

RECLAIMING HOME

Exploring spatial and social life in residential Winnipeg
through the lens of *Lilong* - housing in Shanghai

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A Practicum submitted to the Faculty of Graduate Studies of the University of Manitoba in
partial fulfillment of the requirements of the degree of

Master of Landscape Architecture

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ACKNOWLEDGEMENTS.

I would never have been able to finish my degree and practicum without the guidance of my committee members, and the help and support of my family and friends.

First and foremost, I would like to express my deepest gratitude to my advisor, Dietmar Straub. Thank you for your excellent guidance, care, and patience throughout my practicum exploration process. I would also like to thank Anna Thurmayr, my internal advisor, for her kindness, constant encouragement, and valuable critiques. Last, but by no means least, I thank JieQiong Wang for her long distance communication, and for sharing her knowledge and providing good advice.

I am also very much indebted to my family, my husband Nanzeng and my little angel Aster, who always love and believe in me. This practicum would not have come to a successful completion without their support and understanding.

ABSTRACT.

Residential environments have a close relationship to everyday human life. They are not only significant places for human activity; they also play an important role in the physical and social contexts. Additionally, welcoming and attractive open spaces in residential neighbourhoods increase opportunities for informal interaction among residents, and create hospitable places for humans to live, build family, develop community, and interact with their natural environment.

The intention of this practicum is to provide a lens through which to reconsider the definition of home, focusing on outdoor space as a crucial and key component to increasing overall satisfaction with one's home. The study of *Lilong* housing in Shanghai plays a significant role in this practicum, through exploring the spatial-social relationship of *Lilong* housing, looking at how physical and spatial layout influence patterns of space use and movement, and examining impact on the social life (Hillier, 1987).

These findings are derived from carefully investigating both the physical and community aspects of *Lilong*, and prove that the hierarchy of social structure is reflected and supported by a hierarchy of communal spaces (Gehl, 2011). Therefore, the most important spatial feature graduated, outdoor spaces with public, semi-public, semi-private and private areas - dominates the design decisions. The design is presented as a major means to redefine and reform outdoor spaces in residential Winnipeg, in relation to social interaction from a landscape architecture perspective.

INTRODUCTION.

Having lived in Canada as an international student for many years has made me realize how important a friendly living environment is to a newcomer. A properly designed residential area invites residents to participate in physical, social, and recreational activities and socialize with neighbours, and actively engaging in social roles helps people build self-esteem, physical wellness, and a sense of commitment to the community around them. The theoretical framework of this practicum based on Jan Gehl's theory about the relationship between human activities and environment. In his most famous work, *"Life Between Buildings"* (2011), Gehl distinguishes human activities into three categories: necessary/functional activities, optional/recreational activities and social activities in public spaces. He points out that social activities rely on the quality and length of the other types of activities. Although necessary activities can take place without considering the quality of the physical environment, optional activities demand good quality of the physical environment, the better a place, the more optional activities occur, and the longer necessary activities last. Therefore, good quality communal spaces encourage optional activities, and stimulate social activities through a variety of activities with different purposes. Gehl's theory provides a basis upon to argue the significance of the residential landscape, and how landscape design for communal residential spaces is essential to improving neighbours' social relationships.

There is a Chinese saying that "Far away relatives are not as good as close neighbours". This simple statement calls attention to the importance of establishing a close relationship with neighbours. According to Nelischer (1997), neighbourhoods are one of the important spaces that make up people's everyday lives, as well as an important component of a community. Moreover, Nelischer defined neighbourhood as "a natural pedagogic unit reflecting the larger units of human culture, potentially giving children their first insights into human interaction, acting, basic behavior and the conditions for love, friendship and trust" (1997). As Gehl explains that the main reason for developing close contact with neighbours is to have frequent meetings in connection with daily activities, and those possibilities of meeting are attached to the opportunity of being

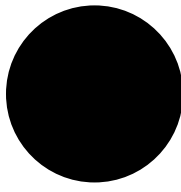
in the same space (2011). Hence, this space can not merely be discussed as physical concept; interrelationships between people and environment must also be addressed. Humans and landscapes are interactive, and to avoid the creation of adverse environments for both human and landscapes, understanding their relationship is important (Shojaei, 2011).

The study of *Lilong* housing in Shanghai, where I lived during my childhood, is employed in this practicum. It is an ideal model to explore from a cultural perspective, because its pattern of dwelling is so deeply loved by local residents. The practicum first reviews the overall physical configurations of *Lilong* residential settlements, traces the evolution of *Lilong* formations in response to social transformation, and analyzes its design features and key characteristics.

Another section of this practicum presents a series of comparisons between *Lilong* housing and examples of old and new residential developments in Winnipeg. The analytical comparison of existing arrangements provides an opportunity not only to better understand existing conditions and distinct characteristics of each settlement, but also to re-discover, or introduce new ideas that could be incorporated into design decisions, and redefine the residential landscape in Winnipeg.

As a final step, based on a comprehensive understanding of the selected site, the study areas will be turned into pleasant living environments through sensible design and planning, and transformed into a walkable, mixed-use neighbourhood. The proposed new landscape is intended to increase unintentional contact, allow residents to know their neighbours, to trust others, and to be involved socially.

THEORY BASE

	Quality of the physical environment	
	Poor	Good
Necessary activities		
Optional activities		
"Resultant" activities (Social activities)		

High intensity

Low intensity



Close friendships
Friends
Acquaintances
Chance contacts
Passive contacts ("see and"hear
contacts)

■ Figure 0.1. Theory base of the practicum

MOTIVATION OF THE STUDY.

About twenty years ago, my family decided to move to Shanghai to build a new life. As new residents, we had little choice but to squeeze ourselves into a type of housing known as *Lilong*, as our primary living space. Although in many ways we did not see *Lilong* housing as desirable or even suitable because of poor living facilities and extremely tight space, it had other intangible benefits. Subtle and close social connections were established through the intense contact of shared lives, especially between children and elders, and for us, *Lilong* housing became an ideal place to enjoy more intimate and blurred living patterns (Zhao, 2004). With the passage of time, the *lilong* style of dwelling has gradually faded away amidst urban redevelopment, but the vivid social life within and around it is deeply rooted in my memory.

I moved to Winnipeg for educational purposes in 2005. As it is for many other newcomers, renting an apartment was the most affordable way for me to get settled in this new city. Since single-family houses make up the bulk of housing in North America, and people rely on cars for most of their daily needs, almost all rental properties turn any available adjacent outdoor space into large surface parking lot. As a result, the opportunities for spending time outdoors in public areas near these buildings are very poor. Under these conditions, most residents prefer to remain indoors in front of the television or on their private balconies. In stark contrast to the “big warm family” of *Lilong*, living in a rented apartment in Winnipeg does not inspire a sense the belonging that so naturally occurred in *Lilong* housing. Therefore, the motivation for this study was born of my personal experience. I am inspired to investigate the inherent housing aspects specific to *Lilong* that could be used as an alternative way to develop and improve the landscape of medium dense urban housing in Winnipeg, thereby supporting communal culture and encouraging stronger social lives.

TABLE OF CONTENTS.

ACKNOWLEDGEMENT	i
ABSTRACT	ii
INTRODUCTION	iii
MOTIVATION OF THE STUDY OF <i>LILONG</i>	vi
LIST OF FIGURES	ix
<i>one - LILONG STUDIES IN SHANGHAI</i>	
1.1 INTRODUCTION	14
1.1.1 Basic Structure: Spine and Rib	15
1.1.2 A Dual Structure: Waipuneili	17
1.1.3 Internal Circulation and Security System	19
1.1.4 <i>Lilong</i> Neighbourhood: Three Configurations	21
1.1.5 Typical <i>Lilong</i> Housing Unit	23
1.1.6 A Pleasant Micro : Climatic Environment	25
1.1.7 Neighbourly Relations and Social Interactions	27
1.2 FIVE STAGES OF <i>LILONG</i> HOUSE DEVELOPMENT	29
1.2.1 Old <i>Shikumen Lilong</i> House (1880-1910)	30
1.2.2 New <i>Shikumen Lilong</i> House (1900-1930)	34
1.2.3 New Type <i>Lilong</i> House (1920-1930)	38
1.2.4 Garden <i>Lilong</i> House (1930-present)	42
1.2.5 Apartment <i>Lilong</i> House (1930-present)	46
1.3 KEY FEATURES OF <i>LILONG</i>	50
1.4 CONCLUSION	53
<i>two - COMPARATIVE ANALYSIS</i>	54
2.1 BASIC INFORMATION ON SELECTED HOUSING DEVELOPMENTS	55
2.2 COMPARISON WITH RESIDENTIAL AREAS IN WINNIPEG	60
2.1.1 Land Development and Density	61
2.1.2 Residential Arrangement	63
2.1.3 Land-use Distribution and Circulation	64
2.1.4 Private and Open Spaces	67
2.1.5 Proximity to Local Services	69
2.1.6 Spatial Hierarchy	71
2.3 COMPARISON WITH CONTEMPORARY HIGH-RISE BUILDING IN CHINA	73
<i>three - SITE INVENTORY & ANALYSIS</i>	79
3.1 INTRODUCTION TO THE SITE	80

3.2 SITE INVENTORY	83
3.2.1 Location	84
3.2.2 Major Traffic Routes and Zones of South Winnipeg	86
3.2.3 Major Traffic Routes and Zones of Fort Richmond	87
3.2.4 Major Traffic Routes and Zones of Site	88
3.2.5 Street Parking and Access to Bus Route	89
3.2.6 Build Environment and Circulation at Polo Club	90
3.2.7 Build Environment and Circulation at Richmond Village	91
3.2.8 Build Environment and Circulation at Tudor Village	92
3.2.9 Existing Vegetation	93
3.2.10 Occupancy of Communities	95
3.3 BUILDING TYPOLOGY & ITS ACCESSIBILITY	96
3.3.1 Building Typology and Its Accessibility at Polo Club	97
3.3.2 Building Typology and Its Accessibility at Tudor Village	98
3.3.3 Building Typology and Its Accessibility at Richmond Village	99
3.4 SPACE STRUCTURAL ANALYSIS	101
3.4.1 The Definition of Different Space Category	103
3.4.2 Connections Between Spaces	104
3.4.3 Existing Space Category	105
3.4.4 Image Description of Existing Space Category	111
3.5 CONCLUSION	113
four - DESIGN	
4.1 DESIGN CONCEPT	115
4.2 DESIGN IDEA	116
4.3 MASTER PLAN 1:1000	119
4.4 PROPOSED DESIGN LAYERS	120
4.5 PROPOSED PEDESTRIAN CIRCULATION	125
4.6 DESIGNS - ORIGINAL SCALE 1:200	
4.6.1 DONUTS PLAYGROUND	127
4.6.2 ENTRY SQUARE	141
4.6.3 WOODEN PIAZZA	149
4.6.4 COMMUNITY GARDEN	157
4.7 CHOICE OF MATERIALS	165
4.8 MAINTENANCE PLAN	167
CONCLUSION	169
REFERENCES - TEXT	170
FIGURES CREDITS	172

LIST OF FIGURES.

one.

Figure 0.1. - Theory base of the practicum

Figure 0.2. - Bird's eye view of old *Lilong* houses in modern Shanghai (at border of xuhui and luwan)

Figure 1.1. - Basic structure of *Lilong*

Figure 1.2. - Traditional courtyard dwelling and western row housing

Figure 1.3. - Dual structure

Figure 1.4. - Internal circulation

Figure 1.5. - Three types of configuration of *Lilong* neighbourhood

Figure 1.6. - Section view of a typical *Lilong* unit

Figure 1.7. - Plan and section of cross-ventilation in a *Shikumen* house

Figure 1.8. - Life in *Lilong*

Figure 1.9. - Plan and section of old *Shikumen*

Figure 1.10. - Old *Shikumen*

Figure 1.11. - Plan and section of new *Shikumen*

Figure 1.12. - New *Shikumen*

Figure 1.13. - Plan and section of new type *Lilong*

Figure 1.14. - New type *Lilong*

Figure 1.15. - Plan and section of garden *Lilong*

Figure 1.16. - Garden *Lilong*

Figure 1.17. - Plan and section of apartment *Lilong*

Figure 1.18. - Apartment *Lilong*

two.

Figure 2.1. - Plan of Jing-an Villa ,Shanghai

Figure 2.2. - Plan of River Heights, Winnipeg

Figure 2.3. - Plan of Linden Woods, Winnipeg

Figure 2.4. - Comparative analysis: land development and density

Figure 2.5. - Comparative analysis: residential arrangement

Figure 2.6. - Comparative analysis: land-use distribution and circulation

Figure 2.7. - Comparative analysis: private and open spaces

Figure 2.8. - Comparative analysis: proximity to local services

Figure 2.9. - Comparative analysis: spatial hierarchy

Figure 2.10. - Site plan of Lianyang, Shanghai

Figure 2.11. - Section of highrise residential development

Figure 2.12. - Outdoor spaces of highrise residential development

three.

Figure 3.1. - Urban context map

Figure 3.2. - Topography of the urban area

Figure 3.3. - Neighbourhood context map

Figure 3.4. - Street views of the site

Figure 3.5. - South Winnipeg - major traffic and zones

Figure 3.6. - Fort Richmond - major traffic and zones

Figure 3.7. - Site - major traffic and zones

Figure 3.8. - Street parking and access to bus route
Figure 3.9. - Build environment and circulation at Polo Club
Figure 3.10. - Build environment and circulation at Richmond Village
Figure 3.11. - Build environment and circulation at Tudor Village
Figure 3.12. - Distribution of existing vegetation
Figure 3.13. - List of existing plants species on site
Figure 3.14. - Occupancy of communities
Figure 3.15. - Building typology and its accessibility at Polo Club
Figure 3.16. - Building typology and its accessibility at Tudor Village
Figure 3.17. - Building typology and its accessibility at Richmond Village - part one
Figure 3.18. - Building typology and its accessibility at Richmond Village -part two
Figure 3.19. - Decomposition of existing built elements
Figure 3.20. - Connections between spaces
Figure 3.21. - Existing space category
Figure 3.22. - Spatial hierarchy analysis of site through sections - part one
Figure 3.23. - Spatial hierarchy analysis of site through sections - part two
Figure 3.24. - Images of each space category

four.

Figure 4.1. - Sketches of design concept
Figure 4.2. - Master plan
Figure 4.3. - Proposed design layers
Figure 4.4. - Proposed space category
Figure 4.5. - Proposed pedestrian circulation
Figure 4.6. - Location of donuts playground
Figure 4.7. - Plan of donuts playground
Figure 4.8. - Section 1 - south entrance of donuts playground
Figure 4.9. - Section 2 - donuts playground
Figure 4.10. - Perspective view of south entrance of donuts playground
Figure 4.11. - Perspective view of north entrance of donuts playground
Figure 4.12. - Perspective view of donuts playground -wintertime
Figure 4.13. - Location of entry square
Figure 4.14. - Plan of entry square
Figure 4.15. - Section of entry square
Figure 4.16. - Perspective view of entry square
Figure 4.17. - Location of wooden piazza
Figure 4.18. - Plan of wooden piazza
Figure 4.19. - Section of wooden piazza
Figure 4.20. - Perspective view of gateway to woodlot
Figure 4.21. - Location of community garden
Figure 4.22. - Plan of community garden
Figure 4.23. - Section of community garden
Figure 4.24. - Perspective view of community garden
Figure 4.25. - Paving materials
Figure 4.26. - Choice of hedges
Figure 4.27. - Sketches of maintenance plan
Figure 4.28. - Proposed distribution of barrels for water collection and irrigation

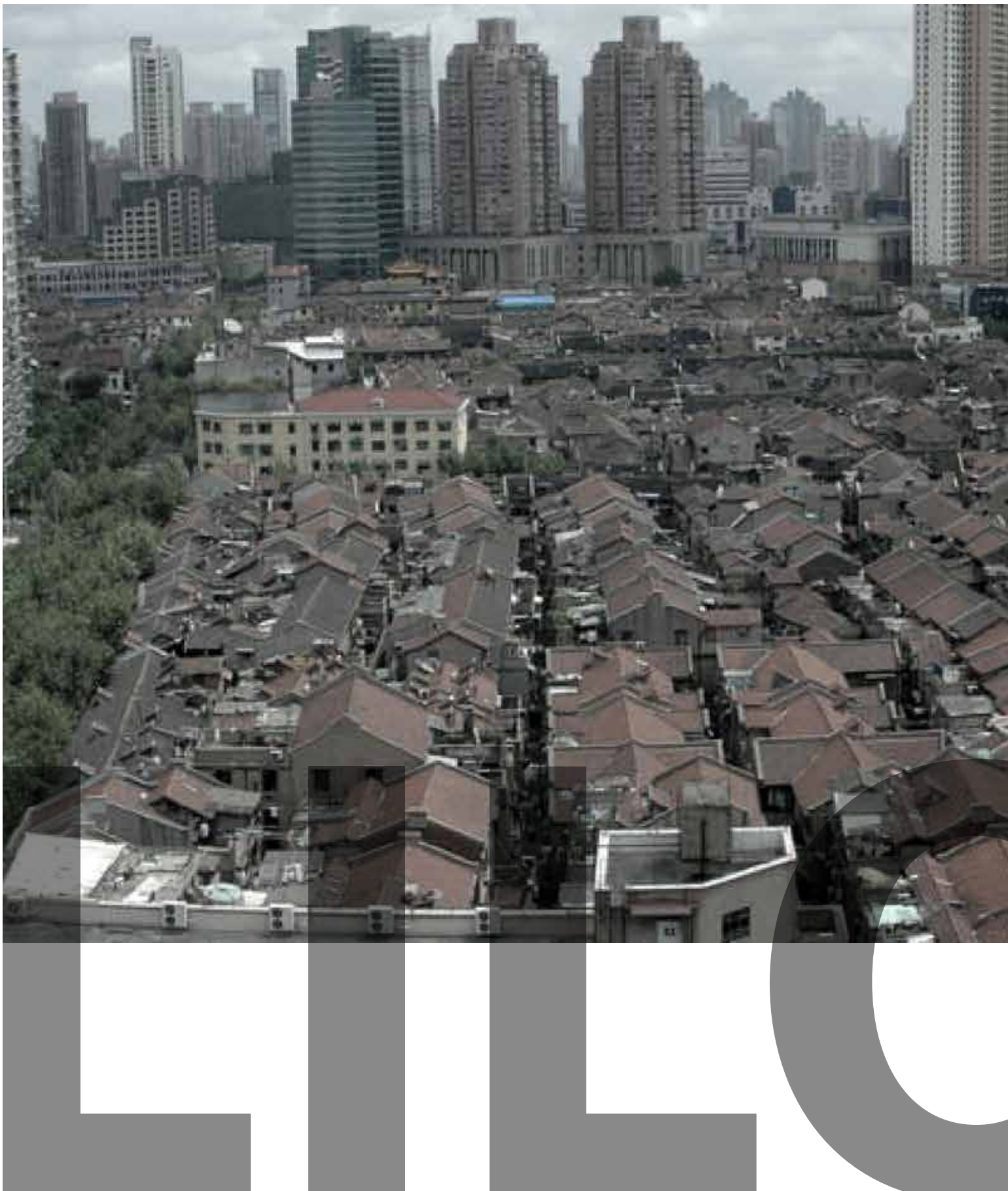


Figure 0.2. Bird's eye view of old *Lilong* houses in modern Shanghai (at border of xuhui and luwan)



ONG

one.

LILONG STUDIES IN SHANGHAI

1.1 INTRODUCTION

Lilong housing is the symbolic living culture of Shanghai, it combines Western row-house layouts and construction methods with Chinese traditional enclosed courtyards (see Figure 1.2). It draws much attention both at home and abroad due to its unique architectural form and the resultant unique style of rich cultural traditions associated with the housing (Xu & Qi, 2010).

As a major type of residential development, *Lilong* first appeared in the 1860s, as huge numbers of refugees swarmed into foreign concessions. The first real estate developers were British investors who borrowed the plans of townhouses in Britain and started to construct clustered buildings to house new comers. Between the 1860s and the 1940s, *Lilong* housing underwent a series of transformations that reflect the city's history. During that long period of time, millions of citizens in Shanghai as well as immigrants from other parts of the country carried out their daily lives in *Lilong* settlements, to which they felt attached both physically and emotionally.

1.1.1 - BASIC STRUCTURE: RIB AND SPIN

“Li” means *neighbourhoods*, and “Long” means *small lanes*. The term describes an urban housing form which characterizes and dominates the city fabric of Shanghai and was the earliest type of mass commodity housing in Chinese history (Wang, 1989).

The **Spine** form of *Lilong* neighbourhoods is rooted in its construction efficiency and ability to achieve high levels of density (see Figure 1.1). The original purpose of this layout was to save space and to reach economical efficiently. Generally, a *Lilong* neighbourhood has one or two sides bordered by an urban commercial street, and its other sides enclosed by walls. Every *Lilong* consists of commercial units and living units. At the same time, the main lanes and a series of sub lanes frame the internal circulation structure of *Lilong*. The main lane runs all the way to the exterior street and is accessible through an entry gateway. The sub lanes branch off from the main lane, providing access to individual living units. The living units are tightly joined in rows, with every two units sharing a common wall between them. They are evenly aligned and distributed in a Western row-housing pattern. Commercial units are arranged in a similar layout to living units, occupy all street front lots, and can be directly reached from the exterior commercial street.

In Chinese, five families mean a neighbourhood, and five neighbourhoods constitute a “Li”, so the number of living units aligned in one row will be at least five. Each living unit, standing on a narrow-front lot, has access to one sub lane at the front and another at the back. It usually maintains south-north orientation, which is considered an important design feature in Chinese traditional philosophy. Moreover, as a crossbreed of the Chinese courtyard house and the Western terrace house (see Figure 1.2), balconies or terraces and courtyards are usually constructed in order to provide natural light and ventilation. The courtyard not only functions as an extension of the interior space and communal space, but also as a distinctive solid-void fabric that systematically constructs a viable form of urban neighbourhood (Arkaraprasertkul, 2009).

Urban Street

Main Lane

Commercial Units

Sub Lane

Living Units

Balcony & Terrace

Courtyard

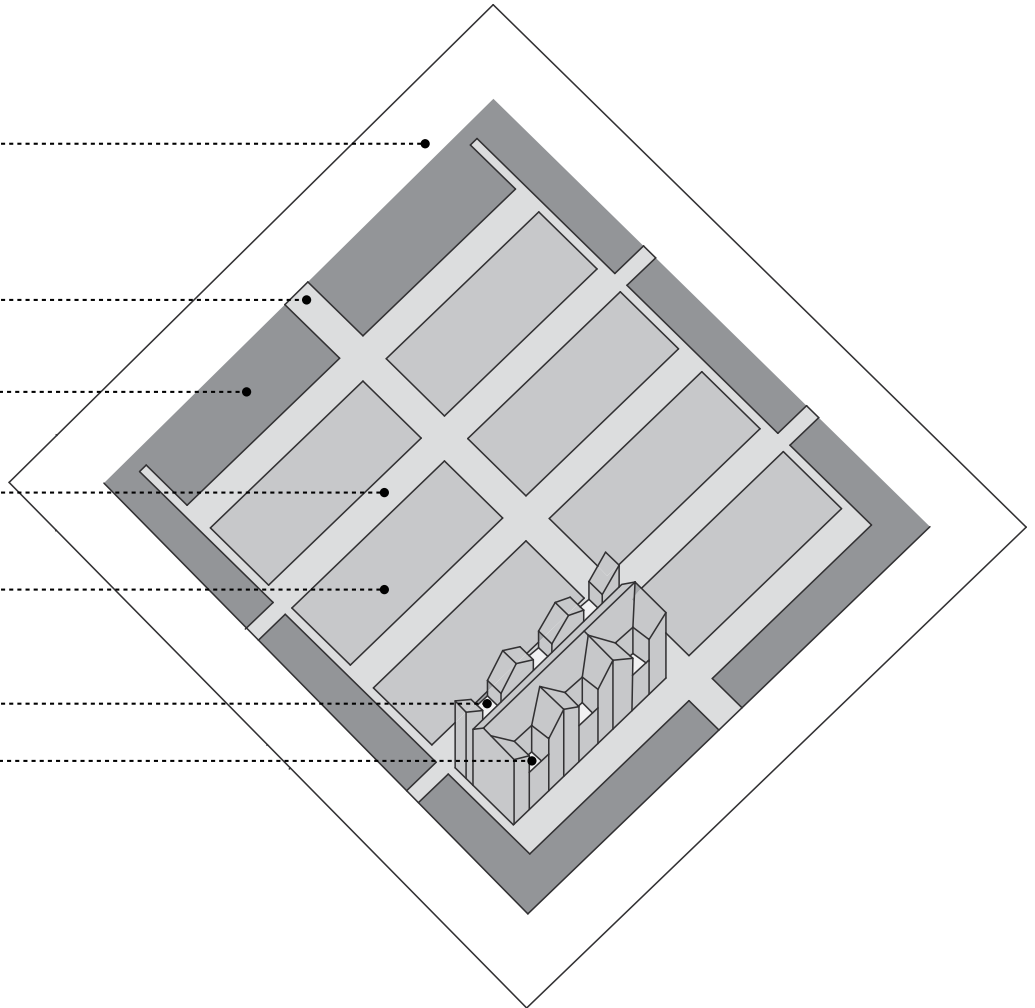


Figure 1.1. Basic structure of Lilong



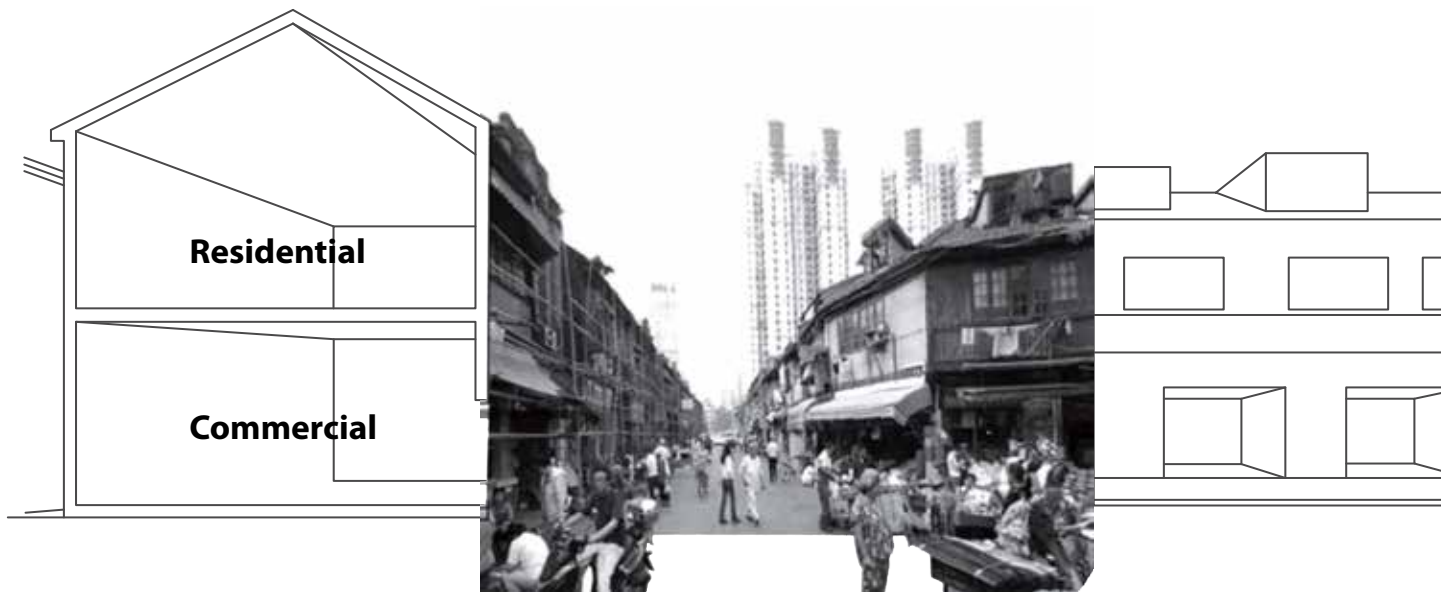
Figure 1.2. Traditional courtyard dwelling and western row housing

1.1.2 - A DUAL STRUCTURE: WAIPUNEILI

One distinctive characteristic of *Lilong* housing is the integration of commercial and residential components. A row of commercial units, which are two to four storey high, accommodates shops open to the urban street on the lower level, and several rows of residential houses standing behind that can only be accessed from a general path located in between the shop houses. The typical *Lilong* neighbourhood is financially sustained by the community profits from the commercial component are fed back into the overall system.

“Wai Pu (shop houses outside) - Nei Li (community living inside)” (see Figure 1.3) is commonly used by domestic scholars to describe such a neighbourhood morphology. It also became a standard land use strategy for *Lilong* housing development. Furthermore, the mixed-use between commercial and residential is considered to be a densified version of the back-to-back mixed-use strategy in the city composed of courtyard housing (Wenjun, Ge, 2005).

Another function of shop houses along the street is to integrate the pockets of residential neighbourhoods within the same urban block into a whole. In contrast to big centralized markets held at certain times and places throughout the city, these shops form a fixed street market that serves mainly the nearby residents and fulfils their daily needs. From tailor shops to barbershops, rice stores to grocery stores, hostels to theatres, and restaurants to teahouses, all sorts of shop houses unite to produce a colourful façade along the street. They show the mixed-use character of the urban fabric within a given block, mark the threshold and the channel, as well as serve as a buffer zone between two domains - public space (the bustling street) at the front, and a more private space (the residential neighbourhood) at the back. Therefore, there is a distinct contrast between the busy life of the public street, and a much quieter life behind. This dual structure of WaiPu-NeiLi, helps *Lilong* neighbourhoods to maintain a certain degree of autonomy, yet still be integrated into a larger urban context.



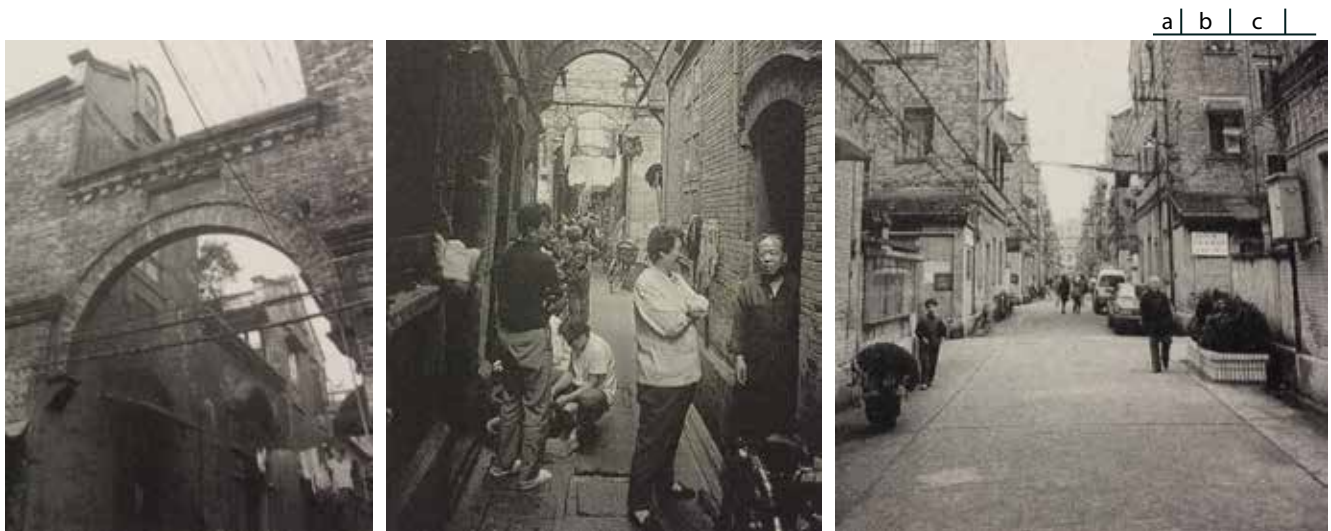
■ *Figure 1.3.* Dual structure

1.1.3 - INTERNAL CIRCULATION AND SECURITY SYSTEM

The **fish-bone-type** (see Figure 1.4) internal circulation structure in *Lilong* housing establishes a hierarchical surveillance system for *Lilong* residents, assuring the community a strong sense of safety. The entrance is distinguished by unique archway that bridges the main lane. As a control node, it is aligned with the busy commercial street facades, constantly guarded by a social organization of the resident's committee, housed near the gateway. The main lane located in the central positions of the site, provides public circulation for the community, and is often used as gathering space for socializing.

Small shops or home-based businesses take up the space adjacent to main lanes or entrance areas. In addition to meeting residents daily needs and enriching community life, those who run the shops increase the sense of neighbourhood security by peeping an eye on those walking through the main lanes. This is especially beneficial to children.

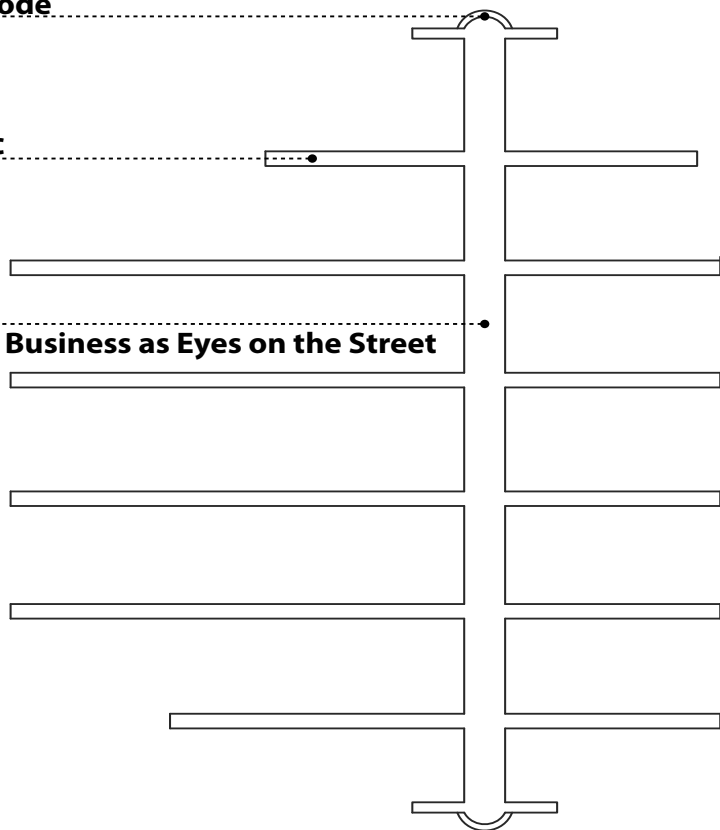
The sub lanes are used by every two rows of housing that face them as walkways and semi-public open space. They normally connect to the main lane perpendicularly but are parallel to each other, and lead to living units. Mostly dead-ended, these sub lanes provide an extra sense of security because they create a self-contained neighbourhood. Apart from its circulation function, the framework of the main lane and sub lanes is also a part of residential living space.



Entrance : Control Node

Sub Lane: Cul-de-sac

**Main Lane:
Small - scaled Home Business as Eyes on the Street**



a: entrance
b: sub lane
c: main lane

Figure 1.4. Internal circulation

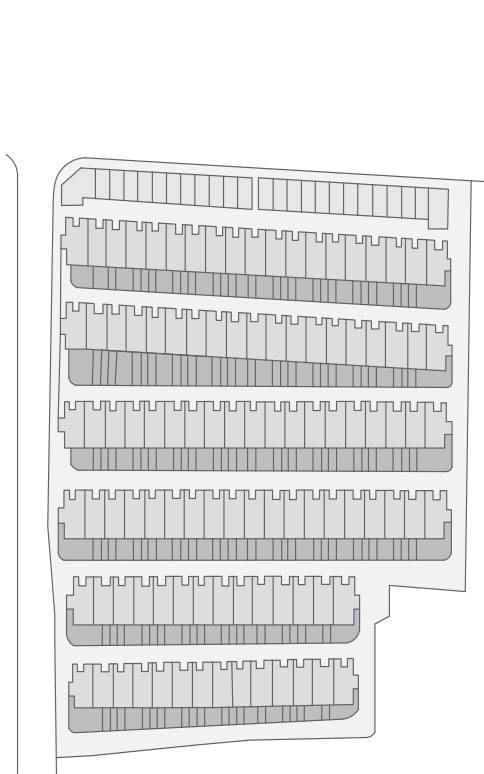
1.1.4 - **LILONG NEIGHBOURHOOD:** THREE CONFIGURATIONS (see Figure 1.5)

In terms of overall unit organization, living units and shop units, three types of configuration can be identified throughout the development of *Lilong* housing (see Figure 1.5).

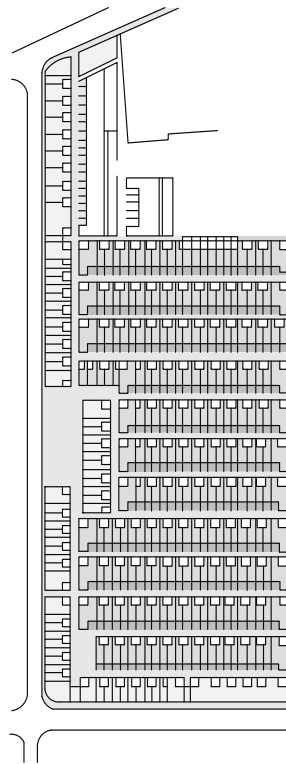
The first type is the ***Hanglie***, a strip-pattern layout, in which all units orient south. The shop units occupy one row and are linked to an urban street. The other sides of the neighbourhood are enclosed by high walls. Most early *Lilong* settlements (1880 - 1910) used this layout.

The second type is called ***Weihe***, in which the living units stand in a row and face south, while the outer commercial units surround the living units are placed opposite to the living units. This type of organization appeared in the middle period of *Lilong* development (1900 - 1930).

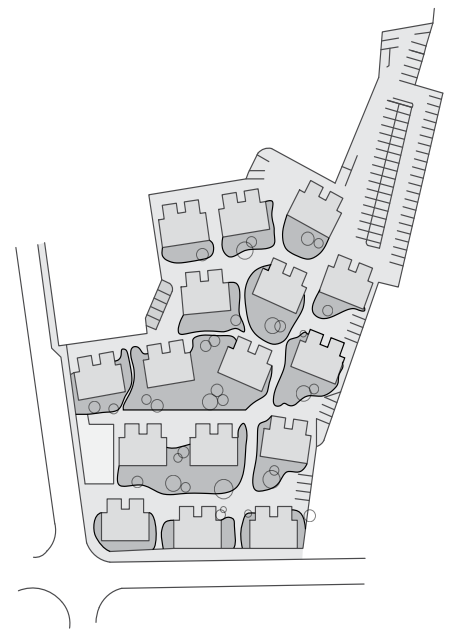
The last type is called ***Ziyou***. It is a free-style layout, with no particular order to the houses. This type was only found in the garden *Lilong* development era (1930 - later).



Hanglie



Weihe



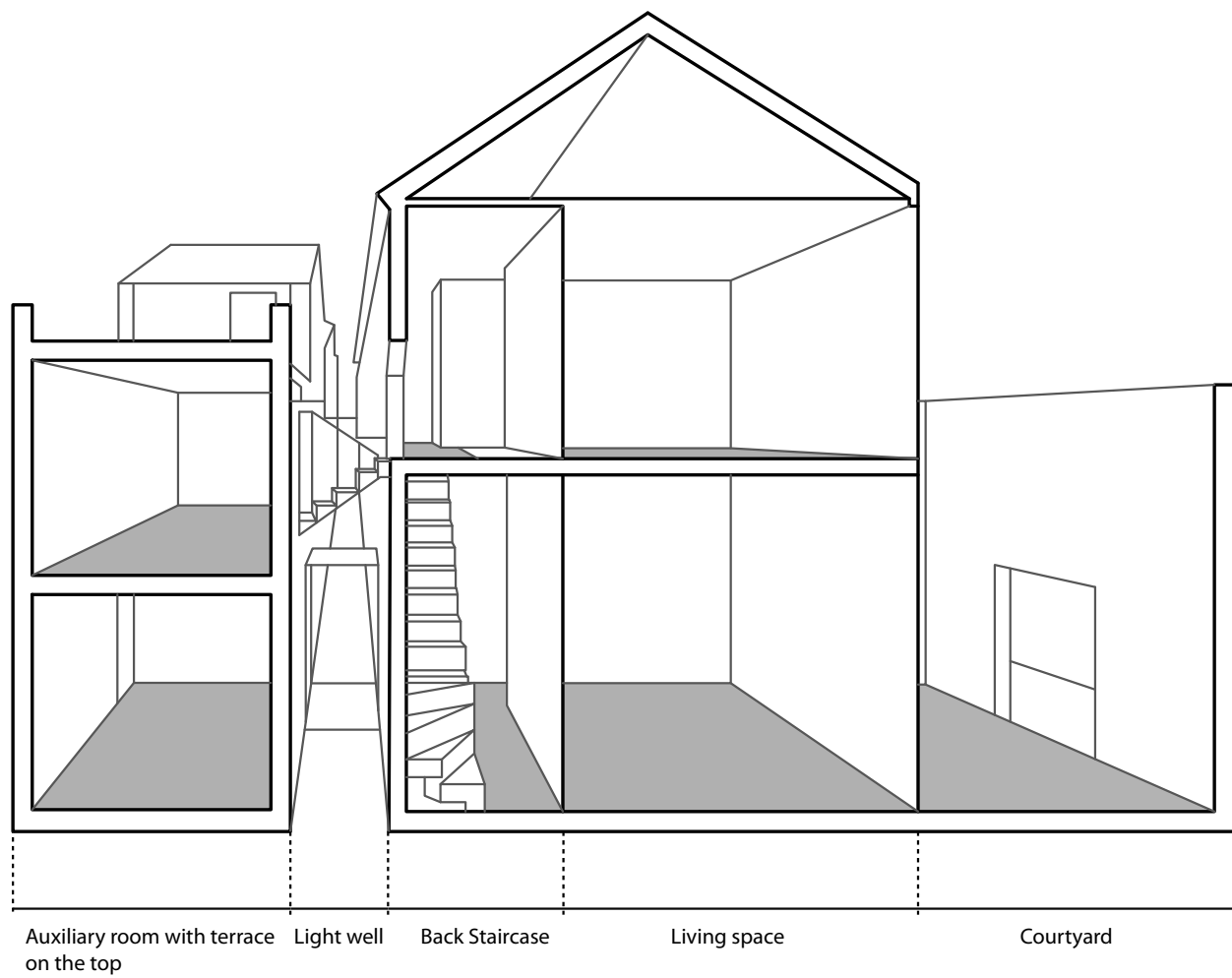
Ziyong

Figure 1.5. Three types of configuration of *Lilong* neighbourhood

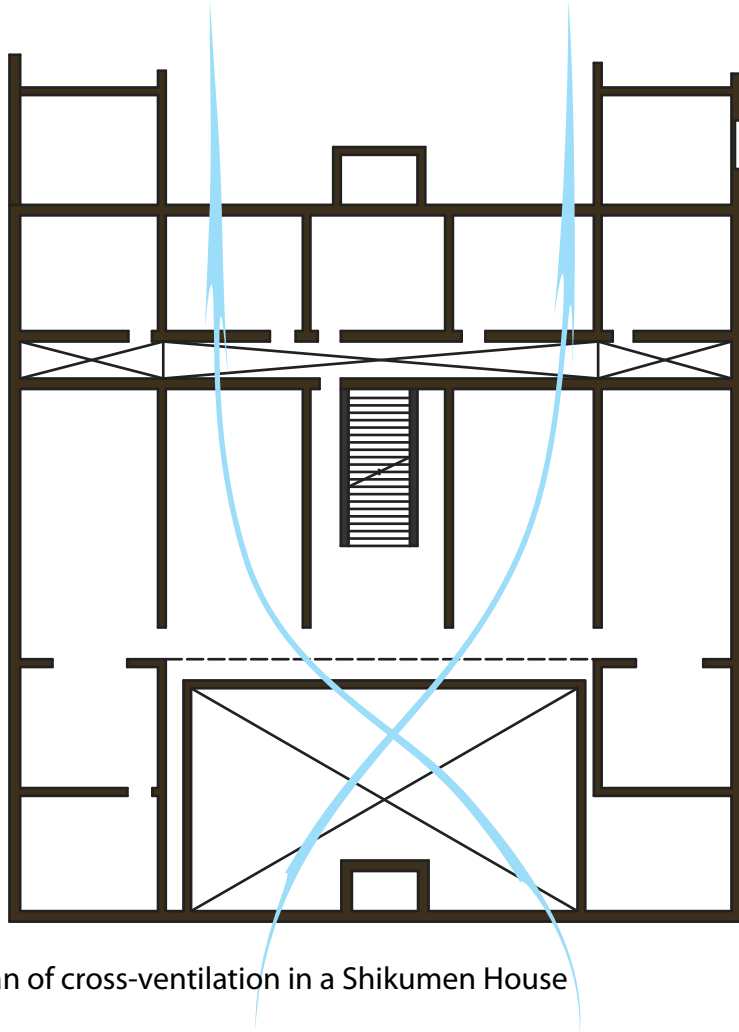
1.1.5 - TYPICAL *LILONG* HOUSING UNIT

The individual houses that make up a *Lilong* neighbourhood are similar in nature to traditional three-sided courtyard houses in the Jiangnan area. The main structure of a *Lilong* housing unit is a free-standing system of wooden columns and beams enclosed with brick exterior walls. Its layout embraces several sets of dual coordinate relationships: the solid vs. the void, the front vs. the back, the major vs. the subordinate, the high vs. the low, and so on. With few openings towards the outside and high exterior walls, the whole house is built in an inward manner. In short, many traditional metaphors and spatial coordinators are used to preserve an inward family-based courtyard-centered dwelling pattern (Zhao, 2004).

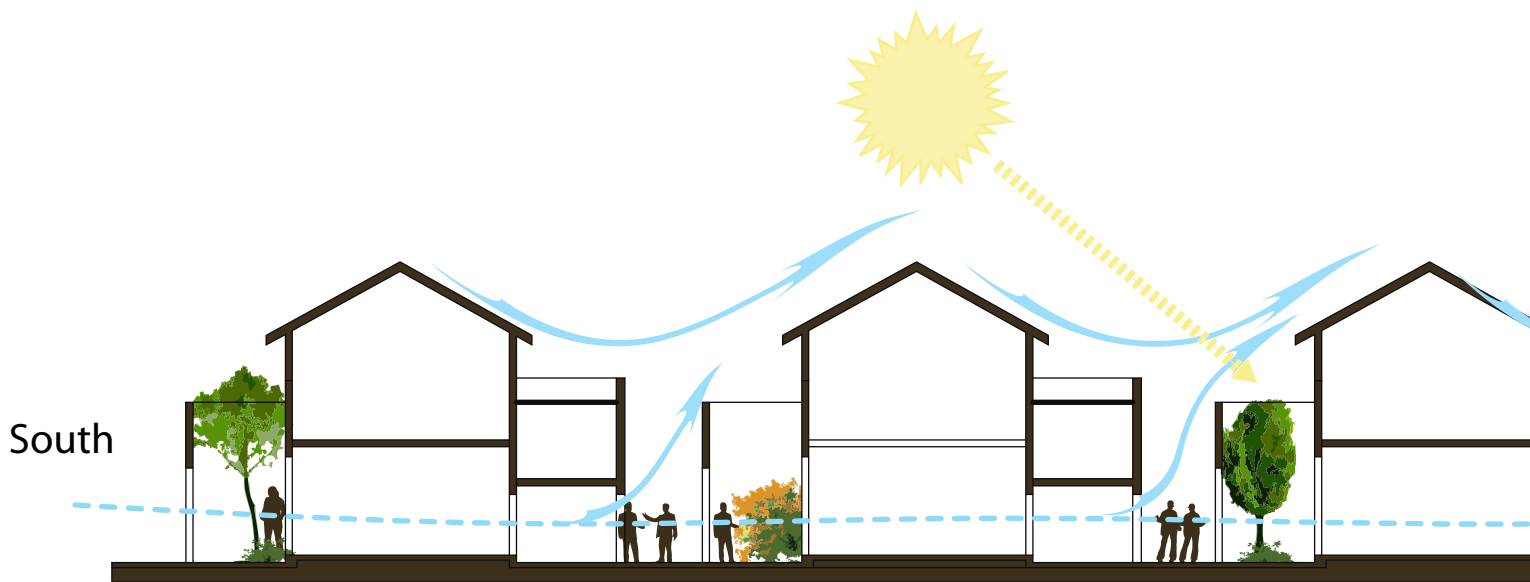
Along with the development of *Lilong* housing, the *Lilong* housing unit was transformed from metaphoric layout to functional plans. In the house plans, the traditional cosmological implications of spatial organization in axisymmetric and dialectic articulation that previously led to vagueness and flexibility in functions and activities, and evenness and fluidity in space, were taken over by a different organization of dwelling space based on Western rationality and logic. Generally, each room was associated with a clear function and activity; that space became fixed or solidified. Other evidence can be found in the front courtyard, where the previously open and multifunctional front courtyard was replaced by a well-defined front garden (see Figure 1.6). In later stages of *Lilong* housing development, modern facilities (electricity, tap water, gas, lavatories and even garages) were gradually installed. This new type of housing ultimately introduced ordinary Chinese families to the basic principles of modern dwelling (Zhao, 2004).



■ Figure 1.6. Section view of a typical *Lilong* unit



Plan of cross-ventilation in a Shikumen House



Section of cross-ventilation in a Shikumen House

1.1.6 - A PLEASANT MICRO : CLIMATIC ENVIRONMENT

Lilong houses received most of light from front and back court-yards controlled by the family, rather than from exterior public space. The courtyard was not only a traditional way to individualize the house, but also an important tool for ventilation and allowing natural light into the ground-floor space in long narrow lots. Through the courtyard, sunlight could be moderated, and at the same time, the higher temperature of outside space and lower temperature of inside open space generated an air pressure gap which brought out a wind draught available to every room (Zhang, 1992). As a result, cross-ventilation through the house and a comfortable micro-climatic environment surrounding the house was achieved (see Figure 1.7).

Furthermore, appropriate distance between buildings provided ample sunshine in the ground-floor rooms, and created large shady areas in sub lanes. Many people used these areas to enjoy the cool during warmer parts of the day. The sub lanes also served as protection against winter winds. Due to their pleasant micro-climatic environment, sub lanes were used frequently, and were vivid and charming scenes of communal activities for the *Lilong* residents.

In addition to their functions in controlling ventilation and sunlight, the lanes and courtyards provided a hierarchy of transitional space from the most public to the most private. Lanes promoted communal and neighbourly outdoors interaction, while courtyards assured privacy and personalization in familiar daily living (Zhang, 1992).

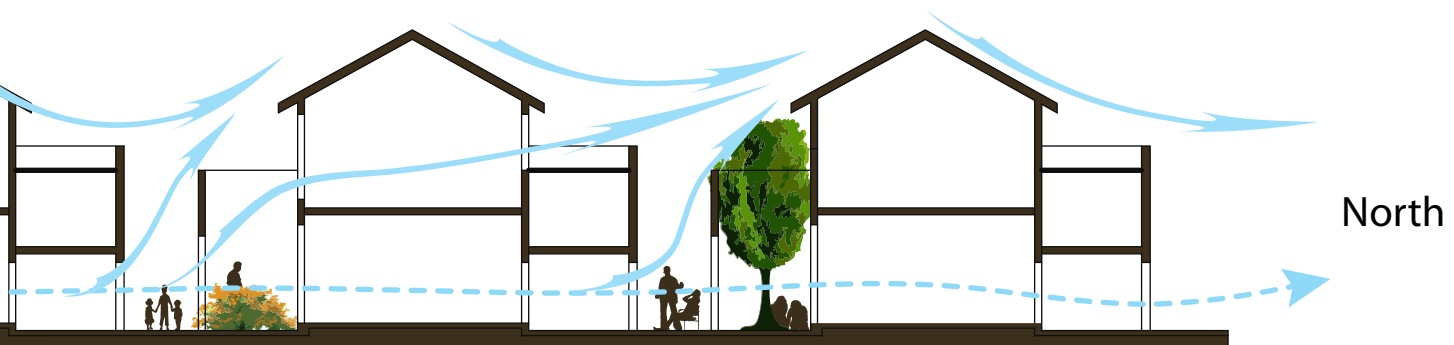


Figure 1.7. Plan & section of cross-ventilation in a *Shikumen* house

1.1.7 - NEIGHBOURLY RELATIONS AND SOCIAL INTERACTIONS

Long-Tang, another name for *Lilong*, means “**alley as the living hall**”, which emphasizes an important feature of the *Lilong* neighbourhood: alley living or neighbourhood life. Morris (1994) has even claimed that “*Lilong* provides an intimate environment where one is not alone”. By living so close to each other, sharing experiences and amusements every day, individual families inside the *Lilong* become one big family. The lane structured neighbourhood with appropriate human scale allowed residents in a *Lilong* block to physically interact with each other. It also provided a “neighbourhood watch” sense of security that is conducive to the development of social networks.

In the lanes, people greeted and chatted, children played games and the elderly played chess, peddlers conducted small business, and women did their laundry (see Figure 1.8). Although those activities were not driving force for the original design of the *Lilong*, they represented the practice of everyday life, and ultimately the lanes - become the shared “living room” of the whole community. Most importantly, apart from their function as narrow circulation, the lanes became an ambiguous space that was flexible and interchangeable in mediating the private and the public, the ‘inside’ and the ‘outside’ (Zhao, 2004).

Nowadays, the neighbourhood life of *Lilong* neighbourhoods has been recognized as a condition and “abstract concept of space” that is not achieved by any other of today’s housing types. Such space provides close proximity to the residents with the mixed-use programmes and transparency of public and private realms, encouraging them to communicate with each other dynamically (Arkaraprasertkul, 2009). Dwellers view the public space as important as their own house, and this establishes a strong sense of belonging. As an old Chinese saying goes, the sense of belonging possesses inherent qualities of *Lilong* (Lim, 2006).

a	b
c	d
e	f



Figure 1.8. Life in Lilong

a: housewife doing laundry in sub lane
b: daily activities in main lane
c&e: children play in sub lane
d: hanging cloth in *lilong*
f: small business near entrance

1.2 - FIVE STAGE OF *LILONG* HOUSING DEVELOPMENT

In 1949, the Shanghai Housing and Land Bureau defined *Lilong* housing as having five subtypes: the old *Shikumen*, new *Shikumen*, new style *Lilong*, garden *Lilong* and apartment *Lilong* (Zhao, 2004). Specific social, historical, and urban contexts produced these variations. For example, the early *Shikumen Lilong* houses were built with ample living space, while the late *Shikumen* were built with more efficiently divided space because of constrained land resources in rapidly growing Shanghai.

The old and new *Shikumen Lilong* houses were built in the most ground-related, traditional courtyard pattern of dwelling. The new style *Lilong houses* added a characteristic of openness into these new and compact urban dwelling spaces, while the enclosed nature of traditional house plans gradually disappeared. Garden *Lilong*, in semi-detached or detached form, were not subject to space-saving measures and were built as high-class residences. Apartment *Lilong* were built in concrete-framed structures, similar to contemporary apartment buildings. Although these housing subtypes differ to some degree, they all followed the same planning principles and have a shared neighbourhood structure that is concentrated along alleyways.

1.2.1 - OLD SHIKUMEN *LILONG* HOUSE (1880-1910) (see Figure 1.9 - 1.10)

The Old *Shikumen* houses were mostly built in the late 19th century, with a few built in the early 20th century. The general pattern of old *Shikumen* was borrowed from row housing which originated in London, while the layout and structure of each unit combined spatial configurations from traditional southeast Chinese dwellings called *San-he-yuan* or *Si-he-yuan*. A *Shikumen* house had two main parts, a front two-storey building that was enclosed with a central courtyard, and linked to a rear one-storey building through a light well.

The old *Shikumen* house was three or five bays in width, and measured 16 metres in depth, for a total area of about 200 square metres. Its major rooms were arranged around the central or front courtyard in a symmetrical way, and guarded by a tall house wall and front gate (Zhao, 2004). The house was enclosed by high walls with few openings, maintaining an inward-looking character and achieving a great sense of integrity.

At this stage of development, *Lilong* houses were clustered to resemble basic traditional Chinese houses, allowing many families to live together in the same compound (Lü et al, 2001).

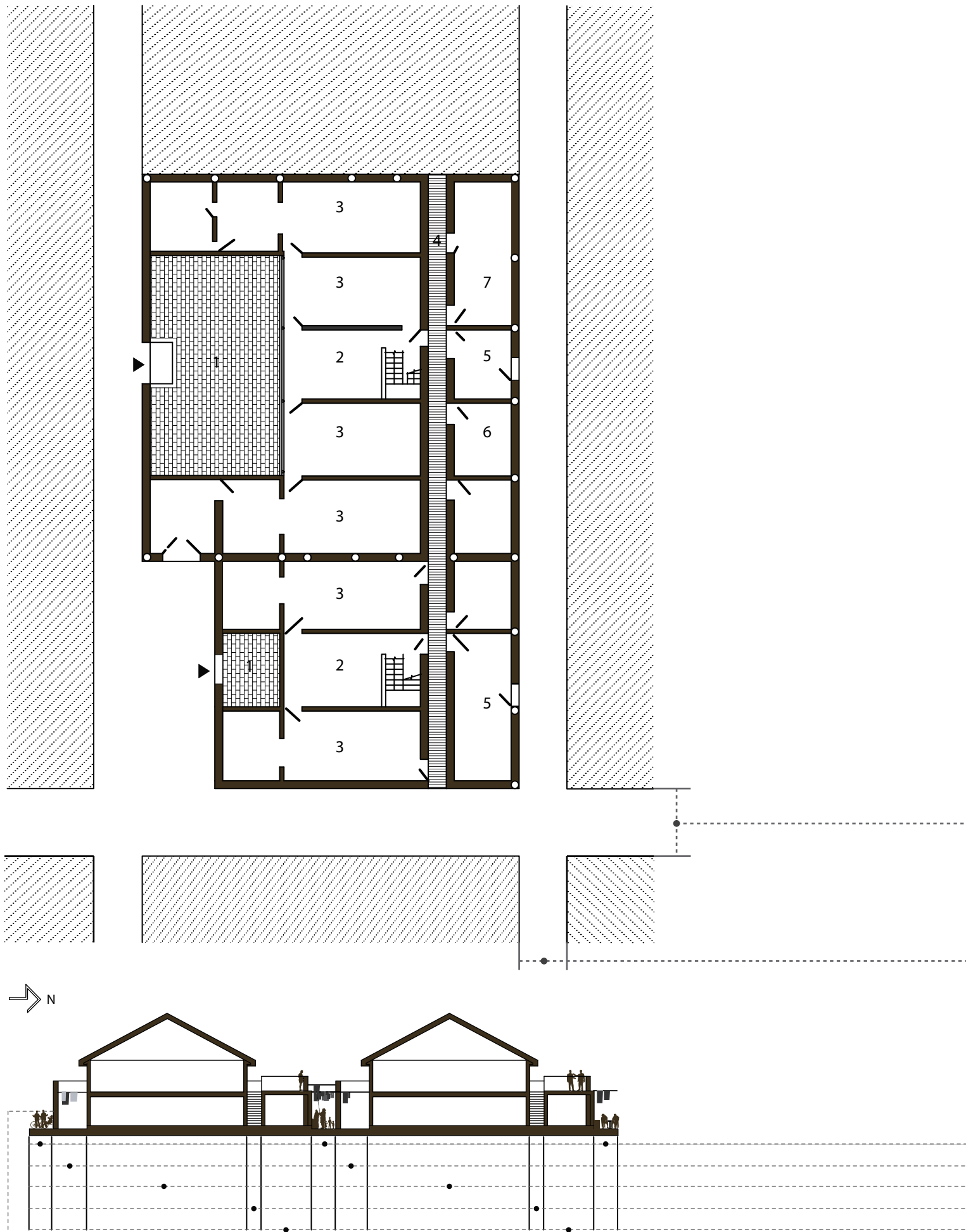


Figure 1.9. Plan and section of early *Shikumen*

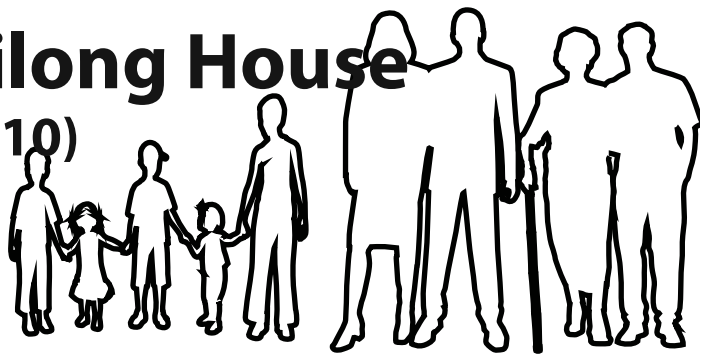
Plan of Old Shikumen Lilong House Five & Three Jian Units

Ground Floor (approx. three jian unit: 100 m²)

1. Courtyard
2. Central Hall
3. Bedroom
4. Light Well
5. Kitchen
6. Storage
7. Auxiliary Room

Old Shikumen Lilong House

(1880 - 1910)



main lane 3.5 m

sub lane 2.5 m

sub lane	2.5 m
courtyard	3 m
living area	16 m
light well	1.5 m
auxiliary room	4 m
exterior wall	5 m



■ *Figure 1.10. Old Shikumen*

1.2.2 - NEW SHIKUMEN *LILONG* HOUSE (1900-1930) (see Figure 1.11 - 1.12)

In response to rising land values and shrinking family sizes, the design of old *Shikumen* was modified into a high density scheme with more compact units and significantly smaller courtyards. Moreover, Western building technology and ornamental patterns were widely incorporated, showing a further departure from their vernacular origin (Zhao, 2004).

The most obvious modification in the new unit plan was that the early three-bay or five-bay forms were replaced by the single-bay and two-bay division in most cases. Another major modification was the reduced size and height of rooms. In some new *Shikumen Lilong*, one more floor was added to the front building to result in three storeys, and the back building was increased to two storeys. These two parts, the living zone and the service zone, were connected by a 1.2 to 1.5 metre internal corridor.

Because extra space was added vertically, the function of each floor was clarified. The ground floor was used for public family activities, and the second and third floors were used for private family activities. Sometimes extra space was sublet to tenants in order to produce extra income for house owners. Moreover, the size of front courtyards was shrunk to two metres by three metres, exterior wall was reduced to a height of two metres with more fenestration, creating a vivid look.

Both old and new types of *Shikumen Lilongs*, reflected a traditional way of living. On one hand, an intense sense of privacy and tranquility was preserved amidst the hustle and bustle of the city, and kept out of sight of the public. On the other hand, within the enclosing wall, the houses also allowed an elastic way of using and personalizing one's private domain (Xu, 1983).

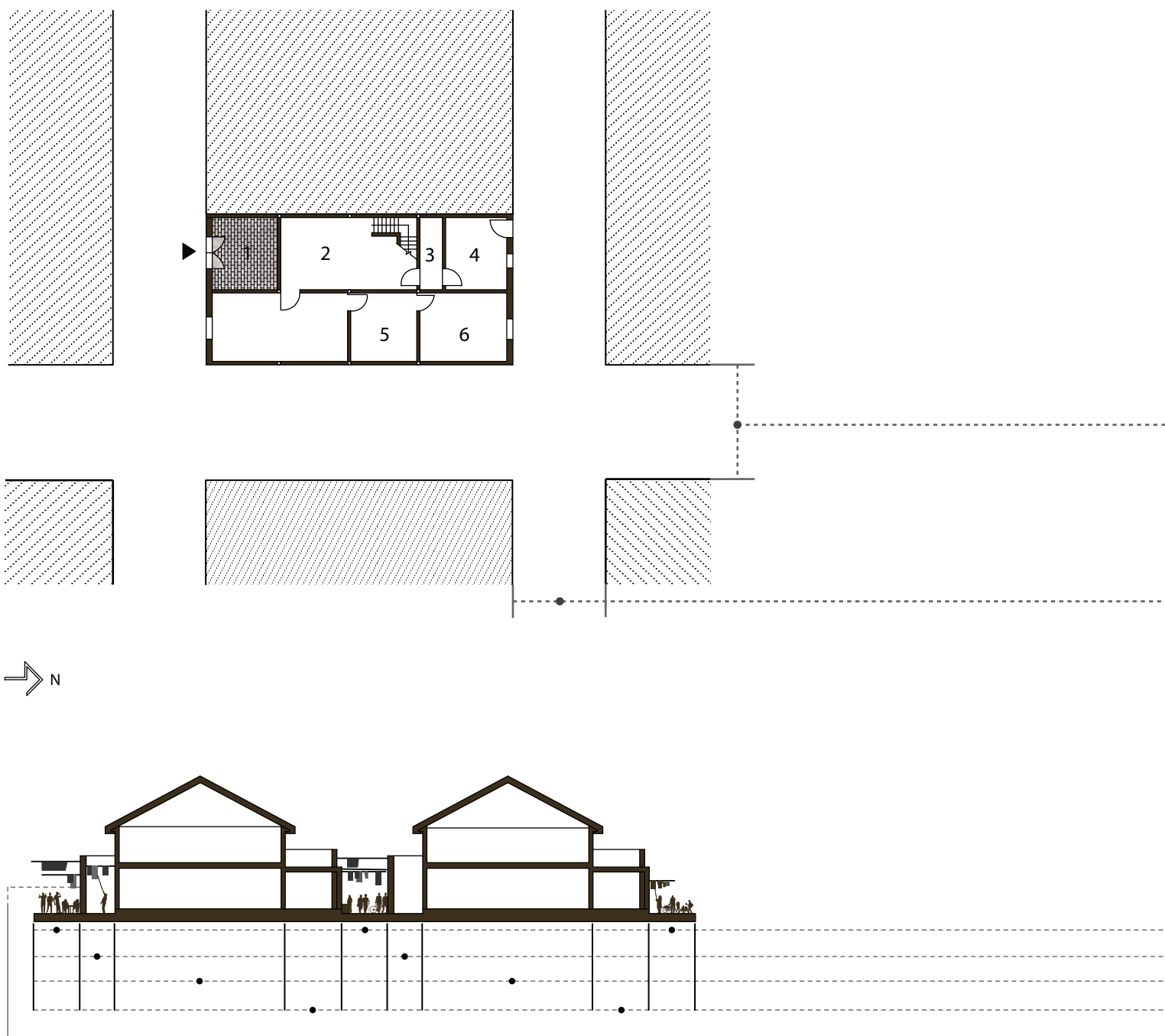


Figure 1.11. Plan and section of new Shikumen

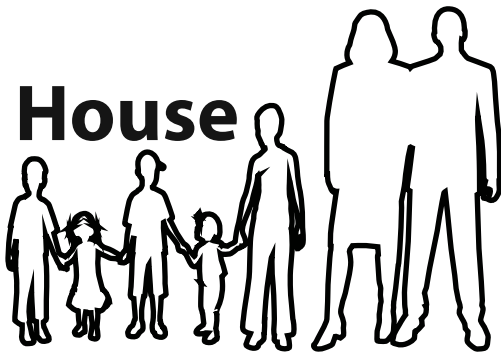
Plan of New Shikumen Lilong House

One Jian & One Shang

Ground Floor (approx. 80 m²)

- 1. Courtyard
- 2. Central Hall
- 3. Light Well
- 4. Kitchen
- 5. Auxiliary Room
- 6. Storage

New Shikumen Lilong House
(1900 - 1930)



main lane 5 m

sub lane 4 m

sub lane 4 m
courtyard 2.5 m
living area 14 m
auxiliary room 4 m
exterior wall 5 m



■ *Figure 1.12. New Shikumen*

1.2.3 - NEW TYPE *LILONG* HOUSE (1920-1930) (see Figure 1.13 - 1.14)

The new type *Lilong* house is the most favourable and successful type of *Lilong* dwelling. After the 1920s, this new type of *Lilong* houses was constructed in large scale developments, and became the most important type among all existing *Lilong* today. The major feature of new style *Lilong* was the introduction of a more functional unit plan. There were three basic layouts: one *jian*, one-and-half *jian*, or two-*jian*, and buildings were generally three-storeys high. Interior spaces were clearly defined by use, such as an entrance hall, a living room, a dining room, a kitchen, a servant's room, bedrooms, and bathrooms. This style of *Lilong* waste less space because of strong functional logic.

Previously, *Lilong* had front courtyards, which were multifunctional and figurative spaces. In new style *Lilong*, the courtyard was transformed into an open or semi-open front garden for the single purpose of gardening. The height of house walls was greatly reduced to provide better visual connection between inside and outside spaces. In contrast to the *Shikumen* houses, the front gate at the entrance was relocated to be an off-centre gate with iron bars or low concrete walls.

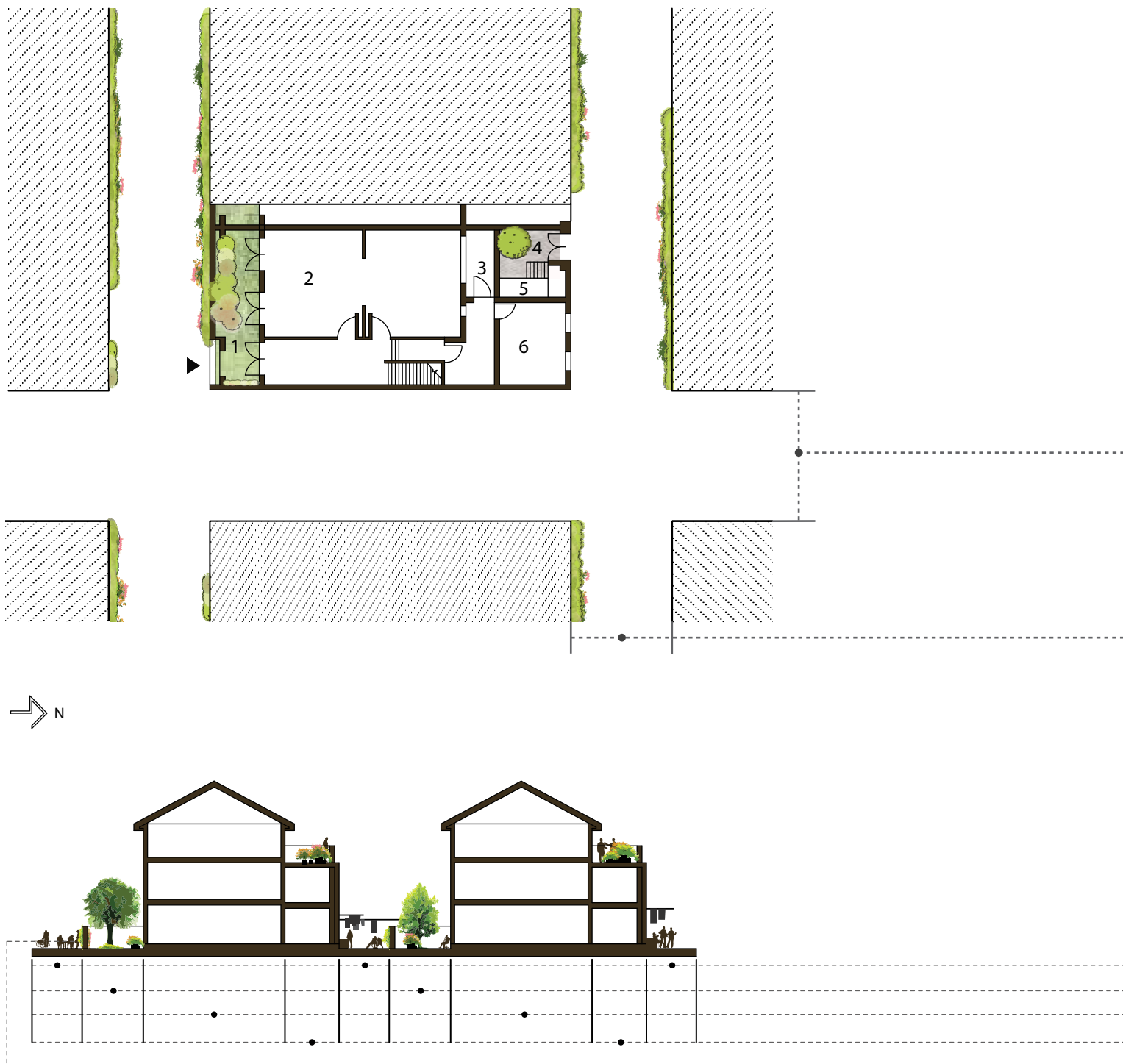


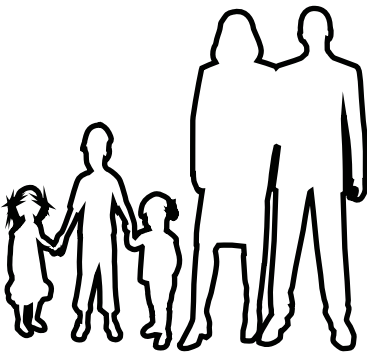
Figure 1.13. Plan and section of new type Lilong

Plan of New Type Lilong House
One & Half Jian Unit

Ground Floor (approx. 100 m²)

- 1. Courtyard
- 2. Living Room
- 3. Light Well
- 4. Side Yard
- 5. Garage
- 6. Kitchen

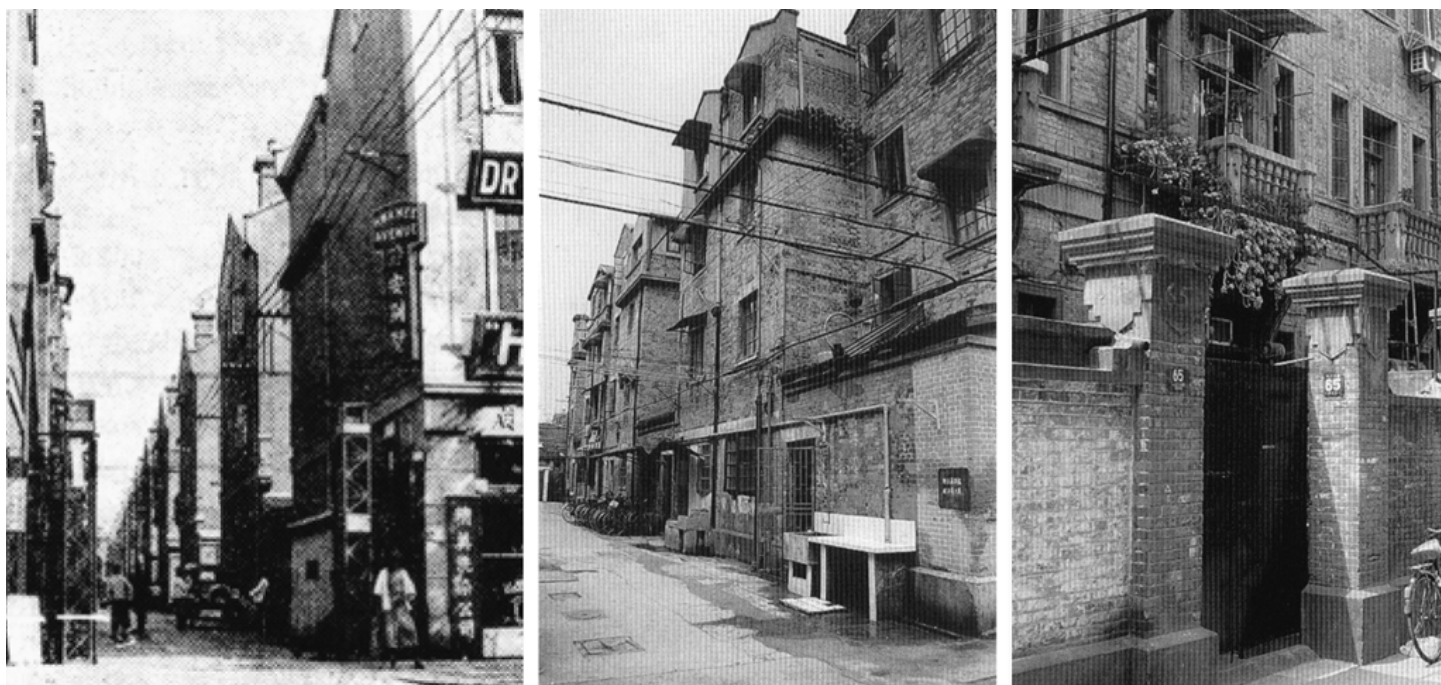
New Type Lilong House
(1920 - 1930)



main lane 6 m

sub lane 4.5 m

sub lane 4.5 m
courtyard 5 m
living area 12 m
auxiliary room 4.5 m
exterior wall 2 m



■ Figure 1.14. New type Lilong

1.2.4 - GARDEN *LILONG* HOUSE (1930-LATER) (see Figure 1.15 - 1.16)

Beginning in 1930, with the spread of Western culture and values in Shanghai, garden *Lilong* houses were constructed as high-class residences with larger scale and more open space. The basic layout was similar to the new type *Lilong*, but interior facilities and decoration standards were much higher, and the function of each room was well designed.

Benefiting from spacious lots, site plans achieved a high level of flexibility. Rooms were not restricted by site orientation, which was previously the case with long, narrow lots. Now, three or four exterior walls were available for windows, and ventilation and lighting were greatly improved with the garden *Lilong*.

The exterior landscape of garden *Lilong* houses were intentionally designed to have a good view from the interior space into the garden. The side walls of neighbouring houses provided visual privacy and acoustic insulation. Here, the existence of abundant private open space reduced neighbourly contact, and the sub lanes, which used to be semi-public space for communal activities, were widened and used only for circulation. In some senses, residents living in the high-class garden *Lilong* lost close ties with their neighbours.

In terms of architectural form, quality of structure, physical function, and interior furnishing, the garden *Lilong* houses were much larger and more comfortable than other types of *Lilong* houses. But they required bigger lots, and their density was very low.

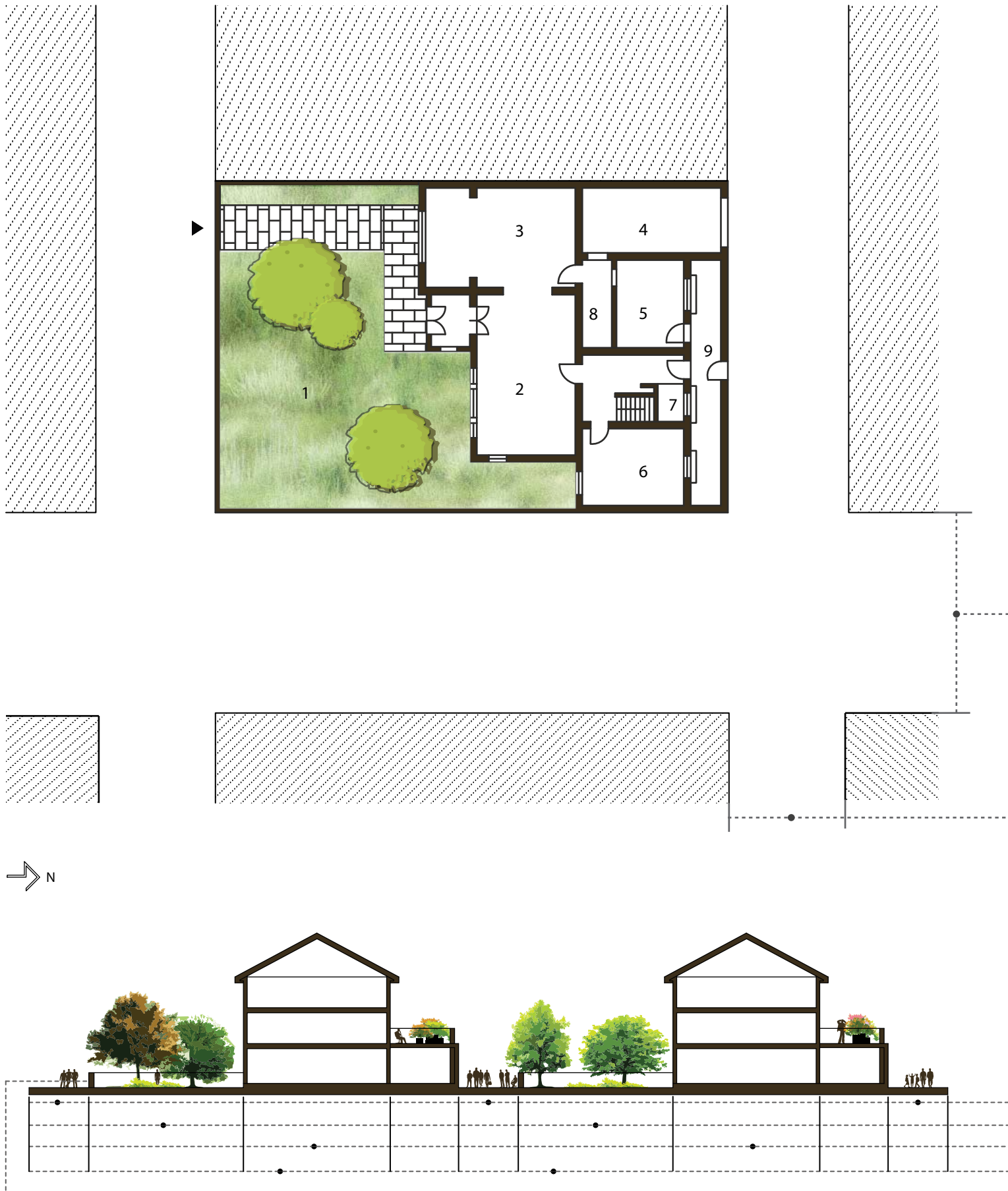


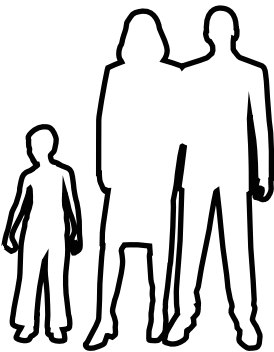
Figure 1.15. - Plan and section of garden Lilong

Plan of Garden Lilong House
One & Half Jian Unit

Ground Floor (approx. 200 m²)

- 1. Garden
- 2. Living Room
- 3. Dining
- 4. Garage
- 5. Kitchen
- 6. Servant Room
- 7. Bathroom
- 8. Food Preparation
- 9. Mud Room

Garden Lilong House
(1930 - later)



main lane 10 m

sub lane 6 m

sub lane	6 m
courtyard	15 m
living area	14 m
auxiliary room	6 m
exterior wall	1.5 m



■ *Figure 1.16. Garden Lilong*

1.2.5 - APARTMENT *LILONG* HOUSE (1930-LATER) (see Figure 1.17 - 1.18)

The apartment style *Lilong* evolved from the design of the garden *Lilong*. There is a significant difference between the garden style and the apartment style. A garden *Lilong* building is basically was generally owned by one family, while an apartment *Lilong* building was designed to accommodate several families. This was a reflection of the rapid growth of population in Shanghai.

Apartment *Lilong* houses generally ranged from four to six storeys, and had most characteristics of modern apartment buildings. The exterior was commonly covered in stone, brick or stucco, and also included some modern and Western decoration (Wang, 1989). Interior facilities were completed with high standards to include full bathrooms, heating systems, gas, and electricity. The elevator in the lobby of the building was considered a must.

Apartment *Lilong* were a compact and concentrated type of *Lilong*, and delivered the conveniences and advantages of modern apartment buildings of the day. However, there were negative aspects to the apartment *Lilongs*: ground-relatedness and the socially cohesive atmosphere common in traditional *Lilong* dwellings were sacrificed (Qian, 1996).

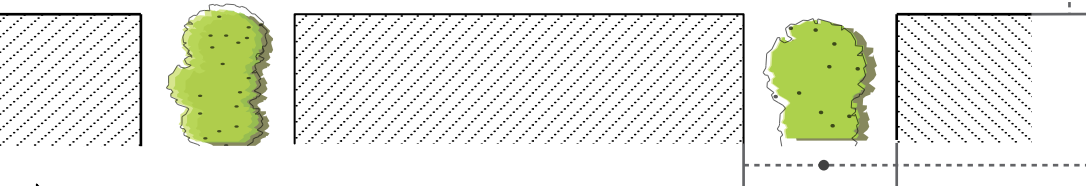
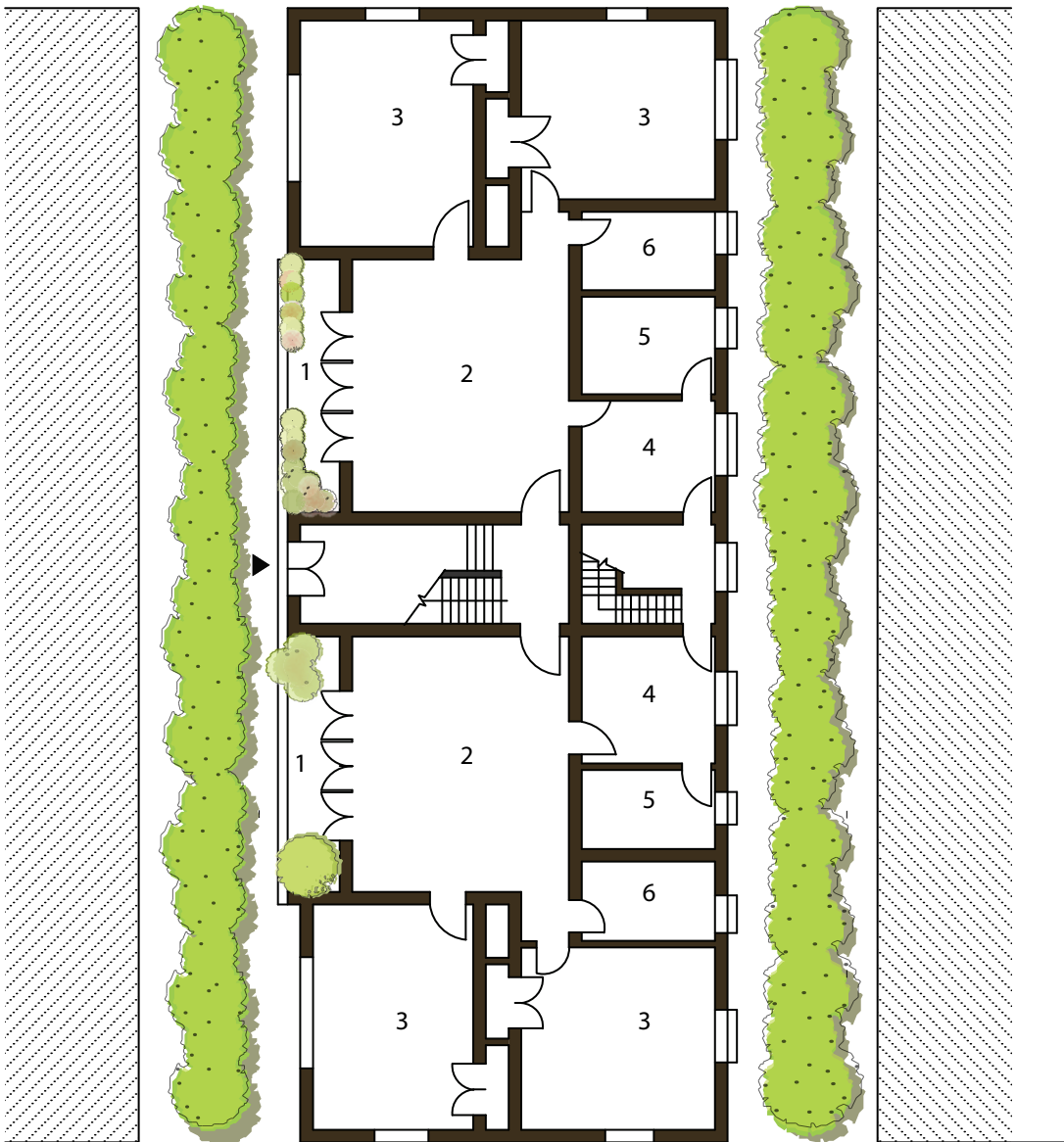


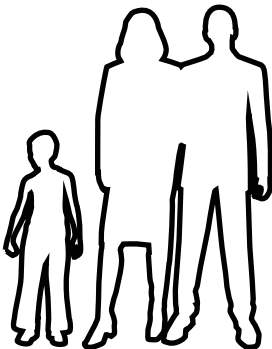
Figure 1.17. Plan and section of apartment *Lilong*

Plan of Row Pattern Apartment Lilong Building

Ground Floor (approx. each unit 180 m²)

- 1. Balcony
- 2. Living Room
- 3. Bedroom
- 4. Kitchen
- 5. Storage
- 6. Washroom

Apartment Lilong House
(1930 - later)



main lane 5 m

sub lane 5 m

sub lane 5 m
balcony 1.8 m
living area 12.5 m



■ *Figure 1.18. Apartment Lilong*

1.3 - KEY FEATURES OF *LILONG*

The key features of *Lilong* housing that affected residents' social network are sense of order, sense of place and sense of community. Those features made *Lilong* settlements a meaningful place.

- *SENSE OF ORDER*

Based on a comprehensive understanding of the connection system or network, circulation structure, and linear open space in a *Lilong* neighbourhood, the most important spatial feature of *Lilong* housing is the hierarchical order of organization network from public to semi-public, to semi-private, to private. This hierarchical pattern, not only allows the main lane to run efficiently, but also protects the intimacy of dwelling life along sub lanes. This spatial network and the privacy hierarchy is the key to success in *Lilong* housing. In the paper "Analysis of urban space structure in residential areas", Włodarczyk (1996) described the interrelations between private space, semi-private, public and semi-public, and indicated that the proper proportions between public, semi-public, semi-private and private spaces and their distribution are vital for the social quality of the area. The structure of ordering spaces creates a feeling of belonging to a larger social group and forms the basis for such functions as meetings and other activities of living in a community.

The significance of hierarchical spatial sequence in circulation networks is that it decreases the disturbance of trespass traffic, and helps to establish a sense of order to the internal environment, enhancing the safety and convenience of inhabitants. It also has the advantage of letting residents self-manage or control internal spaces. Thus, a tranquil environment for dwelling activities can be achieved within the bustling surroundings of a commercial area (Qian, 1996).

- SENSE OF PLACE

A space with a distinct character can be identified as a place, where people can develop their social, cultural, and political values and behaviours under a stable system. *Lilong* housing develops an emotional aspect through spatial design, not only by involving physical aspects, but also taking local history, the feelings and needs of the populace, the tradition of craftsmanship and indigenous materials, and the political and economic realities of the community into consideration (Qian, 1996). This makes *Lilong* housing become a meaningful place, one that residents are very proud to call home.

Furthermore Grant (2003) argued that “gated enclaves are spatially defined residential communities with shared amenities and thus the potential for developing social networks” (p913). The *Lilong* is distinguished by its spatial enclosures. Every *Lilong* settlement has clear boundaries formed by streetfronts and a unique entry gateway; this creates a gradual spatial transition from the public space of the city to a semi-public space of residence, and therefore a strong presence of community is demonstrated.

The mixed-use pattern and small business vendors that spread out in and around the *Lilong* serve to activate residents’ lives. The inherited human scale, usable open space for family and communal activities, and a safe environment for children and elders are all factors that enrich social, cultural, and political aspects of the *Lilong* and make residents feel at home. In short, *Lilong*, as a spatial and social unit, is embraced for its own distinctiveness. As Entriken (1991) described, the sense of place not only explains the dynamics of a place, it also plays a key role in determining human interactions, and it is the basis for community.

- SENSE OF COMMUNITY

Lilong housing, as a pattern of urban dwelling, can be described as a composition shaped by physical, social, economic, and political forces. In order to establish a strong sense of community within a *Lilong* settlement, there are several things that must be present to ensure quality of life.

Security - In building a sense of community, security is crucial. Between the limited entrances, efficient use of open spaces and lanes, and residents’ control over their own living environment, a hierarchical surveillance system is formed to give the community a strong sense of security. Moreover, due to the intimate scale of sub lanes (only two to four metres wide), only allow two or three people may pass at a time, and most sub lanes are cul-de-sacs. People share a sub lane as if they were one big family, and families often open their courtyard to the sub lane. Even when there are no residents in the lane to watch, strangers still can’t escape eyes from indoors. At last, the small shops or home-based businesses scattered around the main lanes voluntarily keep an eye on passersby, reinforcing the safety of the entire community. This is especially beneficial to children.

Comfort – The continuous shops along street fronts act as a buffer zone between two domains, the urban street and the residential neighbourhood, creating a distinct contrast between internal peace and external chaos. Once residents step inside the *Lilong*, they escape from the urban noise immediately. The living zones of dwelling units are further protected from noise of daily activities taking place in main lanes by the high walls. The hierarchical spatial order of the circulation system allows different dwelling activities happening at different levels in the internal environment. This improves the comfort of *Lilong* housing.

Functional comfort is better achieved in the new style, garden and apartment type *Lilong*, due to the higher standard of interior facilities and finishes. Residents have greater visual comfort in the new style, garden and apartment *Lilong* as well. This is achieved by transformation of multifunctional courtyard into the open or semi-open front garden. Green space and beautifully landscaped gardens enhance the visual sense of vitality.

Although the level of physical comfort varies in different style of *Lilong*, an emotional sense of tranquility and order fostered within the building environment is successfully achieved in all types of *Lilong* settlements.

Scale – Human scale can make a space inviting and friendly, giving a person an intense sense of familiarity and comfort while walking through it. The intimate atmosphere attained in the sub lanes of *Lilong* settlements increases the friendly feeling of the place. In addition, the appropriate building distance arrangement not only allows enough sunshine into the ground-floor rooms, but also maintains a large portion of shady area in the sub lanes during the hot summer. In winter, the sub lanes are also protected from wind flow. The pleasant micro-climatic environment encourages residents to use sub lanes frequently, promoting a sense of community.

In short, the sense of order and rhythm, qualities of harmony and conformity, and intimate-scale streetscape are the essential elements in the appealing space of *Lilong* settlements.

1.4 - CONCLUSION

The study of *Lilong* housing in Shanghai is not only an opportunity to fully understand the essential characteristics and relationships of people and their living environment, or to find out how social life can be greatly encouraged and influenced by physically constructed elements, buildings, walls, and pathways (urban arrangement). It also bridges a connection between research and practice. The findings derived from the study strongly support the design decision and make those decisions reasonable and reliable while designing housing areas.

two.

COMPARATIVE ANALYSIS

The comparative study consists of two parts. One part compares the quantitative data of *Lilong* settlement in Shanghai to the most common urban housing practices in Winnipeg. The second part includes a comparison between *Lilong* and high-rise buildings in China. Through these studies, we can achieve a better idea of different housing developments, and the advantages and disadvantages that lay within their planning features.

2.1 - BASIC INFORMATION ON SELECTED HOUSING DEVELOPMENTS

The *Lilong* settlement chosen for this comparative study is called Jing-an Villa. It is the largest new type *Lilong* neighbourhood in Shanghai. The Winnipeg neighbourhoods selected to compare with *Lilong* are typical North American low-rise residential developments: River Heights and Linden Woods. River Heights is an older neighbourhood which was established after World War I. Linden Woods was developed in 1980, and constructed in 1982.

The basic characteristics of these housing developments are as follow:

JING-AN VILLA , SHANGHAI (see Figure 2.1)

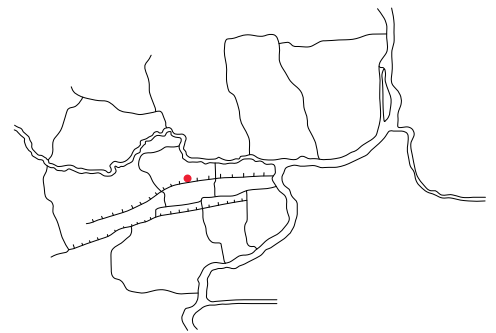
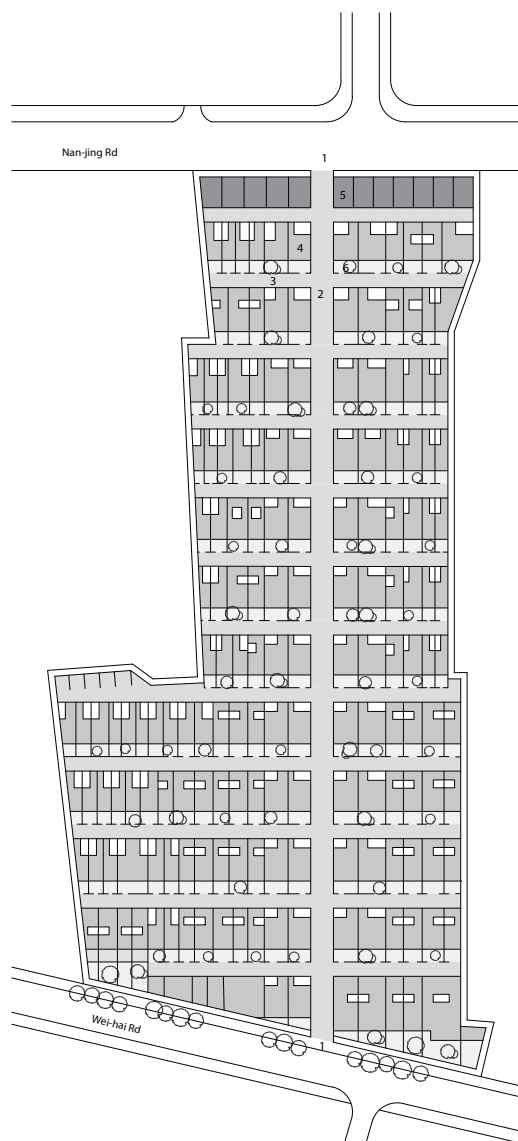
Jing-an Villa is located in the central location of the Jing-an District, embedded in a very busy commercial area of Shanghai. It is bordered by two streets, Nanjing Road on the north and Wei-bai Road on the south. It only has one main lane, running north-south across the whole neighbourhood. 24 sub lanes branch off from the main lane, and are all dead-ended.

RIVER HEIGHTS, WINNIPEG (see Figure 2.2)

River Heights is a neighbourhood in Winnipeg, Manitoba, Canada. It is located south of the Assiniboine River, west of Fort Rouge at Cambridge Street, east of Edgeland St. adjacent to Tuxedo, and north of the Canadian National Railways mainline. River Heights, along with West Fort Rouge, comprised the South End of the old City of Winnipeg. It was annexed by the City of Winnipeg in 1882 although substantial development did not occur in the area until after World War I (Wikipedia).

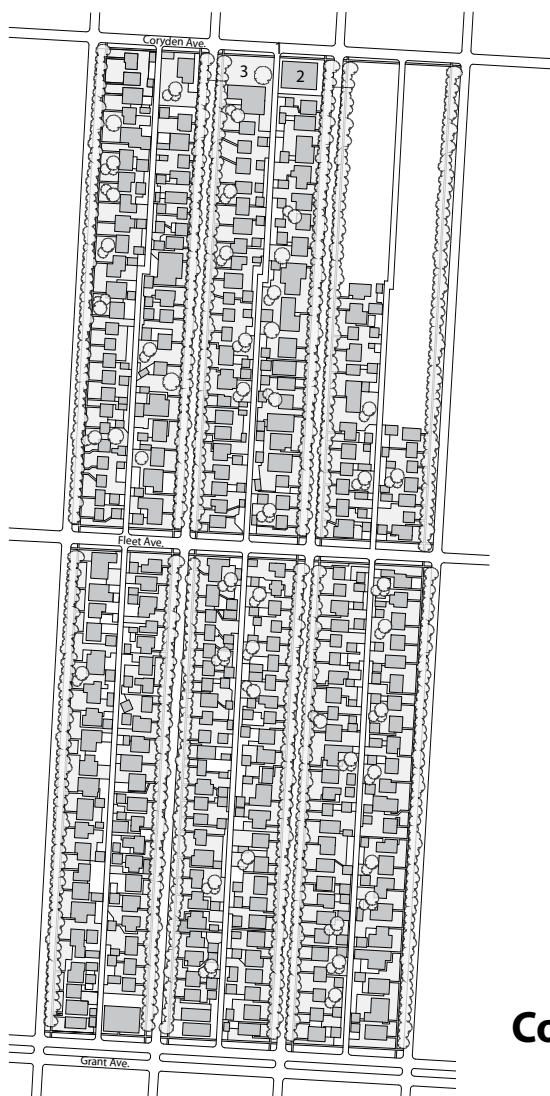
LINDEN WOODS, WINNIPEG (see Figure 2.3)

Linden Woods is a neighbourhood in the southwest corner of Winnipeg, Manitoba, Canada, and is a part of the Fort Garry North neighbourhood cluster. The first phase started in 1980 and was designed by IDE (Interdisciplinary Engineering Company). The neighbourhood was set up in a curvilinear style with about 2400 homes arranged around a lake adjacent to Van Wallegghem Park and Muys Park. Four streets form the borders of Linden Woods: Wilkes Avenue and Sterling Lyon Parkway on the north, McGillivray Boulevard on the south, Waverley Street on the east, and Kenaston Boulevard on the west (Wikipedia).

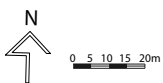


Comparative Analysis :Site one _Jing-an Villa Shanghai

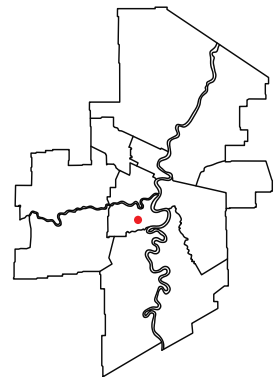
Figure 2.1. Plan of Jing-an Villa ,Shanghai



- 1 Urban Street
- 2 Residential units
- 3 Front & Back Courtyard

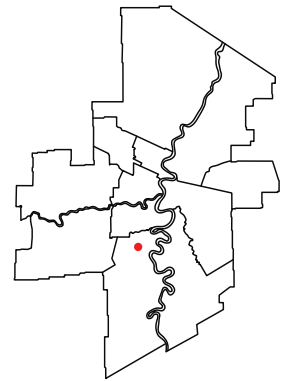
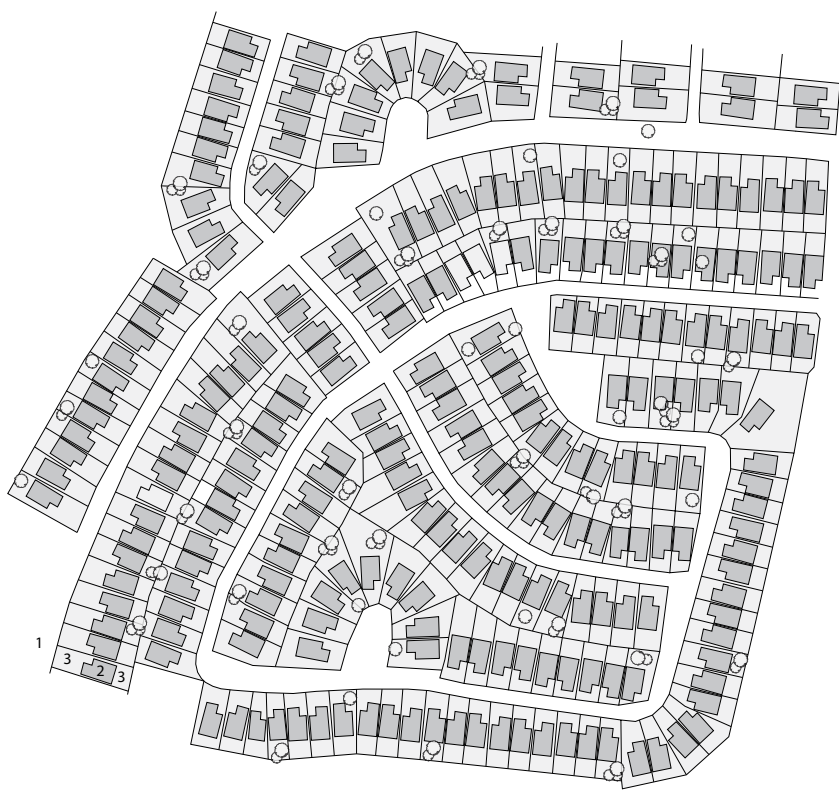


Site plan of Central Riverheight Winnipeg

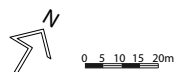


Comparative Analysis :Site two _ Central River Heights Winnipeg

Figure 2.2. - Plan of River Heights, Winnipeg



Comparative Analysis :Site three _ Linden Woods Winnipeg



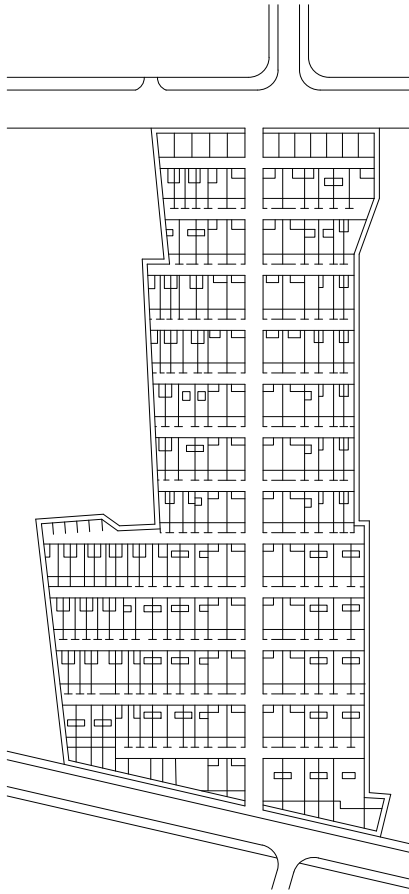
Site plan of Central Lindenwoods Winnipeg

Figure 2.3. Plan of Linden Woods, Winnipeg

2.2 - COMPARISON WITH RESIDENTIAL AREAS IN WINNIPEG

The comparative analysis aims to identify the significance of each neighbourhood. These significant pieces of quantitative data convey attitudes towards land consumption, material consumption, and infrastructural requirements. Evaluating a housing type also requires an examination of how the development fits into the larger urban context, specifically in relation to accessibility, transportation, and proximity to essential services and amenities. Programmatic options, the function, and the utilization of each space are also important when comparing the structure and organization of the selected development types.

See page 61-72 for details of comparative study

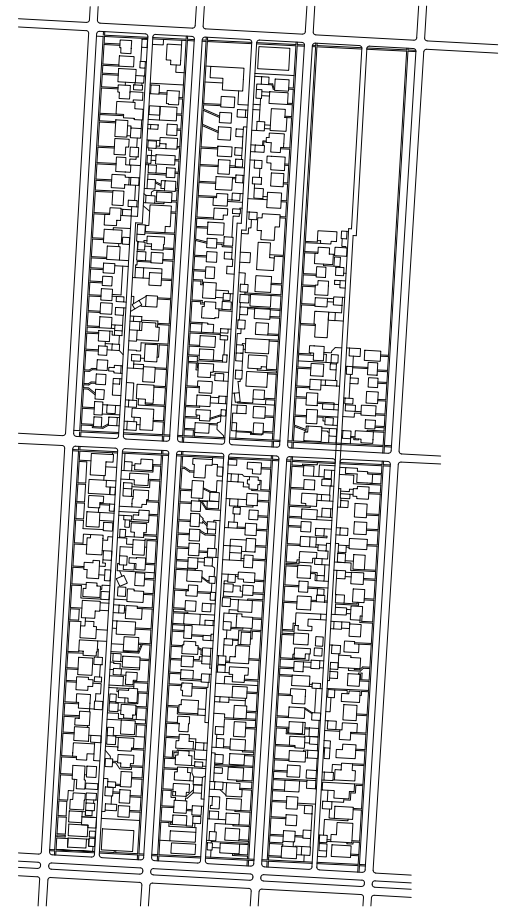


JING-AN VILLA

land coverage **2.35 ha**

total built area **34,300 m²**

built unit density measured
in dwelling units per hectare **77.87**



RIVER HEIGHTS

land coverage **19.28 ha**

approximate total built area
to support 800 residents in
a single-family detached
dwelling suburban development **50,300 m²**

built unit density measured
in dwelling units per hectare **12.55**

■ Figure 2.4. Comparative analysis: land development and density



LINDEN WOODS

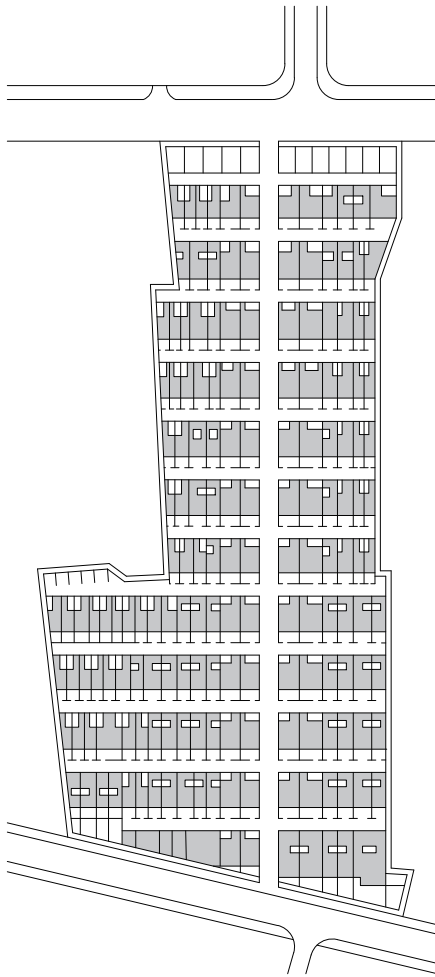
land coverage **20.8 ha**

approximate total built area
to support 800 residents in
a single-family detached
dwelling suburban development **94,000 m²**

built unit density measured
in dwelling units per hectare **11.63**

2.2.1 - LAND DEVELOPMENT AND DENSITY

Lilong settlements were built to maximize profit from limited land. The Jing-an Villa occupies the smallest amount of land compared to the two residential development in Winnipeg, but has the highest population density. Between the two communities in Winnipeg, the earlier residential development, River Heights, has a more compact configuration of dwelling units and has higher density than Linden Woods, based on the same number of residents that total built area can support (see Figure 2.4).

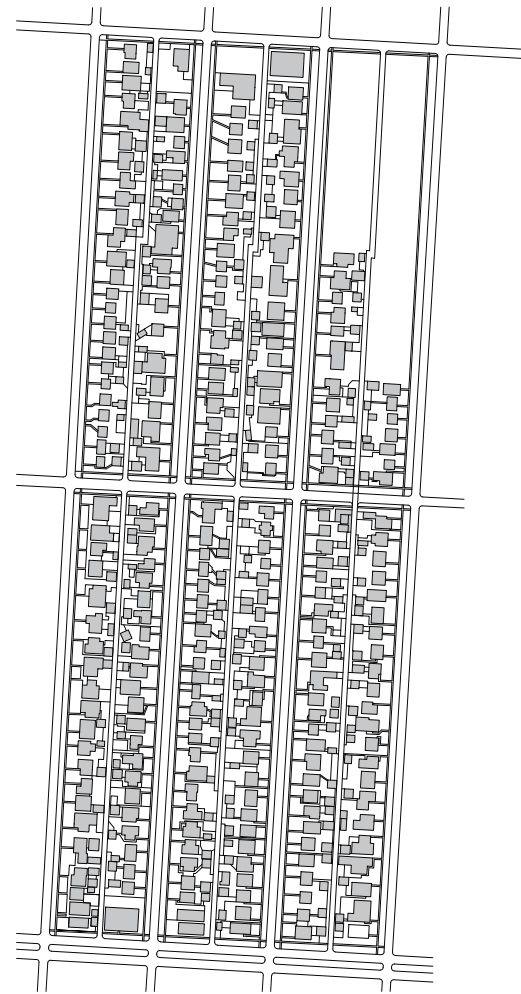


JING-AN VILLA

approximate number of residents based on average 5 people per unit **800**

number of residential units **163**

number of commercial units **20**



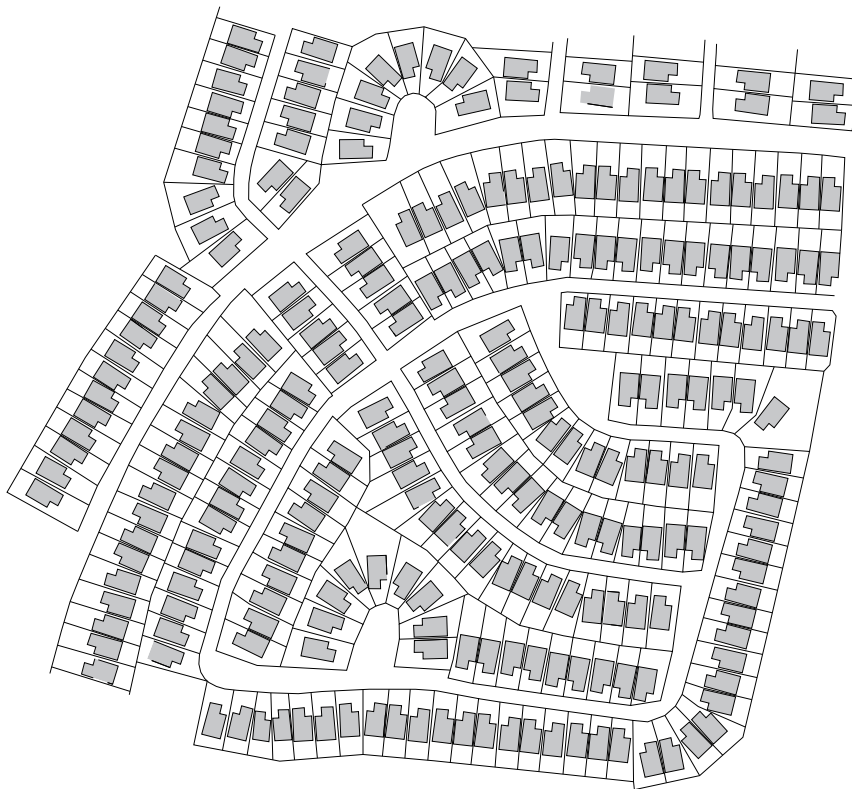
RIVER HEIGHTS

approximate number of residents based on average 5 people per unit **800**

number of residential units **242**

number of commercial units **4**

■ Figure 2.5. Comparative analysis: residential arrangement



LINDEN WOODS

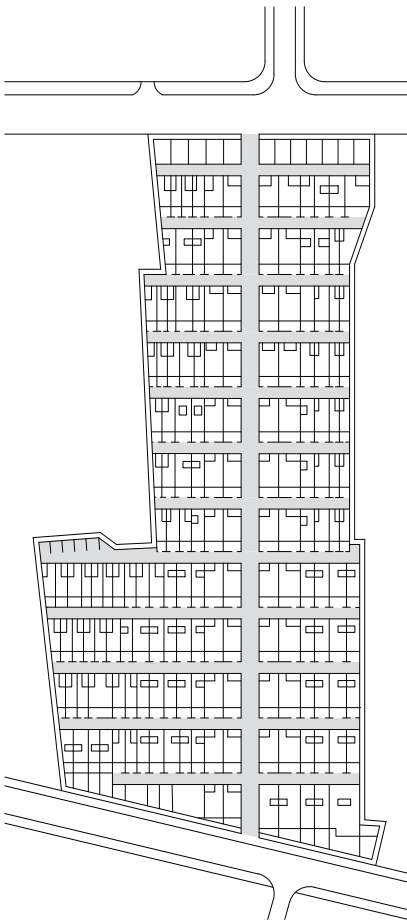
approximate number of
residents based on average
5 people per unit **800**

number of residential units **242**

number of commercial units **0**

2.2.2 - RESIDENTIAL ARRANGEMENT

Jing-an Villa has total of 163 residential units, and can hold 800 residents based on an average of five people per unit. In order to accommodate the same number of residents as Jing-an Villa, River Heights and Linden Woods would need 242 residential units. In addition to residential units, Jing-an Villa includes 20 commercial units along its commercial street. River Heights has four commercial units located near residential units. Linden Woods has no commercial units within walking distance; people must drive to shop for their daily needs (see Figure 2.5).

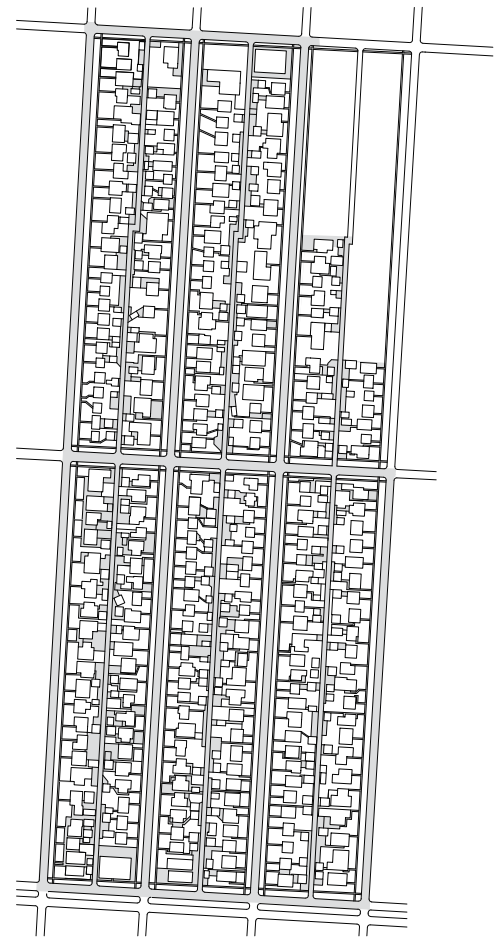


JING-AN VILLA

building **48.65 %**

circulation **26.1%**

paved surface **1,236 m²**



RIVER HEIGHTS

building **26.08%**

circulation **21%**
(approx)

paved surface **23,500 m²**
(approx)

■ Figure 2.6. Comparative analysis: land-use distribution and circulation



LINDEN WOODS

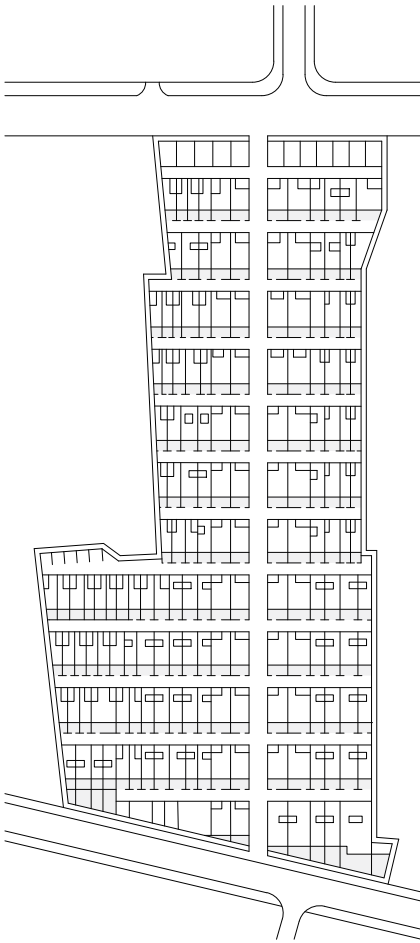
building **35.1%**

circulation **23 %**
(approx)

paved surface **35,000 m²**
(approx)

2.2.3 - LAND-USE DISTRIBUTION AND CIRCULATION

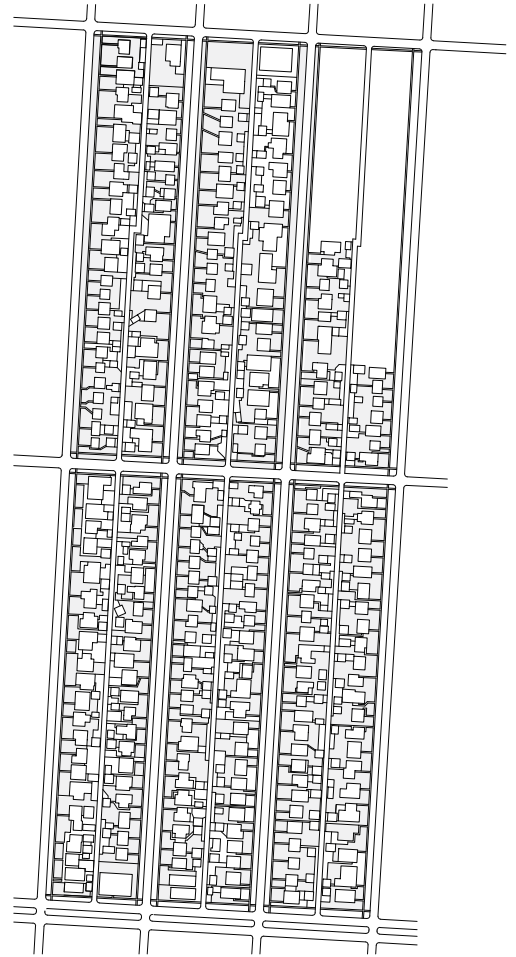
Due to high building density, almost half of Jing-an Villa's land is used for living units. In Winnipeg, the newer housing development, Linden Woods, has a higher percentage of land occupied by living units. Furthermore, all three housing developments have a very similar percentage of area identified as circulation. The big difference among the three areas is the paved surface. The main reason for this difference is the mode of transportation. In Jing-an Villa, only bicycles are allowed to enter the area. In Winnipeg, cars are the primary mode of transportation, and that requires more paved surface area (see Figure 2.6).



JING-AN VILLA

courtyard is defined as
private outdoor space or
private garden **16.9 %**

sub lane is used as
semi-public space **18.9 %**



RIVER HEIGHTS

area defined as private outdoor space
such as front and back yards (approx.) **52.92%**

■ Figure 2.7. Comparative analysis: private and open spaces

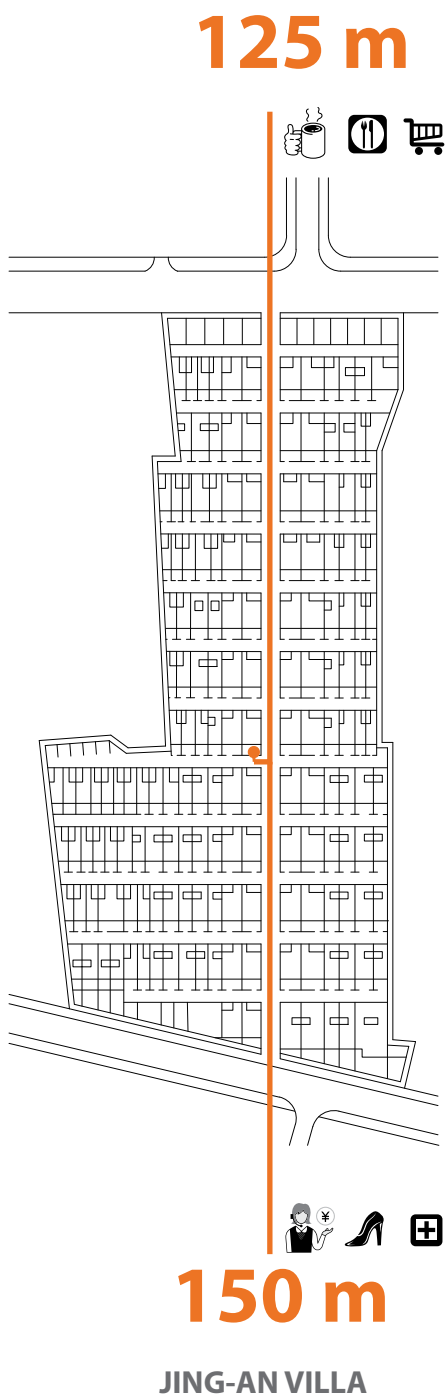


LINDEN WOODS

area defined as private outdoor space
such as front and back yards (approx.) **41.9 %**

2.2.4 - PRIVATE AND OPEN SPACES

The predominant housing type in River Heights and Linden Woods is single-family homes. This type of house has the benefit of a large property with its own back and front yards as private green space. Row houses in Jing-an Villa have very limited dedicated outdoor spaces. Due to decreasing family size since the 1930s, the courtyard is no longer seen as an extension of living space, but transformed into private outdoor space. However, the sub lane in Jing-an Villa, classified as semi-public space, can function as an outdoor green space when maintained by groups of residents who live adjacent to them (see Figure 2.7).



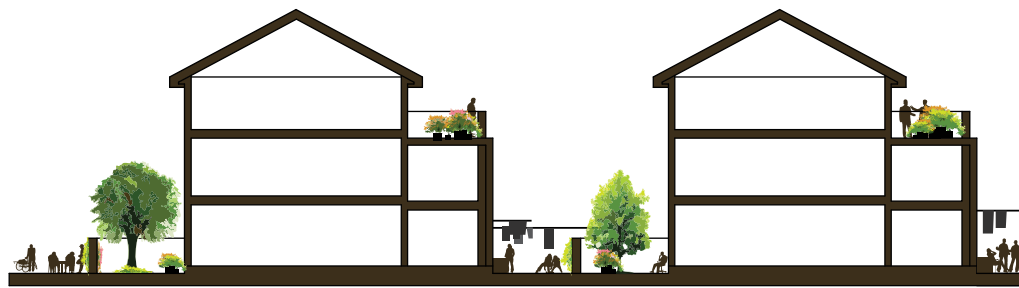
■ Figure 2.8. Comparative analysis: proximity to local services



LINDEN WOODS

2.2.5 - PROXIMITY TO LOCAL SERVICES

The mixed-use development of Jing-an Villa allows residents to obtain their daily needs within walkable distance. Compared to Linden Woods, River Heights has relatively short distances to local services. Linden Woods has no local services located in nearby neighbourhoods, so it is impossible to access services by walking (see Figure 2.8).



Section Through Jingan Villa Shanghai

Urban Street - Main Lane - Sub Lane - Courtyard - Dwelling Unit

Public Semi-Public Semi-Private Private



Section Through Central Riverheight Community Winnipeg

Urban Street - Front yard - Detached Dwelling Unit - Backyard - Back Lane

Public Private Semi-Public

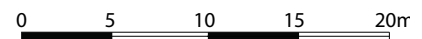
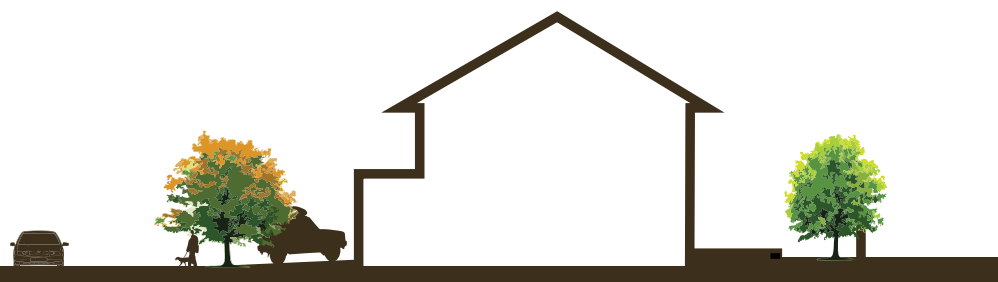
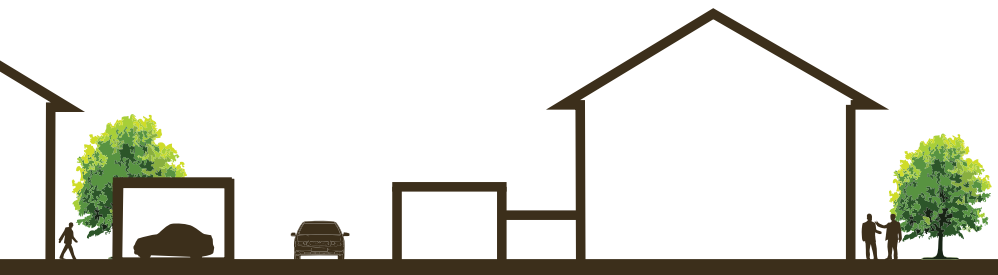
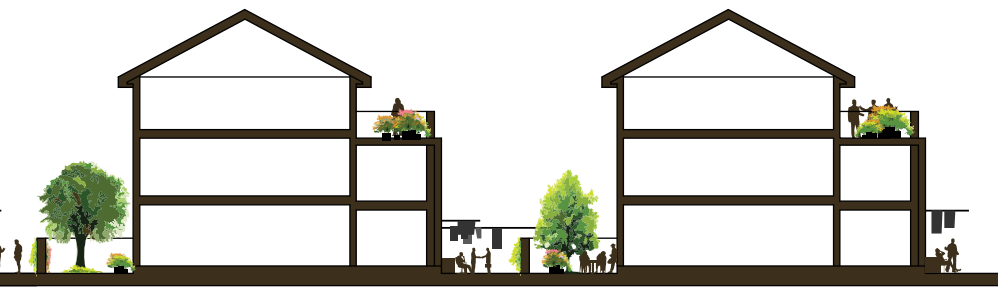


Section Through Lindenwoods Community Winnipeg

Urban Street - Front yard - Tached Dwelling Unit - Backyard

Public Private

Figure 2.9. Comparative analysis: spatial hierarchy



2.2.6 - SPATIAL HIERARCHY

The spatial hierarchy analysis demonstrates the spatial feature of each housing development. From public to semi-public, to semi-private, and finally entering private space, it is necessary to develop the transitional zone between public and private. The proper proportion between those spaces and their distribution is vital for the social quality of the area. However, the housing developments in Winnipeg are missing semi spaces, which causes difficulty in interacting with others in communal space, and in creating a feeling of sharing a common responsibility for this communal space (see Figure 2.9).

2.3 - COMPARISON WITH CONTEMPORARY HIGH-RISE BUILDINGS IN CHINA

Shanghai is a city where two distinctive urban characteristics merge – contemporary high-rise and traditional low-rise *Lilong* houses. 20 storey residential blocks rising amidst the continuous lowness of the three storey *Lilong* are common occurrences repeated in every corner of the city. This creates a paradoxical pattern of unevenly developed urban fabric. In comparing *Lilong* to high-rise buildings in China, the land-consuming, low-rise patterns of *Lilong* are a stark contrast to high-rise buildings occupying large parcels of open land. The modern 'Tower in the Park' concept (Le Corbusier) may not achieve real efficiency since large portions of open space are not really used.

In a high-rise building, open space is separated from ground floors, due to the vertically arranged units. Therefore, units in high-rise towers are more isolated than the ones in *Lilong*. Furthermore, circulation on the ground level only occupies a small amount of the open space; the rest of the land is vast and defined as communal space. Within the building, the principal circulation relies on elevators, closed capsules used exclusively for circulation and offering little chance to interact with other programs. Residents lose visual connection to communal spaces, such as play grounds and green land. The most important fact is that each space in high-rise housing is given a specific program, independent from others. The clearly defined space in high-rise housing, compared with lanes in *Lilong*, does not encourage the encounters between people upon which social activities are based (Gehl, 2011).

Jane Jacobs (1966) has coined the term "eyes on the street", describing neighbourhood presence within which people kept an eye out for one another's belongings and safety. When these 'neighbours' are placed into a tower, the distance to the street is increased, making the eyes less visible and also yielding slower response time. Eyes are weakened when people are housed vertically rather than horizontally.

See page 75-78 for details of comparative study



Figure 2.10. Site plan of lianyang , Shanghai

land coverage **11.6 ha**

total built area **200,000m²**

total apartment units **1595**

total number of residents **4785**

built unit density measured
in dwelling units per hectare **1.29 %**

green space **50 %**

Compared to a *Lilong* house, the high-rise tower occupies much land, but yields a low built density. The vertical living unit arrangement is the fundamental reason for such a result. Green space is ample and well defined by plants and outdoor facilities, but from a human scale aspect, a spatial intimacy is lost between residents and their outdoor spaces. When children are playing outside, parents cannot supervise from higher level of the tower. The sense of safety is weakened in the high-rise's outdoor space.

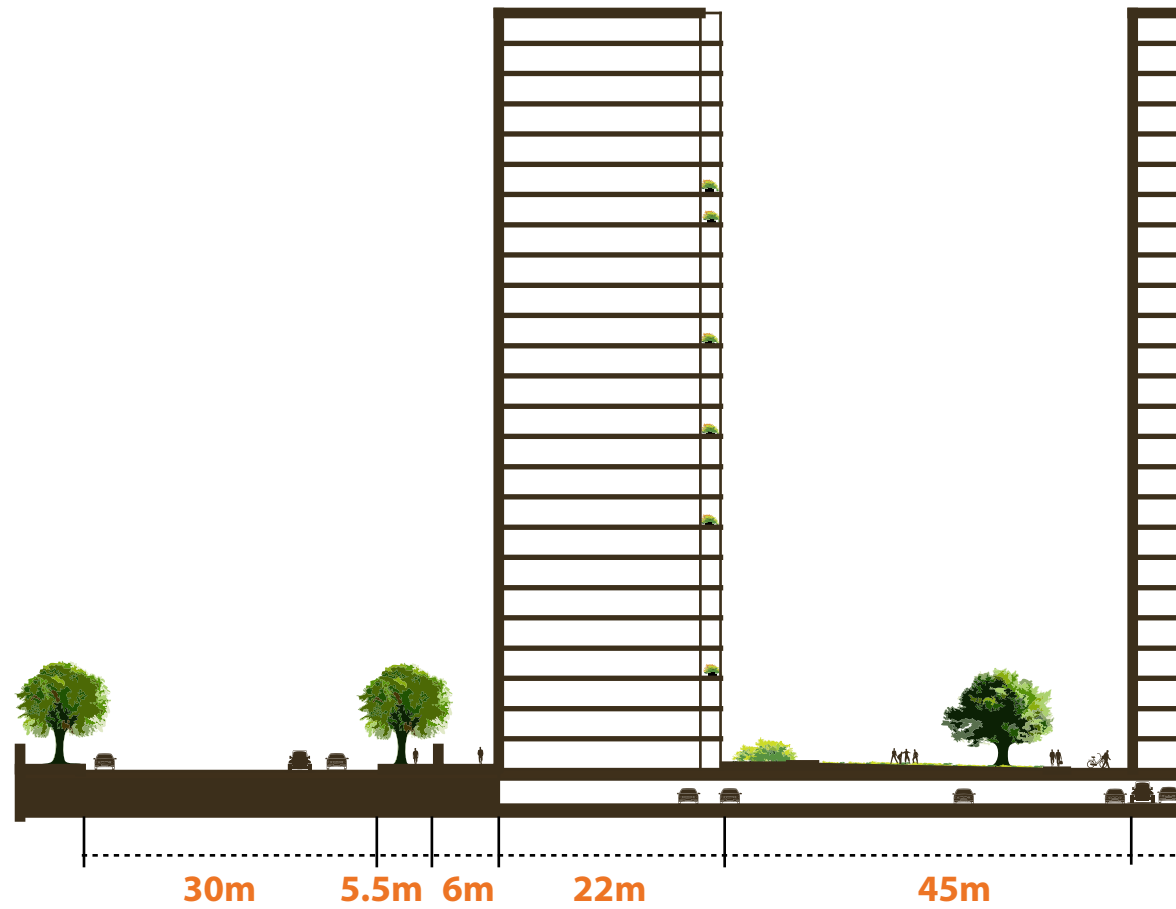


Figure 2.11. Section of highrise residential development

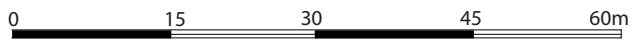
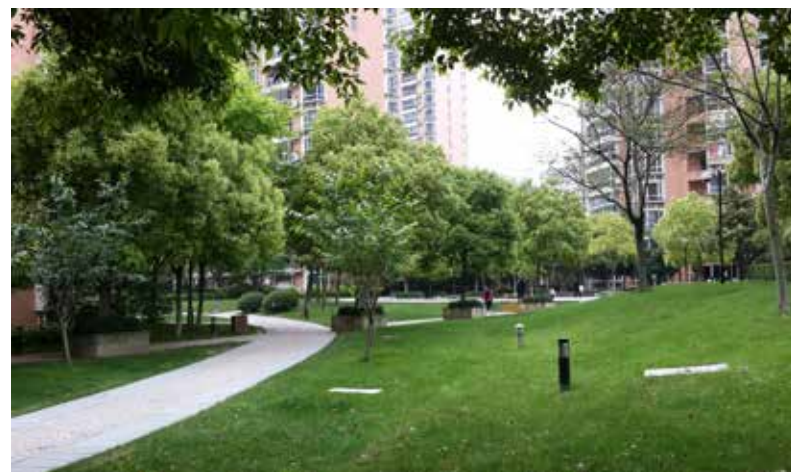


Figure 2.12. Outdoor spaces of highrise residential development



three.

SITE INVENTORY & ANALYSIS

3.1 INTRODUCTION TO THE SITE

The subject site is located in a neighbourhood in south of Winnipeg called, **Fort Richmond** Neighbourhood. (see Figure 3.1) The history of Fort Richmond dates back 45 years. In 1965, the rural municipality of Fort Garry joined Ladco Corporation Ltd. to develop the subdivision of Fort Richmond. In 1968, Ladco Corporation Ltd. applied to the former Metro-politan Winnipeg for a rezoning bylaw that would allow the construction of apartment buildings around Dalhousie Drive and Ulster Street. Finally, the Metro Council approved the application and since then, the proposed site and its vicinity, which together make up the subject site, have become a prime area for multiple accommodation and green space in Neighbourhood of Fort Richmond.

The Fort Garry Detailed Area Plan (1970) suggested that the Fort Richmond subdivision would be “devoted mainly to single family housing, with some apartments in the vicinity of the high school on Killarney Avenue and along the frontage of Pembina Highway” (p42). The main components of the proposal site are three rental properties, Polo Club, Richmond Village, and Tudor Village. They are managed by Rancho Reality Services LTD and Lakewood Agencies Limited. The dwellings situated on the site are apartments and townhouses.

This site is a typical medium density area in Fort Richmond. It is home to about one quarter of the population of Fort Richmond, and the density is higher than average. As this area is close to the University of Manitoba, the influence of the University on this area is noticeable. Many students settle here, contributing to ethnic diversity.

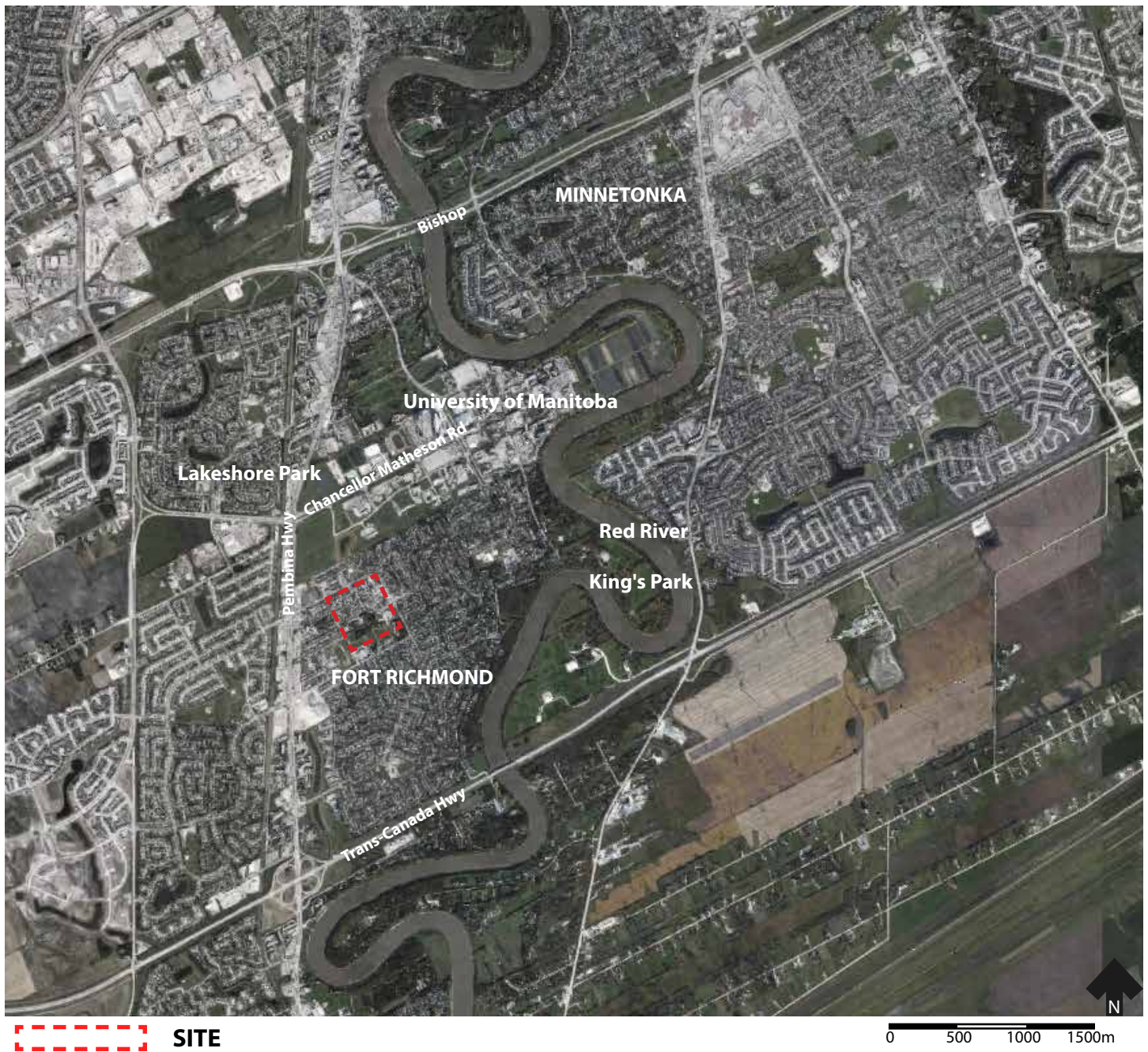


Figure 3.1. Urban context map



SITE

Figure 3.2. Topography of the urban area

Winnipeg lies at the bottom of the Red River Valley, a low-lying flood plain with an extremely flat topography. The topography around Fort Richmond is flat, and due to the Red River being located on the east side of the site, the natural flow is towards to the Red River (see Figure 3.2).

3.2 SITE INVENTORY

A comprehensive study of the site is essential to the design and development of an area. The overall characteristics of the landscape are defined by a unique set of physical, biological and cultural attributes of every site. A full understanding of the context of the site will directly influence design solutions.

Site inventories communicate and map the physical, biological, and cultural components of the site and the surrounding area. This initial observation provides the information required to begin the design process. The inventory is not only a process of information gathering, but also a compilation of site conditions prompted by the requirements of the program plan and questions or concepts that arise during the design process.



Figure 3.3. Neighbourhood context map

3.2.1 LOCATION

Dalhousie Drive, Ulster Street, and an unnamed wood lot form the borders of the site, while Allegheny Drive runs through the site. The topography of the site area has minimal variation, and occupied roughly 28 acres of land. The project will focus on the outdoor spaces formed by the existing residential buildings (see Figure 3.3).



POLO CLUB

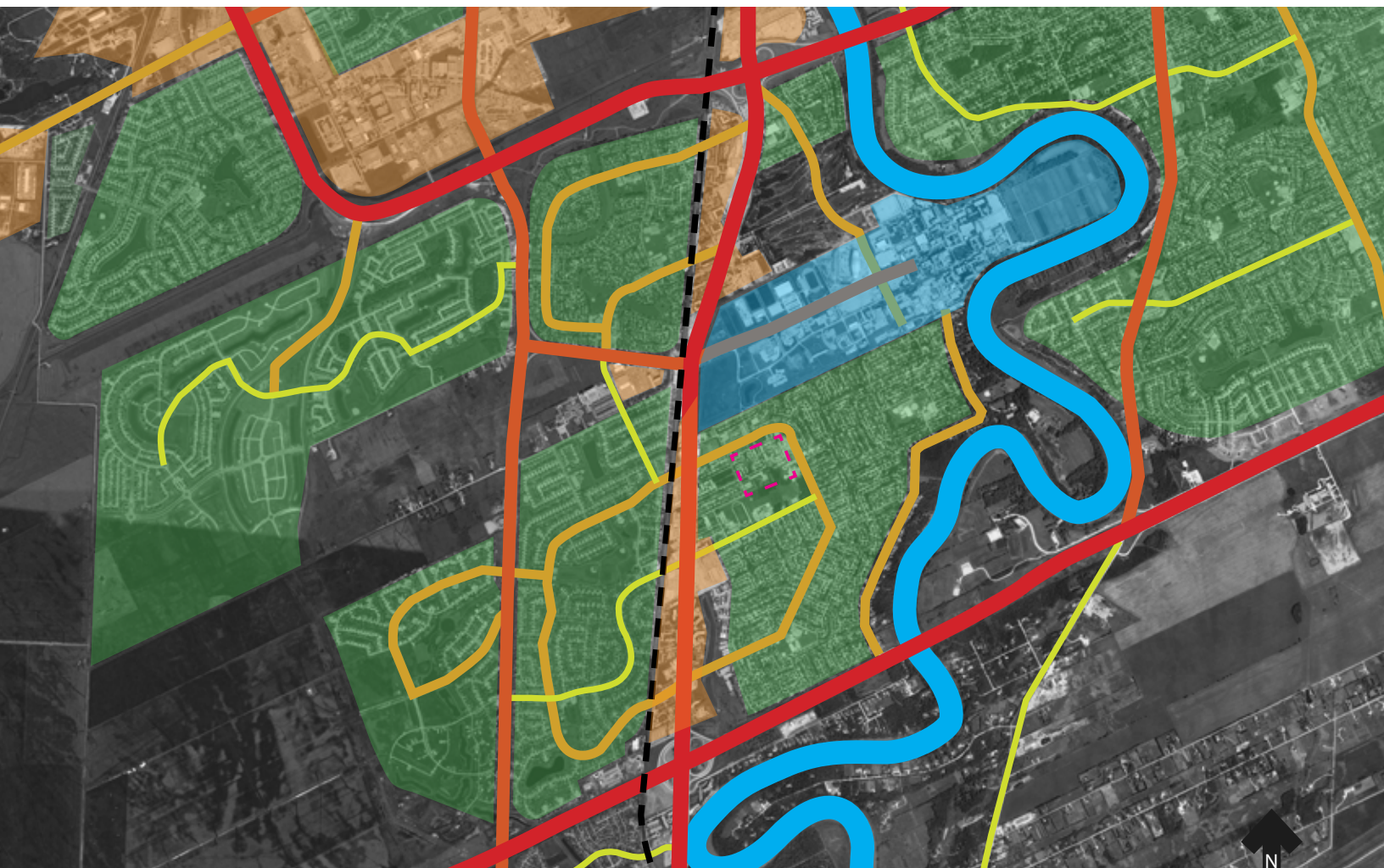


RICHMOND VILLAGE

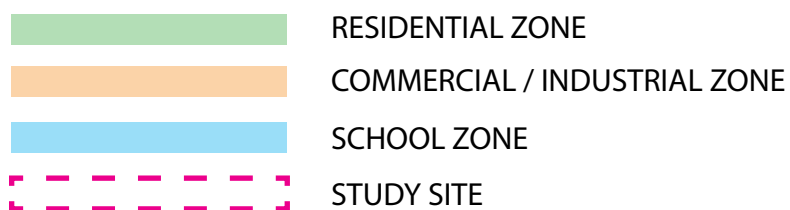


TUDOR VILLAGE

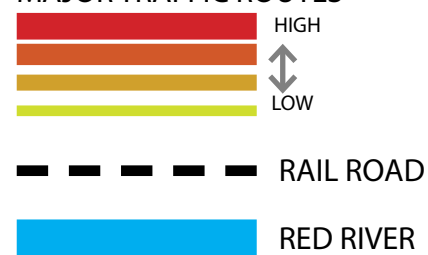
Figure 3.4. Street views of the site



0 500 1000 1500m



MAJOR TRAFFIC ROUTES



 **Figure 3.5.** South Winnipeg - major traffic routes and zones

3.2.2 MAJOR TRAFFIC ROUTES AND ZONES OF SOUTH WINNIPEG

The major traffic routes and zones map shows how the site fits into traffic network at an urban level. The site is not immediately adjacent to the busiest road, but does have direct access to the primary traffic road, and it is nested in a single-family residential housing area (see Figure 3.5).

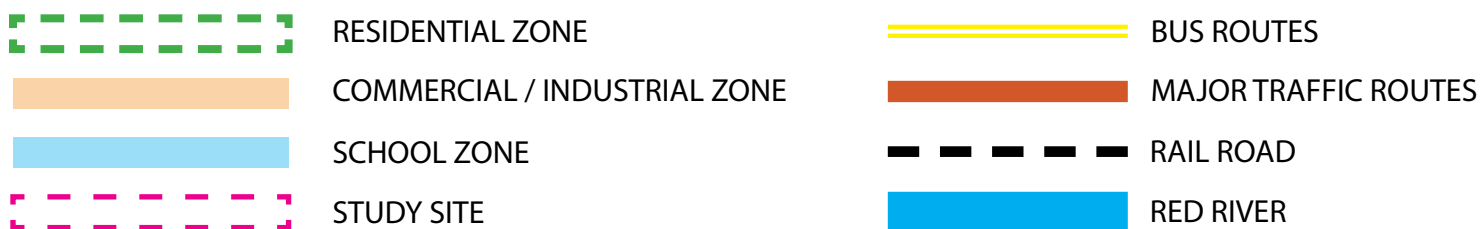
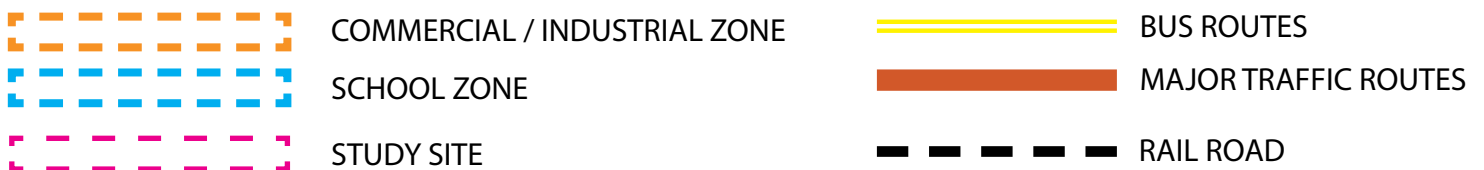


Figure 3.6. Fort Richmond - major traffic routes and zones

3.2.3 MAJOR TRAFFIC ROUTES AND ZONES OF FORT RICHMOND

There are two school zones near to the site. One is the University of Manitoba, located to the south of the site. The other is adjacent to the site, and includes the campuses of Dalhousie School, Acadia Junior School and Fort Richmond Collegiate High School. Commercial development is mainly concentrated along Pembina Highway, and consists of small, local businesses such as restaurants and specialty shops (see Figure 3.6).



 **Figure 3.7.** Site - major traffic routes and zones

3.2.4 MAJOR TRAFFIC ROUTES AND ZONES OF SITE

Zoomed into the site scale, this map clearly shows bus route servicing the site, and that a large portion of land along Pembina Highway is developed for commercial use. There is another commercial zone immediately beside the site, but since Polo Club is enclosed by fencing, the walking distance from living units to these local services is increased (see Figure 3.7).



BUS STOP



STREET PARKING



BUS ROUTE



ACCESS FROM SITE TO
BUS ROUTE

Figure 3.8. Street parking and access to bus route

3.2.5 STREET PARKING AND ACCESS TO BUS ROUTE

The parking lots located within the site are mostly used by residents, and visitors may park on the streets, as no heavy traffic is present there. Additionally, because the University of Manitoba is near the site, many of the tenants are students, and most chose to take the bus to campus (see Figure 3.8).



RESIDENTIAL UNITS
156 UNITS

stalls

PARKING STALLS
212 STALLS



VEHICLE ACCESS ROUTE



PEDESTRAIN ONLY ACCESS
ROUTE



FENCE

Figure 3.9. Build environment and circulation at Polo Club

3.2.6 BUILD ENVIRONMENT AND CIRCULATION AT POLO CLUB

The Polo Club has 156 units and 212 parking stalls assigned to residents. The main vehicle circulation is shown on the map in red line, it is a two-way loop with two entrances open to Allegheny Dr. Pedestrian circulation is identified by the concrete paved path, leading from each parking lot to the buildings. A pathway between Polo Club and Tudor Village is used as a shortcut for children to access to their schools more directly (see Figure 3.9).



RESIDENTIAL UNITS
132 UNITS

stalls

PARKING STALLS
149 STALLS

garage

PARKING GARAGES



VEHICLE ACCESS ROUTES



PEDESTRAIN ONLY ACCESS
ROUTE

0 25 50 75m

Figure 3.10. Build environment and circulation at Richmond Village

3.2.7 BUILD ENVIRONMENT AND CIRCULATION AT RICHMOND VILLAGE

Richmond Village has two types of buildings, six groups of townhouse and four three-storey apartment buildings, totaling 132 residential units. In contrast to Polo Club and Tudor Village, Richmond Village offers garage parking as well as surface parking lots. Moreover, there are four vehicle paths, located at each of the four corners of Richmond Village. There is no fence around the complex and people can access it from all directions. The pedestrian network mainly directs people to two destinations, the residential units and central playground (see Figure 3.10).



RESIDENTIAL UNITS
192 UNITS

stalls

PARKING STALLS
208 STALLS



VEHICLE ACCESS ROUTE



PEDESTRAIN ONLY ACCESS
ROUTE



FENCE

0 25 50 75m

Figure 3.11. Build environment and circulation at Tudor Village

3.2.8 BUILD ENVIRONMENT AND CIRCULATION AT TUDOR VILLAGE

Tudor Village occupies the smallest amount of land, but has the most residential units and reaches the highest build density. Eight three-storey walk-up buildings plus 208 surface parking stalls are situated in Tudor Village in a compact arrangement. Outdoor space in Tudor Village is very limited (see Figure 3.11).



■ *Figure 3.12.* Map of existing vegetation

PLANTS FOUND ON RESIDENTIAL AREA

Species Name	Common Name	Species Name	Common Name
Acer ginnala	Amur maple	Prunus virginiana	Chokecherry
Amelanchier alnifolia	Saskatoon	Quercus macrocarpa	Bur oak
Fraxinus pennsylvanica	Green ash	Salix sericea	Silkywillow
Pinus cembra	Swiss Stone Pine	Thuja occidentalis	White Cedar
Populus deltoides	Cottonwood	Tilia americana	Basswood
Populus grandidentata	Bigtooth aspen		

PLANTS FOUND ON WOODLOT

Species Name	Common Name	Species Name	Common Name
Achillea millefolium	Yarrow	Poa pratensis	Kentucky blue grass
Amelanchier alnifolia	Saskatoon	Populus tremuloides	Trembling aspen
Anemone canadensis	Canada anemone	Prunus pensylvanica	Pin cherry
Aster ciliolatus	Lindleys aster	Quercus macrocarpa	Bur oak
Bromus inermis	Smooth brome	Rhamnus alnifolia	Alder-leaved buckthorn
Calamagrostis canadensis	Marsh reed grass	Rubus pubescens	Dewberry
Carex spp.	Sedge	Salix bebbiana	Bebbs willow, Beaked willow
Cirsium arvense	Canada thistle	Sanicula marilandica	Snakeroot
Cornus stolonifera	Red osier dogwood	Spiraea alba	Narrow-leaved meadowsweet
Corylus americana	American hazelnut	Symphoricarpos occidentalis	Western snowberry
Crataegus rotundifolia	Round-leaved hawthorn	Taraxacum officinale	Dandelion
Crataegus succulenta	Long-spined hawthorn	Thalictrum dasycarpum	Tall meadow-rue
Fraxinus pennsylvanica	Green ash	Trifolium pratense	Red clover
Galium boreale	Northern bedstraw	Viburnum lentago	Nannyberry
Lathyrus venosus	Wild peavine	Viburnum rafinesquianum	Downy arrow-wood
Lysimachia ciliata	Fringed loosestrife	Vicia americana	Common vetch

Figure 3.13. List of existing vegetation on site

3.2.9 EXISTING VEGETATION

Approximately 70% of the trees were planted e when residential areas were built, and they are still in good conditions. Green ash trees line both sides of Allegheny Drive, creating a thick canopy in spring, summer, and fall. The woodlot occupies around 0.85 hectares of land, and has a high number of shrub species and a great density of young shrubs. A trail was found cut across the site at the time of the inventory. Only two paving materials are present within the site, pedestrian and vehicle paths are paved in asphalt, and the rest of space is covered by typical lawn grass (see Figure 3.12 - 3.13).

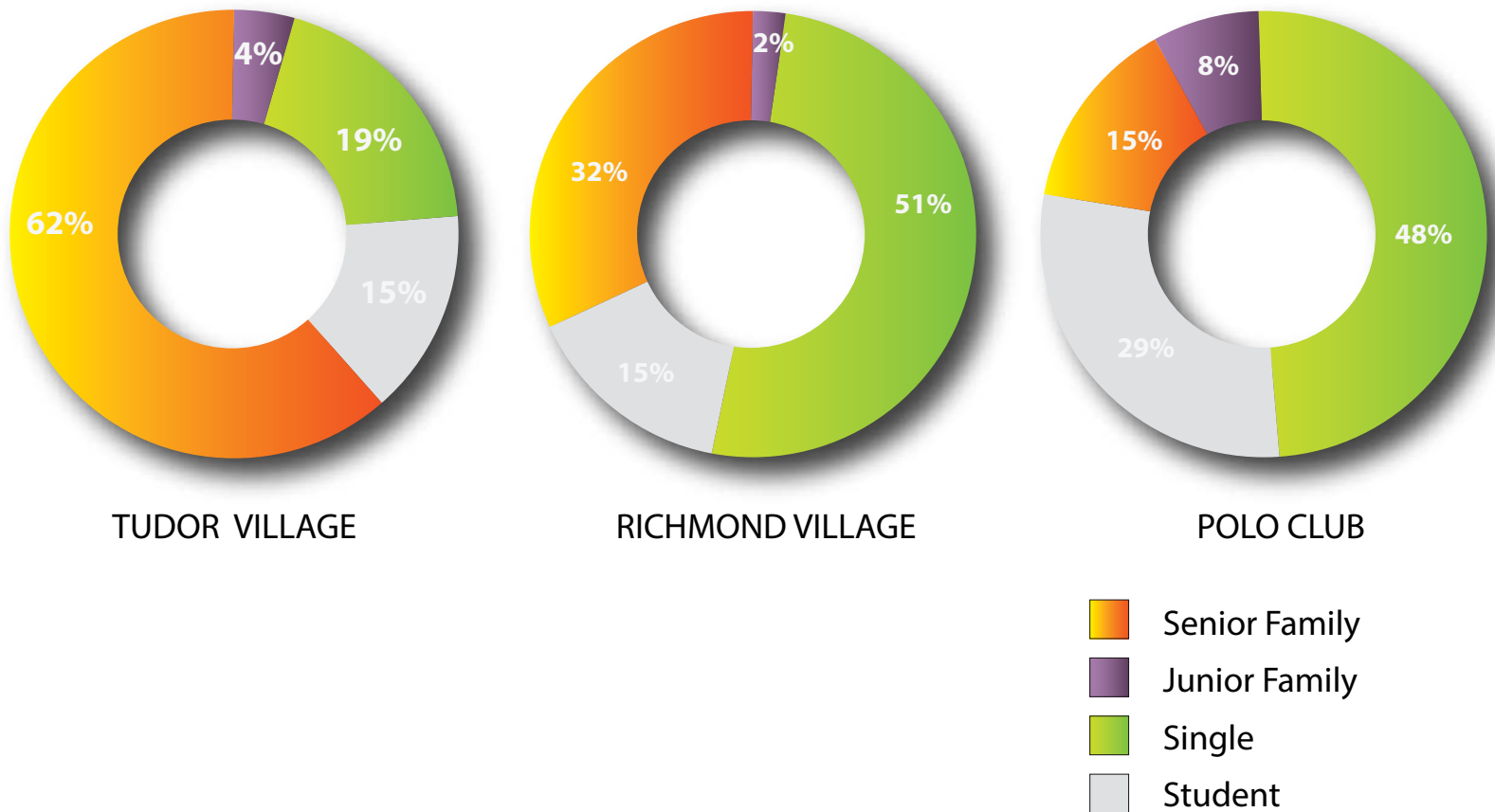


Figure 3.14. Occupancy of communities

3.2.10 OCCUPANCY OF COMMUNITIES

The occupancy of communities has direct relationship to the programmatic elements of design, occupants will be the users and active stewards of the site. It is necessary to identify the site users' age range, education levels, and cultural backgrounds, and take these characteristics into consideration during design decisions. Each area will be given a specific function according to the different types of users (see Figure 3.14).

3.3 BUILDING TOPOLOGY AND ITS ACCESSIBILITY

The arrangement of buildings, and their materials, colours and shapes, have a large impact on the character and experience of the space. The buildings determine the entrances and locate the contact points of pedestrian movement. These points should be carefully treated and well defined, because they have great potential to become gathering spaces for the community. The placement and physical characteristics of the buildings also influence the design solution, affecting the form, choice of materials, and establishment of visual connection from inside to outside.

Moreover, the buildings can be identified as private space. A full understanding of the buildings plays an important role in establishing relationships with other spatial categories.



POLO CLUB

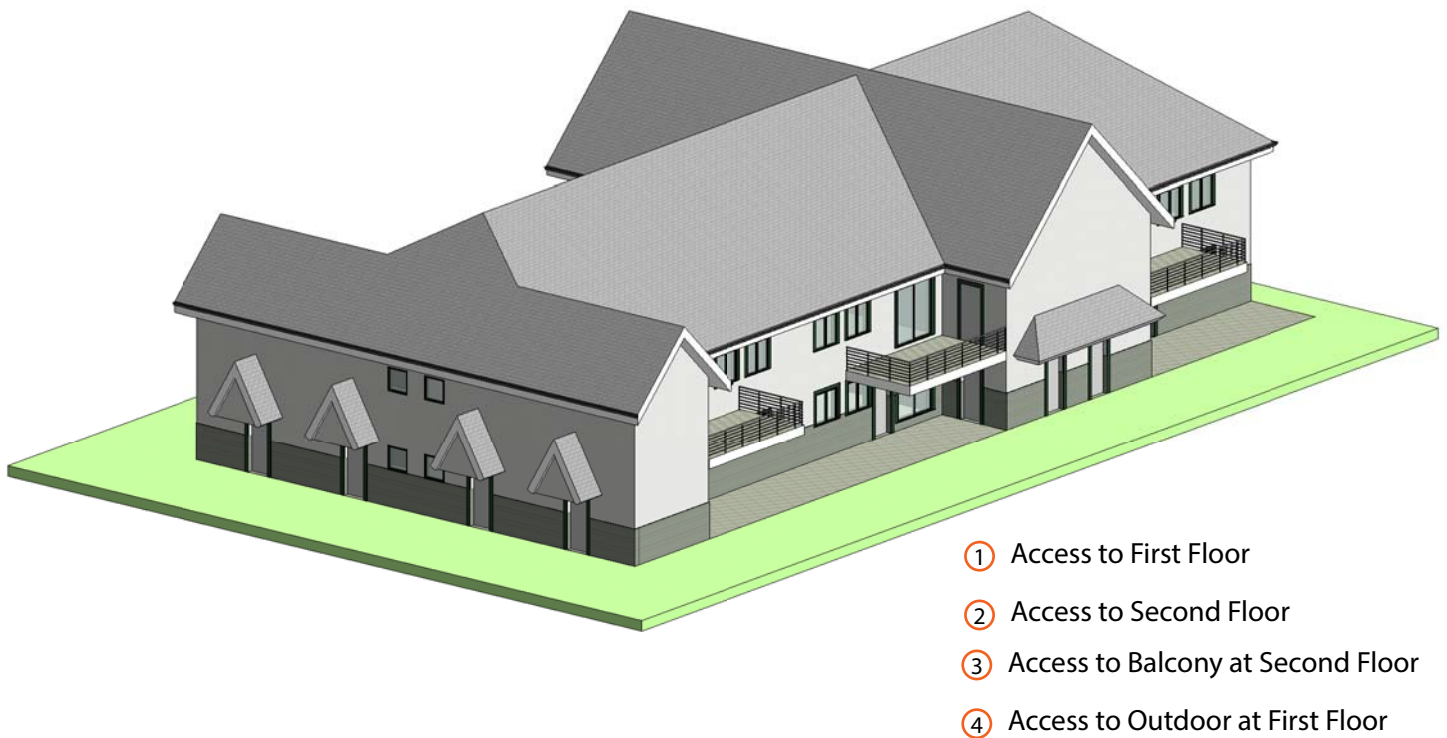


Figure 3.15. Building typology and its accessibility at Polo Club

3.3.1 BUILDING TYPOLOGY AND ITS ACCESSIBILITY AT POLO CLUB

Polo Club has 13 two-storey walk-up buildings, each containing 12 living units. The living units on the first floor have direct access to the outdoors through sliding doors; therefore, tenants in those units may use the space in front of the sliding doors for gardening purposes. Balconies on the second floor units act as an extension of interior space. The building is a typical wood structure with asphalt finish (see Figure 3.15).



TUDOR VILLAGE



- ① Access to First Floor
- ② Access to Second Floor
- ③ Access to Second and Third Floor

Figure 3.16. Building typology and its accessibility at Tudor Village

3.3.2 BUILDING TYPOLOGY AND ITS ACCESSIBILITY AT TUDOR VILLAGE

Tudor Village has a total of eight buildings with two lengths. The two longer buildings have 36 living units each, and the others have 24 living units each. The buildings in Tudor village are three-storey walk-up apartments (see Figure 3.16).



Entrance to the Apartment Building

RICHMOND VILLAGE - APARTMENT



■ *Figure 3.17. Building typology and its accessibility at Richmond Village*



RICHMOND VILLAGE - TOWNHOUSE



■ *Figure 3.18. Building typology and its accessibility at Richmond Village*

3.3.3 BUILDING TYPOLOGY AND ITS ACCESSIBILITY AT POLO CLUB

Richmond Village has two types of buildings: three-storey apartment buildings and two-storey townhouses. The apartment buildings only have one entrance, from which all residents must access their units. The living units on the second and third floors all have balconies. The townhouses are superior in that they have backyards that may be used as garden space. These tenants can enjoy outdoor green space more than those living in the apartment buildings (see Figure 3.17-3.18).

3.4 SPACE STRUCTURAL ANALYSIS

The analysis is a tool to synthesize and interpret inventory information. It will evaluate existing elements and discover potential. The results of analysis will also test the feasibility of the program plan, and provide a framework for design.

The space structural analysis facilitates a better understanding of the existing spatial organization and arrangement of residential areas. Its emphasis is on the shape of outdoor space, which is defined by buildings, trees, and topography. It also recalls the most important spatial feature of *Lilong* housing, the interrelationships between spaces, and forms a comparison between housing developments in Shanghai and Winnipeg.

The interrelations between: private, semi-private, public and semi-public space are important for the functioning of the housing development. They create a feeling of safety and give residents a sense of belonging. Therefore, it is necessary to look at the spatial characteristics of residential areas in Winnipeg, to find the missing ground and provide design approach that is both creative and analytical.

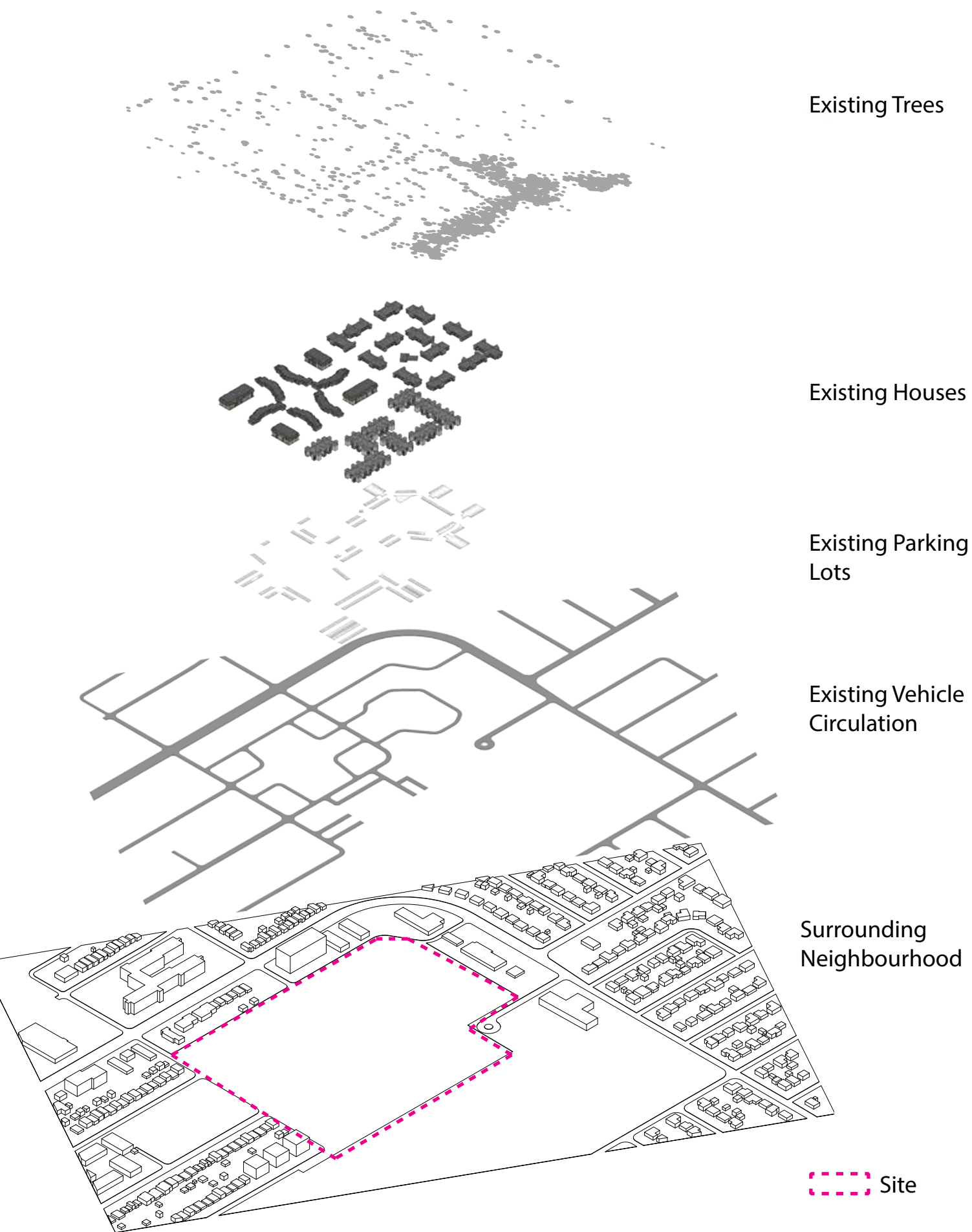


Figure 3.19. Decomposition of existing built elements

3.4.1 THE DEFINITION OF DIFFERENT SPACE CATEGORIES

The definition of different space categories will provide clear principles while defining each space during design processing. In "Analysis of urban space structure in residential areas" (1996), Dorota Włodarczyk summarized each space as follows:

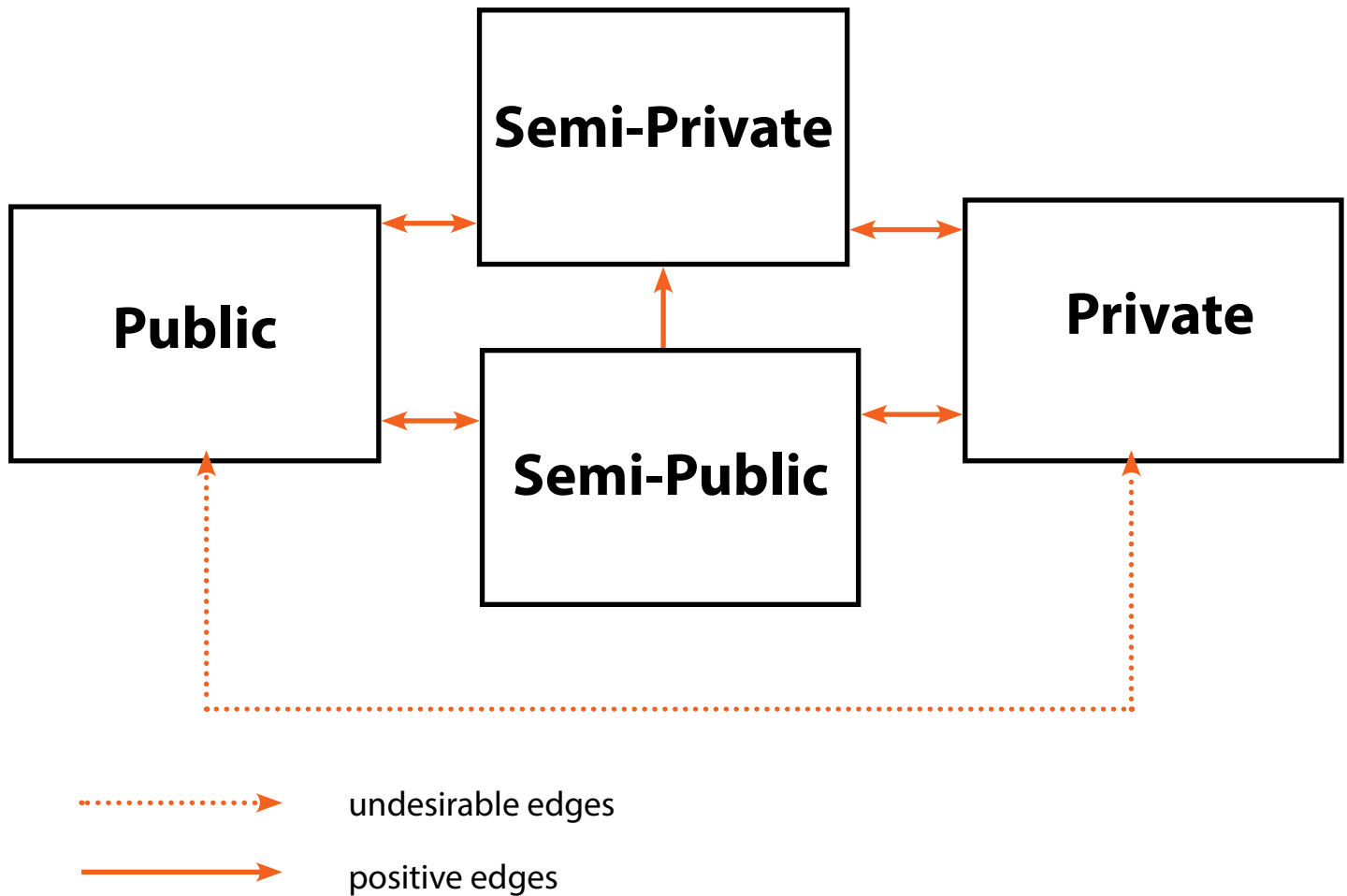
Private - Private space is the territory owned by a person or family and usually constitutes a legally owned property. Private space is always separated from its surroundings, in order to create a feeling of intimacy and isolation

Semi-private - Semi-private spaces is also owned privately, but is available for others in a limited way by the will of the owner, such as unfenced front lawn, entrances, porches etc. Unfenced or symbolically delimited front gardens surrounding a court or cul-de-sac in some senses enlarge the semi-public space of the street or square.

Semi-public - Semi-public spaces may delimit a group of houses and are identified by inhabitants through a set of signs and symbols. Together, semi-public and semi-private spaces located within a larger territory create a new kind of space: communal space, enhancing the safety of inhabitants by creating a feeling of sharing a common responsibility for it.

Public - The formation of public space is based on broad availability and accessibility. It is shared by a growing number of people. Transit roads, common squares and parks can be easily identified as public space, as they are available to all inhabitants, their guests, and random passers-by.

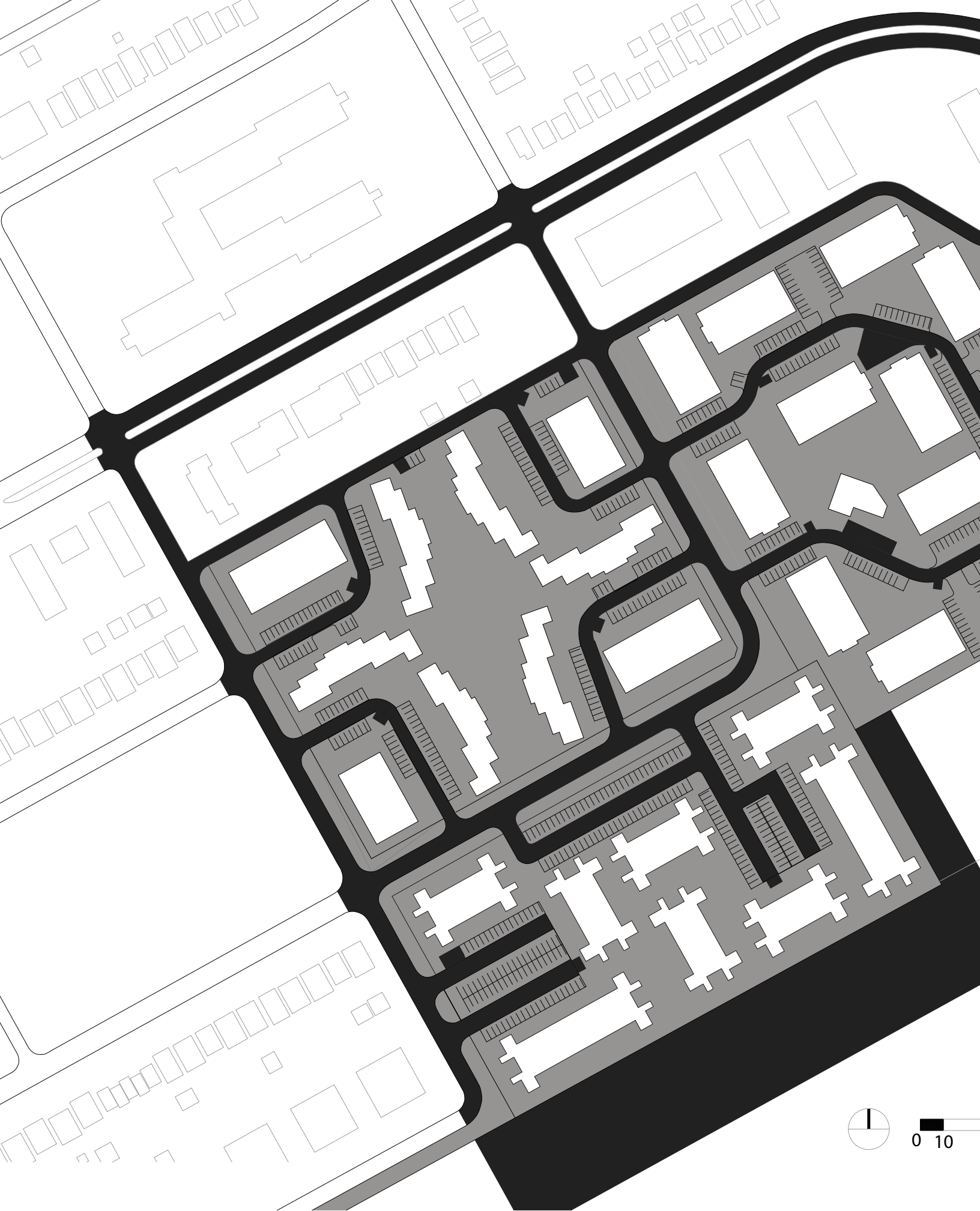
In any environment, space may be occupied by a number of users, and some spaces may overlap, while others are strictly delimited. This requires some boundary notation, which makes it possible to identify each space. The boundary elements may include walls and tall fencing; boundary symbols may include lower fences, changes in ground elevation, etc. The perception of space is dynamic and more concerned with the potential actions that may take place there than the shape of the space itself. The qualification of space relies upon the way in which a person will act and interact with others within it. Unclear identification of space may cause some misunderstanding and social problems (Włodarczyk, 2003).

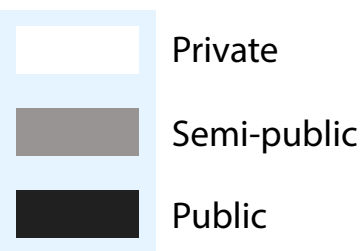
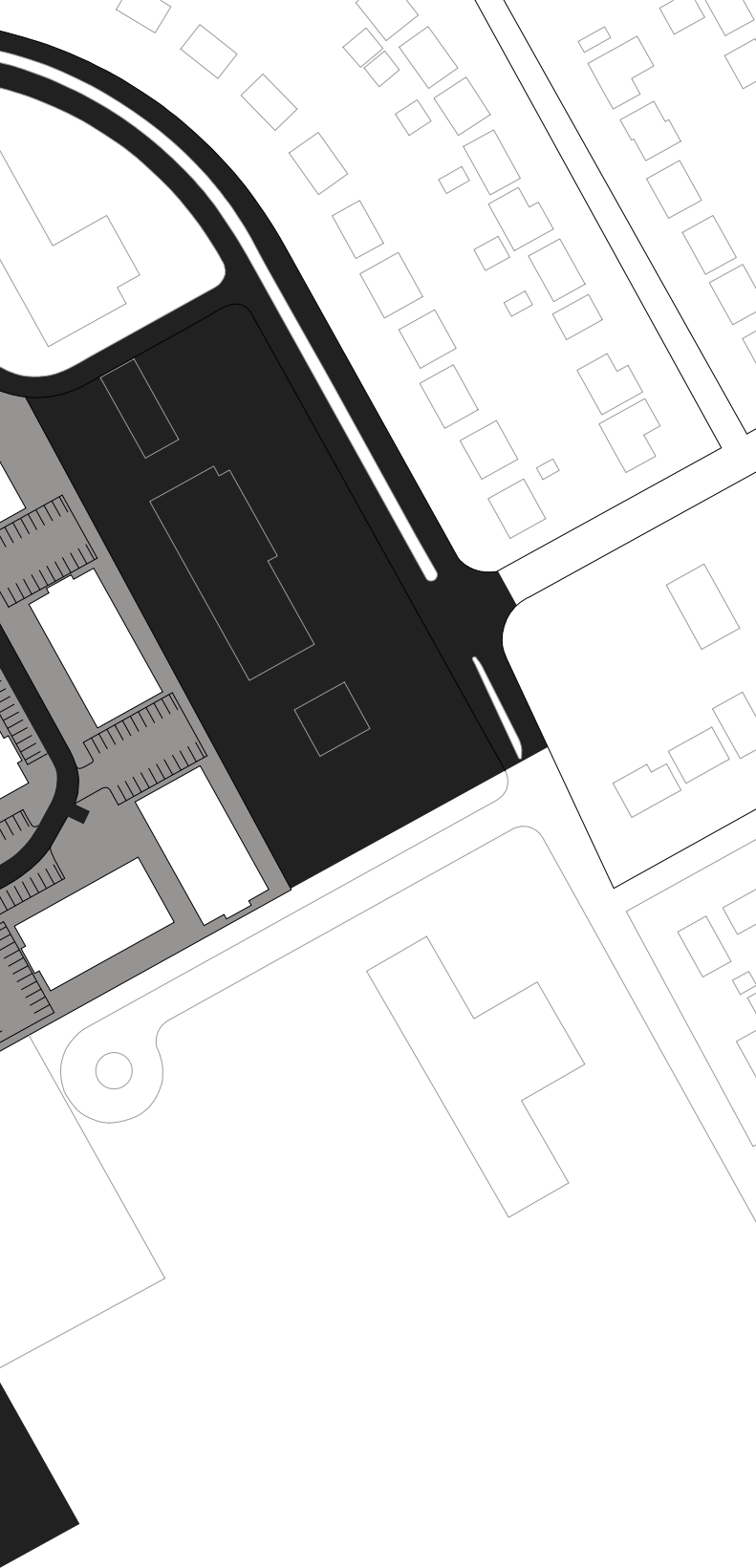


■ Figure 3.20. Connections between spaces

3.4.2 CONNECTIONS BETWEEN SPACES

The diagram of connections between spaces demonstrates the edges of each space category demanding special care. These edges also can be considered as contact points between neighbouring spaces. Where there is undesirable adjacency of public and private space, it is necessary to meticulously develop the transitional zone. The distribution of and proper proportion between public, semi-public, semi-private and private spaces are vital for the social qualities of the area (see Figure 3.20).

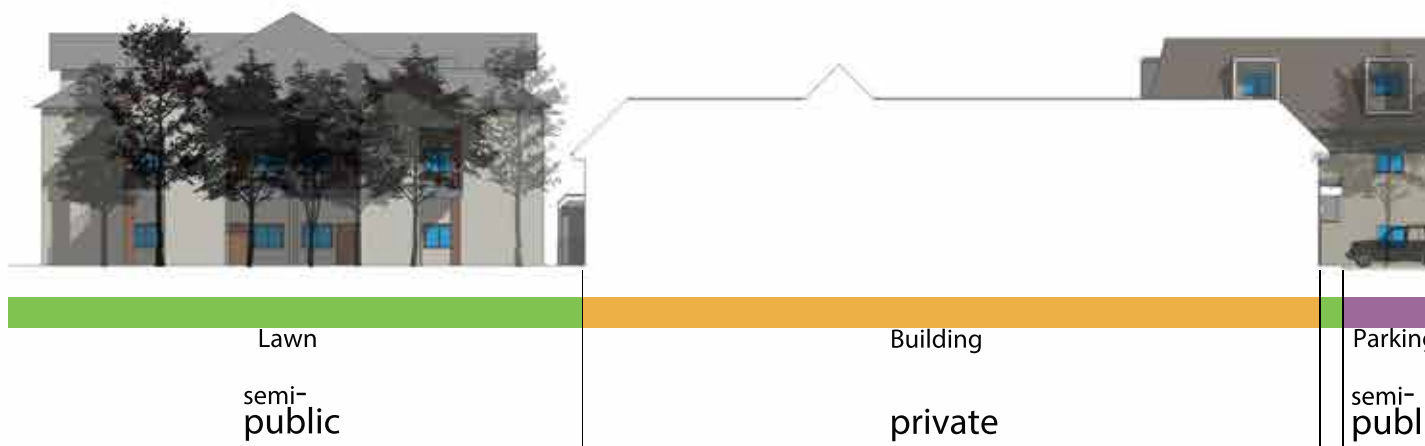




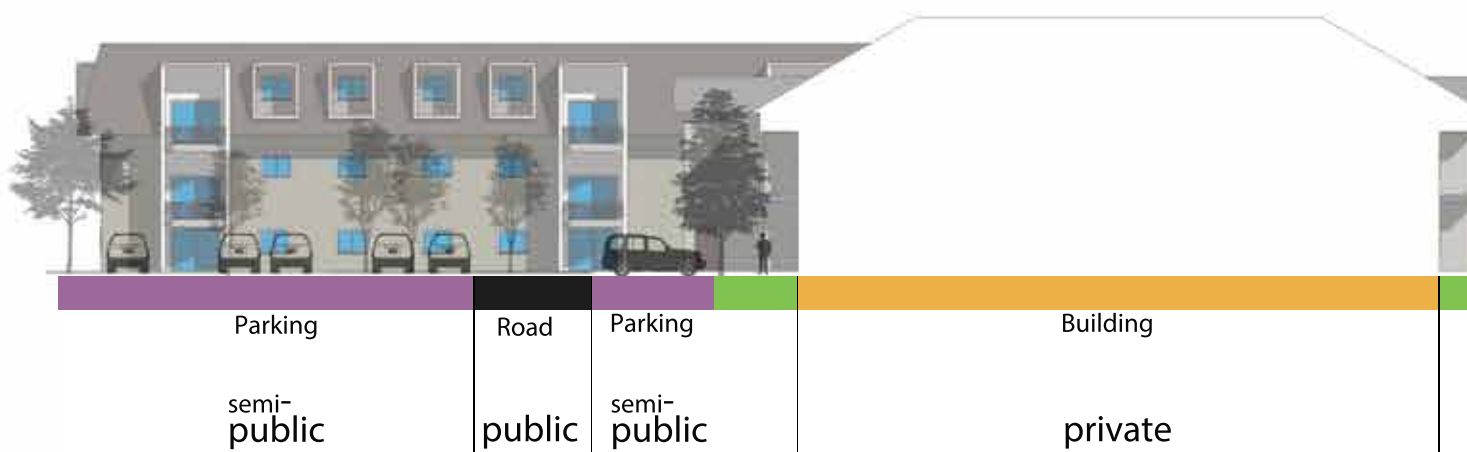
3.4.3 EXISTING SPACE CATEGORY

According to the definitions of space categories, three types of space can be found on the site area: private, semi-public and public. However, each space category is not identified with a clear notation, and people experience difficulty in respecting different types of spaces, which may cause misunderstanding and social problems (see Figure 3.21).

Figure 3.21. Existing space category

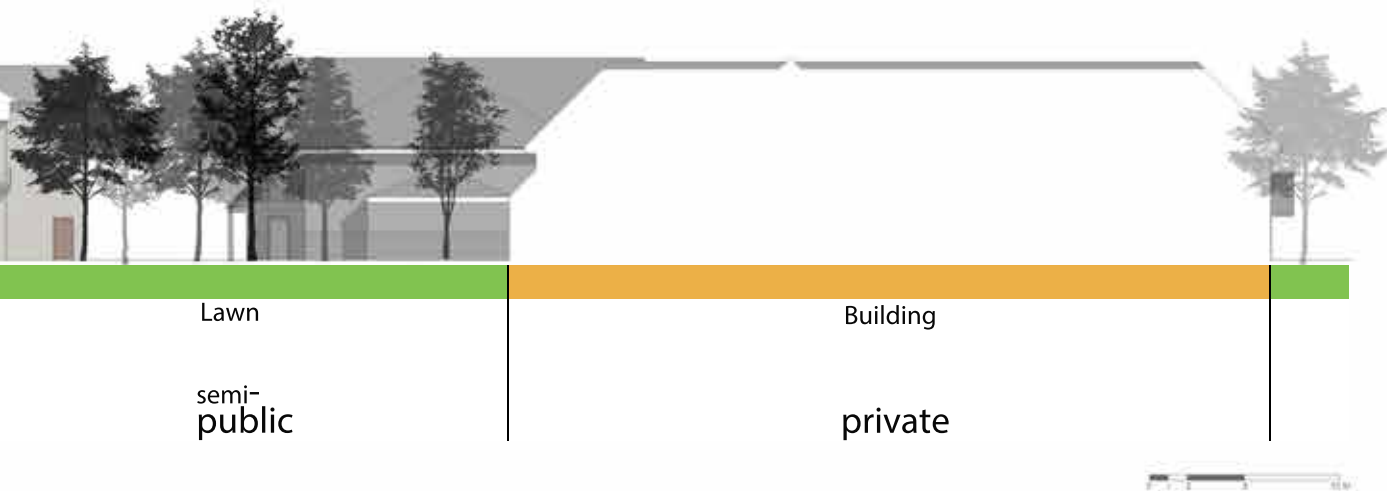
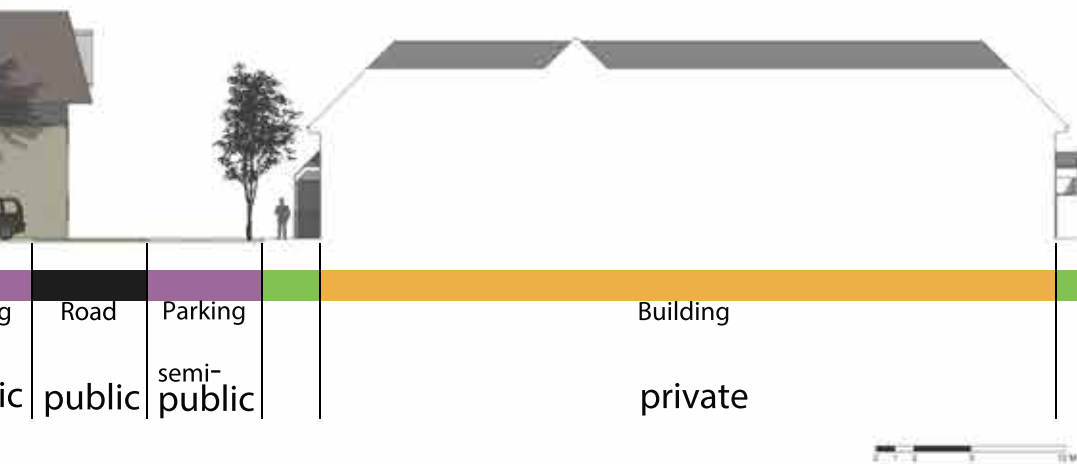
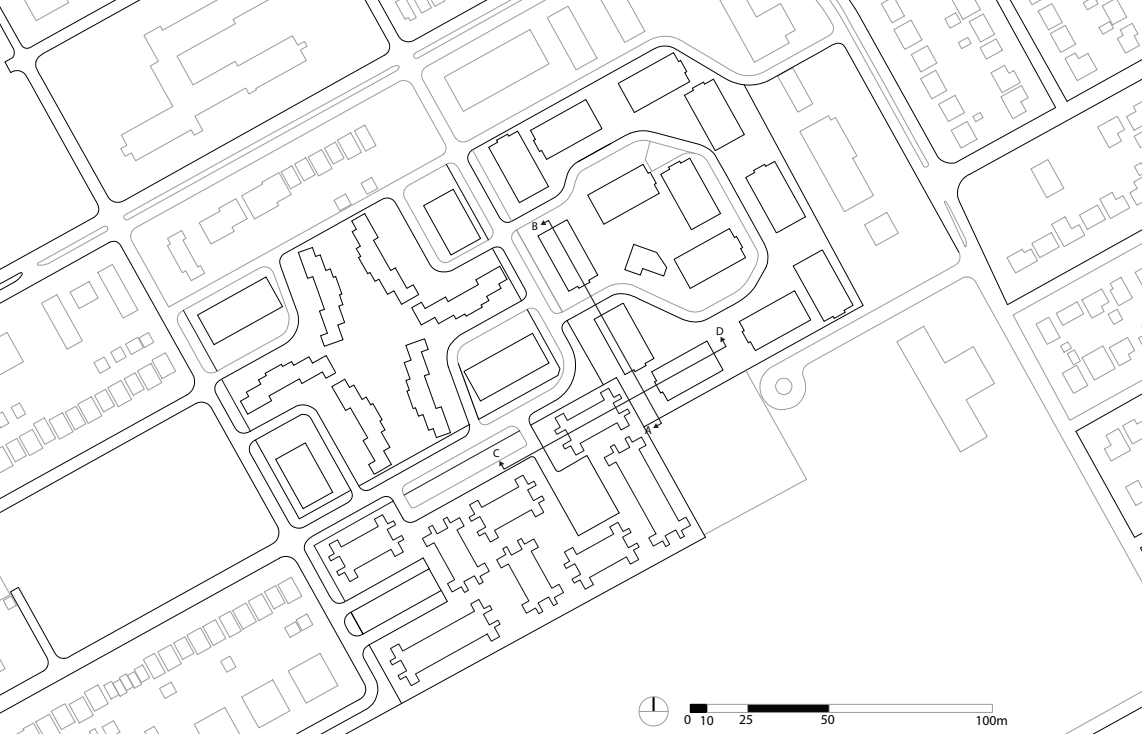


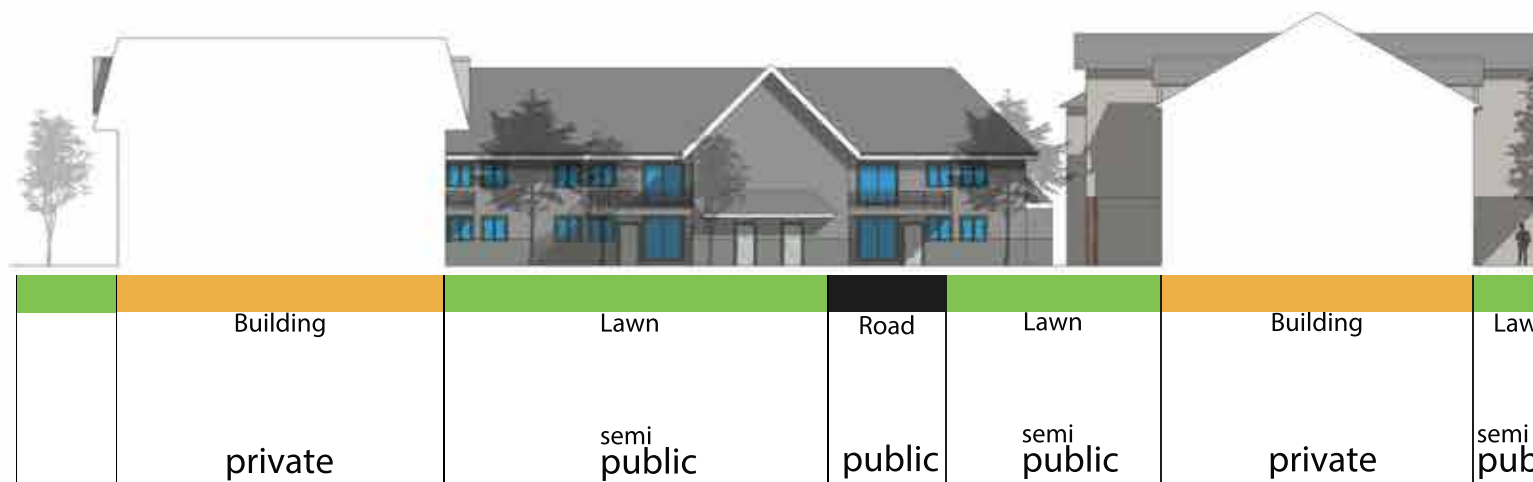
Section A-B



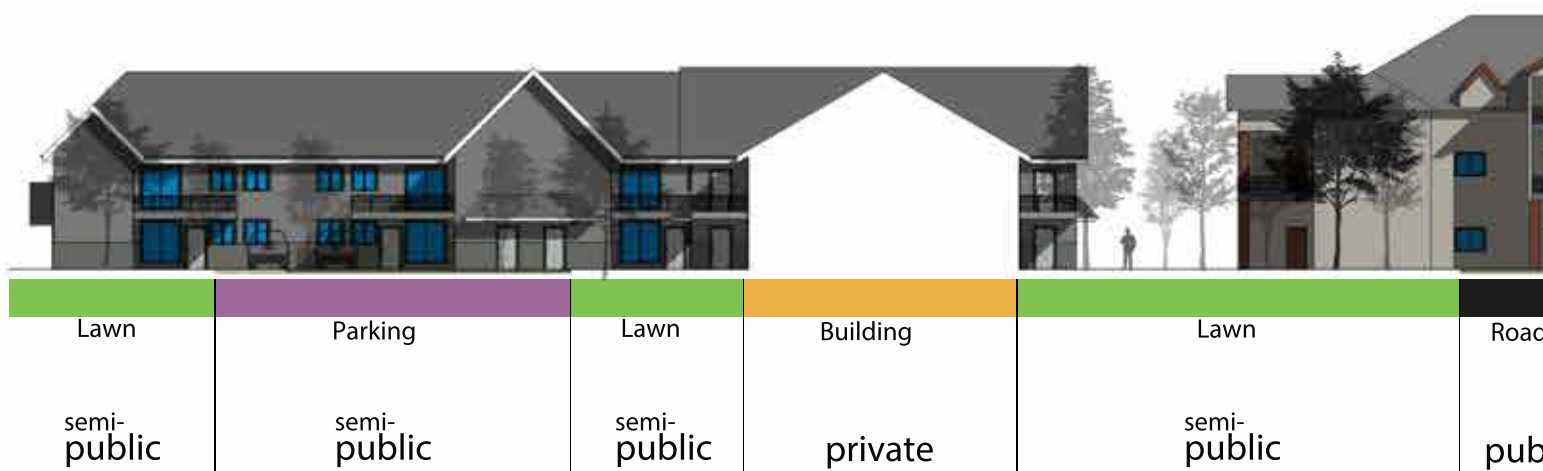
Section C-D

Figure 3.22. Spatial hierarchy analysis of study site through sections - part one



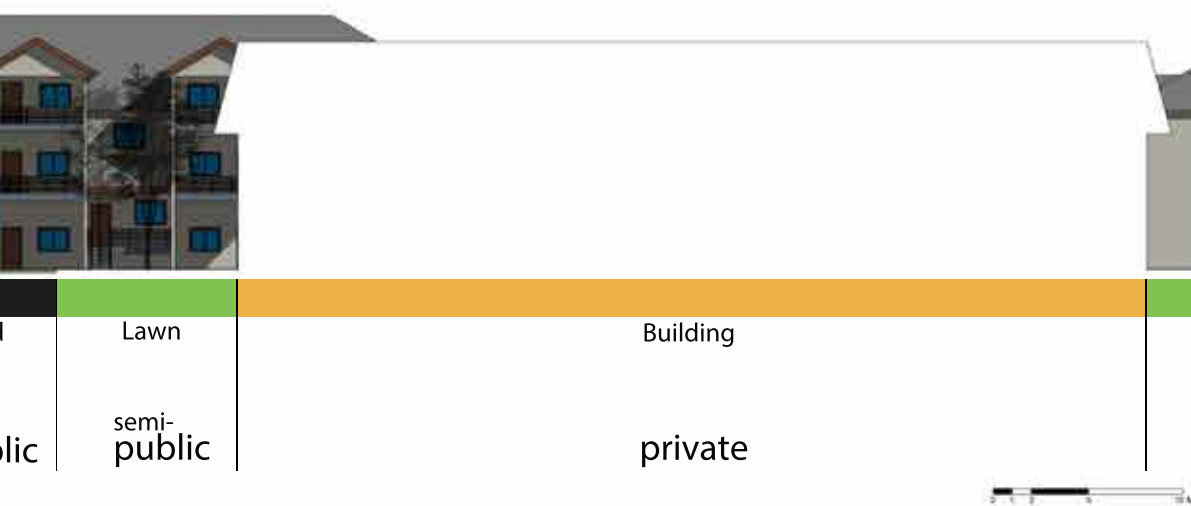
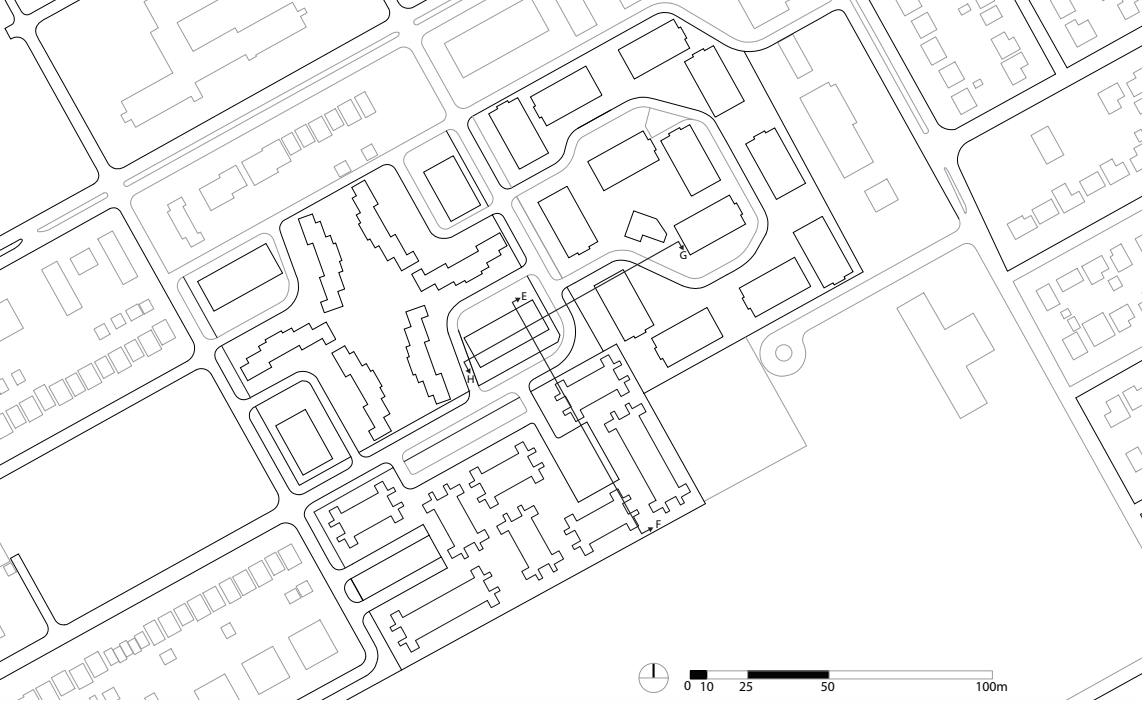


Section E-F



Section G-H

Figure 3.23. Spatial hierarchy analysis of study site through sections-part two





PAVING MATERIALS
Asphalt
Lawn Grass

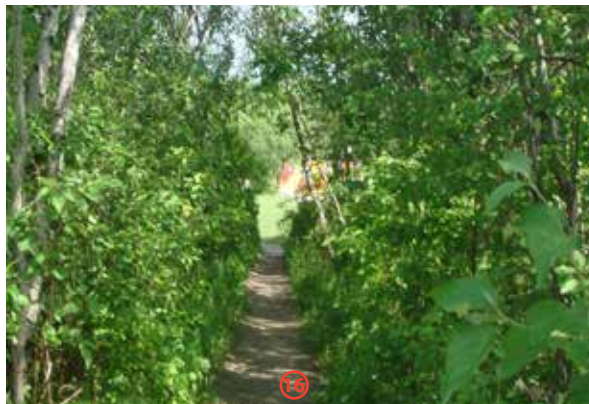




Figure 3.24. Images of each space categories



3.4.4 IMAGE DESCRIPTION OF EXISTING SPACE CATEGORY

The images not only show the existing condition of each space category, but also reveal the existing landscape characteristics. Paving materials on the site area are asphalt and lawn grass. Throughout the entire site, there are no sitting facilities installed. Moreover, the most attractive component of the site is the woodlot, which provides a scenic view to the neighbourhood (see Figure 3.24).

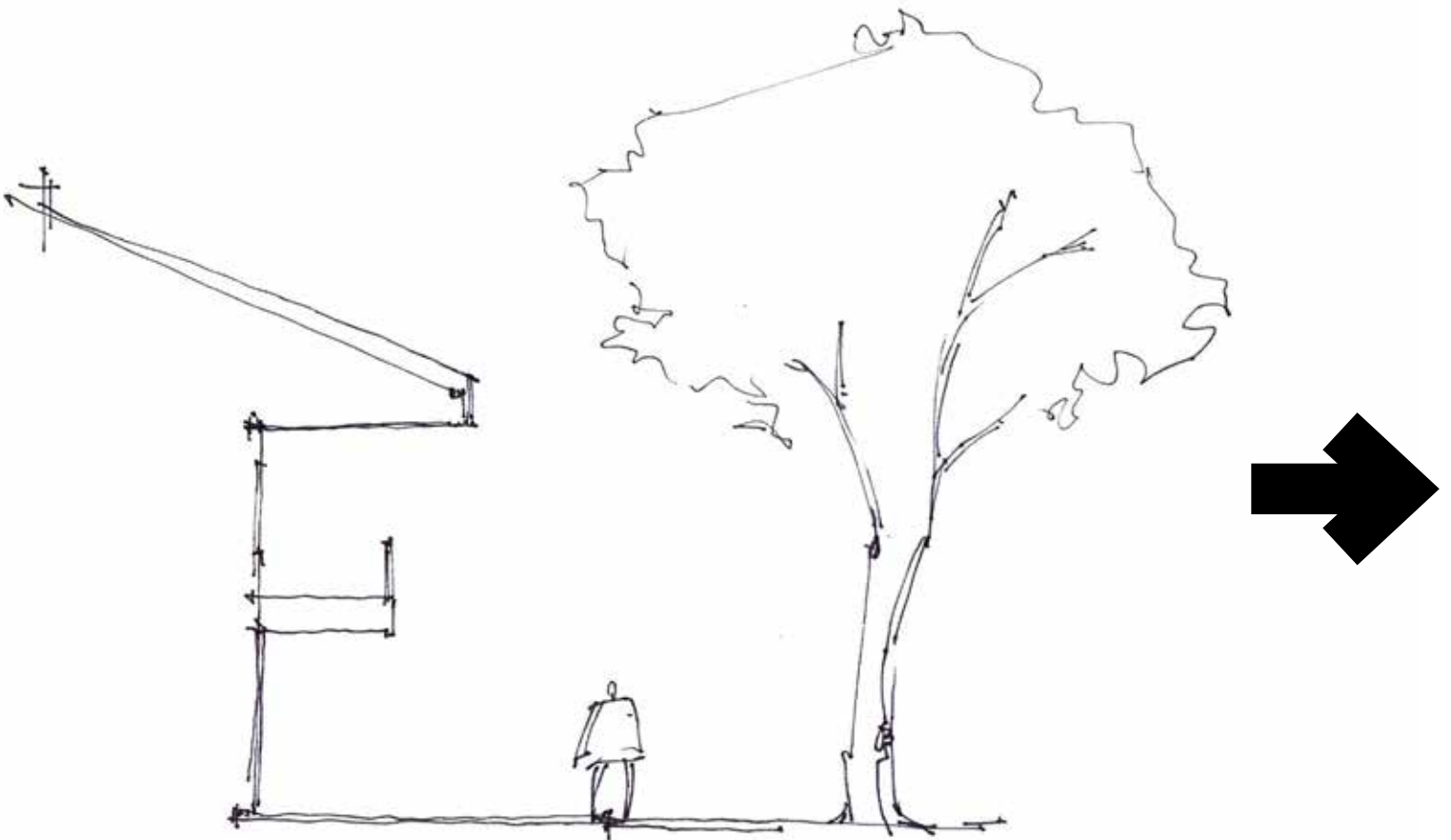
3.5 CONCLUSION

Through graphic representations of spatial properties, analysis and diagrams not only convey the essential characteristics and relations of outdoor space, but also provide opportunity to re-discover potential and possibility. These findings will be brought into ideas and intentions for the design, providing support for the designers in translating human expectations into the appropriate landscape form.

four.
DESIGN

4.1 DESIGN CONCEPT

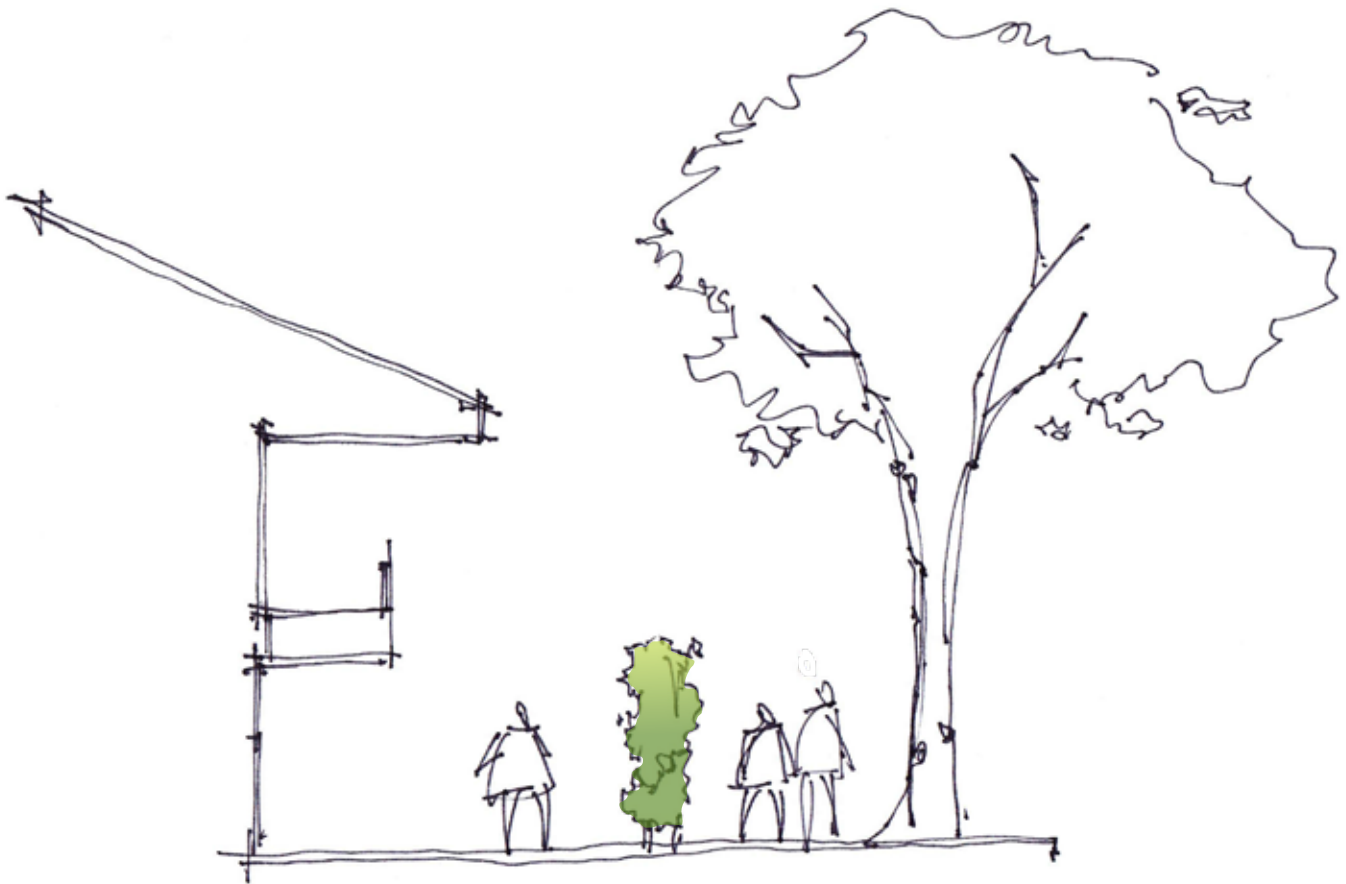
The intention of the design is to create transitional zones between public space and private, inserting and refining the semi spaces. The improvement of space categories will enrich residents' outdoor lives. Moreover, it will encourage people to spend more time outside and interact with others, by establishing a sense of safety and belongings.



■ Figure 4.1. Sketches of concept

4.2 DESIGN IDEA

The design idea is to use hedges as clear notations for each space category, forming graduation of spaces, as well as creating a sense of enclosure that is both comfortable and safe. Furthermore, the visual character of different choice of plants will not only give the space a unique identity throughout the seasons, but also offer various landscape forms, such as spring flowers, autumn leaves, and fruit, providing year-round appeal and enriching residents' outdoor experiences.



Master Plan 1:1000



Figure 4.2. Master plan



entry square

parking lot

entry square

existing building

rows of suger maple

entry square

dalhousie school

grove of suger maple

community garden

piazza

existing woodlot

open field

4.3 MASTER PLAN 1:1000

The master plan presents how hedge structures divide the space into semi-private and semi-public spaces, giving the place a spatial order from public to semi-public, semi-private, and private (see Figure 4.2). The semi-public and semi-private spaces function as transitional zones, and prevent undesirable adjacency between public and private spaces.

According to different building environments, the void spaces the hedges create occur in different forms and sizes. These spaces are given different functions based on each building's typology and site users, and include a playground, entry square, piazzas or shared gardening space for residents who live in the same building. The hedge structures that flow into school zones through the existing woodlot delineate a community garden, which offers communal space for the entire neighbourhood.

The analysis of accessibility within existing buildings provides a solid basis to determine the openings within the hedge structure: an opening matches the entrance of every building, and residents can access their living units as usual. Vehicular circulation, as public space, remains as before. Pedestrian circulation is transformed to a stick-like pathway system. Thanks to gravel paving on both sides of the pathway, rainwater infiltrates the gravel bed and after being purified, recirculates water back to the surrounding vegetation.

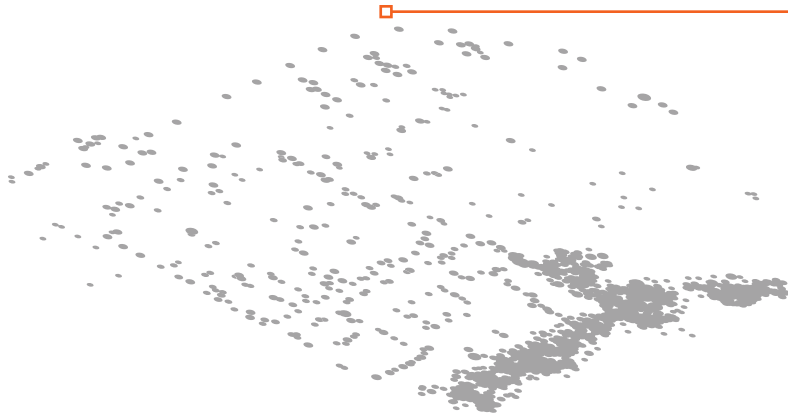
Hedges are also placed around existing parking lots, creating enclosed semi-public space in between public streets and private buildings, as well as providing residents with a pleasant view.

4.4 PROPOSED DESIGN LAYERS

Three proposed design layers are added into the existing build environment: new hedges, new pathways and new trees (see Figure 4.3). The new hedges are the most important design components to clarify the spatial order, giving each space category a distinct notation.

The new pathway is designed to follow the hedge structure, and features a stick-like design (see Figure 4.5), making way finding more interesting.

Newly added trees blend with existing trees on the site, forming rows of trees, providing a canopy for pedestrians, replacing fences, and giving the neighbourhood green boundaries.



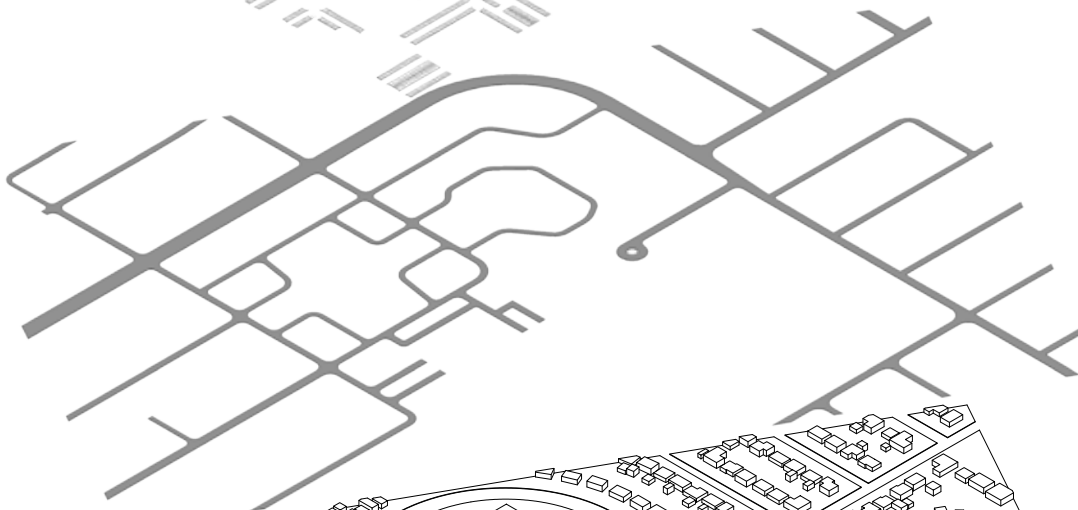
Existing Trees



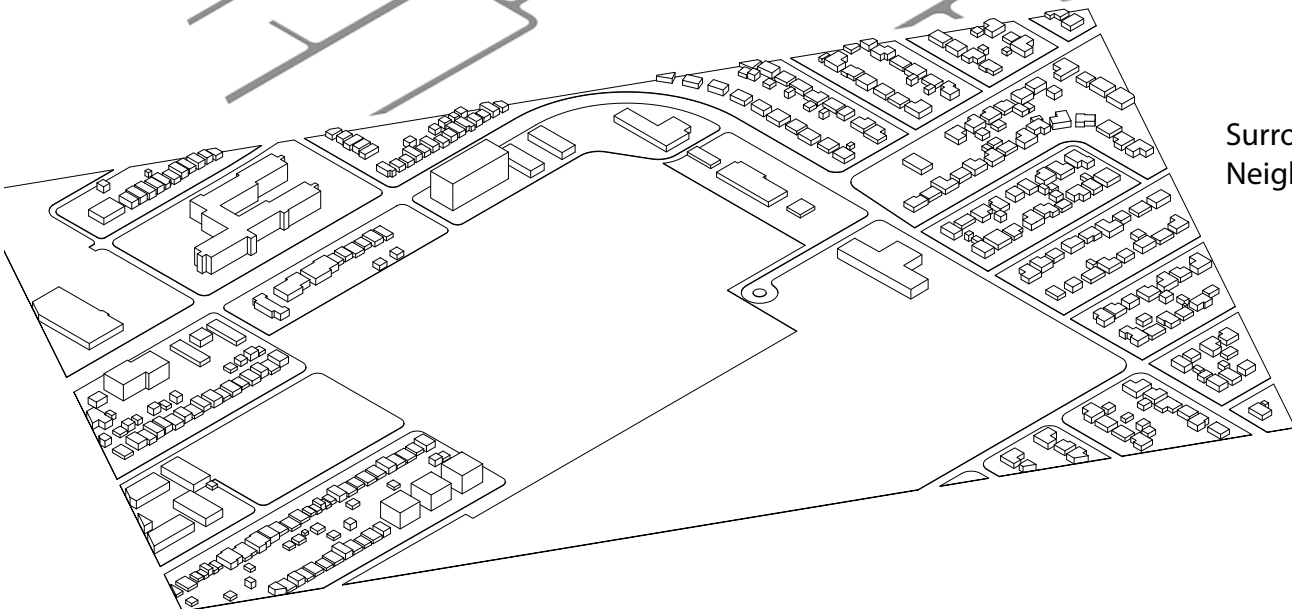
Existing Houses



Existing Parking Lots



Existing Vehicle
Circulation



Surrounding
Neighbourhood

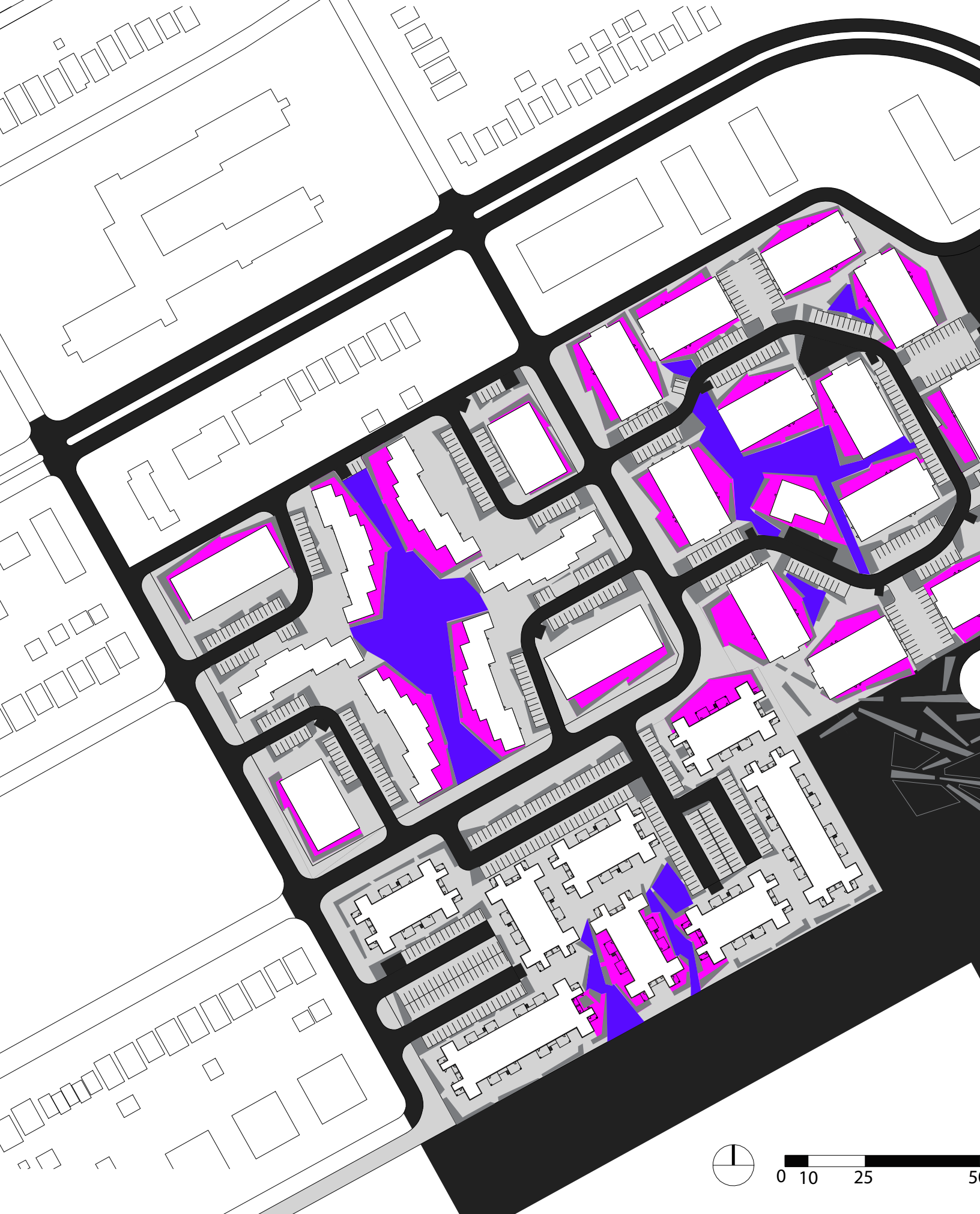


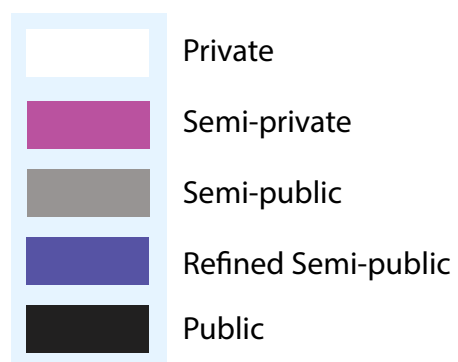
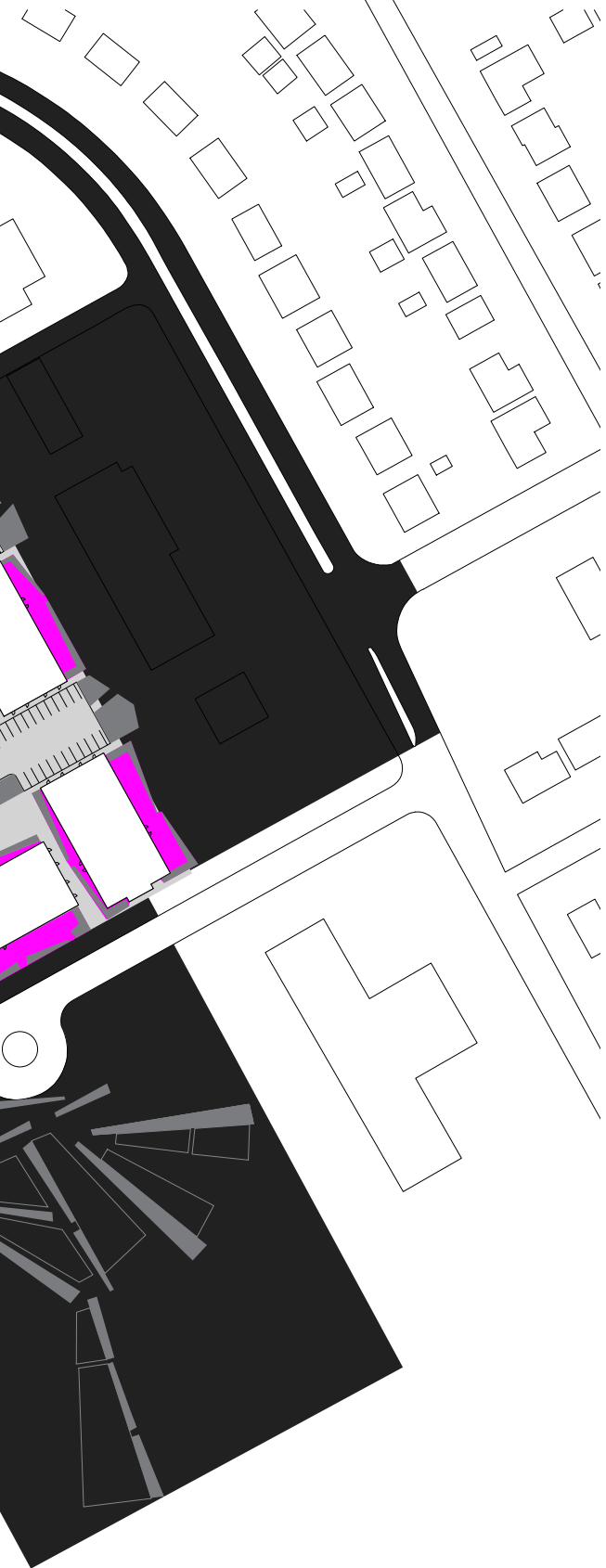
New Trees

New Pathways

New Hedges

■ Figure 4.3. Proposed design layers





0 100m

Figure 4.4. Proposed space category





4.5 PROPOSED PEDESTRIAN CIRCULATION

A new pedestrian pathway system is integrated within the hedge structures. The stick-like pathways are paved by cast-in-place concrete. On both sides of the pathway, the spaces are offset by various width, and filled with one quarter inch pea gravel, in order to allow wild plants to grow freely, as well as providing permeable surface to gain rain water and irrigate plants around them.

■ *Figure 4.5. Proposed pedestrian circulation*

4.6 DESIGNS

4.6.1 DONUTS PLAYGROUND (Original scale 1:200)

Donuts playground is captured from the centre area of Richmond Village (see Figure 4.6). The private space in this area is made up of townhouses, which each has access to a backyard. The hedges are mainly established in the backyard, forming a semi-private space. This space allows people who live in the same building to share and care for the space, encouraging gardening as a physical activity (see Figure 4.7).

Each block of hedge is designed to gradually decrease or increase height and width from one side to another. The intention of doing this is to create a flickering and dynamic scene as people move around the space (see Figure 4.8 - 4.9).

The central area, which was originally a playground, is transformed to a multi-functional semi-public space to support organized or impromptu physical activity. The redesigned playground is surrounded by hedges and separated from the seating areas, giving the children a sense of their own place. The donut play structure, is made of synthetic rubber dermis, allows children to explore their own way to play and interact with the natural environment.

The wooden platform provides a seating area and allows adults to relax while supervising their children, letting them feel comfortable while their children play independently. Benches are installed along the pedestrian routes, either under trees or against hedges, allowing site users to sit in the shade and people-watch or socialize.

New elm trees are added to the existing trees, and stand parallel to the hedges, providing a canopy along the pedestrian route. The trees and hedges form multiple vegetation layers on the ground elevation.

Finally, the **CHARLES JOLY LILAC** is chosen for this area. Large panicles of double reddish purple flowers will give the site visual interest and creates space recognition for this area (see Figure 4.26).



Figure 4.6. Location of donuts playground

Donuts Playground Original Scale 1:200



Figure 4.7. Plan of donuts playground



townhouses

existing elm tree

**granite nature
stepping stone**

charles joly lilac hedge

existing green ash

**cast-in-place concrete
paved path**

wood deck

bench

new elm tree

charles joly lilac hedge

**cast-in-place concrete
paved path**

parking lot

1/4" pea gravel

0 2 4 6 8 10m

Sections Cut

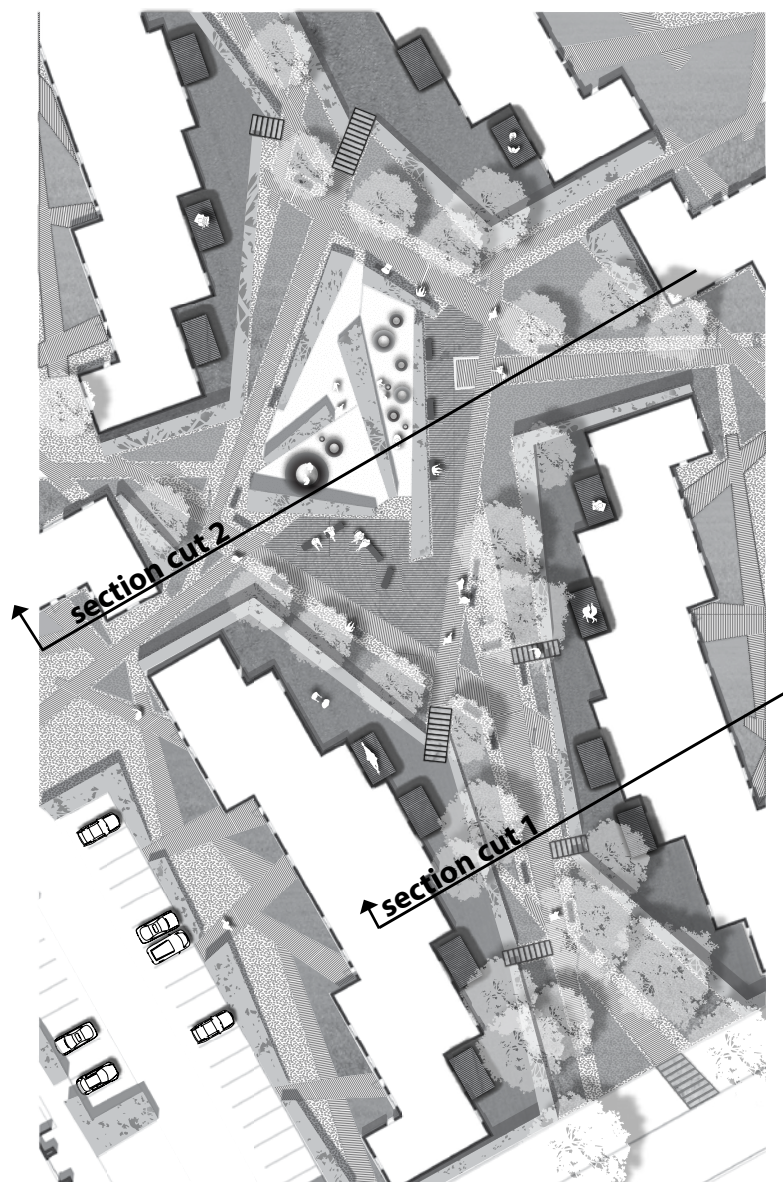


Figure 4.8. Section 1- south entrance of donuts pl



ayground





Figure 4.9. Section 2 - donuts playground

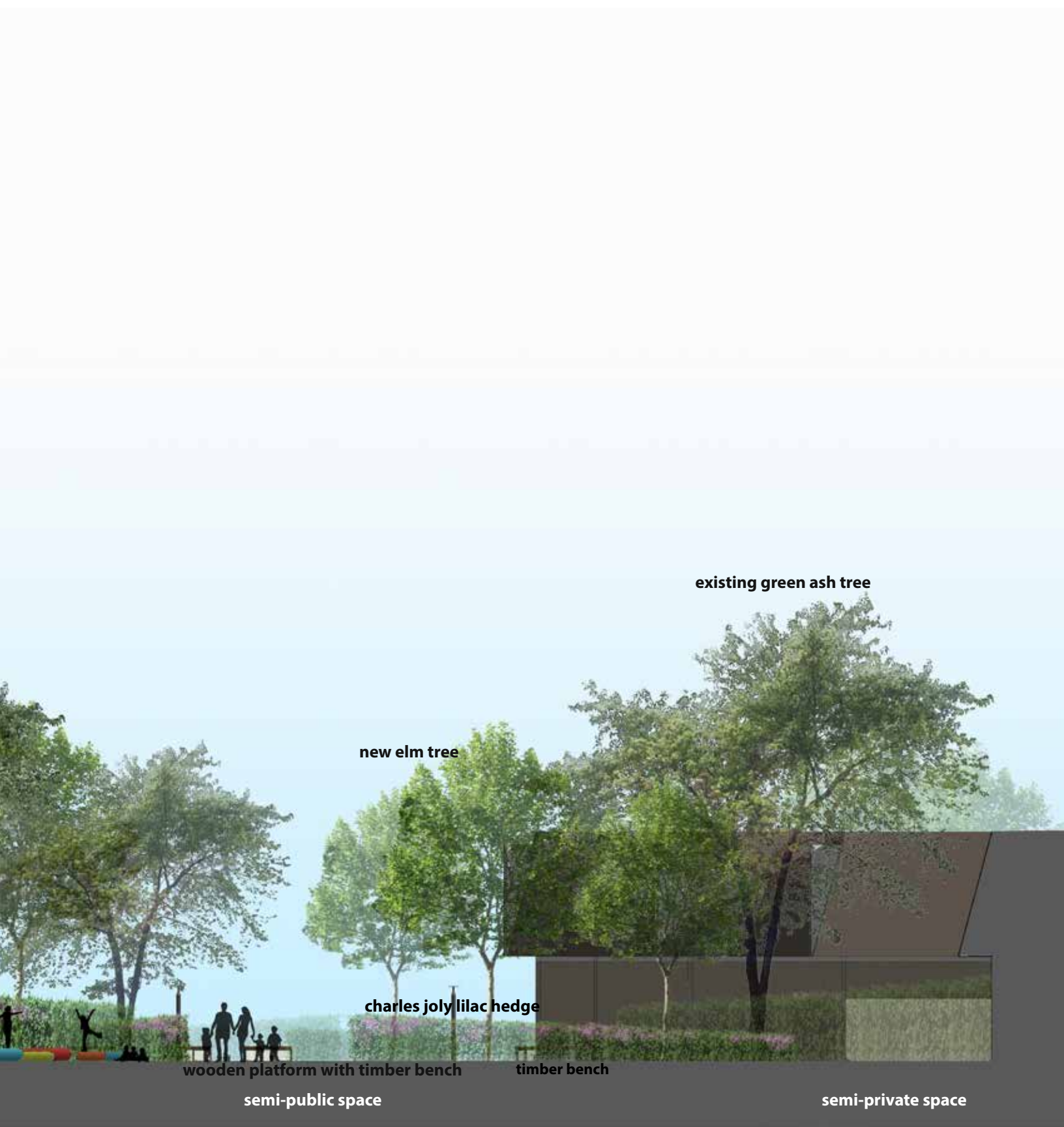




Figure 4.10. Perspective view of south entrance of donuts playground





Figure 4.11. Perspective view of north entrance of donuts playground





Figure 4.12. Perspective view of donuts playground - wintertime



4.6.2 ENTRY SQUARE (Original scale 1:200)

Entry square is selected from Polo Club (see Figure 4.13). The buildings in this area are two- storey walk-up apartments. Entrances to ground and second floor units are located along three sides of the buildings. Since the ground floor living units along the long side have direct access to outdoor space, hedges are planted along both long sides to form semi-private spaces. The hedges are also planted to frame the parking lot, functioning as a vegetation screen to reduce noise and improve air quality from the public vehicular path. The semi-public space is identified in between the parking lot and building, with hedges surrounding it, offering opportunities for social interaction (see Figure 4.14).

HEDGE COTONEASTER is used as indicator of the area (see Figure 4.26).



Figure 4.13. Location of entry square

Entry Square
Original Scale 1:200



two-stories walk-up apartment



Figure 4.14. Plan of entry square



1/4" pea gravel

hedge cotoneaster

parking lot

semi-public space
with lawn grass

semi-public space
with lawn grass

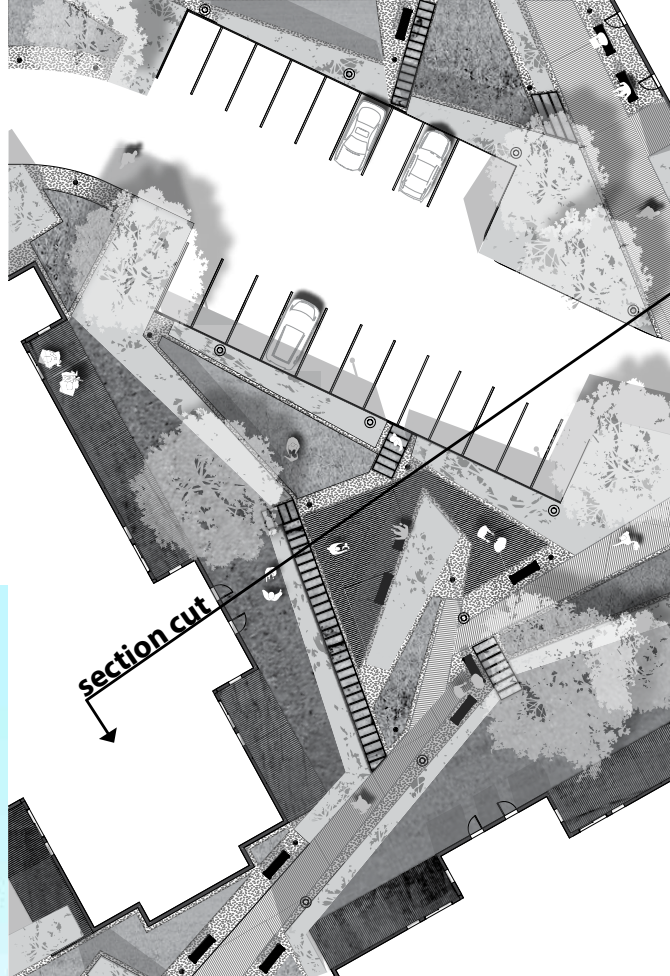
new maple tree

cast-in-place concrete
paved path

0 2 4 6 8m



Figure 4.15. Section of entry square



existing walk-up apartment



hedge cotoneaster

space with timber bench

semi-private space

0 2 4 6 8 10m



Figure 4.16. Perspective view of entry square



4.6.3 WOODEN PIAZZA (Original scale 1:200)

Wooden piazza is located in Tudor Village (see Figure 4.17). As outlined in the site inventory, the outdoor space of this area is mostly occupied by the parking lot, and therefore, instead of enclosing the space in front of every building, two gateways are designed. These two gateways open the area up to nature, and work as corridors leading people to the woodlot at the back. With hedges placed along the way, semi-private and semi-public spaces are clearly identified. People can easily find their own spot to do yard work or interact with others (see Figure 4.18).

AMERICAN ELDER is the hedge species for this area. It not only offers visual pleasure with its snowy white flowers, but also produces fruit suitable for making wines and jellies (see Figure 4.19 & Figure 4.26).



Figure 4.17. Location of wooden piazza

Wooden Piazza
Original Scale 1:200



three-stories walk-up apartment



existing woodlot

american elder
hedge

cast-in-place concrete
paved path

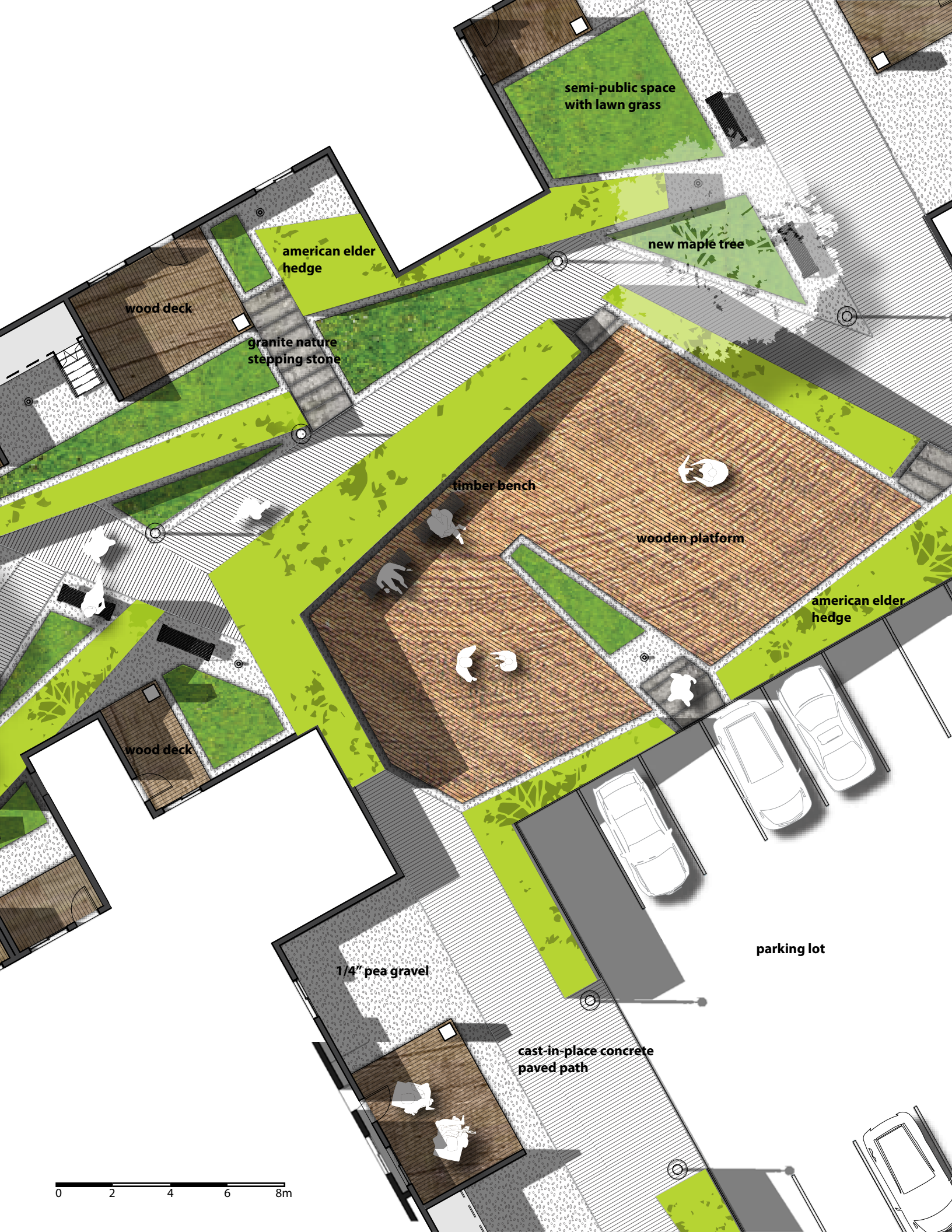
american elder
hedge

semi-private space
with lawn grass

existing bur oak

1/4" pea gravel

Figure 4.18. Plan of wooden piazza



semi-public space
with lawn grass

new maple tree

american elder
hedge

wood deck

granite nature
stepping stone

timber bench

wooden platform

american elder
hedge

wood deck

1/4" pea gravel

cast-in-place concrete
paved path

parking lot

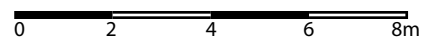
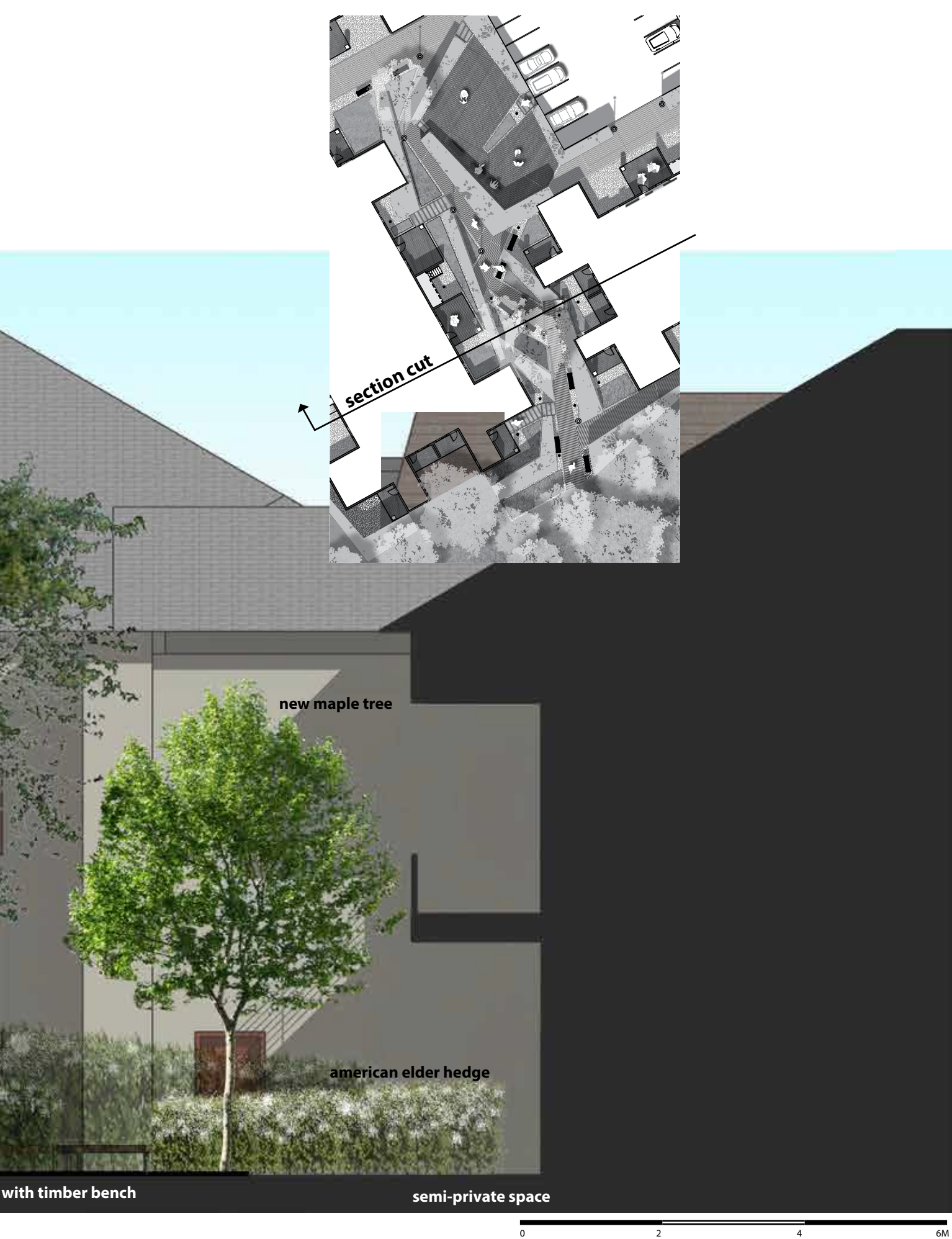




Figure 4.19. Section of wooden piazza



new maple tree

american elder hedge

with timber bench

semi-private space

0 2 4 6M



Figure 4.20. Perspective view of gateway to woodlot



4.6.4 COMMUNITY GARDEN (Original scale 1:200)

Hedge structure from living units to the school zones is expanded to develop a community garden. The design components include a playground, open to the entire neighbourhood. With four lanes of garden plot and two green houses, residents can rent the land for a low price to plant vegetables or whatever else they might like. The community garden also allows students and teachers to take their learning environment outdoors. This is a playful public space that unites the neighbourhood and increases opportunities for people from all different walks of life to establish social connections.

New sugar maple trees are placed in rows and grove alongside the east of the community garden, contrasting with naturally wild woodlot on opposite side. They also become vegetation wall surrounding the community garden, giving it a sense of enclosure and security.

The plant for hedge in this area is **SASKATOON** (see Figure 4.26).

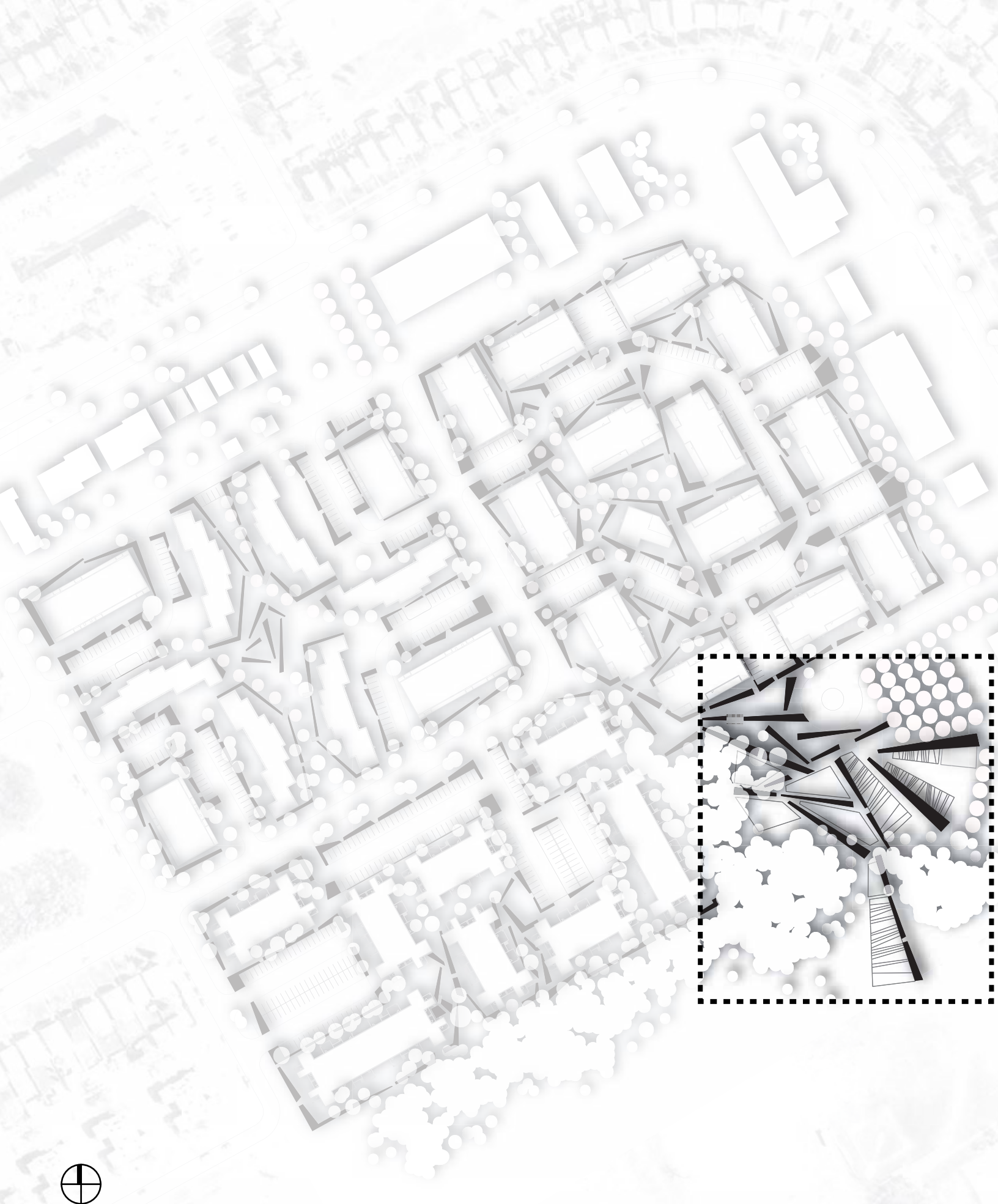


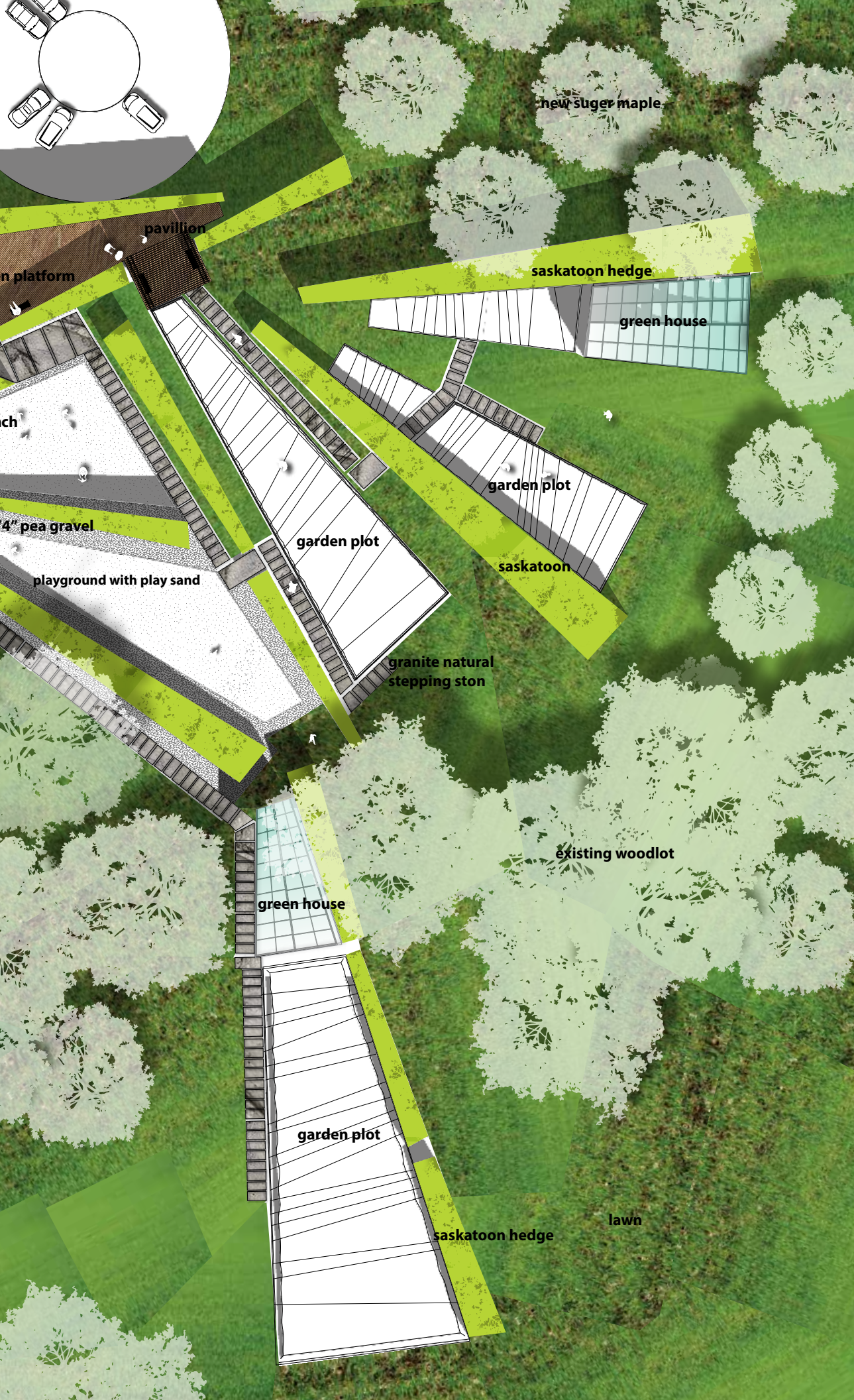
Figure 4.21. Location of community garden

Community Gargen
Original Scale 1:200



Figure 4.22. Plan of community garden

0 5 10 15 20 25m



new sugar maple

pavillion

n platform

saskatoon hedge

green house

ch

garden plot

4" pea gravel

garden plot

playground with play sand

saskatoon

granite natural
stepping ston

existing woodlot

green house

garden plot

saskatoon hedge

lawn



Figure 4.23. Section of community garden

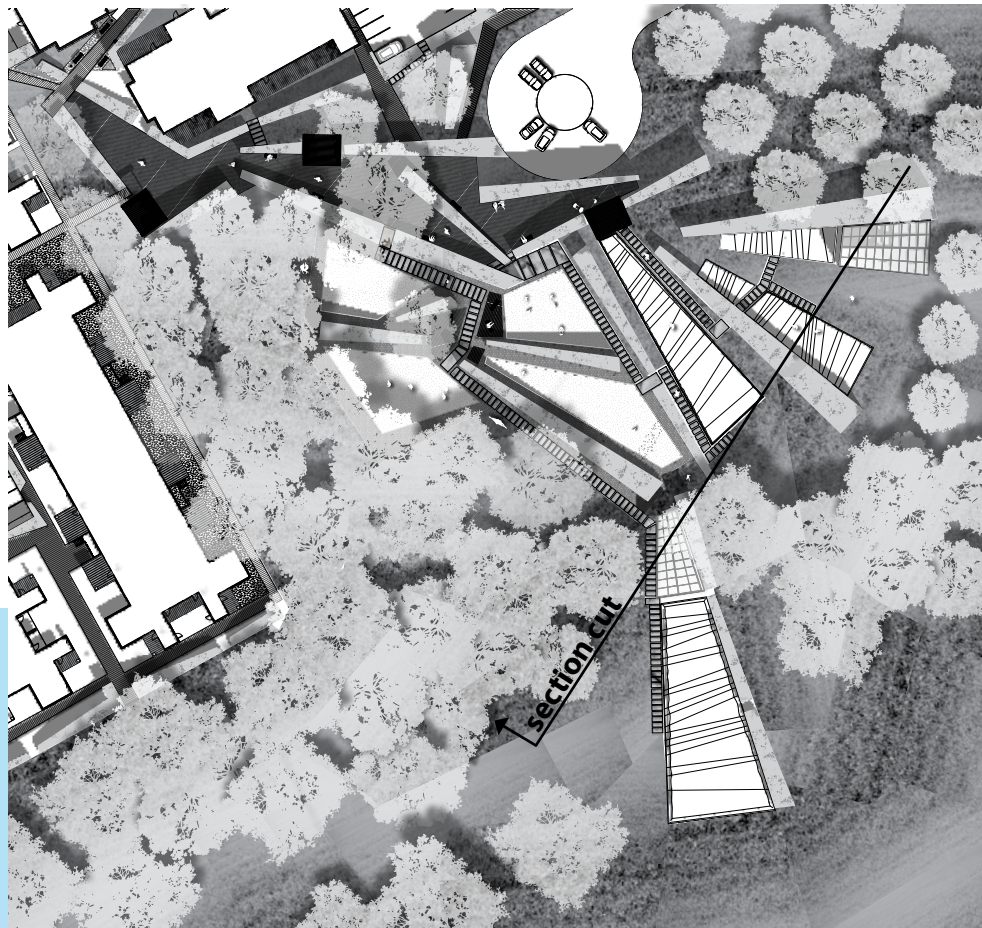




Figure 4.24. Perspective view of community garden



4.7 CHOICE OF MATERIALS

The new pathway is finished by cast-in-place concrete. The concrete's grey colour is similar to the public sidewalk, and unifies the pedestrian circulation system. Meanwhile, granite nature stepping stones in dark grey indicate the entrance to each building. Pea gravel is selected to pave the area on both sides of pathway; it helps to control stormwater runoff, and provides a water source to plants on the site. Quarter-inch pea gravel is chosen, to prevent damage to the lawn mower during maintenance. Play sand is mainly applied in the playground areas to ensure children play safely. Wood is applied to semi-public spaces and also to the deck areas of every living unit that has direct access to outdoor space, and also semi-public spaces. Wood pavers are used to represent stay spaces or spaces of pause, differentiated from the pedestrian movement landscape.

The choice of hedges, as mentioned in the design section, provide seasonal pleasure through their beautiful flowers in spring, attractive coloured leaves in fall (saskatoon), and edible berry-like fruits (american elder and saskatoon). The hedges also function as visual indicators to give each sub area a unique identification. The most important reason for using hedges to form the space is to give residents more opportunities for interaction with their natural environment. Through pruning, watering, and caring for the plants, people build a closer relationship with their living environment, and benefit from the effects of nature on mental and physical health.



WOOD



PLAY SAND



1/4" PEA GRAVEL



LAWN GRASS



CAST IN PLACE CONCRETE



GRANITE NATURAL STEPPING STONE

Figure 4.25. Paving materials



Richmond Village

CHARLES JOLY LILAC (*SYRINGA VULGARIS*)



Polo Club

HEDGE COTONEASTER (*COTONEASTER LUCIDUS*)



Tudor Village

AMERICAN ELDER (*SAMBUCUS CANADENSIS*)



Community Garden

SASKATOON (*AMELANCHIER ALNIFOLIA*)

■ Figure 4.26. Choice of hedges

4.8 MAINTENANCE PLAN

The purpose of a maintenance plan is to ensure the site function as envisioned. It includes a proposed solution for watering and irrigation, and regular pruning for the hedge structures. Moreover, the maintenance plan will help the landscape to be cared for within the users' available resources, and guide the evolution and adaption of the site in a way that continually improves function and the visitor's experience.

Pruning - The annual prune could be done by professionals hired by the manager. Another option is for manager to hire student residents to do the regular pruning and reduce their rent as compensation for the work performed. This could increase residents' sense of responsibility towards their living environment.

Watering and Irrigation - Rain collection barrels provide water for gardens, plants, and flowers and decrease the costs of maintaining the site.

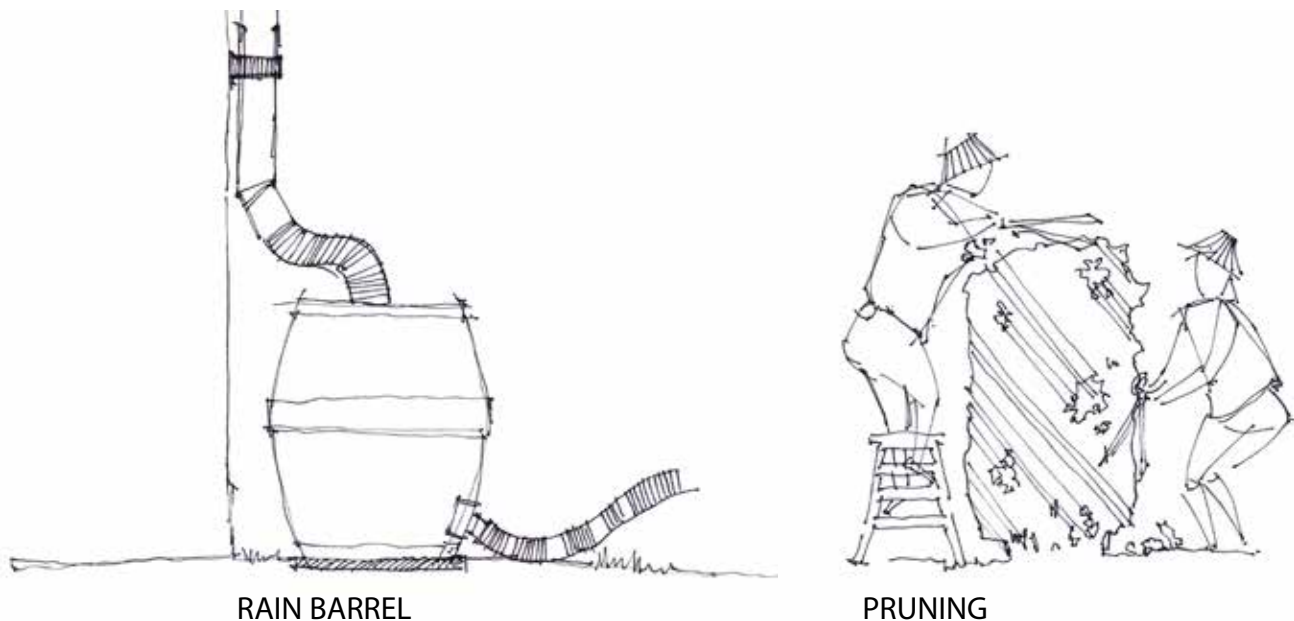


Figure 4.27. Sketches for maintenance



■ Figure 4.28. Proposed distribution of barrels for water collection and irrigation

CONCLUSION

The uniqueness of *Lilong* housing lies in the combination of many vibrant qualities, including interior openness, diverse dwelling environments, a sense of security and belonging, and perhaps the most salient quality, the “lane lifestyle”. Those qualities are not easily found in the Winnipeg’s residential areas, especially within multi-family and rental property housing developments. Frequent residential relocation, spatially-dispersed relationships and activities, instantaneous and distance-free communication, and the movement of interactions from public spaces to private homes have all limited the amount of observable interaction in neighbourhoods.

The key spatial features or principles that affect residents’ social network are identified in the study, providing a basis for the design decision applied to the site I selected in Winnipeg. The proposed spatial layout plays a very strong role in determining whether people are available as resources to be noticed, observed, approached, or addressed by other people. This mostly occurs through the way in which space modulates and distributes boundaries, visual field and volumes of movement (Peponis, 2001).

Opportunities to build social networks are greater when people spend time outside their homes and businesses in green spaces such as front yards, neighbourhood trails, and other common spaces, such as community parks and gardens. In addition to providing a gathering area, landscapes can also provide a setting where people are more relaxed and therefore willing to socialize. Successfully designed sites can support a variety of impromptu and organized gatherings that benefit the health and well-being of site users and the community as a whole.

Winnipeg has many areas with conditions similar to those in study site I selected. The design concept of this practicum delivers a simple idea with many possibilities. The success of the project will become a highlight of the city of Winnipeg, due to its high degree of identification and its potential for self-maintenance. This concept may be taken as a modular design, capturing developers’ attention for use in new housing developments or for upgrading existing residential areas. Such living environments will encourage residents to stay longer, because of their attractive outdoor spaces and the intense interaction residents have with their natural environment. Moreover, it will also result in close and stable social relationships. This change of landscape will not only benefit residents, but also inspire neighbours to discover a new way to build natural landscapes using native plants. People are willing to invest long-term care and effort into landscapes that they enjoy and that meet their physical and emotional needs. This design will result in a sustainable neighbourhood and ultimately enhance urban social well-being.

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FIGURES CREDITS

*ALL PHOTOGRAPHS AND DIAGRAMS ARE CREATED BY THE AUTHOR UNLESS OTHERWISE NOTED.

Figure 0.1 Theory base of the practicum

Reprinted from *Life between buildings: Using public space* (p. 11 & 15), by Gehl, J., 2011, Washington, DC: Island Press.

Figure 0.2 Bird's eye view of old *Lilong* houses in modern Shanghai (at border of xuhui and luwan).

生活(市井文化)气息浓郁的里弄民居(石库门) [PDF]. (2012). Retrieved October 10, 2012 from http://www.360doc.com/content/12/1230/19/98463_257203944.shtml

Figure 1.2 Traditional courtyard dwelling and western row housing

Reprinted from *Modern urban housing in China 1840-2000* (p. 44 & 78), by Lu, J., Rowe, P. G., & Zhang, J. (Eds.) New York: Prestel. Copyright 2001 by Prestel Verlag, Munich.

Figure 1.3 Dual structure

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Figure 1.4 internal circulation a/b/c

Figure 1.10 Old Shikumen

Figure 1.12 New Shikumen

Figure 1.14 New type Lilong

Figure 1.16 Garden Lilong

Figure 1.18 Apartment Lilong

Reprinted from *Modern urban housing in China 1840-2000* (p. 41, 45, 67, 79, 80, 86 & 90), by Lu, J., Rowe, P. G., & Zhang, J. (Eds.) New York: Prestel. Copyright 2001 by Prestel Verlag, Munich.

Figure 1.8 Life in Lilong a/c/d

China.com. 上海弄堂里的日子 [Online image]. Retrieved October 10, 2012 from http://tuku.news.china.com/history/html/2007-03-08/3004334_337826044.htm

Figure 1.8 Life in Lilong b/e/f

CHINADAILY.COM.CN. 有一种记忆叫十里洋场, 有一种风情叫老上海 [Online image]. Retrieved June 19, 2015 from <http://www.chinadaily.com.cn/hqcj/xfly/2015-06-19/content_13866488.html>

Figure 3.1, 3.2, .3.3, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11 - Background image from GIS Aerial Image 2012. Reprinted with permission from Mike Jocaby. City of Winnipeg GIS Data.

Figure 4.25 Choice of hedges.

American Elder (*Sambucus Canadensis*)

Wikimedia Commons [Online image]. (2009). Retrieved from https://commons.wikimedia.org/wiki/File:Sambucus_canadensis_W3_IMG_3144.jpg

Charles Joly Lilac (*Syringa Vulgaris*)

Name That Plant. (2011) A Fashion Plate in Charteuse and Sea Green [Online image]. Retrieved August 28, 2015 from <https://namethatplant.wordpress.com/>

Hedge Cotoneaster (*Cotoneaster lucidus*)

All things plants. (2011) Photo of the stem, scape, stalk or bark of Hedge Cotoneaster (*Cotoneaster lucidus*) [Online image]. Retrieved August 10, 2015 from <http://allthingsplants.com/plants/photo/143243/>

Saskatoon (*Amelanchier Alnifolia*)

Saskatchewan Fruit Growers' Association. (2013) Saskatoon Berries [Online image]. Retrieved August 2, 2010 from <https://www.doctorswithoutborders.org>