that attract many more people to join in.

Conclusion

This chapter has analysed public open spaces in a work unit community in terms of local responsiveness from a user's perspective. The conceptual framework and the methodology have been implemented for the data collection and analysis. The data analysis of public spaces in the work unit community was carried out in two stages, as detailed below.

First, the morphological transformation analysis identified the characteristics of the work unit, which included: a] it was surrounded by walls with public services infrastructure (such as schools, the local market etc.) and facilities (such as sports facilities, chairs and rubbish bins) located within the community; b] there was a boulevard which acted as the main street and entrance to the community; c] there were Soviet-style modern multi-storey buildings with shared spaces in between. In addition, the quality of the indoor living spaces has improved as a result of globalisation, and the housing has also responded to social needs by means of families extending their living quarters into additional space.

As defined in the transformation analysis, the space has responded to socio-cultural needs and the shifts in the economy by extending the buildings and adapting to changing lifestyles in the use of public open spaces; it has also responded to changes in the general daily social interaction and activities as well as individual behaviours.

Secondly, the experience of using the public spaces has been evaluated against different qualities in order to identify how the spaces have adapted to meet users' socio-cultural demands as well as commercial needs based on the context of the work unit. The findings can be summarised as follows:

1. The spatial design of the community is highly responsive to political and socio-cultural needs in terms of its original design, which represents the

political and social ideology in the physical living environment. Through urban transformation, economic development and the evolution of the people's lifestyles, the public open spaces have adapted to the dramatically increased demand for parking. Nevertheless, due to a lack of professional management and regulatory control to maintain the use of public open spaces, car parking has become a challenge for the community and it has caused issues such as access difficulties, vehicle safety concerns, cleanliness issues and constrained social interaction and activities.

2. Insufficient and unprofessional management is behind the aforementioned issues and is the main issue for the community, directly leading to uncontrolled vehicle parking, poor cleanliness and maintenance of public facilities, and safety concerns.
3. Privacy in the community needs to be enhanced by design and by enforcing its observance, in order to improve ownership, maintain safety, and forge a sense of community.

In conclusion, public open spaces in the work unit are locally responsive as they have incorporated to socio-cultural usage, political ideology and local commercial activities, albeit at a basic level. Management is the key to improving the maintenance and enhancing the quality of responsiveness in the use of public open spaces as well as transforming and adapting public open spaces for further developments. Meanwhile, the comparison has emphasised the similarities and differences between the theories identified in the conceptual framework and the realities of the neighbourhood. In the next section, an analysis of a contemporary community is carried out to look at the level of local responsiveness in the use of public open spaces in these areas.

Chapter Eight - Back Modern City, A Contemporary Living Community

Introduction

The previous two neighbourhoods analysed in Chapter Six and Seven that have identified learnings and transferable lessons responding to political, economic and socio-cultural dimensions in public open space design. In this chapter, the analysis focus on a contemporary residential development in order to identify local responsiveness based on global cross-cultural influences. It continues examining the case study in order to answer the research question 'what kind of urban spaces and urban design qualities contribute to the development of local public life in Beijing?' and to use the conceptual framework and the methodology to analyse and identify how public space affects the use and experience of and associated meanings in residential areas in Beijing. The same analysis structure as discussed in Chapters Six and Seven has been carried out in a contemporary modern community named Back Modern City, and organised in a similar structure to the previous chapters.

8.1 Urban morphological analysis of a contemporary residential community

8.1.1 The Implementation of the Field Study

This neighbourhood focuses on a contemporary residential development – Back Modern City – and as discussed in the research methodology (Chapter 3) and city level analysis (Chapter 4 and 5), the community was selected as the study field as a large number of similar communities in Beijing in terms of scale, density and spatial

structure. The development is a well-known residential community in Beijing, situated beside the 4th east ring road, and occupies an area of 160,000 m² (Figure 8.1). The community committee of Back Modern City oversees administration of the community through a property management company. The community is divided into four smaller districts with a city road across the community (Figure 8.2) and enclosed by walls (District A and C). Within the community, there are residential and commercial areas mixed with large green spaces (District B), and sports facilities (District C). The design of the community was the first project that considered the needs of a residential community on a smaller scale in Beijing.

Figure 8. 1 The neighbourhood and its spatial layout. Source: constructed by author based on Baidu Map

Qualitative methods were used in this analysis, such as interviews, mental mapping, on site observation, annotation and documentary evidence analysis.

8.1.2 Time Zone in Use of Public Space in a Contemporary Community

As mentioned in research methodology (section 3.4.2.3), contemporary neighbourhood is the main form of urban development in China especially Beijing, and thus, this neighbourhood mainly focuses on identifying key issues regarding locally responsive public open space design in contemporary neighbourhood. The neighbourhood explores how people use the spaces, what type of spaces they use, in what time they use the spaces in order to understand how contemporary modern public open space design respond to people's daily usage based on local socio-cultural preferences.

Different age groups require different types of public spaces for social activities and interactions. As this neighbourhood can be taken to represent the types of use and activities in public open spaces in the most contemporary modern communities in Beijing, the fieldwork investigated key times for public activities and events between 5am to 9am, 9am to 12pm, 3pm to 6pm and 7pm to 10pm (based on answers from questionnaires, refer to Appendix), in order to identify all types of social activities, interaction and individual behaviours in a contemporary living community.

7.1.2.1 Use of public space between 5am and 9am

It is believed this time period is one of the peak times for use of public spaces during the day, as almost 70 per cent of residents stated they would use public open space in this time period (Appendix). The main users and their activities include (Figure 8.2):

- Accessing space between the community and public transportation (from young to middle-age respondents) (Example photo 4 in Figure 8.2)

- Exercising, based on traditional local health beliefs (refer to sections 2.2.2 and 6.1.3.1) of gathering fresh Qi (natural breath) from transmutation between yin and yang (from all age groups albeit different types of morning exercises) (Example photo 1 in Figure 8.2)
- Eating breakfast in restaurants or buying food from food shops (from all age groups) (Example photo 2 in Figure 8.2)
- Shopping in the supermarket, local shops or from vendors (mainly from middle-age or senior respondents) (Example photo 3 in Figure 8.2)
- Communicating with neighbours or work colleagues (from all age groups for both workers and residents)

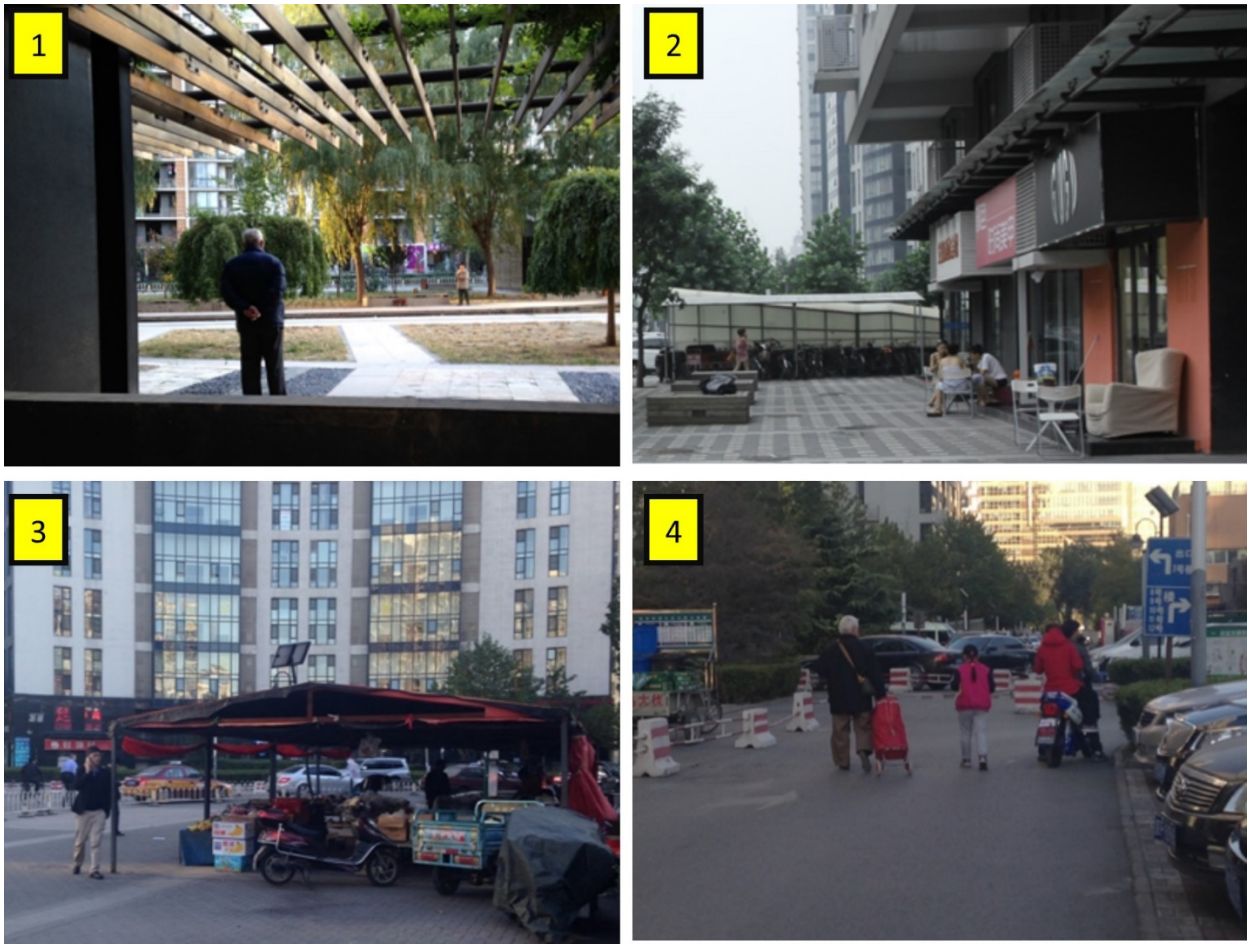


Figure 8. 2 Use of public space between 5am and 9am. Source: author

8.1.2.2 Use of public space between 9am and 12pm

Nearly 30 per cent of residents responded they use public spaces in this time period. The main users and their activities include (Figure 8.3):

- Commercial activities (mainly from young and middle-age workers)
- Exercising and walking (mainly from retired seniors who are responsible for the care of pre-school children in the family) (Example photos 1 and 2 in Figure 8.3)
- Engaging with other people in the public space (from workers, and seniors taking care of pre-school children in the family) (Example photos 1 and 2 in Figure 8.3)

Figure 8. 3 Different users' group activities and social interactions in open spaces.
Source: author

8.1.2.3 Use of public space between 3pm and 6pm

This time period tends to have the best temperatures of the day, either cooler in summer or warmer in winter. Over 70 per cent of residents stated that they used public spaces during this time period. The main users and their activities include (Figure 8.4):

- Social interaction (a large number of retired seniors use the public space after having a midday nap, and engage with others from the same age group in the public spaces around 3-4pm) (Example photos 1, 2, 3, 4, 5 and 6 in Figure 8.4)
- Exercising (senior groups normally exercise in this period due to the fact that the weather conditions are best during the day in free spaces between 3pm and 4pm; other age groups may use the sport facilities when they return from work or school around 6pm) (Example photos 3 and 4 in Figure 8.4)
- Commercial activities (shopping for dinner ingredients in food shops, local shops and the supermarket normally takes place between 5pm and 6pm among young workers, middle aged groups and senior groups)
- Accessing the public space (all age groups use the public spaces as accessible routes between the community and public transport, and local schools and their homes) (Example photos 5, 7and 8 in Figure 8.4)
- Playing (children's playtime happens during this time period after they have returned from school) (Example photos 5 and 7 in Figure 8.3)

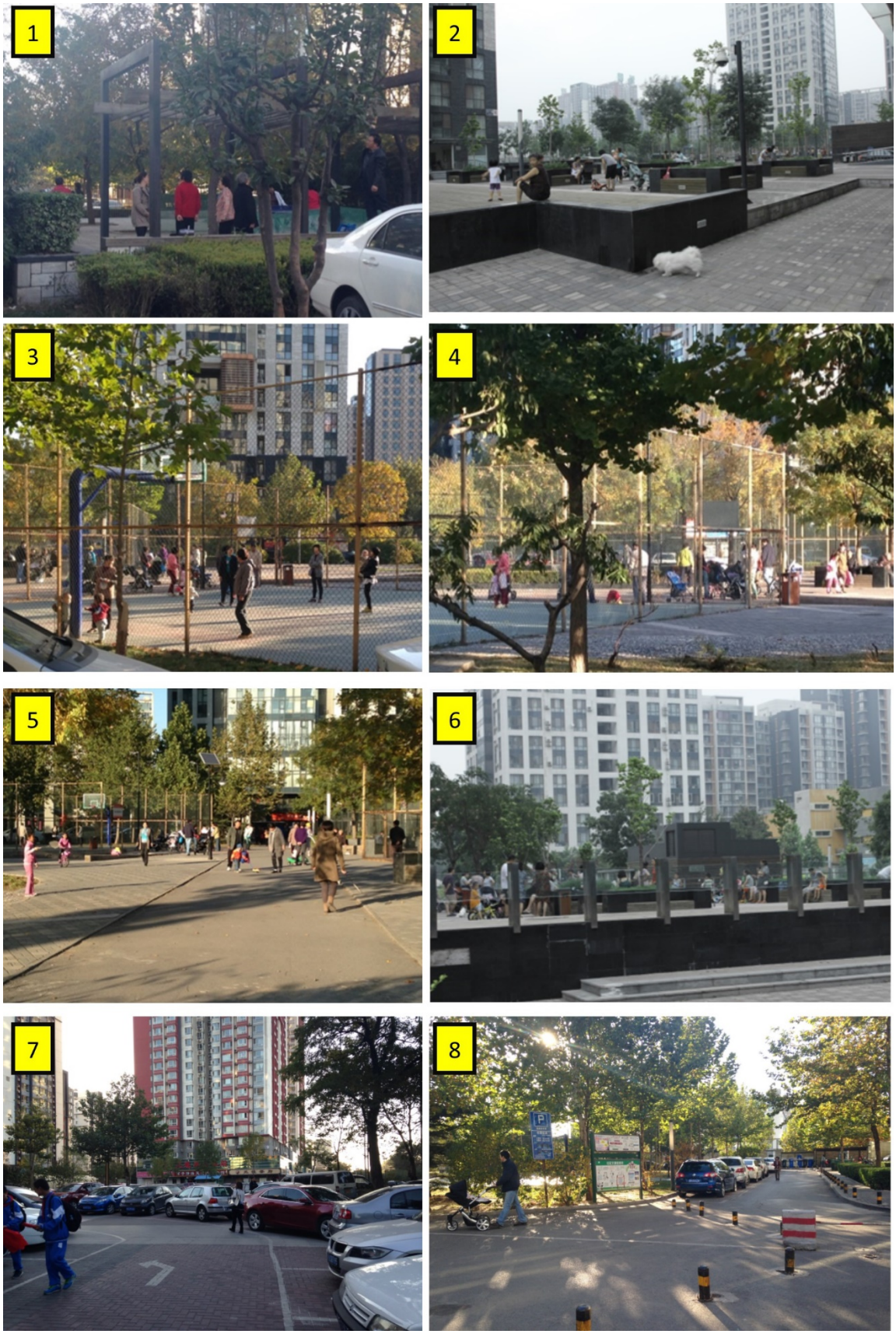


Figure 8. 4 Different users' group activities and social interactions in open spaces. Source: author

7.1.2.4 Use of public space between 7pm and 10pm

Almost 40 per cent of residents use the public spaces in this time period. The main users and their activities in this period are (Figure 8.5):

- Communications and social interactions with others (young and middle aged groups use the square for group dances, communication and social interaction) (Example photo 3 in Figure 8.5)
- Exercising (young and middle aged group use the sports facilities for exercise) (Example photos 1, 2 and 4 in Figure 8.5)

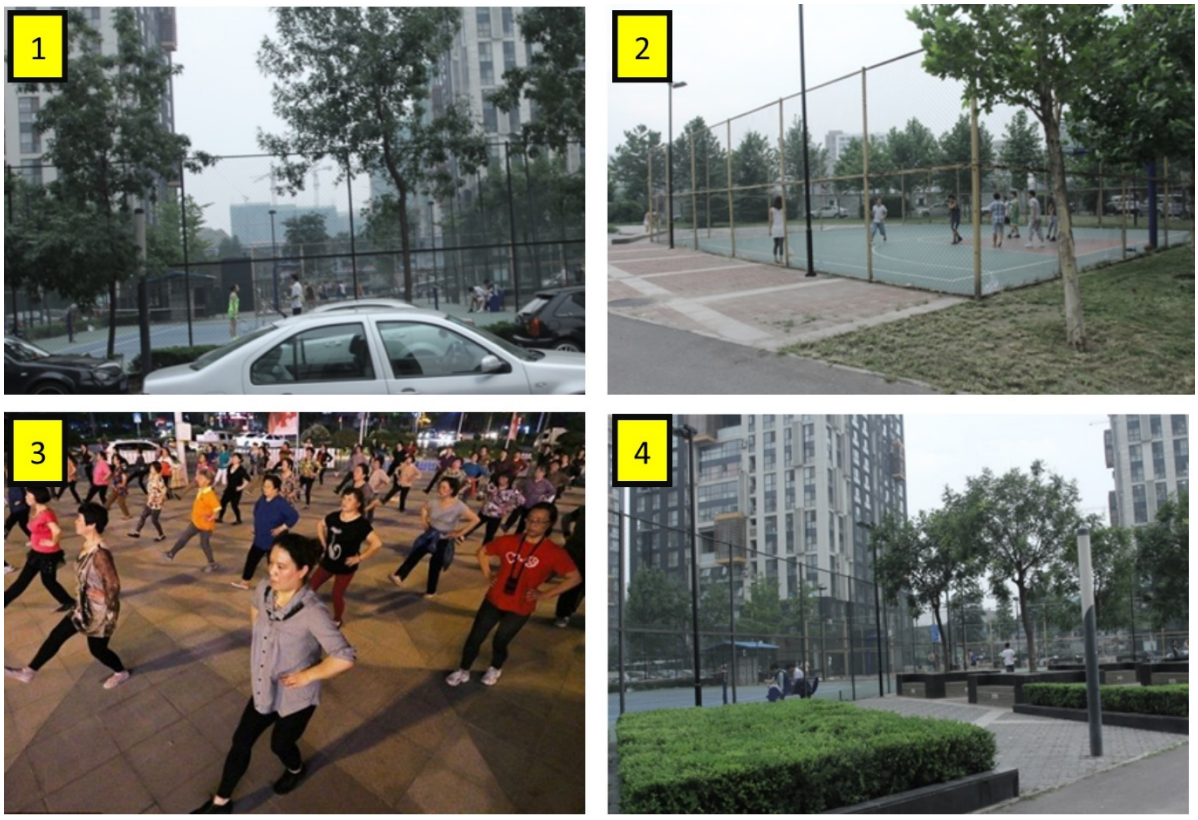


Figure 8. 5Different users' group activities and social interactions in open spaces.
Source: author

8.1.3 Spatial structure of the public space

8.1.3.1 Spatial Layout

As a contemporary modern community, Back Modern City incorporates various global cultural concepts in its spatial design and layout (Figure 8.6). First, the community is divided into four blocks in order to enhance accessibility to public facilities, transportation and commercial shops and provide better walking experience. Second, each block has different designed purpose and functions. District A is a typical wall enclosed living zone which residents and visitors need a digital credential for access. The ground floor of the district faces externally to the public open space and not connected internally with the living area. District B is an open pedestrian zone with mixed-use for commercial and residential purposes. Districts C and D are residential zones enclosed by walls in order to clarify the boarder of the community from the ring road and other communities, but with open access for pedestrians to use the public facilities.

However, the spatial layout of the community is fragmented, especially in District D, which not only lacks spatial connections to other districts, but also lacks local contextual integration in terms of its local identity, and the space as well as the fragmented spatial layout and building types have created an anonymous place that lacks place identity (Figure 8.6). In addition, although, as discussed in section 4.2, culturally, the residents prefer to live in a wall enclosed community, the walls may be causing spatial disconnection between the buildings, the building and the external streets, as well as the community and its surrounding environment. Furthermore, access to the community in each living district is limited which may cause additional access issues. Further discussion will continue in the typological analysis (section 8.1.4) and local perception analysis (section 8.2.2.1).

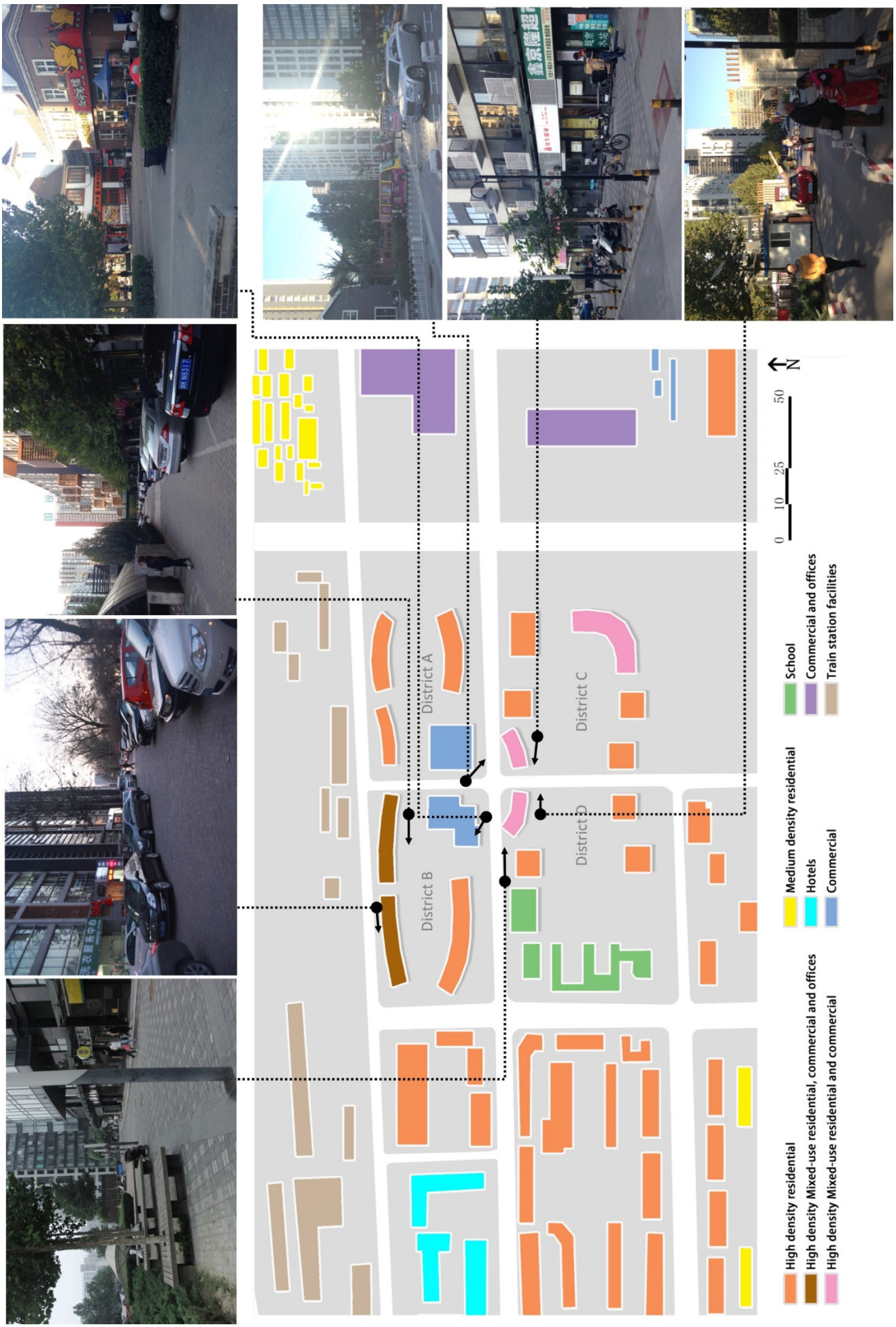


Figure 8. 6 Land use and spatial tissues of the community and its surroundings. Source: author

8.1.3.2 Building structures

As discussed in section 4.2.3, due to evolution of political ideology since market reform, China's real estate market shifted to a developer-driven process, and forced along by globalisation. In this process, modern building types have largely been applied to meet the needs of the rapidly expanding urban population. The neighbourhood uses block and building styles which have been directly copied in Beijing.

In terms of building structures, beside its identity-less design style, the functions and layout design have responded to the needs of a global life style. In Figure 8.7, the indoor layout satisfies most demands from residents in terms of modern life styles as identified in sections 4.2.3 and 4.3.3. Private access is commonly used in Beijing to provide a physical and psychological sense of safety. Ground floor commercial shops provide various services and goods but are only available in the buildings where close to the public streets.

Figure 8. 7 Building type, indoor layout and access method of the community. Source: author

8.1.4 Typology of the public spaces

Based on visual survey, mental mapping (Figure 8.8) from participants and questionnaire results, three different typological public spaces have been identified as the most commonly used spaces by users that represent their demands for different public spaces.

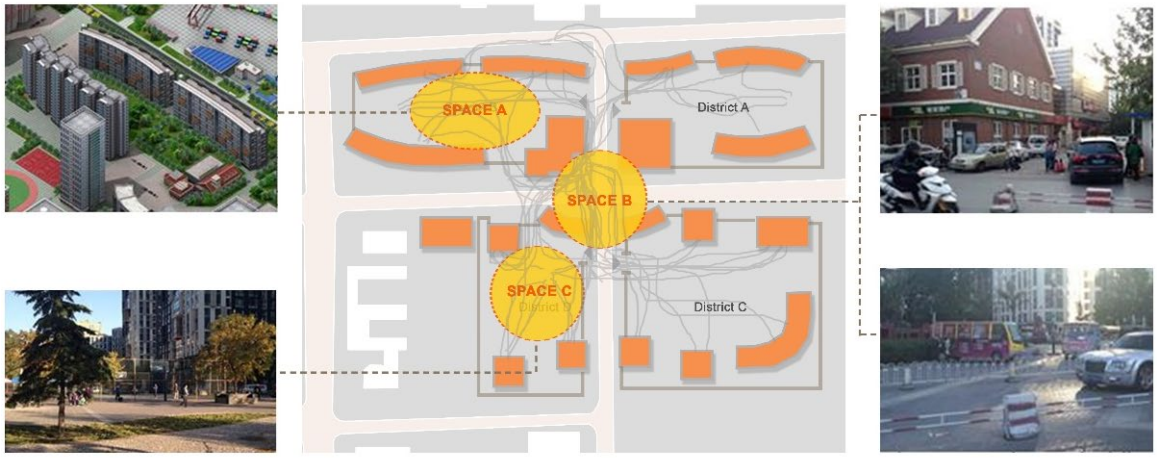


Figure 8. 8 The most commonly used spaces identified by users' mental mapping and questionnaire. Source: author

8.1.4.1 Space A – Integration with Greenery

Space A (Figure 8.9) has been identified as the most enjoyable and commonly used space as it is the largest green space in the community. The space is mostly enclosed by walls with pedestrian access through gaps between the buildings from the west side. Parking is located alongside the buildings next to the green spaces (Photo 1 and 4 in Figure 8.9). The landscape bridge is designed not only for access purposes but also as a visual tour route in order to enhance nature-human connection based on traditional local beliefs (Photo 3 in Figure 8.9). The fabric of the building façades has created a visual contract, and have also increased the visual variety spaces (Photo 1 and 2 in Figure 8.9). In addition, the spatial layout of the buildings has visually enclosed the space and has also identified the edge of the space.

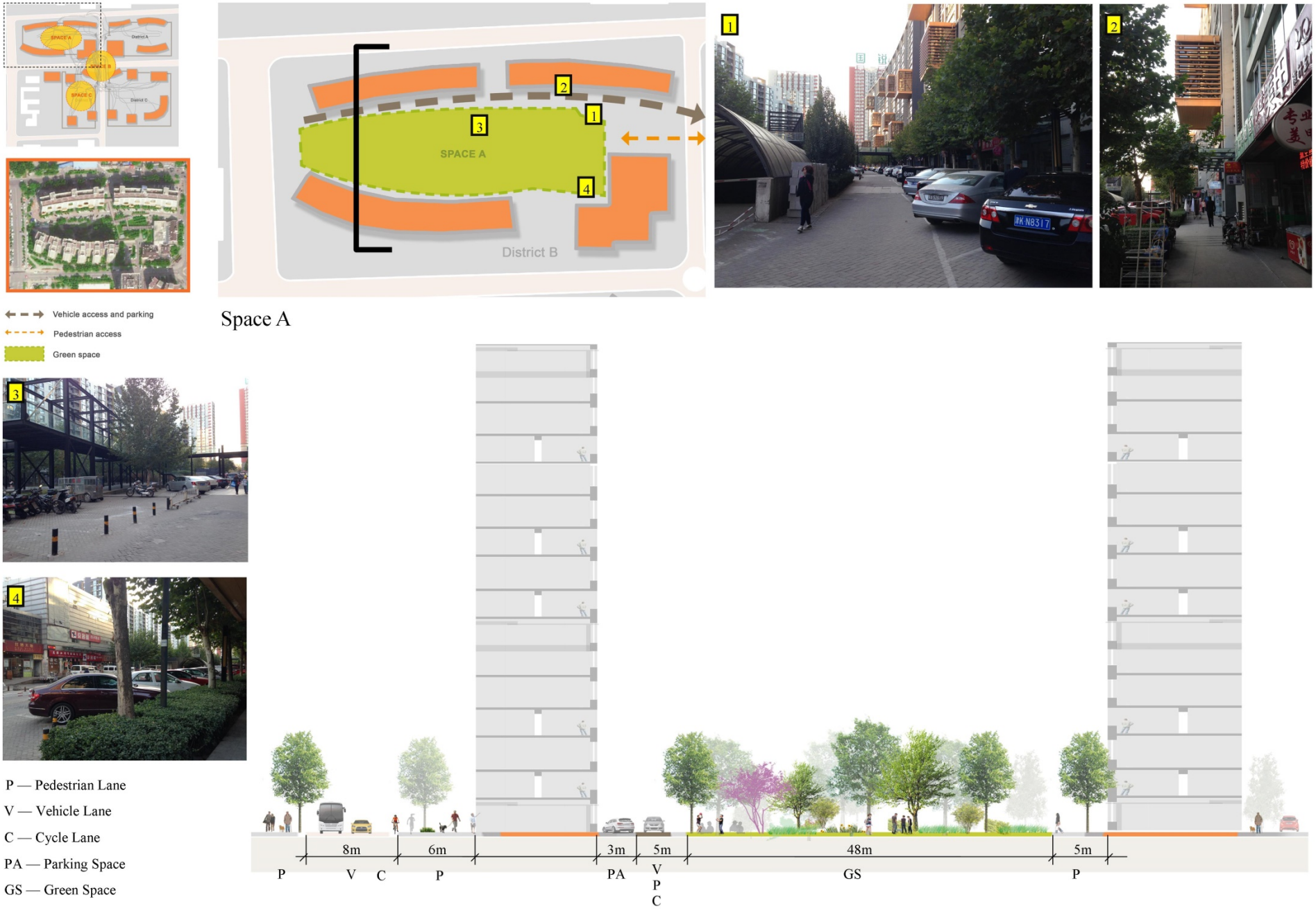


Figure 8. 9 Space A access and land use. Source: author

As this is the main green space in the community, one access point is not sufficient to provide convenient access for residents from other districts, due to travel distances, especially for residents from the south towers in districts C and D for whom the travel time will take over 15 minutes. In addition, non-interactional green space by design limits possibilities for types of social activities and behaviours desired by the residents (the space suffice demand for individual activity such as walking and jogging but cannot be used for group activities such as playing games and group exercise); in other words, it is not adaptable for all types of social gatherings, activities or behaviours and this is therefore one reason why fewer people use the space in the evening than during the day (for time and activities, refer to section 8.1.3).

8.1.4.2 Space B – Commercial support and public transport

Space B (Figure 8.10) is located in the central area of the community and a junction connecting different districts. Spatially, the junction is a public road, which is not only accessible for the residents, but is also used as the secondary road of the city and links to one of the main ring roads in Beijing. The main commercial support (commercial centre) for the community is located in this area, surrounding the roundabout and on the ground floor of the buildings. This includes not only daily essential amenities such as restaurants and the supermarket, but also various advanced shops for enhancing the quality and variety of choices of international life style such as pubs, coffee shops and pets' services (photo 1 and 2 in Figure 8.10).

However, from the photos, it can be seen that there are no pedestrian crossings designed (photo 5 in Figure 8.10), and the spatial organisation of the streets is chaotic, particularly between pedestrians and vehicles (photo 5 in Figure 8.10), especially at peak time each morning (for times and activities, refer to section 8.1.2). It is therefore extremely dangerous for pedestrians to cross the road, especially senior residents and children.

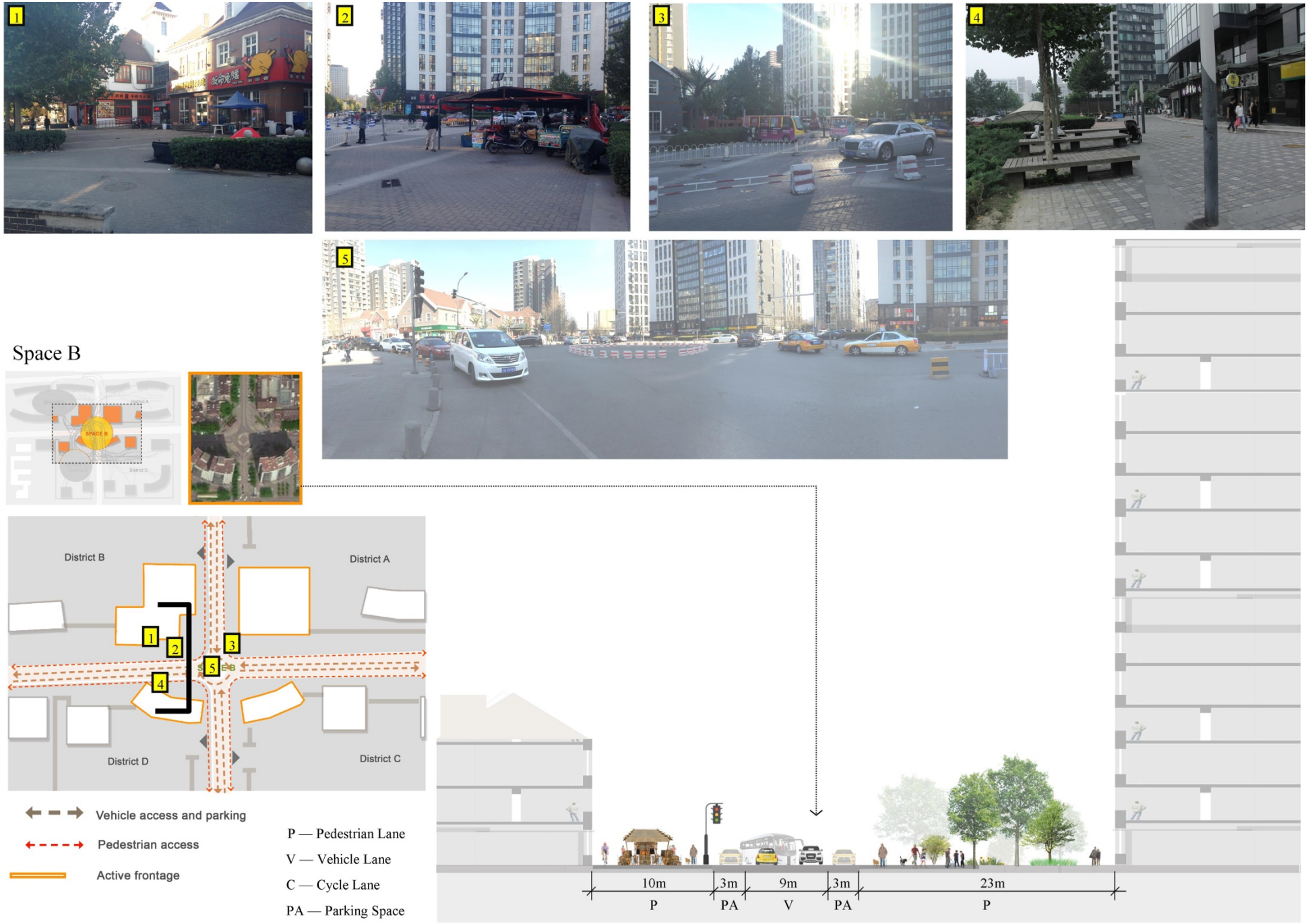


Figure 8. 10 Space B access and land use. Source: author

In addition, there's limited public space along the road for social activities. Although there are chairs provide along the road (photo 4 in Figure 8.10), the space is not designed to respond to more social activities and enhance social cohesion, functionally, except for access and shopping, due to vehicle parking encroaching into pedestrian areas (further discussion in section 8.2.2.3) and unsafe designed access route as well as lack of interactional facilities.

Nevertheless, the community bus stop is located in this space (photo 3 in Figure 8.10). The bus is provided by the community and links to the closest underground station, which increases accessibility and connection to the rest of the city (further discussion in section 8.2.2.1).

8.1.4.3 Space C – Play and Exercise

Space C (Figure 8.11) is wall enclosed with one entrance designed for vehicle and pedestrian access. The space has been designed for the purpose of playing and exercising because the community was designed based on US design concepts and respond to US life style. Basketball courts, tennis courts and table tennis facilities (photo 2, 3 and 5 in Figure 8.11) are provided in order to create a place for interaction, play and exercise that enhances social cohesion in the public open spaces, and also forms a strong local identity that attracts more users to use the space for interactional activities. In addition, a small open square (photo 1 and 4 in Figure 8.11) is located next to the sports facilities for group activities and interaction, which is the most adaptable space in the community for socio-cultural activities or individual behaviours, such as for group dancing in the morning and evening, as well as social activities involving different age groups.

Although the space, surrounded by buildings without clear boundaries by design, has not created strong spatial order and spatial connection among buildings, the

abovementioned sports facilities and the open square provide necessary facilities for the residents' lifestyle and needs. This illustrates the important role of public facilities in a contemporary community for enhancing social interaction and the use of public spaces. In the meantime, the public facilities may be seen as a way to regenerate some poor quality public spaces shaped by a fragmented spatial layout.

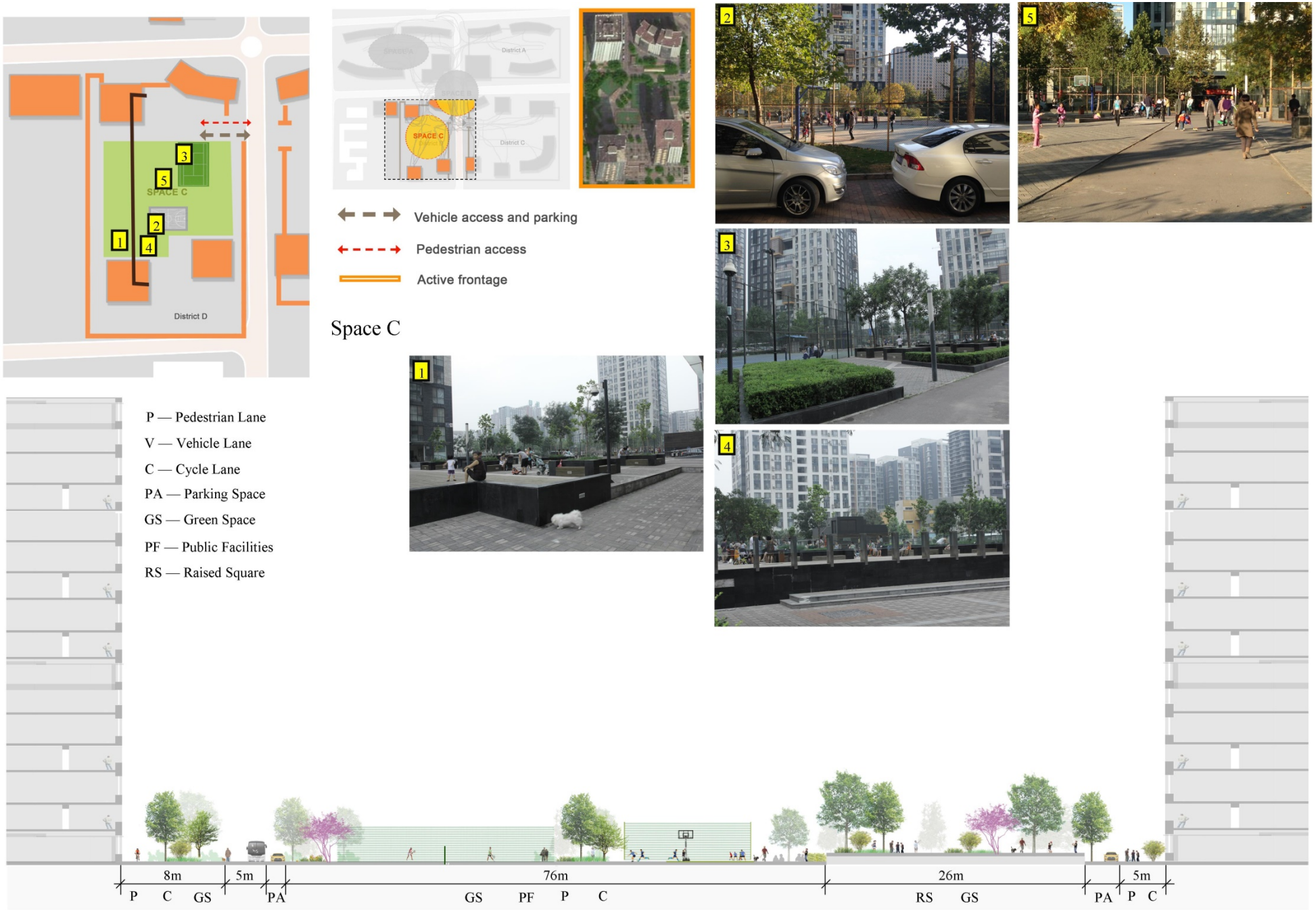


Figure 8. 11 Access for using various facilities in open spaces. Source: author

8.2 Survey Findings: the physical quality of the community

As explained in the conceptual framework, socio-spatial patterns are a process of interaction between use and the physical built form. The previous section analysed how the physical space has adapted to socio-cultural activities and behaviours in needs and usage of public open spaces, thus, the survey findings will discuss the user's perspective and perception in understanding of how the user perceives the space in relation to his or her activities and behaviours. The associated global and local theories discussed in Chapters Two and Four will be implemented within the data analysis, as the qualities of public open space identified in the conceptual framework will be used as the structure for evaluating the level of responsiveness of the public spaces, in order to clarify people's perspectives in relation to access and linkage, use and activities, comfort and image, and sociability.

8.2.1 General Profiles of Participants

In order to understand the perspectives of different generations across different age groups, respondents were selected based on the three main historical periods discussed in Chapter 4. Thirty participants were selected through recommendations of community committee to cover different age groups in this community for interview (see Appendix B for example transcript). The first group includes people who were born before 1964 (older than 50 years old), who have experienced the collective lifestyle of danwei, the transition during the Post-Reform period and the influences driven by the contemporary global market. The second group involves people who were born after 1979 and who experienced the Post-reform period (about 30-50 years old). The third group comprises residents who were born after 1992 (around 22-35 years old), who have only experienced global cross-cultural influences.

Among the thirty-one participants who took part in the data collection, 77.4 per cent of residents were aged over 50 years old, 16.1 per cent of participants were aged between 35 to 50 years old, and only 6.5 per cent of participants were aged between 22 and 35 years old (Figure 8.12).

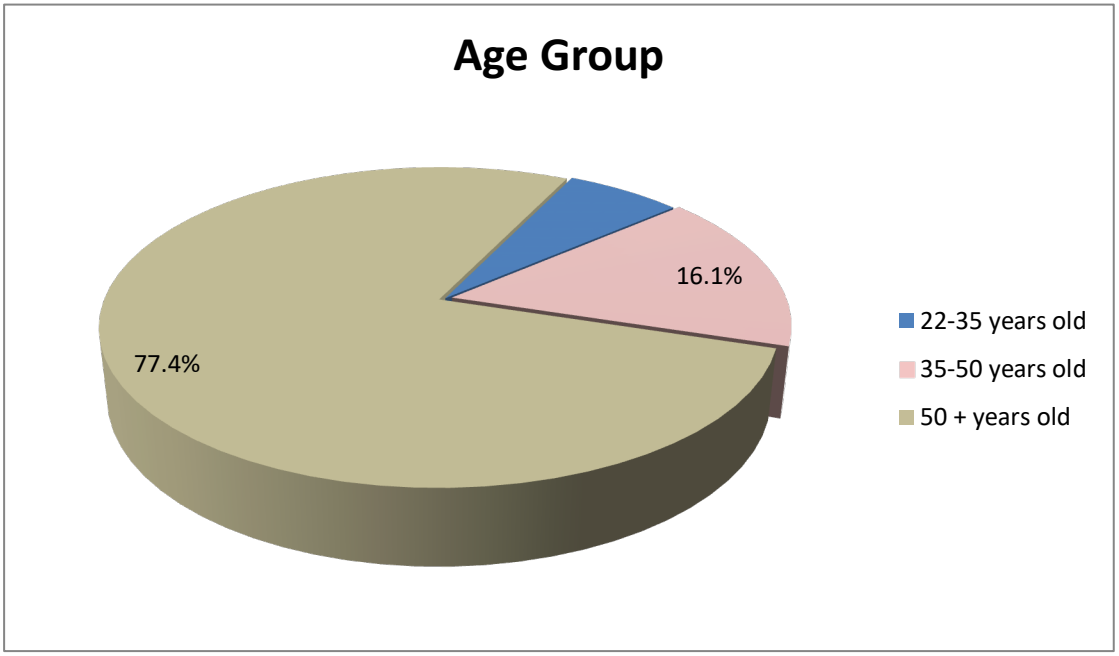


Figure 8. 12 Age group of participants. Source: author

8.2.2 Local perception of using public open spaces in relation to local responsiveness

In this section, design qualities for evaluating the level of local responsiveness regarding user experiences of public open spaces (refer to conceptual framework chapter section 2.2.1 and 2.2.2) are applied in order to identify how public open space respond to the use of public spaces by users. The data analysed based on observations, interviews and mental mapping collected in the field, in order to fully understand how and why people likes or dislikes and chooses certain area for their interactions and activities.

8.2.2.1 Access and Linkage

Based on the responses from the residents, they fully agreed that the accessibility from the centre of the community (where the main commercial services and public transport were located) to each residential district was positive. As shown in Figure 8.13, first, at a city level spatial scale, the community is spatially open, allowing access between each residential district for both pedestrian and vehicles to use the main roads of the community (also the secondary road for the city). Therefore, in terms of its spatial structure, the main roads of the community are part of city public road in the city level road system, which acts as the secondary road in the urban road system (photo 5 in Figure 8.13). In addition, in order to present the main roads of the community as a semi-private space, the design of the pavements (photo 4 in Figure 8.13), greenery and landscape furniture are used as transitional signals for 'outsiders' (non-residents). Thus, when 'outsiders' enter the main roads of the community, they immediately notice the spatial changes (photo 1 in Figure 8.13). Second, at district level scale, the wall enclosed design clearly marks the limited number of entrances for both pedestrians and vehicles (one entrance per residential district) (80 per cent of respondents support the agreement) (photo 3 in Figure 8.13). As the annotation map in Figure 8.13 shows, the limited access, especially for pedestrians, means that it takes a long travel time to access many facilities (such as the sports facilities) for residents who live in other districts. Third, in terms of the public spaces, the community is enclosed by walls surrounding each residential district. Therefore, the privacy of the community space has been emphasised spatially and it clearly defines the ownership of the space (Figure 8.13). At the same time, it also improves the connections between each residential district by allocating the public transport and main commercial services to the central area of the community.

Figure 8. 13 Access points of the community. Source: author

In terms of connection with the city, as Figure 8.14 shows, underground stations are reachable within a walking distance from the centre of the community. In addition, the community also provides private bus for the residents; as the photo shows (Figure 8.14), the private bus stops are located in the centre of the community, and the route is designed to run from the centre of the community to the underground stations every 15 minutes. Thus, the transportation facility is designed to respond the modern lifestyle in order to increase the convenience and connection to the rest of city.

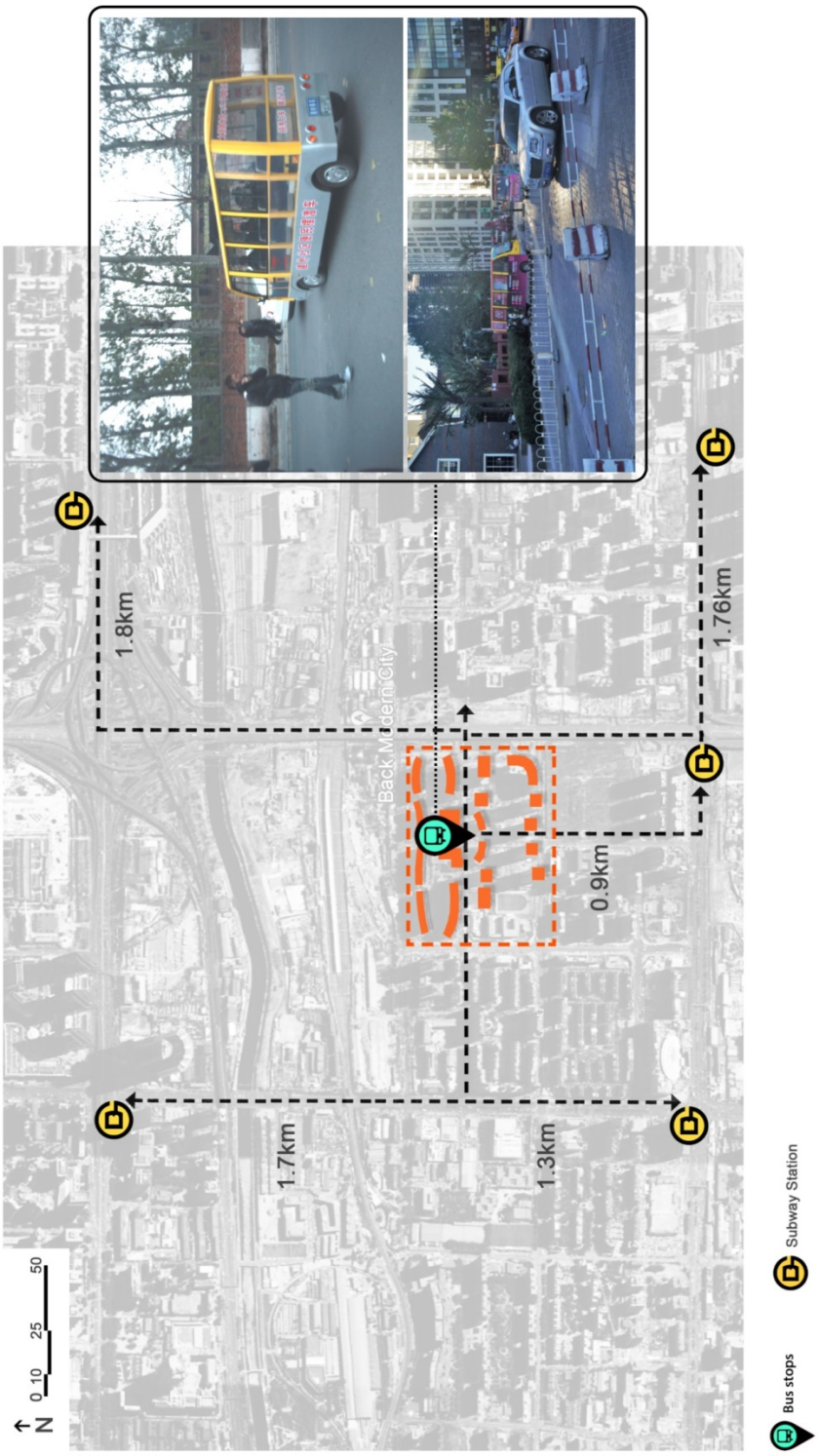


Figure 8. 14 Public transport within and around the community. Source: author

In terms of vehicle safety concerns, the residents agreed that the environment was safe (100 per cent of respondents agreed). As shown in Figure 8.15, various boundaries are designed to enhance the walking experience as well as safety of the public spaces, which are not only managed by the security (the access control), but also by the design of routes and boundaries (boundaries to separate vehicles from pedestrians). The only concern from the residents, however, is vehicle parking (100 per cent of respondents agreed) which has increasingly taken up a large amount of space, both internally within and externally outside the community, and this might cause further safety issues in the future. Further discussion will be carried out in section 8.2.2.3.4.

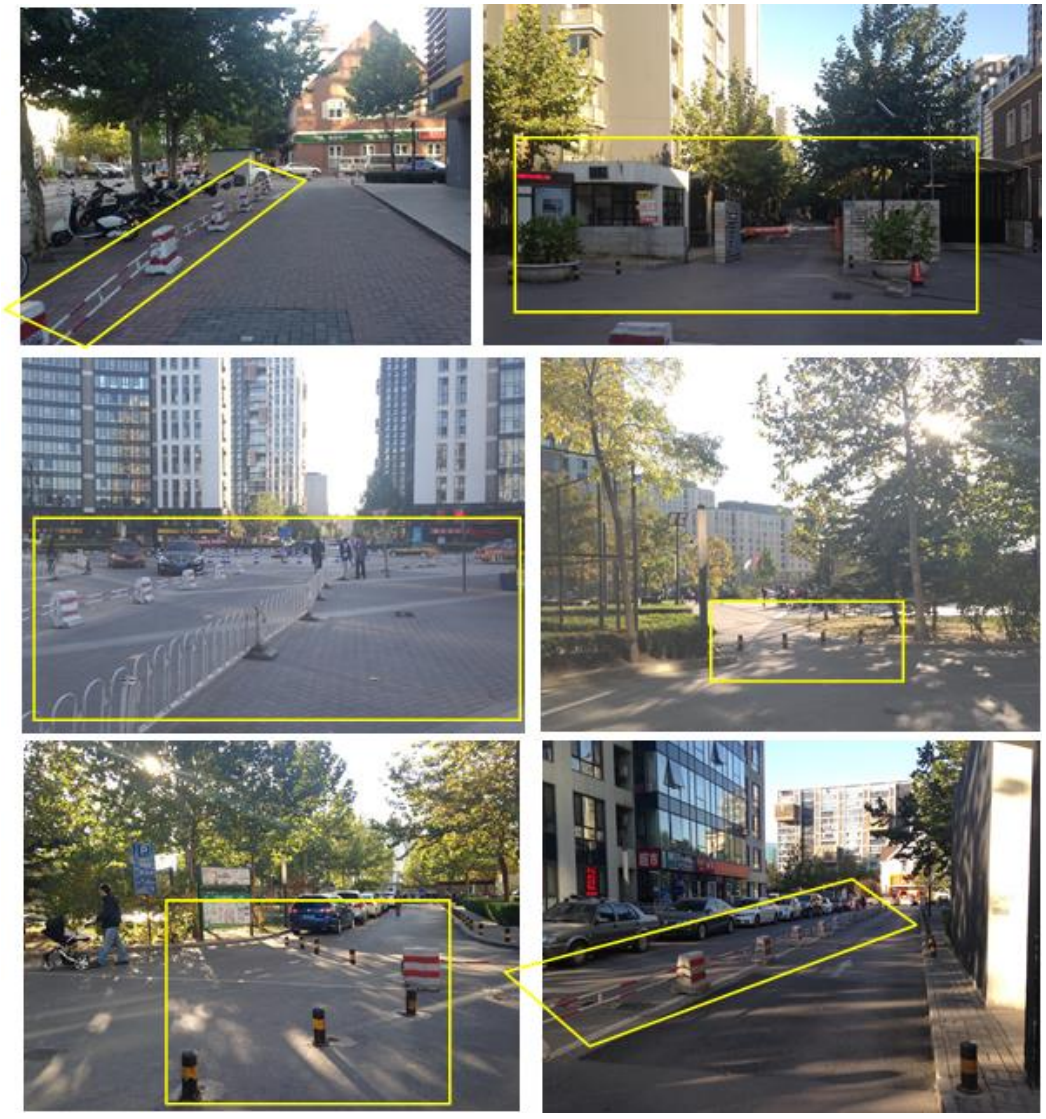


Figure 8. 15 Boundaries for separating pedestrians from vehicles. Source: author

In conclusion, the spatial design of the community provides excellent access to the private and public transport in the city as well as to the commercial activities which are located in the centre of the community, but there is insufficient access between each residential district, especially for those using different facilities (i.e. green spaces in district B and sports facilities in district D) across the community. Meanwhile, the large number of boundaries are responsive to pedestrian safety within each residential district, but pedestrian safety concerns have not been incorporated within the design of the roads in the centre of the community.

8.2.2.2 Use and Activities

As a high-density living community, various activities and demands are required in the public spaces in terms of both commercial and social aspects. On a large scale, the most essential needs such as transport, commercial demands, education, exercise and interaction are all within walking distance (Figure 8.16).

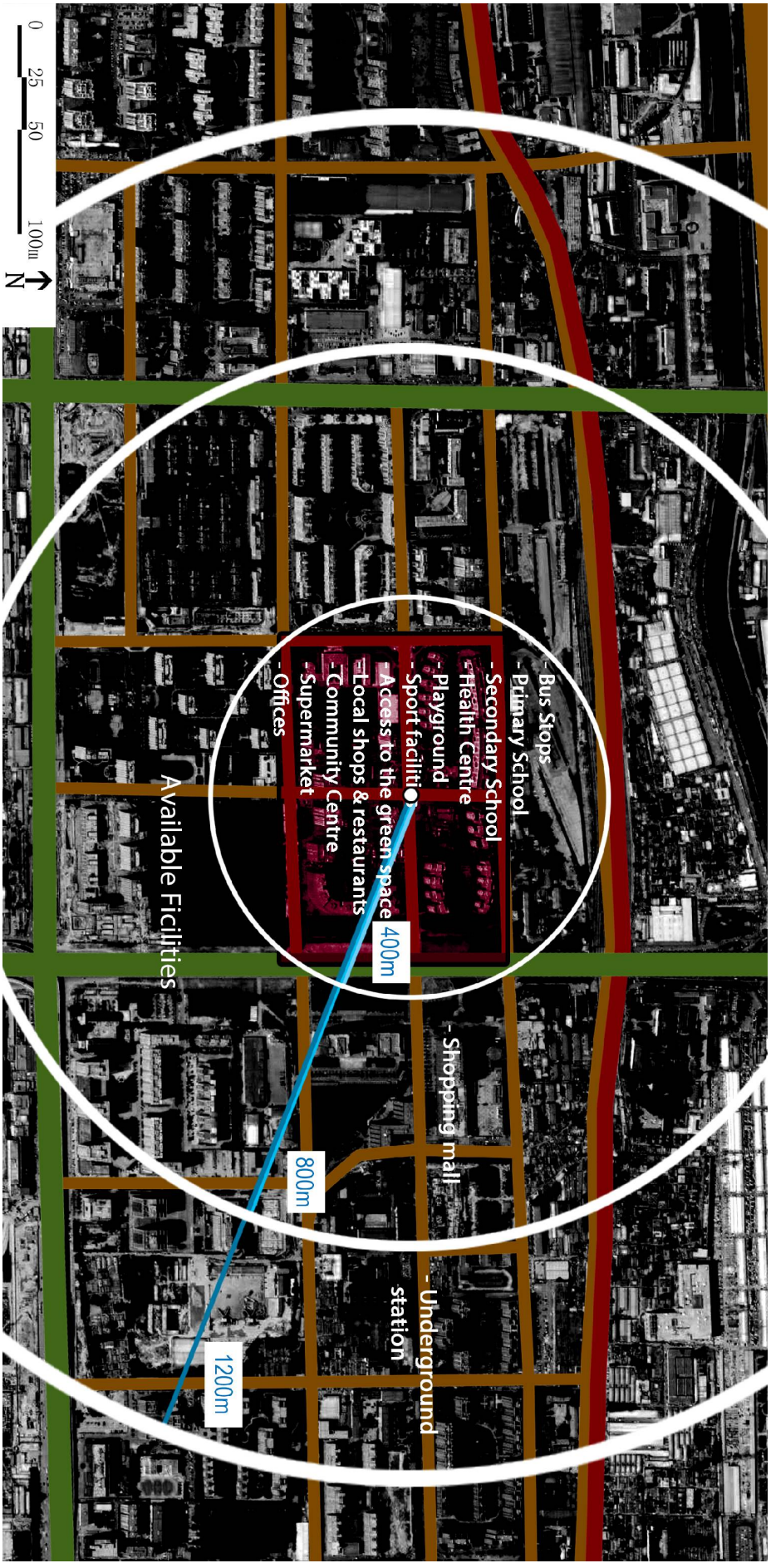


Figure 8. 16 Distance for reaching various facilities from the community. Source: author

Based on the large demand for commercial premises, almost all ground floor spaces in the central areas of the community are occupied by commercial concerns. In order to enhance the business value and commercial opportunities in the community market, various types of businesses have been located in the community centre to cover all areas in terms of liveliness, so not only essential services such as the supermarket for day to day essentials, vendors for fresh vegetables and fruit, restaurants and food shops, but also services which enhance quality of life such as a dental surgeon, gym, photo shop, pet clinic, cafés, bookshops, dry cleaning shops, a spa, hairdressers, creation shops and an art gallery (Figure 8.17). In addition, in order to encourage competition among businesses in the community market, delivery services from service shops are also offered. As a result, all interviewees reported satisfaction with the commercial support in the community. However, compared to the local business in historical living area and work unit, the local business seems not have provided enough interactional opportunities for local social usage (such as game or group activities at shopfront). Therefore, the shopfront in this modern community is not as socially active as in historical living area and work unit.

Another concern from residents is insufficient access points designed for commercial facilities at street level (discussed in 8.1.4.3 and 8.2.2.1). This is because most commercial shops are located on the ground floor and are public facing and accessible from one single public entry point only. Due to the large scale of each residential district and the long travel time caused by the limited number of access points into and out of the community, many shops are not frequently used, except for some shops who provide home delivery services as well as those locate in the centre of the community. Therefore, limited access by a lack design among districts does not respond to use and access to some of local business.

Figure 8. 17 Commercial shops locate in the centre of the community and along the streets. Source: author

8.2.2.3 Comfort and Image

As one of the most successful contemporary developments in Beijing, this community is designed to incorporate the latest design concepts in order to enhance the living quality for the residents. As an example of community design that has been affected by global cross-cultural theories, the community is designed with a modern landscape, a series of public facilities and different types of public spaces. Nevertheless, responses from residents show different perspectives.

8.2.2.3.1 Nature and greenery

As discussed and emphasised in previous chapters (Chapter 2, 4, 6 and 7), nature is foundational in traditional Chinese beliefs and world view. According to the residents'

response from the questionnaires, 73 per cent of residents agreed that there were a large green spaces available in district B, but they felt the spaces were designed with poor quality, as they can only walk through the green spaces by following the designated route. Also, aside from walking through, the spaces were too narrow for other activities or exercises, such as Taichi or group activities. In addition, a further 26 per cent of respondents stated the reason they were not satisfied with green spaces because the rest of the community lacks green spaces and the existing green spaces were also design in poor quality. In terms of the quality of green spaces, as defined and shown in Figure 8.18, except for the planned route in the green space in district B, the other green spaces are enclosed by boundaries, which residents are not allowed to walk on to prevent damage to the grasses. In this case, the design positions the greenery only as a visual albeit natural element that fail to communicate with human, and it is often enclosed in a perimeter which is off limits to users, which is against the traditional Chinese beliefs of achieving 'harmony between nature and mankind' (refer to section 2.2.2, 4.1.3 and 6.2.2). The green space is therefore not designed to respond to local preferences in use, notion and world view of understanding the nature, and way of social cohesion and interactional activities in green spaces. As a result, this part of local social identity is lost in public open spaces in such modern community.

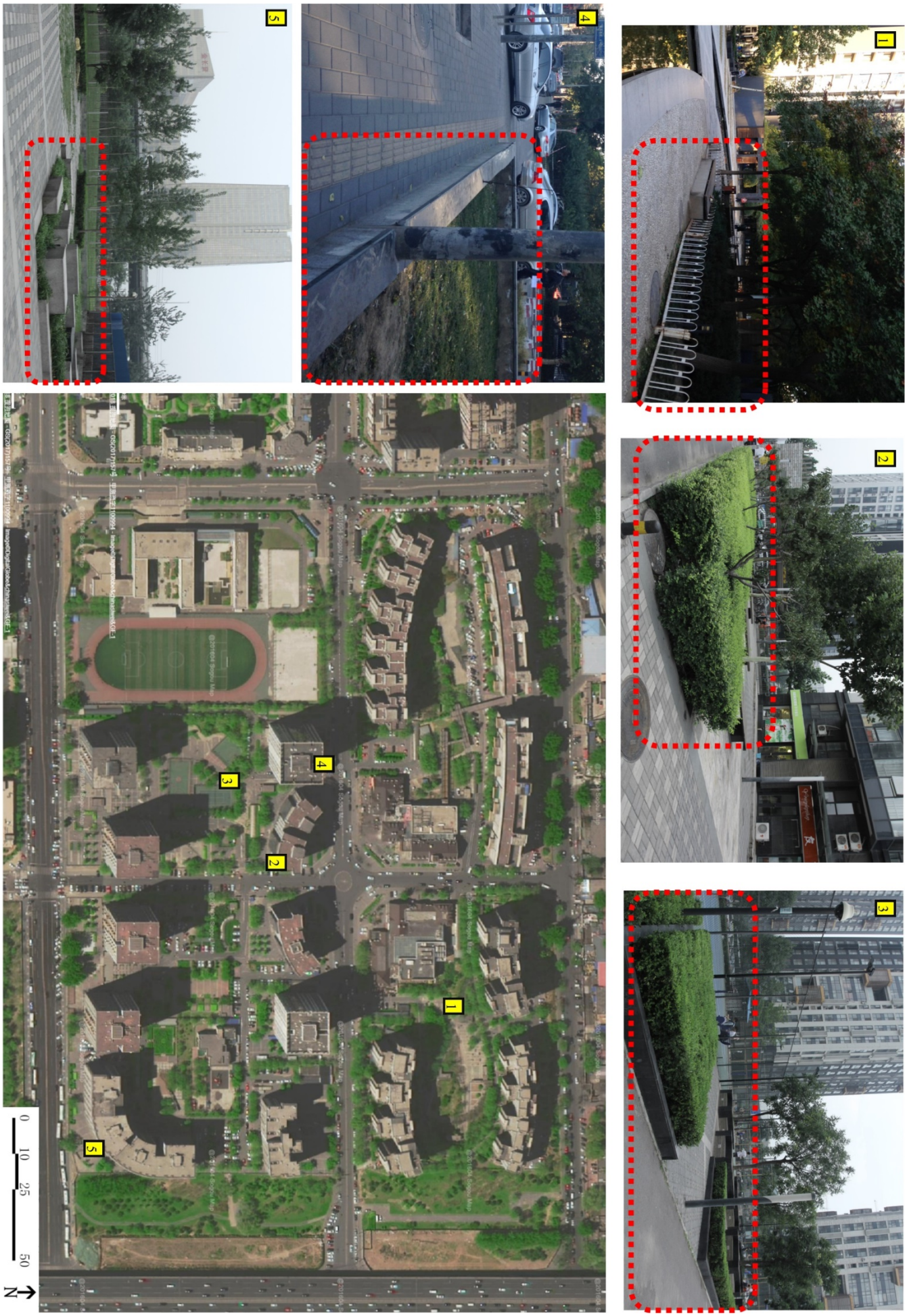


Figure 8. 18 Examples of un-interactable and visual only green spaces. Source: author

8.2.2.3.2 Public Facilities

Public facilities are the mediator for enjoying the use of public space by means of facilitating use of the space, creating opportunities for social interaction, enhancing public activities, and more importantly, communicating with the nature which is fundamental in traditional local beliefs. According to statistical results showing satisfaction with public facilities among residents, only sports facilities recorded a high satisfaction level (90 per cent of residents), despite 60 per cent of them stated that the types of facilities provided were quite basic. In the community, many sports facilities were designed for specific activities and types of interaction such as tennis and basketball, and these facilities are not adaptable for other games and types of social activities such as Chinese chess and local card games in public spaces. Therefore, different types of exercise facilities are required in order to enhance the variety of the usage of the public spaces, both in terms of types of usage but also frequency. In addition, other public facilities such as information boards, rubbish bins and chairs all need to be improved in order to enhance the residents' satisfaction with using the public spaces.

As pointed out by the residents (Figure 8.19), the public facilities were almost all located in district B (the main green spaces) and district D (sports facilities and the open square). Although centralised location of public facilities can create opportunities for social interaction, community events and activities, some of the facilities such as chairs and green spaces should be considered as community-enhancing, and therefore spread into each residential district in order to increase the amenity of different types of public spaces and improve the user experience for all public spaces.

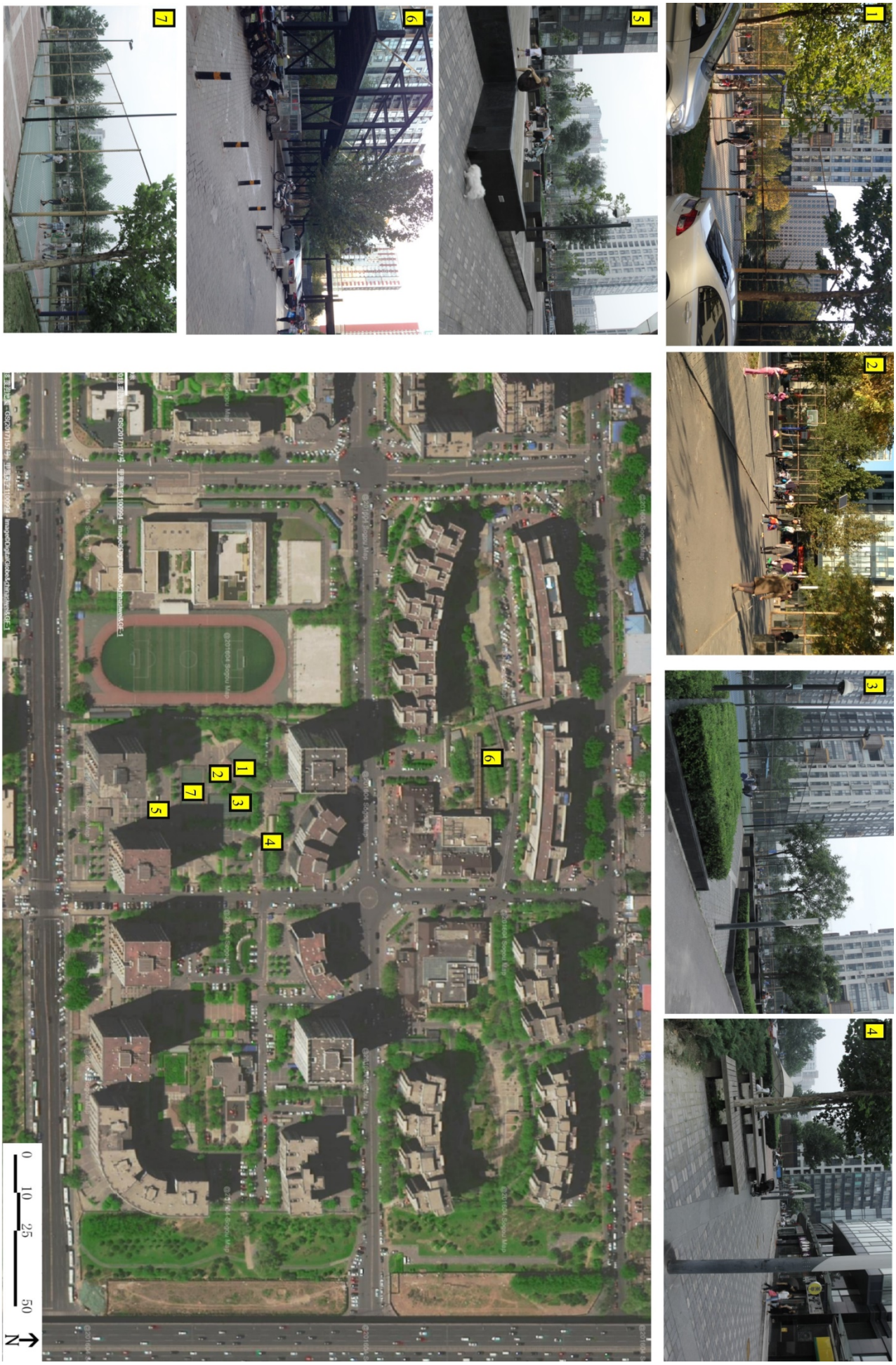


Figure 8. 19 Example of green spaces in different districts of the community. Source: author

In terms of safety issues, all respondents stated they felt safe in the community. First, sports facilities and commercial activities attract a large number of people (residents and non-residents) to use the public spaces which increases the sense of safety by enhancing social interaction and social surveillance (Jacobs 1993). Second, as shown in Figure 8.20, 24-hour security is provided by the property management company which solves the safety issue as well as assisting in managing the public facilities and spaces. Third, CCTV cameras monitor the public spaces in the community to prevent criminal activities. Finally, private door access systems are provided at the entrance to each building so that only residents have access to the blocks and in order to clarify that these are private spaces.

However, as mentioned in the previous section, almost all facilities are located in district D, which means social surveillance only applies to this one district and other districts all have to rely on CCTV cameras or security. Increasing the usage and vitality of the public spaces is a sustainable approach to maintain the safety of the public spaces. Thus, increasing the variety and number of public facilities is a way to enhance the safety of the public spaces. In addition, inefficient design has blurred the boundaries between the private and public spaces. Private spaces are clearly marked but often ignored because a] the community is designed to be large in scale with high density, which leads to a high demand for services such as food and home-delivery from various companies and shops; b] private communal facilities such as the basketball courts are often occupied by the general public attracted by the facilities.

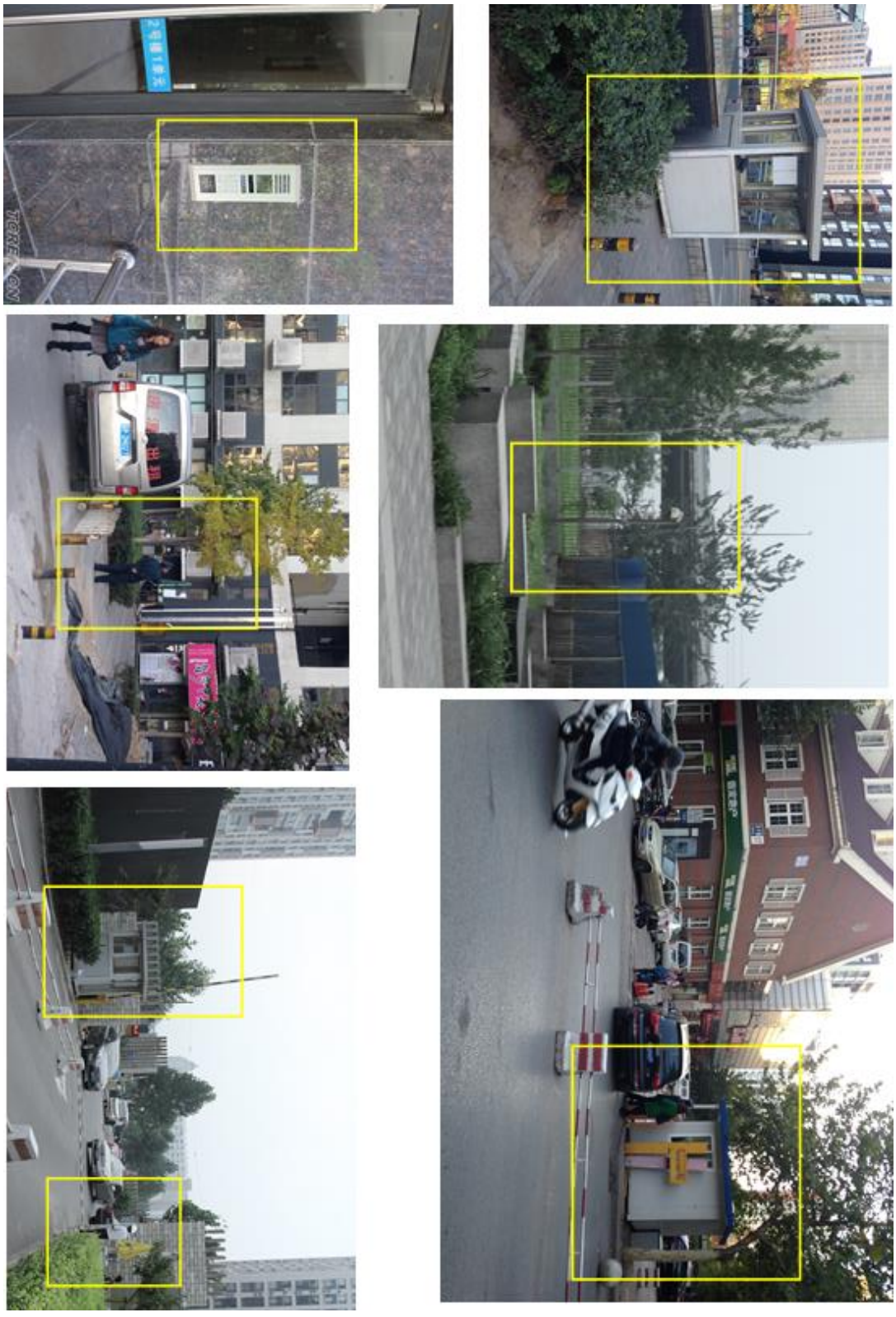


Figure 8. 20 The security and access control in the community. Source: author

8.2.2.3.3 Management

The same as for the other types of communities (communities discussed in previous two chapters), this community is also legally controlled and politically managed by the residents committee, under the Law of the Urban Residents Committees of the PRC. However, the responsibilities of the residents committee in this community are not the same as for the other neighbourhoods, as they no longer include the maintenance of the public spaces and facilities, but focus instead on political and legal services for the residents.

In general, in terms of the maintenance of public spaces in the community, the results of the questionnaires were positive, as almost all respondents were satisfied with the maintenance services provided by the property management company. As a consequence of the market economy, the residents now have the right to change the management company if they are not satisfied with the services provided. Therefore, commercial and competitive pressures have encouraged the management company to try to improve the area.

As shown in Figure 8.21, the public spaces are regularly cleaned and maintained in order to satisfy the users' experiences in the public spaces. Also, in order to improve the pedestrian experience, different pavements have been designed and the sidewalks have been divided.

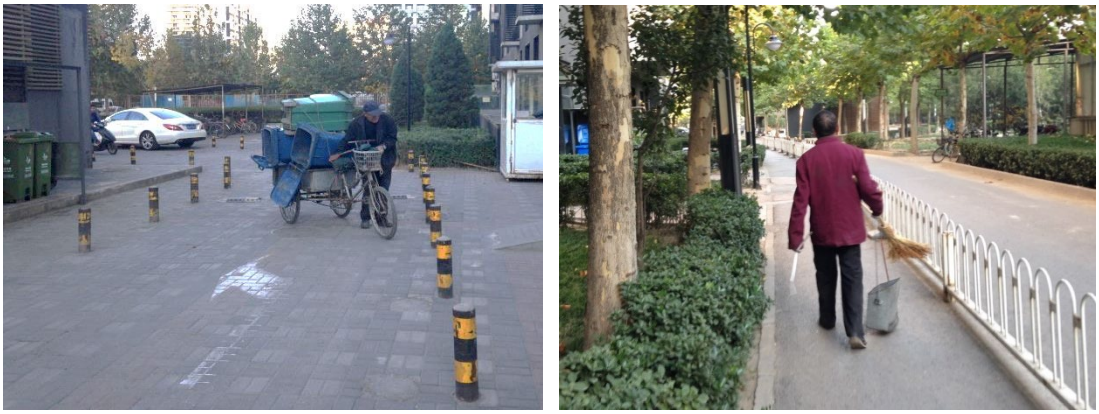


Figure 8. 21 The maintenance of the community. Source: author

8.2.2.3.4 Parking Control

As discussed in section 4.2.3, since modern high-density living communities have become the main contemporary developments in China, vehicle parking management has always been a serious issue in relation to the use of public spaces. High demand for parking requires more space in the public open spaces. Although the management company has tried to manage the different parking requirements (for vehicle, e-bike and motorbike spaces), 90 per cent of the dissatisfaction expressed by the residents relates to the seriousness of this issue because the current number of allocated parking spots cannot accommodate the high volume of vehicle use seen in the community today. As a result, open spaces that are normally used for social activities are increasingly being occupied by parked cars (Figure 8.22). Therefore, the parking control and management need a more sufficient system, such as increase parking fee for additional car per family (legal policy requires 1 parking space per family in design of community, Guide for Planning of Urban Parking Facilities 城市停车设施规划导则, 2015), and set up hourly paid parking spaces. Otherwise, increased vehicle parking occupies more public spaces that were supposedly designed for public activities, and as the results in the end, there would be no public spaces for social activities.

Figure 8. 22 Parking in the community. Source: author

8.2.2.4 Sociability

As the product of globalisation and market forces, the spatial design of this community does not follow the traditional spatial design philosophy and concepts. The layout design incorporates fragmented blocks with modern facilities in order to represent the global lifestyle. However, as stated by the developers (refer to the interview with developer in Appendix B, and section 4.3), due to the fact that consumers have limited influence on the market, the floor layout and the property location

have become priority considerations when purchasing property, and the quality of public spaces and public facilities have only been seen as additional estate value. Therefore, local preferences and beliefs about the use of public spaces have been ignored, and only the spatial layout is seen as important. The vernacular social activities and interactions are adapted to a very limited degree due to low adaptability of imported space design philosophies, and therefore, local lifestyles, preferences and beliefs have been transformed towards a global style. This is the reason why all residents disagreed that they had ever participated in planning, designing and construction processes within their community though they were all willing to be involved. Thus, going forward, in order to improve the socio-cultural aspects, economic quality and local responsiveness in the design of public spaces, community involvement in the design and construction process is essential..

8.3 The issues identified in the contemporary development regarding locally responsive public space design

By examining both physical aspects and users' perspectives, several issues have been identified as the most common concerns emerging in relation to the spatial design in terms of local responsiveness. These issues are not only present as problems within one community, but also appear to be social phenomena across the entire city, for example, parking issues and the urban form.

Issue One – The fragmented urban form and lack of contextual integration

The urban layout and form in contemporary developments are fragmented and lack contextual integration (See section 4.1.4, and sections 8.1.3, 7.1.4.3 and 8.2.2.1). In this neighbourhood, the large individual development has lost its spatial connection to the surrounding urban tissue, and overall city fabric. Without local contextual integration in terms of urban form, the spatial identity is lost and the community risks becoming an anonymous place.

Issue Two – Disconnected spatial connections between buildings

The existing community is enclosed by various types of walls, creating access difficulties that prevent connections between a] the buildings, b] between the buildings and open spaces, and c] between the community and its macro surroundings (sections 8.1.3 and 8.2.2.1 and 8.2.2.2).

Issue Three – Limited access to the community and within the community

There are insufficient numbers of pathways for pedestrians and cyclists, which leads to long travel times and access difficulties. In detail: a] there are few entrances into the community, and b] a long travel time is required for pedestrians to access many facilities, i.e. sports facilities, shops, restaurants etc. (sections 8.1.4.2, 8.1.4.3, 8.2.2.1 and 8.2.2.2).

Issue Four – Private spaces are being overtaken for public use

Inefficient design has blurred the boundaries between the private and public spaces. Private spaces are clearly marked but often ignored because a] the community is designed to be large in scale and high in density, which leads to a high demand for services such as food and home-delivery from various businesses and shops; b] private communal facilities such as the basketball courts are often occupied by and attract public users (see sections 8.1.4 and 8.2.2.2).

Issue Five – Higher demand for an increased number and an increase in the types and services of public facilities within the community

Public facilities are not easily adaptable. Many of the public spaces are designed for specific activities and types of interaction such as tennis and basketball. These are not adaptable for other activities and types of social interaction such as Chinese chess, local card games, square dancing, and Taichi (sections 8.1.4.1 and 8.2.2.2).

Issue Six – Insufficient land use design

Most service shops are located on the ground floor and are public facing, accessible only from one single public entry points. Due to the large scale of the community and the additional travel time

caused by limited number of access points into and outside the community, many shops are not frequently used, except for some commercial shops which provide home delivery services (sections 8.1.4.2 and 8.2.2.2).

Issue Seven – Inappropriate design qualities of green spaces

The traditional Chinese philosophy for greenery design dictates that green spaces should be designed in way which makes users feel as being part of nature that facilitates nature-human communications, rather than a visual element (section 7.3). In this contemporary community, people are not allowed to experience nature, either by walking or touching, but rather, nature is enclosed within a perimeter which is off limits to people (sections 8.1.4.1 and 8.2.2.3).

Issue Eight – Open spaces are increasingly being used as parking spaces

The current number of allocated parking spaces cannot suffice the high volume of vehicle use seen in the community today. As a result, public open spaces originally designed for social activities are increasingly being occupied by parked cars (sections 8.1.4 and 8.2.2).

8.4 Linkage to the conceptual framework and findings from the city level analysis

In order to draw the connections between the findings and the conceptual framework, it is necessary to link the findings from the contemporary development and city level analysis to the conceptual framework. Then, the differentiation between theory and practice is clearly identified in relation to political, economic and socio-cultural aspects. Furthermore, by linking the theory and the findings from practice (Chapter 4 and 7) to issues identified in the contemporary development that present the details of different issues in relation to different levels and aspects of responsiveness in political, economic and socio-cultural considerations. Details of the connections are presented in Figures 8.23 (political dimension), 8.24 (economic dimension) and 8.25 (socio-cultural dimension) as follows.

Figure 8. 23 Findings in relation to political responsiveness in public space design. Source: author

Figure 8. 24 Findings in relation to economic responsiveness in public space design. Source: author

Figure 8. 25 Findings in relation to socio-cultural responsiveness in public space design. Source: author

Conclusion

This chapter has investigated the morphological and typological terms and local perceptions and experiences of using public open spaces in a contemporary living community.

The rapid population growth has significantly influenced the building type and spatial layout, and has then partly changed the socio-cultural events and the types of social interaction in the use of public open spaces. The modern design of public open spaces has mainly delivered well-established commercial support and modern management as well as a variety of facilities for public activities (such as sport facilities and a variety of shops). However, local cosmological beliefs have barely been considered in the design of the built form and the structure of public open spaces, as these beliefs have been outweighed by economic considerations and the demographic composition. As a result, some forms of traditional social interaction and cultural events have been ignored (such as local card games and Chinese chess) and there has been a lack of consideration of these events in the design.

On the one hand, compared to the historical living neighbourhood and the early modern community, the design of public open spaces in contemporary communities has delivered more local responsiveness to functions, privacy, facilities, management and maintenance terms. The spaces have addressed global design influences that have categorized the spaces according to different functions and support a variety of needs in relation to daily shopping, social interaction and leisure. However, local perceptions are that some design qualities need to be improved (such as the design of green spaces and accessibility) based on local cosmological understanding and socio-cultural needs in public open spaces in order to respond to local preferences, such as activities and ways of using green spaces (for details, refer to section 8.2). On the other hand, the friendly socio-cultural commercial environment lacks local responsiveness even though a variety of shopping is well supported. As discovered in the historical and early modern neighbourhoods, local businesses can be seen as providing important socio-cultural interaction areas for local residents as they not only provide various commercial services, but also create space for major social events and activities as well as daily interaction.

The key point identified in this neighbourhood analysis is causing less local responsiveness is the failure to involve users in the design and construction process, especially in relation to the failure to incorporate local knowledge and cosmological understanding into the design. Therefore, public consultation is urgently needed in the design of contemporary residential communities, especially when conducting an urban design study.

Eight key issues emerged from the results of both the morphological study and the local perceptual analysis. In order to understand the complexity of these issues in relation to the conceptual framework and the city level analysis, a linkage between them was established, and the results were used to develop design and management proposals to improve the quality of the public open spaces in terms of local responsiveness in the next chapter. The proposals will then be tested, focusing on their appropriateness and feasibility in order to build towards the final recommendations to improve the design quality in terms of local responsiveness.

Chapter Nine - The Design Principles and Test Results for Locally Responsive Public Space Design

Introduction

The aim of this chapter is to develop generic urban design principles to improve the quality of public open spaces, focusing on local responsiveness in residential developments in Beijing. It then goes on to test the feasibility of these urban design proposals with key stakeholders in order to obtain practical and feasible feedback, which will help provide any necessary modifications to the principles.

Therefore, the chapter is organized into five stages (Figure 9.1):

1. To review the analysis results from all three neighbourhoods (CH5, 6 and 7) to identify positive and negative aspects in terms of local responsiveness under political, economic, and socio-cultural dimensions;
2. To use the positive aspects learned to identify key lessons of local responsiveness in the design of public open space;
3. To identify generic urban design principles, which can assist in addressing contemporary development issues (CH7);
4. To use the generic design principles to develop propositions; and
5. To present the test results and study limitations for implementation.

Figure 9. 1The process and structure for defining generic design principles of local responsiveness

9.1 Identification of Generic Lessons from Neighbourhoods Analysis

In order to identify generic lessons for archiving local responsiveness in public open space design, the analysis results across all neighbourhoods were used to identify positive and negative aspects regarding local responsiveness under political, economic, and socio-cultural dimensions and is outlined in detail in Table 9.1. The positive lessons were then used to develop key elements for defining generic urban design principles regarding local responsiveness of public open spaces.

Table 9. 1Potential key lessons from neighbourhood analysis

Generic Lessons from Neighbourhoods Analyses				
	Positive aspects		Negative aspects	Aspects with both positive and negative attributes
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**	**Work Unit Neighbourhood – Heiyaochang Unit Community**	**Contemporary Neighbourhood – Back Modern City Community**
Political Dimension	**Political Ideology**	The contemporary neighbourhood can be perceived as the result of implementation of political ideology because the chaotic-no-yard houses and construction of early modern residential buildings all emphasised socialism and equality of the public (Section 6.1.1.3). It was therefore highly responsive to political needs throughout the transformation of the entire historical neighbourhood.	The original design of the work unit community can be seen as a political production, as it focused on exploring and emphasising socialism and social equality (the main political ideology), not only in the overall community plan (the boulevard, section 4.2.2 and 7.1.1.1), but also in the building typologies as well as public facilities (the original plan, such as the school within the community, for details refer to section 4.2.2).	The political ideology is mainly presented as unique local preferences, such as wall-enclosed residential living in the physical environment or strong psychological social gathering needs in social use. However, it forms a conflict with living demand, which on one hand, is influenced by traditional imperial ideology that the community is gated with wall-enclosed in order to emphasize social superiority and privacy, while on the other hand, is affected by socialist ideology that people require strong social dependence and connection. Therefore, several issues are affected by this contradiction, such as private spaces are not used as private and access difficulties (Details refer to CH8).

Generic Lessons from Neighbourhoods Analyses				
	Positive aspects		Negative aspects	Aspects with both positive and negative attributes
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**	**Work Unit Neighbourhood – Heiyaochang Unit Community**	**Contemporary Neighbourhood – Back Modern City Community**
	Government Policies and Regulations	The original design of the neighbourhood was the result of political development (refer to 6.1.1). However, because of the lack of policy control and the population issues (details refer to section 4.2.2 and 6.1.2.2), family occupied courtyard houses started growing organically. On the other hand, based on Soviet ideologies and modernism that spread into China in 1950s, multi–storey buildings were built by danwei within historical areas without regulatory control and appropriate designs and planning (details refer to 4.2.2 and 6.1.2.2).	As discussed in the city level analysis (section 4.2.2), the development of the work unit was a central government effort under the influence of socialism and collectivism and therefore the design style represents early modernism influences and addresses social equality needs. However, through the process of market-driven property ownership and privatization in 1980s (section 4.2.2), and a lack of policy control (same as the historical living community), building facades were extended by residents to include extra storage space as well as security (Section 7.1.1.2 and 7.1.2.2).	As the national agenda is used as the main development guide, and city government policies and regulations maintain basic requirements in order to provide flexibility for economic development and achieve financial goals, developers have more power in decision making of spatial structures, layout, and building types in order to respond to financial goals and dramatic population growth. As a result, fragmented spatial layouts, and weak spatial connections between buildings started to appear (Refer interviews with government officers in CH5). additially, user interests are delivered at a very basic level. such as providing basic facilities in types, numbers, and services, and open spaces are increasingly occupied by parking (Refer to CH8).
	Public Participation	There is no public participation involved in the design or planning of public open spaces in the neighbourhood.	There is no public participation in the design and planning of public open space in the neighbourhood as the original design (produced by Soviet professionals) was made as a model and replicated across the country (Section 4.2.2).	In the neighbourhood level, according to site survey and questionnaires (CH8, section 8.3), there is no efficient way of engaging stakeholders to receive their ideas and preferences. The reasons cause the issue are: a] lack of public participations in commercial residential developments; b] the power between the developers and residents is unbalanced, and a legal channel should be set up to receive ideas and preferences from residents.

Generic Lessons from Neighbourhoods Analyses							
	Positive aspects			Negative aspects		Aspects with both positive and negative attributes	
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**		**Work Unit Neighbourhood – Heiyaochang Unit Community**		**Contemporary Neighbourhood – Back Modern City Community**	
Economic Dimension	**Economic Ideology**	Commercial activities are considered successful in the neighbourhood. While the service did not meet the quality and variety expected by residents, these commercial behaviours and activities were formed based on local cognition and preferences, and has played an important role in relation to enhancing socio-cultural activities as well as increasing the opportunities for social connection and interaction (refer to section 6.2.3.2).		Local markets, shops, restaurants, and vendors provide extremely convenient services for local residents, but due to a lack of proper management this has led to access issues, safety concerns (section 7.1.2.1.3), privacy demands (section 7.2.2.2), and cleanness issues in public open spaces (section 7.1.2.1.3).		Community development is highly influenced by economic factors, such as imported design styles, philosophy, and ideas. The political factors mainly focus on large scale planning and design, and public open spaces as well as spatial layout and structure at the neighbourhood scale are subject to very basic requirements such as fire access and green space percentage, but not socio-cultural needs. Therefore, the socio-cultural performance is changing in modern economic development based on market drivers and the transformation of economic ideologies (Details refer to CH8).	

Generic Lessons from Neighbourhoods Analyses					
	Positive aspects		Negative aspects		Aspects with both positive and negative attributes
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**	**Work Unit Neighbourhood – Heiyaochang Unit Community**		**Contemporary Neighbourhood – Back Modern City Community**
Socio-cultural Dimension	**Place Identity**	The historical identity of vernacular architecture has been mostly transformed into organically regenerated housing and a part of the socio-cultural identity of celebration and activities was lost in the neighbourhood (such as wedding celebrations discussed in section 6.2.3.2). Public open spaces have adapted to most local needs due to its flexible physical setting, and even formed a new identity of self-designed and constructed buildings as well as strong social cohesions between residents (refer to section 6.1.2 and 6.2.3.2).	Public spaces in the work unit have adapted to changing preferences in use and needs, to form a strong local identity. Firstly, the local market area, as well as shops along the main street and inside of the community, have responded to local commercial needs (section 7.1.2.1.3 and 7.2.2.2). Moreover, green spaces satisfy the basic need for social interaction and activities in public open spaces, though there is potential to respond to more activities and needs in the park (section 7.1.2.1.5 and 7.2.2.3). In addition, building facades have transformed from the original design to adapt to the need for extended storage space as well as protection for safety and security (section 7.1.1.2 and 7.1.2.2).		The local traditional physical identity was replaced by modern cultural identity. Therefore, value, preferences, perceptions, activities, and even ways of interaction for local residents have been transformed by changes in the physical environment, and presents itself as a modern global identity.

Generic Lessons from Neighbourhoods Analyses						
	Positive aspects		Negative aspects		Aspects with both positive and negative attributes	
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**		**Work Unit Neighbourhood – Heiyaochang Unit Community**		**Contemporary Neighbourhood – Back Modern City Community**
	Lifestyles	Public spaces as well as self-regenerated architecture are reframed based on local political, economic and socio-cultural needs. Meanwhile, in the use of public open spaces, the form of local businesses, as well as social interaction and activities have all adapted to local values, preferences, and cognition.		Public spaces strongly respond to the changing needs in the use of public open spaces in a contemporary lifestyle, such as vehicle use and parking in the community (section 7.1.2.1.1). Meanwhile, local markets and shops maintain local preferences in commercial activities (section 7.1.2.1.3). Furthermore, public open spaces have adapted to the preferred local lifestyle in terms of social interaction, activities, and behaviours based on local cosmological understandings (section 7.1.2.1.2). Nevertheless, a lack of management remains the prominent issue in every segment of this study.		Preferences, value, and meanings of social interactions and activities in public open spaces are changed by modern design and environment. The lifestyle, although under the local context, is strongly affected by global multi-culture, technologies, and information, and replaces the local traditional worldview and interpretations.

Generic Lessons from Neighbourhoods Analyses							
	Positive aspects			Negative aspects		Aspects with both positive and negative attributes	
Components in Conceptual Framework		**Historical Neighbourhood – Qian Yuan'en Si Community**		**Work Unit Neighbourhood – Heiyaochang Unit Community**		**Contemporary Neighbourhood – Back Modern City Community**	
	Socio-cultural Uses	Due to the form of living in shared spaces (both in hutongs and shared spaces within each courtyard house), and the cognition of running local business, the entire lifestyle is based on social cohesion and interaction. Therefore, public spaces in the neighbourhood can be seen as a positively engaged 'social space'.		The traditional local markets and vendor trading activities present a strong identity and local preference for lifestyle which forms social cohesion and enables interaction (section 7.1.2.1.3), though it has caused issues such as cleanliness and privacy issues as identified in this study. Moreover, the small squares (analysis of space B in section 7.1.2.1.2 and analysis of space E in section 7.1.2.1.5) with public facilities and greenery, have responded to the socio-cultural needs in interactions, activities, and individual behaviour, thereby forming strong social cohesions as well as an identity that attracts people.		Although collectivism still influences social interactions and activities, the level is decreased by the transformation to a modern physical environment. Social networks and social connection are increasingly affected by global influences as well as economic ideologies. Therefore, socio-cultural needs are changing based on transformation of physical environment under global and economic influences.	

Based on the review of findings from neighbourhoods' analyses, and the connections across analysis of neighbourhoods and conceptual framework, the positive and negative aspects for all neighbourhoods are identified. In the next section, the positive aspects are used for defining key lessons regarding local responsiveness, which are considered as potential solutions for solving issues of contemporary development.

9.2 Key lessons Regarding Local Responsiveness

Building on the positive aspects developed in the previous table, this section is organised in two parts: the first focuses on, the key lessons identified from both the historical residential community (CH6) and the work unit community (CH7) in relation to issues of contemporary development (CH8), from political, economic, and socio-cultural perspectives that are used as a guide for defining urban design principles. The second part will focus on specific recommendations that were developed based on the negative lessons identified from the previous section for improving qualities of public open spaces.

9.2.1 Key lessons from the historical neighbourhood (Qian Yuan'en Si Living Zone)

9.2.1.1 Key Lessons

The positive aspects (see also section 9.1) from the historical neighbourhood (Chapter 6) have been used to develop table 9.2 in order to present political, economic, and socio-cultural responsiveness in terms of public open space use as potential solutions for solving issues of contemporary development. The details are as follows:

Table 9. 2 The key lessons from the historical neighbourhood. Source: author

Key Lessons Learning from Historical neighbourhood (Qian Yuan'en Si Living Zone) in relation to Issues of Contemporary Development			
Issues of Contemporary Development	**Political Responsiveness**	**Economic Responsiveness**	**Socio-cultural Responsiveness**
Issue 1 - Fragmented urban form and lack of contextual integration	Imperial power legally imposed social and spatial order in order to enhance social, political, and economic control.	Hutongs and courtyard houses were organized in a grid spatial layout at a scale suitable for human access, with commercial shops facing the main street while internal spaces maintained the privacy of each plot. This layout maintains a clear distinction between public and private relationships as well as supporting local commercial activities by providing good access and reduced travel times.	Grid based urban form was designed to integrate local cosmological understanding of the physical environment, which a] set up the spatial order and spatial continuity to enhance legibility; b] maintain micro-climate harmony between buildings and residents; and c] emphasize local spatial identity.
Issue 2 - Disconnected spatial connections between buildings	Politically, courtyard houses and hutongs were the products of enhancing imperial control and military defence.	The self-extended spaces with interactional facilities at the shop front for customers to meet, effectively enhances social interaction and increases commercial activities.	Courtyard houses and hutongs were designed based on local interpretation and beliefs, which emphasise the spatial connection between indoor and outdoor activities and behaviour, especially through the limited amount of indoor space and by offering good access to public spaces to increase public usage of and social connections between neighbourhoods.
Issue 3 - Limited access to the community and within the community	Good access between the inside and outside of the community for pedestrians that increased the usage of public open spaces, which enhanced safety and reduced crime.	Good size community with multiple access points enhances the use of facilities as well as open spaces, which could potentially stimulate consumer behaviour.	Multiple access points facilitate short travel times to the main street and public transport that could effectively increase the use of public open spaces and spatial movement in many areas, which responds to the variety of uses of public open spaces.
Issue 4 - Private	Fully occupied families in courtyard houses	The hutongs in the historical living area are defined as	Clearly marked private and semi-private spaces on a small

Key Lessons Learning from Historical neighbourhood (Qian Yuan'en Si Living Zone) in relation to Issues of Contemporary Development			
Issues of Contemporary Development	**Political Responsiveness**	**Economic Responsiveness**	**Socio-cultural Responsiveness**
spaces are being taken over for public use	create semi-private spaces within each unit, with private and semi-private spaces marked very clearly by the gated access. Therefore, the area is managed by each courtyard house instead of the entire community.	public open spaces, which can be accessed by the public. Therefore, due to the privacy in typology of public spaces design, the issue is not applicable.	scale enhance the responsibility that residents have for their property as well as their sense of belonging.
Issue 5 - Higher demand for an increased number of public facilities	Public facilities are at basic level and are limited in number that can fulfil the needs of social activities and events.		
Issue 6 - Insufficient land use design	There is no land use design in the historical living community because land use is subject to organic growth driven by resident needs.		
Issue 7 - Inappropriate design qualities of green spaces	Due to multi-families occupying courtyard houses with self-extended rooms, the original green spaces designed within these houses have been converted into family rooms. Therefore, greenery is mostly present as mature trees in hutongs. However, a traditional park is next to the living area, which easy to access, and can be used for most socio-cultural activities and events.	It is not applicable within the living area.	Although courtyard houses have transformed into chaotic-yard houses, the idea of planting greenery still follows the traditional beliefs in relation to nature, which target harmony between nature and mankind, such as using mature trees to cover the hutongs. In particular, the community has good access to one of the largest traditional natural parks that is able to satisfy all resident needs in terms of access to nature, outdoor activities, and social interaction.
Issue 8 - Open spaces are increasingly being used as parking spaces	Parking was found to be a serious issue that increasingly occupies and takes over public open spaces from social activities.		

9.2.1.2 Recommendations for improving qualities of public open spaces in Qian Yuan'en Si Living Zone

Based on the morphological and typological analysis, and the local perception analysis regarding the use and experience of public open spaces in the historical living area (for details refer to CH6), several issues were found as follows: 1] lack of planning and design regulations for regeneration of court-no-yard houses and hutongs in historical areas, 2] safety concerns between vehicles and pedestrians, and 3] inappropriate management and maintenance.

In order to improve the qualities of public open spaces, the following recommendations have been developed:

- Planning and design regulations should be made by a planning institution specifically in charge of historical areas, which includes creating standards for self-extension rooms in hutongs, regulating the height of courtyard houses, and making regulations for building materials used in construction (such as doors and roofs).
- Reconsidering the design of vehicle access and pedestrian activity areas, and limiting vehicle access to small cul-de-sacs is needed, which gives protection for social activities in such narrow spaces. Additionally, regulations regarding vehicle parking is urgently required for improving pedestrian safety as well as providing more space for socio-cultural events, activities, and interactions.
- Modern property management should be considered for historic areas to manage public open spaces, and more importantly, maintain these spaces more efficiently.

9.2.2 Transferable lessons from the work neighbourhood (Heiyaochang Unit Community) in relation to issues identified in contemporary developments

9.2.2.1 Key Lessons

The positive aspects (see also section 9.1) from the work unit neighbourhood (Chapter 7) have been used to develop table 9.3 in order to present political, economic, and socio-cultural responsiveness in

the use of public open spaces as potential solutions for solving issues of contemporary development. The details are

Table 9. 3 The key lessons from the work unit community. Source: author

Key Lessons from Work Unit neighbourhood (Heiyaochang Unit Community)			
Issues of Contemporary Development	**Political Responsiveness**	**Economic Responsiveness**	**Socio-cultural Responsiveness**
Issue 1 - Fragmented urban form and lack of contextual integration	The spatial layout addresses socialist and collective ideology, which represents social equality.	Although the community is enclosed within walls, it is designed to be of medium density and the size of the community has remained small with multiple access points from different directions, which enhances the connections to public streets and the convenience of accessing shops.	Open spaces between buildings create a spatially enclosed space with good transparency in terms of sunlight through the mature trees, which based on local understanding and demands from nature, satisfies the need for local activities and social interaction.
Issue 2 - Disconnected spatial connections between buildings	As the product of socialist and collectivist ideals, the design of the community addressed the then existing political ideology, which emphasised equality and collectivism in the design of the public open spaces for social interaction.	Shops within the community provide good social support, which attracts residents for social interaction while increasing commercial activities.	Although the community is enclosed by walls, multiple access points provide good access and connections to outside the community. On the other hand, on the north and south side, the buildings have been used as boundaries to enclose the community, which effectively increases the spatial connection to the external streets. In addition, within the community, buildings enclose the spaces in-between for daily activities and social connection that provide for the daily outdoor activity needs of residents.
Issue 3 - Limited access to the community and within the community	The community has been designed to have multiple access points in different directions, which provides good spatial and social connections to the surroundings, and at the	Good access to public streets has increased the connections to the shops along the main streets, which also benefits the residents quality of life.	Multiple access points to the main street and public transport results in short travel times that could effectively increase the convenience of using public open spaces in many areas, which would respond to the variety of uses of the

Key Lessons from Work Unit neighbourhood (Heiyaochang Unit Community)			
Issues of Contemporary Development	**Political Responsiveness**	**Economic Responsiveness**	**Socio-cultural Responsiveness**
	same time, high usage of access routes could improve security for the community.		public open spaces, and the connections to the rest of the areas in the city. However, due to a lack of control in access and management, vendors are the main concern with regards to safety and cleanliness in relation to public space management and maintenance.
Issue 4 - Private spaces are being taken over for public use	Due to a lack of management, the area has the same issues as in the contemporary community (CH7). However, because the community is small (refer to density compared to contemporary communities, for details refer to section 4.2.3.3), there is a lack of public facilities. Therefore some of the spaces have been taken over by public access and commercial activities.		
Issue 5 - Higher demand for an increased number of public facilities	Public facilities are also basic and are limited in type and number that can fulfil the needs of social activities and events due to management issues.		
Issue 6 - Insufficient land use design	The original land use design is political driven, which emphasizes socialism and equality. However, in contemporary areas, land use has been changed based on market driven factors, such as ground floor shops.	The buildings facing the public side are mostly regenerated with ground floor shops of various types, which enhance the variety of commercial activities and convenience for the residents.	Based on the size of the community (density) and the fact that it has good access to public streets, the market as well as various shops are effective at increasing the variety of choices in relation to daily consumer needs.
Issue 7 - Inappropriate design qualities of green spaces	The original design addresses socialism in public space design. Therefore, modern green space design with open spaces (such as squares) has adapted for most social interactional activities and behaviours. Meanwhile, a traditional park has supported the majority of socio-cultural needs and preferred local social activities and behaviours, such as Taichi in the	It is not applicable in this category	The design of greenery in the work unit does not follow traditional design principles; therefore, the global style of the internal green spaces does not satisfy local preferences and beliefs. However, the community has good access to a traditional natural park that is able to satisfy all resident needs from nature, outdoor activities, and social interaction.

Key Lessons from Work Unit neighbourhood (Heiyaochang Unit Community)			
Issues of Contemporary Development	**Political Responsiveness**	**Economic Responsiveness**	**Socio-cultural Responsiveness**
	morning.		
Issue 8 - Open spaces are increasingly being used as parking spaces	The parking issue was found to be a serious issue that increasingly occupies and takes over public open spaces from social activities.		

9.2.2.2 Recommendations for improving qualities of public open spaces in Heiyaochang Unit Community

Based on the morphological and typological analysis, and local perception analysis regarding the use and experiences of public open spaces in the work unit community neighbourhood (details refer to CH7), several issues were found as follows: 1] reconsideration of design in functions of social activities, pedestrian safety, and vehicle parking in public open spaces are needed; and 2] inappropriate management and maintenance.

In order to improve the qualities of public open spaces, the following recommendations were identified:

- Reconsidering the design of vehicle access and pedestrian activity areas is needed. Additionally, regulations regarding vehicle parking are urgently required for improving pedestrian safety as well as providing more space for socio-cultural events, activities, and social interactions.
- Modern property management should be considered for the work unit community to manage public open spaces, and more importantly, to maintain public open spaces more efficiently.

9.3 Identification of Generic Urban Design Principles in Relation to Issues of Contemporary Development

Based on the key lessons identified in the previous sections, generic urban design principles have been developed in order to establish the connection between each morphological layer in relation to issues of contemporary development in each specific dimension of local responsiveness. Therefore, this section consists of 1] the identification of generic urban design principles based on key lessons discussed in the previous sections; and 2] how these generic urban design principles accommodate issues of contemporary development.

9.3.1 Identification of Generic Urban Design Principles

9.3.1.1 Generic urban design principles from the historical living zone (Qian Yuan'en Si Living Zone)

Based on the key lessons acquired from the historical neighbourhood (Table 9.4), the generic urban design principles identified based on the morphological layers for different spaces can be summarised in the following tables: public open space (Table 9.5), semi-private open space (Table 9.4), and private space (Table 9.6).

Table 9. 4 Generic urban design principles for designing public open space. Source: author

Morphological layers	Generic design principles (from Qian Yuan'en Si Living Zone) for the design of public open spaces
Public space	• **Adaptability of spatial structure to local context** The spatial layout of the community should adapt to the urban fabric in order to maintain positive spatial relationships and connections to the surrounding areas, which have to be based on the local cosmological understanding and world view in order to emphasize the local identity. • **Spatial order and hierarchy** The spatial layout should provide spatial order and hierarchy in order to improve legibility. • **Local climate** The design of the urban layout should consider the local climate in order to achieve harmony between people and nature. • **Local preferences in activities and use** The design of the urban layout should consider and involve different types of local activities and access needs based on local preferences and notions of use of open spaces, not only to increase the usage of the spaces but also to address safety concerns around crime. • **Legal support** A legal requirement may need to be established in relation to the spatial layout in order to maintain spatial identity and legibility for local users of public open spaces. Also users should be involved in the production process in order to enhance responsiveness.

Block pattern	• **Improve accessibility to reduce travel time** The community should be divided into smaller scale districts (if they are too large), while improving accessibility in order to reduce the travel times needed to access different facilities and public transport. • **Multi-dimensional access required** The block size should be maintained on a small scale (no larger than 160 meter by 120 meter) with multi-directional access in order to reduce travel time to public facilities as well as to enhance local use of commercial facilities in a convenient way.
Building structure	• **Ground floor commercial units need to consider local preferences in social interaction** Ground floor shops should be designed with a combined shop frontage and local social interaction should be taken into account in order to enhance commercial activities through social gatherings.

Table 9. 5 Generic urban design principles for designing semi-private open space. Source: author

Morphological layers	Generic design principles (from Qian Yuan'en Si Living Zone) for the design of semi-private open spaces
Public space	• **Open access for pedestrians** The gated district community should be open for pedestrian access and controlled vehicle access, and should be divided into smaller scale private and gated areas, while open spaces between private spatial groups can be seen as semi-private spaces in order to increase accessibility and reduce private car use. • **Commercial activity in social context** The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction. • **Micro climate** Mature trees are required in open space design to balance the vertical spatial layers between users and the high-density buildings; this would enhance transparency as well as micro climate in the open spaces. • **Adaptation of local cosmology in design of green spaces** The design of green spaces and landscape should be adapted to suit local cosmological understanding of nature, which would respond to local daily activities, social interaction, and individual behaviour.

Table 9. 6Generic urban design principles for designing private open space. Source: author

Morphological layers	Generic design principles (from Qian Yuan'en Si Living Zone) for the design of private open spaces
Public space	• **Multi-access entrances** Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenience for public transport. • **Private access control in maintaining privacy** Private access control is required in order to maintain privacy in the use of the open spaces. At the same time, clearly marked private spaces on a small scale can enhance the sense of belonging and encourage the residents to take responsibility for maintaining these spaces. • **Design of green space needs to be adapted to local beliefs, behaviours and activities** Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help maintain a comfortable climate within the space, such as providing shade in summer. • **Appropriate materials using** The materials used in open spaces, such as fences, could be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need policy support in order to maintain the responsiveness to local preferences and beliefs about nature.
Building Structure	• **Sufficient access** Entrances to both semi-private and private spaces should be considered in order to enhance accessibility and convenience of reaching different facilities and commercial shops as well as for the various uses for open spaces. • **North-south facing building orientation** Buildings should be mainly designed to be north-south facing based on the local climate situation.

9.3.1.2 Generic urban design principles from the work unit (Heiyaochang Unit Community)

Based on the key lessons, gained from work unit neighbourhood (Table 9.7), the generic urban design principles identified based on the morphological layers for different spaces can be summarised in the following tables: public open spaces (Table 9.7), semi-private open space (Table 9.8), and private space (Table 9.9).

Table 9. 7 Generic urban design principles for designing public open space. Source: author

Morphological layers	Generic design principles (from Heiyaochang Unit Community) for the design of public open spaces
Public space	• **Adaptability of spatial structure to local context** The spatial layout of the community should adapt to the urban fabric in order to maintain positive spatial relationships and connections to the surrounding areas, which have to be based on local cosmological understanding and world view in order to emphasize local identity. • **Local climate** The design of the urban layout should consider the local climate in order to achieve harmony between people and nature. • **Local preferences in activities and use** The design of the urban layout should consider and involve different types of local activities and access needs based on local preferences and notions of use of open spaces, not only to increase the usage of these spaces but also to address safety concerns around crime. • **Sufficient public transportations** Multiple forms of public transport should be designed for high density communities in order to reduce private car use.
Block pattern	• **Improving accessibility for reduce travel time** The community should be divided into smaller scale districts (if it is too large), while improving accessibility in order to reduce travel times needed to access different facilities and public transport. • **Multi-dimensional access** The block size should be maintained on a small scale (no larger than 160 meter by 120 meter) with multi-directional access in order to reduce travel time to public facilities as well as to enhance local use of commercial facilities in a convenient way.
Building structure	• **Ground floor commercial uses need to consider local preferences in social interaction** Ground floor shops should be designed with a combined shop frontage and local social interaction should be taken into account in order to enhance commercial activities through social gatherings.

Table 9. 8 Generic urban design principles for designing semi-private open space. Source: author

Morphological layers	Generic design principles (from Heiyaochang Unit Community) for the design of semi-private open spaces
Public space	• **Open access for pedestrians** The gated district community should be open for pedestrian access and controlled vehicle access, and it should be divided into smaller scale private and gated areas, while the open spaces between private spatial groups can be seen as semi-private spaces in order to increase accessibility and reduce private car use. • **Commercial activity in social context** The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction. • **Management of local commercial behaviours in open spaces** The traditional economy (vendors) should be supported and taken into account in the design in order to provide a variety of commercial choices and enhance social vitality in the use of public open spaces. Meanwhile, management should pay more attention to the occupation of the space and its cleanliness. • **Micro climate** Mature trees are required in open space design to balance the vertical spatial layers between users and high-density buildings; this would enhance transparency as well as micro climate in open spaces. • **Adaptation of local cosmology in design of green spaces** The design of green spaces and the landscape should adapt to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction, and individual behaviour.

Table 9. 9 Generic urban design principles for designing private open space. Source: author

Morphological layers	Generic design principles (from Heiyaochang Unit Community) for the design of private open spaces
Public space	• **Spatial enclosure by buildings** Private spaces should be enclosed by solid buildings rather than non-transparent walls in order to improve the spatial relationships between buildings and spaces. • **Private space design needs to be based on local activities and behaviours** To emphasise privacy, private spaces should be designed based on the types of individual activities and behaviour undertaken there rather than for large group activities. Therefore, private spaces should not be designed on

	a large scale alone. • **Multi-access entrances** Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenience for public transport. • **Design of green space needs to be adapted to local beliefs, behaviours and activities** Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help maintain a comfortable climate within the space, such as providing shade in summer • **Appropriate materials using** The materials used in open spaces, such as fences, should be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need policy support in order to maintain the responsiveness to local preferences and beliefs about nature.
Building Structure	• **North-south facing building orientation** The buildings should be mainly designed to be north-south facing based on the local climate situation.

9.3.1 Generic Urban Design Principles in Relation to Issues of Contemporary Development

In order to clarify how the generic urban design principles accommodate the issues of contemporary development (Table 9.10), connections between them are drawn based on morphological layers. The details of the connections are presented in the tables below and are divided into three parts, which are the design principles of local responsiveness for public open spaces (table 9.11), semi-private open spaces (table 9.12), and private open spaces (table 9.13). The pink rows represent the principles from the historical neighbourhood, the blue rows signify the principles from the work unit neighbourhood and the yellow rows show the collective lessons learnt from both neighbourhoods.

Table 9. 10 Issues identified in contemporary development (Back Modern City Community) (details refer to section 8.3), Source: Author

Issues Identified in contemporary development (Back Modern City Community)

Issue 1	Fragmented urban form and lack of contextual integration
Issue 2	Disconnected spatial connections between buildings
Issue 3	Limited access to the community and within the community
Issue 4	Private spaces are being taken over for public use
Issue 5	Higher demand for an increased number of public facilities
Issue 6	Insufficient land use design
Issue 7	Inappropriate design qualities of green spaces
Issue 8	Open spaces are increasingly being used as parking spaces

Table 9. 11 Proposed generic design principles for designing public open space in relation to issues of contemporary development. Sources: author

	Lessons from the historical living community (CH5) and work unit (CH6)		Lessons from the historical living community (CH5)		Lessons from the work unit (CH6)
Proposed Generic Design Principles for Designing Public Open Spaces in Relation to Issues of Contemporary Development					
Morphological Components	**Proposed Design Principles**				**Relevant Issues in Contemporary Development (Refer to Table 9.10)**
Urban Layout	The spatial layout of the community should adapt to the urban fabric in order to maintain positive spatial relationships and connections to the surrounding areas, which have to be based on the local cosmological understanding and world view in order to emphasize local identity.				**Issue 1**

	The spatial layout should provide spatial order and hierarchy in order to improve legibility.	**Issue 1**
	The design of the urban layout should consider local climate in order to achieve harmony between humans and nature.	**Issue 1**
	The design of the urban layout should consider and involve different types of local activities and access needs based on local preferences and notions of use of open spaces, to increase the usage of the spaces and also to address safety concerns around crime.	**Issue 3**
	A legal requirement may need to be established in relation to spatial layout in order to maintain spatial identity and legibility for local users of public open spaces.	**Issue 1**
Public spaces	Multiple forms of public transport should be designed for high density communities in order to reduce private car use.	**Issue 3**
	The spatial layout should provide spatial order and hierarchy in order to improve legibility such as clarifying the different levels of streets and changing the sense of the place to denote privacy in the design of different types of spaces.	**Issue 4**
Block Pattern	The community should be divided into smaller scale districts (if it is too large), while improving accessibility in order to reduce the travel times needed to access different facilities and public transport.	**Issue 3**
	The block size should be maintained on a small scale (no larger than 160 meter by 120 meter) with multi-directional access in order to reduce travel time to public facilities as well as to enhance local use of commercial facilities in a convenient way.	**Issue 1** **Issue 3**
Building Structure	Ground floor shops should be designed with a combined shop frontage and local social interaction should be taken into account in order to enhance commercial activities through social gatherings.	**Issue 2** **Issue 6**

Table 9. 12 Proposed generic design principles for designing semi-private open space in relation to issues of contemporary development. Sources: author

	Lessons from the historical living community (CH5) and work unit (CH6)		Lessons from the historical living community (CH5)		Lessons from the work unit (CH6)
Proposed Design Principles for Designing Semi-private Open Spaces in Relation to Issues of Contemporary Development					
Morphological Components	**Proposed Design Principles**				**Relevant Issues in Contemporary Development (Refer to Table 9.4)**
Public spaces	The gated district community should be open for pedestrian and controlled vehicle access, and should be divided into smaller scale private and gated areas, while open spaces between private spatial groups can be seen as semi-private spaces in order to increase accessibility and reduce private car use.				**Issue 3** **Issue 4**
	The design of the open spaces should transition in such a way as to emphasize the privacy of the semi-private spaces in order to prevent unnecessary disturbance; this could be achieved by changing the pavement design for example.				**Issue 4**
	The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction.				**Issue 2** **Issue 6**
	The open space design should consider ways of adapting spaces for multiple users and activities in-line with local types of interaction and social needs. Legislation and policies might be needed to support this principle.				**Issue 3**
	Different types and numbers of facilities should be designed based on local socio-cultural needs (e.g. Chinese chess play area), and also for different age groups; in particular, facilities in semi-private spaces should involve more social interaction and group activities rather than individual facilities.				**Issue 5**

	The traditional economy (vendors) should be supported and taken into account in design in order to provide a variety of commercial choices and enhance social vitality in the use of public open spaces. Additionally, management should pay more attention to the occupation of the space and its cleanliness.	**Issue 4** **Issue 6**
	Mature trees are required in the open space design to balance the vertical spatial layers between users and the high-density buildings; this would enhance transparency as well as micro climate in the open space.	**Issue 1**
	The design of green spaces and the landscape should adapt to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction, and individual behaviour.	**Issue 7**
	Controlled parking spaces need to be designed along the roadside in order to prevent space being taken from pedestrian areas; meanwhile, legislation or management might be needed in order to enhance the efficiency of controlling these areas.	**Issue 8**
	The spatial layout should provide spatial order and hierarchy in order to improve legibility such as clarifying the different levels of the streets and changing the sense of the place to denote privacy in the design of different types of spaces.	**Issue 4**

Table 9. 13 Proposed generic design principles for designing private open space in relation to issues of contemporary development. Sources: author

	Lessons from the historical living community (CH5) and work unit (CH6)		Lessons from the historical living community (CH5)		Lessons from the work unit (CH6)
Proposed Design Principles for Designing Private Open Spaces in Relation to Issues of Contemporary Development					
Morphological Components	**Proposed Design Principles**				**Relevant Issues in Contemporary Development (Details refer to Table 9.4)**
Urban Layout	Private spaces should be enclosed by solid buildings rather than non-transparent walls in order to improve the spatial relationships between buildings and spaces.				**Issue 2**
Public spaces	To emphasise privacy, private spaces should be designed based on the types of individual activities and behaviours undertaken there rather than large group activities. Therefore, private spaces should not be designed on a large scale.				**Issue 2**
	Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenience for public transport.				**Issue 3**
	Private access control is required in order to maintain privacy in the use of open spaces. At the same time, clearly marked private spaces on a small scale can enhance the sense of belonging and encourage residents to take responsibility for maintaining these spaces.				**Issue 4**
	In order to maintain the use of and activities in different open spaces, underground parking would be extremely significant to ensure that open spaces are not taken over by parked vehicles				**Issue 8**

	Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help maintain a comfortable climate within the space, such as providing shade in summer.	**Issue 1** **Issue 7**
	The design of green spaces could be taken into legal control in terms of style and design concepts, which could effectively adapt local activities and needs in use of green spaces.	**Issue 7**
	The materials used in open spaces, such as fences, could be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need policy support in order to maintain the responsiveness to local preferences and beliefs about nature.	**Issue 7**
Building Structure	Entrances to both semi-private and private spaces should be considered in order to enhance accessibility and convenience of reaching different facilities and commercial shops as well as for the various uses of open spaces.	**Issue 2** **Issue 3**
	Buildings should be mainly designed to be north-south facing based on the local climate situation.	**Issue 2**

In this section, the design principles have been developed based on key lessons in order to solve the current issues and respond to political, economic, and socio-cultural needs in public open spaces, semi-private open spaces, and private open spaces. As the conceptual framework requires, the level of local responsiveness needs to be evaluated in relation to design qualities, and therefore, the propositions will be developed in the next section.

9.4 The Propositions for improving the local responsiveness of public spaces in residential developments in Beijing

This section develops research propositions for improving the local responsiveness of public space. The propositions were developed using an Inquiry by Design method,

which allows the identification of reciprocal relationships between people and the built environment (discussed in section 3.1.3). The proposed urban design principles were validated by Inquiry by Design process through semi-structured interviews with government officials and real estate developers by using illustrated design sheet as shown in Appendix C.

The design qualities for open spaces from the conceptual framework have been used to develop the preliminary design principles for public (table 9.14), semi-private (table 9.15) and private open spaces (table 9.16). These design principles will then be tested with key urban actors in later sections (see Appendix C for testing sheets).

9.4.1 The propositions in relation to public open spaces

Table 9. 14 Propositions in relation to urban design qualities for public open spaces. Source: author

Propositions for Archiving Local Responsiveness in Public Open Spaces		
Design Qualities		**Proposed Principles for Improving Qualities of Public Open Space**
Access and Linkage	Accessibility	The community should be divided into smaller scale areas (Ideal size of block no larger than 160m by 120m), while improving accessibility in order to reduce travel time to access different facilities and public transport.
		The block size should maintain a small scale with multi-directional access in order to reduce travel time to public facilities as well as to enhance the use of local commercial activities in a convenient way.
	Legibility	Legislation is required to establish regulations in relation to spatial layout in order to maintain spatial identity and legibility for local use of public open spaces.

	Cosmology	The spatial layout of the community should adapt to the local urban fabric in order to maintain positive spatial relationships and connections to the surrounding areas. Additionally, the local cosmological understanding (e.g. fengshui) and world view (socio ideology) should be take into account in order to emphasize the local identity as well preferred legibility.
Use and Activities	Variety	The design of the urban layout should consider and involve different types of local activities and access needs based on local preferences and use of open spaces, not only to increase the usage of the spaces but also to address safety concerns about crime.
		Ground floor commercial shops should be designed with an active frontage, which should take local social interaction into account in order to enhance commercial activities through social preferences.
		A range of public transport options should be designed for high density communities in order to reduce private car use.
Comfort and Image	Amenity	The design of the urban layout should consider local climate (such as mature trees and shade) in order to satisfy local activities and behaviour, as well as the way of social interactions, which addresses local cosmological beliefs on harmony between people and nature.
Sociability	Spatial Hierarchy	Designing of spatial layout should consider spatial order and hierarchy in order to improve legibility, such as clarifying the different levels of streets and avenues, and changing the sense of the place to denote privacy in the design of different types of spaces.
	Gregariousness	Ground floor commercial shops should be designed with an active shop frontage, which should take local social interactions into account in order to enhance commercial activities through social preferences.

9.4.2 The propositions in relation to semi-private open spaces

Table 9. 15 Propositions in Relation to Urban Design Qualities for Semi-Private Open Spaces. Source: author

Propositions for Archiving Local Responsiveness in Semi-private Open Spaces		
Design Qualities		**Proposed Principles for Improving Qualities of Semi-private Open Space**
Access and Linkage	Accessibility	The gated district community should be open for pedestrian access and controlled access for vehicles and it should be divided into smaller scale private and gated areas, while the open spaces between private sub-blocks can be considered as semi-private spaces in order to increase accessibility and reduce private car use.
	Legibility	The design of open spaces should transition in such a way as to emphasize the privacy of the semi-private spaces in order to prevent unnecessary disturbance; this could be achieved by changing the pavement design for example.
	Cosmology	The design of green spaces and landscape should be adapted to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction, and individual behaviour
Use and Activities	Variety	The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction.
		The open space design should consider ways of adapting spaces for multiple users and activities in-line with local types of interaction and social needs. Legislation and policies might be needed to support this proposition.
		Different types and numbers of facilities should be designed based on local socio-cultural needs, and for different age groups; in particular, facilities in semi-private spaces should focus on social interaction and group activities rather than individual facilities.

		The traditional economy (vendors) should be supported and taken into account in design in order to provide a variety of commercial choices and enhance social vitality in the use of public open spaces. Additionally, management should pay more attention to the occupation of space and its cleanliness.
Comfort and Image	Amenity	The design of green spaces and landscape should be adapted to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction and individual behaviour.
		Mature trees are required in open space design to balance vertical spatial layers between users and high-density buildings; this would enhance transparency as well as micro climate in the open spaces.
		Controlled parking spaces need to be designed along the roadside in order to prevent parking taking over pedestrian areas. At the same time, legislation or management might be needed in order to enhance the efficiency of controlling these areas.
	Naturality	The design of the green spaces and landscape should be adapted to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction, and individual behaviour.
Sociability	Gregariousness	The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction.
		The open space design should consider ways of adapting spaces for multiple users and activities in-line with local types of interaction and social needs. Legislation and policies might be needed to support this proposition.
		Different types and numbers of facilities should be designed based on local socio-cultural needs, and for different age groups; in particular, facilities in semi-private spaces should focus on social interaction and group activities rather than individual facilities.

9.4.3 The propositions in relation to private open spaces

Table 9. 16 Propositions in Relation to Urban Design Qualities for Private Open Spaces. Source: author

Propositions for Archiving Local Responsiveness in Private Open Spaces		
Design Qualities		**Proposed Principles for Improving Qualities of Private Open Space**
Access and Linkage	Accessibility	Access from multiple directions is required in order to improve social and commercial use of semi-private spaces as well as make it convenient for public transport.
		Private access control is required in order to maintain privacy in the use of open spaces. At the same time, clearly marked private spaces on a small scale can enhance the sense of belonging and encourage residents to take responsibility for maintaining these spaces.
		Entrances to both semi-private and private spaces should be considered in order to enhance accessibility and make reaching different facilities and commercial shops convenient, as well as for various uses for open spaces.
	Legibility	Private spaces should be enclosed by buildings rather than non-transparent walls in order to improve spatial relationships between buildings and spaces, and buildings and other buildings.
	Cosmology	The materials used in open spaces, such as fences, should be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need regulation support in order to maintain the responsiveness to local preferences and beliefs about nature.
		Buildings should mainly be designed in a north-south facing direction based on local climate conditions.
Use and Activities	Variety	To emphasise privacy, spaces should be designed based on the types of individual activities and behaviour undertaken there rather than large group activities.

		Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenient access to public transport.
		In order to maintain the use of different open spaces and associated activities, underground parking would be extremely significant to ensure that open spaces are not taken over by parked vehicles.
Comfort and Image	Amenity	Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help to maintain a comfortable climate within the space, such as providing shade in summer.
	Naturality	The design of green spaces should involve both policy control and user participation in terms of style and design concepts, which could effectively adapt local activities and needs in use of green spaces
		Based on the needs for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help to maintain a comfortable climate within the space, such as providing shade in summer.
		The materials used in open spaces, such as fences, should be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need regulations support in order to maintain the responsiveness to local preferences and beliefs about nature.

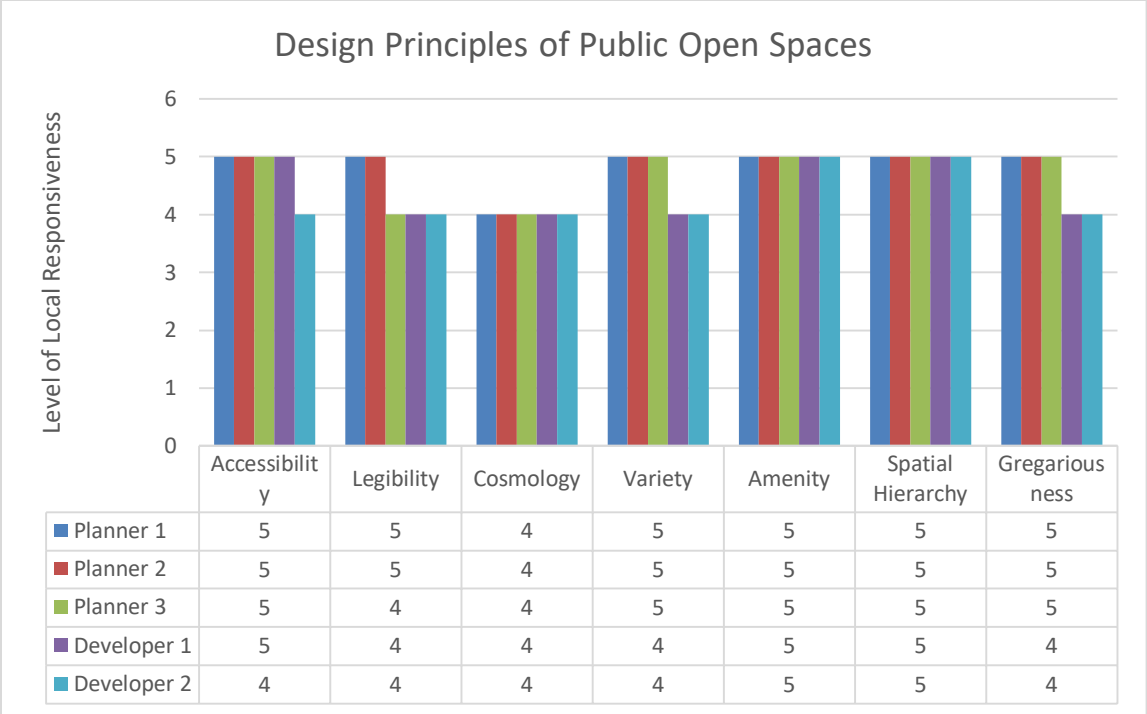
9.5 Test Results and final recommendations

The test phase was carried out in February 2016 and December 2017. Key actors were invited to participate by employed inquiry by design approach for testing the feasibility and acceptability of proposed urban design principles, which included three controllers from different planning departments and two developers to provide the developers' standpoint. The results are presented below.

9.5.1 The overall test results

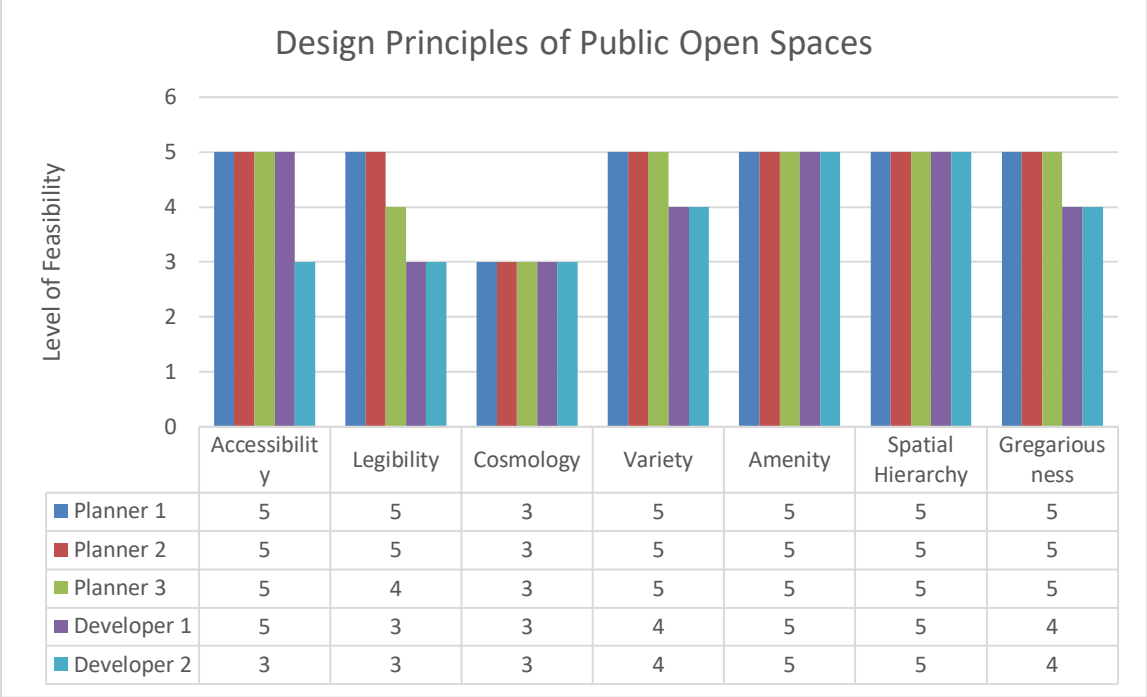
The test interviews were lively and rich in information. Generally, both controllers and developers agreed on most aspects in terms of the level of local responsiveness, and the minor limitations and feasibility issues of the design principles. Their levels of agreement are shown in the following figures as: 1 represents disagreement; 2-4 means they agree but with limitations; and 5 symbolises agreement with the principles and the fact it can be implemented straight away. The test proposals were organized into three parts, which were: the design principles for public open spaces, the design principles for semi-private open spaces and the design principles for private open spaces. Therefore, the following results follow this sequence. As the overall results are presented in this section, the detailed feedback for each specific section will be discussed in detail later.

In terms of the design principles for public open spaces, the participants mostly agreed in relation to the level of local responsiveness, but limitations in terms of feasibility with regards to accessibility and legibility were pointed out by developers, and both developers and planners think the cosmology needs a rethink (Figures 9.2 and 9.3).



	Accessibility	Legibility	Cosmology	Variety	Amenity	Spatial Hierarchy	Gregariousness
Planner 1	5	5	4	5	5	5	5
Planner 2	5	5	4	5	5	5	5
Planner 3	5	4	4	5	5	5	5
Developer 1	5	4	4	4	5	5	4
Developer 2	4	4	4	4	5	5	4

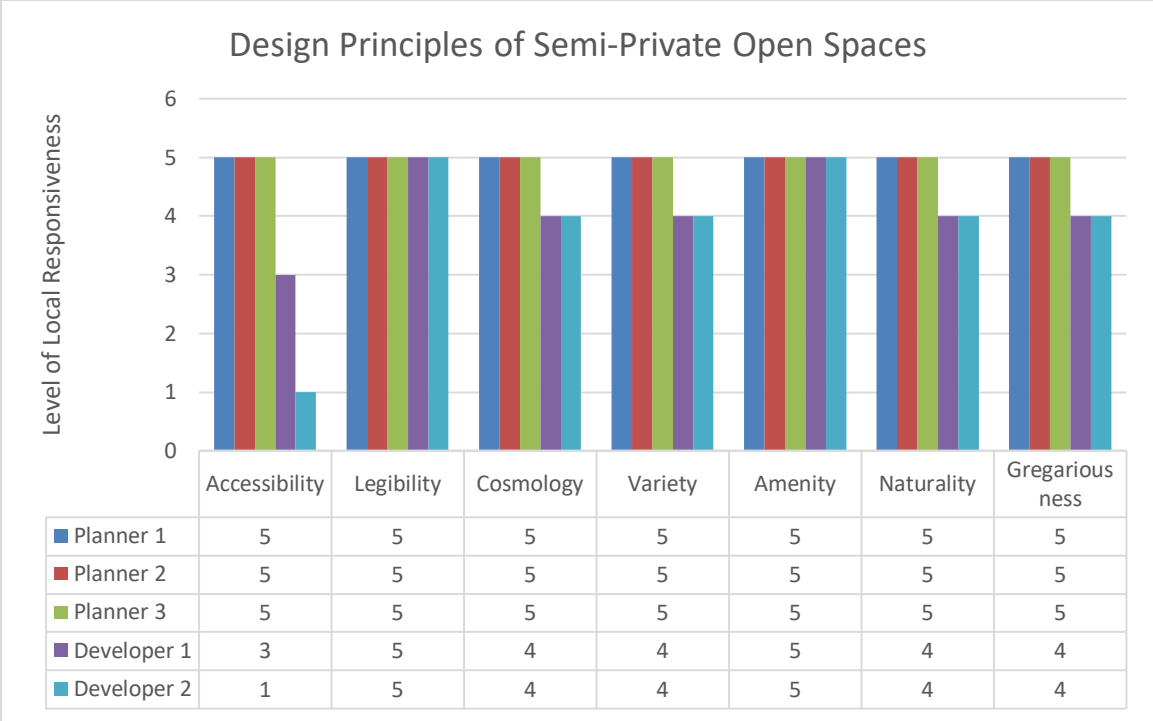
Figure 9. 2 Participants' opinions regarding the level of local responsiveness for the design principles for public open spaces. Source: Testing Interview



	Accessibility	Legibility	Cosmology	Variety	Amenity	Spatial Hierarchy	Gregariousness
Planner 1	5	5	3	5	5	5	5
Planner 2	5	5	3	5	5	5	5
Planner 3	5	4	3	5	5	5	5
Developer 1	5	3	3	4	5	5	4
Developer 2	3	3	3	4	5	5	4

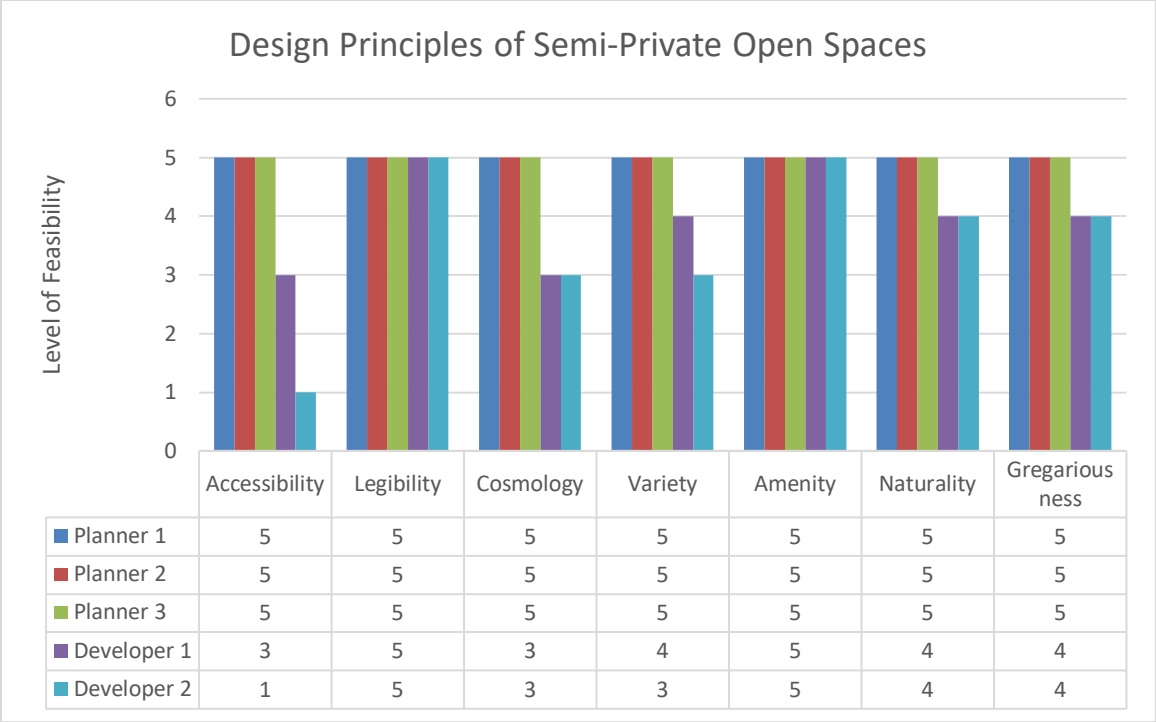
Figure 9. 3 Participants' opinions regarding the level of feasibility for the design principles for public open spaces. Source: Testing Interview

In the section on design principles for semi-private open spaces, the interviewees all agreed. In terms of the feasibility results, the planners agreed with the implementation of the design principles, but the developers were less convinced about the feasibility in terms of accessibility, cosmology and variety in order to implement the design principles from a market perspective (Figures 9.4 and 9.5).



	Accessibility	Legibility	Cosmology	Variety	Amenity	Naturality	Gregariousness
Planner 1	5	5	5	5	5	5	5
Planner 2	5	5	5	5	5	5	5
Planner 3	5	5	5	5	5	5	5
Developer 1	3	5	4	4	5	4	4
Developer 2	1	5	4	4	5	4	4

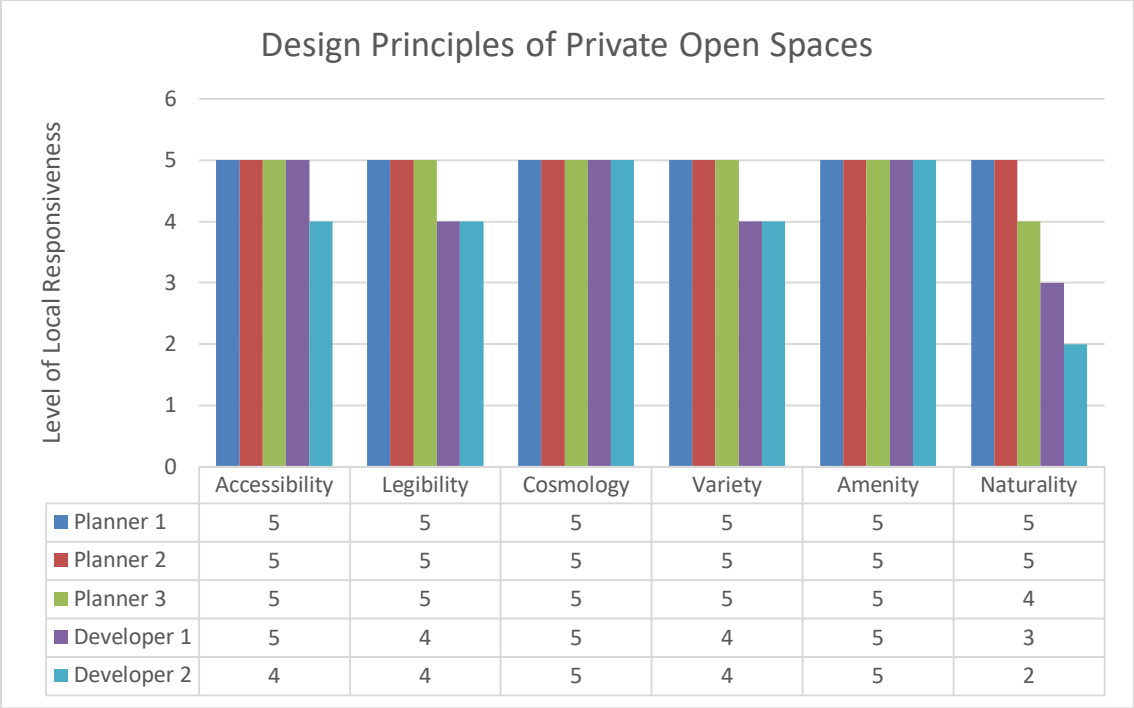
Figure 9. 4 Participants' opinions regarding the level of local responsiveness for the design principles for semi-private open spaces. Source: Testing Interview



	Accessibility	Legibility	Cosmology	Variety	Amenity	Naturality	Gregariousness
Planner 1	5	5	5	5	5	5	5
Planner 2	5	5	5	5	5	5	5
Planner 3	5	5	5	5	5	5	5
Developer 1	3	5	3	4	5	4	4
Developer 2	1	5	3	3	5	4	4

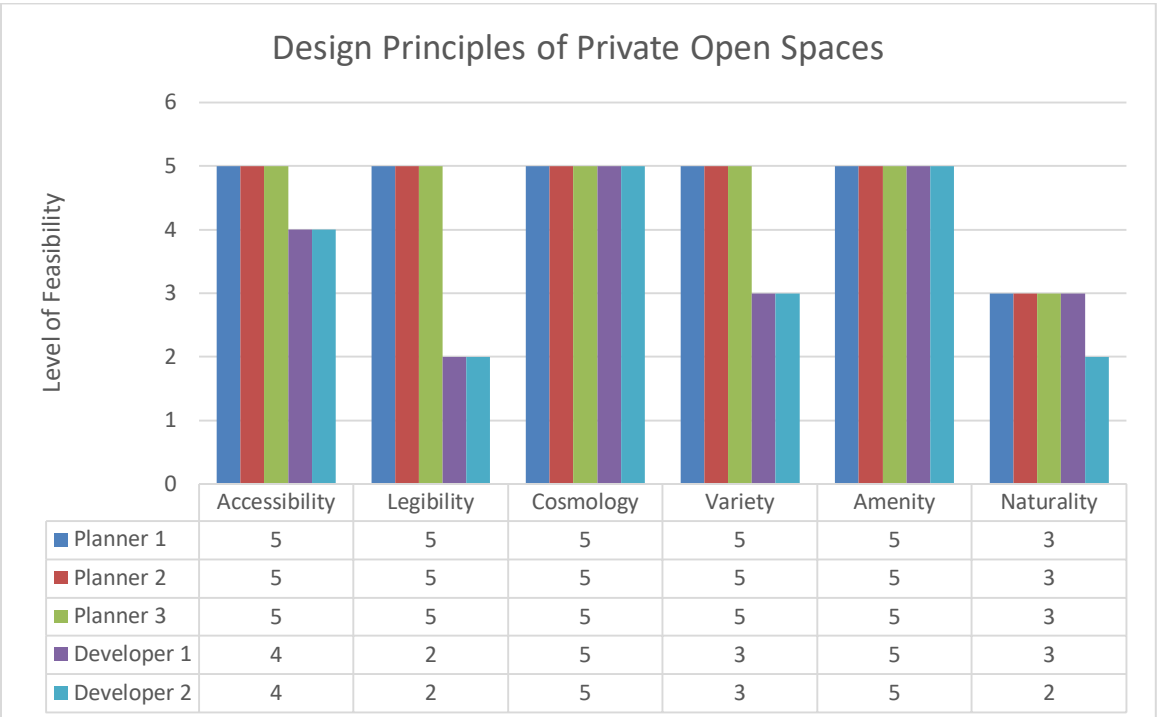
Figure 9. 5 Participants' opinions regarding the level of feasibility for the design principles for semi-private open spaces. Source: Testing Interview

In terms of the level of local responsiveness for the design principles for private open spaces, the only concerns pointed out by the developers related to 'naturality'. However, in terms of feasibility, more limitations were identified in relation to legibility, variety and naturality (Figures 9.6 and 9.7).



	Accessibility	Legibility	Cosmology	Variety	Amenity	Naturality
Planner 1	5	5	5	5	5	5
Planner 2	5	5	5	5	5	5
Planner 3	5	5	5	5	5	4
Developer 1	5	4	5	4	5	3
Developer 2	4	4	5	4	5	2

Figure 9. 6 Participants' opinions regarding the level of local responsiveness for the design principles for private open spaces. Source: Testing Interview



	Accessibility	Legibility	Cosmology	Variety	Amenity	Naturality
Planner 1	5	5	5	5	5	3
Planner 2	5	5	5	5	5	3
Planner 3	5	5	5	5	5	3
Developer 1	4	2	5	3	5	3
Developer 2	4	2	5	3	5	2

Figure 9. 7 Participants' opinions regarding the level of feasibility for the design principles for private open spaces. Source: Testing Interview

9.5.2 The test results regarding physical development

The general test results have been presented in the previous section. In this section, detailed and specific test results will be discussed in tables 9.17, 9.18 and 9.19 along with recommendations and suggestions from participants.

8.5.2.1 Test results for the design principles for public open spaces

Table 9. 17 Test Results for the Design Principles for Public Open Spaces. Source: Testing Interview

Test Results for the Design Principles for Public Open Spaces								
P1 = Planner 1; P2 = Planner 2; P3 = Planner 3; D1 = Developer 1; D2 = Developer 2								
Qualities of Open Spaces		Proposed Principles	Local Responsiveness			Feasibility		
			Agree	Part Agree	Disagree	Yes	Partly	No
Access and Linkage	Accessibility	The community should be divided into smaller scale areas (if it is too large), while improving the accessibility in order to reduce travel time to access different facilities and public transport	P1 P2 P3 D1 D2			P1 P2 P3 D 1	D2	
		Reasons for Partial Agreement: When a community is divided into smaller scale areas, management fees as well as labour costs will increase. Therefore, it really depends on the location and the financial position of the project position as to whether the management companies could afford the costs						

		The block size should be maintained on a small scale with multi-directional access in order to reduce the travel time to public facilities as well as to enhance the use of local commercial activities in a convenient way	P1 P2 P3 D1 D2			P1 P2 P3 D1	D2	
		Reasons for Partial Agreement: From the user's perspective, this would definitely improve their experience of using and accessing public facilities, but same as for the previous recommendation, management and labour costs would be the main concern.						
	Legibility	Legislation is required to establish regulations in relation to the spatial layout in order to maintain the spatial identity and legibility for the local use of public open spaces	P1 P2 P3 D1 D2			P1 P2	P3 D1 D2	
		Reasons for Partial Agreement: Now that the issue has been recognised by policy makers, two of the government officials totally agreed with this, but there was one planner and the developers who pointed out that there are limitations, a] from the controllers' side, they mentioned that it is hard to put too many regulations on design, as this would slow down the speed of the construction process, and in the meantime, it might limit the creativity of the design ideas. On the other hand, current regulations require basic things such as a certain amount of green space and minimum sunshine time per day; b] from the developers' point of view, they agree regulations would help produce more locally responsive designs, but their only concern was that, if the regulations were too detailed, then it might slow down the evaluation process and might lead to negotiations taking more time.						

	Cosmology	The spatial layout of the community should adapt the existing surrounding urban fabric (especially historical urban layout) in order to maintain positive spatial relationships and connections to the surrounding areas, which should be based on the local cosmological understanding (e.g. fengshui) and world view (socio ideology) in order to emphasize the local identity	P1 P2 P3 D1 D2				P1 P2 P3 D1 D2	
		Reasons for Partial Agreement: Lack of systematic and statistical data on local use in relation to design guidelines is the main concern involved in responding to local social and cultural ideology. In addition, the lack of relevant professional subjects (No fengshui subjects, and limited urban design subjects) at university to educate the professionals is another concern. Finally, planners mentioned that walls are the main problem stopping spatial relationships between buildings and open spaces, and that the new government agenda is to remove the walls and open up the community. However, the current stage is figuring out how to remove the walls and keep positive relationships between the buildings while maintaining privacy and safety.						
Use and Activities	Variety	The design of the urban layout should consider and involve the types of local activities and access based on local preferences and local usage of the open spaces which will not only increase the usage of the spaces but also address concerns about crime and safety	P1 P2 P3	D1 D2		P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: The range of activities involved depends on a] the position of the project, its size and the types and quality of the facilities and spaces as the additional value for the community; b] management costs (mainly labour costs) and maintenance costs						
		Ground floor commercial shops should be designed with a combined shop frontage and local social interaction should be taken into account in order to enhance commercial activities through social preferences	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement:						

		Depends on space availability						
		Multiple forms of public transport should be designed for high density communities in order to reduce private car use (such as settle bus link between the community and public transportations, shared bicycles and shared cars)	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
Comfort and Image	Amenity	The design of urban layout should consider the local climate in order to achieve harmony between human and nature	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
Sociability	Spatial Hierarchy	The spatial layout should provide spatial order and hierarchy in order to improve the legibility such as clarifying the different levels of the streets and changing the sense of the place to denote in the design of different types of spaces	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
	Gregariousness	Ground floor commercial shops should be designed with shop frontage together and local social interaction should be taken into account in order to enhance commercial activities through social preferences	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: Depends on space availability						

9.5.2.2 Test results for the design principles for semi-private open spaces

Table 9. 18 Test Results for the Design Principles for Semi-Private Open Spaces. Source: Testing Interview

Test Results for the Design Principles for Semi-Private Open Spaces								
P1 = Planner 1; P2 = Planner 2; P3 = Planner 3; D1 = Developer 1; D2 = Developer 2								
Qualities of Open Spaces		Proposed Principles	Local Responsiveness			Feasibility		
			Agree	Part Agree	Disagree	Yes	Partly	No
Access and Linkage	Accessibility	The gated district community should be open for pedestrian and controlled vehicle access and it should be divided into smaller scale private and gated areas, while the open spaces between private sub-blocks can be seen as semi-private spaces in order to increase accessibility and reduce private car use	P1 P2 P3	D1	D2	P1 P2 P3	D1	D2
		Reasons for Partial Agreement: Firstly, developer 1 agrees that the above theories could work in terms of both feasibility and consideration of the local responsiveness of the spaces. However, he points out that one of the key reasons for the traffic issues in Beijing is the limited choice of vehicle access in the city. Therefore, he suggests that one could consider opening all access routes, not only for pedestrians but also for vehicles which could significantly reduce the traffic issues in the city						

		Reasons for Disagreement: Developer 2 agrees with the theory in principle. However, the reason why she chose to disagree was that the management company could not afford to provide so many access points to the community because, even if an automatic control system could be used at the control points, people would still need human assistance considering the local social context. Therefore, the high labour costs might not be supported and might not be affordable for the management companies. At the same time, if the proposed communities are located along the secondary roads, more entrances are workable, but if they are situated next to the main roads of the city, according to the relevant planning codes, no entrances to any of these communities are allowed.						
	Legibility	The design of the open spaces should transition in such a way as to emphasize the privacy of the semi-private spaces in order to prevent unnecessary disturbance; this could be achieved by, for example, changing the pavement design	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
	Cosmology	The design of green spaces and the landscape should adapt to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction and individual behaviour	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: Management and maintenance costs are the main concerns, but if these costs are within the budget, then this can be achieved						
Use and Activities	Variety	The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction.	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	

		Reasons for Partial Agreement: Depends on space availability						
		The open space design should consider ways of adapting the spaces for multiple users and activities in line with local types of interaction and social needs. Legislation and policies might be needed to support this.	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		Different types and numbers of facilities should be designed based on local socio-cultural needs, and also for different age groups; in particular, facilities in semi-private spaces should focus on social interaction and group activities rather than individual facilities	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: This depends on the financial position of the project in terms of whether it a] has the budget to provide a sufficient number and type of facilities; and b] has sufficient management and maintenance budget to afford the extra costs						
		The traditional economy (vendors) should be supported and taken into account in the design in order to provide a variety of commercial choices and enhance social vitality in the use of public open spaces. Meanwhile, management should pay more attention to the occupation of the space and its cleanliness	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
Comfort and Image	Amenity	The design of green spaces and the landscape should adapt to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction and individual behaviour	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		

		Mature trees are required in the open space design to balance the vertical spatial layers between users and the high-density buildings; this would enhance the transparency as well as the micro climate in the open spaces	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		Controlled parking spaces need to be designed along the roadside in order to prevent space being taken from pedestrian areas; meanwhile, legislation or management might be needed in order to enhance the efficiency of controlling these areas	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
	Naturality	The design of green spaces and the landscape should adapt to suit the local cosmological understanding of nature, which would respond to local daily activities, social interaction and individual behaviour	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: This depends on the financial position of the project in terms of whether it a] has the budget to provide a sufficient number and type of facilities; and b] has sufficient management and maintenance budget to afford the extra costs						
Sociability	Gregariousness	The shop frontage should be designed with some free space in order to provide opportunities for shop owners to extend their shops to attract more customers (if necessary, depending on the type of business), which could enhance social engagement as well as social connections and interaction.	P1 P2 P3 D1 D2			P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: Depends on space availability						

		The open space design should consider ways of adapting the spaces for multiple users and activities in line with local types of interaction and social needs. Legislation and policies might be needed to support this.	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		Different types and numbers of facilities should be designed based on local socio-cultural needs, and also for different age groups; in particular, facilities in semi-private spaces should focus on social interaction and group activities rather than individual facilities	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		

9.5.2.3 Test results for the design principles for private open spaces

Table 9. 19 Test Results for the Design Principles for Private Open Spaces. Source: Testing Interview

Test Results for the Design Principles for Private Open Spaces								
P1 = Planner 1; P2 = Planner 2; P3 = Planner 3; D1 = Developer 1; D2 = Developer 2								
Qualities of Open Spaces		Proposed Principles	Local Responsiveness			Feasibility		
			Agree	Part Agree	Disagree	Yes	Partly	No
Access and Linkage	Accessibility	Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenience for public transport	P1 P2 P3 D1	D2		P1 P2 P3 D1	D2	
		Reasons for Partial Agreement: As discussed previously, the labour costs incurred by the additional control and maintenance are the main concern						

		Private access control is required in order to maintain privacy in the use of the open spaces. At the same time, clearly marked private spaces on a small scale can enhance the sense of belonging and encourage the residents to take responsibility for maintaining the spaces	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		Entrances to both semi-private and private spaces should be considered in order to enhance the accessibility and convenience of reaching different facilities and commercial shops as well as for the various uses for open spaces	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
	Legibility	The private spaces should be enclosed by solid buildings rather than non-transparent walls in order to improve spatial relationships between buildings and spaces, and between different buildings	P1 P2 P3	D1 D2		P1 P2 P3	D1 D2	
		Reasons for Partial Agreement: By considering the commercial value by square meter, the developers will not consider differentiating selling prices for different locations based on the social context of the market						
	Cosmology	The materials used in open spaces, such as fences, should be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need policy support in order to maintain the responsiveness to local preferences and beliefs about nature	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		The buildings should be mainly designed to be north-south facing based on the local climate situation	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		

Use and Activities	Variety	To emphasise privacy, private spaces should be designed based on the types of individual activities and behaviour undertaken there rather than large group activities. Therefore, private spaces should not be designed on a large scale.	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		Access from multiple directions is required in order to improve the social and commercial use of semi-private spaces as well as convenience for public transport	P1 P2 P3 D1	D2		P1 P2 P3 D1	D2	
		Reasons for Partial Agreement: As discussed previously, the labour costs incurred by the additional control and maintenance are the main concern						
		In order to maintain the use of and activities in different open spaces, underground parking would be extremely significant to ensure the open spaces are not taken up by parked vehicles	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
Comfort and Image	Amenity	Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help to maintain a comfortable climate within the space, such as providing shade in summer	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
	Naturality	The design of green spaces should be taken into legal control in terms of style and design concepts, which whether or not effectively adapt local activities and preferences of use in open spaces	P1 P2	P3 D1 D2			P1 P2 P3 D1 D2	

		Reasons for Partial Agreement: From the planners' point of view, urban design guidelines are needed in order to present local needs for the use of green spaces more clearly. Thus, the necessary regulation may ensure the quality of the design of green spaces. From the developers' side, the design style of green spaces is difficult to control because people's needs, lifestyles and preferences are changing due to globalization.						
		Based on the need for greenery within traditional beliefs and in relation to socio-cultural use, high quality user-friendly green spaces are needed for private exercise and activities and communication with nature. At the same time, greenery can help to maintain a comfortable climate within the space, such as providing shade in summer	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		
		The materials used in open spaces, such as fences, should be designed using natural or visually appropriate materials rather than metal or steel in inappropriate colours. This matter may need policy support in order to maintain the responsiveness to local preferences and beliefs about nature.	P1 P2 P3 D1 D2			P1 P2 P3 D1 D2		

Conclusion

This chapter plays a very important role in the study. Generic lessons from each neighbourhood have been brought together, which to identify positive and negative aspects, then to define the transferable lessons regarding local responsiveness of public open spaces. Based on the transferable lessons, generic urban design principles were developed, and used to generate propositions for testing. With the results from the field survey used in the tests, the study and its proposals were investigated with contributions from key actors who gave their opinions regarding the level of local responsiveness and the feasibility of the proposals. The chapter has brought the rich resource of a real-life

context to the study's recommendations. This has been shown by the lively discussions, particularly in relation to the feasibility of the study. With these results, the proposals will be revised to reach the level of acceptance for a better and more achievable implementation.

Based upon the discussions presented in the previous part (section 8.5), there are no major changes needed to the proposals, only some modifications. Generally, the only disagreement came from one of the developers regarding the feasibility of increased accessibility within semi-private open spaces because this would substantially increase the management budget in terms of labour costs. In addition, the design principle of naturality within private spaces is another concern with significant limitations by both planners and developers due to the lack of data support for policy- making and the current transformations, which are emerging as a result of globalisation in the market. These issues, therefore, need further research, not only in the urban design realm, but also in other fields.

Chapter Ten - Conclusion

Introduction

The purpose of this conclusion chapter is to review the research process to identify the general value and theoretical contribution of this study, and where there may be a need for further research. This research was carried out to connect the empirical, methodological and theoretical fields of urban design in the context of contemporary urban development in Beijing.

Overall, the previous nine chapters lay out how the study was conducted in a systematic manner. This conclusion evaluates the overall process and pinpoints the value as well as the limitations of the research by addressing the main research question: what kind of urban spaces and urban design qualities contribute to the development of local responsiveness in Chinese cities? This chapter comprises three parts, as follows:

- Identifying the key findings by answering the research questions, achieving each objective and fulfilling each stage of the investigation to produce relevant findings;
- Discussing the most valuable theoretical, methodological and empirical contributions to knowledge derived from the investigation process;
- Recommending further research for the future direction of this issue

10.1 Key findings of the research

This research began by identifying the key elements of locally responsive public open spaces in the context of Beijing, China. This is the point at which the main research question can be answered, which is 'what kind of urban spaces and urban design qualities

contribute to the development of local public life in Chinese cities, with a special reference to Beijing?' In order to answer the research question, the overall aim of this investigation was 'to develop a theoretical framework and a methodology for defining the principles of locally responsive public open space design.' This section answers the research questions to achieve the objectives of this investigation.

The Conceptual Framework

A multi-dimensional conceptual framework is needed to analyse complex socio-spatial patterns, which stem from the interaction between the quality of the built form and public use of open spaces, in order to define the responsiveness across different dimensions (political, economic and socio-cultural) through global, national, regional and city to local influences. In order to do so, a conceptual framework has been developed to analyse and evaluate the level of local responsiveness in public open space design that offers a holistic understanding of multi-dimensional urban complexity (Figure 10.1). The research identified that the current public open space design has mainly been driven by political and economic factors, and that there has been a lack of consideration of socio-cultural needs in both the morphological and functional aspects of the design. Therefore, balancing the responsiveness to political, economic and sociocultural needs in the design of public open spaces is the core of future development.

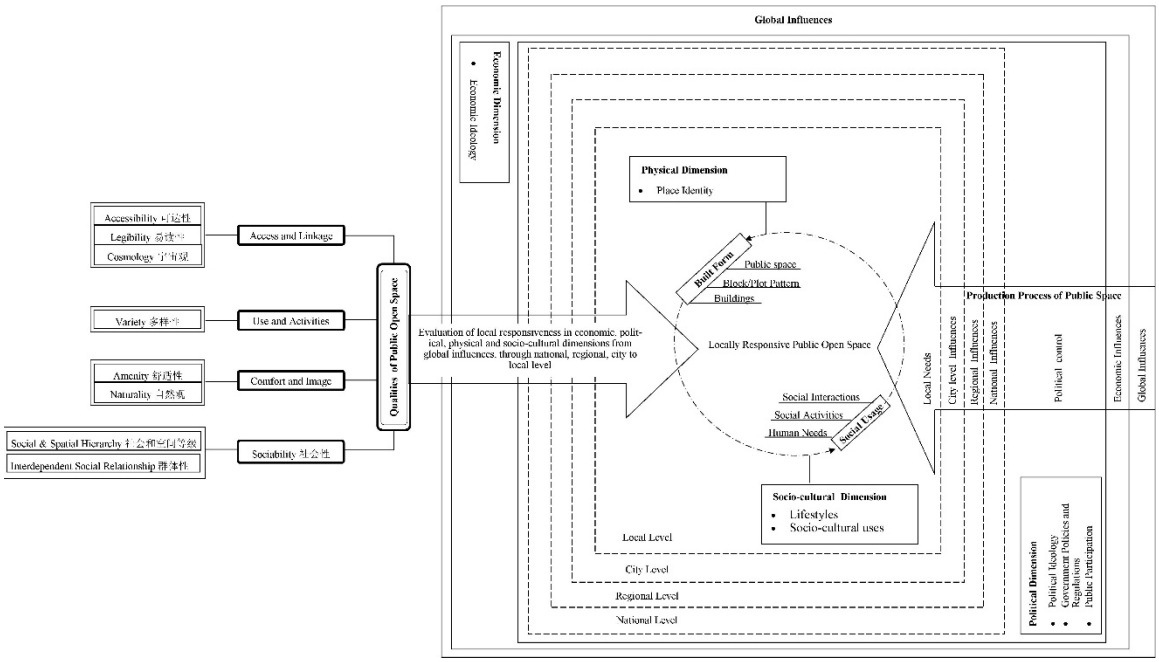


Figure 10. 1 The conceptual framework for analysing and evaluating local responsiveness in public open space design (for the larger version, refer to Figure 9.2). Source: author

The Research Methodology

The research methodology was shown to be appropriate for investigating the case of Beijing (Table 10.1). In order to understand comprehensively public use of open spaces in relation to the quality of the built form, the analysis was divided into two levels: city and neighbourhood level. At the city level, to analyse the components of the political and economic dimensions, agency role analysis and content analysis were used to analyse documents and semi-structured interviews were employed so that the roles and interests of urban actors in relation to locally responsive public open space design could be identified. In terms of socio-spatial patterns, historical transformation analysis and urban morphological analysis were used to identify how public spaces are used locally based on local preferences, the local world view and beliefs, through political and economic changes as well as changes of socio-cultural ideology. At neighbourhood level, the socio-cultural dimensions were analysed using environmental behaviour analysis and

discourse analysis. Through observations, semi-structured interviews and mental mapping etc., the meanings associated with the use and experiences of the place were revealed. Finally, the findings were enriched by a collaborative process in which key urban actors participated. The same process was directed towards identifying key issues and developing recommendations and strategies to address the issues. A dialogical approach was used for these purposes. This approach contributed to establishing a relaxed environment where in-depth discussions were possible. By engaging key actors and setting up semi-structured interviews, the actors contributed to formulating the site-specific urban design recommendations and they also proposed strategies to address key issues.

Table 10. 1 The Methods used in the Research. Source: author

<table>
<tr><td rowspan="3">Conceptual Framework</td><td colspan="4">Production Process of Public Spaces + Urban Morphologies and Spatial Typologies</td></tr>
<tr><td>Political Dimension</td><td>Economic Dimension</td><td>Socio-cultural Dimension</td><td>Physical Dimension</td></tr>
<tr><td>Government Policy
Public Consultation
Political Ideology</td><td>Economic Ideology</td><td>Lifestyle
Socio-Spatial Network</td><td>Place Identity
Vernacular Architecture</td></tr>
<tr><td rowspan="8">Methodology for Analysis</td><td colspan="4">City Level</td></tr>
<tr><td colspan="2">Agency Role Analysis

Content Analysis</td><td colspan="2">Historical Transformation Analysis

Urban Morphological Analysis</td></tr>
<tr><td colspan="2">Documentation analysis

Institutional Framework Analysis

Semi-structured interviews</td><td colspan="2">Literature review
Documentation analysis

Analysis of urban plans and projects</td></tr>
<tr><td colspan="4">Neighbourhood Level</td></tr>
<tr><td colspan="2"></td><td>Environmental Behaviour Analysis

Discourse Analysis</td><td>Urban Morphological and Typological Analysis

Visual Analysis</td></tr>
<tr><td colspan="2"></td><td>Observations

Mental mapping

Questionnaires

Semi-structured interviews

Visual records

Annotation mapping</td><td>Literature review

Documentation analysis

Site reconnaissance</td></tr>
<tr><td colspan="4">Exploratory visit

Field work for data collection</td></tr>
<tr><td>Method for Testing</td><td colspan="4">Inquiry by Design,

Semi-structured interviews with key actors</td></tr>
</table>

On site observation has proved its strength. Through direct field observations of the public open spaces, the researcher could explore many crucial aspects of public spaces. Photography and annotation were the main tools used to record the data.

Documentary research was carried out in order to identify the relevant policies and regulations in relation to the design of public open spaces. Many sources proved to be helpful such as regulations and policies from the Planning Office. Much important information was collected from the Master Plan, District Plan and Five-year Development Plan. However, due to land security concerns, the AutoCAD files of the city were not shared by the institutions. Therefore, the author had to measure the necessary data himself from maps, site observation and measurement.

The statistical data about socio-cultural factors were collected using questionnaires, semi-structured interviews and mental mapping. The original architectural and planning drawings of the places were not available from the relevant institutions although, in principle, this data was supposed to be provided or at least recorded by the institutions.

Research Findings and Proposals

City level Analysis

In this work, three main periods are characterised: Imperial Beijing, when the city was designed for political symbolization and integrated all disciplines in order to emphasize the imperial power, and thus, the city design and its functions were politically- driven as well as driven by the social structure and economic formation. Then, socialist ideas were reflected in the restructure of the city after the 1949 liberation. Work units and collectivist plans and designs were the products of socialist ideologies used in order to address political responsiveness. In contemporary Beijing, when the political ideology transformed to market reform, the importance of economic growth became a political target and policy-making compromised socio-cultural involvement in order to achieve economic development goals. As a result, the lack of consideration of socio-cultural needs has threatened the local identity and cultural traditions, and, more importantly, people's local interpretations, world view, beliefs and lifestyles have continually changed through the development process. As a result, social traditions and cultural identity have been lost or partly discontinued and social relationships as well as ways of interacting and activities have been changed or adapted by global modern designs. In terms of residential developments and projects that are mainly driven by developers, users only have a very limited influence on the designs

and plans. On the other hand, in order to achieve economic development goals, policy- making only maintains very minimum requirements in relation to the qualities of open space design, such as fire access, greenery coverage rate etc.

Detailed Neighbourhood Analysis

In the detailed neigbourhoods analyses, three main levels of findings were identified:. 1] the characteristics of each type of residential community; 2] issues in contemporary development that lack consideration of locally responsive public open space design; and 3] the transferable lessons from historical neighbourhoods that could enhance local responsiveness.

At the first level, the characteristics of different types of public open spaces were identified in each neighbourhood analysis, which were as follows (for details, refer to Chapters 5, 6 and 7):

- The definitions of public open spaces were identified based on users' perspectives regarding their local beliefs, cosmological understanding, world view and preferences of use in terms of socio-cultural interaction and activities.
- Theoretical connections were established between local understanding of the open spaces and the conceptual framework
- Usage experiences of public spaces were evaluated by different design qualities in order to identify the adaptation of socio-cultural requests as well as economic needs.
- The level of responsiveness in different types of residential community was identified in relation to public use, interaction and activities.

At the second level, eight common issues were identified from both the physical aspects of the neighbourhoods analyses and users' perspectives in terms of local responsiveness. These issues are not only present as problems for one community but also as social phenomena across the entire city, for example parking issues and problems with the urban layout. The issues are (for details, refer to Chapter 7):

Issue One – Fragmented urban form and lack of contextual integration

Issue Two – Disconnected spatial connections between buildings

Issue Three – Limited access to the community and within the community

Issue Four – Private spaces being overtaken for public use

Issue Five – Higher demand in relation to the numbers, types and services of public facilities within the community

Issue Six – Lack of sufficient land use design

Issue Seven – Inappropriate design qualities of green spaces

Issue Eight – Open spaces increasingly being used as parking spaces

At the third level, the transferable lessons were identified based on historical residential communities in relation to common issues. The transferable lessons were not only drawn from the socio-cultural angle, but also integrated political considerations and economic interests. In the meantime, by linking the transferable lessons to common issues, research proposals for improving the local responsiveness of public open spaces in residential developments were developed by using inquiry by design approach.

Research propositions for locally responsive public open space design

The propositions were developed by using inquiry by design approach, and based on socio-cultural usage, preferences and needs in relation to different types of public open spaces. The propositions make suggestions based on morphological layers in relation to design qualities in order to achieve local responsiveness to political, economic and socio-cultural aspects. During the testing process, the propositions were largely accepted by the key actors, who included policy makers and market representatives; they only suggested a few modifications (for details, refer to Chapter 9).

10.2 Contribution to Knowledge

In the context of China, the definition of locally responsive public open spaces is one of the contributions of this research to the body of knowledge. From the research, by reviewing the formation and transformation of public open spaces throughout history as well as reviewing local and global literature, a locally responsive public open space is defined as "a space that needs to be identified by a framework for defining the needs of different user groups, accommodating both global integration and the local context, responding to political and economic interests, and adapting to local socio-cultural and physical conditions over transformation and time".

As a result of the research into the definition and key concepts of locally responsive public open spaces in China, a new theoretical framework and methodology for approaching the case of a typical city in China were formulated. These were achieved by contextualising the existing universal aspects as well as combining these with significant aspects which emerged from the local context based on its different morphological layers. Therefore, the study provides a new comprehensive and systematic approach to evaluating the level of local responsiveness of public open spaces in the case of cities in China, which is socio-culturally oriented and has been investigated through the perceptions and interests of various key urban actors. In addition, a better understanding of public open spaces in specific contexts was achieved as well as the way in which key actors interactively contribute to places. In the context of China, the lack of a definition of local responsiveness in relation to public open spaces as well as a lack of understanding of and failure to investigate public open spaces systematically were the major issues in identifying the actual needs of different actors and balancing the development of open spaces across different dimensions; thus, the study can act as a useful reference for studies in similar realms.

As there has been a lack of research into the local responsiveness of public open space design in China, particularly in Beijing, a study in this field is required. Cities in China are transforming dramatically. Various architectural and planning projects, regulations and much investment are going to take place in China. The need for the study is clear, to provide a reference point for designing and issuing regulations and design guidelines as well as other necessary socio-cultural tasks.

In terms of its broader applicability, the study has provided two major contributions to the body of knowledge: first, it has developed a conceptual framework for approaching locally responsive public open space design at different morphological layers, and secondly, it has provided a methodology for investigating the qualities and levels of local responsiveness in public open spaces.

First, the contribution of the conceptual framework is that it has identified dimensions and components for analysing the different qualities of public open spaces in order to define the level of local responsiveness (Figure 10.2). This framework has allowed the researcher to understand comprehensively the interaction between local socio-cultural needs affected by political interests and driven by the market formed by global integration in the development of public open spaces. At the same time, local responsiveness was evaluated across different design qualities in order to identify the balance between the interests of key actors in the production process of public open spaces.

Having been tested using a typo-morphological approach to the formation and transformation of public open spaces though the city's history, the typology as well as various key actors and key factors such as the socio-cultural needs of public open spaces and adaptability to public use were highlighted. This helped to provide a relatively complete set of typo-morphological elements together with public space qualities that define the level of local responsiveness. This approach is worth considering in any research that aims to fulfil a similar purpose in another context within or outside China.

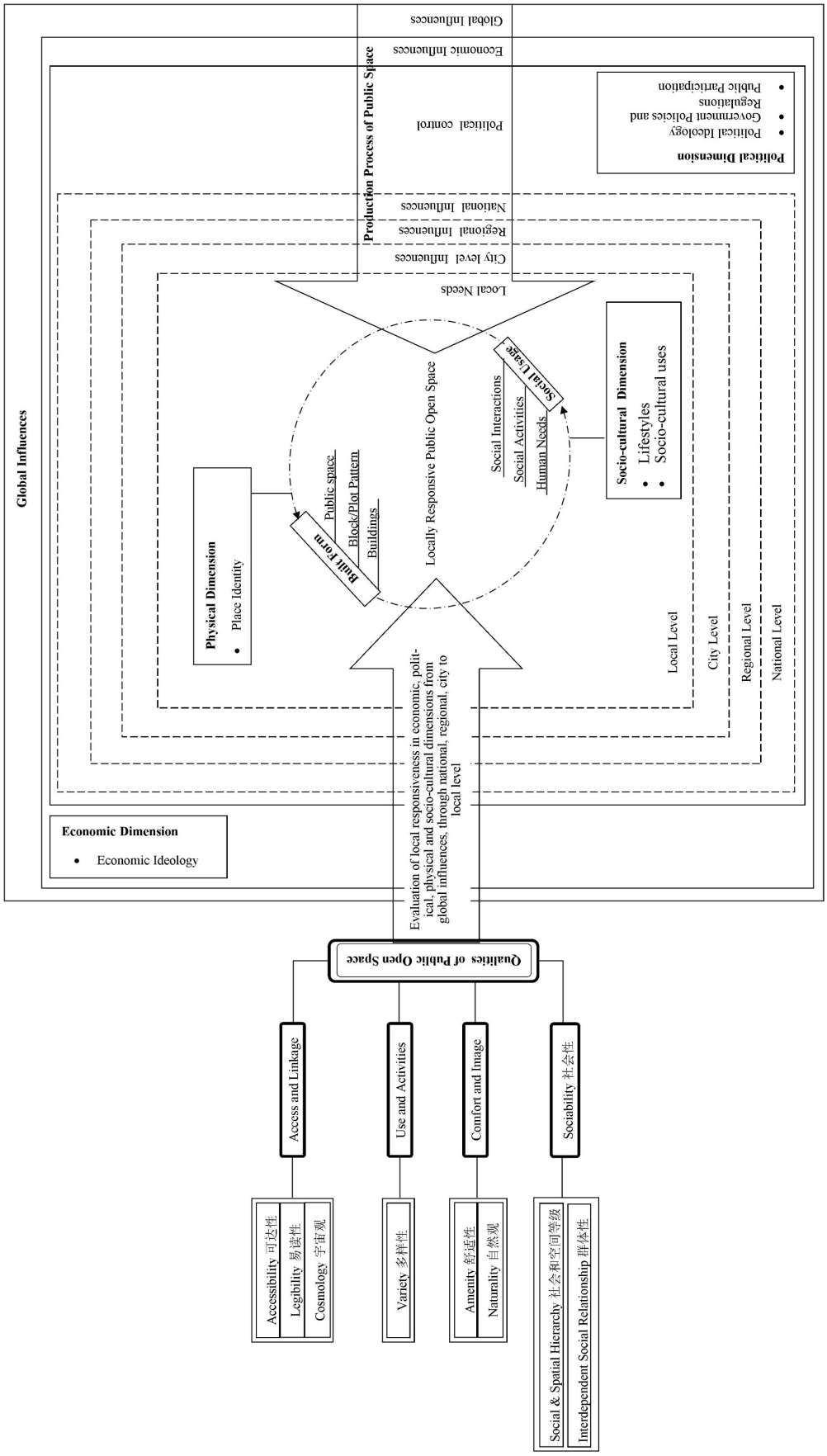


Table 10. 2 The conceptual framework for analysing and evaluating the local responsiveness in public open space design. Source: author

Secondly, the contribution of the methodology is that it has generated a sample of comprehensive ways to investigate and evaluate various design qualities in terms of the local responsiveness of public open spaces in cities that share the same or similar contextual characteristics, by:

- Formulating a theoretical framework for defining local responsiveness
- Identifying the key actors and key elements of public open spaces through a typo-morphological approach
- Implementing the assessment framework in practice for collecting empirical data and generating proposals based on this
- Testing the propositions with key actors by using inquiry by design to revise the propositions as well as the conceptual framework

The methodological approach can then be used to collect data from different morphological levels by engaging with key actors in the various types of public open spaces which have emerged from history though their significant influence on the morphology of the city such as streets, open spaces and blocks. In the process of building the conceptual framework, this methodology can be implemented in similar scenarios.

Together with the morphological approach, as mentioned in the conceptual framework and the findings of this study, a typological approach is useful for investigating the case of public open spaces in Beijing. This typological approach should focus on the types of public open spaces uncovered by the study, identifying:

- The typical issues that happen with specific types of public open spaces caused by their characteristics such as their function, physical limitations and users' socio-cultural needs
- The most suitable solutions or recommendations, which are specially designed for the problems or issues mentioned above

- How the implementation of the proposals and recommendations can be effectively carried out within the context of each type.

Besides this, the key socio-cultural characteristics of the use of public open spaces in Beijing should be the focus of each investigation such as the needs in terms of various activities and types of interaction at different times during the day that form the typical Chinese social characteristics and identity for a place.

10.3 Recommendations for Further Research

This investigation has focused on the study of local responsiveness in the design of public open spaces in the context of contemporary urban growth in a historical city in China. There has been an in-depth examination of the specific local scenarios selected in order to achieve the objectives of this research; further exploration can be undertaken in different urban contexts in China. Implementation of the methodology for analysis in other contexts would contribute to identifying similar or different socio-spatial patterns or effects in terms of the local responsiveness of public open spaces, which could test and refine the framework. It would deliver a robust methodology for identifying the needs and interests of key actors to achieve or balance locally responsive public open spaces.

In addition, this investigation can be used to underpin various actions in different research studies if the research outcome is implemented in a real-life urban scenario. In that case, relevant studies can be carried out to assess the performance of the recommendations and strategies, which can contribute to a better understanding of the responses to local and global influences, and methods for achieving locally responsive public open spaces.

Specific initiatives can be oriented to strengthening the links between theory and practice, reducing the gap between designers and other key urban actors, implementing methods to improve connections between users and design by using qualitative and quantitative

techniques for collecting and analysing data, and exploring the potential of dialogical and collaborative approaches to define locally responsive public open spaces.

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Appendices

Appendix A – Key informant interview questions

The interview questions with controllers

List of participants

- Department of Masterplan at the Beijing Municipal Commission of Urban Planning
- Department of Basis Planning at the Beijing Municipal Commission of Urban Planning
- Department of Research at the Beijing Municipal Commission of Urban Planning

The interview question sheet:

Locally Responsive Public Space Design – Special Reference to Beijing

Guide to interviews

Controllers (Politicians and Government Officials)

Introduction:

The interview is part of a field survey in order to analyse locally responsive public space in Beijing. The result of this survey will direct the formulation of appropriate recommendations for improving the locality and quality of public space.

The outcome of this interview will contribute to a PhD research currently being carried out in the field of urban quality. It will also contribute an important and useful tool for urban design practice leading towards high quality public space based on cultural needs in Beijing.

Instructions:

The interview consists of four parts. The first is concerned with general information about your role; the second part is about your interests in the public space development; the third part

relates to the issues in the current policy; and the final part is about your opinions on the different cases of public spaces. You are kindly required to describe your opinion, and add any further comments in the designated spaces.

Thank you very much for your participation.

Part I: General information about role and responsibility of respondents

1. What is your role and responsibility in the production process of public space in residential areas in Beijing?

2. In what way are you engaged in the control and management of public space in residential areas in Beijing?

3. Do other institutions participate in the process?

4. Does the public in any way participate in the process?

5. How do you process the information?

6. How do you make decisions?

7. What are the next stages towards implementation?

8. Are there any post-occupancy evaluation?

9. Do you have any comments?

Part II: The interests of actors

10. From your point of view as part of the control mechanism of the public space, what factors are important for you to operate effectively toward achieving locally responsive public space?

	Not at all	Little	Average	Much	Very much
Intangible culture/folklore events/festivals					
Why?					
Historical context and spatial structure of public space					
Why?					
Beliefs and religion of residents					
Why?					

Public facilities and services (e.g. shops, facilities and parking)					
Why?					
Public participation/engagement					
Why?					
Community perception of public space					
Why?					
Community perception of public behaviour					
Why?					
Any other aspects?					
Why?					

Part III: Questions from Policies

11. As mentioned in policy, historical culture protection mechanism is required to improve, and professional research and public participation will be involved into the decision process, in order to bring national culture into urban development. Based on that, could you give your opinion on the following points?

- What kinds of cultural development have been covered under this policy?
- What is your role in the decision making process of historical urban heritage protection?
- How does this process works?
- How do professional researchers and public participants engaged into the process?
- Do you think this policy will affect people's public behaviours and folklore in public space in residential areas? Why?
- Do you have any comments?

12. As mentioned in policy, in order to protect and develop historical cultural sources of the city, and its character, it is important to integrate the historical culture with contemporary modern urban condition as one of the key purpose to improve the quality of urban environment.

- What is your role in this decision making process of integrate historical culture with contemporary urban environment?
- In which aspects you think it is important to integrate the historical culture with contemporary modern urban environment?
- Have you considered people's public behaviour and folklore in this process? Why?
- Do you have any comments?

Part IV: Information about neighbourhood

In current three types of public space, could you give your opinion on the following points?

Hutong Work unit
Modern living community

13. What do you think of the present condition of these public spaces in residential areas?

	Not at all	Little	Average	Much	Very much
Quality of public space					
Why?					
Use of public space					
Why?					
Safety					
Why?					
Liveliness					
Why?					
Any other aspects?					
Why?					

14. In what way are you engaged with these public spaces within and around the community?

15. Could you explain positive and negative aspect of control and management of the public space for each of neighbourhood?

16. Are there any transferable lessons you think is important from Hutong/work unit that can be implemented in the future urban development in terms of public space?

17. Is there anything else you want to add?

Thank you very much.

The interview questions with producers

List of participants:

- Project manager at Vanke Real Estate Development
- Project manager at Beijing Gem Real Estate Development Co.,Ltd.

The interview question sheet:

Locally Responsive Public Space Design – Special Reference to Beijing

Guide to semi-structured interviews

Producers (Developers and Designers)

Introduction:

The interview is part of a field survey in order to analyse locally responsive public space in Beijing. The result of this survey will direct the formulation of appropriate recommendations for improving the locality and quality of public space.

The outcome of this interview will contribute to a PhD research currently being carried out in the field of urban quality. It will also contribute an important and useful tool for urban design practice leading towards high quality public space based on cultural needs in Beijing.

Instructions:

The interview consists of four parts. The first is concerned with general information about your role; the second part is about your interests in the public space development; the third part relates to the issues in the current policy; and the final part is about your opinions on the different cases of public spaces. You are kindly required to describe your opinion, and add any further comments in the designated spaces.

Thank you very much for your participation.

Part I: General information about respondent

1. Are you?

Developers □ Designers □

2. What is your role in the production process of public space?

3. Do other institutions/organisations/companies participate in the production process of public space?

4. Does the public in any way participate in the design/invest process?

5. How do you get the information/suggestion for making decisions for the design/investment in public spaces within or around the community?

6. What does the public space mean to you?

7. What are the most important elements in public space in your opinion? Why?

8. How do you find out what are the most important needs from people in public? Why?

9. What do you think of the present condition of public spaces in residential areas?

	Not at all	Little	Average	Much	Very much
Quality of public space					
Why?					
Use of public space					
Why?					
Safety					
Why?					
Liveliness					
Why?					
Any other aspects?					
Why?					

10. Have you ever thought about people's cultural needs and folklores in public space when you design/invest? Why?

11. Do you have any comments?

Part II: The interests of actors

12. From your point of view as part of the development mechanism of the public space, what factors are important for you to operate effectively toward achieving locally responsive public space?

	Not at all	Little	Average	Much	Very much
Intangible culture/folklore events/festivals					
Why?					
Historical context and spatial structure of public space					
Why?					
Beliefs and religion of residents					
Why?					
Public facilities and servicess (e.g. shops, facilities and parking)					
Why?					
Public participation/ engagement					
Why?					
Community perception of public space					
Why?					
Community perception of public behaviour					
Why?					
Safety/Security					
Why?					
Any other aspects?					
Why?					

Part III: Questions from policy

Based on the main policy (e.g. Beijing master plan 2004-2020, Beijing 12th five year plan, etc.), could you give your opinion in the following questions?

13. Are there any government policies or regulations affect your design/invest?

14. Which policies or regulations?

15. How do they affect or limit your design/invest?

16. Is there anything else you want to add?

Thank you very much.

The interview questions with users

List of participants:

- Residents at Qian Yuan'en Si Community
- Residents at Heiyaochang Unit Community
- Residents at Back Modern City Community

The interview question sheet:

Locally Responsive Public Space Design – Special Reference to Beijing

Guide to structured interviews

Users (Local Residents)

Introduction:

The interview is part of a field survey in order to analyse locally responsive public space in Beijing. The result of this survey will direct the formulation of appropriate recommendations for improving the locality and quality of public space.

The outcome of this interview will contribute to a PhD research currently being carried out in the field of urban quality. It will also contribute an important and useful tool for urban design practice leading towards high quality public space based on cultural needs in Beijing.

Instructions:

The interview consists of four parts. The first is concerned with general information about your role; the second part is about your interests in the public space development; the third part relates to the issues in the current policy; and the final part is about your opinions on the different cases of public spaces. You are kindly required to describe your opinion, and add any further comments in the designated spaces.

Thank you very much for your participation.

Part I: General information about respondent

Are you:

Resident Worker
Visitor

Age:

18-30 31-50
50+

Gender:

Male Female

Where do you live?

What is your occupation?

Part II: The quality of public space

1. What does public space mean to you?

2. How often do you use the public spaces in this residential area?

Every day Few days per week Few days per month Special events

3. Where is the most common place/space you frequently use? Why? Please show me on the map.

4. Where is the most undesirable place/space in your mind? Why? Please show me on the map.

5. What do you normally do in the place/space you like? What time?

6. Where do you normally meet with your neighbours in public space? Please show me on the map.

Accessibility and linkages -

7. Are there sufficient pedestrian walkways leading to/ surrounding the public space?

Completely Fairly
Acceptably Not at all

8. Do you encounter any problems or boundaries getting into any of the public spaces?

Yes No
Do not know

If yes, what problem? And please show me on the map.

9. Do you think access to the residential community is practical and easy?

Completely Fairly
Acceptably Not at all

Why?

10. Please draw a quickly map to mark the route you normally choose for accessing the public space on a daily routine. Why have you chosen these routes?

Comfort and image -

11. Are the following amenities and facilities sufficiently available for people in the public spaces?

Greenery Landscape furniture
Information board

Chairs Sport facilities
Pavement

Toilets Rubbish bin
Other (Please specify)

12. Which facilities are the most important to you and which one is least important?

13. Are there any other facilities or space for amenity should be provide in the public spaces?

14. Where are the most comfortable/enjoyable places/spaces in your mind? Please show me on the map

15. In what reason, do you think those places/spaces comfortable/ enjoyable?

16. Do you feel safe when you in public spaces within or around the community?

Safe from vehicles

Completely Fairly
Acceptably Not at all

If no, please give reason on which part you feel not safe

Safe from crime and nuisance

Completely Fairly
Acceptably Not at all

If no, please give reason on which part you feel not safe

17. Do you think the public space inside/around the community is a good place for recreation/leisure?

Completely Fairly
Acceptably Not at all

Why?

Uses and activity -

18. How do you consider the variety of land uses or activities in the public spaces?

	Good	Acceptable	Bad
Enough Commercial support (e.g. local shops, market, vendors)			
Why?			
Enough places/spaces for daily use (e.g. excises, social interaction, break, leisure)			
Why?			
Enough places/space for cultural /folklore events (e.g. beliefs, traditions, festival celebrations)			
Why?			

19. Are you satisfied with the following concentration of urban functions in the public spaces?

Local shops Completely Fairly
Acceptably Not at all

Why?

Vendors Completely Fairly
Acceptably Not at all

Why?

Public facilities Completely Fairly
Acceptably Not at all

Why?

Cultural events Completely Fairly
Acceptably Not at all

Why?

Parking Completely Fairly
Acceptably Not at all

Why?

20. Do you suggest any change from previous question? Which one? How should it be?

21. Where do you normally use for cultural events (wedding, festival etc.) in public space?

22. Are you satisfied with the public space for cultural activities?

Completely Fairly
Acceptably Not at all

Why?

Management –

23. Are you satisfied with the level of maintenance of public spaces in the residential areas?

Completely Fairly
Acceptably Not at all

If not, what places do you think need more maintenance? And how?

24. Is there enough control on ground parking?

Completely Fairly
Acceptably Not at all

Sociability -

25. Do you think adequate public consultation is being carried out in the planning and designing process?

Yes No
Do not know

26. Would you welcome more public involvement/ participation?

Yes No
Do not know

27. Is there anything else you want to add?

Thank you very much.

Appendix B – Sample of semi-structured interview transcript

Sample of semi-structured interview with planning officer from Department of Basic Planning at the Beijing Municipal Commission of Urban Planning

Identification Code: P01

Part I: General information about role and responsibility of respondents

1. What is your role and responsibility in the production process of public space in residential areas in Beijing?

The role of my department is mainly focus on the planning of street, the system of underground, railway station. In terms of production of public space, we are only involved in the part of planning of public streets around the community or within some of extremely large community.

2. In what way are you engaged in the control and management of public space in residential areas in Beijing?

We not specific for residential area, the control is focus on all type of public streets and spaces. All design has to follow the planning policies and regulations, and it is the way we control the spaces designed based on the purpose of master plan.

3. Do other institutions participate in the process?

Yes, such as Beijing Municipal Public Security Fire Corps and Beijing Municipal Environment Protection Bureau. One is regulating the fire risk in design and construction of either public spaces and buildings, and another one is controlling the rate of green spaces as well as its quality.

4. Does the public in any way participate in the process?

Well, currently only social housing is legally required for public participation, and the common ways we use are that 1] we offer information box to receive information from residents in the area we do the social housing project; 2] after design evaluated by the government, we announce the exhibitions, then the residents can come to see it and give opinions. In terms of commercial housing, we don't have any legal requirement for public participations, it all depends on the developers and design team.

5. How do you process the information?

Once we receive information based on government information box and exhibitions. We will use statistical analysis to identify the major issues, then to discuss them in meeting and submit a proposal to Ministry of Housing and Urban-Rural Development. Finally these issues will be discussed in national development meetings that to make central government development annual agenda and five-year development plans in city level.

6. How do you make decisions?

The decisions are mainly made based on the information supplied by professionals (people who from different research institutions), and the central government development annual agenda and five-year development plans.

7. What are the next stages towards implementation?

Based on the central government development agenda and city five-year development plan discussed in national meetings, the development agenda and plan will be further developed in details based on detailed categorise, such as large scale in road system and airport, and small scale in public facilities and road pavement. These further developed plan will form new or adjust existing policies, regulations and design code, and delivery to sub-districts for implementation and monitor.

8. Are there any post-occupancy evaluation?

No, for social housing, the street committee is the main government department to receive information and using problems from residents. Once we have this information, we will categorise them and list priority for solving. In terms of commercial community, I don't think the developers will do the post occupancy evaluations.

9. Do you have any comments?

Part II: The interests of actors

10. From your point of view as part of the control mechanism of the public space, what factors are important for you to operate effectively toward achieving locally responsive public space?

	Not at all	Little	Average	Much	Very much
Intangible culture/folklore events/festivals	√				
Reasons: That's belong to designers, not us					
Historical context and spatial structure of public space			√		
Reasons: It depends on the location of the projects. If it is in historical area, then yes. If it is in new development area, then we do not have any regulations to control it. Also the regulations only applied for design of architectural buildings, not for spatial layouts and structure.					
Beliefs and religion of residents	√				
Reasons: That's belong to designers, not us					
Public facilities and services (e.g. shops, facilities and parking)			√		
Reasons: We only have regulations for parking – 1 parking space per apartment; green spaces –					

30 per cent of green spaces for development area; and fire access requirement. The rest such as shops and other facilities no regulations to control them.					
Public participation/engagement			√		
Reasons: It depends on the types of projects. If it is historical commercial streets, then we do require public participation for information gathering through online and public exhibitions. If the project is a community then we do not require any public engagement.					
Community perception of public space	√				
Reasons: No regulations for that					
Community perception of public behaviour	√				
Reasons: No regulations for that					
Any other aspects?					
Reasons:					

Part III: Questions from Policies

11. As mentioned in policy, historical culture protection mechanism is required to improve, and professional research and public participation will be involved into the decision process, in order to bring national culture into urban development. Based on that, could you give your opinion on the following points?

- **What kinds of cultural development have been covered under this policy?**
  The coverage only applies on development or projects in historical area, and it mainly focus on building façade.
- **What is your role in the decision-making process of historical urban heritage protection?**
  There are no roles on my department the regulations mainly from architectural side.
- How does this process works?
- **How do professional researchers and public participants engaged into the process?**
  Professionals provide recommendations to the conservational projects, and suggestions for the spatial design, but they are not involved in legal perspective. The public engagement is mainly involved in public exhibitions at before and after the projects.
- **Do you think this policy will affect people's public behaviours and folklore in public space in residential areas? Why?**
  Well it depends on how many recommendations of spatial design from professionals accepted by real estate companies, but there are no legal requirement in design of public open spaces in terms of public behaviours.
- **Do you have any comments?**

12. As mentioned in policy, in order to protect and develop historical cultural sources of the city, and its character, it is important to integrate the historical culture with contemporary modern urban condition as one of the key purpose to improve the quality of urban environment.

- **What is your role in this decision-making process of integrate historical culture with contemporary urban environment?**
  The national policy gives us a future development direction, but currently, we do not have any regulation require historical culture present in new development especially community development.
- **In which aspects you think it is important to integrate the historical culture with contemporary modern urban environment?**
  Personally, I think social connection is important in design of new community as it present the Chinese philosophy between people in traditional Chinese space deign.
- **Have you considered people's public behaviour and folklore in this process? Why?**
  It is very hard to involve people's behaviours in design of regulations, because it is too detail, and my department is focus on planning. However, I think this is belong to urban design, but urban design agenda is currently no legal power, so it is just developers' preferences.
- **Do you have any comments?**

Part IV: Information about neighbourhoods

In current three types of public space, could you give your opinion on the following points?

Hutong Work unit
Modern living community

13. What do you think of the present condition of these public spaces in residential areas?

	Not at all	Little	Average	Much	Very much
Quality of public space	√				
Why? We do not have any regulations or policies in control and manage these. The qualities of public open spaces mainly depend on design companies for new developments. The public open spaces in hutongs and work units are hard to control because the architectural buildings themselves are historical buildings, so new regulations are not designed for them, but conservation regulations are tending to keep them. Multi-family occupied courtyard houses are historical issues, it is very hard to deal with these families from government perspectives. It would be if real estate company start a commercial project, and government will support it from policy perspective.					
Use of public space	√				

Why? We do not have any regulations or policies in control and manage these.					
Safety	√				
Why? We do not have any regulations or policies in control and manage these.					
Liveliness	√				
Why? We do not have any regulations or policies in control and manage these.					
Any other aspects?					
Why?					

14. In what way are you engaged with these public spaces within and around the community?

We do not legally require public participation in new residential community development. However, if the regulation project is a historical building, then conservation regulation applied on architectural façade and some of structures, but not public open spaces.

15. Could you explain positive and negative aspect of control and management of the public space for each of case?

As state early, we do not have regulations or policies for these except parking, percentage of green spaces area and fire access.

16. Are there any transferable lessons you think is important from Hutong/work unit that can be implemented in the future urban development in terms of public space?

Personally, I would say the social connection and activities, because the most of new development focus on privacy and facilities, so residents have more indoor activities rather then use of outdoor spaces, then people's social connection get weaken. That is why the public open spaces in hutong are more Chinese style.

17. Is there anything else you want to add?

Sample of semi-structured interview with developer from Beijing Gem Real Estate Development Co., Ltd.

Identification Code: D01

Part I: General information about respondent

1. Are you?

Developer

2. What is your role in the production process of public space?

I think my role is a integrator, who integrate different social sources from pieces to one, which involves government, designers, users, etc.

3. Do other institutions/organisations/companies participate in the production process of public space?

The two main institutions are, one is planning authorities and another is construction department, the rest involves many, such as landscape, fire department etc.

4. Does the public in any way participate in the design/invest process?

Not in most of projects, only exception is that if any situation affect the results may defer from original design, then a public exhibition will run for negotiation of the final constructions.

5. How do you get the information/suggestion for making decisions for the design/investment in public spaces within or around the community?

A third part company is hired and provide an analysis, our decision is based on these results to positioning the style, design and requirements of public open spaces

6. What does the public space mean to you?

One is outdoor spaces; another one is a place where people can stop for enjoying. From developers' perspective, the public open space can be seen as an attached value for a development.

7. What are the most important elements in public space in your opinion? Why?

The beauty of green spaces is quite important, it gives a good image to the buyers, and green spaces is a important requirement from buyers as well.

8. How do you find out what are the most important needs from people in public? Why?

The most required need from buyers is green spaces, as most of activities and behaviours are happened in green spaces. Another one is parking space, the ground parking is main way for the residents, underground parking is very limited because of costs are too high.

9. What do you think of the present condition of public spaces in residential areas?

	Not at all	Little	Average	good	Very good
Quality of public space					√
Why? Because the conditions and facilities are designed based on our current needs, such as parking, green spaces, and various facilities					
Use of public space			√		
Why? Not as good as historical area, as the public space for them are a part of iving spaces. However, as I mentioned before, the public spaces just an attached value, so we just maintain basic activities for daily life. The main quality we focus is indoor spaces and their qualities.					
Safety				√	
Why? Because CCTV cameras through the community and access control for both pedestrian and vehicles are provided good level of security					
Liveliness			√		
Why? As I said before, the activities and behaviours maintain basic in public open spaces due to costs considered in development, and this design as standard in Beijing, so we do not need add more in design of public open spaces.					
Any other aspects?					
Why?					

10. Have you ever thought about people's cultural needs and folklores in public space when you design/invest? Why?

No, because it not provide direct profits for the developments, so we do not consider it as a part of design.

11. Do you have any comments?

Part II: The interests of actors

12. From your point of view as part of the development mechanism of the public space, what factors are important for you to operate effectively toward achieving locally responsive public space?

	Not at all	Little	Average	Much	Very much
Intangible culture/folklore events/festivals	√				
Why? As standard commercial communities are easy for sale, so the design of public open spaces are maintain the basic, unless the development focus on luxury sale, we may add more facilities or design into public spaces for selling point. On the other hand, if this requirement become the main requirement in the market, we main provide.					
Historical context and spatial structure of public space		√			
Why? Yes, but very basic. For example, we do apply fengshui in our design.					
Beliefs and religion of residents			√		
Why? We do consider the basic in our design, for example, fengshui in directions and style of green space design					
Public facilities and servicess (e.g. shops, facilities and parking)					√
Why? This is very important in contemporary development, as these facilities already become the standard in the market, if the project not include these aspects, it would be very hard for sale.					
Public participation/ engagement	√				
Why? We normally listen to the market, when the market shows we need this, we provide it.					
Community perception of public space		√			
Why? We may consider this as basic in the design, as it also become to attached value which not affect sale.					

Community perception of public behaviour			√		
Why? Because we need put privacy as top priority for the community, if too many people use the spaces, then the residents may complain. So, we need make sure the behaviour can be managed and not affect the residents. Because from our experiences, the residents normally not happy the outsiders come into their territory.					
Safety/Security			√		
Why? The security already become the standard for a development project, such as CCTV cameras and security guard. The design has separate pedestrian and vehicles for safety consideration.					
Any other aspects?					
Why?					

Part III: Questions from policy

Based on the main policy (e.g. Beijing master plan 2004-2020, Beijing 12th five year plan, etc.), could you give your opinion in the following questions?

13. Are there any government policies or regulations affect your design/invest?

Yes, every new policies and agenda will present the aspects that the government will support. So this gives us a direction for future projects.

14. Which policies or regulations?

All policies will give us directions, for example, new 12th five year plan emphasize education will get more support, then we will seek on land location where have good school catchment, which to get government benefits.

15. How do they affect or limit your design/invest?

Some of policies do limit our project sale, for example last year the local government announced a policy which limit people to buy property below 90 square meters. Then our profits get affected.

16. Is there anything else you want to add?

Sample of semi-structured interview with user from Heiyaochang Unit Community

Part I: General information about respondent

Are you:

Resident Worker
Visitor

Age:

18-30 31-50
50+

Gender:

Male Female

Where do you live? Heiyaochang Unit Community

What is your occupation?

Company Employee

Part II: The quality of public space

1. What does public space mean to you?
   A place for waling and exercise

2. How often do you use the public spaces in this residential area?

Every day Few days per week Few days per month
Special events

3. Where is the most common place/space you frequently use? Why? Please show me on the map.

I prefer use Taoranting Park, as it has very good natural environment

4. Where is the most undesirable place/space in your mind? Why? Please show me on the map.

The main road of the community, as 1] the road is too narrow and occupied by large amount of cars parked along the road, which makes difficulties for pedestrian access; 2] the road is not designed appropriate for pedestrian and cars to use; 3] outsider come in to the community and go through our private public spaces freely that make me not feel safe; 4] green spaces and plants are very limited and the qualities not as good as public park.

5. What do you normally do in the place/space you like? What time?

Walking, exercising and on the way to public transport

5am-9am 9am-12pm 12pm-3pm 3pm-6pm 7pm-10pm

6. Where do you normally meet with your neighbours in public space? Please show me on the map.

Subway station and Taoranting Park

Accessibility and linkages -

7. Are there sufficient pedestrian walkways leading to/ surrounding the public space?

Completely Fairly
Acceptably Not at all

The entrances of the community are limited

8. Do you encounter any problems or boundaries getting into any of the public spaces?

Yes No
Do not know

If yes, what problem? And please show me on the map.

Too many cars and pedestrian flow as well as car parking and vendors

9. Do you think access to the residential community is practical and easy?

Completely Fairly
Acceptably Not at all

Why?

1] Too many cars and pedestrian flow as well as car parking and vendors; 2] limited entrances of the community

10. Please draw a quickly map to mark the route you normally choose for accessing the public space on a daily routine. Why have you chosen these routes?

As the main road is the only entrance to get out of the community to the park and subway station.

Comfort and image -

11. Are the following amenities and facilities sufficiently available for people in the public spaces?

Good – G Bad – B Not applicable – NA

Greenery [B] Landscape furniture [NA]
Information board [B]

Chairs [B] Sport facilities [B]
Pavement [NA]

Toilets [NA] Rubbish bin [B]
Other (Please specify)

12. Which facilities are the most important to you and which one is least important?

Important: green spaces, landscape furniture, information board, pavement

Least important: Toilet

13. Are there any other facilities or space for amenity should be provide in the public spaces?

Green spaces, landscape furniture, sport facilities, pavement, and square (large open spaces)

14. Where are the most comfortable/enjoyable places/spaces in your mind? Please show me on the map

15. In what reason, do you think those places/spaces comfortable/ enjoyable?

High quality green spaces

16. Do you feel safe when you in public spaces within or around the community?

Safe from vehicles

Completely Fairly
Acceptably Not at all

If no, please give reason on which part you feel not safe

1] Too many car access and speed of control; 2] mixed pedestrian and vehicle access makes unsafe felling during walking and access

Safe from crime and nuisance

Completely Fairly
Acceptably Not at all

If no, please give reason on which part you feel not safe

1] Too much strangers from outside of the community; 2] some of area no street light that feel unsafe at night

17. Do you think the public space inside/around the community is a good place for recreation/leisure?

Completely Fairly
Acceptably Not at all

Why?

1] Low quality and quantity of green spaces; 2] Feel unsafe due to many strangers from outside of the community; 3] Lack of variety and quantity of public facilities; 4] limited interactive spaces

Uses and activity -

18. How do you consider the variety of land uses or activities in the public spaces?

	Good	Acceptable	Bad
Enough Commercial support (e.g. local shops, market, vendors)		√	
Why? The shops and market provide standard commercial support, such as the most of shops are restaurants, and we need more variety of choices such as flower shops, pet services, and large supermarket etc.			
Enough places/spaces for daily use (e.g. excises, social interaction, break, leisure)			√
Why? The spaces are very limited due to increased car parking, meanwhile, lack of public facilities is another issue, such as sport facilities, and square for social activities and interaction			
Enough places/space for cultural /folklore events (e.g. beliefs, traditions, festival celebrations)			√
Why? We do not have any spaces for this			

19. Are you satisfied with the following concentration of urban functions in the public spaces?

Local shops Completely Fairly
Acceptably Not at all

Why?

Simple type of shops

Vendors Completely Fairly
Acceptably Not at all

Why?

The qualities of products they provide are really poor, and meantime, they cause more problems such as cleanness and traffic issue

Public facilities Completely Fairly
Acceptably Not at all

Why?

Lack of numbers and types of facilities

Cultural events Completely Fairly
Acceptably Not at all

Why?

No spaces

Parking Completely Fairly
Acceptably Not at all

Why?

No parking spaces considered in design, which random parking cause extremely serious problem inside the community

20. Do you suggest any change from previous question? Which one? How should it be?

All of them need change. Redesign of public open spaces in the community is urgently needed, which 1] parking spaces should be designed instead of randomly parked on pedestrian area; 2] provide more public spaces for activities and events; and 3] improve management for control non-residents get into the community such as vendors and salesman.

21. Where do you normally use for cultural events (wedding, festival etc.) in public space?

At restaurants

22. Are you satisfied with the public space for cultural activities?

Completely Fairly
Acceptably Not at all

Why?

We do not have spaces for this

Management –

23. Are you satisfied with the level of maintenance of public spaces in the residential areas?

Completely Fairly
Acceptably Not at all

If not, what places do you think need more maintenance? And how?

The management is very limited, so we need redesign the spaces and then import better management system and team.

24. Is there enough control on ground parking?

Completely Fairly
Acceptably Not at all

Why?

There is no control

Sociability -

25. Do you think adequate public consultation is being carried out in the planning and designing process?

Yes No
Do not know

26. Would you welcome more public involvement/ participation?

Yes No
Do not know

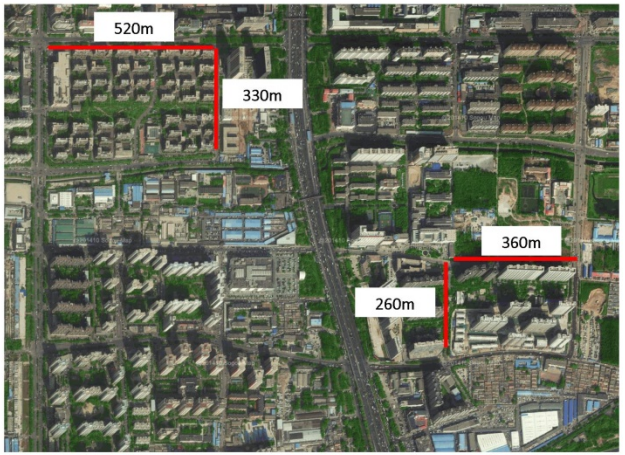
27. Is there anything else you want to add?

Refer to question 20

Appendix C – Testing sheets

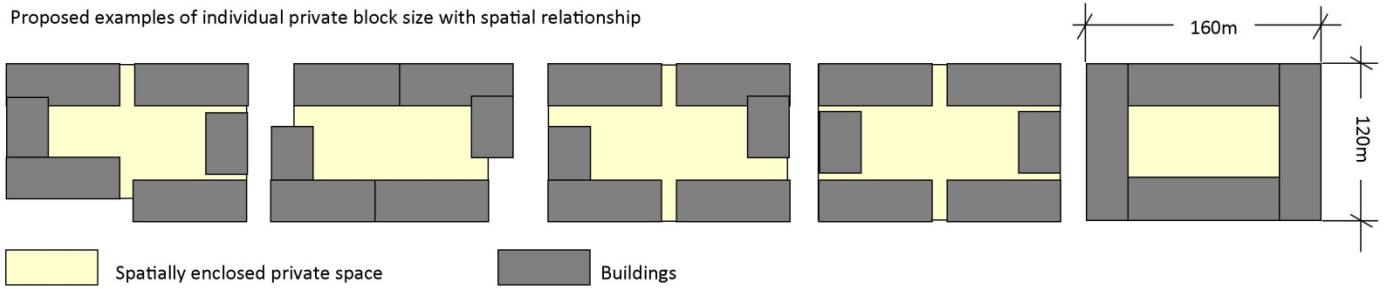
Spatial Morphological Structure — Spatial Enclosure

Current Block Sizes — Large Scale Enclosed Community

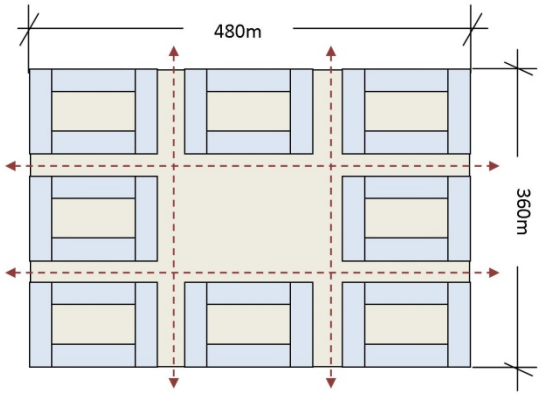


Current Boundaries for defining spaces

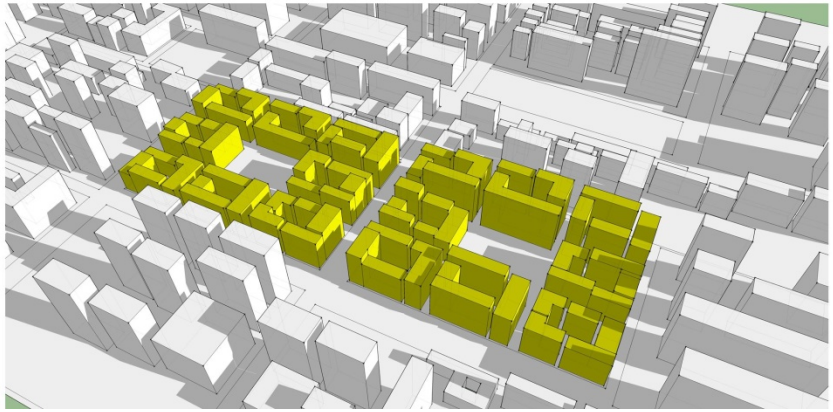
Proposed examples of individual private block size with spatial relationship



Proposed free access for pedestrian and private vehicle



Model Illustration



Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Public Activities in Open Spaces

5-9 am





9-11 am




12-3 pm

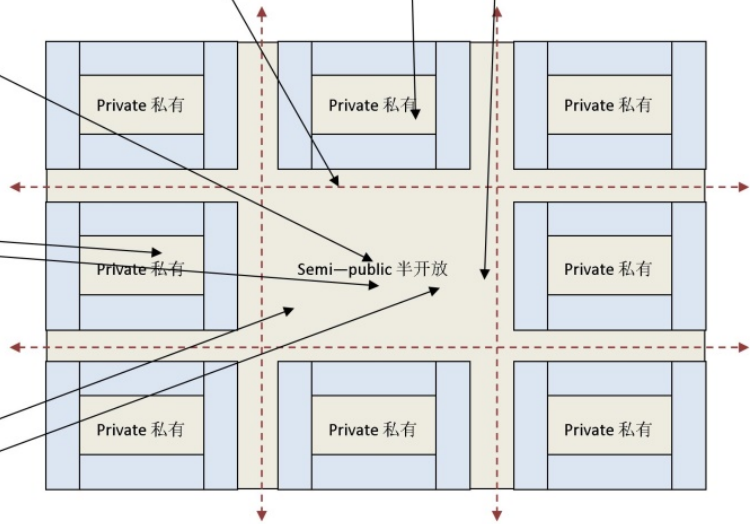


3-6 pm



7-10 pm



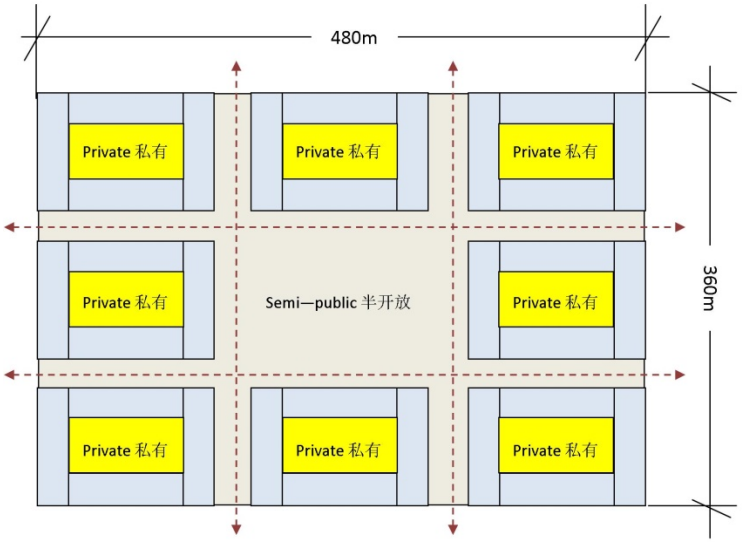


450

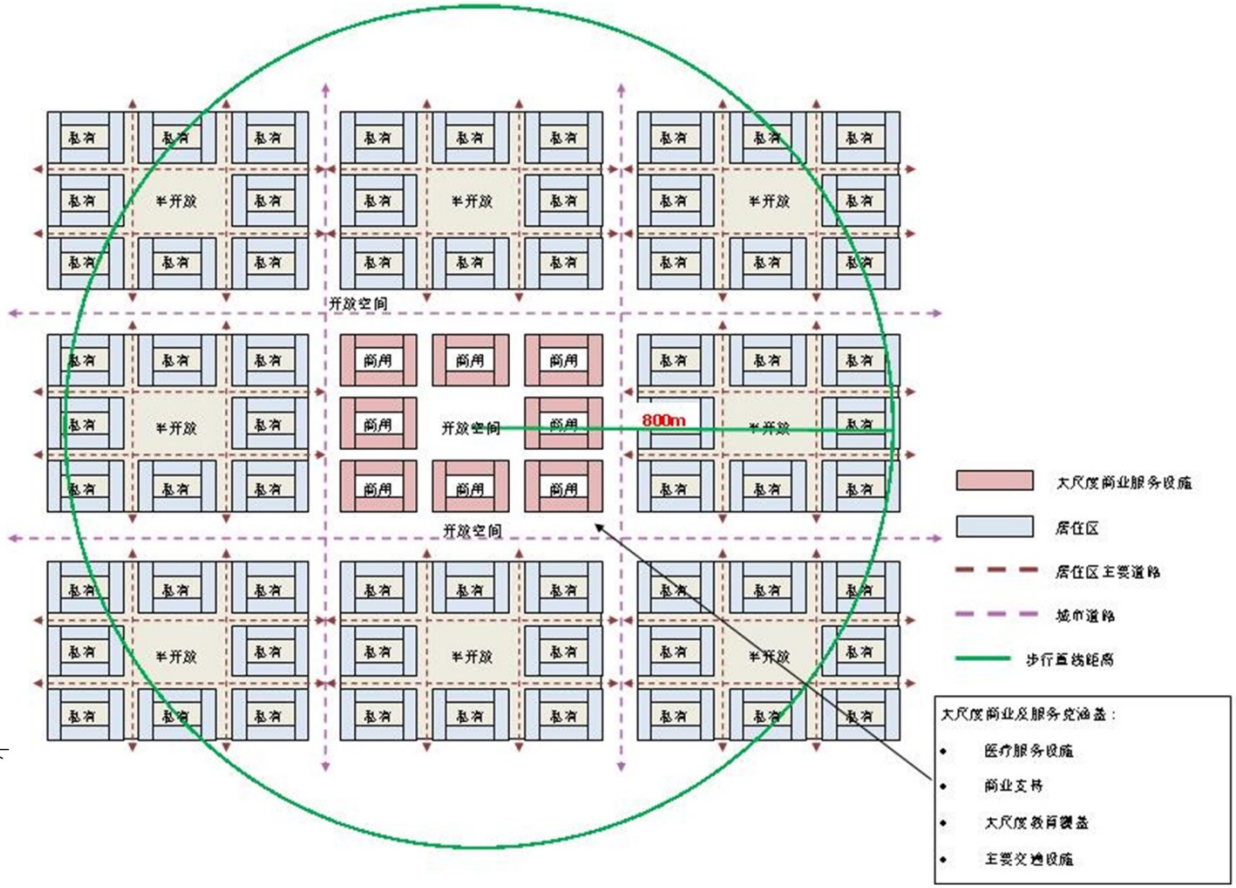
Spatial Morphological Structure 空间形态结构 — 空间性质

Current characteristics of spaces

Proposed definition of spaces in community
建议的居住区空间设定



Proposed spatial Structure in relation to city level land use 建议的大尺度服务设施布局与土地使用性质



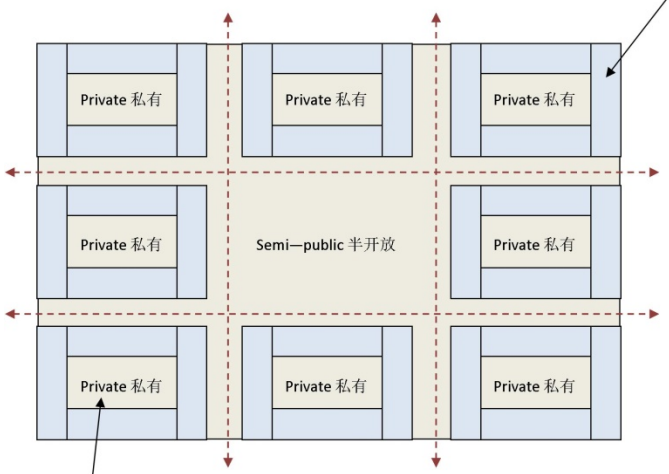
Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

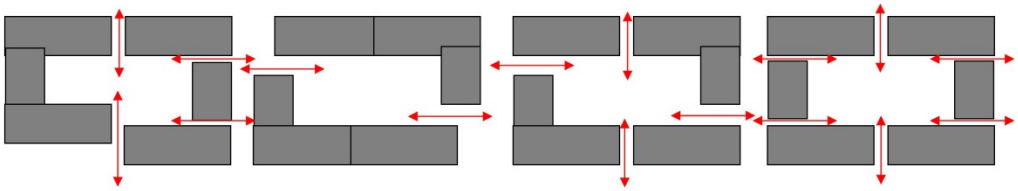
Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Open Space 开放空间 — Private Space 私有空间

Proposed definition of spaces in community in small block with no access for vehicle
建议的居住区空间设定



Proposed **accessibility** to private space (pedestrian only) in order to maintain the privacy 建议的私有空间穿行方式（居民私有步行穿行）



Proposed examples for accessing control

Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Proposed **amenity** in private space — Focus on the interaction and communication between nature and human

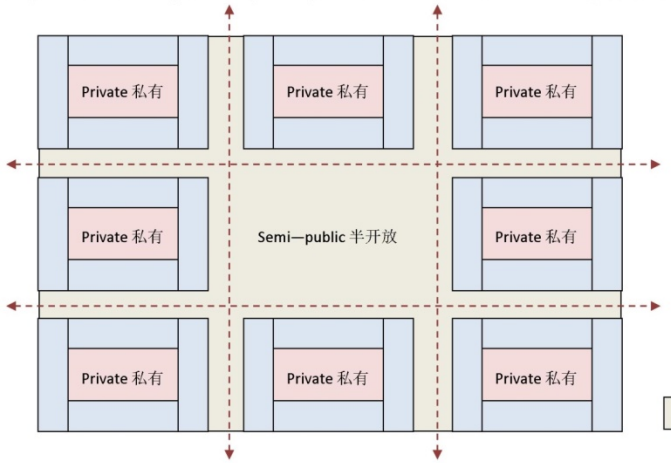
Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Open Space 开放空间 — Semi-public Space半开放空间（1）

Proposed **accessibility** to semi-public space in order to maintain the vitality 建议的半开放空间穿行方式（无限制的步行穿行空间、管制的机动车穿行路线）



Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

无限制步行穿行区域　　私有管制的车型路线

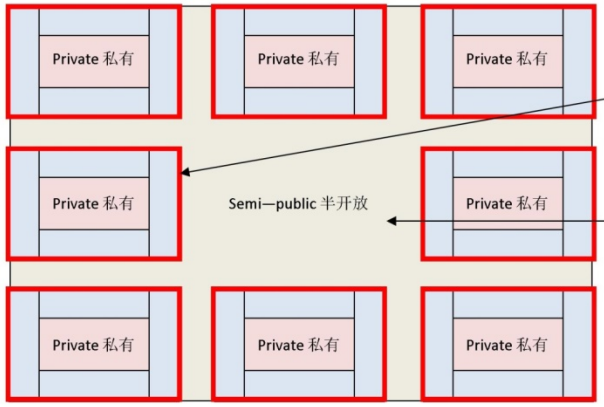
Proposed **amenity** in semi-public space — Need focus on the spatial order and functions (Such as pavement, greenery, chairs, information board, facilities for social interaction）

Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Proposed **variety** in semi-public space 建议的半开放空间的使用多样性（底层商业、不同活动所需要的空间及设施）



底层商业和相关服务设

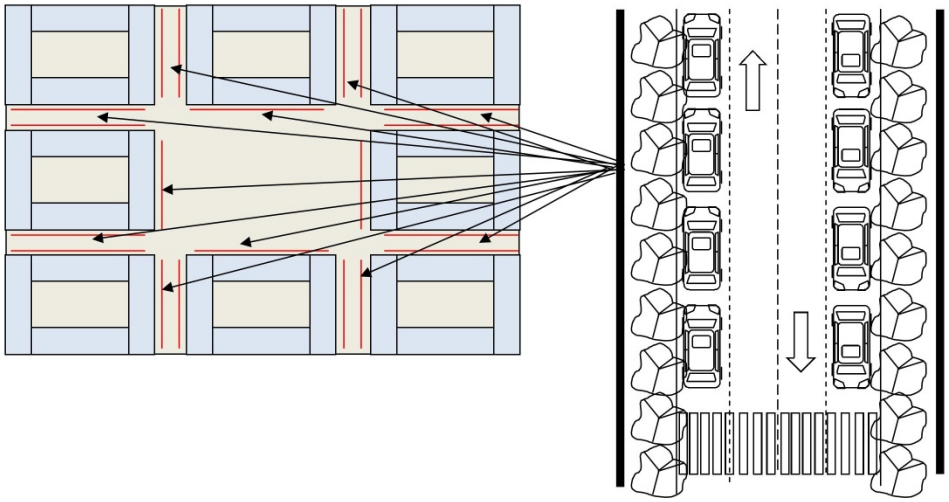
Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Open Space 开放空间 — Semi-public Space半开放空间（2）

Proposed **parking** in semi-public space 建议的停车方式为地下停车场私有，地面半开放空间为访客或临时停车并设置收费系统

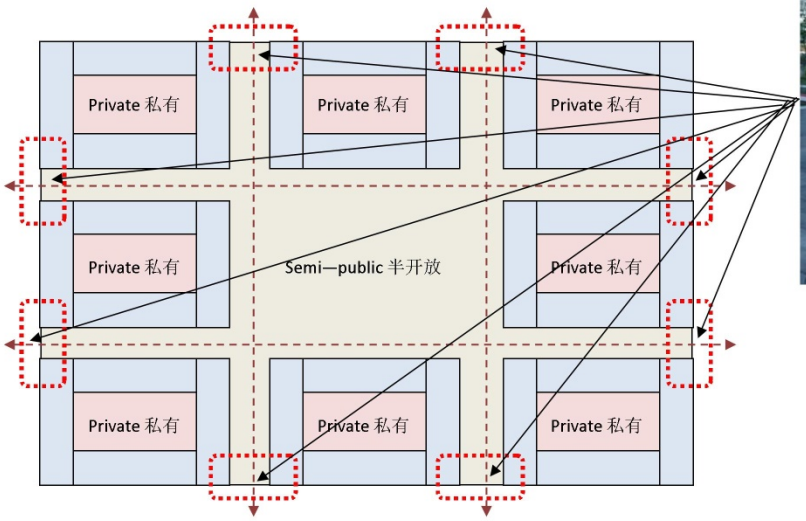


Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

Proposed **management** in semi-public space 建议的半开放空间的车型穿行管理方式



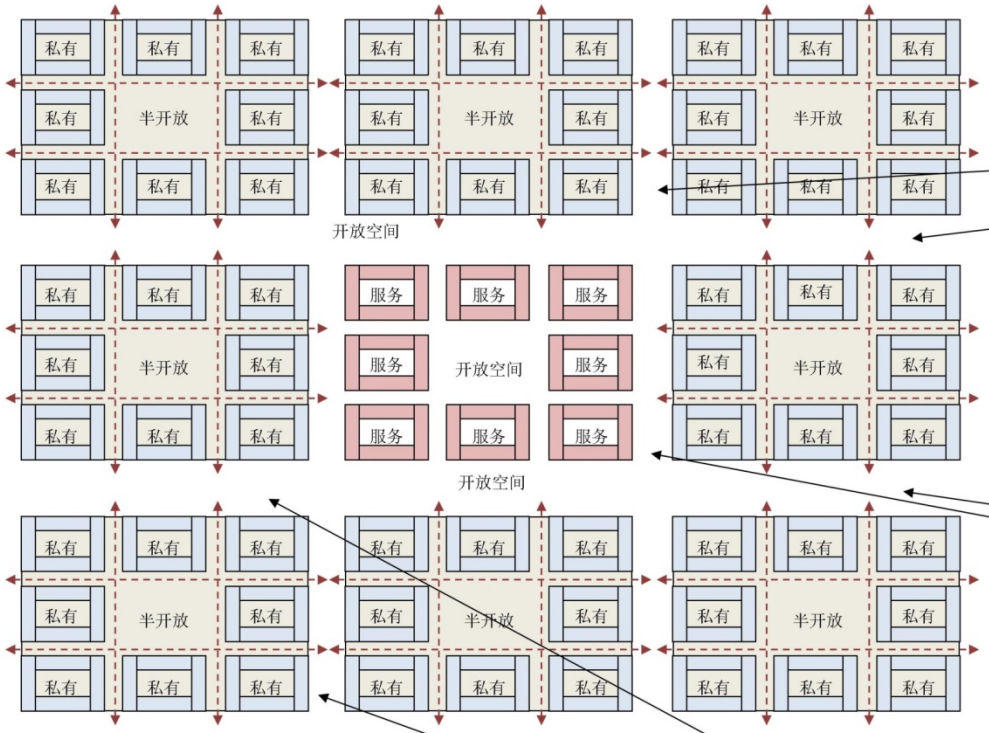
Is the theory implementable? Why? 该理论建议是否可行？为什么？

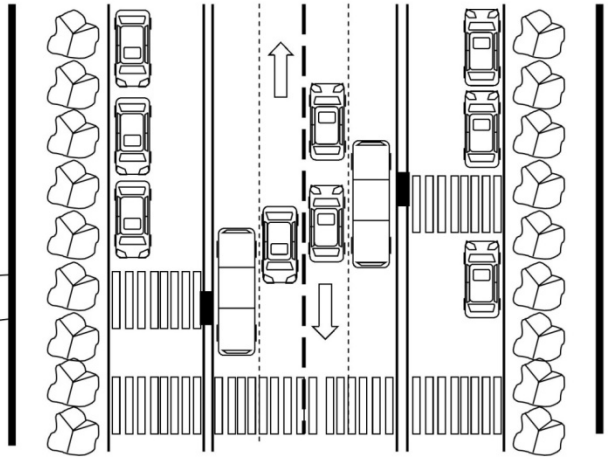
Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

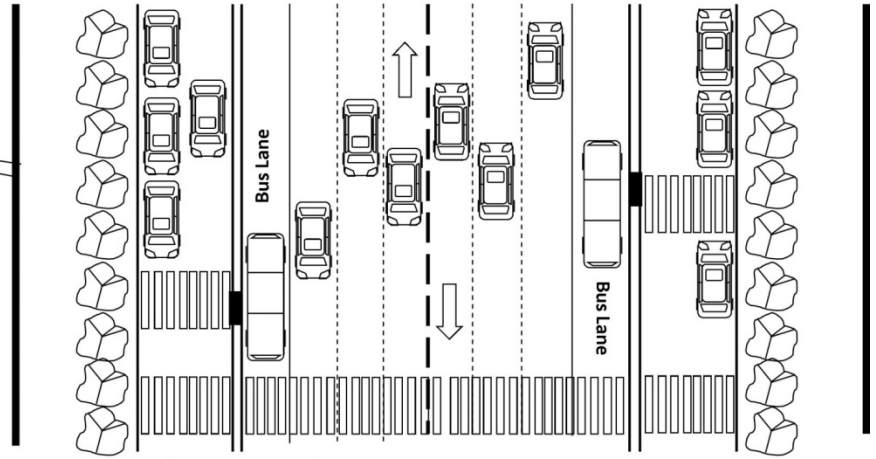
Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他

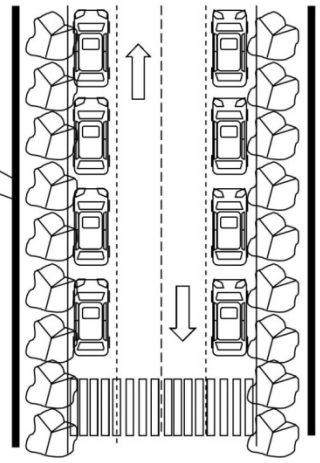
Open Space 开放空间 — Public Space 公共空间

Proposed community layout in relation to existing road system and parking control 建议的居住区布局与现有城市路网系统的关系以及付费停车管理









Is the theory implementable? Why? 该理论建议是否可行？为什么？

Is there any limitations regard to the theory? Why? 如可行的话，有哪些限制？为什么？

Local Responsiveness 本地适合性	Yes 是	No 不是	Other Commends其他