PERCEIVED LILONG
Towards participatory design in urban regeneration

Qian Gu
4614550
TU Delft
Faculty of Architecture and the Built Environment
Department of Urbanism
MASTER THESIS

Author: Qian Gu
email: Rachel_0618@outlook.com
Student number: 4614550

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Mentor team
Ir. GA Verschuure-Stuip
Ir. B.Hausleitner
Dr.ir. PLM Stouten

TU Delft
Faculty of Architecture and the Built Environment
Department of Urbanism
Research Group
History & Heritage
This graduation thesis is carried out in the last 10 months in the studio of History & Heritage. Here I want to deliver my sincere thanks to the people who had been involved in this project. Firstly, I would like to thank my mentors, Gerdy Verschuure-Stuip, Birgit Hausleitner and Paul Stouten, without whom I won’t achieve the result as it is now. Gerdy gave me many insights on the attitude towards heritage conservation with her background knowledge and her passionate personality encouraged me a lot during the whole process. Birgit guided me a lot both in theoretical and methodological perspective, who could always gave me inspirations when I just came to an idea. And for Paul, who is not accompanied with me to the end though, I have to thank him for his strong capability in theoretical framework and rich experience in urban regeneration, which helped me to build the solid foundation of the project thesis. Also thanks for my delegate examiner Nelson Mota, whose suggestions on my P2 and P4 were really helpful.

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Also I would like to thank Sha Yongjie, the urban planner of the Xuhui district in Shanghai, who gave me the basic knowledge of the site. Xu Qin, who I have not met before and generously provided me GIS data of the Hengfu District for further analysis. What’s more, I have to thank the residents or visitors I interviewed during site visit. They all kindly accepted my interview and shared me with their stories.

Qian Gu
Delft, June, 2018
MOTIVATION

My interest in the theme of this graduation project derives from my obsession on lilong, the special type of colonial heritage and residential neighborhood. As a born and grown Shanghainese girl, I really appreciate the beauty of lilong and also the culture value like the intimate social communication presented by dynamic and vital street life. However, lilong, located in the central urban district is considered as problematic area and is being threatened in the fast urbanization process in Shanghai. From mid 1990s, extensive slum clearance in Shanghai inner city first put emphasis on lilong neighborhoods. Large number of lilong neighborhoods were demolished and original residents were displaced. The question of what’s the future of existing lilong and is it possible to create a new urban form of lilong inspired me to explore more. In addition, my motivation for conducting a participatory design was intrigued by my study experience when I was an exchange student in Germany. The concept of ‘community involvement’ occurred to me for the first time on the seminar when we were discussing what matters in urban design, which could be seen as an eye-opener of the big differences between European and Chinese practices in urban regeneration process. From then on, I positioned myself as a more people-oriented urban designer who encourage bottom-up initiatives in urban planning and design. I tried to imagine what if current market-oriented urban regeneration in Shanghai shift to a user-led design of higher level participation, what fundamental change would be brought about in spatial and social quality of lilong.
Motivation

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1 Introduction
CHAPTER 1 Introduction
1.1 PROBLEM FIELD

1.1.1 Introducing problem field

FROM SLUM CLEARANCE TO URBAN REGENERATION

Urban regeneration is and was one of the most challenging tasks for urban planners and designers, which is not only about fixing the physical decay but also a complex of social and economic issues. (Stouten, 2010) ‘Slum clearance’ as an operation to demolish existing housing stock extensively for new buildings and relocate original residents to peripheral city, widely happened in China in last several decades, met with growing dissatisfaction. In the USA the term ‘urban renewal’ replaced ‘slum clearance’ as the name of such measures. Urban renewal is more or less part of a more comprehensive form of urban regeneration, which is to integrate a variety of interests into proposals for design and process. In this report, the definition of urban regeneration mainly follows Charles Fraser and Susan Percy (2003), “...urban regeneration is an aspect of the management and planning of existing urban areas rather than the planning and development of the new urbanization”. It means the essence of regeneration is the ‘regrowth of economic activity, the restoration of social function and the environmental quality’ to rediscover the lost value.

SUSTAINABLE DEVELOPMENT OF THE HISTORIC ENVIRONMENT

The concept of sustainability is widely-adopted in spatial planning and urban design recently and it has come to be applied outside of environment goals. The three components of sustainable development is ‘social, ecological and economic’ (Earth Summit, 1992), while sometimes known as ‘People, Planet and Prosperity’ (European Commission, 2002). As to research into urban regeneration, except for an approach concerned with urban form, the other deals more with questions concerning the planning of environmental processes, participation, and social and economic issues (Stouten, 2010). Therefore, the sustainable urban regeneration is a ‘comprehensive and integrated vision and action to search for a lasting solution in economic, physical, social and environmental changes’ (Roberts and Sykes, 2000: 12).

LIVEABILITY & PRIVACY

The concept of liveability is introduced to examine the quality of living environment and relationship with People. According to Machiel van Dorst (2012), liveability is defined as ‘the quality of the match between people and their living environment’, which are the perceived liveability - individual’s perception of a place, the apparent liveability - the match between people and their environment and presumed liveability - about presumed conditions of liveability.

Within the concept of ecological liveability, the control over social environment by residents are organized in a sustainable approach. Residents have the freedom to choose and control their social interaction through privacy zones. Privacy provides transition from public space to private domain and balance the amount of social interaction.

In this graduation thesis, how do built environment facilitate social interaction through privacy zonings are key to Iliong transformation.

PARTICIPATION

This part differs the report from other urban regeneration practices, which will conduct from the research into public perception and requirement. A further research explores how users, occupants, and citizens can express their needs, searching for the enhancement of individual choice and control over the residential environment, and the predicted positive spin-offs for urban collectives” (Hasselaar, 2011). Thus, residents or so called ‘have-not citizens’ could have ‘choice’ according to their housing or environmental preference and even have ‘voice’ in the higher level of participation in the process of urban regeneration. (Armstein, 1969; Rusbult et al., 1982) Armstein (1969) argued that citizen participation is a categorical term of citizen power and classified them into eight level of participation called ‘Ladder of citizen participation’. After that, Hasselaar adjust this category into five levels which are ignoring, information, consultation, participation and decision making.
1.1.2 Context in Shanghai

**URBANIZATION IN SHANGHAI**

Urbanization has become one of the key characteristics of contemporary China. As the first modernized city in China, Shanghai, witnessed unprecedented large-scale modernization since its Pudong area became one of China's Special Economic Zones in April 1990 (Scheen, 2012). The city is being transformed into a global metropolis of gleaming skyscrapers at the cost of large-scale demolition of historic lilong neighborhoods (see fig.1.3). Different from Beijing, Shanghai's history and heritage consist of the mixture of Chinese and Western culture, which is called by historian Lu as ‘half-breed’ during its colonial past (1842-1949). Therefore, whereas the urbanization of Beijing can be seen as its first show on the globalization stage, Shanghai's development can be seen as ‘a revival of the old Shanghai in its heyday’, the period as the Paris of the East, as much as for the new buildings (Scheen, 2012).

Under the property-led development, in order to satisfy the rapid population growth, housing market seek to find a more densified typology to meet the requirements of modern lifestyle. Lilong, which locates in the inner city with low density and poor living quality, stands in sharp contrast with the growing trend of property-led growth that favours higher density and high-return housing development (Arkraprasertkul, 2012).

**LILONG & SHANGHAI NOSTALGIA**

Lilong is a very special type of colonial heritage and residential neighborhoods, created in the international settlements and foreign concessions in Shanghai in 19th century after Shanghai was forced to be opened as a treaty port. As Bracken (2012) pointed out, ‘Shanghai is a city in which the colonial past has played an important role in both establishing and re-establishing its successful economic base.’

Accompanying the process of destruction and renewal in Shanghai, there has been a growing sense of ‘nostalgia’ (Wang Anyi, 2003) for the city’s colonial glory, which can be represented by two forms of legacy. One is the sophisticated architecture (such as buildings on the Bund) and the other is run-down lilong houses. As Arkraprasertkul (2012) commented, the former is seen as the selling point of the city’s history, the latter has an ambiguous status. In this report the latter lilong house is further discussed as a remarkable housing typology which dominated housing provision in Shanghai’s colonial age and is being threatened against skyrocketing housing demand in contemporary Shanghai.

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**Fig. 1.1** The evolution of Shanghai during the last century
Source: Song Zhang, An approach to Integrated Urban Historic Conservation

**Fig. 1.2** 35 millions sqm of existing lilong in old Concessions area(red line), 2009
Source: https://landlab.wordpress.com/2009/03/20/longtang/

**Fig. 1.3** more than 2700 new towers built in ten years (2009)
Source: https://landlab.wordpress.com/2009/03/20/longtang/
WHOSE CITY
The question of ‘historical preservation for whom’ is then a very challenging question that can only be answered through the acknowledgement of all other socio-cultural changes in post-reform urban China. With the housing related issues, there exist some problems including inequity and justice.

Firstly, the lilong houses built in the 1900s are facing with physical decay and lack of basic amenities, i.e. private toilets. The congestion of massive migrants to share the rent also leads to ‘dilapidation of infrastructure, and sometimes conflict between groups.’ Therefore, achieving livability become the most urgent problem for residents living in illong.

There exist huge rental gap between lilong housing and modern houses nearby. While the most case is that the people in lilong cannot afford the high land price nearby due to the modernization of high-rises, they have no choice but to stay waiting for the government to renovate. However, the dilemma is that some residents in better economic situation also cannot transform their own houses simply because their house is registered as heritage by the governmen t’ (Arkaraprasertkul, 2012)

What’s more, local residents do not have ‘choice’ and ‘voice’ in the regeneration process.

Fig. 1.4 The threatened vibrant street life
Source: Author

Fig. 1.5. illong stands in sharp contrast with high-rise construction
Source: Greg Girard
URBAN REGENERATION STRATEGY

After large scale of rapid urban construction in the 1980s and 1990s, Shanghai started to raise policy for heritage preservation. ‘Preservation and maintenance of historic relics’ is one of the key indicators that the local government of Shanghai proudly presents in its Statistical Yearbook, which was implemented from 2003. There are 12 historic preservation zones in the inner city[see fig.1.6] From 2014, the strategy of ‘zero growth in urban construction land’ suggested compact city, mixed-use and sustainable development(Zheng Shiling, 2017).

‘What makes the lilong houses and neighborhoods worth preserving is the combination of unique architectural form and the dynamism of the community, not just one or the other. Hence, if one is to preserve only the form but not the community, then it is not preservation, but a Disneyfication(Arkaraprasertkul,2012)’.

Current approach of lilong conservation can be concluded into three modes(Yun Jie, 2012), namely 1) the restoration and rehabilitation 2) transformation and 3) self-transformation[see fig.1.7]. Restoration is mostly applied in lilong transformation, which is funded by local government to restore the buildings. The transformation approach is to transform lilong which are in good condition and location into commercial function. While the self-transformation is initiated by inhabitants and artist tenants to improve the quality of life in lilong. With the gentrification process, original residents are forced to move out due to the rapidly increased housing price.

Fig. 1. 6  12 Presevation and maintenance of historic relics in inner city
Source:  www.shanghai.gov.cn/, made by Author
### Fig. 1.8 Evolution of Shanghai urban regeneration
Source: made by Author

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1.1.3 Context in Location

The site to study is located in the west part of the former French concession in Shanghai (see fig. 1.8b). Having significant diversity and complexity even in the small scale, this district is different from any other urban areas in Shanghai. As one of the 12 historic areas in Shanghai and the location for important institutions such as embassies, shanghai library, celebrity houses and etc., the site enjoys its great cultural significance and political status. Garden-style lilong as main housing typology which are relatively of high quality, high green rate and residents of upper class ensure the quality of the site.

However, the site ceased developing under the rapid urban development in the surrounding area. In perspective of architecture, lilong houses from 1930s now face with physical decay and limited living area do not fit the requirement of modern life. As to neighborhoods, lack of public space and amenities also arise urgent problem.
1.2 PROBLEM STATEMENT

URGENCY OF LILONG PRESERVATION
Lilong construction came to a halt in the 1940s due to Sino-Japanese war. Under the rapid urban development in the surrounding area, Lilong became a victim of Shanghai’s globalization process. Until the end of 2010, nearly 50% of Lilong has been demolished (Yun Jie, 2012).

PHYSICAL DECAY & CHANGING LIFESTYLE
In perspective of architecture, Lilong houses from 1930s now face physical decay and limited living area do not fit the requirement of modern life. As to neighborhoods, lack of public space and amenities also arise urgent problem. The way we share and understand Lilong is changing with urban development and some urban form is transformed due to bottom-up initiatives by locals. The fact that local inhabitants self-construct extra small houses in their courtyard or on the roof is quite common. Such self-construction is mostly illegal and of low quality, which is regarded as ghetto and has to be cleaned in government’s agenda. Therefore, the most urgent problem is that Lilong no longer satisfy the requirements of the local inhabitants with the development in their new lifestyle.

POTENTIAL TOWARDS PARTICIPATORY REGENERATION
Arkarapraertkul sharply pointed out that ‘Although today we know how important Lilong houses are historically, historical preservation of the Lilong houses can be superficial if it emphasizes mainly the preservation policy is the preservation of the appearance of the building.’ The strategy of Lilong regeneration from government policy such as painting the architecture facade and constructing cultural facilities, do not have real impact on improving the living quality of local inhabitants. The so-called ghetto clearance to demolish the added building constructed by residents to restore the original characteristic of Lilong indeed further reduce their usage space, causing a even worse situation. At the meantime, residents reflect their willingness to sponsor the regeneration in order to have a better result of transformation which meet which their requirements. In conclusion, there exists potential for participatory regeneration to include inhabitants and raise their ‘choice’ and ‘voice’.

“I show that there are a few attitudes towards the existence of the Lilongs that both the local government and the people do in fact share. Thus, if there is a conflict, it would be ‘inside’ the terrain of the attitudes themselves.”

---------Non Arkarapraertkul

Fig.1.9 Blue part are self-constructed houses by inhabitants in site
Source: Author

Fig.1.10 left: illegal construction by residents; right: after slum-clearance by government
Source: http://www.upnews.cn/archives/11422
1.3 RESEARCH QUESTION

RESEARCH QUESTION:

What spatial planning and design intervention is needed to keep the value of lilong and to provide a sustainable and participatory urban regeneration?

SUB QUESTIONS:

1. What’s the spatial quality and social quality of lilong from a changing context?
2. What’s the value of lilong?
3. How to evaluate participatory design based on sustainable development in lilong regeneration?
4. What spatial planning and design interventions are needed in lilong regeneration?
1.4 RELEVANCE

SOCIAL RELEVANCE
In a societal point of view, the topic is relevant for Chinese context. On the 19th CPC National Congress, Chinese president Xi (2017) made clear that the 'principal contradiction facing Chinese society in the new era is that between unbalanced and inadequate development and the people’s ever-growing needs for a better life'. It is relevant in this graduation project in achieving a livable and historic district for local residents. What’s more, issues related to urban regeneration is never only about fixing the physical decay but also a complex of social and economic issues. (Stouten, 2010) For one, the problem of aging population and immigrant issue in lilong has impact on social structure of the inner city and still remain to be solved. Moreover, the social structure in lilong area is faced with polarization problem caused by sharp rental gap in the inner city, a sharp contrast with the growing trend of property-led growth that favours higher density and higher-return housing development (Arkaraprasertkul, 2012). Thus, this graduation project intend to give local inhabitants who are ‘have-not citizens’ (Amstein, 1969) an opportunity to raise their own words.

SCIENTIFIC RELEVANCE
Firstly, the morphology of lilong in historic area in Shanghai will be compared with that in new town, which could be an interesting comparison as to chinese context research in order to figure out the essence of historic blocks. Then, empirical findings of sustainable urban regeneration in Netherlands (Rotterdam) as an international comparative case would be tested in lilong regeneration. Urban regeneration was and is one of the most challenging tasks for urban planners and designers across the world (Stouten, 2016). Seemingly it is gradually becoming a heated topic when it comes to sustainable regeneration in Shanghai. The scientific concern is increasing with the discourse such as ‘the possibility of lilong to be a new type of social housing to represent popularized daily life’ (Liu Gang, 2016) or ‘the potential of self-organized cities in lilong’ (Nicolas Gustin, 2017). Although there are some successful cases in lilong regeneration such as Tianzifang and Xintiandi in Shanghai which are more market-oriented, the possibility of transforming lilong into a new urban form still needs to be explored. In addition, the new vision of heritage
CHAPTER 2 Theoretical framework
2.1 SUSTAINABLE DEVELOPMENT

2.1.1 Related concept

**GENTRIFICATION** is defined as the process to improve the environmental quality of residential area to attract more wealthier residents which forcing the poor population to move out as a result of increasing housing price (Jones and Evans, 2009).

**QUALITY OF LIFE**

‘Quality of life is used to relate to shared environment in which people live’(Helburn, 1982). The evaluation of quality of life includes to ways, one is about attributes of environment and the other is personal characteristics which indicates characteristics of people and satisfaction and well-being.

**LIVEABILITY**

The concept of liveability is introduced to examine the quality of living environment and relationship with People. According to Machiel van Dorst(2012), liveability is defined as ‘the quality of the match between people and their living environment’, which are the perceived liveability- individual's perception of a place, the apparent liveability - the match between people and their environment and presumed liveability - about presumed conditions of liveability (see fig.17).

**HERITAGE VALUE**

There has long been extensive debate about the sustainable development of heritage. In order to carry out conservation of heritage, not only buildings but also urban fabric as a whole, understanding and defining the cultural and natural heritage value is the basis for sustainable management of a place(Drury, P., & McPherson, A., 2008).

**SUSTAINABLE COMMUNITY**

As to the sustainable community, its essence relates to ‘social order in neighborhoods and the support of social interaction and networks between all residents’ (Dempsey, Nicola, et al., 2011). The territorial dimension of community is applied to social sustainability to connect social activity with physical setting. Sustainable community requires interaction within community members, attendance of formal or informal activities of collective institutions and sense of identification with, and pride in, the community(Dempsey, et al., 2009). In order to further analyze the social life at the community level, five dimensions are listed by Dempsey as: social interaction, participation in collective groups and networks in the community, community stability, sense of place and safety and security.

The concept of sustainability has long been discussed in the planning, urban and architecture design with its three components of ‘People, Planet and Prosperity’ [European Commission, 2002]. The previous work mainly conducted research within physical context, and there is a new trend that sustainability discourse has moved on from the environment concern to the social and economic issues so that social sustainability is the right thing to discuss now.(Turkington and Sangster, 2006)

The idea of social sustainability is to put emphasis on well-being of people. However, there is limited literature defining the ultimate goal of social sustainability, despite a common European approach of ‘sustainable community’, which can be defined as “places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life”(ODPM, 2006).

Some contributory factors as to urban social sustainability within the urban context were defined by Dempsey, Nicola, et al.(2011) to provide a detailed explanation and indicators. Two main dimensions were clarified as ‘equitable access’ and ‘sustainability of community itself’ regarding to the relationship with physical environment and social condition.

Social equity, which is based on social justice, related to social and environmental exclusion(Dempsey, Nicola, et al., 2006). It includes indicators of accessibility to the key services and facilities, public transport routes, affordable housing(tenure) and ‘everyday eight’(food shop, newsagent, open space, post office, primary school, pub, supermarket and secondary school) and etc.( Barton, 2000a; Burton, 2000b, Winter and Farthing, 1997).

Fig 2.2 Scheme for liveability
2.1.3 Criteria for sustainable development

According to Stouten (2010), a criteria for sustainable urban regeneration and community development was established based on the combination of ideas from Castells (2000) and Krueger and Gibbs (2007) as well as practical knowledge from Raco (2007) and his own practice in Rotterdam. (see fig. 18)

As to the problem of aging problem of building, the assessment for housing quality should be considered in perspectives of housing typology, household typology, flexibility is also an important indicator, which enables occupants to adapt their houses to the changing requirements. Inhabitants satisfaction (rating of the building block and dwelling) could reflect mobility and tendency to move out of the neighborhood.

In terms of social structure, avoiding displacing poor people is one of the key target in order to achieve social equity. Indeed, low income people are the group should be put emphasis on first because they do not have power and money. Moreover, affordability is always important goal. Subsidies or allowances should be set to increase the accessibility of good quality housing for poor people.

Moreover, a strategic planning which included community participation is called for and the urban design of high accessibility, compactness, adequate public space and amenities is required.

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<tr>
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<th>CRITERIA FOR SUSTAINABILITY</th>
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<tr>
<td>Physical quality of housing</td>
<td>Flexibility referring to different lifestyles, use value of the dwelling.</td>
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<td>Housing provision</td>
<td>Accessibility, availability, affordability for all social groups.</td>
</tr>
<tr>
<td>Urban design</td>
<td>Good-quality - easily maintainable - housing and residential environment. Flexibility referring to multifunctionality.</td>
</tr>
<tr>
<td>Social structure</td>
<td>Avoiding social exclusion, displacement of disadvantaged groups, reducing social inequalities, attractive environment, strong pull for a range of social groups.</td>
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<tr>
<td>Economic structure</td>
<td>Flourishing economic base built on long-term commitments; a broad range of workers: being in the network or ability to link up; creating added value.</td>
</tr>
<tr>
<td>Governance</td>
<td>Decentralisation of power; flexibility in the process; active and institutionalised forms of partnerships including housing associations, organisations of local residents of tenants and owner-occupiers, local entrepreneurs and etc.; new forms of citizen participation and interactive democracy with help of the Internet and new media; top down visionary and bottom-up emphasis on inclusion</td>
</tr>
<tr>
<td>Urban planning</td>
<td>Strategic planning including community-led development; accessible public spaces, compact city, provision of a wide range of amenities including a strong mixture with housing.</td>
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Fig. 2.3 Criteria for sustainable development in urban renewal and community development
2.1.4 Defining heritage value

When it comes to decision making towards heritage conservation, the values attributed to heritage is important, which will have great impact on conservation strategy and principle. According to the summary by Randall Mason (1996), the typology of heritage value is an effective way to identify the relation of so many values from various stakeholders’ perspective. In fig.2.4, it is easy to see the different typologies of heritage value proposed by Reigl(1902), Lipe(1984), Burra Charter(1998) and etc.in order to further clarify easy value, some values related with this graduation thesis are selected to be explained.

Historical value, which is the root of heritage values, ‘devired from the ways in which past people, events and aspects of life can be connected through a place to the present’(Drury, P., & McPherson, A., 2008).

Aesthetic value means visual quality of a place, is a conscious design. It is context and time specific but its beaty could be recognized by people from other culture.

Social value refers to the value facilitate social interactions and networks, like some activities like gathering on the public space. What’s more, it also includes place attachment.

For more heritage values, there is more specific explanation for the thesis in chapter 5.

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<td>Historic</td>
<td>Option</td>
<td>Educational and academic</td>
</tr>
<tr>
<td>Commemorative</td>
<td>Associative-symbolic</td>
<td>Scientific</td>
<td>Existence</td>
<td>Economic</td>
</tr>
<tr>
<td>Use</td>
<td>Informational</td>
<td>Social (including spiritual, political, national, other cultural)</td>
<td>Request</td>
<td>Resource</td>
</tr>
<tr>
<td>Newness</td>
<td></td>
<td></td>
<td>Prestige</td>
<td>Recreational</td>
</tr>
</tbody>
</table>

Fig.2.4 Summary of heritage value typologied devised by various scholars and organizations
Source: Reigl,A. (1994)
2.2 PROCESS

towards participatory approach

**WHY PARTICIPATION FOR SOCIAL SUSTAINABLE?**

Generally speaking, urban renewal, revitalization, or regeneration is to integrate a variety of interests into proposals for design and process, which means the process only cater to a single actor or stakeholder will not work. Our city is a complex platform for many: power holders, developers, architects and urban planners, businessmen and also residents [Stouten, 2016]. However, in a property-led development, local government’s biased investment strategy easily stands in favour of the groups that have more purchasing power [Arkaraprasertkul, 2012]. Residents or so called ‘have-not citizens’ do not have ‘choice’ to move to a better place or have ‘voice’ in decision making because they do not have power even money. Thus, before the discussion of which process or approach should be taken, the question of ‘urban regeneration for whom’ seems more challenging and urgent.

**VOICE AND CHOICE**

Participatory design aims at including residents in the design process so that users could express their voice in the design process. It is the belief that all everyone has his own feature and ability in the design and that they can be both articulate and innovative when they have appropriate tools to express themselves. [Sanders, 2002] It is important to call for an approach to give opportunity to users, occupants, and citizens to express their needs, searching for the enhancement of individual choice and control over the residential environment [Hasselaar, 2011]. Thus, residents or so called ‘have-not citizens’ could have ‘choice’ according to their housing or environmental preference and even have ‘voice’ in the higher level of participation in the process of urban regeneration. [Arnstein, 1969; Rusbult at el., 1982] As pointed out, the potential for people who intend to be involved as active citizens is huge, but there lacks the setting to co-produce their human capital [Tonkens, 2010]. Participation, seems wanted by the side of consumers, rather lack of consideration from the planners and project developers [Hasselaar, 2011].

**LADDER OF PARTICIPATION**

Arnstein (1969) argued that citizen participation is a categorical term of citizen power and classified them into eight levels of participation called ‘ladder of citizen participation’. At the bottom of the ladder, there are typologies of ‘manipulation’ and ‘therapy’, which indicate ‘non-participation’ in the design process. Residents are not able to participate in the planning or programs, instead, they are ‘educated’ by power holders. Next, the level of ‘informing’ and ‘consultation’ enable residents to make voice and to be heard in the design process, but they lack power in decision making. ‘Placation’, enjoys a little bit higher level of right to give suggestions to the power holders. Further, the level of ‘partnership’, ‘delegated power’ and ‘citizen control’ mean empowerment for residents to negotiate, engage and make decisions.

**NEW LADDER OF PARTICIPATION**

After Arnstein, Hasselaar (2011) adjusted this category into five levels which are ‘ignoring’, ‘information’, ‘consultation’, ‘participation’ and ‘decision making’. As Hasselaar (2011) stated, with the new development of planning procedure, the non-participation level of ‘manipulation’ and ‘therapy’ seems old-fashioned. Also, calling for a more open framework, a ladder of five participation levels was introduced to adapt to requirements in contemporary society. In this ladder, the concept of ‘choice’ and ‘voice’ and the relation with user-decision maker are also discussed. The bottom level of ‘ignoring’ represents strategy exclusion, in which residents only have the choice in buying houses or not. The second level, ‘information’, indicates transparency in the planning process but no influence. The next three levels of ‘consultation’, ‘participation’, ‘decision making’ respectively increase citizen power by means of advice, negotiate and decision making.
2.3 PLACE

TERRITORIAL DEPTH
According to the Habraken(2000), the hierarchy of space can be depicted by territorial depth. It is measured by the boundary crossings needed to move from public space, semi-public space to innermost territory. As shown in the fig.19, territory C has the deepest territory depth and is privatest.

INCOMPLETE FORM
Richard Sennett(2017) proposed the concept of 'incomplete form' as one of indicator for open city. The opposition of incomplete form is perfectly fit, which could not adapt to the changing requirement. Instead, incomplete form challenges the design ideal of a physical object as fit for purpose, so building with incomplete form is an approach to achieve flexibility. Exploring new technology to make housing flexible and simple is a main task. Incomplete form also give space to the inhabitants to further design their own housing, which increases diversity in blocks and sense of community. Thus, the housing become living and evolving.

PRIVACY ZONING
"Territories that support social interaction consist of different zones of privacy"(Machiel J.van Dorst.2005). Privacy zonging refers to different layers of public space and people involved could be inhabitants, visitors and passers-by. According to Machiel J.van Dorst, spaces belong to residents and users. In order to make visitors feel welcome and inhabitants have control over their space, many private zones are defined. The distribution and division of public space and private space is explained by the case of Tunjungan(see fig.2.6), in which the spatial zoning regulate the privacy through informal interventions by residents themselves.

Fig.2.5 Territorial depth

Fig.2.6 Territorial depth
2.4 FROM THEORY TO DESIGN

The theory framework in the graduation thesis can be concluded into 3P: Place, People and Process (fig. 2.1). For ‘Place’, typologies of heritage values are reviewed and some key heritage value are clarified. Theory of privacy zoning and territory depth are introduced to explore the privacy levels of built environment. As to ‘People’, outdoor activities are divided into three types of necessary activity, optional activity and social activities by Jan Gehl (2011). What’s more, control by residents to achieve liveability plays an important role in the graduation thesis. It also has a close connection with privacy, considering built environment could facilitate social interaction. When it comes to process, participation is explored through case studies and literature review. It is not the main focus of the design in this graduation, but the literature preparation could give guidance and principle in the future work. In conclusion, this theoretical framework of 3P establishes the research direction and leads to three visions of design. ‘Place’, ‘People’ and ‘Process’ are closely worked with each other and they should not be considered separately.
THEORETICAL FRAMEWORK

PLACE


PEOPLE


PROCESS


CHAPTER 3 Methodology
3.1 SCALES

In order to clarify the values of heritage, changes of traditions and interventions from various scales, a scale system is introduced. First of all, the general context of lilong or even bigger city scale is the largest scale, which is named XL in order to have a better understanding of overall background. Then, scale L is about the site, west part of Hengfu Historic District in Shanghai, which is defined by five roads as its territorial borders: Middle Wu Lu Mu Qi road, Middle Hualai road, An Fu road, Chang Le road and Hua Shan road. This is the main scale for social and spatial analysis. In this scale, public space system and street network are the main issues for analysis and interventions in spatial perspective, while residents’ behavior pattern is also observed in this scale in social perspective. As to scale M, the scale of a specific block (see fig3.1), which is chosen due to its location along Middle Wu Lu Mu Qi road (has more urgency to transform) and consists of all 6 types of plot typologies. Scale S of plot is next step for further design and principles. Last, the smallest scale is of lot and house which won’t be mentioned a lot because in this graduation thesis, public, semi-public to semi-private space is emphasized, not privacy territories, is common in the social sciences. Masser(1986) suggested that graphical representation and tables of events are found to be helpful in cross-national case studies.

<table>
<thead>
<tr>
<th>XL</th>
<th>CITY SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>NEIGHBORHOOD SCALE</td>
</tr>
<tr>
<td>M</td>
<td>BLOCK SCALE</td>
</tr>
<tr>
<td>S</td>
<td>LOT SCALE</td>
</tr>
</tbody>
</table>

Fig.3.1 Territorial depth
3.2 METHODS ANSWERING SUB QUESTIONS

In order to answer the research (sub) questions, several methods will be introduced, namely: literature review, case studies, mapping, observation and interviews. They will be catalysts to draw conclusions for each sub questions in order to achieve final product.

LITERATURE REVIEW
In the first phase, in order to clarify the direction of project, a theoretical framework is formed based on method of literature review. The goal of this method is not only to get more knowledge about problem fields but also improve critical thinking and build our own position after extensive reading. The theoretical framework in this report mainly consists of three compositions, namely: urban regeneration, sustainable development and participatory design. As to the first theme, urban regeneration in European cities, especially London and Rotterdam, are widely examined by historical review. Literatures concerning historic areas in city planning are also included. Theory in sustainable development can be seen as a tool or indicator for further research. What’s more, participation is an important part of this graduation project. Ladder of participation(Arnstein, 1969; Hasselaar, 2011) will be used as an assessment to evaluate the design process.

CASE STUDIES
After having a general idea and knowledge background of critical thoughts about the topic from various researchers, related comparative case study will be conducted to draw lesson that what we can learn from the European practices on historical area urban regeneration. Since China is the process of ‘from slam clearance to urban regeneration’, the same situation in 1960s in the Netherlands; 1950s in UK; some lessons such as policy or organization could be drew in the process of urban regeneration. The biggest challenge for case studies in this graduation project is whether the empirical practices in European cities could be applied to Shanghai or to some extent can we learn from it? Yin(1982) argued that situations such as cross-national studies, where context(the history, geography, institutions, economy and culture of the country) and phenomenon(the planning issue being studied) are entwined to be unclear is common in the social sciences. Masser(1986) suggested that graphical representation and tables of events are found to be helpful in cross-national case studies.

MAPPING
Mapping is a method to visualize data derived from other approaches. It will be the main method what we can contribute to lilong regeneration. As Arkaraprasertkul(2011) pointed out, there has been not enough research on lilong neighborhoods to penetrate the reality of urban life in present-day Shanghai. The study of quality of lilong is inadequate and requires to be explored.

OBSERVATION
The part of observations consists of historical value analysis, socio-spatial analysis of the chose location. In spatial perspective, the physical quality of the site is measured by observation. In social perspective, how people use the space and activities happen at what specific spaces are observed.

INTERVIEW
Since the perception gap between government planning and requirements of local inhabitants is a key element in this graduation project, it is also necessary to conduct interviews with both urbanist and local inhabitants. The method of interview is interactive and interesting due to its uncertainty. It’s believed that the local inhabitants are the people who know most about the residential built environment so that their perception is quite valuable. Interviews of local inhabitants will be conducted with two main groups, new comers and long-term residents. Except for the goal to figure out the gap between government and user, the other objective is to understand the evaluation of local inhabitants. Mental map ((K Lynch, 1960)) will be introduced as one of the tools to collect the impression of lilong to see what’s value of lilong in public perception.

PATTERN
Pattern language created by Christopher Alexander(1977) is introduced as a linkage between research of the problems and design interventions. What’s more, patterns could be applicated to other places due to its transferability.
Redefine an approach towards sustainable and participatory lilong regeneration

Fig. 3.2 Methodology of graduation project
Source: made by Author
3.3 THESIS STRUCTURE

This graduation thesis follows the structure of 5 parts to cover the scope from historical value definition of lilong to interventions based on socio-spatial analysis of site (see fig. 3.3). Part 1 is about introducing the problem statement, methodology to answer the research questions and theoretical framework to clarify the position and concern in this graduation project. Part 2 is about research, analysis and observation, which is further divided into 3 chapters. In part 2, two questions of ‘what’s lilong’ and ‘what’s the value of lilong’ are answered within scale XL and scale L, in spatial and social perspective. Then, intervention map and 3 visions for the whole site as conclusions of previous chapters are shown in part 3. Accordingly, design patterns as a tool applying theories and case studies to the local site design are also proposed in part 3. Then, in part 4, planning and detailed design are explained in 3 chapters in scale L, scale M and scale S. Last but not least, in part 5, conclusions are drew and reflection for the whole graduation process are clarified. What’s more, feasibility of design patterns and principles for different plot types which are applied in this graduation project is checked. won’t be mentioned a lot because in this graduation thesis, public, semi-public to semi-private space is emphasized, not privacy territories is common in the social sciences. Masser (1986) suggested that graphical representation and tables of events are found to be helpful in cross-national case studies.
Fig. 3. Lilong sprawl in 1947
Source: Li, Y. (2014). The value of the Lilong neighborhood in Shanghai, p42
2 LILONG & VALUE
CHAPTER 4 Lilong introduction
4.1 History of lilong

THE FORMATION OF LILONG

Lilong is a very special type of colonial heritage and residential neighborhoods, created in the international settlements and foreign concessions in Shanghai in 19th century after Shanghai was forced to be opened as a treaty port. Lilong construction was extended in the concession area from the old Chinese city. At the beginning, Chinese were not allowed to live in the foreign concessions. However, due to the huge interest in housing market with rapid growth in population and large number of Chinese rich refugees caused by incessant civil war, policy changed to allow mix of Westerns and Chinese.
4.2 Distribution of lilong

The creation of lilong housing was due to the colonism after Opium War in 1840s and it continued to construct during 1872 to 1940s. 1920s witnessed the glory of lilong with the creation of new typology of late-stage shikumen lilong and new-styled lilong in which housing quality had been greatly improved compared to early-stage shikumen lilong. In 1940s, the majority of population (nearly three millions) live in lilong, while the total population of Shanghai including Western and Chinese residents at that time is 4.1894 million. However, from the 1930s, extensive development and construction of lilong came to an end because of Sino-Japan war and the establishment of new government afterwards. Thus, there is no development and expansion of lilong anymore so that lilong became an stagnated urban form without any innovation. With the continuous urban sprawl in Shanghai, a more complicated economic and social situation came behind. The housing typology and social segregation started to show hint in spatial distribution. No more expansion and redevelopment of lilong made lilong very passive in the rapid urban development in Shanghai. (see fig. 26)
4.3 Configuration of lilong

1. Half door with shikumen gate
2. Gabled roof and decoration
3. Elevated portion of the compound encloses but allows for passage underneath
4. Parlor window doors
5. Dormer windows
6. Archway
7. Western motifs utilized for decoration

The original typology of English terrace house was transformed to cater to traditional Chinese lifestyle (sanheyuan, see fig.31) so that lilong can be seen as a native product which integrated Western and Chinese culture. For the sake of management and economic efficiency, lilong was designed of high density row upon row and can be easily accessed. The road system consists of urban street, entrance lane, main lane and sub-lane (fig.29). Along the streets are normally shops at ground floor and residents had an intimate relationship with neighbors due to the 3-meter sub-lane where many social activity happened.
4.4 Evolution in lilong category

**Early-stage Shikumen lilong**
Lower-middle class
Brick & wood

- General layout followed Western townhouse style; no clear division of main lane and sub lane; width of lanes was no more than 3 meters

**Late-stage Shikumen lilong**
Lower-middle class
Brick & wood

- Start to consider sun and wind impact, units were laid in north-south direction; main lane expanded to tell the difference with sub lanes

**New-styled lilong**
Middle class
Mixed

- Width of lanes was expanded to 5 meters, considering car parking and fire control

**Garden-styled lilong**
Upper class
Mixed

- From town house layout to (semi) detached layout

**Apartment-styled lilong**
Upper-middle class
Mixed or reinforced-concrete structure

- From town house layout to (semi) detached layout

*Fig.4.13 Layout of lilong categories*
Source: Author
EARLY-STAGE SHIKUMEN
The early-stage shikumen lilong is the first category of lilong, which can be seen as a good mixture of Western and Chinese culture and named after its feature of shikumen (stone door frame and wooden door with Western decoration). As to architectural unit, it follows the traditional Southern Chinese residential form of ‘sanheyuan’ or ‘siheyuan’ (a compound with house on three or four sides) of two-storey building. It keeps the style of enclosed courtyard in the house and wood structure. However, the general layout of early-stage shikumen lilong adopts the row-upon-row method of Western residences.

LATE-STAGE SHIKUMEN
Compared to the former category, late-stage shikumen lilong shows the trend of smaller housing unit and two-storey building turns into three. New configuration of ‘Tingzijian’ (fig. 28) started to appear. The wooden structure was transferred into brick bearing wall.

NEW-STYLED LILONG
New-styled lilong has big improvement in sanitary equipments and kitchen facilities and parking place is included. ‘Shikumen gate’ is changed into iron door or green fence, while brick wall and reinforced concrete structure are mainly used.

GARDEN-STYLE LILONG
Garden-styled lilong enjoys a better living standard and its more like villa instead of row house in typology. Green space and living environment are emphasized and living style is more westernized. Building is of three or four storey high.

APARTMENT-STYLE LILONG
Apartment-styled lilong appears at the same period of garden-styled lilong and their architectural styles are also similar. This style is more like collective housing, several families living in different unit on a floor.

New-styled lilong has big improvement in sanitary equipments and kitchen facilities and parking place is included. ‘Shikumen gate’ is changed into iron door or green fence, while brick wall and reinforced concrete structure are mainly used.

Fig. 4.14 Phase of lilong categories
Source: Author
CHAPTER 5 Value of lilong
5.1 VALUE DIAGRAM

Why we value lilong?

This chapter aims to clarify the value of lilong to be discussed in this graduation thesis after general introduction of what lilong is. In the diagram (Fig. 5.1), 6 values of lilong are listed which are social value, environmental value, historical value, aesthetic value, memorial value and age value. In physical perspective, environmental value, which indicates the unique public space system and publicness is one of main interest of lilong. Aesthetic value means outstanding details and practices of specific locations. Culture value such as landmarks designed by a famous architect in historic ages shows the achievements in architecture or urban environment. Age value is simply evaluated by the construction years as an existing heritage. As for intangible perspective, vibrant street life contributed to its social value and the organization of lilong helped to social cohesion. As to memorial value, which is location based, consists of collective memories of group of residents. Such as celebrity former residence could raise the memory of historic issue of a specific location.

In this chapter, two values, namely social value and environmental value which are more universally applied, are to be discussed. As to other four values, more located-based, are to be further explained in neighborhood scale in chapter six.
5.2 ENVIRONMENTAL VALUE
5.2.1 Public space system

Public space and public life are declined in contemporary urban modernization in Shanghai. Thus, the characteristic of continuous public space system in lilong is an important value in historic districts. The hierarchies of space—from public, semi public, semi-private to private, are intertwined to each other. There exist transition zones between interior and outdoor spaces, which can be used flexibly by residents. The subtle distinction between public and private is instinctly acknowledged by residents. For example, people will hang their clothing on sub lanes other than main lanes; residents will choose to sit on sub lanes at the corner of the sub lane and main lane other than the side of main lane.

Fig. 5.2 Public space network in lilong
Source: Author
5.2.2 Privacy zoning in lilong

Zone 1: Bedroom
Zone 2: Saloon (guest room)
Zone 3: Front closed courtyard
Zone 4: Kitchen where the back doors are often open
Zone 5: Bench or basin in front of back door
Zone 6: Sub lane
Zone 7: Main lane
Zone 8: Urban street

Privacy zoning

Fig.5.3 ground floor plan of new-styled lilong
Source: Author

Fig.5.4 Privacy zoning of lilong neighborhood
Source: Author
5.3 SOCIAL VALUE

5.3.1 Vibrant street life

According to Jan Gehl (2011), outdoor activities can be divided into three types, namely necessary activities, optional activities and social (resultant) activities. Among these activities, frequency of optional activities is greatly dependent on the quality of physical environment while there is no big difference for necessary activities under different situation. The performance of necessary activities and optional activities also will boost the occurrence of social activities.

After analysis of outdoor activities in historical lilong, we can also category these activities into three. Drying and washing clothing, brushing teeth and etc. on streets are necessary activities due to the limited interior space and lack of facilities such as basins and clothes racks which were attached later on street. These necessary activities mainly happened on sub lanes so that residents often claim sub lanes as their semi-private space as well as an extension of their house. What’s more, along with these necessary activities, social activities such as chatting and playing chess increased relationship of neighbors near one sub lane. (fig.5.6)
Fig. 5.7 activities in historical lilong
Source: Author
5.3.2 Activities on urban street

The historical lilong urban street is full of rich activities. First of all, the characteristic of the road is different from that of today. As the car is not popularized, the urban roads are still shared by people and vehicles. Pedestrians can walk on the street without worrying about safety issues. Many shopkeepers often put their goods on the street, so the streets have created a room for change. Usually, the outer periphery of the lilong district is commercial space. This mix of functions makes the urban streets full of vitality and convenience.
Fig. 5.10 Cars and shop extension on urban streets

Fig. 5.11 Panorama of illong urban street
Source: Website
5.3.3 Activities on main lanes

Main lane as a transition of urban street and sub lane, it is considered as semi-public space in lilong. Visitors could also go through the main lane as a shortcut and neighbors often gather at the main lane to chat or gossip. Some optional activities happens on main lanes such as mobile stalls in the morning, haircut and shoeshine services.
5.3.4 Activities on sub lanes

Sub lanes are the places where are most vibrant in lilong. Housewives often wash clothing and food on sub lanes, at the mean time, it’s a good opportunity for these ladies to gossip and share information together; children do their homeworks and play with others on the sub lane; seniors often sit on the chairs in front of the door to enjoy the sun...Sub lane is a semi-private space in which residents nearby claim it as an extension of their own apartment and the neighbors along sub lane have a close relationship.
5.4 ENVIRONMENT AND SOCIAL VALUE CONCLUSION

For the value of lilong in today’s cities, the six types of values are summarized. Because social value and environmental value are more universal, they are discussed in this chapter in a more general context. The spatial value mainly manifests in the continuous spatial sequence of space in street network. Public spaces in lilong are divided into urban streets, main lanes and sub lanes according to street character of public, semi-public and semi-private.

Among them, in-depth privacy zones are defined. For example, in the case of the new-styled lilong, the 8 types of private space areas are divided. What is unique in historical lilong neighborhood compared with contemporary residential estate is privacy zone 4 and 5 (see fig.xxx). Zone 5 is the benches or green in front of the door of a housing unit. Zone 4 is service area such as kitchen behind the back door. Due to the back doors are always opening, privacy zone 4 can be seemed as semi-private and neighbors are welcomed to enter zone 4.

As to social value, it is closely linked with environmental values analyzed before. Key social value of lilong lies in the vibrant street life and intimate relationship between neighborhoods. What's more, rich social activities also enhance social cohesion for various social groups, natives, immigrants and even foreigners. That's the reason why Shanghai people are known as sophisticated in social relationship (Xiaowei, L., 1997).

There is a subtle connection between the occurrence of specific activities and space. One of the reasons why the sub lane is the most active place in lilong derives from the lack of indoor space and the need for outdoor activities such as washing clothing and brushing teeth in the past. Necessary activities for people also encourage them to perform social activities. Another reason is that there are intense privacy zones between interior space and sub lane, especially near the back door area. Activities happen more frequently in front of residents’ own door. The H/D (height and width ratio) of the sub lane is around 2 (2-storey-high lilong house and the sub lane is 3 meters) also makes space suitable for activities and make people feel comfortable. In addition, parents can also easily observe their children from the windows which promises safety.

The character of the main lanes and urban roads in lilong are more open, and most of the activities that take place are optional activities. Examining these spaces and activities from a historical perspective, urban forms of the main lanes and urban streets have now undergone major changes, as well as the corresponding social activities. Today’s roads already have a lot of traffic and people can no longer stand on the middle of the road. Therefore, shopkeepers who will put their own stalls extended on the street, will make the original narrow sidewalk crowded. The temporary mobile stalls were also regulated by the security department of the government and no longer exists.

As for the sub lanes, with the improvement of people’s living standards, it is becoming increasingly rare to set up a basin outside the lilong house. Drying clothing in the lanes is also considered to affect the image of the city, though it is still common.

In conclusion, the environmental value of continuous public space sequence and privacy zones is worth learning in lilong regeneration to restore the lost space hierarchies. As to the lost vibrant street life, due to the changing of requirements, space suitable for new activities should be considered.
3 Spatial Analysis
CHAPTER 6 Location & Conservation
6.1 Location & History

Fig. 6.1 Location of site
Source: Author

Fig. 6.2 Site location in Hengfu Historic District
Source: Author

China
Shanghai inner city
Western French concession

1917
1920
1948
1948
1979

1979

diversity in residential typology

more garden styled long
more amenity

Data: Google earth historic satellite photo

Fig. 6.3 Road and housing development in site
Source: Author drawing

site
Hunan community
Hengfu historic district
6.2 Infrastructure & amenity

The neighborhood locates in the inner city of Shanghai, enjoying a convenient location. As shown in fig.7.4, there are three metro stations near the neighborhood within 15 minutes’ walking distance. Also, education, healthcare and green space are analyzed as criterias for social sustainable. The result shows the facility of education and healthcare are adequate in this area. However, the public space in this neighborhood is limited. Although the green area ratio is rather high in this area, it’s mainly belongs to private section. Residents in this area need to walk over 15 minutes to gather at a park or open space, which is the challenge and opportunity in the urban regeneration.
CONVENIENT LOCATION

ABUNDANT EDUCATIONAL RESOURCES

MEDICAL CONVENIENCE HIGH GREEN RATE BUT LACK OF PUBLIC SPACE

Fig. 7.4 Walking distance within neighborhood
Source: Author

Fig. 7.5 Education in the neighborhood
Source: Author

Fig. 7.7 Green space & Healthcare in the neighborhood
Source: Author
6.3 Heritage value in the neighborhood

<table>
<thead>
<tr>
<th>MEMORIAL VALUE</th>
<th>CULTURAL VALUE</th>
<th>AESTHETIC VALUE</th>
<th>AGE VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>celebrity former residence</td>
<td>Wukang Building</td>
<td>material: brick cement bamboo</td>
<td>facade</td>
</tr>
<tr>
<td></td>
<td>Midan apartments house</td>
<td>plane tree</td>
<td></td>
</tr>
</tbody>
</table>
Memorial value, historic value, aesthetic value and age value are further clarified within neighborhood scale (see fig.xxx). In terms of memorial value in this area, many famous celebrity used to lived here and some of the former celebrity residence are open to public nowadays. Through a glimpse of these places, the collective memory of a generation was waken up.

As to culture value, a special character in building style and context was formed combing western and chinese culture. Some outstanding architectures, for example, the famous Wu Kang building designed by Ladislav Hudec reflected achievements in culture.

Aesthetic value shows typical details and practices on site, which is more authentic in heritage preservation. The combination of lapping cement, brick arrangement, bamboo fence and etc. are identified to be preserved.
6.4 Physical Quality Evaluation

In order to draw a conclusion of whether we should preserve the buildings and to what extent we should preserve them in the neighborhood, physical quality evaluation is the next step after heritage value analysis. This evaluation is based on the site observation in the neighborhood, and there are four criteria to assess the physical quality. First, the situation of residential public space such as sub lane or shared courtyards which are accessible to visitors are analyzed. Examples of how to judge the poor quality and good quality are shown in fig. 6.7. Then, the situation of self-construction is another criteria. Since there exist several patterns of self-construction by local residents, a more detailed explanation is shown later (see fig. 6.8). As to architectural level, facade and floor plan quality are also evaluated. To be clarified, for facade, what to be evaluated is the quality of maintenance not the aesthetic value mentioned in heritage value.
<table>
<thead>
<tr>
<th>FACADE</th>
<th>FLOOR AREA</th>
<th>SELF CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Poor quality" /></td>
<td><img src="image2" alt="Poor quality" /></td>
<td><img src="image3" alt="Poor quality" /></td>
</tr>
<tr>
<td><img src="image4" alt="Good quality" /></td>
<td><img src="image5" alt="Good quality" /></td>
<td><img src="image6" alt="Good quality" /></td>
</tr>
</tbody>
</table>

**ARCHITECTURAL QUALITY**
- Poor quality: shabby window frame and canopy, no consideration of facade material; space occupation; lack consideration with surrounding environment; unsafe.
- Good quality: clean and neat with material consideration; clean and neat; consistent with surrounding built environment.

**RESIDENTIAL PUBLIC SPACE**
- Poor quality: occupy public space; drying clothing on public space; lack clear definition of spatial zoning.
- Good quality: clearly defined; adorable entrance with green; well-designed courtyard with local material.

Fig 6.7 Physical quality standard
Source: Author
Phenomenon of self-construction is quite common in Hengfu Historic District. In-depth self-construction patterns are analyzed to discover what’s the changing requirements of the residents through what they added to their housing. Besides the self-construction due to lack of space and amenities such as toilets and kitchen, what is interesting is in the third pattern. Residents added a transition space like privacy zone 4(fig.5.4) and neighbors all agreed to do the same. It also shows a negotiate between neighborhoods.
Physical quality in the neighborhood is evaluated to be one of criterias of conservation conclusion for the area. There are five indicators for physical quality evaluation, namely facade, structure, floor area, residential public space and self-construction. The pictures (see fig.6.7) show the standard of good quality and poor quality in these five indicators.

After the analysis of the whole neighborhood, some plots of poor maintenance or poor self-construction situation are figured out, which need to be transformed in spatial quality. Instead, plots of good maintenance are to be preserved.
6.5 Conservation conclusion

Conservation map is one of three conclusions contributing to the overall intervention map, which overlays the result of heritage value and physical quality in the neighborhood. The plots of value and in good maintenance are to be totally conserved. Plots in poor quality but of value are to be restored while plots of value but in poor self-construction situation have the potential of innovative transformation. Last, places where there is no value but in poor maintenance are proposed to demolished and rebuild. From the conservation map, it turns out that there exists great opportunity in transforming this area, especially the plots which could be demolish and rebuilt.
6.6 Conclusion

In chapter five, social value and environmental value are clarified within the general context of illong. In this chapter, cultural value, aesthetic value, memorial value and age value which are more location-specific are marked out in the selected location.

Through preliminary analysis result (see fig.6.5), it turns out that this neighborhood is a region with rich historical value, but it is difficult to draw intervention conclusions because of the even distribution of valuable plots. Therefore, the status quo of the physical quality of the area is further analyzed, including the maintenance of public space, self-construction situation and situation of building including facade and inner area. It shows there is big potential for transformation of the poorly-maintained area. Combining the conclusions of heritage value and physical quality, it is not difficult to come up with a conservation strategy for this neighborhood. There are four levels of conservation strategy, which is total conservation, restoration, innovation and demolish and rebuild depending on the situation of value and quality. In general, for the neighborhood, areas with greater potential for development are areas that can be demolished, rebuilt, and can be creatively transformed (see fig.6.11).
CHAPTER 7 Morphological type
Morphological type

- street network
  - street environment
    - section
      - public function distribution (public space, business and catering)
  - publicness --> strategy for neighborhood

- plot
  - GSI
  - FSI
  - Territorial depth
  - 6 plot types --> plot strategy --> design in the block

Fig. 7.0 methodology
Source: Author
7.1 Street environment

Street character
Rows of plane trees along streets in French concession is an impressive character. Another feature of the roads in site is the wall with different textures. Some of the walls are stuccoed and some are made by bamboo to illustrate special practice in this area.

Streets of different scale and ratio of commercial are divided into two main category: active and quiet. Parking is a big problem in this area, many bicycles and cars are parking on the narrow streets, which obstacles transportation.

Fig.7.1 street character
Source: Author

Fig.7.2 street character photo
Source: Author & Baidu map
Street sections on the right are followed the sequence from active street to the quiet one. Through these sections, some conclusion are drawn. First, French plane trees are grown on every urban streets in the neighborhood, which creates a special French concession atmosphere. Second, only the Middle Huai Hai road has four car lanes, other roads are secondary roads. Considering the function ratio of the streets and its scale, we can category them into urban infrastructure(Road 01), amenity road(road 2) and living road(others).

In perspective of pedestrians, almost all the pedestrians are narrow, of the width of 2-3 meters. Although in some case, especially on Middle Wu Lu Mu Qi road, it is rather crowded, the road aspect ratio has its own advantage. When we walking along this roads, we feel comfortable with the 3-meter-high walls.

Fig.7.3 Street sections in the neighborhoods
Source: Author
7.2 Publicness

There are two public green spaces in the neighborhood. The one at the right corner is quite popular among residents while nobody go to the left park. The library in the south is the biggest public building in the area, which attracts a lot of people to gather there.

The diagram above shows the location of amenities and business in the neighborhood. Business function attracts people from other places for work while public amenities are public to the residents nearby.

Through the location of catering in the area such as bars, restaurants, cafes and supermarkets, we can have a rough estimate of people flow in the area in a day. Several roads with more catering are more lively in the neighborhood.
In conclusion, the border of the neighborhood shows a higher level of publicness, especially two roads of Middle Wu Lu Mu Qi road and Middle Huai Hai road. While the inner part of the neighborhood is more quite and less social interaction.

PUBLICNESS CONCLUSION
7.3 Plot typology

GSI shows the building coverage on ground floor in the plot. Blue color indicates highest GSI, which means building almost cover the whole plot and there is no much room for the open space in the plot. On the contrary, yellow color shows its GSI is very low so that plots with this color enjoys a high spaciousness which provides potential for social interaction on open space.

FSI represents land use intensity in the neighborhood. Compared with GSI, the height of buildings are easily to be predicted. Purple and blue color indicate higher land use intensity while yellow means low density. As shown clearly in the fig.7.13, density along the boundary of the neighborhood is relatively high, different from that of inner part.

Territorial depth is introduced here to show public space hierarchies by counting the boundary crossings(refer to fig.19) In the neighborhood, there exist three levels of territorial depth. For example, if a housing is closely related to the urban street, its territorial depth is 1. If a house is accessed from urban street, sub lane and courtyard, its territorial depth counts 3, which means of higher privacy.
MORPHOLOGICAL TYPOLOGY ANALYSIS

In order to conduct in-depth design of the neighborhood, morphological typology of plots are classified in order to make principles for specific plot types. Firstly, after several trials and discussion in defining the density variables, GSI, FSI and territorial depth are chosen as three elements. Among three, territorial depth plays the most important role in classifying the morphological types. Then, a quantitative research tool was used to classify six types in the neighborhood. After comparative study of plot types, it is assumed that plots of one type have the similar morphological form. So it's reasonable to design the whole neighborhood with the selection of typical plot examples of six types.
Six Plot Typologies

Fig. 7.16 plot type data
Source: Author
The plots in the neighborhood can be classified into six types. (see fig.7.15) Type 1 is detached garden styled lilong with shared sub lane and its territorial depth level is 3 (urban street-sub lane-courtyard). It takes up for around 20% in proportion in the whole neighborhood. As to type 2, FSI of 2.42 is relatively high compared with other types. The organization of this type is a main building, a center courtyard and several auxiliary buildings. Type 3 is the type has low territorial depth of 1, which means residents enter the building directly from urban street. The quality of urban street has great impact on liveability in this type. As to type 4, it takes biggest proportion of 31.1% in the neighborhood. Type 5 and type 6 are similar to type 4 in urban form of walled garden styled lilong, but the density of this three types are gradually declined. The courtyards of type 5 and type 6 are bigger and physical quality are better. Even some vacant plots are concluded in type 6.

Fig.7.17 photos of six types
Source: Author
### 7.4 Plot type evaluation

<table>
<thead>
<tr>
<th>TYPE 1</th>
<th>TYPE 2</th>
<th>TYPE 3</th>
<th>TYPE 4</th>
<th>TYPE 5</th>
<th>TYPE 6</th>
</tr>
</thead>
<tbody>
<tr>
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<td><img src="image2.png" alt="Type 2" /></td>
<td><img src="image3.png" alt="Type 3" /></td>
<td><img src="image4.png" alt="Type 4" /></td>
<td><img src="image5.png" alt="Type 5" /></td>
<td><img src="image6.png" alt="Type 6" /></td>
</tr>
</tbody>
</table>

#### Evaluation Criteria

<table>
<thead>
<tr>
<th>Spaciousness</th>
<th>Density</th>
<th>Outdoor Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image7.png" alt="Spaciousness" /></td>
<td><img src="image8.png" alt="Density" /></td>
<td><img src="image9.png" alt="Activities" /></td>
</tr>
</tbody>
</table>

**Fig. 7.18 Plot type evaluation table**

Source: Author
Territorial depth & activity potential

1. TYPE 4
   - Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) sub lane (courtyard) \(\rightarrow\) apartment
   - Semi-Public
   - More privacy zoning
   - Shared space

2. TYPE 2
   - Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) sub lane & courtyard \(\rightarrow\) apartment
   - More privacy zoning

3. TYPE 1
   - Public
   - Semi-Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) sub lane \(\rightarrow\) walled courtyard \(\rightarrow\) apartment
   - More privacy zoning

4. TYPE 3
   - Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) apartment
   - Semi-Private
   - Divide entrance of work & life

5. TYPE 5
   - Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) courtyard \(\rightarrow\) apartment

6. TYPE 6
   - Public
   - Semi-Private
   - Private
   - Urban street \(\rightarrow\) courtyard \(\rightarrow\) apartment

- More potential for social interaction
- Higher privacy
7.5 Plot strategy

After evaluation of the open space, density and use of open space in the plot (existing activities) of each plot types, strategies are proposed for specific plots (fig. 7.20) and specific strategies are explained in fig. 7.19. For plot type 1, residents enjoy the highest privacy so that the sub lane is not well-used. So the strategy for plot type 1 mainly focus on sub lane transformation to encourage social interactions. For type 2, the situation is that the main buildings are well maintained but their auxiliary buildings are in poor condition. And there exists social polarization so that courtyard is not that active. Hence, to improve territorial depth of the auxiliary buildings or even redivide the plot could improve the quality of auxiliary buildings in plot type 2. Also, to enhance social cohesion is the other strategy. Type 4 has the same strategy with type 2, though the quality of building clusters in type 4 are more similar. As to type 3, the most urgent is to deal with its low territorial depth and for type 6, there is huge potential for densify the plot. Decision has to be made considering the ownership, apparently. Last, for type 5, we do not include it for now because its not that urgent.

7.6 Conclusion

The chapter 7 plays an important role in the graduation thesis. Through the clarification of publicness of the street network and classification of six plot types in the neighborhood, further strategy for the neighborhood and interventions in the block are conducted based on this morphlogical analysis (fig. 7.0).

The main results in this chapter lie in two perspective. First, in terms of publicness of street network, it shows that the territory boundary of the neighborhood are more open and have higher level as urban infrastructure. While the streets inside the neighborhood are more quiet and mainly accessed by neighborhoods nearby. This trend should be preserved, so the amenity function is added along the Middle Wu Lu Mu Qi road where has more potential for the social interaction for local inhabitants. As to Middle Huai Hai road, which is the only 4-lane road in the neighborhood, with public library and metro station nearby, its more public to the visitors (see fig. 7.11).

In terms of plot scale, six different plot types are classified and evaluated. With the strategy proposed for each type, it is more easier to carry out further design in the neighborhood. So the solution is to do in-depth design in the typical plots which represents similar plots in one type. Then the strategies are examined to see whether they are suitable in the plot and whether they could be transferred to other places with similar character.
Fig. 7.19 Strategy for six types
Source: Author

Fig. 7.20 Plot strategy in the neighborhood
Source: Author
4 Social Analysis
CHAPTER 8 Social structure & Interview
The most significant character in social structure of the neighborhood is its aging problem. People over 60 years old take up the majority (18140/49181) of the whole age groups. As to education and income level, it shows the most residents in this area receive good education and have a well-paid job. However, there is still around 20% of inhabitants are in low income and low educational level. So that, it can be assumed there exists social polarisation within the neighborhood.

Besides, data of social structure of the neighborhood are collected in two scales, which are in Hengfu Historic District scale and in Hunan community scale (see fig. 8.1).

Data based on Hengfu historic district scale in 2016

Data based on Hunan community scale in 2015
8.2 INTERVIEW

8.2.1 interview methodology

TARGET GROUP:
A. Long-term inhabitants
B. New inhabitants

TARGET BLOCK: BLOCK 5
The reason I choose block 5 to be target block is due to the diversity in plot typology and street typology in block 5, which can reduce difficulty in interviews and also could represent the situation of other area.

GROUP A
This mainly focus on natives in lilong, who are aged and have been lived in the area for above 20 years.
1. surveys and analysis on self-constructed housing to discover design pattern by residents.
2. survey on satisfaction of site (social sustainability) and their own housing quality and satisfaction based on different housing typologies.
3. Ask for what they really like and want to keep in this area.

GROUP B
As to new inhabitants, they can be divided as Chinese and people from other countries.
1. survey on satisfaction of site (social sustainability) and their own housing quality and satisfaction
2. Ask for what they really like and want to keep in this area
3. Changes in lifestyles

Fig.8.2 Interview location
Source: Author
8.2.2 Interview questionary

Hi, I am a student in TU Delft in the Netherlands. Now I am working on my graduation project about urban regeneration in a historic district. Please fill the interview questions.

About neighborhood
1. Mark the place you live on the map.
2. I have been lived here for ___ years/months, and I am from______.
3. I chose to live here because________(friends/ work/ culture…)
4. What do I love most in this area? What differentiate this place from others? ______________
5. I usually go to ______________ on ____________ road after work.
   I usually go to ______________ on ____________ road at weekends.
6. Please give a comment on this area.
   Very satisfied  Satisfied  Neutral  Disappointed  Very disappointed

<table>
<thead>
<tr>
<th>Parking</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By car/bike</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural facility</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Governance</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

About apartment
1. I live in a house/ an apartment about _____ sqm.
2. I live with _____ other people.
3. I own/rent the apartment. The price is ______ per month/ year.
4. Please give a comment on your own apartment.

<table>
<thead>
<tr>
<th>Living room</th>
<th>Very satisfied</th>
<th>Satisfied</th>
<th>Neutral</th>
<th>Disappointed</th>
<th>Very disappointed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balcony</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garden</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

5. Do you want to stay here? Do you want to maintain or participate in ililong regeneration?
6. (Type B) Compared to your own country or city, what’s the difference in living here?
8.2.3 Residents’ satisfaction

The conclusion of the interview is relatively positive in the neighborhood scale. Residents normally have a good impression in the built environment. Among the criteria, residents are almost all satisfied with public transportation and appreciate the location of site. Then, the situation of education and healthcare are good as well. Some residents complained the higher price in market but they are satisfied with the commercial distribution. On the other side, the problems mainly lie on the criteria of parking issue, lack of cultural and sports facility and governance to be improved.

Fig.8.4 Interview result
Source: Author
Fig. 8.5 Residents voice
Source: Author

- Too little public space!
- Beautiful environment!
- Cozy but expensive!
- Historic tour.... Fancy small town
- More restaurants!
8.2.5 typical long-term inhabitants
A MAN LIVING WITH HIS FAMILY

Age: Around 45
Come from: Native
Plot typology: type 3
Live for: 13 years
Ownership: Social housing,
500 CNY/year (70 euro/year)
Living area: 18.5 sqm
Live with: 4 people
Satisfaction: Not satisfied
A GRANDMA IN A SHARING COURTYARD

Age: 70
Come from: Native
Plot typology: Type 2
Live for: 70 years
Ownership: Private
Living area: 14 sqm
Live with: /

Satisfaction: Satisfied

Fig.8.7 A grandma and her courtyard
Source: Author
8.2.6 Typical new inhabitants
A YOUNG JOB SEEKER

Age: around 30
Come from: Henan
Plot typology: 3
Lived for: 2 years
Ownership: Tenant
Living area: 32 sqm
Live with: 4-5 people
Satisfaction: Neutral

Fig. 8.8 A young man and the sub lane he lives
Source: Author
A LADY WITH HER FAMILY

Age: around 35
Come from: Chile
Plot typology: 2
Live for: 3 months
Ownership: Tenant
Living area: 80 sqm
Live with: 3
Satisfaction: Satisfied

Fig.8.9 A lady and the building she lives in
Source: Author
8.3 Interview Conclusion

This chapter mainly discusses the social structure of the neighborhood and the conclusion of residents’ perception about the area through interviews of local residents. Because they are the people who know how the space is used best, it’s necessary to know their opinions. The interview is mainly conducted through a survey questionnaire, and the target groups are residents who are living in the block selected for further design. Through the interview, it is found that residents there are relatively satisfied with the neighborhood. They like the convenient location (see fig. 8.4). However, residents who are interviewed have different levels of satisfaction with their own apartments. The reason for the analysis is mainly related to the number of households in the building density and the territorial depth of the building itself. Normally, people have larger space per person and higher privacy of their apartments will be more satisfied than others.

Some unexpected results are found in the interview. First, the neighborhood attracts a lot of foreigners, indicating that this area still has its own attraction. According to some foreigners who are interviewed, the fancy small town identity and rich cultural environment are key attractions for them. However, it also widened the gap between the rich and the poor and raised some conflict with people from different cultural background (e.g., foreigners tend to go to bar at night which make local residents feel noisy).

The ownership of the neighborhood is quite complex due to historical property distribution. This no doubt adds difficulty in urban regeneration. In addition, residents are not satisfied with the government’s transformation of old houses. The practice of half-done renovation from government is complained. What’s more, they expressed willingness to afford part of the expense to participate in the urban regeneration process in order to achieve more satisfactory results.
CHAPTER 9 Environmental-behavior analysis
There is a shift in the relationship between activities and spatial hierarchies. Sub lanes are most vibrant space in history while nowadays, more activities happen on public space and urban streets. And parking takes up much space in various streets.

Fig.9.1 space & activity in contemporary illong
Source: Author
9.1.2 Urban street

Nowadays, there are most frequent activities happen on urban streets, especially on those active streets in the neighborhood (7.11). Some shops have an interactive space with pedestrians and residents often park their bikes and hang their clothes on the street. It looks the same with old days. Thus, the reason is not how residents use urban streets changes greatly, is that main lanes and sub lanes are gradually lost their vitality.

Fig. 9.2 Street snapshot
Source: Author

Fig. 9.3 Mobile stalls on the street
Source: Author
9.1.3 Main lane

Main lanes are used for passing by mainly.

Fig. 9.4 An old lady sitting on an urban street without transition zone
Source: Author

Fig. 9.5 A man sitting outside the shop
Source: Author

Fig. 9.6 Residents passing through the main lane
Source: Author
9.1.4 Sub lane

Typical sub lanes (fig.5.16) are not common in the neighborhood. In some buildings of poor quality, attachments such as basins still exist but residents rarely sit or chat outside their apartment. On the sub lanes, cars occupied much space and there is no longer vibrant street life on sub lanes.
9.1.5 Shared courtyard

It is almost the same case with sub lanes.
9.2 Conclusion

After the comparison of socio-behavior analysis (how people use the public space in lilong), it is not difficult to figure out the loss in vibrant street life and loss in privacy zones. ‘Higher the quality of housing, less the communication among residents’ (Hanchao Lu, 2004). With the improvement of the inner house, there is less necessary activities (such as washing clothing outdoor) leading to less social communication. What’s more, the occupation of cars and debris on sub lanes and courtyards reduces the quality of public space, resulting less optional activities which requires favorable exterior environment. Interestingly, there is a shift in the frequency of locations where activities happen. In the history, sub lanes are most vibrant streets. However, people tend to sit on the urban street rather the sub lanes in front of their own house. What’s more, it’s worth mentionig that almost everyone interviewed reflected that they like the pocket park at the south-east corner of the neighborhood. It tends to be the most vibrant space in the neighborhood. Some seniors even go to parks far away to have a walk. Therefore, the need for public space or green space for people to play chess/cards or chat is necessary.

In order to revive vibrant street life, the problem of parking and public space occupation should be resolved. What’s more, spaces meeting the changing requirements of neighbors should be designed such as outdoor fitness facilities for seniors and children. Liveable public space should have more innovations and of good quality to attract more people to stay longer in order to facilitate social interactions. Furthermore, the lost privacy zones of zone 4 (transition zone) and zone 5 (bench or green outside the door) which promises higher level of privacy and flexibility in space use should be restored.
5 Design Intervention
CHAPTER 10
Pattern languages
10.1 PATTERN LIBRARY

Pattern language is created by Christopher Alexander (1977) from timeless entities in ‘A pattern language: Towns, Buildings, Construction’. They are used as a toolbox or solutions to the problems in this graduation thesis. The structure of pattern languages here includes hypothesis, context of problem, solutions, spatial requirements and schematic representation. These 13 patterns are used as tool boxes through various scales of the project: boundary and open space, public street network, residential semi-private territory and personal territory. These patterns have to work together throughout various scales.

Considering the group involved, size and level of interventions and different impacts, the 13 patterns can be identified from abstract to concrete, easy to achieve and need power. Detailed patterns are further explained in the following pages.
Open public territory as a system

**Scale**

- Boundary & open space
- Urban street
- Public street network
- Main lane (residential public territory)
- Sub lane
- Lot & house
- Personal territory

**Vibrant Street Life**

- Public activity catalyst
- Pedestrian safety
- Courtyard placemaking
- Meet others
- Shared amenity & roof

**Liveability in Historic Area**

- Old & new
- Green the street
- Car-free area
- Semi-private space

**Participation**

- Social cohesion
- Collective-development & co-housing
- Affordable transformation
- Control (incomplete form)

*Fig. 11.2 Pattern matrix
Source: Author*
10.2.1 PUBLIC ACTIVITY CATALYST

Hypothesis
Opening the ground floor of public architecture to civilians can promote community social interaction.

Context
Hengfu Historic District is a compact and diversified area, where public space is a rare resource. High price and scarcity in land limit the possibility of constructing public squares or large-scale parks. Residents there could only go to a pocket park at a trifurcation corner to play chess or chat with others. However, near the pocket park, Middle Wu Lu Mu Qi Road is a street composed of public amenity functions, such as grocery, catering, market and community center. This busy street is a place where every resident will ordinarily go to, has great potential for necessary activities.

Solution
Thus, the market and community center here is mixed and function as a catalyst to attract residents nearby or even outsiders as a landmark in this area. The area surrounding the market, where used to be subsidiary buildings, is demolished and opened up to public. It functions as ‘main lane’ (public space where people normally pass by and have commercial and social activities in historic lilong neighborhoods.)

Spatial requirements
1. open ground floor
2. mixed-function
10.2.2 PEDESTRIAN SAFETY

Hypothesis
Buffer zones could enhance pedestrian safety and street walkability.

Context
Middle Wu Lu Mu Qi Road (fig.7.15) has its special character: the plots along this street are mainly of type 3, which means their territory depth is very low so that street quality will have great impact on plot livability. Moreover, in perspective of function, Middle Wu Lu Mu Qi Road takes the role of adding more public amenity, which increases flow on the street. This is not the only case in historic area, narrow streets are meeting with safety problems due to crowdness and parking.

Solution
Considering the situation that this narrow side walk (2m) could not be broadened, a buffer zone is added between houses/stores and pedestrian path, which can be seen as a grey area shared by residents/shopkeepers and pedestrians. It provides control to the owner and make a clear division of visitors and people who are passing by.

Spatial requirements
The addition of transition zones in different cases:
1. Along urban street
2. Along main lane
10.2.3 COURTYARD PLACEMAKING

HYPOTHESIS
Control over courtyard promise good quality and sense of belonging.

CONTEXT
In Hengfu Historic district, where consists of many buildings of garden-styled lilong, courtyard is a common spatial element in plot scale. There are two kinds of courtyards on site, which can be categorized as enclosed courtyard where the surrounding four facades are buildings and outdoor courtyard which is enclosed by walls. The situation of these courtyards are not positive as designed. Occupation of parking, storation and self-construction of poor quality effect the liveability and safety of the courtyard, making nobody want to stay in the courtyards.

SOLUTION
The first solution is to meet with the changing requirements for more inner space of residents. To do so, some households should be replaced to somewhere else nearby or demolish the self-construction housing and rebuild a well-designed one. More control should be given to residents so that they will have a sense of belonging of the courtyard and start to take care of it.

SPATIAL REQUIREMENTS
a. enclosed courtyard
b. semi-closed courtyard

Fig.11.5 A fancy courtyard
Source: Pinterest
10.2.4 MEET OTHERS

HYPOTHESIS
Innovative components in human scale increase liveability on the street.

CONTEXT
The sub lanes in Hengfu Historic District is not as charming as it used to be historically. Mass of debris storage, car parking and hanging clothing occupy the sub lane. People do not like to stay longer in sub lanes, where was the most vibrant space in lilong neighborhoods. So there is need for innovative components on the street to attract residents back to street in order to facilitate social interactions.

SOLUTION
New solutions for hanging clothing are made and centralized parking areas are set to make room for residents in sub lanes. And innovative installations are inserted to make space interesting in order to attract more people to use this space. According to Jan Gehl, ‘the design of individual spaces and of the details, down to the smallest component is determining factors to quality of public spaces(1987)’ These components support human behaviors of sitting, watching, chatting and etc.

SPATIAL REQUIREMENTS
1. privacy zone of higher privacy
2. support activities of sport/sitting/ ...
10.2.5 SHARED AMENITY & ROOF

HYPOTHESIS
Shared amenity is an approach to make people meet when space is limited.

CONTEXT
According to the analysis of the outdoor activities in historical lilong life, one main reason contributing to the vibrant street life is the lack of space and facility inside the house. People were forced to go out to do necessary activities such as washing clothing, brushing teeth and etc. These necessary activities happened on the narrow sub lanes encourages close relations with neighbors. To some extent, there was a tradition for Shanghaiese to share space with others. In the lilong transformation, the interior quality of building has been improved. Each household has or will have private toilet in their own house. However, there still lacks places for people to trying their clothing and do outside exercise.

SOLUTION
Shared space for amenities with flexible functions. Shared tea house or kitchen

SPATIAL REQUIREMENTS

Fig. 11.6 Shared tea house in a co-housing neighborhood
Source: Pinterest
10.2.6 OLD & NEW

HYPOTHESIS
Traditional spatial quality should be carried on in historical urban regeneration!

CONTEXT
During the early stage of urban development in Hengfu historic area, good spatial qualities including public space hierarchy, deep territorial depth and privacy zone were imbedded among the llong architectures. The first one helps to create a smooth transition from total public areas to total private areas where the inhabitants feel natural and comfortable. And adequate territorial depth and privacy zone guarantee the peace in private space which also contributes to the livability of this residential area.

Nevertheless, the new buildings in later densification of the area are threatening these great traditional spatial qualities. For instance, a new real estate defended by high and cold metal fences cut its connection with the other adjacent areas while the front gate only stands as abrupt and stiff boundary. In addition, those massive volumes out of economic forces also damage the intimate atmosphere in historical areas.

SOLUTION
Densification in historical area doesn’t have to abandon its traditional spatial qualities. By smart restraints in urban design level, these qualities could still be achieved. The urban regeneration of Paris has already taught us a good lesson in which the building heights of new constructions have to be limited. In this way, streets’ profiles could continue the traditional proportion so that intimate space could be guaranteed. Facades of new buildings, as the envelopes of the public space, must be considerately studied to fit in the surroundings. Fitting in the context could have various expressions while the internal logic relates properly to the spirit of place. In Valentino Flagship Store design in Old Bond Street of London by David Chipperfield, new materials are applied while the architectural language still follows the layer and typology in this traditional context.

SPATIAL REQUIREMENTS
1. keep the same height
2. similar facade
3. new material
4. energy efficiency
10.2.7 GREEN THE STREET

HYPOTHESIS
People are tend to stay longer in a place with green.

CONTEXT
Historically, Hengfu District used to be a place with cultural atmosphere where celebrities or people of middle-up classes lived there. Thus, it’s been a tradition for people there to create adorable living environment. For example, people tended to put pots of flowers outside of their window or on the sub lanes. What’s more, French plane trees along streets of the neighborhood creates a beautiful image of the streets.

The problem is that the limited space is a hinder for residents to create a space with more green. And in terms of climate, it’s super warm in summer in Shanghai, the lack of green shadow in public space also prevents people staying longer on the street.

SOLUTION
1. green canopy along the street
2. small green area in front of the door
3. green wall and small green area along the wall
4. green roof and facade

SPATIAL REQUIREMENTS
10.2.8 PEDESTRIAN FIRST

HYPOTHESIS
Low speed of traffic and priority of pedestrian are promise of vibrant streets.

CONTEXT
Accessibility and walkability in historic district contributed to the vibrant street life in lilong. According to the analysis of the connection of activities and its spatial requirements, urban streets in history were shared by pedestrians and cars. Pedestrian felt comfortable and safe on the street at the age that cars were not dominant. However, nowadays, with more and more cars, pedestrians are no longer the priority of streets.

SOLUTION
First, setting up public parking areas are prohibit car parking in the specific plots could settle the problem of public space occupation by car. Next, based on the infrastructure system, some urban street can be defined as pedestrian prioritized. Some sitting space could extend on the road in order to slow down the traffic speed.

SPATIAL REQUIREMENTS
1. in sub lane or main lane
2. along secondary urban street

Fig.11.9 vibrant street life in the main lane transformation of lilong
Source: Website
10.2.9 SEMI-PRIVATE SPACE

HYPOTHESIS
Semi-private space has most frequent activities.

CONTEXT
In traditional lilong, sub-lane (narrow street between back door and front door of each house) is the most vibrant space. Residents nearby will claim this space as their semi-private area. They will put chairs along the wall and place their plants or birdcages on the street. Due to the limited interior space, residents use the sub-lane to dry clothing, wash food and brush their teeth. These necessary activities push people to go outside to meet each other and communicate with each other. Thus, relationship of neighbors were intimate. However, the sub-lane phenomenon is not common nowadays. Though people may still hang their clothing in the sub lane, they do not interact with their neighbors.

SOLUTION
In order to revive vibrant street life, more privacy zones are added. In one practice, the spatial form similar to original ‘sub-lane’ is created as semi-private space. This interior corridor is wider than usual, so that chairs and shelves could be placed. Residents could share the corridor outside their own apartments with their neighbors in one floor. This case is suitable for local elderly residents, who are familiar with each other and lifestyle.

SPATIAL REQUIREMENTS
1. H/D
2. furnitures or installations to facilitate activities
10.2.10 AFFORDABLE TRANSFORMATION

HYPOTHESIS
Prefabricated modules provide affordable plug-in housing for low income groups.

CONTEXT
According to the interviews on site, polarization among residents has been confirmed that some people live in garden-styled ilong of rather high quality while some workers live in places where used to be garages. For those poor people who do not have money to move out and government's transformation are not satisfactory, prefabricated modules provides a choice for them to improve their living standard in an easy and affordable way.

SOLUTION
Construction of modern housing with new technology to decrease construction cost and increase quality and efficiency. Plug-in house is one of these solutions. To use prefabricated modules inside of the old house, it only cost one day for several worker to build up the new housing with locks to connect modules to each other. Also, this material is energy efficient and water proof. What's more, in order to deal with the problem of no sewage system, the off-the-grid composting toilet system could manage this problem.

SPATIAL REQUIREMENTS
1. interior transformation: using double skin
2. self-construction reconstruction:
10.2.11 SOCIAL COHESION

HYPOTHESIS
Public space as an exhibition for diversity!

CONTEXT
Historically, lilong used to be a residential typology which combines western and chinese culture, ethnically diverse. Nowadays, it's still a characteristic in Hengfu Historic area. Due to the convenient location and cozy atmosphere, many foreigners and immigrants are attracted to live in this area. However, the vibrant street life in old days does not exist any more, the relationship between immigrants and local residents is becoming indifferent. Then come behind conflicts.

SOLUTION
'Superflex' in Copenhagen is a good case for social cohesion. The idea of gathering objects from 60 different countries where surrounding residents are come from and to using the half-mile long urban space as an giant exhibition aims at supporting diversity. Different languages are met, challenged and communicated with local ones. In the neighborhood of the graduation project, a place of culture collaboration is also made to promote social cohesion and diversity. Small installations are set, such as 'mini museum' and 'exchange library' and etc.

SPATIAL REQUIREMENTS
1. only for pedestrians
2. accessible
3. long-time stay
4. pavement/color/.....

Fig.11.12 Diversified public space with various culture.
Superflex, Copenhagen
Source: BIG
10.2.12 PARTICIPATORY DESIGN: eg. CO-HOUSING

HYPOTHESIS
Higher level of participation in regeneration process could enhance social sustainability.

CONTEXT
There exists a large variety of participatory approaches in urban regeneration depending on various need and scale setting. Though most of the urban regeneration decisions are made top down, some bottom up practice is called for to raise residents’ voice and choice. Since the case of self-construction of residents are common, it shows the potential that people tend to be empowered to improve their liveability by themselves. Thus, collective development and co-housing are chosen as a relatively high level of participation. In order to meet all the needs of stakeholders (house owners, tenants, shop keepers, housing association and etc.), scale is limited to the unit of lot to control. Some design ateliers will get involved as a design expert to help residents.

SOLUTION
Co-housing: Residents have the right to ‘manage their own co-housing communities and may also perform work required to maintain the property’ (Hasselaar, 2011). Co-housing members played an important role in maintaining social sustainability quality in Groene Dak. More solutions see appendix.

SPATIAL REQUIREMENTS
As a pilot project, some lots with a shared courtyard with households nearby is firstly chose. Second, if the relationship of neighborhood is intimate, it’s easier to realize co-housing. With the extension of participatory practice, the selection of plot types could be expanded.

Fig.11.13 Play the city, a game to engage stakeholders to the process of planning and development of town design
Source: Website
10.2.13 INCOMPLETE FORM

Fig.11.14 A residential area with privacy zones could be controlled by residents
Source: Author

HYPOTHESIS
Incomplete form promises diversity in neighborhood and increase control of residents.

Context
One of characteristic in Hengfu Historic District is its diversity in plot types and organization of these diversities. In one block there may be five to six plot types, which attracts residents of different social groups. While in the new urban development, residential areas are designed the same, which lost its specific identity. Thus, it’s essential to maintain or strengthen the diversity of historic area.

Solution
Richard Sennett(2017) proposed the concept of ‘incomplete form’ as one of the indicators for open city. The opposition of incomplete form is perfectly fit, which could not adapt to the changing requirement. Instead, incomplete form challenges the design ideal of a physical object as fit for purpose, so building with incomplete form is an approach to achieve flexibility. Exploring new technology to make housing flexible and simple is a main task. Incomplete form also give space to the inhabitants to further design their own housing, which increases diversity in blocks and sense of community. Thus, the housing become living and evolving.

Spatial requirements
Flexibility and control of space should be easily connected to each household. For example, the area in front of the door (privacy zone 5 in historical lilong) will has a strong control by the residents because they could claim this area as semi-private.
### 10.3 INTERVENTION SCHEME

In order to further clarify the spatial interventions of each pattern, detailed interventions are shown by schemes (Fig. 11.15). The list on the right only shows the possibilities of spatial interventions applied in this graduation thesis and it can be added in the future.

<table>
<thead>
<tr>
<th>Public activity catalyst</th>
<th>open ground floor</th>
<th>mixed function</th>
<th>landmark attraction</th>
<th>define territorial with canopy</th>
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<tbody>
<tr>
<td>Pedestrian safety</td>
<td>control commercial extension</td>
<td>pavement control</td>
<td>transition zone</td>
<td>pleasant H/D</td>
</tr>
<tr>
<td>Courtyard placemaking</td>
<td>flexible use of space</td>
<td>add courtyard</td>
<td>set flexible facility</td>
<td></td>
</tr>
<tr>
<td>Meet others</td>
<td>innovative wall</td>
<td>benches outside the door</td>
<td>set flexible facility</td>
<td></td>
</tr>
<tr>
<td>Shared amenity &amp; roof</td>
<td>facade height control</td>
<td>parking above housing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old &amp; New</td>
<td>local material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green the street</td>
<td>add trees</td>
<td>green roof</td>
<td>green canopy</td>
<td>green along the wall</td>
</tr>
<tr>
<td>Pedestrian first</td>
<td>control of space occupation</td>
<td>enlargement of sidewalk</td>
<td>car-free area</td>
<td></td>
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<tr>
<td>Semi-private space</td>
<td>interior enlarged corridor</td>
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<tr>
<td>Affordable transformation</td>
<td>double skin</td>
<td>prefabricated panel</td>
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<tr>
<td>Participatory design</td>
<td>opinion wall</td>
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</tr>
</tbody>
</table>

Fig. 11.15 Spatial intervention scheme
Source: Author
CHAPTER 11
Vision & Strategy
11.1 VISION

In order to clarify the main goals of the transformation of the neighborhood, three visions are proposed, namely to achieve liveability in historic area, to revive vibrant street life and to encourage participation in the process of urban regeneration.
The first vision is to revive vibrant street life in ililong. It is mentioned in chapter 5, rich social activities represent social value of historical ililong. However, the social cohesion and close relationship with neighbors are no longer common nowadays. It derives from loss in the privacy zones and changing requirements of residents. In this graduation project, qualified space and higher level of privacy zones are created in order to facilitate social interaction. Some new value and activities are added.

According to Machiel van Dorst (2012), liveability is defined as 'the quality of the match between people and their living environment'. To achieving liveability in historic area is the second vision, which aims not only at creating space of quality, but also a place meet with use’s requirements. Furthermore, various privacy zones support inhabitants’ control over social interaction. This vision brings the linkage between built environment and social interaction.

Participation in the urban regeneration means raising ‘voice’ of residents and empowering them to involve in the process and have ‘choice’. In this graduation project, participation could not really achieved but it raise a vision in long-term urban regeneration. Through some patterns and case study, possibilities and approaches of conducting participatory transformation are explored.
11.2 INTERVENTION CONCLUSION

- Conservation
- Plot strategy
- Publicness

Fig. 10.5 Conservation conclusion
Source: Author

Fig. 10.6 Plot strategy
Source: Author

Fig. 10.7 Publicness in the neighborhood
Source: Author
innovation (potential for social interaction)
conservation
restoration (potential for social interaction)
restoration (improve privacy)
innovation (potential for social interaction)
demolish and rebuild
space or street of high publicness

Fig. 10.10 Analysis conclusion
Source: Author
11.2 NEIGHBORHOOD STRATEGY

Fig. 10.8 separated strategies
Source: Author

Fig. 10.9 general strategies for the neighborhood
Source: Author
Public street perspective
Public space perspective
Commercial street perspective
Historic street perspective
CHAPTER 12
Designing the block
12.1 BLOCK SELECTION

In this chapter, a specific block is chosen for further in-depth design (see Fig. 12.1). Places of potential are pointed out on the intervention map (see Fig. 10.9) and transformation principles for each plot type should be considered. One method is to do in-depth designs in separated places in the whole neighborhood, and the other method is to choose a block to represent the whole neighborhood. Considering the outcome, choosing a block could have a more complete scenario and it's easier to see how interventions on different streets and plots work together.

The proposed block is selected due to two reasons. Firstly, it contains six plot types to represent the whole neighborhood. Then, this block is close to Middle Wu Lu Mu Qi road, where street quality should be improved and more public amenity should be added.

3 STREETS:
- Urban street: amenity for residents
- Residential public territory: main lane
- Residential semi-private territory: sub lane

A BLOCK: includes 6 cluster types

Fig. 12.1: the selection block for further design
Source: Author
12.2 BLOCK CHARACTER

12.2.1 Plot division & accessibility

The chosen block is full of diversity, including six different plot types. In between the block, there is an east-west main lane to divide the block into two parts. The main lane is quite narrow of around 2 meters’ width. What’s interesting is the good accessibility of each plot. In the fig.12.3, it is shown that each building could be accessed through urban street or main lane, without crossing other plot. What’s more, each plot is divided by 3-meter-high walls (see fig.12.2). Thus, in this compact block, each plot is well-organized with each other, enjoying high privacy and diversity.
12.2.2 History & Transformation

After comparison with historical map in 1917 (see fig. 12.4), the layout of the block generally keep the same structure. Some transformations are marked with color. For the blue parts, plot change has taken place. For example, small plots of commercial units are combined into big plots along urban street on the right side of the block. Garage and auxiliary space were taken in to consideration in history, however, with the rapid growth of housing space, these space are transformed into residential area, which is of poor quality (brown). Also, functions of the buildings in pink has been changed.
12.3 DESIGNING THE BLOCK

12.3.1 analysis for the block

The strategy for the whole block is proposed based on the conclusions of conservation and plot strategy in the neighborhood. In the block scale, practical issues are taken into consideration such as the ownership of the building and the historic evaluation from the government. Combing these criterias, the strategy for the whole block is made (see fig.12.8). First, two car parking areas are set in order to deal with the problem of space occupation by cars. Then, public space in this block could be better used to facilitate social interactions. Second, for plots, three kinds of strategy are proposed, namely rebuild and increase building density along Middle Wu Lu Mu Qi road. For the orange plots, the buildings can be demolished and rebuilt. But the principle for the rebuild is to improve liveability by adding privacy zones. For blue plots, there are plots of potential to conduct participatory transformation like co-housing.

Last, for streets, an urban street, a main lane and a sub lane are selected as pilot projects.

![Fig.12.6 Conservation conclusion of the block](Source: Author)
![Fig.12.7 Plot strategy of the block](Source: Author)
12.3.2 Strategy for the block

Fig. 12.8 Strategy for the block
Source: Author
12.3.3 Public system transformation

Public network system is redefined in the block and a new level of public space is added (see fig. 12.11). Accordingly, outdoor activities are redesigned based on the new public network system. Spaces are designed to add more privacy zones in order to get back lost activities such as playing chess on the sub lane and visiting neighbors. Furthermore, more new activities which meet with changing requirements of residents are proposed on public space in the block.

Fig. 12.11 Public space transformation
Source: Author
Fig. 12.12 Proposed new space & activities
Source: Author
12.3.4 Street network transformation principle

Fig.12.13 Street transformation principle
Source: Author
12.3.5 Projects in the block

1. courtyard house
2. open market & extension
3. hostel
4. social housing

Fig. 12.14 Projects in the block
Source: Author
Fig. 12.15 Ground floor plan of the block
Source: Author
12.4 DESIGNING THE PLOT
12.4.1 Bird’s eye view & Pattern application

Pattern languages are used to link research to design to provide solutions to the problem of the site. From the bird’s eye view of the block, it is easy to figure out the application of patterns in the design intervention. Streets with orange color are transformed. For the urban streets, pedestrian safety as pattern 2 is utilized. For main lane, in order to meet the others(pattern 4), many innovative interventions such as graffiti wall and transition zone are set. And for sub lane transformation, cars are prohibited(pattern 8) to create a resident-dominant space.

The open market(Nr 1) and the enlarged public space nearby with purple color are the most vibrant space in the whole block. Pattern 1 ‘public activity catalyst’ is applied to the open market. The public space is well-designed space with green canopy(pattern 7) to facilitate social interaction and cohesion(pattern 11).

As to the courtyard house(see fig.12.14), patterns of affordable transformation, shared amenity and etc. are applied to its transformation. Many patterns are used several times in the block design, for example social cohesion, meet with others and etc. These patterns of high repetition show the high transferability.
Fig.12.16 Bird's eye view of the block
Source: Author
12.4.2 Principle for plot type 4

The project of courtyard house is chosen as the pilot project because the plot type 4 has the most potential for social cohesion. The density of this type is favorable, not too high or too low, which provides opportunity in courtyard transformation to facilitate communications of neighbors.

In order to achieve desired result, some basic principles are made. First, since the territorial depth of plot type 4, there is potential to increase the privacy to enhance liveability in the plot. So one principle is to increase territorial depth (if necessary) or add privacy zones such as adding transition space shared with neighbors or adding benches and small green space in front of each apartment.

Second, more interventions should take place in the courtyard. Currently, the courtyard is normally a vacant lawn or cement ground full of debris of residents. Pattern of courtyard placemaking could be introduced here to improve the quality of the courtyard so that more optional activities could occur.

![Diagram of Plot Type 04](image)

Fig. 12.17 Transformation principles of plot type 4
Source: Author
12.4.2 Scheme of Courtyard house design

Fig. 12.18 Scheme for courtyard house transformation
Source: Author
12.4.2 Privacy zones of courtyard house

Zone 1: Bedroom
Zone 2: Saloon (guest room)
Zone 3: Front closed courtyard
Zone 4: Kitchen where the back doors are often open
Zone 5: Bench or basin in front of back door
Zone 6: Sub lane
Zone 7: Main lane
Zone 8: Urban street

Privacy zoning in historical lilong

Zone 1: Bedroom
Zone 2: Living room
Zone 3: Sub lane
Zone 4: courtyard or square
Zone 5: Main lane
Zone 6: Urban street

Current Privacy zoning in the project

Zone 1: Bedroom
Zone 2: Living room
Zone 3: Shared corridor/shared amenity
Zone 4: Bench or green in front of door
Zone 5: Sub lane
Zone 6: courtyard or square
Zone 7: Main lane
Zone 8: Urban street

New Privacy zoning in the project

In this project, plot division are redesigned. Originally, it was divided into three part vertically. Now, the plot is divided into four parts, enlarging the space around the courtyard.

More privacy zones are added to the project in order to restore the space hierarchy of historical lilong.
Fig. 12.20 Ground floor plan of courtyard house
Source: Author
In the strategy of the courtyard house project, co-housing is one solution because the long-term residents here have a close relationship with each other. The fact that they all have self-construction in front of their house shows the potential for them to transformation their own housing together. However, it is difficult to achieve participatory design for now, so the intervention by author is made to give them a example for design. Two main courtyards are maintained in the similar form to preserve the lifestyle of residents here.
12.4.2 Perspective

Fig.12.23 Design scenario
Source: Author
12.4.2 participation process

**CO-HOUSING PROCESS**

- **initiative**
- **form**
- **rent house to**
  - **co-housing community**
  - **government**
  - **land owners**
  - **inhabitants**
  - **housing association**
  - **designer**
  - **liilong**
- **live in**
- **design**
- **negotiate**
- **manage**
- **regulate**

**COMMUNAL SPACE**

- **SELF-CONTAINED HOUSE**
- **SHARED KITCHEN**
- **RECREATION AREA**
- **LAUNDRY AREA**
12.4.2 Details
12.4.3 Principle for plot type 3

Plot type 3 is the place of urgency for transformation because the territorial depth of buildings in this type is only 1 and density is relatively high. It means the street quality has great impact with residents’ liveability.

So there are three principles for type 1 transformation. First, street quality are to be improved by add privacy zones along the shops on ground floor. In this case, the sidewalk is extended to the road to reduce the traffic speed (see fig.12.46). Second, for the new buildings on street, height should be consistent with its surroundings and facade should follow the same form. Local materials and craftsmanship are encouraged to use. Last, the entrance of residents along street should be divided to increase the territorial depth (fig.12.24).

Fig 12.24 Transformation principle for plot type 3
Source: Author
12.4.3 Scheme of Open market extension

Fig. 12.25 Transformation scheme of open market
Source: Author
12.4.3 Material & activity

The concept of transformation in the open market and its extension derives from the new public space system in the block. Due to the amenity function of Middle Wu Lu Mu Qi road, the existing community center and market on this road could be strengthened. It is an opportunity to open the ground floor of public architecture to civilians as pattern 1 mentioned (see fig.11.3). Thus, the building is designed as a complex with an open market on the ground floor and has mixed-function of community center. Two buildings near the market are demolished and the sub lane is expanded (fig.12.25). So the open market and the sub lane are connected as a big public space in the neighborhood. New activities are designed for residents here.
12.4.3 Perspective

Fig. 12.27 Design scenario
Source: Author
12.4.4 Principle for plot type 2

For plot type 2, the case is that the main buildings are normally well-maintained. So the focus should be put on its auxiliary buildings transformed from garages or etc.

There are two principles for plot type 2 transformation. First, to improve the status of the auxiliary buildings. To improve their physical quality is not enough, a decent plot division or the improvement of territorial depth is required. Then, for these auxiliary buildings, density should be decreased in order to promise adequate living space for each household.

As to the courtyard transformation, there is also potential in adding more amenity facilities like outdoor fitness equipment for residents to share the courtyard.

Fig 12.28 Design principle for plot type 2
Source: Author
12.4.4 Scheme for Hostel design

Fig. 12.29 Transformation scheme for hostel
Source: Author
12.4.4 Material & activity

The project of hostel is to change the plot division of the plot of type 2. The affiliated house used to be garage which now has been transferred into residential area. Thus, the primary and secondary relations of it with main building in the plot has changed. In order to improve the quality of this place, a new plot is divided in order to make its territorial depth clear. The concept of the hostel transformation is similar to the form of plot type 1. It is a good choice to design a building with a small courtyard where more social interactions could take place.
12.4.4 Perspective

Fig. 12.32 Scenario of the hostels
Source: Author
12.4.5 Principle of plot type 6

As to plot type 6, the strategy is to densify this plot type. However, it is complex considering the various ownership and many buildings of type 6 are listed as historic architectures by the government. The principle proposed here is for the places with permission to transform or vacant plots.

In rebuilding the plot, historical maps should be the first principle. Keep the original urban form and plot division as much as possible. And then, follow the principle of previous three plot transformations: higher territorial depth, more privacy zones and shared public space to enhance social interaction in the plot.

DENSIFY
BASED ON ORIGINAL URBAN FORM
HIGHER TERRITORIAL DEPTH
MORE PRIVACY ZONES
USE LOCAL MATERIAL

Plot type 06
12.4.5 Scheme of Social housing design

Fig.12.34 Transformation scheme for social housing
Source: Author
12.4.5 Material & activity

For this plot, it belongs to the business plot, however, in history it was divided into 6 small plots. Nowadays, it has been transformed into a parking plot for the business. Since most of the plot is vacant, it is a waste of space so the strategy is to densify this area and to rebuild houses there. In order to keep the function of parking lot, ground floor and upper floors are divided to two stakeholders and their entrance are separated. The new built housing is a social housing cluster. Residents could enter their housing through main lane, stepping up a few stairs. The entrance is on a shared platform and there are big trees between the housing and the business company, so the privacy is promised.
12.4.5 Perspective

Fig. 12.37 Scenario of social housing
Source: Author
12.4.6 Sub lane transformation

This sub lane locates in a plot of type 1 in the block. The situation of this lane is what fig.12.39 shows. In history, sub lanes are the place where most vibrant social life happens. However, nowadays, the sub lane are used for car parking and residents only pass through it. A public parking lot is set under the open market in the block so Icars are banned on sub lanes. The concept of intervention is to restore the lost privacy zones such as chairs along the wall and green space. People could play chess and chat with neighbors on the sub lane now.

Fig.12.38 Materials  
Source: Author

Fig.12.39 Existing situation  
Source: Author
12.4.6 Perspective

Fig. 12.40 Design scenario of sub lane
Source: Author
12.4.7 Main lane transformation

Currently, the main lane in the block is clean but boring. Nobody would stay a long time on the main lane, and it only works as a shortcut for the residents who live nearby. In the transformation of main lane, some innovative interventions such as graffiti wall and some interaction installation are introduced to improve the attraction of main lane. At the ground floor of pilot project of plot & transition zones are set along the main lane to create a space for people to sit and relax.
12.4.7 Perspective

Fig. 12.43 Design scenario of the main lane
Source: Author
12.4.8 Urban street transformation

In the transformation of urban street of Middle Wu Lu Mu Qi road, the character of the street has been changed. With the function of amenity street, pedestrians have the priority on the street. Some extension of relax space are set on the road so that the traffic speed is limited. For the ground floor, commercial space are designed to set back 1-2 meters as transition zones in order to improve walkability on the sidewalk.
12.4.8 Perspective

Fig. 12.46 Design scenario of urban streets
Source: Author
6 Conclusion
Transferability
Evaluations

At the end of the thesis, evaluations are conducted to compare options and measure the results and its impact. Evaluations are measured for the 5 projects in a block (see fig. 12.14) within the plot scale. Main indicators for evaluation of the interventions are based on previous analysis, namely the improvement of the physical quality, the impact on heritage value such as aesthetic value, whether there are higher privacy levels to ensure the liveability and whether social interactions are facilitated through interventions of built environment and to which level the residents were or will participate in the process. Generally, after comparison, the result for plot type 2 and plot type 4 are better than others. Since they also have high priority to transform (fig. 13.1), it can be concluded that the interventions of plot type 2, 3, 4 have most potential and should be first considered in the future Iliong transformation.

Then, the repetition of patterns are examined in street network and plot types. In fig. 12.3, it shows the level of importance and frequency of patterns under various plot types. For the street network level: from urban street transformation, main lane transformation to sub lane transformation and other streets of different character are examined (fig. 12.4).

![Evaluation Table](image)

**Fig. 13.1 Strategy and urgency of transformations for 6 plot types**

*Source: Author*
### Project Evaluation

<table>
<thead>
<tr>
<th></th>
<th>sub lane transformation (plot type 1)</th>
<th>hostel (plot type 2)</th>
<th>open market (plot type 3)</th>
<th>courtyard house (plot type 4)</th>
<th>social housing (plot type 6)</th>
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</thead>
<tbody>
<tr>
<td><strong>Quality</strong></td>
<td></td>
<td></td>
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Fig.13.2 Evaluation table for 5 projects
Source: Author
## Pattern repetition

**plot scale**

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Fig. 13.3 Pattern repetition
Source: Author
### Pattern repetition

**street network**

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</tr>
<tr>
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<td>meet others</td>
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<td>●</td>
<td>●</td>
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</tr>
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</table>

**Fig. 13.4 Pattern repetition**

Source: Author

- Most frequent
- Less frequent
- Important
Reflection
ASPECT 1. THE RELATIONSHIP BETWEEN RESEARCH AND DESIGN

In this graduation thesis, there exists the relationship of co-evolution process between research and design, which means they are in a loop and effects each other. The main aim of the project is to restore the space hierarchies from public space to semi-private space in the historic district and revive vibrant street life happening on specific privacy zones. Firstly, research deals with different perspectives of the background, development and problems of lilong in Shanghai, which gives a comprehensive knowledge to the project. It is conducted based on various scales from the general context of lilong in the whole city, to neighborhood scale and plot scale. The process of research is a process from abstract to solid, from extensive to intensive. Due to the research of morphological typologies, a possibility is provided to narrow down the research to six types of plots for further design which could be applied to other locations. Meanwhile, design on a smaller scale could be seen as a case study contributing to the research to examine the result and conclusion on a specific location. What’s more, during the design process, more questions were raised and the method of research was reconsidered and refined.

Pattern language was used as a linkage of design and research which provided solutions for three visions of vibrant street life, liveability in historic area and participation in urban regeneration process.

ASPECT 2. THE RELATIONSHIP BETWEEN YOUR GRADUATION (PROJECT) TOPIC, THE STUDIO TOPIC, YOUR MASTER TRACK, AND YOUR MASTER PROGRAMME.

Studio of History & Heritage gave me a new idea towards how to define heritage preservation. It is not only about preserving the still physical past, but a ‘vector’ perspective to look at heritage through its past, its transition and its future. What’s more, except for the tangible spatial characteristic, social aspects are also vital in the heritage preservation. According to this understanding, my thesis project is closely related with this topic. Heritage value of lilong as a sub question is defined and the loss of socio-spatial value during the transformation of lilong is clarified. The vision of liveability and vibrant street life actually aim at restoring the value of historic lilong and further add some new value to it according to the changing requirements and trends.

ASPECT 3. ELABORATION ON RESEARCH METHOD AND APPROACH CHOSEN BY THE STUDENT

In relation to the graduation studio methodical line of inquiry, reflecting thereby upon the scientific relevance of the work.

One of the main concern within the methodical line of History & Heritage studio is to clarify what is the value of lilong as a historic residential typology in contemporary Shanghai. The issue of where heritage value lies is discussed by many researchers, and what is important in this graduation thesis is to identify the unique value system by myself which shows my own position towards the argumentation of ‘why we should value lilong’. In order to answer this question, literature review and location based analysis are chosen to form my heritage value matrix. As a conclusion, six values are identified in abstract and concrete perspective.

What’s more, what I learned a lot from is the practice of social behavior observation and interview to the local residents of my site. Since this graduation put emphasis on the relationship of social outdoor activities with the quality of built environment, in-depth analysis of residence perception and satisfaction is essential to the project. The method of selection of groups of people to be interviewed, the interview questionnaire should have connection with the conclusion for the previous research of social groups and plot typologies. Furthermore, the approach of quantitative research of morphological types in the neighborhood is also of importance.


To expand the research scale from lilong regeneration to a wider social, professional and scientific picture is discussed at the end of conclusions. Taking lilong regeneration as a case study of urban regeneration in Shanghai or even in China has its empirical meaning. After the process of extensive modernization(demolish and rebuilt neighborhoods by neighborhoods), we are gradually entering a era of considerate urban regeneration. There still exists lack of successful practices in heritage transformation in large scale of historic district. The practice of value evaluation, the process of public participation and how to achieve liveability are all to be explored.

The concept of this graduation project is to preserve the character in urban form(continuous public space hierarchies and privacy zones) of
the historic district in order to improve liveability of local inhabitants as well as to revive the vibrant public street life. The research conclusions of activities on specific spatial zones reflect the lifestyles and collective memory of a generation on context and some other value is added within the changing requirements. Sustainable development is also one criteria for the future design, which provides flexibility and adaptability in urban regeneration.

It has to be acknowledged that urban regeneration is a process combing economic, social and environmental issues. In this graduation thesis, spatial character and social structure are mainly focused, and economic value of lilong regeneration such as use value and exchange value need to be explored in empirical practice. What’s more, patterns applied in the projects are concluded and their transferability are discussed. In terms of street typology, patterns have a higher level of transferability in other historic lilong neighborhood under similar settings of urban streets, main lanes and sub lanes. As to plot typologies, after comparing the variables of GSI, FSI and territorial depth, similar typologies may be figured out as six plot types in the project. The transferability of these patterns are measured through two main ideas, ease and impact. For some patterns, such as green the street, is easy to be achieved and also easy to have improvement in spatial quality. Patterns of this type could be transferred to other places. For some other patterns like public space as a catalyst, is difficult to conduct because it engages many stakeholders like government, developer and landowners. However, considering that these pattern could have effect on a bigger scale and are beneficial in economic and social perspective, it is still worthy to apply these patterns to other places. Under such condition, the decision should be made after serious consideration of balance and context analysis.

ASPECT 5. DISCUSS THE ETHICAL ISSUES AND DILEMMAS YOU MAY HAVE ENCOUNTERED IN DOING THE RESEARCH, THE DESIGN AND POTENTIAL APPLICATIONS OF THE RESULTS IN PRACTICE.

During the whole process of design, two ethical issues and dilemmas are encountered. First dilemma is the attitude towards heritage transformation, to what extent should we preserve, to what extent should we transform. Is a method to keep old look like old, which is a fake indeed, calls preservation or a method to differentiate new from old so that we can easily figure out outcomes of different layers from different age at the meantime calls preservation? What’s more, the phenomenon is that to be identified as heritage is not a good thing in Shanghai actually. Lilong houses which are on the preservation list from the government normally are those we forget. Nobody could touch them without related policies and strategies, even the residents living inside also do not have the power to improve their own house. Therefore, only the research of spatial interventions which could be applied in historic area is not enough, the solution of how to better conduct heritage regeneration process is more urgent. Second dilemma is about one of the goal of the graduation thesis, which is public participation in the process of lilong regeneration. What I have done is interview on site visit and collecting resident’s opinion in transforming their apartment and neighborhood. However, the shortcoming is that I could not get them involved during the whole process of my design. This is what I intend to achieve in the future work when I go back to Shanghai.
Appendix - Theory paper
PARTICIPATION FOR SOCIAL SUSTAINABILITY

Dutch approaches of community participation in design process

ABSTRACT
The management and organization of urban regeneration projects in the Netherlands, especially for issues concerning housing provision, has changed fundamentally over the last two decades. By adopting sustainable development principle, participation in local community which is one of the criteria for social sustainability was put on the agenda. Public actors, especially residents are given more power since the local governments are gradually in a back seat position. However, the transformation towards participatory design is slow and practice remains poor. Therefore, the aim of this paper is to understand the role of future owner-occupants and tenants in the process of urban regeneration and to explore the future challenges of community participation based on empirical case studies. The first topic seeks to have a discourse on how participation could contribute to the social sustainability within a community level. The second topic compares ‘ladder of participation’ (Arnstein, 1969) with the revised version proposed by Hasselaar (2011) to discuss the level of citizen involvement from a changing context. Furthermore, two cases of design atelier project in Gouda East and co-housing dwelling in Groene Dak are introduced. The two cases are in relatively high level of ladder of participation, used to examine the contribution of participation to social sustainability. Finally, future challenges and potentials are generally discussed to leave some room for thinking.

This paper does not aim at list an overall picture of the current participatory approaches in the Netherlands, but to examine the concept whether participation could benefit social sustainability and show some hint for the future.

SOCIAL SUSTAINABILITY
The concept of sustainability has long been discussed in the planning, urban and architecture design with its three components of ‘People, Planet and Prosperity’ (European Commission, 2002). The previous work mainly conducted research within physical context, and there is a new trend that sustainability discourse has moved on from the ecological and environmental to the social and economic, such that ‘social participation’ (Arnstein, 1969) and new ladder of participation (Hasselaar, 2011) are introduced to judge the level of influence of the residents.

Second topic is about participation itself. A general historical review on the Dutch housing province links to the reason for the re-emerging of participation. Moreover, the ladder of ‘citizen participation’ (Arnstein, 1969) and new ladder of participation (Hasselaar, 2011) are introduced to judge the level of influence of the residents.
sustainability’ has emerged as a theme in its own right’ (Turkington and Sangster, 2006).

The idea of social sustainability is to put emphasis on well-being of people. However, there is limited literature defining the ultimate goal of social sustainability, despite a common European approach of ‘sustainable community’, which can be defined as “places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life” (ODPM, 2006).

Some contributory factors as to urban social sustainability within the urban context were defined by Dempsey, Nicola, et al. (2011) to provide a detailed explanation and indicators. Two main dimensions were clarified as ‘equitable access’ and ‘sustainability of community itself’ regarding to the relationship with physical environment and social condition.

Social equity, which is based on social justice, related to social and environmental exclusion (Dempsey, Nicola, et al., 2006). It includes indicators of accessibility to the key services and facilities, public transport routes, affordable housing (tenure) and ‘everyday eight’ (food shop, newsagent, open space, post office, primary school, pub, supermarket and secondary school) and etc. (Barton, 2000a; Burton, 2000b, Winter and Farthing, 1997).

Sustainable community

As to the sustainable community, its essence relates to ‘social order in neighborhoods and the support of social interaction and networks between all residents’ [Dempsey, Nicola, et al., 2011]. The territorial dimension of community is applied to social sustainability to connect social activity with physical setting. Sustainable community requires interaction within community members, attendance of formal or informal activities of collective institutions and sense of identification with, and pride in, the community (Dempsey, et al., 2009). In order to further analyze the social life at the community level, five dimensions are listed by Dempsey as: social interaction, participation in collective groups and networks in the community, community stability, sense of place and safety and security.

WHY PARTICIPATION FOR SOCIAL SUSTAINABLE?

Generally speaking, urban renewal, revitalization, or regeneration is to integrate a variety of interests into proposals for design and process, which means the process only cater to a single actor or stakeholder will not work. Our city is a complex platform for many: power holders, developers, architects and urban planners, businessmen and also residents (Stouten, 2016). However, in a property-led development, local government’s biased investment strategy easily stands in favour of the groups that have more purchasing power (Arkarapraserkul, 2012). Residents or so called ‘have-not citizens’ do not have ‘choice’ to move to a better place or have ‘voice’ in decision making because they do not have power even money. Thus, before the discussion of which process or approach should be taken, the question of ‘urban regeneration for whom’ seems more challenging and urgent.

The opinions can be easily divided into two schools, one is to advocate participation and the other can be called ‘participation pessimism’. As Arkarapraserkul (2012) argued, “the local government will need more actors to get involved in this program, including residents whose opinions about their living conditions and the present situation in the house and neighborhoods have to be heard.” On the contrary, residents are widely criticized by institutional organizers as ‘not future-minded enough’ and only think in ‘NIMFY’ or ‘NIMBY’ terms [‘not in my front yard’ or ‘not in my backyard’]. Three possible explanations from previous experience are listed by Stouten (2011) to explain why people against user participation, whereas firstly our ‘top down nature’ in policy and planning, then time waste from efficiency perspective and finally lack of ‘mutual trust’ between authorities and users.

Voice and choice

Participatory design aims at including residents in the design process so that users could express their voice in the design process. It is the belief that all everyone has his own feature and ability in the design and that they can be both articulate and innovative when they have appropriate tools to express themselves. (Sanders, 2002)

It is important to call for an approach to give opportunity to users, occupants, and citizens to express their needs, searching for the enhancement of individual choice and control over the residential environment (Hasselaar, 2011).

Thus, residents or so called ‘have-not citizens’ could have ‘choice’ according to their housing or environmental preference and even have ‘voice’ in the higher level of participation in the process of urban regeneration. (Amstein, 1969; Rusbult at el., 1982)

As pointed out, the potential for people who intend to be involved as active citizens is huge, but there lacks the setting to co-produce their human capital (Tonkens, 2010). Participation, seems wanted by the side of consumers, rather lack of consideration from the planners and
project developers (Hasselaar, 2011).

Community participation
Participation in collective groups of local community is described as a dimension of social sustainability related to social cohesion and social network integration (Littig and Griessler, 2005). It includes attendance of community-organized activities, political participation, such as electoral turnout, which are more related to sense of community. The participation in community is a collective approach that are community based activities. For example, some active residents were selected to express their idea and requirements to represent the majority of the community during the design process.

Ladder of participation
Arnstein (1969) argued that citizen participation is a categorical term of citizen power and classified them into eight levels of participation called 'ladder of citizen participation'. At the bottom of the ladder, there are typologies of 'manipulation' and 'therapy', which indicate 'non-participation' in the design process. Residents are not able to participate in the planning or programs, instead, they are 'educated' by power holders. Next, the level of 'informing' and 'consultation' enable residents to make voice and to be heard in the design process, but they lack power in decision making. 'Placation', enjoys a little bit higher level of right to give suggestions to the power holders. Further, the level of 'partnership', 'delegated power' and 'citizen control' mean empowerment for residents to negotiate, engage and make decisions.

New ladder of participation
After Arnstein, Hasselaar (2011) adjusted this category into five levels which are 'ignoring', 'information', 'consultation', 'participation' and 'decision making'. As Hasselaar (2011) stated, with the new development of planning procedure, the non-participation level of 'manipulation' and 'therapy' seems old-fashioned. Also, calling for a more open framework, a ladder of five participation levels was introduced to adapt to requirements in contemporary society. In this ladder, the concept of 'choice' and 'voice' and the relation with user-decision maker are also discussed. The bottom level of 'ignoring' represents strategy exclusion, in which residents only have the choice in buying houses or not. The second level, 'information', indicates transparency in the planning process but no influence. The next three levels of 'consultation', 'participation', 'decision making' respectively increase citizen power by means of advice, negotiate and decision making.

Approaches in practice in the Netherlands
There already exist a variety of participatory designs in the Netherlands as early birds. These projects are in different scale and can last for one day or a much longer period. In order to make comparison cases clear, the cases to be chose are based on community development focus. Within the scale of community, the level of participation is relatively higher and the sustainability of community can be one of the goal to achieve.

R&M/FORUM Design Atelier Gouda East
R&M, as a local volunteer foundation, cooperated with FORUM (Utrecht), organized R&M-FORUM neighborhood design atelier in Gouda East to regenerate the central area of the district in 2003. In order to meet the aim of involving residents in contemplating and redesign of city center, residents of migrant and native origin were brought together to express their requirements in terms of their living environment. A form as a result was made to represent to...
other residents and the municipality. With its 12 meetings, 27 native and migrant residents participated. At the first session, discussion about tasks were conducted with homework of ‘pictures of characteristic, valuable and problematical spaces and places’. Then, professionals from FORUM and Steering group organized lectures, discussion and design workshops. In the final session, design decisions and report were made. In this process, design ateliers were used as an instrument to involve residents to express ideas and possibilities and make drawings for example of accessibility and recreational routes. This practice enjoyed a fruitful result of structure vision, designs and report, which can be seen as an example of bottom-up activities.

Co-housing in Groene Dak
The practice of Groene Dak includes a co-housing dwelling. Co-housing community is a living way for people to live together while have the privacy and publicity as they want. Each of the household will have a self-contained house and have a large communal space where they could meet regularly. In co-housing community, residents enjoys a topmost level of participation. Residents have the right to ‘manage their own co-housing communities and may also perform work required to maintain the property’ (Hasselaar, 2011). Co-housing members played an important role in maintaining social sustainability quality in Groene Dak.

During the process, the first step started from an initiative by a promoter to attract active and positive people as allies. When these people join a group, this group shares a dissatisfaction with traditional approach and organization and is eager to develop new qualities in their living environment. Later, this group will buy a building plot together and choose an professional(architect) to guide the design process. Individual requirements will be fulfilled as much as possible through a cheaper overall solution. What differentiate this approach from others, is the selection of community members at the beginning. ‘Co-housing comes with a high degree of homogeneity with respect to lifestyle’ (Hasselaar, 2011). To some extent, this group process stimulates the sense of community and reflects the community identity.

CHALLENGES FOR FUTURE
"At present, participatory planning faces problems of poorly-developed local institutions, undefined lines of authority, opposition from central institutions and a weak base of information and management skills.” (Dalal-Clayton and Dent, 1993)

There exist two big challenges of participation, one is to increase its level and enlarge it scale, the other is to improve its efficiency. The huge obstacle is that there are already a lot of policies and plannings without participation. It’s hard to take participation in the mainstream in a short time, which calls for a huge transition from institutions and agencies. Small interventions within community scale is relatively easy, but how to enlarge the scale into strategic planning is a challenge. What’s more, as to effectiveness, the training in participatory methods should be promoted, for residents and local institutions to improve their knowledge and experience in participatory approach. More agencies should be set up to monitor or guide these participation exercises. A more sound supporting system is needed.

CONCLUSIONS
‘Participatory approaches seem nowadays an indispensable part of urban development’ (Hulsbergen and Stouten, 2011), has drew much attention in the planning and design process. The current participatory cases provide the result of ‘better plans, better social sustainability and quality perception of the neighborhood and technologies that are better accepted and used’ (Hasselaar, 2011). Though the preparation for participation is time-consuming and increase the cost, which make the whole design process even more complex, it’s still worthwhile to encourage such bottom up initiatives. First, participatory approach reduces the risk of opposition from the residents and also the low return of investment under the condition of reduced government subsidy. Then, residents are the group who know their living environment best, who should be empowered to have voice and choice in their own living environment. With the guidance of professionals and the help of local housing associations, it is possible to make quality-wise and financial-efficient result.

What is more, participation in design process which involves (future) residents can be an instrument for creating social sustainability. The participatory approaches are discussed at the community level, as an link between sustainable community and community participation. As mentioned in the co-housing dwelling, collective management and design process increase the sense of community. Residents will feel happy to live in their living environment and more willing to maintain the quality there.


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