Living on the Line: a Search for Shared Landscapes

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August 2014
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A project submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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August 2014
To those living on the margins in China who have taught me how to design ...
I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

20 January 2015

I would like to give thanks to my supervisors, Charles Anderson and Sand Helsel, for their critique, guidance and encouragement. And my deepest appreciation I forward to my PhD advisors Patrick Foong Chan, Khalilah Zakariya and SueAnne Ware for their input and support.

My thanks also go to Shurong You, Kan Wang, Enjie Zeng, Xu Wang, Yao Yao, Zhangfan Lin, Tongtong and others from the School of Architecture of Huaqiao University in Xiamen, for having assisted me in the early stage of my research. In particular, I thank all Sun Cuo villagers that I have worked with during my years of PhD study. Each of you has inspired me and taught me how to learn and become a better designer.

Finally, I acknowledge with heartfelt gratitude, the continuous love, support and encouragement that my family has given and especially my wife, Zini Huang, who has made my PhD life all the more pleasant and enjoyable.
There is no denying boundary walls exist in China and have bearings on the socio-economic, psychological, and corporeal spaces of those who live within the walls and those who are outside them. Indeed, most urban design literature regards boundary walls negatively and would support their eradication. This PhD research recognises the impacts of boundary walls, but it still aims to provide an inkling of how lives are lived, positively, despite these walls, and how people have over time used boundary walls as physical and social structures to help move beyond the bounds and territories imposed on them. To do this, this thesis maps the lived experiences of a number of vendors whose businesses operate around a boundary wall circling Jimei University in Xiamen, China, to understand how a boundary wall can be ‘broken’ or transgressed to allow a ‘shared landscape’ to emerge. Mapping the vendors leads to a consideration of boundary from a wider perspective, and to understanding the territories and boundaries as a network of relationships. This knowledge allows me to think of design as the facilitation of forming relationships. Following the mapping, this thesis develops a series of boundary design strategies which would provide readers with suggestions for use in their own exploration and creation of shared landscapes.
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Photo of my grandmother chatting with a stranger outside the boundary wall (July 2009)
I lived with my grandmother for eighteen years in a gated residential community in Xiamen, a city on the southeast coast of China. As a child, the boundary wall around the community was the thing I hated most. Because of the wall, I had to take a detour every morning and walk more than twenty minutes from my residence to the bus stop to catch the school bus. In actual distance, this bus stop was just fifty metres from where I lived.

The interesting thing is that I have never heard my grandmother complain about the boundary wall. In fact, she related to me years later that her happiest time, until today, is sitting on a stool beside the boundary wall in the late afternoon waiting for someone outside to exchange a newspaper with her through small gaps in the wall. For grandma, the wall is probably not so much a negative thing as something that has become part of her everyday life and brings her joy. It is a site where part of her social life happens, when she chats with the people who bring her the newspaper, for example. Grandma’s relation to the boundary wall made me wonder how a boundary wall really impacts, negatively and/or positively, the everyday lives of Chinese people.

As an adult I practiced as a civil engineer in China. I started noticing my landscape architect colleagues’ approach to boundary walls was to ‘beautify’ them, to make them look more ‘positive’ by means of locating planter boxes along the wall, or softening the hard edges with ornate grilles. Nothing was really done to take into consideration how ordinary people like my grandmother would use the wall. There is much potential to further explore what we can learn and do with these boundary walls and the people whose lives surround them. This was the point where I made a career shift from engineering to landscape architecture.

GRANDMA AND HER ‘WONDERLAND’

1. Xiamen is a major city on the southeast (Taiwan Strait) coast of China. It is one of the four original Special Economic Zones opened to foreign investment and trade when China began economic reforms in the early 1980s. It is at the frontline of China’s new urbanization and where massive urban transformations are currently taking place. Today, various types of gated communities are dominating Xiamen’s cityscape, turning it into a city of walls.
Introduction
Background 1:

In August 2010, Beijing became the first Chinese city to implement the ”Closed-Off” management policy for residential communities. One hundred and thirteen open communities in the city's Haidian District were subsequently turned into gated enclaves by the erection of new fences and walls.¹

1. This news was first published by Beijing News on 31 August 2010 (Source: www.news.xinhuanet.com/2010-08/31/c_13470171.htm).

Background 2:

On 11 July 2013, hundreds of local farmers in Putian, Fujian Province, launched a protest march against the local government's decision to grant a permit for the construction of a concrete boundary wall between their village and a new university campus (the boundary wall would have cut off their direct access to the surrounding facilities like temples, ancestral shrines, markets and major roads). Bloodshed ensued (Fig. 1).²

2. This incident was first exposed by a local on-line media called ‘Hiputian’. The news was deleted not long after its publication (Source: www.hiputian.com/27089.html).
Fig. 1: Photo of farmers in Fujian’s Putian confronting the riot police force at their anti-boundary-wall demonstration. (Image source: chinaaid.net)
Fig. II: City of enclaves (Jimei District, Xiamen, 2012)

Jimei Bay (formerly known as the "Fisherman's Bay")
Situating the Research

Gated communities are becoming the dominant form of community lifestyle in contemporary Chinese cities. Walls and fences are omnipresent around university campuses, apartment complexes, urban parks, tourist resorts, office and industrial parks (Fig. II). The ceaseless construction of boundary walls across suburbs and cities destroys street life and privatizes urban resources, thus causing social, cultural and economic segregation and marginalization of certain socio-economic groups. The gap between the wealthy and the extremely poor is exacerbated by the decreasing opportunities for peoples of different social groups to interact and this can lead to conflicts and tensions.

In an attempt to reduce conflicts and social tensions, designers, mostly landscape architects, in China started to ‘beautify’ boundary walls by using artistic forms, accent tiles, and landscape features such as planter boxes (Fig. III). While visually improved, the walls still remain a structure with a singular purpose – security. Reducing the boundary wall to just this one purpose, I believe, hampers urban Chinese cities from becoming more liveable and sustainable.

These tensions and anxieties, in China and elsewhere, have led urban design theorists to regard boundaries and gated communities as categorically negative. The response is to eradicate all walls or at least to reduce their frequency. In China, it is almost impossible to find supportive policy or design guidelines that articulate how boundary walls or the transition between private property and public lands could be approached differently. There is generally a lack of knowledge on how these boundary walls actually operate on the ground. At a glance, it seems China can either persist with its current approach to boundaries, or simply adopt the international, common sense urban design approach of tearing down all boundary walls. However, neither strategy takes into account the nuances of how ordinary Chinese people live, experience and use boundary walls.

Urban theorist Teresa Caldeira (1999) writes that the current execution of urban boundaries has little regard for the meanings people attach to them and the acts of resistance they use to appropriate these boundary spaces (p.102). It is how people perform acts of resistance that add complexity to the boundaries and bring about a level of porosity that has driven this study.

My research takes a position that boundaries have to be understood and explored beyond their general negative connotation as portrayed in urban design literature. Urban boundary walls as security devices may indeed be read as oppressive and divisive, but they contain a great deal of complexity. A nuanced approach to boundary walls does not have to be completely on the side of ensuring absolute segregation, or completely on the side of no segregation. It is not an either-or situation. Instead of moralizing boundary as ‘bad’ and not-boundary as ‘good’, this research study aims to map the actual lived experiences and significance people assign to boundary walls, and how designers can work with these observations. This is conducted through two investigations: investigating mapping techniques and investigating boundary strategies.

Research Propositions

The PhD commences with the question:

How can boundaries, common in contemporary Chinese cities, move beyond being a negative element while not discounting the Chinese people’s desire for physical and social security?

How can boundaries, common in contemporary Chinese cities, move beyond being a negative element while not discounting the Chinese people’s desire for physical and social security?
On December 21, 2011, a 78-year old village leader in Xiamen’s Jimei District stood in front of a construction site for approximately six hours to protest against the construction of a boundary wall between his village and a new gated residential development.
Many villagers in Xiamen's Jimei District continue to grow vegetables on construction sites (their former farmland) before the construction projects begin (2011).
1. Investigating Mapping Techniques

The urban planning graphic convention of representing boundaries is often no more than drawing a one-dimensional line to demarcate land use, ownership, municipal territories or political affiliations. It takes a 'God's eye view' of the land. However, each small fluctuation along this line can determine the lives of the people who are then cast on either side; their mode of interaction and exchange are thus impacted. One thinks of the Berlin Wall or the troubled lines over the former Yugoslavia that led to wars. The complex reality of living along boundaries stands in stark contrast to the simplicity of a line drawn on a map. The normative methods of cartography turn maps into "backdrops for statements about politically imposed boundaries, territoriality, and other notions of power and projection" (Harmon, 2009, p.10).

The very idea of a map, as cultural studies scholar Iain Chambers (1994) explores, with its implicit dependence on the survey of a stable terrain (site), fixed referents and measurement, seems to contradict the palpable fluidity of metropolitan life and cosmopolitan movement (p.92). Chambers continues to argue that maps are not embedded with human action. He writes,

> Early maps explicitly represented space as a setting for complex actions and included special information only insofar as it was relevant to these actions...gradually, action was left out and space came to be represented as an object order, existing separately from, and prior to, human action. (p.88)

Like Chambers, van Leeuwen regards "human action" as a significant component of a site. The nature of maps as objective representation ignores the hidden relations hence simplifying the complexities and the richness of a place. This objective representation disregards the different ways a place may be utilized, improvised, enhanced, negotiated, or appropriated by different users. In other words, maps define information visually but it is at best a slice of a particular moment in time. In the case of boundaries, it does not take into account the flow taking place between the sides of a boundary; hence it takes no record in real time of the ways in which the abstract boundary line is in fact redrawn through human actions. The normalising map assumes that particular moment in time to be the universal condition for a territory or site. In other words, a map is rarely capable of expressing what is emerging in the now.

Besides being inspired by people like my grandmother (as stated earlier), the dominant method of mapping spaces, largely based on creating divisions, also spurred me to question its methodology and normative assumptions. Thus the question, "how can boundaries, common in contemporary Chinese cities, move beyond being a negative element while not discounting the Chinese people's desire for physical and social security" might be addressed by asking another question:

> What other mapping techniques can designers employ to understand the qualities and complexities of boundary spaces?

02 Investigating Boundary Strategies: University Campus as a Case Study

Due to the shortage of available land in the cities of China, agricultural land in suburban areas is now targeted as potential sites for new university campuses. As China's higher education continues to expand, a large number of university campuses have been recently built in these agricultural areas, taking over a considerable amount of arable land (Fig. IV). Often these new campuses are incapable of responding to the rural environment around it. Like the famed Forbidden City in Beijing, these campuses are impermeable to public life. In Networks Cities, Shanghai-based architect James Brearley (2010) notes:

> In the quest for modernization China has embarked upon a high-speed and mass-scaled program of university building. To achieve near-instant results a simple urban development process and an even simpler planning model have been adopted. (…). The results are clean, green, quiet university ghetto-cities: gated universities without any connective tissue to the surrounding district, to one another, or even between departments on the campus. The opportunity to create university-cities, where the city is infused with the life of the students, and vice-versa, is lost. (p.154)
From Brearley’s point of view, the rise of university ghettos segregates the university and its surrounding district. As a result, remnants of the former farming village have been turned into ‘islands’ in new but hastily developing suburban or rural environments. These small remnants of the old farming conglomerates are called a “village in the city,” which may or may not be an affectionate description.

Interestingly, although the national planning legislation and building code in China do not require university campuses to be gated, many local governments have been approving applications with clear boundary walls arguing that these walls provide better security and site facilities management. The outbreak of SARS and the avian flu in the early 2000s further reinforces the case for boundary walls. The Chinese preference for living, learning and socialising within enclosed environments with their own socio-economic milieu (to be further discussed in Chapter One) adds to the argument for boundary walls. The Chinese preference for living, learning and socialising within enclosed environments with their own socio-economic milieu (to be further discussed in Chapter One) adds to the argument for boundary walls. With the spread of diseases coupled with the common and seemingly long-lived love for segregation, one might suggest the boundary wall is already an invisible policy in China, even without any official guidelines to enforce enclosure.

Because of the boundary wall’s impermeability, the potential for a new synergistic relationship between the new campus and the old village to form is disabled. University resources, encompassing all types of learning and leisure facilities, are arranged inside the boundary walls and are inaccessible to the neighbouring villagers.

As a result of these segregations, the tensions between universities and villages are growing in many Chinese cities, such as my home town of Xiamen. Since 2003, at least twelve new state-owned university campuses have been built in Xiamen’s suburban areas, such as the Jimei University new campus and the Huaqiao University new campus (Fig. V). They are isolated from the surrounding village, and operate as private institutes despite being state-owned. Villagers living around these campuses have begun questioning why they are denied access to university resources that are by legal definition public.

In response to the rising tensions, Xiamen’s Planning Department issued an amendment to the detailed planning by-laws for university development in suburban areas. One of the added clauses states that “accessibility” and “shared resources” need to be addressed in the design of university campuses, while not jeopardising the university’s security (Fig. VI). Despite this ordinance, many universities continue to erect boundary walls that offer no access onto campus. At best, some facilities like outdoor sports grounds are opened to the public during key sporting matches as a symbolic act. Access to the universities’ parks, libraries, shopping malls, medical centres, exhibition halls, cinemas and other variegated open spaces are still impossible.

4. Severe Acute Respiratory Syndrome (SARS) is a viral lung disease caused by a newly recognized coronavirus, SARS-CoV. It was first recognized as a global threat in March 2003, after first appearing in Southern China in November 2002 (Source: www.health.gov.au/internet/main/publishing.nsf/ content/health-sars-faq-index.htm).

3. Village in the City is a unique urban phenomenon that formed part of China’s urbanization efforts. The villages appear on both the outskirts and the downtown segments of major cities like Shenzhen, Xiamen, Guangzhou, and Shanghai. They are often surrounded by large-scale urban ghettos.

Again, this research study does not aim to dismiss the role of boundaries – physical or not – in Chinese societies, but to see how boundaries can both be provided and transgressed with as little detriment to people on either side of the boundary as possible. Ultimately, it is to find ways along the boundary for peoples of different levels to connect.
Fig. V: Aerial photo showing boundary wall between Huaqiao University and Dui Shan Village (2010)
A farmer in Xiamen's Jimei District viewing his razed house and orchards that will eventually become a new campus for the Jimei Fisheries College.
Methodology

A series of mapping exercises and speculative design projects in Xiamen, specifically around the boundary wall at Jimei University, informs the body of this PhD. In general, the mapping exercises gave rise to some of the design-methodological and conceptual grounds from which my speculative design projects were launched.

The mapping exercises largely took place between 2010 and 2014. I utilised the two key techniques of “close observation” and “following” to map the boundary wall’s complex intersection of milieus, lives and economies. “Close observation” pertains to documenting how vendors operating at the boundaries appropriate small infrastructures from the dressing sticks to bring packed food to the students over the three-metre high boundary wall to the small wash areas near public toilets they use to wash their wares. “Following” pertains to documenting, photographing and producing time-based maps of the way activities occurring at the boundary wall extend to a much larger field.

Mapping requires us to invent new ways of representing the landscape. It requires us to make visible the structures, processes and systems at play that cannot be immediately recorded by conventional cartographic methods.

Reflecting on the conditions ‘revealed’ by the mapping, I then generated a series of design interventions that range from minor incursions to the boundary wall to master planning around the notion of a porous boundary. Of course, the nature of design is that for any solution drawn, a string of problems will appear. One has to constantly be reflecting on one’s own designs to make sense of what can be done or improved next to address those problems. But one has to also be brave enough to accept that problems are what, partly, characterise design as a practice. Thus, instead of offering a single answer to how best to design boundary walls, design along with mapping is really a way to open up opportunities to understand the landscape in new scales and with new relations.

Structure of the Document

The Appropriate Durable Record (ADR) document established for this research study is organized chronologically according to the dates the speculative design projects took place. The body of work in each chapter is structured into three parts: first, literature review of theorists, designers, and artists who have engaged with the notion of boundary (amongst other topics); second, personal reflections on the mapping-designing and writing process; and third, the speculative design projects themselves accompanied by captions and visual materials including maps, drawings and site photos.

The texts in each chapter are written in three main voices: the descriptive voice in italics, which explains general information such as the recording of observations during field trips; the theoretical voice which discusses and critiques the references of others and the design projects; and the narrative voice, which highlights the key moments and shares personal reflections on what I have learned during the research process.

Chapter Two: Boundary as Sites of Exchange

If Chapter One only treated the boundary as a design typology, an object in other words, Chapter Two further investigates how the locals, whose lives surround a boundary, have appropriated existing boundary conditions to improve their lives. The invention of newness requires picking up current lines of forces, events and interactions, and deciphering which of these could be prioritised by means of further design. To pick up these lines of forces, events and interactions I consciously, strategically and temporarily move away from creating physical boundary typologies and edge toward a critical map of informal activities that populated the space in and around the boundary wall between Jimei University and the village. The critical mapping employs techniques that I call “close observation” and “following” to more
interactions at different levels of accessibility. The design for a shared space and a following intervention project further shift the (notion of) boundaries from a strictly physical one to a spatial one; with the element of time added, boundaries can hopefully become shared spaces where different ideas and identities can meet and a new sense of community can be negotiated.

**Conclusion**

In the Conclusions chapter, I review the key themes throughout the research. They include techniques of critical mapping and reflective designing for exploring the boundary, shifting scales as a way of interrogating the boundary, and boundary design strategies to create shared spaces. The contributions of my research study are established in these areas.

**Chapter Three: Boundary as Shared Landscape**

Understanding boundary as a network of relationships in Chapter Two enabled me to think of how the alternative boundary strategies could produce or contribute to these relationships that would blur the territorial demarcation between Jimei University and Sun Cuo Village. So in Chapter Three, I return to the ‘physical’ dimension to further question the current master plan of the Jimei University new campus by proposing that the university’s boundaries, at least its experiential if not operational boundaries, could be recast at a neighbourhood or even regional scale. Universities after all do attract students from beyond their immediate locale. Based on some of the notions of scale and space, and observations on how people use the boundary wall, I propose four different strategies to blur jurisdictional boundaries to promote accessibility and shared resources. The design gestures will have a range of public-private

**References**


CHAPTER ONE

Boundary as Object
Driven by an increased desire for physical security, a rising number of gated residential communities in China are tending to install additional security devices on top of boundary walls including different types of electric fencing, razor/barbed wire and various kinds of spikes. (Photo taken in Xiamen's Jimei District, 2011)
1.1 The Use of Boundary Wall in Chinese Spatial Tradition

In 2006, the New York Times invited thirteen local architects, landscape architects and urban designers to create alternatives for the US/Mexico border wall. As expected, many of them declined because they felt the impetus was mainly political rather than for social, spatial transformations. Architect Ricardo Scofidio from Diller Scofidio & Renfro, one of the abnegators of the invitation, told the New York Times that it was a very stupid thing to design a political conundrum (Hamilton, 2006). Scofidio's political conundrum could be used as a way to understand boundary in the current design of gated communities in China.

Currently, the boundary walls around China’s gated communities such as university campuses or residential blocks are more often appropriated by vendors and less intervened by designers and authorities. The reason is that most Chinese designers believe the issue of boundary is with the politicians or in the security engineers’ domain. This belief leads Chinese designers to simply follow construction rules and planning regulations, hence turning boundaries into defensive barriers (Fig. 1.1). In an ironic move, initiated by local governments to increase the urban green-space ratio, the spaces adjoining the boundary walls are often designed for the planting of dense vegetation or green buffers with very limited public access (Fig. 1.2). This move trades urban vegetation for the possibility of using the boundary wall as a space of exchange. Such a move also reafirms the role of boundaries in China as security devices necessarily deprived of programs and human activities.

Jiang Jun, a Chinese designer, curator and editor of Urban China, argues that boundary walls are not just present spatially and materially, but also ideologically (Jiang, 2009). The formation of this ideology, in Jiang’s understanding, can be mostly attributed to the Chinese philosopher Confucius who advocates a distinct hierarchy in which each lower level gives obedience to a higher level. For example, Confucius identified five fundamental human relationship types (known as wu lun): Emperor (kindness) – Subject (loyalty); Father (protection, being considerate) – Son (respect, obedience); Husband (duty) – Wife (submission); Older brother (role model, carer) – Younger brother (disciple); and Friend – Friend (trust). The distinction and hierarchy, according to Confucianism, can guarantee the stability of a country and ultimately safeguard the power of a particular ruler (Liu, Huang and McLean, 1997). The Confucian stress on hierarchies and distinctions may further explain why boundary walls play such a central role in Chinese spatial tradition and China's urban development history attests to this.

To create urban districts, China has undertaken several development models, from ancient prescriptions of city buildings, to the Li Long House during the post Treaty Port era, to the Dan Wei (the work unit district making) during the post-Civil War era, and to the current practice of gated communities that seem ubiquitous globally. Some of these models follow the strict hierarchical grid, while others employ the assumed universality of modernist planning. However, what these models have in common is that they all employed the ‘boundary wall’ as a device that produces a city of enclaves. Among them, the Li-Fang System of the Tang Dynasty (A.D. 618-907) and the New Town Movement of the Modern Era (1980s-present) are perhaps the two most astonishing models for comprehending the role of boundary in Chinese spatial tradition.
1.1a The Li-Fang System
(A.D. 618-907)

During the Tang Dynasty, China built the world’s largest capital city Chang’an with a population of more than one million. The planning of this imperial city strictly followed the principle of 'Li-Fang' (Chinese: 里坊), which strongly reflected a social and spatial hierarchy, and symbolized the absolute power of the emperor. As recorded in Zhou Li’s Kao Gong Ji (Chinese: 周 历考工記), the entire city was composed of fang (similar to today’s gated communities), and each fang further consisted of a number of individual houses (Fig. 1.3). These fangs were enclosed by walls and arranged in an orthogonal grid system layout. Houses inside a fang had to be set back from the boundary wall without active building frontages to the street. Every street had a gate that opened at dawn and shut at night. The behaviour of individuals on the street was watched and they had to follow certain rules.

Li-Fang was an enclosed-structure approach to city planning, where residential streets and market areas were clearly segregated by a square-grid network of roads (Gauri, 2012). This segregation made informal social and economic activities difficult on the street. Thus, the Li-Fang system allowed surveillance of the city to occur, in the guise of public safety. However, despite an extremely controlled living environment, Chang’an was in fact the world’s most urbanized and populous metropolis at that time (Charles, 2004, p.46). The boundary wall became a very effectual ruling instrument for maintaining public order in this capital city.

1.1b The New Town Movement
(1980s-present)

By 2020, China will complete the building of a comfortable society ... cities will lead the way.

- Wen Jiabao, the former Premier of China

After almost one thousand and five hundred years, China is undergoing another urbanization process at a scale and pace which the world has not yet seen. With China’s current urban development trend, by 2030 more than one billion people will be living in cities, bringing tremendous change to the urban population (McKinsey, 2008). To accommodate migrations from the countryside into the urban conglomerations, 400 new cities would have to be built by the year 2020 according to a plan by the former Civil Affairs Minister of China in 2000 (Neville & Hornsby, 2010). To cope, a modernist planning model was adopted as a formula by both property developers and government authorities. This model uses a top-down approach which marks out distinct territories. Often an over-simplified approach to land use allows vast areas to be effortlessly turned into cities made of homogeneous and segregated zones within the shortest imaginable time. Over the past twenty years, this model has resulted in a mass production of cities of enclaves for the rapidly urbanizing nation (Fig. 1.4).
Whether residential, educational, commercial, recreational, institutional, office or industrial park, and of various scales, development in China today is trying to replicate the Tang Dynasty’s Chang’an by the implementation of boundary walls that tightly control the edges between different urban programs and contexts. To avoid noisy, filthy, vulnerable, chaotic, over-congested, and under-controlled urban conditions, the boundary wall seems to be the quickest way to re-generate the Chang’an image of peaceful, clean, safe, ordered, spacious, and controllable landscapes. With little regard to the meanings ordinary people (like my grandmother) attach to city spaces, boundaries, in a violent act, are reinforced as a one-dimensional line on a planning map (Wigley, 2002). Lines become hard scorings that, once translated from the planning map to the built world, are etched into real territories and carved through properties. The role of a contemporary boundary thus increasingly reinforces a rigid grid of containment instead of a fluid bed of opportunities (Cruz, 2005). Interestingly, living within such socially homogeneous environments with high walls and fences, armed guards, and sophisticated surveillance technologies is actually popular for both the display of status and security reasons in current Chinese society. With the increasing urban population and the growing desire for physical security, social status, quiet and landscaped living and work places, the rise of gated communities in China is inevitable and unprecedented. Security and control are for maintaining separation from those considered to be socially inferior, for assuring not only isolation but also “social order”, “happiness”, and “harmony” (Caldera, 1999, p.90) (Fig.1.5).

While most urban design literature regards gated communities as outdated and not conducive for social justice, this research study does not dismiss the anxieties and aspirations of Chinese people altogether; instead, it proposes that the role of boundaries and boundary walls as security measures within the spatial, urban and mental-psychological realms of Chinese society cannot be entirely dismissed.

Hence the questions:

What are the other roles of boundaries in contemporary Chinese urbanism apart from being a device of security and control? What could a boundary offer in terms of an alternative vision?

It is about what else could a boundary or boundary wall do, not to discount this spatial typology. The following sections and chapters explore this “what else.”

Fig.1.5: On October 2006, the Communist Party of China put forward a resolution of building a ‘Harmonious Society’ by 2020. ‘Stability and Social Order’ is the key component of the ‘Harmonious Society’. (Source: www.china.org.cn/english/2006/Oct/184810.htm)
"Our goal is to create spatial distinction, and to enhance your social status"
An advertising slogan for a gated residential development in Xiamen's Jimei District (2011)
Our goal is to enhance your power and social status— an advertising slogan for a new residential enclave development in Xiamen’s Jimei District (2011).

1.2 From Line to Thickness

American landscape architect Charles Jencks (1993) suggested that all the security devices could possibly be transformed into art through designs that would metamorphose hard-edged materials needed for security and privacy into ambiguous signs of intensive beauty and ‘keep out’ (p.93). Jencks maintained that while protecting the rights of individuals and threatened groups, the boundary wall could be beautified and become a visually ambiguous sign of ‘defensive space’, an idea broached by Oscar Newman in the early 1970s. This appreciation of the boundary wall as both divider and art could be seen in both Steven Holl’s Store Front for Art and Architecture (Fig.1.6) and Tejo Remy’s Social Fence (Fig.1.7). However, both projects seem more concerned about the visual and aesthetic qualities of the boundary as a security device, and less about the potential of the boundary as a ‘thick’ space.

In 1972, Rem Koolhaas, along with Madelon Vreisendorp, Elia Zenghelis, and Zoe Zenghelis, presented their thesis titled “Exodus or the Voluntary Prisoners of Architecture” at the Architectural Association School of London. Influenced by Superstudio’s Continuous Monument (Fig.1.8), their proposition was understood as a subversive and provocative act on the political border wall. The proposition provided an alternative typology of the wall – a desired and inviting prison on the scale of a metropolis in which people voluntarily sought refuge (Koolhaas, 1995, p.5-7) (Fig.1.9). According to Koolhaas, the wall is used with positive intentions. Koolhaas, however, pursued this idea at a...
more fantastic and symbolic, but less realistic and realizable scale. The wall as a mega-structure also became an important concept for architect and artist Lebbeus Woods, who endeavoured to make the wall function as an urban sponge and absorb the invaders it is supposed to keep out (Woods, 2009). But rather than promoting the wall's functionality and dealing with the complex situation of living, most of his design propositions, such as the *The Wall of Bosnia Free State*, tended to promote the wall's aestheticization or poeticization by simply replacing it with a gigantic labyrinth-like artifact without paying attention to the existing conditions on the ground. This type of mega-structure is an important precedent on how border walls have inspired many architects over the past decades. This concept is also evident in the submission works from a number of border competitions, including the Berlin Wall competition (Morphosis, 1986), the Project DMZ (Storefront, 1988), the Geopolitical Borders competition (*Think Space & Teddy Cruz*, 2011), and the most recent Borderless competition (ASEAN, 2013).

Although Koolhaas and others, like Woods, started to address the thickness of boundary, they tended to focus more on how attractive boundaries could contribute to the city's image. It is surprising that most designers are very reluctant to address the real issues of the everyday life of ordinary people living at the boundary. The lived and physical realities at the contested sites are eschewed, while abstraction and generalization are favoured. Not to dismiss the contributions of the abovementioned architects, one could, following Stanley Matthews (2007), suggest the quality of everyday life at these boundaries is as important as the city's image. In his study of contemporary borders, urban planner Maarten Hajer also emphasised that we must focus much more on the design of the transitions, the crossings, the connections and the in-between boundary spaces (Hajer, 2001, p.129). The challenge for designers is essentially the search for innovative boundary typologies that could both provide security and improve the quality of life.

To avoid abstraction and generalization, some groups like the London-based Transgressive Architecture or the Italian architectural collective Stalker, started to work with specific urban sites to produce more realistic and realizable boundary solutions. For instance, Stalker's *Transborderline* installation transformed a spiral of barbed wire along the border between Italy and Yugoslavia into a habitable and crossable space for potential interaction, meeting, and public confrontation (Fig.1.11). This urban intervention made a social infrastructure out of a destructive border structure, which allowed it to be freely crossed and transcended without being wiped out and replaced. The line of control in the installation is thus turned into a new prototype of urban space, which is capable of not just providing security but also promoting a diversity of programs, activities and freedom of passage. According to Stalker, *Transborderline* as a concept becomes an architectural object that can be placed at a point on the border that lacks fencing and markers.
More recently, architect Ronald Rael closely examined the U.S.-Mexico border wall. He regarded it as an infrastructure from which he developed a series of provocative boundary typologies including Bicycle/Pedestrian Wall, Solar Wall, Hydro Wall, Forest Wall, Wildlife Wall, Burrito Wall, Confessional Wall, and Climbing Wall (Fig.1.12). Rael believed that we must deal with a factual reality and that we have to do our best to view the border wall in a positive rather than negative light (Rael, 2005). For example, by noticing different casual exchanges across the border wall ranging from small talk, long visits with friends and family, and commercial exchanges of items, Rael transformed a portion of the U.S.-Mexico border wall into a burrito wall, into which a food cart could be easily inserted, and seating and shelter quickly assembled (Fig.1.13). Given these conditions, people on both sides of the border can come and cook food, share ideas, engage in discussions, or play bi-national games through the wall itself. For Rael, this shared border wall is not seen as a negative divider, but rather a facilitator for exchange and a social space that connects different communities and lives.

In Rael’s Burrito Wall and Stalker’s Transborderline installation, the boundaries’ site specificity became key in promoting new ways of approaching boundaries at a more realistic scale. Instead of assuming to resolve design and immigration problems, Rael and Stalker’s respective projects thicken the boundary line, so to speak, to carve a space that still functions as a separating element but also allows some degree of accessibility and openness to accommodate shared social, cultural, educational, recreational or commercial infrastructures. In this regard, the thickened line does not sidestep security concerns as “a matter of realism” as Jencks argues (1993, p.91). This concept allows the significance of the boundary in contemporary Chinese urbanism to continue to be acknowledged, and attends to the people’s realistic demands for physical and social security. Yet, as Rael and Stalker suggested, a thickened line is an inhabitable zone that cannot be defined by a simple dichotomy, and thus challenges the politics of public-private separations. Instead, it encourages architectural programs and human activities that bring people of different communities together. It is a space, a territory where people on both sides can intermingle and negotiate for mutual benefit and reliance.

For many Chinese cities, the challenge is to find a balance between control and looseness, or more precisely, to increase and improve on what is acceptable and desirable for greater mixes of users and parties. The shift from demarcation line to thickened line thus values the long-established Chinese spatial tradition and rethinks how we can better cater to the ordinary people like my grandmother who live in these cities. It is a call for a design practice that makes the boundary walls a liveable space without it being over aestheticized and poeticized. It is to increase the porosity of the boundary wall.

Operatively, what needs to be called into question is not the wall itself per se, but the way the wall is addressed and used, often as a singular means of security. It is to attend to the transformative potentials that underlie the simple wall. “Walls can be an armature for transformation, an instrument not for dividing and separating, but for bringing opposing ideas and people together”, wrote Lebbeus Woods, “It all depends on the design – the architecture of a wall” (Woods, 2009). As such, the wall need not be perceived as just a political conundrum to be avoided (as Scofido did in 2006 with regards to the US-Mexico border wall), but as an architectural object that can be programmed, inhabited, and shared – a thickened ‘program’ line. It is from this perspective that it is possible to envisage alternative interpretations of a contemporary urban boundary that seek not to limit and separate, but to enable and connect.
4. Please go to www.holcimfoundation.org for more information.

5. Jimei University, one of the key universities in China’s Fujian Province, is a multi-disciplined university with students from all over the country.

6. Sun Cuo Village was formerly known as an agricultural and fishing village located in Xiamen’s Jimei District. In 2003, the local villagers were forced to stay away from the campus due to the erection of the boundary wall around the new campus. Today, more than 12,000 students are studying in the new campus.

Fig. 1.16: The existing conditions in Sun Cuo Village

1.3 Re-designing the Wall

The competition site is located in Xiamen’s Jimei District. The boundary wall that runs between the new campus of Jimei University and Sun Cuo Village before 2003, the local villagers were forced to stay away from the campus due to the erection of the boundary wall around the new campus. Today, more than 12,000 students are studying in the new campus.

The design proposals were later submitted to the 2013 Holcim Awards Competition titled “Living on the Line”. In this section, I applied the above discussed concept of thickness in this specific context, from which I developed four thickened boundary typologies to support a range of commercial opportunities and social activities for both university students and local villagers.

Fig. 1.14: Aerial view showing location of Sun Cuo Village in relation to its farmland (2003)
Fig. 1.15: Aerial view showing location of the remaining Sun Cuo Village in relation to the Jimei University new campus (2005)
Yet, without any better access to the campus, survival for these informal businesses is very difficult (Fig. 1.17 & 1.18). This epitomizes the ‘Village in the City’ syndrome, where people are striving to survive in an increasingly marginalized urban environment. As such, my intention for this competition is to create alternative boundary typologies, and to foster more commercial opportunities on the boundary between the two communities. It is ultimately to tear down the existing barrier and make it more open and accessible without compromising security of the campus.

For the purpose of the competition, I focused on four constructed portions of the boundary wall between Jimei University and Sun Cuo Village (indicated as P01, P02, P03, and P04 in Fig. 1.15). Each portion of the wall is situated in a particular setting with distinct social-spatial characteristics. By exercising the earlier discussed concept of thickness to address the four different social-spatial situations, I created four different boundary typologies that might facilitate the university students and the local villagers to intermingle, trade, and share in a mutually beneficial way.
Fig. 1.19: An ornamental pond situated between the university side of the boundary wall and the covered walkway

Fig. 1.20: A row of shophouses located behind the village side of the boundary wall

P01: A Vending Wall

This portion of the boundary wall is situated between an ornamental pond on the university side and a street on the village side (Fig.1.19). The street is lined with village houses with stores and restaurants on the ground floor (Fig.1.20). After the erection of the wall, the students could no longer access these shops. The dense plantings and the ornamental ditch further pushed the students away from the shops and worked to reinforce and extend the boundary wall. Without enough customers, many shops are facing closure. In order to tackle this problem, I propose a ‘Vending Wall’ that is composed of a supporting lattice and plug-in wooden boxes of various sizes (Fig.1.21). These boxes could be opened and closed at will on either side of the wall, but could only be removed from the lattice structure on the university side for the sake of management. The design proposal uses this portion of the wall as a two-sided playing field – the students control one side, the villagers the other. On the village side, the shop owners and street vendors could easily carry out different deliveries.
In 2010, I was invited by the School of Architecture at Xiamen’s Huaqiao University to lead a two-week design workshop entitled “Thickening the Line.” The concept of ‘Vending Wall’ was first developed in an improvisational installation in a classroom.
Fig. 1.21: Foam models investigating potential ways of using the boundary wall

01 supporting lattice structure
02 plug-in boxes
03 security device
04 vending wall

Initial installation project at Huaqiao University (2011)
via the boxes, or sell items through available openings. This turns the wall into a commercial transaction platform (Fig.1.22). On the university side, by covering the ornamental pond with wooden boards, this underutilized site immediately becomes an opportunistic space that caters for a wide range of occupations and activities. For instance, the students could order and pick up deliveries through the boxes or openings (the boxes at the top function as advertising boards where food menus, pricing and/or contact information are provided). The students could further remove the wooden boxes from the lattice and turn them into different sized tables and chairs, and other makeshift assemblages according to need (Fig.1.23).

This interactive wall brings not only services to the university students but also commercial opportunities for Sun Cuo Village’s shop owners and street vendors. With the interaction between two sides further strengthened, the shops behind the wall might very well continue to survive. This proposal considers the site specificity and the social ebb and flow adjacent to the wall (e.g. the existing shops) and devises a freestanding artifact that ensures security while still being flexible enough to produce a shared landscape that fosters opportunities for all parties (Fig.1.24).
On the university side, a large green space sits immediately next to a portion of the boundary wall (Fig. 1.25). Because of the already considerable amount of green space on the campus, this particular green space is often left unoccupied. Noticing the absence of the public space on the village side, I began speculating on how this large green space could be accessed and used by Sun Cuo villagers while not compromising security. In their study, *Border Wall as infrastructure*, Ronald Rael and San Fratello (2009) suggested that walls could be organized not just in single layers, but also in double, triple or more layers to promote functions. Applying Rael and Fratello’s concept, I proposed a three-dimensional wall in place of the one-dimensional boundary structure presently there.

The new boundary structure has two separate ‘program’ layers: the upper layer is the green space serving the local villagers and the lower layer is composed of a number of shops, serving the university students (Fig. 1.26 & 1.27). The elevated green space could function as a community park for the villagers by programming in some civic hardware such as staircases, seating and lighting.
facilities, playgrounds and so on. Additionally, this space becomes a suitable site for hosting seasonal events or festival ceremonies like the performance of the Festive Lantern or Lion Dances during Spring Festival. Capable of hosting a diversity of events and programs, this shared space works to retain and prolong local culture (Fig. 1.28).

However, bearing in mind the anxiety around the need for security amongst various parties, each 'program' layer has an independent access-point. For example, the elevated green space on the upper level faces towards the village and gradually slopes down to the village's local street without transgressing the physical socio-political boundary line. Likewise, the shops on the lower-level could only be entered from the campus with no access to the villagers. Nonetheless, more than just a security device, this multilayered wall provides leisure, cultural and commercial programs that serve people on both sides, hence offering greater opportunities for exchange.
P03: A Crossable Wall

This portion of the boundary wall is situated between a covered walkway on the university side and a large backyard space on the village side (Fig.1.29). The erection of the wall turns the backyards of four village houses into one single paralyzed space. The four village houses currently arranged side-by-side along with the boundary wall act to hermetically seal the joint backyard space. The only access to this space is by the residents of the four village houses. This arrangement renders this portion of the boundary wall redundant. Therefore, the proposal for this site is to remove this portion of the wall so as to create a shared space for both the students and the residents from the four village houses.

By replacing this portion of the wall with a terraced structure which doubles as a supporting infrastructure on which people can sit, read, eat, watch, play, and relax, a multi-use purpose space emerges (Fig.1.30). The students could easily enter the former backyard space where they can conduct various outdoor activities. Given these potential ‘customers’, the four village houses could be verti-
cally stratified with their ground floors converted into commercial shops or take-away restaurants that will serve the university students. Without the demarcation wall, this previously lifeless backyard is turned into an active front yard that could be used for a variety of purposes and functions, such as an informal flea market, a gathering or meeting place, a playground, or a venue for small events (Fig. 1.31). The terraced structure is covered in grass and blended into the surrounding landscape to visually and physically indicate blurring between the university and the village (Fig. 1.32).

Fig. 1.31: Collage image of the 'Crossable Wall' showing potential use of the backyard

Fig. 1.32: Section diagrams showing current impermeable boundary condition (top) and proposed crossable boundary condition (bottom)
Fig. 1.33: A waste disposal site and a water reservoir located in the vicinity of the student dormitories.

Fig. 1.34: A green fence installed next to the concrete boundary wall as second layer of security.

Fig. 1.35: Collage image of the ‘Productive Wall’

P04: A Productive Wall

The construction of this portion of the boundary wall has turned a remaining paddy farm into a fetid waste disposal site on the village side (Fig. 1.33). This site, located only a few metres from the university residences, brings unpleasant smells to the students. In this area, the campus land is about three metres higher than the village. The difference in elevation already created a natural barrier between the two communities regardless of the boundary wall’s existence. In addition, due to its proximity to the village, each student dormitory is individually further fenced to ensure the students’ safety (Fig. 1.34). So, even without the boundary wall, the dormitory buildings’ fences already act as security devices. Given these existing conditions, my proposal for this site is to remove this portion of the boundary wall, and turn the waste disposal site into a shared orchard, which would bear a range of local fruit trees and plants such as longan, litchi, apple, and strawberry (Fig. 1.35). A nearby existing water reservoir could be reused for irrigating the orchard.
By removing this portion of the boundary wall, the university students and the local villagers could possibly work together to manage the garden (Fig.1.36). For example, the students could assist the farmers with different jobs at different times of the year like farming, fruit picking and harvesting. This promotes dialogue and interaction between them and also a unique agricultural learning experience for the university students living on campus. The farmers could further set up vending stalls on the edge or the pedestrian path on the campus, selling fresh fruits to the university students during harvest season (Fig.1.37). Without the presence of the physical boundary infrastructure, this orchard as a productive landscape could become an integral part of campus life. This proposition shifts the understanding of boundary from a static line to a dynamic space for labour, economic and social production.
1.4 Discussion

This chapter began by interrogating the conventional design strategies of the boundary wall associated with gated communities in China. As an initial attempt to frame this thesis, especially after examining the role of boundary in relation to established modes of Chinese living, I came to a position that this research study is not about providing support for or against boundary walls. Rather it is about developing alternative boundary typologies. The initial hypothesis is that it is possible to shift boundary from a line to a thickness that is capable of catering for a range of programs and activities. The reviews of a number of boundary projects like Koolhaas's Exodus or the Voluntary Prisoners of Architecture further initiated an argument that designers should not simply impose a symbolic design from above. Instead, they must deal with more specific urban situations and work at a more realistic and realizable scale from the ground up.

The 2013 Holcim Awards Competition provided me with an opportunity to test the notion that designing alternate boundary typologies should attend to specific urban situations and operate at a more realistic and realizable scale, in this case to rethink and rearrange a boundary wall between a new university campus and an old village. Working with four different portions of the boundary wall, I proposed four thickened boundary typologies to bridge the university campus and the village. The proposed walls include a Vending Wall, a Multi-layered Wall, a Crossable Wall, and a Productive Wall. These thickened typologies are equipped with a greater degree of openness and accessibility, promoting a symbiotic living environment for people at different levels. Instead of solely serving as security devices, they are also able to facilitate exchanges and interactions between the two communities. Additionally, the four boundary typologies may also boost the village's local economy especially after the deprivation of its farmland following the university's construction. However, I began to wonder if I could have done more.

After analysing all the proposals in the competition project, I started to realise the shift I had made from line to thickness seemed to restrict boundary investigation to the realm of typology or object making rather than expanding it to incorporate existing modes of occupation and appropriation by the local villagers. In other words, these proposals still take on a tabula rasa approach that downplays the existing patterns of use by local villagers and students as they negotiate with the wall daily. The four proposed alternate boundary typologies seem to impose pre-conceived design solutions in a bid to sanitize and cleanse the dilapidated and unkempt appearance of the boundary wall and the informal activities that are currently taking place there. The four proposals discounted local knowledge. As such, thickness as a concept is reduced to an object of design.

As artist and architect Richard Goodwin (2012) noted, true porosity between parties is enhanced when we address the existing structure and its gaps and potentials rather than imposing a tabula rasa solution from without (p.24). Likewise, in Taipei Operations, Sand Helsel (2004) also suggested that design proposals should be generated from their original contexts by starting with what is already there (p.6). Thus, without understanding the individual response to the wall or the acts of transgression, how could I possibly come up with better boundary solutions? What would happen to those informal transactions currently operating on the boundary if we suddenly make the boundary space more open and accessible? Will all those informal activities and small businesses disappear without providing certain boundary conditions?

From undertaking this competition project, I started to realise how much of the richness and complexity of the boundary is lost by reducing it to an architectural object. This loss was particularly apparent when I attempted to include informal activities into a more formal boundary setting. As Stan Allen (Gastil, Ryan et al., 2004) reminds us, “it is not the architecture, it is the way in which people use the architecture, and how open that architecture is to different uses” (p. 14). This shifts the emphasis from designing what a boundary might look like to a deeper understanding of how the local villagers appropriate or take advantage of the existing boundary conditions in their ordinary everyday lives. The next chapter thus begins by investigating the informal activities that form impressions along the boundary wall between Jimei University and Sun Guo Village.
References


CHAPTER TWO

Boundary as Sites of Exchange
Current urban design literature often considers boundary walls, and in fact boundaries in general, to be destructive to an active public realm. Taking cues from Jane Jacobs amongst others, developers are often encouraged to provide rights-of-way or easements through private properties and to reduce the number of boundary walls around the site. Jacobs herself notes that areas directly beside boundaries often perform badly as sites of exchange. She attributes the loss of informal, public-oriented activities to the existence of boundary walls, and famously argues that the safety of a neighbourhood does not come from the physical devices, but from “eyes on the street.” Instead of walls, informal street life could contribute more to security (Jacobs, 1992, p.36).

Jacobs’ point on informal street life contributing to security and sense of place is worth considering when dealing with boundary space. However, for Jacobs the boundary wall is only ever “the curse of border vacuums,” and never a space for potentialities (p.257).

Moving beyond Jacob, one might ask, how can the areas around boundary walls be seen as having the potential to be sites of exchange? Are these exchanges already present, but because of the dominance of current urban design literature that treats boundaries negatively we are unable to articulate them positively?

To enable further exploration of the questions just asked, one might turn to the reflections of some notable as well as up-and-coming architects on the issue of boundaries and limits. On a 1993 field trip to the Berlin Wall, twenty one years after he presented his thesis project at London’s Architectural Association School entitled “Exodus or the Voluntary Prisoners of Architecture,” Rem Koolhaas (1995) remarks that the Berlin Wall was more than just a piece of a divisive structure. As he physically experienced the Berlin Wall by walking along it, he notes that “it was a situation, a permanent, slow-motion evolution, some of it planned and some of it improvised” (p.219). The improvised events and activities that gather at the wall betray its monolithic appearance (Fig.2.1). For Koolhaas, it was how the wall operates in various specific settings that makes it significant to a human culture that can thrive beneath grand political statements. Following Koolhaas’ argument one might suggest a boundary could be treated as an enigmatic space in which individuals can easily turn limits into activities, practices and opportunities.

More recently, Gil Doron (2007) notes, when examined at a more intimate scale, boundaries are often blurred and porous, and are impervious to redevelopment; in fact they are often receptive to informal activities that are not pre-designed or pre-planned (p.210-229). More importantly, Doron also resounds the concern of how governments, professional and academic bodies often assign moral overtones to spaces; examples are the spaces...
that are called “dead zones”, “derelict”, “vacant”, and so forth. These spaces are treated as such because they are not occupied by activities that are productive according to dominant socio-cultural and economic logic. The key issues of time and temporality are also excluded from any understanding of these derelict, dead zones, hence further reinforcing the misguided notion that these spaces are futile. However, these spaces, for Doron, often do contain numerous activities, albeit informal ones. Hence he presents an argument that informal activities can appropriate boundary spaces by creating new opportunities rather than conforming to prescriptions for occupation. On the issue of finding opportunities to transgress limits, Indonesian architect Ary Indra (2013) similarly suggests that boundary conditions contain opportunities which people could harness to create something new that would benefit both sides of the boundary. As such, a boundary more than a divider becomes a potential joint between two different communities.

What one can draw from the above-mentioned architects’ views on boundaries is that it is crucial to observe how locals are already taking advantage of existing boundary conditions. Michel Foucault (1984) famously remarked that there is no strict divide between an order of liberation and an order of oppression, and that “no matter how terrifying a given system may be there always remain the possibilities of resistance, disobedience and oppositional groupings.” For Foucault, “liberty is a practice” (p.245). To liberate is to transgress the normative boundaries set physically, culturally and socio-economically. Foucault (1977) also notes that transgression could indeed be temporary actions or activities that continually test limits. He writes,

Transgression carries the limit right to the limit of its being; transgression forces the limit to face the fact of its imminent disappearance. (p.34)

Transgressive actions would thus actively work to resist capture by dominant systems of representation (p.35-36). Following Foucault, one might then suggest informal activities that occur around boundaries perform a certain level of transgression. And even more so, each individual act of transgression is always already connected to a wider system of informal acts that together form a system of transgression.

It is with this notion that even the seemingly most oppressive structures like boundary walls could be transgressed that this chapter constructs its theoretical frame. Hence, in this chapter, I suggest that treating boundary walls only in the negative reiterates a binary condition that selectively discounts mutual exchanges between the two sides, hence forgoing formations of new understandings, spatialities and communities. Such an approach is not dissimilar to demarcating territories with a one-dimensional line drawn on a macro-scale, and is not effective in revealing the informalities that abound in many boundary areas.

Marked and unmarked police patrols and security guards gather together during an anti-vending operation in a boundary area between Jimei University and Sun Cuo Village (24 December 2011).
That boundary spaces are already sites of exchange is especially true in Chinese cities where boundary walls themselves can often become the infrastructure that facilitates exchange for people from different socio-economic territories and milieus. I will elucidate these exchanges through a series of critical mapping exercises later in this chapter. As I stressed in Chapter One, this research study does not set out to discredit boundaries and boundary walls as it recognises the cultural, socio-economic specific sensitivities of the Chinese for wanting some form of physical boundary. To reiterate, what this research seeks to do is to articulate the various levels of exchange – social, commercial and others – that occur despite the existence of boundary walls. This chapter draws out some of the resilient ways people in Chinese cities adapt and utilise boundaries.

To highlight this resiliency, I would like to revisit the boundary wall between Jimei University and Sun Cuo Village discussed in Chapter One. Looking at the boundary wall that circumnavigates Jimei University’s lands, one might easily surmise that wall represents China’s move towards increasing privatisation. One is not wrong. Surveillance cameras and at least five security kiosks manned by armed guards are located at various points along the wall where the campus and the village meet (Fig.2.2). Students need to present their personal IDs to the gatekeepers on duty in order to enter the campus. Within the university, students also require electronic security pass-cards to move from their dormitories (the ‘Living Zone’) to the lecture halls and library (the...
'Learning Zone') to the indoor sports centre and various facilities (the "Activity Zone") (Fig. 2.3). These differentiated levels of access stratify the campus and even the village around it into hierarchical zones. On the lowest rung are the villagers, perceived as rural and uneducated, who cannot enter the university unless to perform menial duties.

When the villagers lost their farmland due to the new university, they also lost their jobs and income sources. Although the university's boundary wall prevents the villagers from entering the campus to seek alternative jobs and income sources, they found opportunities for micro-economies to occur at the wall. Instead of being a politic public-private division, the wall acts more like an urban 'magnet', drawing acts of social, economic and cultural exchange and interaction, symbolizing a joint between two distinct communities (illustrated in Fig. 2.4 on the next page). These acts are in situ, ad hoc, responsive, and specific, working to blur the territorial demarcation and to create a space that moves beyond the binary of private-university versus public-village lane.

What is produced through these exchanges is a picture of a wider area – beyond the immediate vicinity of the boundary wall – where an interrelated web of acts of informal activities or transgressions occurs. Yet, transgressions or informal activities are never isolated acts; they are always part of a wider system. One might suggest beneath the formal rational divisions seen in Chinese cities, there lies an informal landscape of conversations and dialogues that escape dominant socio-economic discourse.
Fig. 2.4: Various informal transactions conducted between Jimei University students and Sun Cuo Villagers through the boundary wall.

Shops built abutting the university boundary wall upon which cash registers, cabinets for displaying food, and menu boards are placed despite there being broken glass inserted into the top of the wall for reasons of security.
Sun Cuo villagers selling food to university students through the gaps along the fence

Sun Cuo villagers selling food to university faculty
2.2 Boundary as System

Besides mapping acts of transgressions that are already taking place in boundary areas, one should also consider mapping the wider systems that encompass these individual acts. This chapter does exactly this – it maps both the individual act and the system it is situated within.

To think of a boundary as a system one might refer to a line from philosopher Martin Heidegger (1971).

A boundary is not that at which something stops but, as the Greeks recognised, the boundary is that from which something begins its presencing. (p.154)

Heidegger conceives a boundary as a horizon, which is a line but one that is always a line that opens up to a wider space. This is potentially a perpetually extensive and intensive space as the horizon will always keep expanding as one approaches it. Continuing Heidegger’s metaphor, one might suggest that the boundary, as we approach to investigate it, will open up to an expanding and intertwining of a system of activities and objects in varying spatio-social arrangements. This system can certainly extend beyond the immediate vicinity of the boundary, and it also has a form that shifts according to time, use and occasion. Clare Lyster (2006) in Landscape of Exchanges: Re-articulating Site argues that exchanges – social, economic and/or symbolic – must be considered beyond a singular territory or within the space of a single object (p.224). Exchanges occur across multiple sites of occupation.

To understand the exchanges and informal activities that occur at the boundary walls in China, such as the one between Jimei University and Sun CuO Village as mentioned in Chapter One, it is beneficial to follow and observe what happens across a myriad of scales beyond the boundary walls. It is to map that shifting spatial entity beyond the boundary wall’s immediate surrounds. Landscape architect and urban theorist SueAnne Ware (2007) also reminds us that it is thus important for designers to map the network of social, economic, cultural, and environmental exchanges, and demonstrate a connection between different socio-economic territories, between both sides of a boundary wall, and within one side of a boundary wall (p.92). The boundary approached as a system of connections and exchanges alludes less to a series of well-defined demarcations, and more to a set of interdependent parts. Each of these parts sustains and defines the others.

It is the boundary’s extended and shifting spatiality that this chapter will investigate and map. The Chinese architect Gary Chang (2003) notes that when engaging with a fluid city, one must be ready to generate an “intensive spatial montage” (p.59). One must thus be ready to map the unexpected. It is, as architects Anuradha Mathur and Dilip da Cunha note, to find opportunities while mapping that allows sites and objects to connect outward rather than isolating them (Mathur and da Cunha, 2006).

A boundary, as Heidegger suggested, is never a static object. Likewise, the activities that occur around a boundary are never in situ. What follows in this chapter concerns how one might begin to conceive of a boundary as well as the activities around it as a wider system. A few enabling questions to ask here to further elucidate how boundaries could be conceived as wider systems would be:

- What are the wider systems of exchanges, hard and soft structures that exist beyond the boundary walls that actually make transgressive actions or informal activities possible?
- How do these wider systems change in scale as they spread away from the boundary?
- And most importantly, how could these wider systems be mapped?

These questions would help create a critical mapping methodology that can add to the literature on the study of boundaries.
2.3 Methods for Critical Mapping

In the previous section the questions of what is mapped and how it is mapped were asked, with special attention to informal activities. However, it is well established in current urban design and spatial geography literature that any map is an abstraction of reality. A map summarises a myriad of conditions and activities that occur over time on a piece of land into a set of graphic conventions. As mentioned earlier, the most severe form of abstraction when mapping boundary areas, for example, is to simply reduce the lay of the land into this *versus* that *side*. It is this abstraction that cartographically and symbolically obliterates the informal activities that transgress the binary of *this* or *that*. That which is inescapable is the fact that any mapping exercise will result in some level of abstraction, but this should not stop us from mapping altogether. Any map necessarily reflects the ideological and socio-political premise of its initiation. No map is neutral. As such, what one could do in the face of abstraction requires knowing what must be made abstract, while at the same time maintaining the 'texture of the real'. This could mean knowing what to retain in the resultant maps to show those particular relations between parts one sees crucial to explicate a particular ideological and/or socio-political stance. Operatively, it is a matter of knowing what to capture, to maximise what we want to show in order to illustrate certain socio-economic, spatial or cultural forces at play. It is also understanding the forces that conglomerate into acts of transgression that add to a boundary’s richness and complex reality.

This section further addresses those questions of what to include in mapping through the writings and reflections of some theorists, artists and designers who have dwelled on the topic. It also outlines how I arrive at the two key mapping methods I employ in this research study.

The question of how mapping is undertaken alludes to the issue of representation where a symbol stands in for a richer breadth and depth of knowledge about a space and the lives that occupy it. During the course of my research I became aware of how boundaries are inevitably connected to the wider urbanscape, the larger city space itself. With this in mind, I began asking how one might cartographically represent these connections spread spatially across an entire cityscape. Here, I turned to the work of Dutch architects MVDRV (1999), particularly their concept of “datascape” which computes large amounts of statistical data into quantitative info-graphics. Datascape uses data-driven visualisation as a means of representing unacknowledged features and relations of a city or region. The visualisations are then used to measure, predict and even test hypothetical future scenarios (Fig.2.5). There is a certain allure to how quantitative data are represented as three-dimensional images. On a large regional planning scale, these visualisations can indeed help policy-makers make decisions. However, there are drawbacks. Most people do not view or experience the region, and certainly not the city and a boundary wall, from a ‘God’s eye’ perspective which is how datascape presents information. It is here that I began to understand mapping relations at this high a scale is not going to produce maps that can help me better understand the boundary wall between Jimei University and Sun Cuo Village and minute sections of it where exchanges occur.

Architect Sand Helsel (2004) noted that in order to know a city more intimately, at the human scale, data needs to be collected from first-hand experience of a specific site, from personal observation and from being there rather than just collected from various Geographical Information Systems (GIS) datasets and other census materials (p.6). While quantitatively based data might provide clues as to how to allocate resources on a big picture scale, it could miss or perhaps even dismiss the complexities of the lived world. Like Helsel, Architect Teddy Cruz noted that quantitative data based on statistical information found in libraries and websites do not provide designers and researchers with the opportunities to read space, especially border areas, closely. When there is failure to "represent the real," any understanding of transgressions that might be taking place could be missed (Cruz, 2011). This in turn leads to greater difficulty in enacting actions of resistance. Both Helsel and Cruz urge designers and researchers to look beyond the over- and under-representation of space as large datasets and even 3D visualisations that present space-time as static. For example, in the context...
of this thesis, one might hypothetically say, while GIS datasets and census information can provide information about the amount of commercial exchange in actual monetary units between the students and villagers in the Sun Cuo vicinity, they cannot adequately represent how those exchanges are actually carried out. An understanding of the boundary must be experienced from the ground. Acts of resistance and transgression often begin and are sustained at a scale that could be located within just a few square metres of space, at the physical level of the ground floor. Iain Chambers (1994) and Theo van Leeuwen (2008) aptly surmise that heavily abstracted data could hardly embrace "human actions" and address the palpable flux of everyday life and the cosmopolitan condition (Chambers, p.92; van Leeuwen, p.88).

It became clear to me that a closer to ground mode of visually representing the boundary and its surrounds is needed. Emerging relations that occur at a human scale can best be documented when observing the lay of the land from this level of scale. Landscape architect James Corner (1999) noted that the act of mapping, and not just the resultant map, is a process in which the cartographer first discovers and/or creates relations between once disparate parts, and brings these connections into productive relations so that new physical and non-physical structures can then emerge (p.230). Most importantly, the discovery of these emerging relations is often made when one is mapping at the human scale.

Mapping at the human scale is certainly crucial to this research study, especially in this chapter, as the thesis ultimately examines how people live with and transgress existing boundary conditions. These people and their various exchanges might very well involve bigger structural and infrastructural mechanisms such as the wider city public transport system or planning policies, but what is elemental here is the person at a human scale.

I began contemplating how operations at a human scale perceptually happen faster than at a 'God's eye' point of view. For instance, the actual movement of a car seems to be very slow or even static when it is seen from the height of an aeroplane. But the same car would appear to be moving at normal speed should we stand next to it, on the ground, at the scale of a human. The perception of time and movement, I reflect, should be addressed in my mapping exercises. Landscape architect Marc Treib (1980) noted in Mapping Experience that mapping is an act of recording experiences, and experiences are never isolated events but rather events that fold and unfold into another experience over a period of time (p.18-22). Hence, when mapping there is a need to register time in its multiplicity. It is time in its movement that drives space's dynamism. In the context of this thesis, mapping is employed to capture the boundary and its surrounds in time. As a method of capturing the city and its temporal multiplicity, Treib advocates walking.

There are many kinds of walking, and so there is a need to more clearly define walking as a method of mapping. As a continuation of Treib’s advocacy for walking, one might turn to Mathur and da Cunha (2009) and their notion of the “photo-walk” to convey spatio-temporal multiplicity. Theirs is a collection of photographs that do not just show the walker’s passage, but also how each scene, each stop, each space transforms over the duration of time. To further show time’s multiplicity they suggest further fragmenting the photographs by splicing them with a series of section drawings depicting landscapes, plants, vehicles, buildings and so forth, then arranging these sections to more directly convey a sense of sequence and passing time (Fig 2.6). Focusing on events rather than definitive demarcations, the "photo-walk" calls attention to the continually shifting territories formed by people and their activities. This leads to a better understanding of an urbanscape as a system rather than a map which shows where things are supposed to be.

Two things are key in critical mapping. First, it is the notion of scale, to see the cityscape from a human scale and perspective to understand what happens in the informal activities that occur between people. Second, it is the notion of time, to record space in its temporal multiplicity, and how informal activities take place over time.
The notion of scale – human scale – could be mapped by what I propose as “close observation.” The notion of time could be mapped by what I propose as “following.” The next two short sections will discuss these mapping methods. However, these two methods could very well be used simultaneously. One might suggest that together these methods prescribe a need to closely observe the city and its people as they change through time.

2.3a Close Observation

Close observation pertains to documenting activities that occur at a localised scale to understand how people appropriate small-scale city infrastructure for purposes of informal commerce and livelihood, amongst others. The observation, most of all, is performed at a human scale. In the context of this thesis, it observes how Sun Cuo’s villagers carry out different commercial transactions at very particular locations along a boundary wall.

The landscape architect Randolph Hester suggests that observation is the best technique for discovering what people do and how people interact with other people in a neighbourhood space (Hester, 1984). And very often, as Helsel (2004) remarked, through close observation one can see the boundaries that demarcate the public and private; the inside and outside is no longer defined solely by the ownership of land but by the actual “evidence of occupation” (p.70). This evidence of occupation, for Helsel, could come down to observing things as small as a post box, a portable ice-cream store, handbags, a stray dog, a pile of rubbish, and how people interact with these things in a limited spatial confine (Fig.2.7).

2.3b Following

While close observations occur at a limited spatial confine, following expands this spatial confine. One might suggest following pertains to tracing the paths of people and their activities around the city in order to map out a lived cartography that connects different people, events and spaces. It examines how the evidence of occupation could take place over a larger spread of land and longer duration of time.

One thing about time is that as time itself unfolds, unexpected events might occur and lead us to discover unforeseen readings of those people and their activities which we were initially following. The element of chance is important in following.

To further discuss the element of chance, I turn to the dérive, a method of walking and following first mentioned by the situationist Guy Debord. In his Theory of the Dérive, Guy Debord (1958) describes the dérive as a transient passage through the ambiences of the city, a search for the awareness of the city’s psychogeography (Fig.2.8). Dérive is a way of recording the experience as you walk through different spaces, and proposes a different reading of our connection between different
spaces in the city. The intent of dérive is to read the city through looking rather than relying only on preconceived concepts of space, architecture and their functions. It is often an aimless and random drift through a place guided by a desire or an awareness of how different spaces draw you in or repel you. It is a mode of spatial engagement and experimental behaviour without a particular motive in mind.

However, what distinguishes my understanding of “following” in comparison to Debord’s dérive is that following has a certain agenda or particular motive. Following might indeed allow for chance and unexpectedness but its key purpose is to understand specific relations that a particular person has to the wider city network of parts, peoples and events. There is always a person or object at the centre of the act of following. What is allowed into the following are the chance encounters this person might run into, of which I aim to document and map.

Around the same era as Guy Debord’s dérive, the French artist Paul-Henry Chombart de Lauwe created a new map of Paris titled Trajects pendant un an d’une jeune fille du XVIe arrondissement (Fig.2.9). This is a map based on the movements of a female student studying at the School of Political Science and living in the 16th Arrondissement. For almost one year, Chombart de Lauwe followed this young woman and took note of her movements in an attempt to understand how she lived every day in Paris. As shown in de Lauwe’s map, her itinerary forms a triangle emerging from her movements with no significant deviations – the vertices are her residence, the school and the home of her piano teacher. The path of the student cartographically reveals “the narrowness of the real Paris in which each individual lives” (Dietz, 2006, p201). Although de Lauwe’s map of the student’s movements does not create a rich image of the city of Paris, it is possible to imagine that when these simple views are combined, the sum may be greater than the parts. Chombart de Lauwe’s following does not aimlessly drift through Paris. He has the student at the centre of his following, but what she might encounter and the deviations from her usual paths are the unexpected events Chombart de Lauwe records.

Many contemporary artists have also performed their own dérive or more precise following. The objects or people they follow can be very different depending upon their motivations or purposes. Some may follow people such as in Vito Acconci’s Following Piece (1969) and Sophie Calle’s Suite Vénitienne (1980); some may follow routes, such as Richard Long’s Fresh Water Salt Water Line Walk (1980) and Francis Alys’s Fairy Tales (1995-98); and others may follow items or symbols, like SueAnne Ware’s Noticing Melbourne (2007) and Sand Helsel’s Oranges (1999) (Fig.2.10). These artists used their personal approaches and the experiences of others to remap the territory we have grown accustomed to. The remapping leads to the formation of new maps.
How can these followings and the new territories they produce be represented? As Corner (1996) noted, it might be a matter of finding representational and graphic marks and symbols that are outside of the usual architectural convention (p.19). It is a matter of inventing new graphic marks. Perhaps, it is to not map as informational devices, but more as performance stages in which they can critically act and experience.

The purpose of following is not just to map the geographical spread in which the followed object or person operates, but also to reveal hidden connections and relationships embedded across this geographical spread. This could result in a map of the unmapped and the unmappable. A map of following is meant to be both narrative and operational. ‘Following’ as a way of mapping extends a certain agency over how different things can come together. More importantly, following could point the way to individual experience and have direct interactions with places and their inhabitants. In other words, it specialises one’s understanding of relations of places, people, events and things, while challenging the hegemonic practice of traditional cartography.

2.4 Critical Mapping Exercises

Expanding on the work presented in Chapter One and the first half of Chapter Two, this section further enquires how everyday lived experiences – often manifesting as acts to survive economically – undo the common notion of boundary being a negative division line. To do so, there can be a shift from just a focus on wall typologies and other explicitly physical forms toward mapping events that take place. These events, in this case, can be the informal engagements the Jimei University students and Sun Cuo villagers have with each other, and how they engage the existing boundary conditions to conduct those exchanges. Three mapping exercises are presented here to elucidate these boundary-questioning exchanges. The first two are concerned with how people use the physical space and objects, albeit on two different scales; the third is concerned specifically with how people interact.

In the first exercise, I mapped how an unlicensed vegetable vendor appropriated a small contained area of public space over a period of time. I also observed how this vendor used a set of what I term “micro infrastructures” to help hawk her produce. These micro infrastructures can be small objects, such as a building’s awning or a small piece of land, that can be used to help a person engage in some form of informal economy that in turn breaches boundary lines.

The second mapping exercise brings the first mapping exercise’s small, contained scale toward a wider urban system that cuts across the city, or at least a neighbourhood. Like the first mapping exercise, I noticed how vendors often use nearby public facilities such as toilets as spaces to prepare their wares. Expanding the scale, I believe, offers a more holistic take on the boundary and its porous conditions; in other words, it demonstrates how a boundary’s porosity is enabled by conditions wider than the singular physical boundary wall and its immediate vicinity.

While the first two mapping exercises focus on spatial and physical forms, the third exercise hones in on the human-to-human exchanges – informal acts – that occur, that make the boundary a site of exchange. These exchanges include ones on the boundary as well as those that happen across the boundary.

Because of its ability to bring together both analytical and propositional thinking, mapping has become a strategic part of the design process in this PhD research. Pedagogically, these three mapping exercises can also serve as methodologies for future mapping exercises, both for myself and for other urban design practitioners.
2.4.1 Mapping the Vegetable Vendor

During my December 2011 field trip to Macao, I noticed, by unintentionally peering out my rented apartment’s window, a vegetable vendor who occupied a portion of the pedestrian walkway not far from the apartment building. I thought nothing of it until I noticed she came back to the same spot daily. Her return led me to want to understand why she chose this particular place to sell her produce. More specifically, what physical conditions or infrastructures are there that enabled her illegal trading to operate.

Every day she comes to this place on her tricycle which carries three colourful baskets of produce, and puts these baskets right next to a few on-street parking stalls (Fig. 2.11 and 2.12). Most days she ’parks’ her tricycle in a nearby lane, and proceeds to lean against a blank wall a few steps from the baskets waiting for potential customers to walk by. Her location is also near a small rubbish drop-off station, which one can only speculate she uses to discard rotting vegetables and fruits at the end of day into.

After observing her continuously for thirteen hours, I noticed her choice of selling spot was not fixed but shifted around with time. Since the use of a camera with a flash might expose my intention and thus cause her to change her ‘usual’ pattern, I decided to map her movement and how she utilised space only by drawing and taking notes. Throughout the day she adapted to different situations by appropriating the existing...
The key micro infrastructures this vegetable vendor utilised were the above-mentioned parking stalls, the laneway where she stores her tricycle, a building’s awning, the garbage drop-off station, and the space next to a parking meter on the walkway. The building’s awning functions as a shelter to protect her from the frequent rain in tropical Macao. The area next to the parking meter provides an extra space for her food baskets without interrupting pedestrian flow patterns. Most interesting of all, the cars at the parking stalls actually function as a perfect ‘protective screen’ to shield her illegal vending from police patrol cars that might drive by. These micro infrastructures all played different roles in supporting her vending business in this specific locality (Fig. 2.13). One may then suggest that street vendors will have to occupy the areas designed for either moving vehicles or pedestrians when designers in China do not provide micro infrastructures like extra spaces or rubbish drop-off stations for them to use. These areas would be eventually turned into the chaos that designers or city managers attempted to avoid in the first place. More importantly, it is not just how the vendor used the micro infrastructure but when she used them. As discussed in the earlier ‘Methods for Critical Mapping’ section, the element of time is critical when mapping events. The following is a map of how the vendor used the micro infrastructure differently over a thirteen hour time period. (Illustrated in Fig. 2.14 on the following page).
Fig. 2.14: Mapping the vegetable vendor's activities over a thirteen hour time period

(Continues on the following page)

The vegetable vendor's three baskets were prevented from exposure to the street by two parked cars, which were placed perfectly in order to form a natural protective screen. The area next to the parking meter became an extra space for placing the baskets to ensure pedestrian flow patterns were not interrupted.

After a policeman was seen patrolling the street, the vendor now used her cunning to make sure her baskets in the laneway were made completely invisible to those walking along the walkway.

At this time one of the two previously parked cars left its parking spot, causing the vendor's space to be partially exposed to the street. Consequently, to continue her illegal vending activities the vendor then moved her three baskets up onto a concrete step, physically connected to a nearby building.

The vendor moved her three baskets back onto the concrete step.

The site now becomes fully exposed as the second car drives away. The vendor then chose to relocate her baskets once again, this time to the lane where she parked her tricycle. Each time the vendor moved positions she expertly ensured the baskets would remain visible to the passing pedestrians on the walkway.

After two newly parked cars appeared in the parking spots, the vendor subsequently moved her baskets back to the original space on the sidewalk.
Due to unexpected rain, the vendor now moved her three baskets to underneath an awning of a nearby building further down the sidewalk.

The vendor now took another three baskets loaded with fruit and vegetables from her parked tricycle and placed all six baskets onto the street’s curb (one can only assume police patrols are no longer on duty after 5.30pm).

Once the rain had stopped the vendor moved her three baskets back onto the concrete step.

The vendor placed her six baskets along the sidewalk on which more and more pedestrians appeared (After 6pm local residents begin to take their domestic waste to the rubbish drop-off station).

The vendor moved her baskets back to the space next to the parking meter on the walkway.

As it was now getting dark, the area located beneath a neighbouring lighting pole became her final vending spot of the day.
Reflection: Appropriating Existing Conditions and other Questions

The micro infrastructures such as the parking stalls, the space next to a parking meter on the walkway, the portion of a hidden laneway where she stores her tricycle, the lighting pole, the building's awning, and the small rubbish drop-off station, are all existing conditions and objects in the small vicinity where our vendor hawks her produce. It is a matter of how and when the vendor appropriates these micro infrastructures that keeps her business alive.

The vendor's makeshift appropriation of other people's property (like the parked cars and the awnings, and state-owned spaces like the walkways) to run her illegal business can be said to express what Henri Lefebvre understood as producing space. Space or place is not a given, but produced. The divisive space of the university boundary wall is produced. To mitigate the effects of the boundary wall, the vegetable vendor and others like her find ways to differently live in the part of the neighbourhood where they are affected by the boundary wall. For Lefebvre, inhabitants of lived space actually live those spaces by making use of existing objects (like those micro infrastructures) to create an overlay of new meanings and functions that weave through the physical space that is stratified by dominant forces of capital such as those of Jimei University. As such, these lived spaces composed of lived situations are "essentially qualitative, fluid and dynamic," and not always quantifiable within the dominant intentions and ordering for how a space should be used (Lefebvre, 1992, pp.38-42).

Just as I started to identify the things the vendor appropriates to run her business, a series of other questions arose: Was it enough to look at just the small area where the vendor operated? Where does she source her produce? Most importantly, if this vending was not a single act then what other elements and persons support its operation? What other actors, exchanges and events are at play that create the lived space I had observed here? In short, if I go back to Sun Cuo Village, what other micro or macro infrastructures, and other vendors, from across the village or possibly outside of the village are those vendors working at the university boundary wall connected to?

There is thus the need to understand the wider connections at play that allow for vendors at the university boundary wall to run their businesses. In other words, my process of observation needs to shift scales to that of the city or neighbourhood itself.

The vegetable vendor's city is a dynamism located not in the speed in which Chinese cities are growing and connecting to global forces. Rather, hers is a dynamism founded in the appropriation of existing conditions so as to create systems for economic sustenance that do not appear in capital reports and official community plans.
2.4.2 Mapping the Journey of Vendor D

During my 2012 trip to Sun Cuo Village, I met a local village committee member, Mr. Yang, who introduced me to his cousin known only as Vendor D. Vendor D runs a commercial kitchen from a disused cowshed with a floor area of no more than four square metres. Seeing the increasing demands for takeaway food from the university students, he rented this disused cowshed from a village family and turned it into a commercial kitchen. This kitchen/cowshed is physically attached to Jimei University’s boundary wall (Fig. 2.15). However, it is not fully visible from the campus side, thus is shielded from the eyes of the campus security.
be delivered to the students across the campus within one hour (Fig. 2.16). He owes this to a very efficient kitchen operation with a tireless staff team: his mother is the chef who stays in the kitchen; his wife is an operator who takes orders at their residence (located about 1.5km from the kitchen); and Vendor D mainly works as a deliveryman (Fig. 2.17).

However, to deliver the takeaway meals to the students, one must pass the university boundary wall, and then have a pass-card to open the gate and pass the security guard on duty in the lobby before reaching their dormitories (Fig. 2.18). How could this possibly happen? In order for me to understand how the takeaway food is being delivered to different places, more precisely to get a sense of the spatiality of his delivery trips, I needed to experience the trip myself.

After expressing my interest in terms
In order to avoid unwanted attention from the patrol police, my interviews with the vendors were often conducted through a mobile phone.
of my research study, Vendor D finally allowed me to follow him for several days provided I did not interfere with his routine. I used a GPS tracking tool (a free iPhone app), a camera and a notebook to record and document Vendor D's movements and the places he visited. One of his daily tasks is to source the food from different places across the village and bring them to his kitchen. All this movement of goods is done on his bicycle with a milk-crate installed at the rear. Throughout the day I followed him from place to place on my own bicycle, watching him switch role from a deliveryman to a buyer and back again as he meets with different people across different locations (Fig. 2.19).
The business connection Vendor D has is not limited to Sun Cuo Village. Very often these journeys could be over 50km away from his residence (illustrated in Fig. 2.20 on the following page). What was interesting was watching him switch through different levels of formality in speech and mannerism depending on the people he was dealing with. Some of the places he visited – a wholesale market, a convenience store, a roadside seafood market, a sausage factory, a roadside juice stand, a home-based workshop for disposable utensils, a roadside egg stall – some are legal and some are unlicensed like Vendor D himself (Fig. 2.21), but together they form a miniature version of the legal trading that goes on in China. And just like legal trading, there is a hierarchy of socio-economic standing. Vendor D is friendlier with some, less with others. I never asked Vendor D why his behaviour and etiquette varied, but one could speculate that the ones he is friendlier with are more crucial to his business’ survival, or are ones that have monopoly over the trading of some products.

**Fig. 2.21: Places Vendor D visited**

- Seafood street market
- Home-based workshop for disposable utensils
- Roadside fruit juice stand
- Sun Cuo wholesale market
- Home-based pork sausage plant
Fig. 2.20: Illustration showing the extents Vendor D travels to source his goods
Fig. 2.22: A security kiosk located right next to Vendor D's crossing point on the university side.
Still on the issue of social relations, it was interesting to see him bribing and hiring others. For example, he bribes a number of university security guards with money or food gifts to let him pass the wall (Fig. 2.22). The security guards are in a position of power to stop Vendor D, but as he is not doing any harm, they let him in especially since the bribe money might very well supplement their meagre income. Moreover, the security guards used traffic cones to create a small Vendor D-use-only spot on the pedestrian path right next to his crossing point (Fig. 2.23). This spot helps Vendor D and other vendors avoid pedestrian conflict during peak times. I also observed that Vendor D temporarily parked his bicycle in the spot when he returned to the kitchen. In addition, he also hires students as assistant delivery persons to bring food into part of the university, especially the highly secured dormitories where it is very hard even for a bribed security guard to let him in (Fig. 2.24). Nonetheless, symbiotic relations exist between Vendor D and the university body, especially the security guards and the hired students. Vendor D earns money from the university and effectively shares his profits with them.
I summarised Vendor D’s journey into a Five-Day Journey Map that visualises his business as an expanded socio-economic-spatial system (Fig. 2.25). Unlike a conventional map which strives at an objective representation of geography, the Five-Day Journey Map focuses on human action as a significant component of a site and uses human actions to construct new relations between otherwise disparate spaces. In this mapping, space becomes very much tied to actions. It is through actions that space gains significance and purpose. Space is thus never just a series of Cartesian coordinates. A space is always related to another space by means of actions. For example, the hired students who assist Vendor D with delivering food within the Jimei Campus during the rush hour might be seen as a ‘continuation’ of Vendor D’s space even if Vendor D is not personally present on campus (Fig. 2.26). The action of food delivery extends Vendor D’s reach. It is also important to note that should new or different actions be included in the way Vendor D runs his business the space of his business operation might very well change. Using the student example again, should the same student be barred from entering some of the university residences due to some infraction on his part, the space of Vendor D’s business operation is thus severely limited.

The sequence of actions Vendor D took in each journey I tracked was as follows:
Step 1: Sourcing products

In the morning Vendor D purchases a range of products from a number of suppliers. These suppliers and wholesalers don’t only supply to Vendor D, but to other vendors as well.

Step 2: Working in the kitchen

Once the products arrive at the kitchen, Vendor D starts to work as a kitchen hand. Groups of meals to be delivered to one location are packed together into single plastic bags, with a note containing delivery information attached to the cover of each separate food container. A milk crate installed at the rear of the bicycle can carry up to sixty takeaway meals per round of deliveries, with approximately four rounds delivered each day. Each takeaway meal sold to students costs the buyer twelve Chinese Yuan (12 RMB).

Step 3: Collecting other orders

Students often order a drink with their takeaway meal. As Vendor D’s kitchen does not provide drinks, the SAMPLE shop (a fruit juice shop) supplies Vendor D with a range of fruit juices. Vendor D then charges each student an extra 1 RMB delivery fee. To reduce travel time, the SAMPLE shop recently set up a roadside juice stand in the direct vicinity of Vendor D’s kitchen. This street stall doesn’t only supply drinks to Vendor D’s kitchen, but to other kitchens as well. It was also observed that many other types of roadside stalls supplying takeaway food were in this area, including twelve hot dog stands, and seven pancake stalls.

Step 4: Crossing the boundary wall

Vendor D leaves a ladder at the point where he crosses the wall (a number of ladders used by other vendors along this section of the boundary wall were also observed) (Fig. 2.27 and 2.28). With the help of the ladder Vendor D can easily climb over the boundary wall, even together with his bicycle. In order to avoid being caught by a police patrol, Vendor D then removes the ladder from the wall and hides it behind some shrubs located close to where he crosses.

Step 5: Bribing security guards

After entering the campus it was observed that Vendor D offered a number of security guards either money or free food as a token of appreciation for ‘looking the other way’.

Step 6: Passing packages to assistant delivery persons

Vendor D hired an assistant delivery person from each dormitory who then passed on the takeaway food bags to the student residents inside (Fig. 2.29). The payment is made when a student receives their meal. Each assistant delivery person receives 1 RMB for each meal they deliver. Vendor D collects the money from the assistant delivery person at the following round of deliveries.

Fig. 2.27: A row of ladders leaning against the university’s boundary wall

Fig. 2.28: Other vendors were also observed to use the same section of the boundary wall as their crossing point

Fig. 2.29: An assistant delivery man delivering the takeaway meal to a student inside a dormitory
Reflection

Mapping Vendor D's daily journey revealed a network of micro economies that might not always register on the official census and tax system (Fig. 2.30). While not suggesting micro economies did not exist in this village community prior to the erection of the university boundary wall, the particular unregistered commercial exchanges mentioned above can be said to exist because of the boundary wall. They arise from the vendors appropriating seemingly restrictive and divisive spatial and social conditions to create opportunities for themselves.

Fig. 2.30: Mapping the system of transgression across multiple scales

* One Australian Dollar equals to six Chinese Yuan (6 RMB)
How do they create opportunities? As mentioned before, the university boundary wall does not make it easy for the students to leave campus just as it makes it difficult for the villagers to enter the university. The vendors capitalise on the fact the students might not want to walk a long distance to leave campus to get food, especially if their lunch-breaks are short, so they set up makeshift shops, eateries and other operations in the boundary wall’s vicinity. The land that these businesses use is often rented out by the property owners who have properties immediately abutting the boundary wall. There are often no formal contracts and the businesses are often not registered with the local municipality. Due to these factors, the overhead for these businesses can often be quite low, and the profit margins high. I was told it could be as high as eight hundred thousand Chinese Yuan per annum (approximately one hundred thirty thousand Australian dollars). These high profit margins have attracted many vendors to operate at the boundary wall, and together these vendors form their own economic network. The wall might be seen as a literal and metaphoric protective screen for tax evasion.

It is not just the vendors who thrive in this network of micro economies. Vendor D’s kitchen and other similar small businesses and entrepreneurs operating at the university boundary wall provide a range of job opportunities for both the villagers and university students. For example, as illustrated in Fig. 2.30 a commercial kitchen requires a number of flyer distributors, assistant delivery persons, and other miscellaneous student workers. These jobs are often paid cash-in-hand. Again, there is no suggestion that part-time jobs for students would not exist without the wall. However, it is obvious that despite the wall’s restrictive physicality the vendors and the students have still created opportunities for employment and thus an economic exchange that requires participation from both sides of the wall. Moreover, as discussed earlier, the university security guards are often bribed to let Vendor D onto campus. In this sense, the university, as it is represented by the guards, can be seen as being entwined in Vendor D’s network of micro economies.

Jimei University, when acted upon by the vendors and their teams of family members, suppliers, security guards and students does not become its own negative image (Illustrated in Fig. 2.31 on the following page). Its boundary wall is still there, but there is something qualitatively changing that brings fissures to the dominant system of control, that makes the vendors move toward the boundary wall and makes the boundary wall work toward other modes of production and results. Accordingly, to flatly dismiss any boundary wall as categorically bad as is seen in contemporary urban design literature, is to dismiss the unexpected resilience of the people who live around them.
Thus, one might suggest dismantling the Jimei University boundary wall could mean disruptions to this existing network of micro economies, and on the level of the individual this could mean disadvantaging the students and the vendors’ personal economic well-being (though one may suspect their resilience would allow them to create new opportunities for commercial exchange).

In short, the university boundary wall is indeed a restrictive and divisive entity. It divides socio-cultural classes where university students are separated from the villagers whom the university officials might assume to be less educated and literally outside ‘academe’s ivory towers’. However, it is the resilience of the villagers and the students to find ways to survive despite the division imposed on them that led them to work for each other, to create this socio-economic system that quietly transgresses the boundary wall’s solidity.

In 2012, according to statistics from Jimei University, there were at least 500 vendors operating unregistered businesses along the university’s boundaries.
2.4.3 Mapping the Acts of Transgression

It is Vendor D’s mode of conducting business as seen in the previous section that makes it possible to question the boundary wall’s solidity. It is not so much that the wall is an inclusive zone, but that its physical structure and the socio-economic conditions created the opportunities for Vendor D and his web of ‘workers’ to earn money. More importantly, it created a way of life for Vendor D, other villagers and students. This is a socio-economy that subsists under the formal layers of class and educational hierarchy.

While the previous section dealt with the socio-economic exchanges, this section ‘returns’ to the physical through observations of how vendors and students manipulate the boundary wall to conduct exchanges. The final mapping exercise investigated some of the transgressions generated by the specific conditions around the boundary wall. Here, I document four acts of transgression, namely A1, A2, A3, and A4 (Fig. 2.32 and 2.33). Three acts (A1, A2 and A3) take place along the portion of the boundary wall abutting a university covered walkway, and the fourth (A4) occurs in the area close to the student residences.

Fig. 2.32: Isometric drawing showing the existing boundary conditions along the covered walkway (top); photo of students passing beneath the covered walkway at peak hour (bottom)

Fig. 2.33: Location map of the four acts
The first act of disobedience takes place at the section of the boundary wall located between the backyards of four village houses and the university covered walkway (This is the same location a ‘Crossable Wall’ was proposed in Chapter One). The proximity of the university’s covered walkway to the four backyards provides the owners of these village houses with an excellent business opportunity: to sell takeaway meals to hungry students passing by along the walkway on their way to classrooms or dormitories. These meals can then be cooked in the convenience of the villagers’ own kitchens.

At this particular section of the boundary wall, the land on the university side is approximately three metres higher than that on the village side. This difference in elevation means the top of the boundary wall is inaccessible to those on the village side, yet this does not deter the villagers. To overcome this obstacle, the villagers attached the plastic bags full of meals to the hooked ends of dressing sticks (which are normally used to reach high hanging clothes) (Fig. 2.34). As the wall on the campus side is only one and half metres high, the students can easily reach the hooked ends of these dressing sticks. These ingenious villagers have also created a convenient and simple system for students to choose the meals they’d like to have. A menu board is installed on top of the wall, and then students place orders by ringing a bell attached to the wall nearby (Fig. 2.35). The boundary wall’s reason for existence is to divide, but its intended purpose is being usurped by the simple law of supply and demand, by the needs of one group of people to survive through diligent work, and the natural desire of another group of people to eat; in effect, the physical wall has been metaphorically, ‘knocked down’.

In another location exhibiting similar conditions, it was observed how a public toilet could also be used to support these dressing stick delivery services. In this area, the boundary wall sits directly between classroom buildings and a row of makeshift takeaway kitchens (Illustrated in Fig. 2.36 on the following page). As these kitchens do not contain their own water supply, vendors obtain water from a nearby public toilet. On many occasions the sinks in public toilets are used as business support spaces for vendors’ food preparation. For example, vendors often wash their vegetables and kitchen utensils in the public toilet’s sink, or in specified wash areas located near to the public bathroom (Illustrated in Fig. 2.37 on Page 144). These simple yet essential tasks are crucial to the villagers’ takeaway food businesses, so in a sense, the public toilet and its supply of water actually contribute to the porosity of the boundary wall.

Dressing sticks are very common items in local villagers’ homes.

A1: Dressing Stick Delivery

Fig. 2.34: A villager delivering takeaway meals to the students via a dressing stick

Fig. 2.35: Cross section showing dressing stick delivery’s micro infrastructures
Fig. 2.36: Dressing stick delivery between Sun Cuo Village’s vendors and Jimei University students at lunch hour time (2011)
Fig. 2.37: Illustration showing flows from either side of the boundary wall at Jimei University
The section of the boundary wall depicted in Figures 2.38 is situated in between a village house’s front yard and the same university covered walkway discussed previously. Currently this tiny front yard with an area of less than two square metres is being rented out to a vendor who runs an ice-cream stall. With the help of a makeshift platform, this ingenious pop-up ice-cream stall actually straddles the boundary wall, offering the vendor the ability to serve passing university students on the other side (Fig. 2.39 and 2.40).

Strict boundary control and regulations prohibit this ice-cream stall from crossing over the jurisdictional boundary line and physically entering into the space of the university’s covered walkway. The vendor approached this restriction by cleverly constructing a pop-up façade composed of two aluminium panels. The top panel functions as an awning, while the bottom panel serves as a selling board, cantilevering over a section of the walkway, but not touching the ground on that side. These panels can easily be opened and closed from inside of the stall, allowing the vendor to quickly close both panels right before a security guard arrives. Once the guard has left the area, the vendor reopen the panels to immediately continue service (The security guards usually turn a blind eye to this illegal vending business, provided it doesn't threaten campus security).
On a recent field trip to Jimei University in 2014, I discovered that the pop-up ice-cream stall had been revamped and expanded. More importantly, I noticed a mural painted on the campus side of the boundary wall by the ice-cream vendor to advertise his popular business. What is interesting is that the ice-cream vendor had conceived of Sun Cuo Village including the university as a continuous space without the boundary wall, despite this mural being painted on the boundary wall (Fig.2.41 and 2.42). The wall for this ice-cream vendor becomes space for commerce – a billboard precisely – rather than a divisive line. The boundary wall is effaced from the vendor’s experience, at least in how he represented Sun Cuo Village’s space.

Fig. 2.41: Mural depicting Sun Cuo Village painted on the university side of the boundary wall (2014)

Fig. 2.42: Close-up view of mural; note the lack of a definitive boundary wall cutting across the city
A pop-up grass jelly stall (a franchise shop) located next to the village side of the boundary wall (To achieve a higher level of visibility for his stall, some of the tree’s branches were stealthily cut off by the stall owner)

View of the pop-up grass jelly stall behind the wall

A wooden board used to create access to his stall

A bell used to call service

A menu board placed on the top of the wall

The grass jelly head shop in Sun Cuo Village located not far from the pop-up stall
A3: Print and Copy Shops

Not far from the pop-up ice-cream stall, occupying a private laneway owned by the same village family that owns the stall’s front yard location, sit four makeshift copy and print shops (Fig. 2.43 and 2.45). This laneway is located right up against the university’s boundary wall, therefore offering commercial opportunities to people wishing to take advantage. Not long after leasing out the front yard to the ice-cream vendor, the village family also rented out the laneway to four local villagers. These entrepreneurs then transformed the lane into four separate print and copy shops to serve the university’s students.

Copy and/or print jobs can be stored onto USB memory sticks and then passed directly through to these shop operators via small gaps in the boundary wall (Fig. 2.44). As the height of the land on the campus side of the wall is much higher than on the village’s side, the location of the boundary wall’s small openings just happen to be at the perfect height for a printer machine operator to reach a student’s hand. These small openings make the delivery possible, when normally the difference in elevation would be a hindrance. The gaps become literal ‘sales windows’ for the shops, where villagers and students are then able to interact with one another (Fig. 2.45).

Fig. 2.43: Cross section showing print and copy shops' micro infrastructures

Fig. 2.44: Small gaps along the wall

Fig. 2.45: Photo of the print and copy shops behind the wall (left); a student handing a piece of paper to the copy and print operator via the gap (right)
At lunchtime or dinnertime when walking along the southern section of the boundary wall on the campus’s side, one would undoubtedly hear the ever-present sounds of frying and sizzling food, followed closely by the smell of delicious aromas wafting through the air from the village on the other side of the wall. This is the location where Vendor D’s cowshed kitchen was discovered, as were many other similar ‘invisible kitchens’.

After the boundary wall’s erection, several privately owned spaces on the village side of the wall (located in the direct vicinity of the new barrier) such as front yards, back yards, laneways, corner spaces, and cowsheds, became highly prized to people who could envisage the opportunities these spaces now offered (Fig.2.49). Quickly, these boundary spaces were rented out to food vendors who then transformed them into commercial kitchens providing cross-boundary food delivery services to the university students beyond the wall. However, in many cases the households that owned these spaces did not provide water or toilet facilities to their tenants. Through mapping the locations of the invisible kitchens, it was discovered the majority of these kitchens are located within walking distance of the nearest public toilet facility (Fig. 2.50). These public facilities provide water, makeshift wash areas, and other necessary services, and so become critical components to supporting the operation of these unregistered food businesses. In the case of Vendor D, it was also observed he would occasionally use the public toilet near to his cowshed kitchen to prepare food or wash his wares.
Five commercial kitchens operating between a village building and the university’s boundary wall.
Reflection

As seen from the above four acts of transgression, the boundary wall which keeps students and villagers away from each other now becomes a physical apparatus used to set up makeshift shops and hide from the law if necessary. While the separation of the campus and the village still physically remains, one might nonetheless suggest the boundary wall, which was once the "centre-piece" of campus security, is now just one of the pieces in a game of unofficial economic exchanges. The boundary wall as divider still physically divides but it is simultaneously a tool and a site for many socio-economic groups to converge and create communities, both temporary and mercantile. However, what swings its function from a divider to something that offers refuge from patrolling policemen, and more importantly a site of transaction, is owed to the very specific conditions of the boundary.

At least four boundary conditions can be identified from the above five acts. These conditions are crucial in creating porosity at the boundary. They are:

- Micro infrastructures around the site
- Spatial qualities of the boundary space
- Physical characteristics of the boundary wall
- Surrounding programs and context

Micro infrastructures, such as a small wash area near/in the public toilet, the dressing stick, the platform, the menu board, the bell and so on, are important in the 'moving' of jurisdictional boundaries. The public toilet, for example, which is normally a site of filth and to be hidden from public view, starts to act as a magnet, drawing different unregistered economic activities to it for the purpose of washing utensils and food. If the public toilet is near a boundary wall, it acts together with the wall to allow for acts of transgression to occur.

Accessibility and (in)visibility are of importance in generating unregistered commercial opportunities. Given China's current gated community development model, spaces adjoining boundary walls are mostly designed for parking or mere visual accents such as dense vegetation or fenced green buffers as mentioned in Chapter One. The aim is to reinforce fortification. Most developers and their designers are unwilling to provide spaces around the boundary walls to allow residents to conduct business fearing such businesses in a residential estate would attract undesirables. Accessibility, for the estate's residents to venture out, or for outsiders to venture into the estate, is halted by the wall's lack of any porosity. As I observed, a certain level of accessibility is important to allow for exchanges.

The physical characteristics of the boundary wall also play a critical role in the operations of informal activities. Quentin Stevens (2007) in Loose Space noted that the physical dimensions of thresholds, such as their width and height contribute to playful opportunities and promote an informal social life (p.82). For example, if the boundary wall on the campus side was too high, as in the case of the dressing stick delivery, a clear sightline to the backyard where the vendor is situated might be jeopardised. Additionally, too high a wall would mean it would be hard for the vendors and students to efficiently use the dressing stick. An optimal height is crucial in allowing for exchanges between vendors and students. Following this, one might also suggest an optimal height is essential for boundaries to be redrawn. Opening is another key factor. In the cases of the copy and print shops, the small openings along the boundary walls also allow for trading to occur. Here, one is reminded of Norberg-Schulz's (1997) idea that openings are what make a boundary wall come alive as they allow for "a wider range of perceptions, movements, exchanges and social encounters" (p.25). In both cases, the physical wall is still there to provide security but due to certain physical characteristics the wall is no longer a line that divides but a platform for transaction.
The surrounding programs or context in a boundary wall’s vicinity could further help a vendor determine where to transgress and what type of business should be conducted. For example, in the case of invisible kitchens, the proximity to the public toilets and the university residences (being mostly student dormitories) leads to some ingenious villagers capitalising on the needs of busy students by setting up a takeaway food business.

From investigating how vendors appropriate the physical conditions of the boundary space, I have also identified other important infrastructures like supporting services, flexible policies and micro strategies that are hard to observe and map (Fig.2.51). These are what Archigram terms the "software" that support the operations of informal activities at the boundary wall (Cook, 1999, p.76). While qualities of improvisation and spontaneity seem to be prevalent in most informal (vending)

From here, one may begin to suggest that designers do not anticipate on designing for vendors and how they use the space. But by knowing how they use or appropriate a space, designers can certainly apply the knowledge gained to promote an informal quality of our increasingly controlled urban public space.

Fig. 2.51: Garbage collection service provided by Sun Cuo Farmers Associations

Fig. 2.52: Mapping the process of planning and managing Vendor D’s kitchen (hard + soft infrastructures)

Fig. 2.53: Unpacking Vending D’s kitchen operation
2.4.3a Providing Micro Infrastructures is a Way of Designing Boundary Conditions

Architect Richard Goodwin (2011) noted designers should observe what is happening on the ground and work with the existing structure to promote a boundary’s porosity without totally abandoning the old body for a tabula rasa solution (p.24). What does it mean to work with existing structures?

One way to work with existing structures could mean using smaller objects and immediate more intimate spatial conditions that in previous sections I have termed “micro infrastructures.” This prompted me to reflect upon the tabula rasa approach I had employed to achieve the boundary’s porosity in Chapter One. In this exercise, I will engage in two quick design esquisses to show how we could facilitate and enhance the current economic and social exchanges between the students and the villagers on the boundary wall without altering much of its current form.

Pop-up Stalls

A ‘Vending Wall’ was proposed for this portion of the boundary wall depicted in Figure 2.54 in Chapter One (See Page 58 for more information). To generate commercial opportunities for locals while maintaining the existing structure, this proposition discusses provision of anchor-hooks in the wall to allow a range of vending props, such as vending carts, selling boards, and outdoor umbrellas, to be set up. The installation of this micro infrastructure enables adjacent restaurants, cafes, convenience stores, and food markets to extend their retail spaces right up to the boundary wall. Portable steps will enable shop owners and street vendors to see over the wall, giving them advance warning for when any potential student customers may be in the vicinity. The portable step is a piece of furniture that allows porosity and socio-economic exchanges to occur.

On the university side of the boundary wall, wide flat wooden boards placed on the ground could be used to create a makeshift bridge over the existing pond. This would be used to take students from the covered walkway through to the boundary wall. The small bridge creates an opportunity for students to interact not only with villagers behind the wall, but also with the natural environment of the water feature, as they move through or around it. In this proposition the use of micro infrastructure including the anchor-hooks, selling boards, portable steps, and the wooden boards for a makeshift bridge demonstrate how the sense of place (in this case the boundary wall) need not be architectural (Fig. 2.55).
Add-on Platforms

This area is where vendors used a public toilet to source the water they needed for their takeaway food businesses (See ‘Dressing Stick Delivery’ in Section 2.4.3). The particular section of boundary wall in this area is composed of a three metre retaining wall, with a further three metre high fence on top. To overcome the issue of such an inaccessible height, and to provide more opportunities for food vendors, the proposition recommends multipurpose platforms that can be inserted into the retaining wall on the village side. These ‘add-on platforms’ appear to be wall ornaments or street installations, but actually can be used as steps allowing villagers to walk up to the top of the wall. Once there they can conduct a range of activities with students via gaps in the fence (Fig. 2.56 and 2.57). Micro infrastructures such as shelters and lighting facilities will be provided, and bells installed on the fence for students to call shop owners over who will then take their orders. The shop owners can serve the students by climbing the add-on platforms. These platforms can also function as everyday places for people to sit, walk, read, and play. Some platforms could potentially be turned into pocket gardens, or made to hold pots of vegetables. While maintaining its physical form, this add-on mechanism transforms the formerly impermeable structure into a shared landscape with greater degree of porosity.

Fig. 2.56: Four boundary typologies

Fig. 2.57: Collage image showing potential use of the add-on platforms
2.5 Discussion

All the acts of disobedience I examined in the mapping exercise have challenged the urban design common sense that usually cast boundary walls as categorically bad. More importantly, they are examples in terms of learning from the ‘design’ of the creative villagers. It is how Sun Cuo Village’s people find ways to make the boundary wall part of their territory and livelihood that demonstrates resilience and adaptability. It also demonstrates an inventiveness that is willing to take advantage of existing conditions towards the production of other uses and meanings. Design theorist Enzo Manzini (2007) recognises that the “local” no longer means some small provincial town or agricultural village tucked in a valley somewhere isolated from the outside and closed within its own culture and economy (p.234). Even small local provincial towns are connected to wider systems of economic and socio-cultural exchanges; they do exhibit what Manzini calls “cosmopolitan localism,” a “balance between being rooted in a place and in the community related to that place, and being open to global flows of ideas, information, people, things and money” (p.234). Often at such a nexus, a new sense of place and culture emerges, as connections are forged, discarded and rediscovered.

One might duly suggest the “local folks” of Sun Cuo Village should not be romanticised as being miserable victims of the Jimei University expansion. To do so would hastily cast the Jimei University staff and students as master and the Sun Cuo villagers as slave, who is ever subservient and whose actions are merely reactionary. The vegetable vendor, the ice-cream vendor, Vendor D and others setting up businesses are the “people and communities who act outside the dominant thought and behaviour patterns” (p.236-37). These acts indicate that non-designers can be creative and not merely reactive, and that their actions are worth mapping and using as learning tools. They unwittingly form larger complex social networks that transform their neighbourhoods and cities, however invisibly. More interestingly, the social networks they form indicate the ability of people to work collaboratively. Vendor D, the students and security guards he hires, his family and customers, the food suppliers and other vendors he trades with together form an extensive system of operation by expanding his cowshed kitchen beyond its single site of operation.

Thus, this leads to the discussion of the issue of scale. Through the actions of Vendor D, the boundary wall itself becomes a part of a wider geographical spread. Vendor D’s kitchen operation and business is not just the single site of the little cowshed behind the boundary wall. The boundaries of Vendor D’s business exist variously across different scales. His territory changes day to day, depending on which other vendor he is trading with, where he is obtaining his supplies, which security guard he has bribed, and which student he is paying to deliver food on campus.

Vendor D’s site, the boundary wall’s site, the village’s site, the university’s site, are all sites of different geographic and physical milieus. Convention would indicate that the university and its boundary wall’s site(s) are an urban design- or masterplan-scale site, and Vendor D’s cowshed kitchen would be at best an architecture-scale site. But are these preset measures of scale holistic in speaking about sites, especially when it is clear how Vendor D’s business operation produces fluid territories and boundaries?

To address the question of scale, one might turn to architectural theorist Andrea Kahn’s text Defining Urban Sites (Kahn, 2005). It suggests “by representing sites as having multiple boundary conditions and multiple scales,” it becomes possible to produce other “conceptual models for describing, interpreting, and analysing places” for the purpose of future urban design intervention (p.282). Kahn gives the example of how a site in the construction phase is not contained only by its legal property lines, but extends much wider. Physically, one has to consider the off-site staging areas for construction vehicles and workers - that could often be on public footpaths and roads, the spread of the noise from machinery amongst other things. Post-construction, one could consider the impact on city sewer and hydro systems, and the actual traffic impact on public streets from the development’s parking, loading and drop-off points. Socially, one could consider the impact the new residents and users might have on a neighbourhood. Understanding the actual operational definition of the site alters the understanding of a development’s limits.

Kahn gives the example of Times Square with its Broadway shows, Madame Tussaud’s Wax Museum, ABC’s Good Morning America, the minimal remains of New York City’s thriving sex industry and other sites, all of which have networks larger than the actual sites themselves. Thus for Kahn, treating urban sites as operational constructs recasts their boundedness. Instead of demarcating simple metes and bounds, defining urban site limits requires accounting for co-present, but not necessarily spatially coincident fields of influence and effect. Urban sites encompass proximate as well as nonproximate relations, physical as well as nonphysical attributes. As settings for interactions and intersections that transgress abstract property divisions, urban sites are conditioned by, and contribute to, their surroundings.

(p.285) Sites thus have not just multiple scales but shifting scales as well. The boundaries which define one set of scale are always de- and re-territorialising to produce other territories of other scales. It is for designers to recognise a site’s scale has “heterogeneous urban orders and logics,” and are irreconcilable to one state, and to treat scale as a measure of boundary porosity (p.292),
This notion of scale becomes most evident in the mapping of the relationships between the places, the people, the products, and the various actions occurring in different places in Vendor D’s kitchen operation. For instance, different products are transported from various distribution centres across the city to Sun Cuo Village’s wholesale market by truck, and then from the wholesale market to Vendor D’s kitchen by bike (Fig. 2.58). After being processed in the kitchen, the takeaway meals are brought into the campus by bribing the security guards, and then passed into the dormitories by the hired assistant delivery persons. It is this wider geographical scale that extends beyond Vendor D’s cowshed kitchen that allows for transgression, breaches through the boundary wall, to occur.

Other instances of economies occurring around the boundary wall that have wider geographical scales: the above mentioned vendors demand a large amount of disposable products such as plastic carrying bags, food containers, paper cups, napkins, and chopsticks. In turn, this has created many commercial opportunities for other business operators. The demand for food containers, for example, means the survival of many home-based workshops (some legal, some not) which provide food containers and other disposable products for the vendors (Fig. 2.59). In the instance of the four print and copy shops discussed in section 2.4.3, the demands for paper also pushed for the reopening of the Sun Cuo Paper Mill, which had been closed for the previous two years. These instances once again suggest that boundary has a significant role in catalysing micro businesses. From this, I am able to see that if the vendors are not permitted to operate at the boundary, then Sun Cuo Village’s informal economy would change and the wider informal system might be affected.

One might surmise that exchanges between persons on either side of a boundary wall are possible only because of a wider scale of operations that together create alternative economies. The discovery of a wider scale of operations calls for regional thinking about the boundary and its neighbouring areas (Illustrated in Fig. 2.60 on the following page). This also means that how we strategize the boundary would not just affect its adjacencies but also the larger communities. This knowledge enabled further speculation for this research study on the alternative boundary strategies and how these strategies could possibly change the way the Jimei University campus is currently being planned.
Fig. 2.60: Collage image showing how boundary operates as an interconnecting network of relationships where a set of things or parts can work together and relate to each other at a regional scale.
References


CHAPTER THREE

Boundary as Shared Landscape
A 3D rendering of the new Jimei University campus (displayed on its official website) excludes the remaining area of Sun Cao Village, replacing it with a picturesque forested park area.
3.1 Situating the Potential of Boundaries at the Master-planning Stage

Much of China’s post-war urban developments from office parks, to industrial lands, to university campuses, and residential communities have relied on the modernist ethos of separating land uses. Planners are taught to demarcate land use as if space can be just as easily divided as the marking of distinct colours used to indicate its specific use—red for commercial, green for parklands, orange for educational, grey for industrial, pink for offices, and yellow for residential. The distinct boundaries between these zones make no allowances for activities to spill over. Landscape architects respond to this already-divided landmass by simply placing programs to fit within these limiting parameters. Shared spaces that allow for more flexible, hybrid, and heterogeneous uses and experiences are very rarely pursued. This deliberate insistence of segregation has led to many master-planned projects becoming ‘ghost cities’ whose neighbourhoods, because of the lack of mixed-use possibility, are drained of any vitality.

In reality, master-planned projects that seemingly exhibit segregation, when actually lived in and experienced, present an overlap of territories often unintended by their designers, as observed by architect Teddy Cruz (Cruz, 2008). One can of course think about our case example of Jimei University. The boundary wall, discussed in earlier chapters, does exact a division between the university campus and the rest of the village. However, interventions that breach this division do exist. As we have previously seen, villagers like Vendor D were able to transgress the limitations of the boundary wall through an assortment of methods. From here we might begin to ask a sequence of questions:

- Why not incorporate elements in the initial design of the boundary to facilitate interventions that cross boundaries at the master-planning stage?
- What might be considered at the master-planning stage to facilitate the emergence of shared spaces? This is to allow the spaces on either side of a boundary to ‘swell up’ and become thickened into a zone with new exchanges—commercial, social, leisure etc.
- Since the boundary wall around Jimei University has already been erected, how might the notion of shared space be used to replan the campus, to allow porosity between inside and outside, and to blur the distinction?
Here let us review Jimei University’s structure plan layout. As with many university campuses in China, Jimei University’s current master plan is comprised of three homogeneous zones: the ‘Living Zone’, the ‘Learning Zone’, and the ‘Activity Zone’ (Fig.3.1-3.3). These zones are linked by a powerful central axis, which is also the dominant sight line organising all of the university’s key facilities, such as the library, the cinema, the shopping mall, the medical centre, the food court, the outdoor sportsground, the indoor sports centre, the art gallery, and various other open spaces and amenities (illustrated in Fig.3.4 on the following page).

While the current master plan with its impermeable perimeter boundary wall does create a strong sense of security, identity and ownership for the university, most of these important facilities are located deep within the campus, far away from the edges. These facilities have also become completely privatised. This has resulted in the majority of less notable programs such as student dormitories being located near the university’s boundary walls, many of them right next to the neighbouring village. Now without access to their former farmland, the people of Sun Cuo Village are facing a shortage of both public open space, and basic civic amenities (illustrated in Fig.3.5 on the following page).

1. The Sun Cuo Municipality has yet provided the village with any community centres or other civic facilities due to lack of public land in the village.
Bearing in mind discussions from the previous chapter, it is Jimei University’s students who interact most with people such as Vendor D at the boundary. So, in terms of redesigning the Jimei University campus, how can we designers potentially strengthen the current exchanges further between students and the likes of Vendor D? There is already a demand for the next generation of Jimei University’s master plan to have a permeable boundary.

This chapter queries how the reconsideration of new boundary strategies for Jimei University could potentially promote accessibility, shared resources, and new opportunities to emerge while still providing its students with the security it desires. Some of these strategies will intervene with the university’s current boundary wall, while others will make assumptions of what could be done if Jimei University’s master planning were to start again from scratch.
3.3 Boundary Strategies for Redesigning Jimei University

The four following propositions evolved by analysing Jimei University's current master plan, then suggesting potential ways in which to restructure the design. The design gestures move from 'light' to 'heavy' in attempts to admit varied degrees of boundary porosity. The first strategy, 'Activating', is a type of intervention upon the current boundary wall. The other three strategies, 'Thickening', 'Downsizing', and 'Shuffling' make the assumption that Jimei University's master plan could theoretically start from scratch. This is not to assume a tabula rasa approach; the strategies act as a warning and cue for other campus master plan designers in China, for what to do when having to take into consideration the livelihood and existing patterns of a neighbourhood.

- Activating: This strategy looks at how to facilitate and enhance current economic exchanges between students and villagers on the boundary walls, without needing to alter much of the university's current plan.

- Thickening: This strategy further transforms the boundary area between university and village into a shared zone. Here a specified number of university facilities could be placed for public use. This approach shifts the notion of boundary from a line to a thickened 'program' space, potentially inspiring Chinese planners to 'zone' block edges (not only blocks). These shared spaces would allow for encounters, opportunities, and hybridisations.

- Downsizing: This plan revisits the pre-campus landscape of the university site and works on co-habitation between the original site's elements and its impending university programs. The approach defies the tabula rasa approach used for the current gated community development, encouraging designers and planners to take existing infrastructures and spaces as potential points of departure.

- Shuffling: This strategy looks at how university programs and village programs can be intertwined so as to change their relative positions and generate new boundary conditions. The strategy challenges the present one-dimensional land use zoning policy, and suggests implementation of a more mixed-use and bottom-up approach to university planning in areas where new development sites and established village communities are located side by side.

3.3.1 Boundary Strategy One: Activating

To allow university students to gain more access to the interface of the two communities, the first strategy proposes a continuous pedestrian path located along the university side of the boundary wall.

As discussed previously, accessibility is a key condition enabling various economic exchanges to occur on a boundary wall. Most exchanges take place where a pedestrian path adjoins the university side of the boundary wall. We now recall both the dressing stick delivery service and pop-up ice cream stall operating beside a covered walkway. In the current master plan, the majority of student circulation paths are sited far away from the boundary walls. Some boundary spaces on the university side are designed for parking vehicles, while others are merely visual accents such as ornamental ponds or green buffer zones with no pedestrian access (Fig. 3.6). This type of spatial arrangement produces a large number of areas that serve no social function whatsoever (Fig. 3.7). Therefore, situating a continuous walking path along the boundary wall would enable the students to have greater access to the wall, and thus the ability to interact with the villagers outside.
To create space for this continuous pedestrian path, some of the vehicle parking areas and ornamental spaces in the current setting would need to be ‘pushed’ slightly away from the boundary wall where the two communities meet (Fig. 3.8). Small ‘sales windows’ along the wall would also be required to facilitate economic exchanges between the students and the villagers (This may require the current concrete wall to be replaced by a fence panel wall). To further operationalise these exchanges, micro infrastructures such as shelters, platforms, rubbish bins, lighting, and seating facilities would need to be provided on both sides of the boundary wall. In locations with the greatest potential for an initiation of dialogue between the two parties, such as spaces adjacent to public toilets or neighbourhood streets, the boundary wall’s design should concentrate more on providing multifunctional interaction as opposed to solely focusing on commercial exchange (Fig. 3.9). For example, in Chapter One a ‘Vending Wall’ was proposed for between the university’s covered walkway and a neighbourhood street on the village side, functioning as an interactive structure that enables both parties to partake in a range of cooperative activities.
Reflection

Placing a continuous student pathway along the university side of the boundary wall as well as providing micro infrastructures at the boundary can certainly strengthen current economic exchanges between the students and villagers. However, as the physical boundary structure still exists, local villagers remain unable to enter Jimei University to access their facilities. Without provision of shared resources and other job opportunities, living conditions in Sun Cuo Village will most likely not be improved. It is important to note that deficiency of facilities and appalling living conditions in China's urban villages can often become excuses for local governments to initiate gentrification projects. In order to prevent the rest of the village from being demolished for new developments, provision of shared resources and improvement of the villagers' living conditions must be included as integral aspects of Jimei University's design. For this reason, a more radical boundary strategy needs to be proposed.

3.3.2 Boundary Strategy Two: Thickening

The second strategy, 'Thickening', further inspires a new campus typology that allows a number of university programs to be placed in the boundary area, thus leading to the generation of a shared zone.

In The Death and Life of Great American Cities, Jane Jacobs (1961) questions why designers discourage development at the edge. Jacobs uses Central Park as an example of a failed case to explain why the location of facilities can cause ‘border vacuums’. Jacobs's point of view is that some facilities should be brought out to the edge of parks, designed as links between the park and bordering streets, essentially becoming magnets to border activity (p.269). Following Jacobs’s ideas, boundaries between programs could potentially be enlarged to become shared spaces, which then catalyse the cross-fertilisation of activities. One could conceive of this type of shared space located between two formerly disconnected communities as a kind of ‘thickness’, where the boundary line has ‘swollen’ to become an area unto its own. Although the concept of thickened boundaries had already been tested in the Holcim Awards Competition project in Chapter One, the boundary interventions in this project were only implemented after Jimei University's master plan had been established. Following on from this point, one could ask whether the boundary between Jimei University and Sun Cuo Village could be thickened at the master-planning stage in order to promote shared resources and new opportunities to emerge.

To achieve this new level of boundary thickness, locations for the ‘Living Zone’ and the ‘Activity Zone’ in the current plan would need to be reversed. The student dormitories near the boundary wall would thus need to be located inwards, while some important university facilities could be moved from their current central locations to the edge between the two communities (Illustrated in Fig. 3.10 - 3.12 on the following page). In such an arrangement the university facilities now located in the boundary area could be easily accessed from the village. In addition to serving their formal roles, some shared spaces could also act as ‘magnets’ to various temporary (and even semi-legal) border activities and micro-economies. These pursuits would bring the villagers and students into daily contact with one another. For example, placing an outdoor basketball court at the boundary could provide villagers with not only a venue for playing basketball, but also a potential site for other short-term uses, such as a marketplace on Sundays, or as a temporary parking bay during university vacation seasons (Fig. 3.13). When the new shared spaces don't allow unregistered vendors to operate there, one could further suggest that certain portions of physical boundary walls might be desirable in some strategic locations for unregistered businesses wishing to evade taxes (as in the area where I discovered invisible kitchens).
Fig. 3.10: Proposed Jimei University’s master plan based on the ‘Thickening’ strategy

Fig. 3.11: Model showing an aerial view of Jimei University at present.

Fig. 3.12: Model showing an aerial view of Jimei University with a ‘thickened’ boundary
Site Selection and Actions

New locations of these shared facilities are mainly determined by their adjacencies. For example, in the proposed plan, the outdoor sportsground is placed strategically in close vicinity to a number of village programs – a constellation of shop-houses, a public toilet, the ancestral shrine, and the Le'an Primary School. In this arrangement, shop owners could potentially extend their commercial floor space into the sportsground when times permit. At the same time, primary school students could share a range of outdoor sports facilities with the university students. Being close to the ancestral shrine, the sportsground could also serve as a potential performance stage where traditional rituals and cultural events could be held during festivals.

Another important design action included in this master plan proposition is the provision of circulation routes that would facilitate local villagers access to the various shared spaces. There are currently no other formal vehicular roads or pedestrian paths in Sun Cuo Village apart from its narrow one-way streets. One might recall, a number of informal bike routes utilised by Vendor D and other Sun Cuo Village vendors were traced and identified in Chapter Two. These routes could potentially form a network of bike lanes that could bring local villagers to the shared university spaces (Bicycle is the primary means of transportation in Sun Cuo Village) (Fig.3.14). These bike lanes would be turned into formal routes by providing basic infrastructure, such as paved surfaces, lighting facilities, and/or other landscape elements. This bike circulation network suggests the design of a campus master plan would need to be held in tandem with the design of the wider physical context.

While helping to increase adjacent property values, create jobs, and most importantly, improve quality of life for the local villagers, this strategy also allows the ‘thickness’ to play its necessary role as a security device (Illustrated in Fig. 3.15 on the following pages). Admission into shared indoor facilities like the art gallery and the indoor sports centre may be regulated by charging entrance fees, offering membership cards, or by a card-reader access control system. For instance, a villager could enter and use the indoor sports centre just as easily as a student can (via a door on the village side of the boundary), but the university’s security would remain intact, as entry into the campus via a door in the sports centre would require a swipe card that only students and faculty possess. As such, when a shared outdoor space is placed in the boundary area like the outdoor sportsground university security could be protected by placing a security fence between the shared outdoor space and the remaining campus area (security gates for students to enter the space are installed along the fence).
Fig. 3.15: Cross section diagrams illustrating how the shared spaces can serve as security devices.

**d-d cross section_current conditions**

**d-d cross section_thickened conditions**
a cross section ‘thickened’ conditions
b-b cross section, 'thickened' conditions


c-c cross section, 'thickened' conditions
Although the boundary between campus and village has been thickened in order to allow the sharing of resources, the remaining campus area inside Jimei University still functions as a ‘mega block’, preventing local villagers from reaching surrounding places and facilities. Examples of these places are a religious pagoda (known as the Haishen Pagoda) located in the bay area, and the Bus Rapid Transit (BRT) station located on the Jimei Highway (Fig. 3.16).

Prior to the new campus project there were five pedestrian underpasses cutting across the X-Q-Z Freeway used by farmers and fishermen to access the bay area. As soon as the campus project began, the direct route from the remnant village community to the bay area was cut off and all five of the underpasses were subsequently sealed for security purposes (Fig. 3.17). Without access to the bay area and its pagoda, ancient worship that had lasted for generations was stopped altogether, and the pagoda subsequently destroyed (Illustrated in Fig. 3.18 on the following page). Similarly, without available routes to cross into the Jimei university campus, villagers have to make a detour and put themselves at risk by walking along and crossing the Jimei Highway to get to the BRT station. In actual distance, the BRT station is only a few hundred metres from the village community. From here one might begin to suggest that the scale of the Jimei University campus needs to be downsized in order to achieve maximum potential accessibility and connectivity.

**Reflection**

4. Haishen Pagoda is a place of worship where farmers and fishermen offer sacrifices to the God of Sea and pray for rain during the drought. (See the aerial photo on Page 47)
Fig. 3.18: Sun Cuo’s villagers praying in front of Hai Shen Pagoda (Feb 2006) (Photo source: Enjie Zen)

Illustration showing the original routes of the gala parade and the missing link

Traditional Lion Dance in Chinese New Year
Bridal Sedan Chair Dance in Lantern Festival
3.3.3 Boundary Strategy Three: Downsizing

As discussed in this thesis’s introduction, China’s current tabula rasa approach to development has eradicated large expanses of arable land. Many of these areas later became large university campus sites. China is still for the most part an agricultural-based society outside of its urban areas, and the loss of these agricultural lands means many farmers have also lost their former means of livelihood. These people are then forced to migrate to urban areas and take on jobs that they may have never been trained to perform. In addition to the loss of rural and agricultural land, many farmers have had to destroy their heritage houses (many of which have been in their families for generations) to build new ones for rent in order to earn an income (Fig. 3.19 and 3.20). Urbanisation often entails the loss of rural landscapes, rather than their growth being complementary to rural life.

A growing number of Chinese designers have begun to respond to this situation. Landscape architect Yu Kongjian’s Shenyang Architectural University Campus utilises a network of paddy fields on a former cropland site (Fig. 3.21). The paddy fields function as an operational and productive agricultural landscape for the campus. Architect Wang Shu’s Xiangshan Campus of Art employs a similar concept of incorporating agricultural practices within the campus plan (Fig. 3.22). There is a notable difference between Yu and Wang’s approaches. Yu’s plan does not allow farmers to work the land. Instead, students farm the land at a hobbyist level. On the other hand, Wang’s plan does allow farmers to come and work in the field, and yet the farmers’
The third strategy thus begins by asking how to mend this rift, or better yet, how this rift can be avoided or at least minimised at the master-planning stage. This aim requires us to ask how China’s rural landscape – the paddy fields and orchards – could be integrated into site planning and design processes, rather than being merely a nostalgic add-on (Fig. 3.23). How can a university campus add to the well-established uses and social relations existing in the rural landscape?

Accordingly, to avoid demolishing large swathes of traditional farmland, the scale of Jimei University must be downsized. If Jimei University has the opportunity to be ‘rebooted’ and planned anew, this would entail observation of existing farmland patterns and inserting the campuses (the five sub-campuses proposed in the new master plan) over the original farmland area (Fig. 2.24). Each campus is equipped with student learning facilities and dormitories, operating as an independent compound with its own security gates and perimeter wall. This small-scale approach encourages students to leave their compounds to actively engage with the retained farmland, the village community, and the bay area. While providing its students with the desired level of security, the downsized series of campuses create a much greater degree of accessibility and connectivity than those in the ‘Thickening’ strategy, as each campus has been inserted and better assimilated into its surroundings.

Another major factor hindering farmers from actually using the fields for their livelihood is the sheer size of Yu and Wang’s respective university campuses. To make these paddy fields a focal point of the universities, they have been sited in the centre of the campuses. In the case of Wang’s campus (where farmers are actually allowed to work the land) this placement means the fields are largely inaccessible to the farmers. They need to travel across the entire campus to reach them, not to mention going through security stops and boundary walls, just to perform their few hours of agricultural duties. Urban theorist Kim Dovey (2011) argues that large scale gated communities in China often become ‘giant cul-de-sacs’, which isolate themselves from the wider urban-rural fabric and social life (p.108). This rift is further exacerbated by campus plans that isolate the educated middle and upper-middle class students and faculty from their surrounding rural context.

Access is greatly restricted to be carried out solely within university opening hours. However, what is common to both plans is the original agricultural lands are razed, and a ‘replacement’ farmland installed. It could be construed that as these paddy fields are not substantial enough to provide the farmers with a normal livelihood, the fields may in truth be simply an endeavour to claim back a nostalgic image of China's rural past. One might say in both of these cases agriculture is being reintroduced as a symbolic if not token act, as opposed to promoting a shared landscape between both university students and farmers.

The retained vegetable plots in Sun Cuo Village

Fig. 3.23: Model showing an aerial view of the pre-campus landscape

Fig. 3.24: Model showing an aerial view of downsized Jimei University
Some of the households in Sun Cuo Village continue raising livestock such as goats and cows even after their farms’ space was requisitioned for Jimei University’s new campus.
Site Selection and Actions

A number of factors influence how the five downsized campuses should be sited. One of the key site selection factors is the value inherent within the existing plots of farm. The designer should ensure (through detailed soil analyses) the most fertile farm plots are reserved for agriculture, while the least fertile plots become the areas to be redeveloped into university campuses. This act will serve to secure maximum crop yield for the farmers. In the case of Sun Cuo Village, vegetable farms on the western side of the village are less fertile than the high yield paddy farms and orchards in the east. The best possible siting could see the various sub-campuses and shared facilities being placed in the west (replacing some of the vegetable farms), while paddy fields and orchards on the village’s eastern side could be well retained (Fig. 3.25).

Other university facilities located outside of the five sub-campuses could then serve as shared multipurpose spaces (Illustrated in Fig. 3.26 on the following page). For example, the outdoor sports-ground could become a potential site for Sunday markets where farmers can sell their produce, and merchants their wares. The sports-ground, if not entirely occupied, may also allow sections of its space to be used by the farmers to dry their harvested crops, store grains and yields. Most importantly the retained farmland would not be solely ornamental or symbolic, but decently sized farms that could potentially even accommodate some level of cattle and sheep grazing. This would expand the farmers’ income source from only crop production to include low-level husbandry.

For connectivity, the downsized campuses allow for more movement across the village, in that the original finer grain street network is retained. The downsized campuses would mean the five key pedestrian underpasses leading to the bay area across the X-Q-Z Freeway could be retained. As a comparative example, by re-accessing the bay area via the underpasses the fishermen would be able to carry on their fishing trade, while the pagoda that was destroyed during Jimei University’s construction would have been saved, allowing local religious activities to continue. Moreover, without a giant campus block dividing up Sun Cuo Village, villagers and students alike would be able to safely reach the Bus Rapid Transit (BRT) station within minutes. To create even better connectivity, a system of raised walkways linking the various campuses could be installed. This system would join all of the scattered classrooms, lecture halls, dormitories, and various other facilities. More crucially, this raised walkway system would translate to less on grade farmlands being razed for footpaths. The use of the raised walkway system will be explored further in the next boundary strategy.

![Fig. 3.25: Proposed Jimei University’s master plan based on the ‘Downsizing’ strategy](image-url)
Fig. 3.26: Cross section diagrams showing constructed relationships among the shared farmland, the village community and the university campuses

a-a cross section, 'downsized' conditions

b-b cross section, 'downsized' conditions

d-d cross section, 'downsized' conditions
Reflection

By implanting a series of downsized campuses among working paddy fields and orchards that continue to be a source of livelihood for farmers, agriculture is no longer merely presented as nostalgia for a ‘disappearing’ rural China. Through this ‘Downsizing’ strategy rural culture could be retained and allowed to exist side-by-side with the culture of China’s rising middle class whose children are attending universities.

While this strategy does allow for much of Sun Cuo Village’s farmland to be retained and integrated as part of the Jimei University setting, there is a sense the five downsized sub-campuses would still be unable to serve the villagers well, as each campus uses a physical boundary wall bulwarking it and its operations from the remnant village community. In this strategy the university’s edge between the campus and the village opens up completely for the operation of the retained farms. As a result, the sense of division between two different contexts disappears, while the thickness of the boundary (as discussed in the ‘Thickening’ strategy) would have little chance of forming in this model. In terms of redesigning the Jimei University campus, to create more thickened boundaries between two different contexts one might suggest that some campuses could potentially mix and co-exist with the remnant village community. Doing so could possibly generate more shared facilities, and strengthen current socioeconomic exchanges between students, security guards, and the likes of Vendor D.

3.3.4 Boundary Strategy Four: Shuffling

Single-use zoning was established to keep apart dissimilar or incongruous uses, and to supposedly safeguard property values by preventing negative effects attributable to laissez-faire development. This approach produces a monotonous and segmented city where potential synergies and cooperation between different contexts are disabled. Spontaneous social and economic life, as a result, can hardly be sustained.

The ‘Shuffling’ strategy takes a cue from the RMIT University City campus. Unlike the traditional Chinese campus typology, different university programs are distributed across the Melbourne CBD without visible boundaries, interweaving through the city’s fabric (Fig. 3.27). Many of Melbourne’s banks, shops, gyms, and cafes are embedded within the university’s academic buildings. A number of university facilities, such as the libraries and lecture halls, are open to the public. By mixing the university and the city’s programs, synergies and cooperation between the two are promoted throughout the urban area. This in turn generates spontaneous social, economic, and cultural exchanges and interactions. The city also provides its university students with a wide range of social, entertainment, training, job, and career opportunities throughout their period of studies. The RMIT City campus is thus ‘shuffled’ amongst the city’s wider context. It could serve as a model for thinking about how Jimei University’s programs could be better integrated into the existing Sun Cuo fabric.

5. Access is often monitored by security surveillance and controlled by limiting the after-hour access to university students and staff.
Site Selection and Actions

In order to make room for Jimei University’s programs within the village community, a number of less heritage and lower market value village houses may have to be removed (Fig. 3.28). It is important to note here this strategy does not always demand the removal of a large number of existing structures. Some of the lower valued village houses to be removed could be located on smaller plots of land. The size and form of inserted university programs could be determined by the varied size and shape of these emptied out vacant plots. The resulting plan is less focused on ‘campus’ in the conventional use of the word, and more focused on university programs scattered throughout Sun Cuo Municipality (Fig. 3.29).  

Instead of one super-scaled walled-off campus, the ‘shuffling’ strategy creates seven separate campus clusters. Three of these (indicated as C1, C2, and C3 in the plan) are inserted into the existing village community. Each campus cluster is composed of several academic buildings and student dormitories. The mixture of two different contexts gives rise to a number of boundaries that could possibly be thickened to promote shared spaces and various other opportunities for the neighbouring villagers. Here C2 is selected as an example to explore the possibilities of thickened boundary typologies.

6. Consultations with municipal planners, villagers and university representatives at the table will have to be conducted to determine house value.

7. The original Sun Cuo Municipality contains both the village community where the village houses are congregated and the surrounding farming areas.

Fig. 3.28: The housing typologies in Sun Cuo Village

Fig. 3.29: Proposed Jimei University’s master plan based on the ‘shuffling’ strategy
In C2, three university buildings, including two academic buildings and one student dormitory, are 'plugged into' the emptied out vacant plots. These buildings blend into the existing village context, forming a small-scale campus cluster. The three university buildings can be arranged in three different ways to respect the spatial qualities of the existing neighbourhood, as well as to form three different types of shared zones between the two contexts (Fig. 3.30). These shared zones are (illustrated in Fig. 3.31 on the following page):

- University amenities collectively form a shared zone by locating parks, outdoor sports courts, and other outdoor facilities around the cluster of university buildings.
- University buildings collectively form a shared zone by allowing the villagers to access specific facilities such as libraries, computer rooms, and lecture halls embedded within the university buildings.
- Village houses around the cluster of university buildings together form a shared zone by allowing both economic and social activities to take place inside the homes (In this case residential houses would be turned into shop-houses). The gap between two village houses could either be infilled or fenced to ensure campus security.

Many heritage houses are being demolished in C2 to make room for new ones for rent.
Fig. 3.31: Three thickened boundary typologies (C2).
In response to the lack of open public space in the current village community, the ‘Shuffling’ strategy suggests a multi-level raised public walkway system to activate the underutilised rooftop spaces of both the university buildings and village houses (Fig. 3.32). Intervention of the public walkway system could transform a privately owned rooftop space into a shared social space, providing another means of dissolving boundaries between public and private, civic and domestic spaces. More importantly, the walkway links up the various scattered university buildings and village houses as an entirety (Fig. 3.33).
For a village house, private living rooms located on floors where the public walkway cuts through can now be turned into semi-private spaces, such as small-size stationery shops, barber shops, and bookshops (Fig. 3.34). The floors above or below could still remain private by employing a card reader access control system. Given this public access, some street vendors could take advantage of newly arisen opportunities and relocate their vending spots from the ground up to the raised walkways or rooftop spaces. One potential ramification resulting from the activation of the elevated spaces is that they may remove various former ground activities. However, as many university buildings and village houses still operate at the street level, street life is not anticipated to diminish, and the raised walkway would act as an important link connecting the ground to the roof.

Similarly, by installing an external staircase on the rear side of an university building, the villagers could be brought directly to the designated floor or rooftop space where shared university facilities and civic programs might be placed (Fig. 3.35). Alternatively, a dedicated lift would be another way of bringing the local villagers directly to the rooftop. By allowing them to enter the ground level floor space to access the lift, the locals may call for a freeing up of the ground level floor to become a public space unto itself. As such, the ground level of a university building could become free to host both social and commercial retail activities.

The various types of access systems employed in this strategy increase the amount of shared spaces available – shared spaces being now both at and off-grade – and thus raise the potential for students, faculty, and the people of Sun Cuo Village to interact with one another. It could potentially offer a rich and varied lifestyle to be experienced at both ground level and the above ground levels.
Reflection

In this strategy the negotiation of public and private, civic and domestic boundaries at different scales (the scale of building, university cluster, municipality, etc.) is defiant of conventional code regulations, and suggests a three-dimensional, multicolour land-use zoning process for the promotion of spontaneous social, cultural, and economic activities to emerge across Sun Cuo Village (Fig. 3.36). This is a bottom-up planning strategy weaving together the context of the university with that of the village and wider city fabric.

From a legal standpoint a system of negotiation between various parties such as the university, the village committee, the villagers, the Sun Cuo Farmers Associations, and the city council, must be established to allow such actions to occur (Fig. 3.37). For example, in order to gain access to rooftop spaces, a street vendor would need to acquire a special rooftop license. If a room in a village house is converted to a shop, the type of shop and the time of operation would need to be regulated to reduce noise, smells, and other disruptions to the upper or lower level tenants. Property owners who benefit from these new opportunities would be required to take responsibility for the maintenance of their rooftop spaces. However, additional financial support provided by local and state governments for facility maintenance is also necessary.

Although the ‘shuffling’ strategy could generate more shared resources and economic opportunities for the local villagers when compared to any of the other boundary strategies discussed above, in this planning model the identity and spirit of a traditional Chinese university campus dissolve as a result of interweaving the university and village spaces together. Therefore, the qualities of a private, peaceful, living and learning atmosphere could hardly be sustained. Although shared resources and security are important and beneficial for the common good of villagers and students, expenses for maintaining the now dispersed university facilities and rooftop spaces would be significant. Without a clear demarcation between the campus and the village, this university plan could become vulnerable to an infectious disease outbreak such as SARS (as mentioned in Introduction). Then, a mitigation boundary strategy might be preferred for current university campus developments in China.
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After assessing these four boundary strategies for a range of factors including security, shared resources, cultural preservation, and accessibility, one is able to see that each strategy has very different impacts upon the village community (Fig. 3.38). For example, the ‘Activating’ and ‘Thickening’ strategies offer better security and management for Jimei University, while simultaneously allowing for exchanges to occur between different socio-economic groups. The ‘Downsizing’ and ‘Shuffling’ strategies offer a much greater degree of accessibility and connectivity, enabling endangered rural cultures to retain and extend their existence.

Despite their drawbacks, these four strategies have demonstrated the necessary balance in different dimensions between public and private space. This was achieved through a progressive design approach, from minimally modifying the boundary space (as in the ‘Activating’ strategy), to uppermost engagement with the entire Sun Cuo area (as in the ‘Shuffling’ strategy). These strategies have provided us with new ways of thinking about boundary conditions, and ways of engaging with social life in public/private spaces. While endeavouring to achieve boundary porosity, it has also been crucial to retain the secure, private, peaceful, and celebrative qualities of a traditional Chinese university campus.

Through undertaking this master plan project, it has become clear that designers should be able to find a balance between public and private spaces, or more importantly, what is acceptable and desirable for various users and parties, not as a utopian vision, but as recognition of ordinary people’s needs in real life. Departing from this point, one may begin to ponder what combination of the various aspects discussed in these four boundary strategies could potentially be used to create a robust and flexible master plan for current university campus developments in China.
3.4 Designing a Shared Space

This section employs various aspects of the four boundary strategies discussed in Section 3.3, either as stand-alone strategies, or in varied combinations, to produce a more thoughtful master plan proposition. The proposition rethinks how Jimei University could have been designed to better incorporate the existing social and physical fabric of Sun Cuo Village, and more importantly, allowing for more exchanges to occur between the different socio-economic groups.

The two key strategies used in redesigning Jimei University would be aspects of ‘Thickening’ and ‘Downsizing’, although features from the other strategies will also be used in parts of the plan.

With the ‘Thickening’ strategy, the boundary between university and village is thickened to become a shared zone of activity and exchange. The ‘Thickening’ strategy is, in my opinion, the most successful strategy overall, because it still provides some form of boundary and security; most Chinese middle and upper-middle class people desire some form of privacy, peace, and quiet, qualities of which have been treasured within a traditional university environment. The ‘Downsizing’ strategy further divides the remaining campus area into two separate zones – the ‘Living Zone’ and the ‘Learning Zone’ – to achieve greater accessibility and connectivity (Fig. 3.39). Each zone will have its own perimeter wall and security gates to ensure all...
of the students have a private and peaceful living and learning environment (Again, one is reminded that the complete erasure of boundary walls would be at odds with the contemporary Chinese desire for security). Several university buildings will be placed on the periphery of each zone to further boost potential for a ‘shared zone’ to form, by allowing villagers to access specific facilities embedded within these boundary buildings.

Downsizing and concentrating the university’s living and learning programs into two smaller zones could free up more space for the creation of a shared ‘In-between Space’. This shared space would provide access to three of the five underpasses across the X-Z-Q Freeway, thus offering access to the bay area and the pagoda. Spatially located between the university’s living and learning zones to the south and north, the village community to the east, and the bay area to the west, this shared space needs to have the capacity to cater for a wide range of uses for all parties involved. To enable this shared space to be better utilised, the student food court, which is equipped with approximately 120 toilet stalls, would be sited immediately adjacent. These toilet stalls could be available to all of Sun Cuo Village’s people, and most importantly, when necessary allow potential vendors to use some of the toilet facilities to wash their wares.

3.4.1 Micro Infrastructures as Conditions for Blurring Spatial Boundaries

Currently spatial design in China eschews multiple and mixed usage. For example, if we design a basketball court, we expect it will look and function solely as a basketball court. However, the aforementioned basketball court in Section 3.3.2 exhibited multiple uses being layered upon one another (Refs to Fig. 3.13 on Page 191). Is it not possible for this shared space situated among different contexts to also have more than one purpose?

To answer this question, let us look at a project by West 8. In 1996, West 8 designed a sizeable strip of land (almost half a kilometre long) in the Binnenrotte area of Rotterdam, located right in the middle of the city. Interestingly, the design expressed the entire strip of land as being empty. The tract of land is paved uniformly with simple concrete slabs and equipped with the paraphernalia of markets like electrical plug points, anchor-hooks, and parking stalls (Fig. 3.40). However, West 8’s design provides a flexible space that not just offers the logistics for the market to regularly take pace there, but also accommodates a series of events and programs like gathering or meeting friends, temporary parking, ceremonial events, and summer skating. West 8’s design does not prescribe what will necessarily take place in the strip of land, but simply provides the hardware – those micro infrastructures as discussed previously - to enable a range of temporary activities to occur in this seemingly ‘empty’ square.

Taking a cue from West 8, the subject of the next subsection experiments with how this shared space, through provision of micro infrastructures, could be used to cater for a range of interests and programs.
Fig. 3.41: Photo of the retained water reservoir located in the vicinity of the shared in-between space
3.4.2 Designing the Spatial Conditions

There are two underground drainage pipes currently running across the site. These pipes were previously used to divert the flow of a nearby water reservoir to help irrigate former farmlands (Fig. 3.41). Given existing site conditions, my proposition is to transform this site to become a shared farmland, which retains Sun Cuo Village’s agricultural practices as activities used to boost social, cultural, and economic exchanges between students and villagers.

In this proposition three carriageways and two (T-shaped) parking bays would jointly divide the site into six farming plots (Fig. 3.42). Each farming plot is comprised of a number of paddy fields, orchards, infiltration swales, native fruit trees, greenswards, farm pond(s), walkways, narrow pedestrian paths, and unpaved cattle tracks. The irrigation system is crucial to ensuring accurate operation of these farms. In each farming plot, filtration swales are strategically placed at the peripheries to catch overflows from the water reservoir, as well as surface runoff from the adjacent X-Z-Q Freeway, carriageways, parking bays, and university building rooftops on rainy days. The filtered water would continue to flow on to the lower paddy fields, which are organised around the swales. The overflows would eventually flow down to the farm pond located at the lowest point of each farming plot (Illustrated in Fig. 3.43 - 3.45 on the following page). These farm ponds can be used for both raising fish, and for irrigating the surrounding orchards and trees.
Fig. 3.43: Cross section (a-a)

Fig. 3.44: Sections showing potential uses of the carriageway

Fig. 3.45: Sections showing potential uses of the parking bay at different times
(See detailed plan on the following page)
Surface strategy for the parking bay
(Designing spatial conditions or providing micro infrastructures is a way of promoting temporary occupations and uses in the shared space)

Sun Cuo villagers can have full access, and even operate these farms. However, these six mini farming plots will not be substantial enough in size for the villagers to survive on alone. Without available grazing land in the village, livestock such as cows and goats could be brought into these mini farms and fed with leftover plant matter from the paddy fields’ recent harvest, or in other designated grazing areas, thus creating more of a cultural identity for the campus site. Meanwhile, these farms are integrated into the campus as a type of productive landscape.

In this shared space, parking and other temporary activities mainly occur within the carriageways, the parking bays, and on the walkways as depicted in Fig. 3.44 and Fig. 3.45. As well as providing micro infrastructures, this proposition also establishes various guidelines for using this shared space for retaining both its order and vitality. The following is a list of potential uses that could occur in this shared space throughout different times of the day, or of the year:
Vendor Parking (8am-6pm, Weekdays)

Between 8am and 6pm during weekdays the three carriageways are mainly to be used for vehicular circulation and 2-hour on-street parking for visitors. Vendor parking spots are located in the two T-shaped parking bays due to their immediate adjacency to the major sidewalks. Each vendor parking spot is composed of a standard parking space (2.5m x 5.0m), and a marked area for placing the market stall (2.5m x 2.5m). Other potential locations for vending are laid out along a covered walkway, which is proposed to connect the ‘Learning Zone’ with the student food court. To further support the vendors’ operations, anchor-hooks in the ground used to secure temporary tensile structures, poles to hang lighting, as well as electrical plug points, should be provided in the two parking bays. Parking guidelines are provided, and supplementary services are required to ensure the operation of these shared parking stalls (Fig. 3.46).

Outdoor Games (6pm-8am, Weekdays)

From 6pm to 8am the two parking bays could be transformed into sportsgrounds where a diverse array of local outdoor activities such as badminton, gate ball, and shuttle kicking could take place. By overlapping various game court lines onto the parking bays’ ground surface, a number of different match courts could be marked out in each space. These can be differentiated from one another via the use of varied paint colours and graphics, which in turn would help create a playful, striking, and engaging surface. In a similar fashion, another four multipurpose match courts could be marked out on the two walkways to be used anytime by both students and villagers. To create opportunistic structures for the tying of ballgame nets, fruit trees and lighting poles would be planted and built in strategic locations. Raised planter boxes with seating options provide students and villagers with additional spaces for sitting and viewing.

Fig. 3.46: Guidelines for the use of the vendor parking spaces

Fig. 3.47: Guidelines for the use of the outdoor sport courts
Marketplace (Sundays)

In the original context, a marketplace was located in this area (Refer to Fig. 3.23 on Page 209). In order to continue these traditional market activities, the three carriageways could be closed down on Sundays and transformed into a new temporary marketplace. On the day of the markets, local villagers can park their cars in the assigned parking spots along the carriageways, while setting up their vending stalls in the marked areas (where anchor-hooks and electrical plug points will be required). Adjoining spaces such as the greenswards, walkways, and T-shaped parking bays will become supplementary spaces for the marketplace. However, a series of supportive services such as garbage collection, food inspection, the renting of market stalls, community watch, and an online vendor stall booking system need to be provided by different organisations (Fig. 3.48).

Basketball Games + Summer Water Parks (University Vacation Periods)

University campuses in China often remain closed during the entire academic summer and winter vacation periods. During these vacation periods, removal of vehicular access to the university ‘Learning Zone’ will free up sections of the carriageways, as well as the two parking bays for pedestrians to use. This temporary closure of some sections of the carriageways would allow enough space for four outdoor basketball courts. An average temperature of 35 degrees Celsius during the university summer vacation period could also lead to an alternative transformation of the two parking bays. These areas could be made into two playful water parks by taking advantage of stored water from the nearby farm ponds. To implement this action, each water park would require a basic hydraulic system including the provision of embedded fountain spouts in each parking bay (Fig. 3.49).
Annual Gala Parade
(Chinese New Year)

An annual gala parade occurred on the first day of the Chinese Lunar New Year was previously held in this location (Refer to the diagram of the original routes of the gala parade on Page 204). The parade started at the ancestral shrine located inside the village, marched slowly through the farming area, and then was completed at the Haishen Pagoda where farmers made prayer offerings and celebrated recent harvests. All of the carriageways could be closed down on this day in order to retain and extend this ancient village ritual into the future (Fig. 3.50).

For the five different uses listed above, one can see how micro infrastructures such as line markers, graphics, anchor-hooks, lighting poles, electrical plug points, rubbish bins, and trees, depending on how and when they are used, and who uses them, create a flexible operational surface for occupation and appropriation. One could even suggest micro infrastructures are a small yet crucial factor for changing the ways in which we perceive and experience space. To further query the topic of this PhD research, the next step was to look at how this design approach could be applied in another context to produce a shared landscape where different communities could mingle well together, partake in common activities, and perhaps through these exchanges develop a greater depth of social interaction.
3.4.3 Testing the Strategy in a Different Context

For the final intervention project I shift to a different urban context and experiment with the shared space design strategy to transform an underused pedestrian walking path located within Xiamen's Mt. Huwei Park into a site for temporary uses.

Mt. Huwei Park is currently situated between two economically disparate neighbourhoods where outdoor activity spaces are generally being occupied by private cars due to a shortage in available ground parking spaces. In order to provide residents with a safer outdoor activity space, in 2004 the local city council built a generously long shared pedestrian walking path of over five kilometres that runs across Mt Huwei Park (Fig. 3.51). This walking path can be accessed via a number of mountain trails, each within a few minutes of the closest community (Fig. 3.52).

However, due to its lack of multi-use functionality, once completed the path was rarely used as an outdoor activity space (Fig. 3.53). In 2008, only four years after construction, the Mt. Huwei Park Management Office launched an ‘Urban Renovation Plan’ for this pedestrian walkway. To make the space more attractive, one of the renovation strategies was to replace various sections of the concrete walking path with raised timber bridges (Fig. 3.54 and 3.55).

8 Refer to http://news.xmnn.cn/a/xmxw/201312/t20131216_3635312.htm
As Mt. Huwei Park is only a couple of minutes away from where my parents reside, this underutilised walking path immediately drew my attention. In 2012 I decided to conduct a small intervention in order to facilitate local use of the area. Taking into consideration Xiamen’s most popular outdoor game, the initial goal of this intervention exercise was to transform the walkway into a sports strip equipped with a number of outdoor badminton match courts.

A badminton match requires a both flat and rectangular shaped court of 13.4 metres by 6.1 metres (The width of the walking path is 6.5 meters). However, marking out a match court on a concrete surface is never a difficult task. The knowledge I gained from ‘designing’ the shared space naturally led me to the all-important question of ‘where to mark’. As Margaret Crawford (1999) suggests, everyday space is radically empirical, rather than normative, and begins with what already exists, then encourages and intensifies it (p.22). Therefore, this intervention exercise doesn’t simply look at the provision of micro infrastructures such as court lines, but also at how we can find ways in which to encourage people to use and appropriate existing site infrastructures as conditions for playing outdoor games. The locations of various existing infrastructures could in essence become the determining factors of where we should mark out match courts along the pedestrian pathway.

This intervention exercise is conducted through five steps:

**Step 01: Identifying Existing Micro Infrastructures**

- **Trees**
  A badminton court is divided in half by a net. To set up the net, net posts are required on both sides of the match court, on which each end of the net is tied. Since the walking path is parallel with the trees beside it, the trees on both sides of the path could become infrastructures for tying the net (Fig. 3.56). The task at hand is to locate sets of two trees along the walking path that are opposite each other, and perfectly aligned.

- **Public toilets**
  Along the walkway four existing public toilets were identified: two in the north, and two in the south (Fig. 3.57).

- **Benches**
  Seating facilities are always important features in the cultural practices of Chinese public spaces. In China, the ground outdoors is often associated with dirtiness and bad luck. People rarely place their personal belongings onto the ground outside. As a result benches in public spaces are often appropriated as places not only used for sitting, but for placing personal belongings such as clothes and bags (Fig. 3.58).
Extra spaces

The section of the walking path allocated to becoming a badminton court must be equipped with extra spaces on both sides in order to avoid interruption of pedestrian flow patterns (Fig. 3.59).

Rubbish bins

A rubbish bin located next to each badminton court is another important micro infrastructure ensuring the walking path will always be kept clean (Fig. 3.60).

To enable its operation an ideal badminton match court should be located immediately adjacent to all of the above-mentioned site infrastructures (Fig. 3.61). Based on the location map, a total of ten outdoor badminton match courts were identified as potential additions. These would be located at two main areas along the pathway (Fig. 3.62).

Fig. 3.59: The extra space next to the path

Fig. 3.60: The rubbish bins

Fig. 3.61: Illustration showing what makes a badminton court functional

Fig. 3.62: Diagram showing locations of the ten potential badminton courts in the two areas
Step 02: Applying for a Permit

Permission for intervention in a public space is always a challenge in China. In order to obtain a permit, I sought the assistance of a local badminton club. With their help, within a few days the Mt. Huwei Park Management Centre granted a verbal permit.

Step 03: Marking Out the Courts

Working together with two other volunteers from the badminton club, and an officer from the Mt. Huwei Park Management Centre, on a Sunday morning the 10 badminton courts were painted with clearly marked yellow lines at both of the designated areas (Fig. 3.63). The role of the officer was to supervise the process of marking out the courts. However, instead of simply observing, the officer volunteered to assist with marking out the lines. To further enable the players to tie the nets between the two aligned trees, two eye bolts were inserted into the tree trunks. For match courts where two trees were not perfectly aligned for tying the nets, two anchor-hooks were placed into the ground for setting up the net posts (Fig. 3.64).

Step 04: Distributing Information Maps

After marking out the match courts, an information map was created for the local residents as a guideline for using the space (Fig. 3.65). The map contained information such as equipment people would need to bring, routes to the sites, locations of existing site facilities (such as public toilets), an indication of trees for tying nets and other installed micro infrastructures. This information map became a type of soft infrastructure for facilitating locals to use the walking path. The map also included information about the local badminton club, and to establish a sense of legitimacy, the Mt. Huwei Park Management Centre. Six students from Huaqiao University helped to distribute one thousand copies of the map to local residents.

The week following production of the path’s badminton match courts, it was observed that several badminton players had started to come and use them in the morning. Six weeks later, in both morning and evening, all of the courts were fully occupied by local sports enthusiasts. Another observation was that when all of the courts were occupied during peak times, some players began to use adjacent spaces (Illustrated in Fig. 3.66 on the following pages). These social activities then inspired other traditional outdoor games such as Tai Chi and Shuttle Kicking to be played in the area (when available the shuttle kicking players often used the same marked out match courts as the badminton players). The groups of people playing games together resulted in additional commercial opportunities for local farmers, who began to sell fruit, drinks, vegetables, and even free-range poultry to the players (Illustrated in Fig. 3.67 on Page 264).
Fig. 3.66: Photos showing how the locals use and appropriate the micro infrastructures around the match courts for outdoor games (Continues on the following page)
Step 05: Providing Micro Infrastructures

This practical intervention created more opportunities to continue maximising the potential of this pedestrian walking path. By proposing a new public toilet in the centre area, as well as various other supporting facilities such as benches and rubbish bins, a further 9 courts became possible (Fig. 3.68). A number of locations along the walking path were then observed as being potential opportunities for vendors to sell their wares. In 2013 all of these suggestions were combined and turned into a future plan, which was subsequently submitted to the Mt. Huwei Park Management Office as an alternative to the previous ‘Urban Renovation Plan’.

Fig. 3.67: Local farmers selling vegetables and fruits to sports players

Fig. 3.68: Providing micro infrastructures as a way of ‘redesigning’ the pedestrian walking path
The fifth master plan proposition in this section was created to find ways in which to apply the strategies listed in Section 3.3, specifically how the four approaches could be used together to create shared landscapes where students, faculty, and the people of Sun Cuo Village could interact with each other. The ‘Downsizing’ and ‘Thickening’ strategies employed in this proposition resulted in the formation of a shared space, located in between the university’s living and learning zones. This section specifically looked at how, if Jimei University could be redesigned anew, the shared space could be designed to facilitate interaction that lie ahead.

The ‘design’ of the shared space attempts to address a potential rift between students and villagers. As mentioned in previous chapters, Sun Cuo Village is essentially a rural agricultural town by Chinese standards, and many of its inhabitants have only recently lost their agriculturally focused livelihoods. This rift is addressed by introducing a series of small farms for Sun Cuo Villagers and students alike to till and work the land. In the shared activity of farming, the two communities might be able to better understand and relate to one another. The multi-use walkways, carriage-ways, and parking bays placed around these mini farms could undeniably host intermittent sporting games, ritual events, market stalls, and other everyday activities that often feature the crops grown by both students and villagers.

The ‘design’ for the shared space introduces micro infrastructures such as markings on the ground to indicate various uses, lighting poles as sources of electricity outlets, trees to tie ball game nets, as well as anchor-hooks in the ground for vendors to set up tensile structures. One could suggest it is the micro infrastructures that enable different temporary activities to successfully operate in this shared space. The one drawback with this proposition is that the sense of informality in this shared space may be lost through design. This issue was particularly relevant when attempting to adapt informal activities such as vending into a more formal setting. When landscape architects attempt to formalise them, these activities often become different to what they once were. This could lead to people moving or shifting places to look for ‘new’ opportunities. For example, although vending activities have been legalised in this shared space by providing vendors with an assortment of above-mentioned micro infrastructures, spaces for vending are specified, and to retain a degree of order, the time for vending is regulated.

The final project in this section tested how micro infrastructures could be used in a practical intervention. A pedestrian pathway was introduced upon Xiamen’s Mt. Huwei Park, connecting two economically disparate neighbourhoods. Specifically, a series of temporary badminton courts were placed along this pedestrian path, each equipped with anchor-hooks in the ground for the setting up of net posts, eye bolts on the tree trunks to tie nets, benches for placement of personal belongs etc., and most importantly, included a series of graphics in the vicinity informing residents of these two neighbourhoods to use the badminton courts.

A short while after installing the match courts, residents began using the space together, chatting with one another, and hopefully beginning to build a social relationship between the two neighbourhoods.

The ‘lesson’ learned in Section 3.3 and perhaps all of the other sections in this and previous chapters, is that while larger physical changes such as creating thickened or downsized boundaries may provide a physical space for interaction, to ensure interaction can truly be better facilitated, micro infrastructures must also be present to inform and encourage the community about the opportunities for interaction that lie ahead.

3.5 Discussion

In The Urban Code of China, architectural theorist Dieter Hassenpluf (2010) suggested the “production of space not only bears witness to fashions of short-term validity and transient ideologies, but are also always deeply rooted in cultural practices as well” (p.11). Hassenpluf’s statement recognises there can be practices of using and occupying urban and/or rural areas that escape the legislated use of a space, yet escaping the designated land-use does not immediately mean these practices are haphazard or ad hoc. These practices can appear informal on the surface, but they do have their own logical reason for existence. It could be a logic continually resisting capture by frequently re-venting its mode of exchange, its geography, scale of operation, and players.

Much of this chapter and the thesis itself has been an attempt to understand and enable the ostensibly informal activities of people who have recently come face-to-face with urbanisation in China, to continue operating despite large-scale structural changes to their towns and communities. Specifically, the previously discussed four strategies: ‘Activating’, ‘Thickening’, ‘Downsizing’, and ‘Shuffling’, all query how this segment of the population might continue their livelihood, and how mostly small-scale agriculture and businesses might be incorporated into future master plans of university campuses.
In the previous two projects – the ‘design’ for the shared space, and the small intervention practice – the importance of shifting the notion of boundaries from being strictly physical to becoming spatial ones, may inform designers about necessary infrastructures, as well as potential strategies needed to shift spatial boundaries over a period of time. These two projects suggest different ways in which landscape architects in China could act when dealing with urban public spaces, whether through direct intervention with the site, or by provision of micro infrastructure that could enable temporary programs and activities to take place. Most importantly, these projects allow us to understand how an informal quality of a space can be promoted and become a significant design element for the future public domain in Chinese cities. This is particularly relevant in contemporary Chinese urbanism, as formal and informal spaces continuously coexist and operate together. One may from here begin to suggest that this research is not only about designing physical boundaries, it is also about creating conditions, providing infrastructures, and devising a loose framework that will continuously shift and blur spatial boundaries.

At the same time, there is a realisation that the informal can never be completely formalised. We may suggest building shared mini farms where students, faculty, and rural villagers can interact; we might build temporary badminton courts along walkways; or we might create vending zones for villagers to set up small businesses. However, there will always be those vendors and villagers who continue to conduct business that escapes the activated, thickened, downsized, or shuffled spaces urban designers ‘provide’ for them.

Possibly, it is time for designers to acknowledge one cannot design for all types of lives. What is ‘all’ is always more than what we can anticipate and plan for. The ‘all’ is continuously expanding as new socioeconomic activities and cultural practices change and grow in response to the conditions flourishing around us.

References


Conclusion
Both China’s economic growth since Deng Xiaoping opened its markets to the world, and the Confucian stress on hierarchies and distinctions that prevails in many aspects of social life have contributed to making China a country increasingly marked by boundaries. As mentioned in the thesis’s introduction gated communities have become more prevalent all around China. Swathes of land from small condominium developments of a hectare to university campuses that are hundreds of hectares in size are often designed as inward-looking places with boundary walls three or more metres high. The key site, Jimei University, studied in this thesis is one prime example. China’s rising middle- and upper-middle classes live within these walls, separating themselves from the chaos, dirt and poverty that sit outside the middle-class dream world. Sometimes, almost as an ill-thought-out goodwill act or a bad joke, designers in China - particularly landscape architects - will decorate these boundary walls with planter boxes, artistic forms, and accent tiles as if to tell those living in poverty that though they cannot go beyond the boundary walls they can still enjoy them.

An easy way to read these boundary walls is to proclaim them as the tools of a social segregation system empowered by neo-liberal forces and classist traditions. This reading is certainly not wrong, and is useful in diagnosing the wider socio-economic structures at play in China. Theoretical pronouncements of boundary walls being the tool of a social segregation system can provide a general way to speak about China’s urbanising landscape, but such a reading might also miss the lived experiences of those who live in the vicinity of these boundaries. At the same time, such a reading, which is theoretically grounded in Western notions of civil rights and the public forum, does not take into consideration the Chinese middle-class desire for security which is not reducible to them being coerced by capitalist forces. As outlined in Chapter One, this desire for security stems from a longer Chinese spatial tradition that emphasizes hierarchies and distinctions, and covers the spectrum of the design of cities to palaces to vernacular houses.

This study attends to precisely those lived experiences of people who live in the boundary walls’ vicinity, and recognizes the need to have spaces for social exchange, while also not discounting the desire for physical and social security. Thus, it is mapping that demonstrates how lives might be conducted despite the boundary walls, or how people produce for themselves lives and territories that exist outside the immediate capture of the neo-liberal Confucian machine. Following this mapping, the thesis has provided a variety of methods which readers can adopt and use in their own exploration and creation of porous boundaries. There is, however, a caveat when creating porosity. As noted above, this study does not advocate the complete removal of a social segregation system.
of boundary walls, at least not yet. The complete removal of boundary walls might be too shocking for China’s middle-class who desire security from the “rest.” I hope by increasing porosity there is a chance that this feudal attitude to spatial segregation will slowly wane and openness will be achieved. The methodologies developed to map how people transgress boundary walls, and how we as designers can actually learn from them and then design spaces that are capable of promoting exchange between different socio-economic classes, are perhaps initial steps to openness.

This thesis, as one pursued through practice, must attend to the realities of the Chinese real estate market and its demands. To propose site development without any boundary walls where anyone can technically enter the site (as in cities like Copenhagen, Portland, Malmo, Vancouver, and Melbourne) could result in this research study not being palatable to Chinese designers (and real estate developers and policy makers), thus halting any possibilities for boundary walls to exist in any form other than the hermetically sealed bubbles they are now.

Exploring boundary as a shared space is an important part of this study. The main approach for thinking about boundary in this thesis is to understand that it need not be only a demarcation line. Rather, it can be a ‘thick’ space, sometimes literally expanding to a zone that allows for people from both sides to come together to share and exchange. As such, the space contained by a boundary wall can start to become blurred with the spaces outside of it. This space is what this thesis searches for - a shared landscape that is not governed by a fixed set of boundaries but by an infinite set of opportunities. The following paragraphs outline a summary of some of the key experiments, mappings and design actions that have enabled me to conceive boundaries as shared spaces that can allow for exchange while still, at least for the moment, satisfying the Chinese middle-class desire for security and spatial distinction.

The study commenced inquiries that questioned the idea that boundaries currently designed with decorative patterns have only been crudely examined in terms of understanding their potential as shared spaces. This assertion was demonstrated in Chapter One through design propositions for a boundary wall that surrounds Jimei University in Xiamen, China. In this project four ‘thickened’ boundary typologies - a ‘Crossable Wall’, a ‘Vending Wall’, a ‘Multi-layered Wall’, and a ‘Productive Wall’ - were developed in opposition to the boundary wall’s original simplistic physical and linear form. Although the new boundary conditions had been created, this project focused on the potential for retrofitting the boundary wall’s appearance at a place scale, and doing so without having to content with large structures, processes, or systems. To understand the boundary’s qualities and complexities to a much greater depth than its appearance alone, exploration techniques were deemed to be necessary.
Hence, in Chapter Two I experimented with techniques of "close observation" and "following" that enabled me to see the boundary with fresh eyes. These techniques allowed me to map the socio-economic exchanges between vendors and students that exist variously across different scales. As discussed in Chapter Two, I started mapping the journey of Vendor D whose takeaway food business operates around Jimei University’s boundary wall, to understand how a boundary wall can be ‘broken’ or transgressed. I followed Vendor D for five days, mapping the cowshed kitchen in which he cooked the meals to be delivered to the university students, the public toilet near the boundary wall that he used to prepare some of his food, and the routes he used to pick up his produce and deliver the food. The territories his routes and routines create extend some 50 kilometres beyond the heart of Sun Cuo Village and actually go behind the university’s boundary walls. Vendor D breaches the boundary walls’ secured bounds by hiring students and bribing security guards. Ultimately, mapping Vendor D led me to posit the idea that boundaries gain their porosity not necessarily by having physical gaps or holes. Sometimes it is the relations one has (such as Vendor D’s relations with the hired students and bribed security guards) that allow boundaries to be transgressed. It is also how Vendor D and other vendors use what I call “micro infrastructures” like the dressing sticks that carry the packed food to the students over the three-metre high boundary wall, the small platforms they use to set up ‘pop-up’ stalls, the self-made ladders they use to climb over the wall, the makeshift areas near public toilets they use to wash their wares, and the bells attached to the wall for students to call different services that enable their operations to function. The university’s transgressed boundaries, even if they are temporary and minute, also led me to think of how territories are never just defined by their physical limits. Is it not possible, at least when Vendor D conducts his short transgressions, that Jimei University’s boundaries have become tied to the territory of the rest of the Sun Cuo Village community?

Mapping Vendor D in Chapter Two led me to consider boundary from a wider perspective and to understand territories and boundaries as a network of relationships and possibilities. This subsequently prompted me to think of design as the facilitation of forming relationships at a larger scale. Thus, my next step in this thesis was to move from mapping to producing a series of boundary strategies at the master-planning stage. Why strategies? Strategies are not finalised site plans. They consist of generalised spatial and social relations in particular arrangements meant to produce particular effects. But they are not specific actualisations as they work as compendiums to official development plans. Designers and the readers of this thesis, I hope, will apply these strategies to their own spatial interventions and designs of Chinese urban and rural landscapes that help rethink boundaries between public and
private spaces. In Chapter Three, I proposed four boundary strategies – Activating, Thickening, Downsizing and Shuffling – as ways to undo the solidity of the boundary wall. For example, with Thickening, some significant university facilities are pushed from the middle of the university site to the edge of the site where the two communities meet. With this strategy, these university facilities that house different programs and activities thus become part of the boundary wall, but they are also 'thick' enough to be a shared space where the villagers can enter.

The creation of a shared space requires thinking beyond simply a physical space. It requires one to think of the intangible form of boundaries – especially the non-physical relations that control power. A shared space could be a space where certain power relations between different groups – socio-economic, cultural, racial, etc – can at least momentarily be wrested from their assumed stability so the groups can begin to forge new bonds. But as designers of physical space we do not dictate actual relations between people. We can, however, design conditions and infrastructures to enable people to feel more comfortable to enter into new interrelationships. Accordingly, by providing them with conditions and infrastructures like anchor-hooks, line markers, electrical plug points, public toilets and so on, some shared spaces like the outdoor sportsground created by these boundary strategies could become sites which catering for a series of local events and programs like farmers’ markets, seasonal events, festival ceremonies, and temporary parking during university vacation periods (as discussed in Chapter Three). These spaces are shared landscapes where students and villagers could mingle and form new social capital.

In Chapters Two and Three, the reality of the Chinese real estate market is always in the background. Again, as mentioned earlier, the methodologies and the subsequent design strategies cannot discount the cultural and socio-economic demand for some form of boundary wall. Shared space, at this moment in Chinese history, cannot be a total open space. I would urge readers of this thesis, if they are practicing in China, to always take into account China’s actual socio-economic, cultural and political conditions when applying any of the methodologies, strategies and guidelines suggested here (see Appendices 01 and 02 for details of the boundary design strategies and guidelines for gated residential community developments).

It is also important to remember that this thesis has a focus on contemporary Chinese cities. The methodologies and design strategies were developed through closely observing and mapping Chinese lived experiences. I will not pretend that life in many Chinese cities, like Sun Cuo Village which this thesis largely draws from, is perfect. Corruption, bribery, flouted health codes are all part and parcel of Chinese urbanism. Thus,
readers should bear in mind the mapping of illegal activities (e.g. bribery), and actually designing or providing infrastructure such as public toilets for food preparation near boundary walls (so the likes of Vendor D would continue to flourish), might not be feasible in other countries that operate under different legislation. Due to the scope of this thesis, however, it is not my intention to sanitise these conditions investigated here, or to suggest that these conditions should be promoted or reproduced in other boundary areas of Chinese cities. This thesis has focussed on how lives lived around boundaries might breach those very boundaries and allow what I called ‘shared landscapes’ to emerge. If there is an overarching question to this thesis, it would be one that asks how boundaries transform places, peoples, events, business operations, actions and the relations between all these entities. And, how can mapping these peoples, events and businesses lead to thinking of urban design in general and strategies in particular in terms of relations. When doing so it is possible boundary lines that seemingly demarcate can start to appear as part of the shifting urbanscape. Thus, it is important for designers to think not just in terms of discrete zones but in terms of relations of varying scales, each shifting over time. There are no final solutions with design; it is a matter of teasing new possibilities out from design iterations as I have attempted to do in Chapter Three. From this research, speculative design propositions derived from each of these different scales have been integral to the development of my academic practice, as they provide me with approaches that can then be passed on to my students in China. These approaches could empower them to think and work at a series of scales, simultaneously, and thus evaluate sites differently from previous methods. Providing alternative ways for students to see and evaluate sites should also expand their roles as landscape architects in the future.

Mapping has the ability to bring together both analytical and propositional thinking and consequently became a strategic part of the design process in this PhD research study. The mapping exercises in Chapter Two can be thought of as design (and design thinking) methodologies to approach boundaries and space in general in terms of relations. When doing so it is possible to reveal where it is suitable for designers in China to intervene and how to intervene when they deal with boundaries.

Mapping has the ability to bring together both analytical and propositional thinking and consequently became a strategic part of the design process in this PhD research study. The mapping exercises in Chapter Two can be thought of as design (and design thinking) methodologies to approach boundaries and space in general in terms of relations. When doing so it is possible to reveal where it is suitable for designers in China to intervene and how to intervene when they deal with boundaries.
During the course of this PhD research, I was invited to lead three mapping workshops at Xiamen’s Huajiao University in 2011 and Guangzhou’s South China University of Technology in 2012 and 2014. The knowledge acquired from this research study on shifting scales and mapping techniques served as a foundation for these workshops.

To conclude, the pedagogical dimension of this thesis is thus to provide concepts – spatial and non-spatial – for students, designers and design researchers to use in their own work. This thesis, through a series of boundary typologies (as seen in Chapter One), mapping methodologies (as seen in Chapter Two) and design strategies (as seen in Chapter Three) provides readers with concepts that they can assemble in their own ways to produce their own treatment for their own specific sites, for their own instances of shared spaces. There is no form that Chinese urbanism must take; there are only relations that designers can extract from the existing cities, so as to add and subtract new parts to these relations to create a more accommodating and inclusive landscape that can be shared by different groups of people.
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Boundary


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Population


Boundary Design Strategies for Gated Residential Developments in China
In addition to the prevalent example of Chinese university enclaves, gated residential communities are also a pervasive form of segregation found in the majority of contemporary Chinese cities. In regards to today’s housing development in cities, British-Canadian journalist, Doug Saunders (2011), noted that property developers and designers do not provide spaces that would potentially allow residents to operate a business, such as a shop or a small workshop, on the gated residential development’s boundary. According to Saunders’s critiques on the current housing development model, there are no physical opportunities to expand the residence or to convert part of it to commercial use. This problem is further exacerbated by non-existent access to surrounding streets and passing pedestrians who could otherwise be able to participate in business transactions with the residents. The lack of opportunities for residents living in the vicinity of boundary walls is particularly evident in the current residential development model in China.

Under the current Chinese residential development model, spaces adjacent to a development’s boundary walls are generally designed to reinforce fortification rather than provide opportunities to the community living within its walls. In most cases, the space abutting a boundary wall on the residential side has been dedicated to the parking of vehicles (Fig. 4.1). An internal street usually runs alongside these parking spaces, which pushes the apartment buildings even further away from

4.1 Current Boundary Strategy

Fig. 4.1: Parking spaces on the residential side of the boundary wall (Jimei District, Xiamen)
the boundary wall and the street sidewalk beyond. This spatial arrangement next to the boundary wall provides no opportunity for residents living on the ground floor of buildings to potentially convert a section of their residence to profitable use.

Furthermore, the boundary walls surrounding the communities residing within, according to China’s national planning policy for gated residential communities, must be set back at least four metres from the sidewalk of the main street. In reality, this distance varies according to the height of the associated apartment buildings (Fig. 4.2). In order to increase the ratio of green spaces in urban areas and to improve the image of Chinese cities, the external space located between the street sidewalk and the outer side of the boundary wall is required to be ‘green’. This green buffer area is often covered by dense vegetation with no pedestrian circulation paths and access to the boundary wall (as discussed in Chapter One). With the immense scale of modern housing developments in China, these green buffer zones along main streets can easily reach five hundred metres in length. By eliminating the interaction of residents and individuals traveling along the street’s sidewalk, this type of boundary strategy creates an uninteresting and dispiriting experience for passing pedestrians. As a result, the much-revered traditional Chinese vibrant street-side lifestyle dissolves in this gated residential model.

Another issue the current residential model has to contend with is the privatisation of community-owned facilities like outdoor swimming pools and tennis courts. These facilities are deliberately situated far from residential peripheries, often arranged to be located in the middle of gated communities (This action is supposed to reinforce their reason for existence, and is a sales strategy to attract property buyers). Due to their central location amongst apartment buildings, these community facilities are by no means accessible by neighbouring residents or the public in general. As time passes some facilities are often forced to close down their businesses because of infrequent use, with profits being significantly less than their inherent maintenance fees.2

On the other hand, I have been a witness to a number of gated residential communities with a range of successful boundary conditions during a recent trip to China in March 2013. Among them, Shanghai’s ‘Yu Tian Garden’ and ‘Shang Nan Garden’, as well as Guangzhou’s ‘Rose Garden’ were particular examples of how we can design a gated residential community, which doesn’t lose the street life atmosphere, while retaining the essential elements of home security. The section that follows is thus to uncover what these boundary conditions are in these three case examples.

2. Residents living in most gated communities in China are required to pay a small amount of fees to use some facilities like outdoor swimming pools and indoor gyms.
4.2 Case Studies

'Yu Tian Garden' and 'Shang Nan Garden', Shanghai

The first two residential communities are located in areas where massive urban transformation is currently taking place in Shanghai. Yu Tian Garden is an old gated residential community located in Shanghai’s Yangpu District. In recent years a number of new office buildings and schools were built in the vicinity of this community. To provide commercial services for the new office workers and student arrivals, the ground floor residents living in close proximity to the boundary wall converted sections of their units to commercial use, including jewellery shops, gift shops, take-away eateries, barbershops, stationery shops, boutiques, bookshops, bicycle repair workshops, phone repair centres, and property letting agencies (Fig. 4.3). To further allow passing pedestrians access to their shops, the ground floor apartment occupants opened a number of informal gates along the boundary wall. The subsequent rolling and surging of human movement, economic activity, the interaction of people occurring at the boundary blurred the politic public-private division. Where once none existed, street life now emerged (Fig. 4.4).
Shang Nan Garden is another longstanding gated residential community located close to the 2010 Shanghai World Expo site. To accommodate more vehicles for the World Expo, Shanghai’s City Planning Department widened Shang Nan Street, the main road alongside Shang Nan Garden. The road was expanded from 4 lanes to 8 lanes before the event began (Fig. 4.5). As a result of the road expansion, the green buffer zone adjacent to Shang Nan Garden’s boundary wall had to be removed. Removal of the green buffer zone meant the street sidewalk now sits right next to Shang Nan Garden’s boundary wall. Consequently, this brought passing pedestrians much closer to the residential buildings located behind the wall.

To create a better city image, the Department of Public Security replaced the old concrete wall with an ornamental fence on which artistic floral patterns were painted (Fig. 4.6). As the boundary had now become a fence containing small gaps in its construct, ground floor residents living behind it began to set up small businesses. In this instance, small backyards were transformed into makeshift shops specialising in erotica, selling a wide range of licentious products such as sex toys to passersby through the fence’s gaps (Illustrated in Fig. 4.7 on the following page). These so-called ‘sex shops’ are literally invisible when viewed from the street’s sidewalk, providing perfect secrecy to customers who desire a confidential transaction.

To understand what empowers the ground floor apartment occupants to make these boundary transformations and/or renovations without the permission of relevant authorities or upper-level apartment occupants, we need to know the ‘hidden codes’ – the conditions of the boundaries. The following is a list of the boundary conditions revealed from these two Shanghai case examples:
Ownership of the Boundary Space

In these Shanghai case examples, it was observed that the ownership of the boundary space, such as the space located between the shopfront and the boundary wall at Yu Tian Garden, or the space where a makeshift ‘sex shop’ was operated at Shan Nan Garden, was always the privately owned backyard of a ground floor apartment occupant (Fig. 4.8). In the case of Yu Tian Garden, ground floor occupants made further changes to their residences by removing demarcation fences between neighbouring private backyards (often turning several private backyards into one single space) to provide visitors with a continuous circulation space once they’d gained access from the street sidewalk, for example, via the opening of informal gates along the boundary wall (Illustrated in Fig. 4.9 on the following page). This discovery shows that to open a shop without the permission of upper-level apartment occupants, the boundary space on the community side of the wall must be privately owned. It cannot be a shared space owned by all occupants of the community, such as an internal street or an allocated parking area.
In the case of Yu Tian Garden, it was noted that apartment buildings containing ground floor shops were rectangular shaped, with their longer sides facing the boundary wall on the main street. This type of building orientation seems to be more conducive to the occupant’s shop gaining greater interface with the street.

In both Shanghai case examples the building structure is of column and frame construction, as opposed to a brick and concrete arrangement. This type of structure facilitates the rearrangement and renovation of ground floor space according to an occupant’s unique needs.

The boundary wall’s construction type also plays an important role in enabling operation of these ground floor shops. Physical holes or gaps in the boundary wall, for example in the case of Shang Nan Garden’s new fencing, allow ground floor apartment occupants to access passing pedestrians. These small gaps additionally promote a visual link between the private backyards and street sidewalks, providing a more secure walking environment for passers by. In the case of Yu Tian Garden, the fence panel wall also facilitated the ground floor residents to open their private gates without needing to undertake massive demolition projects (one may only need to remove a few fence posts).

- **Orientation of the Apartment Building**

In the case of Yu Tian Garden, it was noted that apartment buildings containing ground floor shops were rectangular shaped, with their longer sides facing the boundary wall on the main street. This type of building orientation seems to be more conducive to the occupant’s shop gaining greater interface with the street.

- **Structure of the Apartment Building**

In both Shanghai case examples the building structure is of column and frame construction, as opposed to a brick and concrete arrangement. This type of structure facilitates the rearrangement and renovation of ground floor space according to an occupant’s unique needs.

- **Construction Type of the Boundary Wall**

The boundary wall’s construction type also plays an important role in enabling operation of these ground floor shops. Physical holes or gaps in the boundary wall, for example in the case of Shang Nan Garden’s new fencing, allow ground floor apartment occupants to access passing pedestrians. These small gaps additionally promote a visual link between the private backyards and street sidewalks, providing a more secure walking environment for passers by. In the case of Yu Tian Garden, the fence panel wall also facilitated the ground floor residents to open their private gates without needing to undertake massive demolition projects (one may only need to remove a few fence posts).

![Fig. 4.9: Before and after diagrams (Yu Tian Garden)](image)
Rose Garden, Guangzhou

In recent years a type of combined residential and commercial development (known as “R&C” development) has emerged on the outskirts of many Chinese cities where urban areas converge with rural. Under this model residential towers with ground floor shops are located on the outer rim of the community, flanked by security gates on each side. This kind of arrangement results in the formation of a central courtyard space where all community-owned facilities are situated. ‘Rose Garden’ is just such a gated residential community, and is located in the Baiyun District, a distinctively urban/rural convergence region in the city of Guangzhou.

In 2005, during the D-Lab project in the 2nd Guangzhou Triennial, Times Property, developer of the Rose Garden community, invited architects Rem Koolhaas and Alain Fouraux to China. They were asked to work together to design a permanent museum for the Rose Garden community. In the end, the rooftop spaces of three adjoining residential towers were chosen as the site for the museum, which later became officially known as the "Times Museum" (Fig. 4.10). Today, this rooftop museum has become a shared facility accessible to the public. The combination of private domicile and public rooftop facility proved an enclosed residential block could potentially encompass commercial, cultural, and social aspects of urban life (Fig. 4.11). It also injected innovative and inspired enthusiasm into the people living within this gated community. Further analysis of this project revealed important design strategies that showed how the Times Museum was able to operate on top of three private residential towers. These strategies play a critical role in the blurring of the boundary between public and private space.

- **Architectural Strategies**

The various functions of this rooftop museum are distributed across a number of floors within the Rose Garden’s residential buildings, creating an intermingling structure of everyday public life and residential living space. For example, three apartment units on the 14th floor were converted into the museum’s office area, its information centre is located on the ground floor, and the building’s basement is used for collection and storage (Fig. 4.12). The entrance to the rooftop museum is on the ground floor opening out to the main street, and here you’ll also find a bookshop, a cafeteria, and an art shop. The museum has its own dedicated lift that travels vertically through the entire building, arriving directly at the exhibition hall on the 19th floor. Additional factors facilitating operation of the Times Museum include the rooftop’s flat architecture, the building’s rectangular form, and the greater load bearing capacity attained by the joint rooftop space.
Photo of the dedicated lift used by the public

View of the private courtyard space from an apartment unit on the 5th floor
To further establish a public social space inside this private community, a raised pedestrian bridge has been implemented into Rose Garden. The bridge spans its entire inner courtyard, and connects three important locations including the rooftop museum, the community centre located in the courtyard, and an exhibition gallery (known as the ‘Guangdong Museum of Fine Arts’) situated opposite the community’s security gate to the west (Fig. 4.13). This raised pedestrian bridge creates a public pathway, breaking open an otherwise isolated community. It also works to integrate three separate facilities to form a continuous public network running throughout the gated community. To prevent public visitors from jumping off the bridge into privately owned courtyards, a large-sized ornamental ditch has been provided, which sits beneath the bridge. The inclusion of the raised pedestrian bridge transforms the privately owned community centre into becoming a shared social space in which residents from different communities can gather together. Simultaneously, a sense of security within the community is still maintained. Both the dedicated lift and the raised pedestrian bridge help to establish a new type of interactive relationship between the isolated community system and an urban public space.
The pedestrian bridge built above Rose Garden's security gate

The entrance of the pedestrian bridge from the street sidewalk
Discussion

The case examples discussed in this section explore two main ways in which Chinese housing developments successfully use their boundaries to establish potential coexistence between private and public spaces. By understanding the reasons in which ground floor shops and the rooftop museum are able to exist sustainably, a set of critical boundary conditions were revealed. However, the investigation of these case examples also looks at what hasn’t worked successfully, including the environmental and social areas that still need improvement. By knowing these drawbacks we are able to understand other important boundary conditions that may be necessary to provide greater flexibility when designing gated residential communities in China.

- Issues with the Layout of Floor Space

In the case of Yu Tian Garden, two shops are allocated in each ground floor apartment, one in a converted former bedroom, and the other in the former living room. The area of each shop is approximately nine square metres (3m x 3m). As the home in question does not lose its kitchen, the rest of the apartment is still able to function normally. However, issues with the layout of floor space do arise because the owner of the ground floor unit does not provide the two independent shops (who are renters) with a toilet facility. As a result, the person who rents the shop has to temporarily close the shop each time they need to go and use the nearest public toilet facility. This issue indicates that at the architectural level a more strategic floor plan may be required so that a toilet facility could be provided for tenants of these shops in future developments.

- Disruptions to Privacy and Comfort

At Yu Tian Garden, ground floor shops can often be responsible for producing high noise levels, adversely affecting second floor tenants. This issue also requires employment of architectural strategies, such as a soundproof canopy, to reduce noise, smells, or other often-unavoidable disruptions (Fig. 4.15). At Rose Garden, the issue of privacy has been brought to attention, as the raised pedestrian bridge can expose aspects of residents’ private living spaces within their gated community. This problem is exemplified by the instances of visitors taking photographs of the apartment block’s occupants while strolling across the pedestrian bridge. Many felt it was an invasion of privacy, and after receiving a large number of complaints from residents, shortly after officially opening, the pedestrian bridge was closed to the public. Today it stands as a deserted structure. This failure informs me of the significance of boundaries in Chinese spatial tradition (as discussed in Chapter One). The challenge for designers is to find a balance between what is acceptable and what is desirable for the various users and persons involved.

- Height of the Ground Floor Apartment

The lobby where the dedicated lift to the rooftop museum is located has a height of around 4.5 metres. This tall height creates extra space and allows for a range of functions to be performed in the area, including the ability to hold a variety of public events. However, both Yu Tian Garden and Shang Nan Garden have ground floor apartment unit heights of only 2.9 metres. This standard height makes it very difficult to facilitate multifunctional use of the space.

Fig. 4.15: Existing boundary conditions (left); improved boundary conditions (right) (Yu Tian Garden)
The Rose Garden community is located in an area where urban and rural zones converge, with the majority of the population still living relatively underprivileged farming based lifestyles. The Times Museum, created as a shared community program, does not serve the interests of surrounding village communities. Instead of local farmers and occupants of Rose Garden using the space, it is often foreign artists and exhibition curators that do so. Sadly, most of the time the museum sits unoccupied (Fig. 4.16).

After analysis of all three case examples in this section, it becomes clear that boundary conditions conducive to providing flexibility and the generation of street life should be planned not just at one scale, but multiple scales. For example, at the scale of neighbourhood, the strategic arrangement of community programs such as apartment buildings, parking areas, and circulation streets are of significance when determining the degree of opportunity at the boundary. At the scale of the street, the privately owned boundary space on the community side of the boundary wall is the most crucial boundary condition for empowering ground floor apartment occupants to freely change the use of their floor spaces if and when opportunities arrive to do so. At the scale of the building, the building structure, building orientation, floor layout, and height of ground floor units are important conditions when considering support for the potential operation of future shops. At the scale of the human body, a physical hole or opening in the boundary wall may further facilitate exchanges to occur between different socio-economic groups. Knowledge of these boundary conditions could function as a tool for designing gated residential communities in contemporary China.

Fig. 4.16: Photo of the exhibition space
Recently built Le Huo Garden in Xiamen's Jimei District is located on a former agricultural site, and has a land area of around 40 acres. It is situated among industry parks and village communities (not far from Jimei University). The majority of Le Huo Garden is a walled residential community, with three ‘R&C’ towers located on the outer rim of the neighbourhood. Another twenty residential towers are arranged within the development’s boundary walls (Fig. 4.17).

4.3 Applying the Knowledge to a Standard Residential Enclave

Recently built Le Huo Garden in Xiamen’s Jimei District is located on a former agricultural site, and has a land area of around 40 acres. It is situated among industry parks and village communities (not far from Jimei University). The majority of Le Huo Garden is a walled residential community, with three ‘R&C’ towers located on the outer rim of the neighbourhood. Another twenty residential towers are arranged within the development’s boundary walls (Fig. 4.17).

Fig. 4.17: View of the Le Huo Garden community
The boundary strategy used in Le Huo Garden is the standard approach applied to the majority of current gated residential developments in China (Fig. 4.18). For example, the green buffer zone surrounding the external side of the boundary wall is covered with dense vegetation, while boundary spaces on the community side are mostly designed for parking vehicles and bicycles (Fig. 4.19). A circular internal street runs almost parallel to the parking spaces. Under this plan, residential towers are set far back from the internal street and parking areas, eliminating any potential association with the boundary wall. This strategy also leads to an internalisation of many community facilities, such as an outdoor swimming pool, an indoor gym, a community centre, an outdoor tennis court, a social club, and a library (Fig. 4.20). These facilities are completely privatised without any access provided for neighbouring residents. Since home security is the priority, the current master plan’s approach does not offer commercial opportunities for ground floor apartment occupants that live in close proximity to the boundary wall.

Fig. 4.18: Current master plan of the Le Huo Garden community

Fig. 4.19: Photos of the shared vehicle and bike parking areas next to the boundary wall

Fig. 4.20: Photo of the abandoned outdoor swimming pool
4.3.1 Three Boundary Strategies for Redesigning the Le Huo Garden Community

The boundary conditions discovered after an analysis of successful residential cases (where the residential boundary becomes permeable and thus conducive to multiple uses including commercial activities) informs us about how the Le Huo Garden community could be redesigned in a different manner. The following three propositions evolved from Le Huo Garden’s current master plan, and involved rearrangement of the current community programs. The three boundary strategies applied here, ‘Activating,’ ‘Thickening,’ and ‘Downsizing,’ were also applied in the redesign of the Jimei University campus (as discussed in Chapter Three). The design approach moves from minimum to maximum perspectives, suggesting alternative gated residential community design styles potentially capable of providing both home security and prosperous street life to its inhabitants.

**Boundary Strategy One: Activating**

The activating strategy looks at how to promote economic exchanges between Le Huo Garden’s residents and local villagers at the peripheries of the community. To enable surrounding villagers more access to Le Huo Garden’s peripheries, this strategy simply shifts current locations of the internal street and parking areas so the internal street can sit right next to the boundary wall. For the external street side located along Guan Kou Nan Road, accessibility can be improved by placing a pedestrian space next to the boundary wall, as well as by providing a number of walking paths within the green buffer zone connecting the street sidewalk to the pedestrian space and boundary wall. In such an arrangement, both residents and passing pedestrians (mostly villagers) would be able to approach the boundary wall, establishing the potential for commercial exchanges. To further facilitate these exchanges, the current concrete boundary wall would need to be replaced with a fence panel wall including small ‘sales windows.’
Boundary Strategy Two: Thickening

This strategy is to transform the boundary into a thickened zone in which social and commercial activities can be further enhanced. To achieve the ‘thickness’ of the boundary, the internal street and parking areas need to be relocated towards the inner region of the community, away from the community’s border, so more apartment buildings can be located beside the boundary wall. (In this case, some apartment buildings would also need to be re-orientated in order to face the street). Once this action has been completed, each ground floor household living next to the boundary wall would in all likelihood have their own private backyard. This would then enable them to easily convert a section of the available floor space to commercial use if and when opportunities arose. Likewise, a fence panel wall could be used to facilitate visibility and the future opening of private gates. Density of vegetation planted within the green buffer zone would also need to be reduced to allow visual contact, and future external access to the boundary wall. Formal pedestrian paths could be provided within the green buffer zone to further enhance accessibility.

Boundary Strategy Three: Downsizing

This strategy involves the residential super block (265m x 510m) being downsized to two smaller gated residential communities. The action would result in the formation of a public thoroughfare situated in between the two downsized communities. In this arrangement, underground parking might become a shared facility for neighbouring residents by placing its entry and exit points on the thoroughfare. Separating the single community into two would also multiply the number of interfaces between privately owned backyards and the external street. This is to say that a ground floor occupant living next to the thoroughfare would potentially be able to convert a section of his or her available floor space to commercial use when opportunities arose.

To free up more ground space for the operation of the thoroughfare, some community-owned facilities, such as the library, the social club, the community centre, the gym, and even the swimming pool, would need to be located on the rooftops of the three ‘R&C’ buildings situated on Le Huo Garden’s outer rim. This relocation may also lead to the generation of shared community facilities. Neighbouring residents would be able to access these rooftop facilities after provision of a dedicated lift, separate to those used by the residents. To both regulate pedestrian flows and to retain a necessary degree of order, admission to these shared rooftop facilities would be controlled by either an entrance fee or a membership card. The earnings from these transactions could then be used for maintenance of these shared rooftop facilities.
4.3.2 Planning Ahead for Conditions in Twenty Years

The aforementioned master plan propositions for Le Huo Garden in Xiamen’s Jimei District have also been created to offer a certain degree of flexibility necessary to handle changes in China’s quickly evolving urbanisation process. Taking the ‘downsizing’ strategy as an example, the following diagrams demonstrate how this master plan proposition could evolve from conditions on Day One to those occurring twenty years into the future.

Conditions on Day One

Conditions on Day One would involve each ground floor household in the Le Huo Garden community owning its own private backyard space (See the ‘Thickening’ strategy for more details).

Conditions after Five Years

After five years private gates along the fence panel wall would be created without notice. On Guan Kou Nan Road, informal access to the boundary wall via paths from the street sidewalk would be also gained. These could be made without the permission of others. Given access to passing pedestrians, ground floor occupants living next to the boundary walls would be able to transform part of the apartments into independent shops with pre-planned toilet facilities. Demarcation walls between sets of two private backyards could be removed to provide visitors a continuous space for circulation. Street life would begin to form on the peripheries of the community. At this stage, the newly established shops may create noise pollution, affecting occupants on the second floor. Soundproof canopies would be used to reduce noise, smells, and other unavoidable disruptions.
Road widening project occurs

**Conditions after Ten Years**

After ten years have passed, conditions would allow the main street of Guan Kou Nan Road to be widened from its current 4 lanes to 8 lanes. The development would also include an elevated BRT-use-only bridge (This proposal is included in the Xiamen Master Plan 2030). The green buffer zone abutting the external side of the boundary wall would then be removed as part of the road extension process. Once the green buffer area has been transformed, the street sidewalk could be moved to be located right next to the boundary wall. At this stage, ground floor shops facing Guan Kou Nan Road would gain greater access and exposure to passing pedestrians.

Ground floor shops start to emerge inside the communities

**Conditions after Fifteen Years**

After fifteen years, conditions could be right for the establishment of additional walkways and thus connectivity between Le Huo Garden and its surrounding communities. A pedestrian street could be further created, cutting straight through the centre of the two residential blocks, transforming them into four smaller-sized gated communities. With a new pedestrian street now sitting in front of their private backyards, ground floor occupants of this sector would be given equal opportunity to open their own shops. Street life would now progress not only on the development’s peripheries, but also within internal areas of Le Huo Garden.

Ground floor shops start to emerge inside the communities
Conditions after Twenty Years

Conditions after twenty years could allow portions of the boundary wall that adjoin private backyards to be further removed so as to gain maximum accessibility and visibility. Private backyards would become additional spaces for operating businesses. In other words, this action would offer ground floor occupants currently running commercial operations an opportunity to further expand their business space into these backyards. The result would be larger commercial spaces allowing more features and functionality. However, it must be taken into consideration that at this stage the increase in street life could begin to cause harm to the previously quiet living environment. After analysis, the conclusion is that conditions after ten years would most probably be the ideal living mode for current Chinese society, as it would be the best possible balance between desired levels of street life, and the desired living environment of residents.
Fig. 4.32: 7 steps to generate street life without losing home security
APPENDIX 02

Boundary Guidelines for University Campus Developments
(in suburban + rural areas)
Traditional Chinese village typology
**PLAN**

- Cross-sections
- Design guidelines
- Evaluation guidelines

**Actuating**

1. The space along the boundary wall on the community side must be accessible to the public.
2. Using a dense grid wall instead of a service boundary wall.
3. The green buffer area shall provide clear access to the boundary wall.

**Thickening**

1. The boundary space on the community side must be privately owned.
2. The pedestrian space along the boundary wall should feature future developments in it.
3. The green buffer area shall include clear access to the boundary wall.
4. Design the building elevation to be facing the boundary wall so that it becomes part of the fabric of the street.
5. The height of the boundary wall must be no less than 1.3 meters in height in a dense residential area of the second floor level.
6. Architectural strategies such as up/down samplings need to be considered in reducing future noise and disruption to the second floor levels.
7. Ground floor areas should feature future subdivision into smaller and higher density blocks. Separate flat feedback on the need for planning to avoid the operation of future uses.
APPENDIX 04

PhD Exhibition

Photography by Marc Chung
LIVING ON THE LINE:
a search for shared landscapes