Lively Streets and Better Social Life

———A case study of three comparable streets in Kristianstad

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Abstract

For much of the twentieth century, streets were designed to accommodate the ever increasing traffic flow, but it has become apparent that streets have many social and recreational functions which are severely impaired by fast car traffic. There is plenty of research on conditions for non-motorized transport and development of design measures on the streetscape to protect pedestrians and cyclists, but how places are made in the street is less studied and seldom implemented. In order to create more humanistic space in the street, we need to take consideration of people first, figure out how space can turn into a good place and which physical conditions will improve social life.

This paper starts with pointing out the problems of ignoring social life in urban streets, and investigating the main theories and applications in contemporary western countries. After that, the thesis introduces literature on improving street life, including the books of Gehl: Cities for People (2010), New City Life (2006), and Burton and Mitchell: Inclusive Urban Design - Streets for life (2006), etc. Moreover, to see how these theories can be applied on a specific case, three streets in the town of Kristianstad are studied. This thesis is conducting an investigation on characteristics of these streets, observing social life in each street, and trying to figure out under which conditions does a street change from subduing social life to enhancing it. The theoretical tools and observation results of social life are all taken into the case study for practice, aiming at creating lively streets.

My conclusions concern the primary factors for creating lively streets: location and role of the comparable streets in the overall traffic network, the characteristics of these streets and adjacent buildings, and the relationships between the physical conditions and the observed social life.

Key words: urban design, traffic calming, lively streets, social life, public space, place making
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Karlskrona, 18th May 2012

Qing Yang
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Chapter 1 Introduction to the research topic

1 Introduction

1.1 Background: Revaluing the diverse roles of streets

Streets provide alignment for sewers, carry vehicles, and form the structure of a city. Streets allow people to be outside, provide access to their destinations. However, the streets in a lively city serve more than that. Cliff Moughtin (2003) states that, it is such a common practice to regard the street as a road for motor vehicles, that the function as a place has been quite overlooked. For many generations the street has provided urban communities with public open space right outside their homes.

It has been 50 years since The Death and Life of Great American Cities was published in 1961. These 50 years have witnessed a great change to streets in cities, the domination of cars has been decreased, and better conditions are provided for pedestrians and cyclists. The value of streets has been reappraised, especially in the recent decades. Lots of social activities happen on the street every day. There is an inherent feeling of safety and social bond which has much to do with the obviousness and simple order of the form of the street. The street is not only a means of access but also an arena for social expression (Moughtin, 2003).

Today, most of the streets are still dominated by vehicles. Pedestrians' and cyclists' social activities are limited. For a long period of time, traffic engineers and urban designers were trying to figure out a way that can bring more people out onto the streets — allowing these spaces to serve as public places where neighbors and friends can connect with one another, in order to build livable cities, and meanwhile transportation planners and engineers consistently seek the way to design and operate the entire roadway with all users in mind — including bicyclists, public transportation vehicles, and pedestrians of all ages and abilities.

1.2 Problem statement

In the past few decades, people realized that streets have many social and recreational functions which are severely impaired by fast car traffic. There are plenty of research
findings to protect pedestrians and cyclists, create more humanistic space in the street. Public concern has arisen about constructing streets for life. However, how places are made in the street was ignored. Gehl states that, "In a world where planners look after the plans, architects look after the buildings, landscape architects attend to the landscapes, and traffic planners provide for the traffic it has become increasingly apparent that no one is specifically asked to look after the people" (Gehl, 2010).

This paper is proceeding from people's psychological needs, conducting a research of three living streets characteristics, aiming at creating lively streets, trying to figure out what conditions of the street can improve social life.

2 Research approach

2.1 Research question

A living street serves both ends for many individuals. Jan Gehl (1987) describes three types of activities in outdoor space, that is, necessary activities, optional activities and social activities. He states that a necessary activity can turn into a social activity if the conditions of the street are favorable for rest and talk. A place that is not a path might be very isolated and non-active, while a path with dominant car traffic may inhibit social talk. Therefore, what kind of conditions of the street are more desirable to people? When the space on the street can turn into a place for social life? These questions need to be answered in the future urban design.

The research question of the thesis is:
Under which conditions does a street change from subduing social life to enhancing it?

2.2 Methodology

2.2.1 Empirical investigation

To promote active public life, we have to move away from planning approaches that focus on the building structure, its design, layout and functions, but views the social life outside the buildings (Gehl, 1987). And the significant factor that should be taken into account is activities and social life in the streets. The book New City Life (2006) and Cities for People (2010) are used as the theoretical framework.
The theoretical study is conducted based on the literature and theories, to summarize the basic essentials of different elements on the streets from people's psychological needs. Further, a case study is carried out based on the theoretical studies, to explore which conditions will enhance social life in the streets.

**Case study- Why?**
A case study method is defined by Yin (2010) as "an empirical investigation which examines a contemporaneous phenomenon in deep and in its real life context, especially when the limits between the phenomenon and the context are not clearly evident". Hence the case study can give the researcher, as well as the reader, rich and detailed information about the research topic.

To explore under which conditions a street changes from subduing social life to enhancing it, it is necessary to investigate certain cases. On one hand, spring is coming, and people in the city, who have been waiting all winter, would like to go out and enjoy the pleasant warmth. On the other hand, the data of the city Kristianstad and streets in city center is easy to get, and the season is also appropriate for a researcher to do the analysis outdoor, and observe social life. To some extent, applying a case study analysis is the best option.

**Where?**
Three streets in central location of Kristianstad are selected to do the case study: Östra Storgatan, Östra vallgatan, and Kanalgatan, because they are different in their traffic volumes, street layouts, zoning and adjacent services. The thesis compares the different characteristics of these streets to observe and judge which conditions can better support social life.

**The reason**
In developing countries, the proportion of car users is increasingly higher in large cities, regardless of street life. The pedestrian-priority place can only be found in commercial streets, usually city center. People choose bicycle or public transport by necessity, and individual mobility is often a prerequisite for being able to get to work and earn a living. While in developed countries, people prefer to spend time on streets and enjoy the sunshine. However, in both scenarios, conditions for pedestrians and
cyclists dramatically impaired. We should learn from the practices of developed countries, to provide valuable experience for lively street design.

Further, as we all know, it is hard to experience life higher up in buildings from the street, the higher up, the more difficult it is to see. In fact, the connection between street plane and high-rise buildings is effectively lost above the fifth floor (Gehl, 2010). Fifth floor as a threshold maybe not that accurate, but it is true that higher floors connect little with the streets. As a result, the high-rise buildings will not be considered in the street analysis in this paper. The streets in a medium-sized town are suitable to be used as study objects.

2.2.2 Observation

Direct observation is a valuable method for collecting evaluation information and data by watching what people actually do, or what events take place in a certain situation (Tayloy-Powell and Steele, 1996). "Seeing and listening" is key to observation. This method provides the opportunity to document activities, behavior and physical aspects without having to depend on people's willingness and ability to respond to questions (Tayloy-Powell and Steele, 1996). This paper uses observation as the methodology to investigate behavior and social life in the streets, trying to figure out what conditions will enhance social life or subdue it. The residents were not told that they were being observed.

2.3 Structure of the thesis

The thesis is structured by four chapters: Introduction to the research topic, Literature review and theoretical study, Research and Analysis, Conclusions.

The following chapter two is literature review and theoretical study. It shows the history of street development in Europe, and main theories and findings about street design. Then it describes the theoretical framework on full display. In chapter three, the research on the street begins. First, people are divided into several groups: passers-by, children, young people, retired elderly and disabilities. Their needs are different from each other. Second, the research and analysis is conducted to differ the characteristics from people's psychological needs in the streets. Third, social life,
what people are doing in the streets will be observed and studied.

The final chapter four will discuss the results of analysis and social life observations. It gives the answer and conclusions to the research question, and summarizes the pros and cons of the thesis. Finally, it demonstrates some recommendations to the future street design.
Chapter 2 Literature review and theoretical study

3  Literature review

In order to answer the research question, the theories and findings in recent years about the street are searched. These concepts are traffic calming, livable streets, shared space, living streets, and complete streets. It is widely accepted that we should revalue the diverse roles of streets towards a better social life and sustainable development.

3.1 Definition of street

There are various types of streets. They are classified due to the flow of vehicles per time unit, maximum speed allowed, width and zoning, proliferation of services or retails. According to the PennDOT (Pennsylvania Department of Transportation) road classification system and AASHTO (American Association of State Highway and Transportation Officials), streets are divided into three categories: arterials, collectors, and local streets, in rural or urban area (Pennstate, 2005) (Figure 3-1). Specifically, Municipal Street Classification, which is a subset of PennDOT Classifications, divides streets into 8 categories, i.e., residential access, residential collectors, mixed use streets, special use streets (alley, parkway, and boulevards), commercial/industrial access, commercial/industrial collector (Pennstate, 2005). Streets are divided by different functions.

![Figure 3-1 AASHTO, 2001 Classification of streets](source: http://www.ahm531.com/My%20courses/AASHTO/Chapter%2001%20-%20Highways%20Function.pdf)
Another important distinction has to be made is between road and street. A road is functioned as a connection between two distant places, such as two towns or villages. The emphasis is on movement between two places (Cliff, 2003). A street is described as a road in a city or town, wider than a lane or alley, especially on lined with houses, shops, or other buildings, according to the definition in dictionary.

In this thesis, I am not going to discuss in depth about the details of classification system. Considering that the purpose of the paper is to investigate the relationships between conditions of streets and qualities of social life, the living streets in the city should be taken into account, where social life happens most frequently. Therefore, the street as the research objective in this thesis will be regarded as the street for living, which is a three-dimension space with enclosing boundaries (Figure 3-2), running between two lines of adjacent buildings (Moughtin, 2003). The street is serving for shopping, social activity, recreation and other living-related activities apart from traffic. And the objective boundaries of streets in this thesis are based on the space between buildings (Figure 3-3).

![Figure 3-2 Definition of street in this thesis](image1)

![Figure 3-3 Width of the street](image2)

(source: drawn by author)


3.2 A brief history of street development in Europe

Most European cities have grown from medieval origins, with characteristics of small-scale, narrow, non-geometric street patterns. In the next period, from the 14th to the 17th century, the Renaissance started in Italy in the late Middle Ages and then spread to the rest of Europe, followed by Baroque starting around 1600 in Rome. In the late 19th and early 20th centuries, modernism was arising, and it was shaped by the development of modern industrial societies and the rapid growth of cities, and also the horror of World War I.

In street design realm, since Haussman's renovation of Paris (between 1853 and 1870), many of the streets have become long and straight boulevards. In 1889, Camillo Sitte produced an aesthetic criticism of the urbanism in 19th century in his influential book "City Planning According to Artistic Principles". He feared that Urbanism would have become a mere technical task without any artistic involvement, and argued the most important thing was the inherent creative quality of urban space (Sitte, 1889). Sitte studied the issue from a psychological viewpoint of the perception of the proportions between the monuments and its surroundings, opposing the fashion of very wide streets and squares, and the dogma of orthogonality and symmetry (Sitte, 1889).

In 1898, Howard published his book To-morrow: a Peaceful Path to Real Reform. Garden Cities were intended to be planned, self-contained communities surrounded by "greenbelts", containing proportionate areas of residences, industry and agriculture. Letchworth in England is the first Garden City in the world. Its development inspired other garden cities such as Welwyn in England and Hellerau in Germany. In the meantime, the German sociologist and economist Max Weber conducted a detailed, general study of the city as the characteristic locus of the social and economic relations, resulted in the book of "The City", published posthumously in 1921. Weber argued that the most important difference among societies is not how people produce things but how people think about the world. In Weber's view, modern society was the product of a new way of thinking (Macionis, 2012). There are also many other famous architects and urban planners active in the Weimar era in Germany, such as Ernst May, Heinrich Tessenow, and Bruno Taut.
In 1940s, Sigfried Giedion wrote an influential standard history of modern architecture in "Space, Time & Architecture: The Growth of a New Tradition". This monumental work has been a milestone in architectural theory, and an unparalleled work on the shaping of our architectural environment. After surveying the modern age's European heritage, Giedion focused on the demand for morality in architecture, and the discussion of leading architects—Wright, Gropius, Le Corbusier, Van der Rohe, Aalto, Utzon, Sert, Tange, and Maki. (Giedion, 2003)

In the 1930s and 1940s, the concept of "neighborhood unit" was spread from United States. In 1942, Sir Alker Tripp, Assistant Commissioner of London's Metropolitan Police, proposed a theory of "precinct" planning which formalized the idea of a hierarchy of arterials, sub-arterials, and local streets (Plowden 1972). But the problems of traffic interference in United Kingdom were not addressed until the late 1950s and early 1960s.

Another significant book The City in History(1961), written by Lewis Mumford, explored the development of urban civilizations and harshly criticized urban sprawl. Mumford argued that the structure of modern cities is partially responsible for many social problems seen in western society, and urban planning should emphasize an organic relationship between people and their living spaces. After that, The Buchanan Report, Traffic in Towns, authorized by the Ministry of Transport, published in 1963, produced the first planning concept addressed primarily to the traffic problem in residential neighborhoods. The main argument of the report was that the environment of British cities was suffering severe deterioration from traffic, so environment should be regarded as a major variable in future traffic planning. The chief proposal of the Buchanan Report was that cities be divided into "environment areas" (Buchanan, p. 44). It means that through-traffic would be excluded to travel along the distributor streets. The most important contribution of the report is the idea that streets in the city should have an environmental capacity. This concept was first put forward in this report, and was studied by many scholars. The Buchanan Report reflects that streets play an important role in the city, and emphasizes the significance of street life and aesthetic.

The creation of environmental areas was applied by local authorities in existing cities
in Britain. In other European countries, particularly in Scandinavia, Holland, and Germany, as well as in Japan and Australia, programs for managing traffic in neighborhoods have flourished (OECD, Organization for Economic Cooperation and Development, 1975a, b, c). In Sweden, this work has been given a powerful impetus by the research of Stina Sandels on the problems of children in traffic (Sandels et al. 1971; Sandels, 1975).

In the 1970s and 1980s, the most innovative concept has been the Dutch word "woonerf". It refers to an area, usually residential, where motorists and other users share the street without boundaries. Meanwhile, the techniques of shared spaces, traffic calming, and low speed limits are planned to improve the safety of the street.

New urbanism arose in the United States in 1980s. This planning movement promotes walkable neighborhoods, mixed-use and complete communities. They usually contain housing, work places, shops, entertainment, schools, parks, and civic facilities essential to the daily lives of the residents, all within easy walking distance of each other. In other words, make places walkable. New Urbanism is a broad movement, and while the conventional approach to growth remains dominant, New Urbanist principles have become increasingly influential in the fields of planning, architecture, and public policy (Cozens, 2008).

To conclude, in the past few decades, traffic planners and urban designers are seeking approaches to force the major traffic outside of cities or neighborhoods, and protect the local street from overload traffic. Street development has been processed to a new era.

3.3 Related concepts to protect pedestrians and cyclists

3.3.1 Traffic calming

Gehl argues that many cities today are invaded by cars, hampering social exchange, and the remedy is traffic calming. Traffic calming began in Europe, it is intended to slow or reduce motor-vehicle traffic, in order to improve the living conditions for residents. The methods of traffic calming also improve safety for pedestrians and cyclists. A definition from the Institute of Transportation Engineers is: 'the
combination of mainly physical measures that reduce the negative effects of motor vehicles, alter driver behaviors and improve conditions for non-motorized street users' (Lockwood, 1997, p212).

The three most common direct objectives of traffic calming are reducing speeds, the numbers of accidents, and the volume of traffic (Lockwood, 1997, p23). The toolbox usually includes speed humps, chicanes, roundabouts, raised medians, tight corner curbs, narrowing streets and traffic lanes, etc. (Project for Public Space, Traffic calming 101) (Figure 3-4). However, traffic calming also involves social issues. Available space in the street has to be organized for all users: children, adults and the elderlies; pedestrians, cyclists and the motorists; residents visitors and passer through (Crouse, 2004).

According to the Victoria Transport Policy Institute, Traffic Calming - Benefits, Costs and Equity Impacts, 1999, written by Todd Litman, the benefits of traffic calming are: increased road safety, improved conditions for Non-Motorized Modes, increased non-motorized travel and reduced automobile travel, increased neighborhood interaction and crime prevention, increased property values, and reduced suburban sprawl.

The equality is also fairly concerned. There are two major categories of equality. Horizontal equality refers to the distribution of impacts among people or groups considered to be equal in wealth and ability. Vertical equality refers to the distribution of impacts between people or groups that differ in wealth and ability, with the assumption that people who are disadvantaged may require greater public resources.
(Litman, 1999). The report describes a framework for evaluating traffic calming program, gives data collection and analysis of each benefit, and bows to quantify those benefits.

3.3.2 Livable streets

Donald Appleyard conducted a series of studies on three different streets in San Francisco in his 1981 book *Livable Streets*. The streets are chosen to be as identical as possible in every dimension except for the amount of traffic in each street. He drew information through two main sources: a one-hour interview with 12 residents in each block, and observations of traffic and pedestrian activities on the streets. He explored five issues during the studies: traffic hazard, stress, noise and air pollution, neighboring and visiting, privacy and sense of territory, and environmental awareness (Appleyard, 1981).

The Figure 3-5 shows neighboring and visiting on three streets: the lines in different color show where people said they had friends or acquaintances, and dots show where people are gathering (Appleyard, 1981). It can be seen from the chart that there are just a few lines on the heavy traffic street as opposed to the moderate or light traffic street, which have more connections. It can be concluded that, people who live in the light traffic street know more people, have more friendly neighborhoods than in the heavy traffic street.

![Figure 3-5 Neighboring and visiting on three streets in San Francisco](source: http://infosthetics.com/archives/2010/11/research_mapping_the_impact_of_traffic_on_the_livability_of_streets.html)
This research prevented us from just looking at specific numbers of people hit or killed in the streets, but actually showed the impacts of traffic in neighborhood streets. It is pleased to see more lines and dots in the light traffic street (Figure 3-6), it means if we can slow down the traffic in neighborhood, the social life will be improved, and the street will be more comfortable and lively.

Figure 3-6 Neighboring and visiting on light traffic street
(source: http://www.bikesidela.org/is-your-street-a-livable-street/)

3.3.3 Shared space
The concept of "shared space" was conceived 30 years ago by Hans Monderman, a traffic engineer from Netherlands. By getting rid of sidewalks and traffic lights, shared spaces force drivers to navigate spaces at much slower speeds, leading to an increased sense of awareness, better communication, and much fewer accidents (Monderman, 2006). Shared space is an interesting approach to traffic calming, and it is quite successful in Netherlands according to some authorities (Figure 3-7).

However, heated debates have been going on about whether shared space is safe or dangerous. Some people argue that, to those cyclists and pedestrians, especially children, it is more dangerous than normal streets to some extent. According to a cyclist, "The center of Haren is very busy, and cyclists really need to look out there. By Dutch standards, I find it not a very pleasant place to cycle. It's the only place that I've had to do an emergency stop in this country to avoid a crash and if the Shared Space part of the town was any more than a few hundred meters long, I think I'd take
another route to completely avoid it.” Also some parents claimed that they would not allow their children to play independently on the shared street to slow down the traffic! Shared space can lead to safe situations, but it is thinkable that a sustainable safety principles based design, where the car driver is not given so much freedom of action and spatial quality is taken into account, can produce even better results (Methorst, 2007).

![Figure 3-7 Shared space practice in Netherlands](http://www.pps.org/blog/shared-space/)

The shared space is an approach that is still in its infancy, but there is no doubt that it is a compelling concept. As the British "home zones", Dutch "woonerfs", and Scandinavian "sivegader" have demonstrated for years, pedestrians can thrive with other forms of traffic as long as it is crystal clear that all movements is based on the premises of pedestrians. Mixed-traffic solutions must prioritize either pedestrians or provide appropriate traffic segregation (Gehl, 2010).

In conclusion, the design standards of shared space still need to be completed, but even if we follow all the standards and principles, we cannot guarantee that the shared space can work well. Moreover, we need to focus more on learning how places are created, and under which conditions does the spaces on the street change from subduing social behavior to enhancing it (Toth, 2009).

### 3.3.4 Living street

A living street is a street in which the needs of car drivers are secondary to the needs of users of the street as a whole. It is a space designed to be shared by pedestrians, playing children, bicyclists, and low-speed motor vehicles. This contrasts to the shared space scheme philosophy which gives all road users equal priority in
community spaces. Figure 3-8 shows a living street and the sign of it in Malmö, Sweden.

The speed of cars is limited to a certain level (usually defined to be pedestrian speed) that does not interrupt other users on the street. The streets are designed by some "barriers", such as placing planters at the edge of the street, alternating the side of the street the parking is on, or curving the street itself, so that the cars cannot drive in a straight line for distances. However, early methods of traffic calming such as speed humps are now avoided. Planners try to make slower speeds more natural to drivers, rather than an imposition.

![Figure 3-8 Living streets in Malmö, Sweden](source: Wikipedia http://en.wikipedia.org/wiki/Living_street)

3.3.5 Complete street

Complete streets are roadways designed and operated to enable safe, attractive, and comfortable access and travel for all users, including pedestrians, bicyclists, motorists and public transport users of all ages and abilities (Ritter, 2007). According to the National Complete Streets Coalition, typical elements that make up a complete street include pedestrian infrastructure, traffic calming measures, bicycle accommodations, mass transit accommodations (Figure 3-9).

Since many communities in the United States have long existed in a state of "automobile dependence", other transportations, such as walking and cycling have become impractical, not to speak of the social activities. Now, in communities across the country, a movement is growing to complete the streets. States, cities and towns are asking their planners and engineers to build road networks that are safer, more livable, and more welcoming to everyone.
Figure 3-9 Example of a complete street in New York
(source: http://treesonsanpedroproject.wordpress.com/2011/06/28/complete-streets-working-group-july-7th-7pm/)

3.4 A review of traffic control in different cities

3.4.1 Copenhagen

Copenhagen, the capital and largest city of Denmark is the world famous "Bicycle City". The city aims to become the best cycling city in 2015, said Niels Tørslav, the Head of the Copenhagen Traffic Department (2010). The blue paving is bike lane in the city (Figure 3-10).

Figure 3-10 Copenhagen, the "Bicycle City"
(source: http://blog.bikeleague.org/blog/2009/09/copenhagen_ideal/)

In fact, Copenhagen has almost 40% of all their overall trips by bike, a staggering figure that is already the best in the world (Tørslov, 2010). But they are not satisfied, their goal is to raise that to 50% in 2015, and now they are still working hard to reach that. A series of pilot projects were implemented in 2009, including dustbins for cyclists, plinths at traffic lights, and covered parking for carrier cycles (Tørslov, 2010).

According to the Traffic and Environmental Action Plan (2009), the objective is to
assure a fully functional transportation system to service the city while creating substantially less environmental impact than today. It will be attempted to cater for the increase in traffic activity by increasing use of public transport and bicycles, and to minimize environmental problems (Tørsø, 2010). The initiatives in Traffic and Environmental Action Plan mainly include: construction of missing cycle tracks, creation of the cycling routes expected to handle most bicycle traffic, planning public transport in urban development areas, setting up 40 kph speed zones in local streets in all residential areas, the possibilities of introducing traffic-calming the inner city, active support for developing eco-friendly technologies, etc. (Tørsø, 2010)

3.4.2 London

In 2002, London introduced road congestion pricing, and put it in force on February 17, 2003. The area of charge was the inner ring road, about 21 kilometers (Figure 3-11). The expenses standard is: five pounds per day per vehicle, from Monday to Friday, 7:00 to 18:30. From then on, the vehicle traffic in the inner ring road reduced dramatically. It can be seen from Figure 3-12 that, from 2002 to 2007, the number of cars has dramatically reduced by 41% in the past five years. On the contrast, more people would like to choose cycling, and the total number of bicyclists has increased significantly by almost 50%. At the same time, numbers of buses for public also have increased by 19%.

![Figure 3-11 Pricing zone in London](http://climatetechwiki.org/technology/vehicle-demand-management)
Furthermore, on 4th January, 2011, several more changes were implemented based on the public consultation conducted in 2008, which included the removal of the Western Extension, a charge increased from £8 to £10, and the introduction of an automated payment system (Transport for London).

In fact, Singapore is the first city around the world that charges a congestion fee. They have been considering this issue since 1960s. The policy is quite successful because of their developed public transport system. When London introduced this traffic regulation, and made benefits to traffic and environment, there has been a great influence around the world. However it is currently still limited to a small number of cities, such as Stockholm and Milan. In China, the city of Guangzhou has planned traffic improvements program in 2009, and has decided to charge fees for the congestion. The plan was approved by the local government, and will carried out in the near future. However, most residents don’t like this regulation. They think the local government is charging fees for their own benefits. Overall, the road congestion pricing cannot be popularized in every big city, unless the city itself has developed public transport system and actively cooperation of public.

As for the residential area, London introduces the concept of "Home Zone", where the street is not divided into exclusive sidewalk and traffic lines. So that walking, cycling and cars have equal rights, they share the street similar as shared space in Netherlands. The traffic speed is limited to very low level, around 20km/h. Traffic calming methods also used in communities, such as road humps, broken line, increasing the height of intersection, etc. (Figure 3-13)
3.4.3 Beijing

Beijing, the capital city of China, has a population of about 20 million in 2011, suffered a lot from traffic congestion. To ensure smooth and safe traffic, from 2008, the city has used a method of restricting cars travel at peak hours in working days in specific areas. According to Beijing Traffic Management Bureau, recently, from 9th April to 7th July in 2012, the limited license plate numbers from Monday to Friday are as follows: 3 and 8; 4 and 9; 5 and 0; 1 and 6; 2 and 7. Every working day, from 7:00 to 20:00, the vehicles with limited license plate numbers are prohibited from entering the roads within the fifth ring. (Figure 3-14)

Since the implementation of the traffic management measures, the residents in Beijing give the government a full understanding and support. People actively participate in this regulation, contribute to alleviating traffic congestions, reducing emissions of pollutants, and improving safety on the streets. In the future, Beijing will continue this traffic management measure in the future.
In the meantime, Beijing will improve the public transportation, expanding the range of subway. According to Xiaoming Liu, the director of Municipal Transportation Commission, Beijing should develop a saving and high-density traffic model, that is, we should give priority to the public bus transportation. He states that the next step for Beijing traffic system is to construct fast bus lane network, and put efforts to increase the numbers of bus lanes in the city. Only in this way, we can ensure the equality of different users on the street.

3.4.4 New York

In October 2007, the first physically separated bike lane was started to use in New York, planned by the Department of Transportation (DOT). The lane runs south on Ninth Avenue, in Manhattan (Figure 3-15). The special part is the lane of parked cars, to protect cyclists from other traffic (Neuman, 2007).


Figure 3-15 "Complete Street" Ninth Avenue, New York

According to the online video made by Eckerson, the 9th Avenue redesign has cut pedestrians, bike and auto injuries by 56%, and the speeding on Prospect Park West
has dropped, while driving times have remained nearly the same. In fact, a recent Quinnipiac Poll showed New York City residents support bike lanes 54% to 39% (Eckerson, 2011).

3.5 Summary and illustration

Figure 3-16 shows illustration of the review work. It can be concluded that Traffic Calming is a prerequisite for solving traffic problems in populated neighborhoods and improving social life in the street in contemporary worldwide. Countries and agencies usually use traffic calming in different measures when grappling with their traffic. Traffic Calming is not only about drawing on toolbox and techniques, but also a mindset and an attitude. In the future, we would like to see more people participate into calming down the traffic and enhancing our social life activities in the street.
Figure 3-16 Illustration for literature review
(source: made by author)
4 Theoretical framework

4.1 New City Life and Cities for People

An even more significant factor that should be taken into account is activities and social life in the streets. To promote active public life, we have to move away from planning approaches that focus on the building structure, its design, layout and functions, but views the social life outside the buildings (Gehl, 1987). The book *New City Life* (2006) and *Cities for People* (2010) are used as theoretical framework in this thesis.

*New City Life* (2006)

Written by Jan Gehl and other Danish professors. The book describes the story of a transition from a time when the quality of city space did not play much of a role in its use to a new situation in which quality is a crucial parameter. It shows life in the city and the related thirteen types of city spaces, illustrates how necessary activities can turn into optional activities.

*Cities for People* (2010)

Written by Jan Gehl, it provides a series of design and planning principles and examples that reflect his concerns and recommendations. The book is packed with useful information about public spaces and social behaviors, surveys, facts and suggestions. He suggests lively, safe sustainable and healthy city.

![Figure 4-1 New City Life (2006) and Cities for people (2010)](source: Google images)
4.2 Human dimension and street life

When people go outdoors, they are involved in street life: children playing outside, neighbors walking and talking with each other on sidewalk, working people nodding to each other on their way, girls shopping in the commercial center, older people sitting along the street, and watching other people with interest (Figure 4-2). Jane Jacobs described it as "Street Ballet". Life in the streets can be rich and colorful. Seen from a long-term historical perspective, city space has always served three vital functions, namely, meeting place, market place and connection space (Gehl, 2006).

![Figure 4-2 Diverse street life](source: photographed by author in Karlskrona)

In the 21st century, the public street design needs to take consideration of people, that is, the human dimension. It means that the fine dimensions in public spaces that are favorable for people walking, standing, sitting, watching, listening and talking. Human dimension is becoming a necessary design principle in city planning, in order to create lively, safe, sustainable and healthy city space (Gehl, 2010). When more people are invited to walk, bike and stay in public streets, the potential for a lively street will be strengthened, as well as the safety potential (Gehl, 2010). Moreover, if people would like to choose walking, cycling and public transport, it will reduce resource consumption, limit emissions, and reduce the noise level. These will certainly contribute to sustainable development of the city. Lastly, the desire for a healthy city will be strengthened dramatically if walking or biking can be a natural part of the pattern of daily activities (Gehl, 2010).

In conclusion, quality of social life is the fundamental starting point for spatial planning and urban design in the future. Streets reflect the image of a city, while safe
and lively streets will be beneficial to the potential of lively, safe, sustainable and healthy city development.

### 4.3 Psychological needs on the streets

In order to understand the social life in the street, people's psychological needs should be taken into account first. Abraham Maslow proposed a five-hierarchy of needs in his 1943 paper *A Theory of Human Motivation*, that is, physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs. The theory was fully expressed in his 1954 book *Motivation and Personality*.

Maslow's Hierarchy of Needs Theory describes that we must start with the first need, and satisfy each need in turn. Only when the basic needs are satisfied, we will concern about those higher needs of personal development. By contrast, if we cannot meet our basic needs, we will not concern about the maintenance of our growth needs. He illustrated the needs as a pyramid (Figure 4-3).

![Maslow's hierarchy of needs](http://dinamehta.com/blog/2007/10/18/social-media-strategies-lets-remember-maslow/)

In 1970, the Hierarchy of Needs was modified to seven hierarchy, i.e.,

1. physiological needs (to maintain the survival and continuation of ethnic),
2. safety needs (to be protected and free from threats),
3. belongingness and love needs (to be accepted, loved concerned and support),
4. self-esteem needs (to obtain and maintain personal self-esteem),
5. need to know (to understand the change of others and objects),

...
6) aesthetic needs (to appreciate good things and hope they are in order, well structured and pursue truth),

7) self-actualization needs (to achieve all the personal needs and ideal).

Accordingly, the first four needs are the basic needs, and latter three needs are growth needs. However, the Needs Theory has limitations in some fields, for example, some cultures appear to place social needs before any others. Overall, the theory is applied and studied in many areas. Elizabeth Burton (2006) in the book of *Inclusive Urban Design-Streets for Life*, describes that, there are six key principles on street design: familiar, legible, distinctive, accessible, comfortable and safe. The author gives definition of each principle, and explains how these affect older people's ability to use and enjoy their local neighborhoods.

However, in this thesis, all street users should be considered. Gehl (2010) argues that whether people are enticed to walk around and stay in city space is very much a question of working carefully with the human dimension and issuing a tempting invitation. I suggest that only if people's psychological needs are satisfied, people will feel they are welcomed and invited into the street. Based on the Hierarchy of Needs theory and the key principles on street design, it can be summarized that, people's psychological needs in the streets mainly include: safety needs, accessibility needs, comfort needs, legibility needs, and participation needs. These five needs will be applied to the case study in the latter chapter.

### 4.4 Diagram of theoretical framework

Figure 4-4 illustrates the theoretical framework. The following chapter will discuss about physical conditions of the streets and how these conditions will affect social life in Kristianstad of Sweden based on this framework.
Figure 4.4 Diagram of theoretical framework
(source: made by author)
Chapter 3 Analysis and Research

5 Objective streets in Kristianstad

5.1 Introduction to Kristianstad

The medium-sized city Kristianstad is a municipality located in the southern part of Sweden, in the province of Skåne, with a total area of 1346 km$^2$ (Figure 5-1). The city itself has about 35,000 inhabitants (Pålsson, 2011). The market town and fortress of Kristianstad was founded in 1614 by the Danish King Christian IV (Kristianstad kommun, 2009), as a city for the manufacturing and trading. The trading tradition remains, people from all over northeastern Skåne seek to shop in Kristianstad. The municipality was once one of 35 original municipalities in Sweden. Today, there are more than 40 localities in the municipality, and about half of them have more than 200 inhabitants. This makes Kristianstad the densest municipality in Sweden (Kristianstad kommun, 2009).

Figure 5-1 Introduction to Kristianstad
(source: made by author)

Figure 5-1 describes the location of the whole city in Sweden, and shows the railway...
across the municipality, and the main roads connecting Karlskrona to the east and Malmö to the west.

The old city center is a vibrant hub for trade, service, industry and commerce. Recently, commercial investigations show that the city need strengthen their offerings to customers. According to a brochure about the future construction in Östra center, a new shopping mall will be planned in autumn 2012, between Nya Boulevarden and Södra Kaserngatan (Figure 5-5). It is scheduled to be fully completed in the year of 2014 (Kristianstad kommun, 2011). The social life and commercial activities would be more colorful by that time.

5.2  **Objective streets in Östra center**

Three streets in Östra center of Kristianstad are selected to perform the case study: Östra Storgatan, Östra vallgatan, and Kanalgatan. The city is divided by a canal from south to north and has two main parts. Östra Storgatan and Östra vallgatan are located in central location, and the buildings along the streets are for commercial use. The streets are all surrounded by residential buildings in the whole city (Figure 5-3).

It can be seen from the traffic map (Figure 5-4) that, the objective streets are close to the central train station. It is quite convenient for those who travel from other cities and towns to access the streets by walking (Figure 5-2). The highway E22 is running across the city from east to west in the south area, together with the main road Långerbrogatan, while in north-south orientation, there are two main roads crossing the city in both sides of the river, connecting other major towns, Härlövsängaleden and Snapphanevägen respectively.

![Figure 5-2](source: photographed by author in Kristianstad)
Figure 5-3 Landuse map of Kristianstad
(source: made by author)

Figure 5-4 Traffic map of Kristianstad
(source: made by author)
The blue lines illustrate main transport routes, while the red lines reflect the bus routes across the city. Evidently, Kanalgatan, which dominated by fast traffic, is playing an important role in urban transport system. As for the cycling routes, they are showed in brown broken lines in the figure, almost cover everywhere in the city. However, Östra Storgatan (as a pedestrian commercial street) and Östra Vallgatan do not provide bicycle lanes (Figure 5-4).

As shown in the above figures, the objective streets appear different in traffic volumes, street layouts, and zoning. The three objective streets are all convenient to access for residents or visitors, by bus or bike. It should be noted that Kanalgatan is a main transport street running through the city from north to south, with heavy and fast traffic.

Figure 5-5 shows the functions of buildings around, as can be seen, the adjacent services differ from each other. The streets are located between Nya Boulevarden and Södra Kaserngatan, and connected well to each other. The central square Lilla Torg is a market square and the center for trade and crafts.

Östra Storgatan is a pedestrian commercial street, with a lot of shops along it (Figure 5-7). The public square Lilla Torg is located between Östra Storgatan and Västra Vallgatan (also a pedestrian commercial street). In fact, the history of Östra Storgatan
dates back to the year of 1600s, when the town originally formed (Figure 5-6).

![Old town plan of Kristianstad 1614](http://www.kristianstad.se/Turism/Shopping---Ny-Tellus211/Historia/Kristianstad/)

Östra vallgatan is a street next to Östra Storgatan, with parking cars along the both sides. Few shops and closed ground floor make the street tedious and isolated (Figure 5-7). Kanalgatan is located beside the river near city center, and it is also the under planning area with Östra Boulevarden. Interestingly, although Kanalgatan has the heaviest traffic, it is the greenest street among them.

![Östra Storgatan, Östra vallgatan and Kanalgatan](photographed by author)
6 Analysis and research of streets in Kristianstad

As mentioned previously in 4.3 section, based on the Hierarchy of Needs Theory, psychological needs of people in the streets include safety needs, accessibility needs, comfort needs, legibility needs, and participation needs. I will discuss in detail what these needs are, and how each of the need is satisfied in the three objective streets.

6.1 Safety needs

Safety is a basic need in the street space. When we cross a street, we have to look around to see if there are fast cars coming over (Figure 6-1, in the street of Kanalgatan). In a crowded street, we distance ourselves from strangers, while in a deserted street, we tend to move closer to other people. These behaviors reflect people's safety needs in streets.

Life in the city means safer cities, and safe cities provide more life (Gehl, 2010). Safety also refers to the extent to which streets encourage people to use, enjoy and move around the outside environment without fear of tripping or falling, being run-over or being attacked (Burton, 2006). Feeling safe in the city is a vital quality if we hope that more people embrace city space. In general, life and people themselves make the city safe and inviting in terms of both experienced and perceived security (Gehl, 2010).

To be more specific, a city that invites people to walk must by definition have a reasonably cohesive structure that offers short walking distances, attractive public spaces and a variation of urban functions (Gehl, 2010). Overall, the safety of streets can be improved through more humanistic and lively street design.
6.1.1 Slower traffic and pedestrian-priority

J.H. Crawford (2000) describes an ideal future in the book *Carfree Cities*, that life in the cities is free from noise, stench, and the danger of vehicles. Imagine that all basic needs, from groceries to child care, lie within a five-minute walk in communities. Though the concept of car-free cities that increases the use of non-motorized transport is like an idealized model, but it is also like a beacon that we should always seek ways for smart traffic growth.

Fast traffic results in lifeless cities (Gehl, 2010). Figure 6-2 shows a study of outdoor activities in 12 Canadian residential streets. Transit activities make up more than half of the number of activities but are all very short in duration. Staying activities last an average of nine times longer and thus contribute 89% of life in the streets (Gehl, 1987). Given that lengthy stays means lively streets, the traffic speed need to be slow down, especially in communities.

As for the pedestrian-priority, Gehl (2010) claims that, the concept of shared space or complete streets suggest equality between traffic groups, which is a utopian ideal. Only if pedestrians and cyclists are given priority, the street life can be improved. The speed of cars should be slowed down or even excluded in some car-free zones, so that the streets can invite more people to walk and bicycle.

In addition, Gehl talks about car scale, points out people feel different in a 5km/h speed road and 60km/h speed road. Five km/h architecture is based on an abundance of sensory impressions, spaces are small, buildings are close together and the
combination of detail, faces and activities contributes to the rich and intense sensory experience. While taking a walk in 60km/h architecture is impoverished sensory experience: uninteresting and tiring (Gehl, 2010).

The objective streets in Kristianstad have different traffic volumes and speeds. Östra Storgatan is a pedestrian street, free of cars from 11:30 to 18:00 everyday, and totally pedestrian-priority during that time (Figure 6-3). When walking in the street, people feel safe and relaxed, without worrying about being hit by cars. They are walking around freely and observing interesting things, and joining various events.

![Figure 6-3 Östra Storgatan-pedestrian priority](source: photographed by author in Kristianstad)

![Figure 6-4 Östra vallgatan-one way street](source: photographed by author in Kristianstad)

Östra Vallgatan is a one-way street (Figure 6-4), and the speed of cars is slow. Pedestrians are given priority only at intersections. By contrast, Kanalgatan (a fast traffic street) has no pedestrian-priority, and one of the intersections has traffic lights (Figure 6-5). The traffic speed in fork ways is limited to 30km/h (Figure 6-6).

![Figure 6-5 Traffic lights](source: photographed by author in Kanalgatan, Kristianstad)

![Figure 6-6 30km/h in branch routes](source: photographed by author in Kanalgatan, Kristianstad)
In summary, traffic situation is playing a pivotal role in different street features. People feel different in different speed street. In car-free zones, we can get an abundance of sensory impressions, spaces are small, and buildings are close together. We can feel the combination of details, faces and activities, experiencing rich and intense sensory. Conversely, when walking in a car-dominated street, we feel unsafe, uninteresting, tiring, and absorbing automobile exhaust when cars passing by. People are always vigilant, and are worried if any cars suddenly coming in. Table 6-1 outlines the comparative results.

<table>
<thead>
<tr>
<th></th>
<th>Östra Storgatan</th>
<th>Östra vallgatan</th>
<th>Kanalgatan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed of cars</td>
<td>car-free</td>
<td>slow</td>
<td>fast</td>
</tr>
<tr>
<td></td>
<td>11:30-18:00</td>
<td>one-way street</td>
<td></td>
</tr>
<tr>
<td>Pedestrian-priority</td>
<td>Yes</td>
<td>only at intersections</td>
<td>no</td>
</tr>
<tr>
<td>feelings</td>
<td>safe and relaxed</td>
<td>fairish</td>
<td>unsafe</td>
</tr>
</tbody>
</table>

Table 6-1 The comparative results

6.1.2 Crime prevention

Jane Jacobs (1961) states that streets have a crime-preventive effect, and people (including children) can have safe feelings if they can often see each other. She describes "street watchers" and "eyes on the street", and suggests maintaining small blocks and different kinds of shops, to increase the chance for meeting. In 1970s, Newman discussed the community design and crime prevention, which marks the rise of a new research direction.

Gehl (2010) considers that soft edges mean safer streets and cities. If the ground floor along the street is friendly, soft, and populated, then pedestrian streets will be full of social activities. Nothing dangerous would happen even at night. In this case, Östra Storgatan is a friendly street, interesting ground floor, and many people are walking there. It has a great effect of "street watchers" (Figure 6-7). While Östra vallgatan and Kanalgatan are deserted street to some extent, few people walking, windows are closed, nobody care what is happening around (Figure 6-8).
In addition, it is evident that the light from buildings along streets makes a significant contribution to the feeling of security when the night falls. And lighting design is also an important element of a safety road. The objective streets in Kristianstad are all have good lighting at night.

### 6.2 Accessibility needs

Accessibility refers to that can encourage people to reach, enter, use and walk around places they need or wish to visit, regardless of any physical, sensory or mental impairment (Burton, 2006). Accessible streets have local services and facilities, connected to each other, have wide footways and bike lanes (Burton, 2006). Gehl (2010) also suggests that the prerequisite for street life was the building density, which encouraged many people to get around the street by foot. More importantly, a lively street should be a friendly place for older people and disabilities, with no barriers (Figure 6-9). Accessibility should be regarded as street layout and adjacent services in this paper.
6.2.1 Street layout

Accessible streets are connected to each other, and have clear views along them and simple junctions (Burton, 2006). People hope to arrive at their destinations in a most effective way to save time and money. When we walk in the street, next safety consideration, we always choose the most convenient route. In addition, the streets that have flat footways and bike lanes in all direction are more accessible. To see from the plan (Table 6-2), Östra Storgatan and Östra Vallgatan are straight, while Kanalgatan is curved. below shows the different forms and layouts (highlight part) of the objective streets.

<table>
<thead>
<tr>
<th>Form</th>
<th>Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Östra Storgatan</td>
<td><img src="image" alt="Diagram of Östra Storgatan" /></td>
</tr>
<tr>
<td>Östra Vallgatan</td>
<td><img src="image" alt="Diagram of Östra Vallgatan" /></td>
</tr>
</tbody>
</table>
Östra Storgatan has a stone paving along the street, walking people can access to every corner in the street without boundaries. And the street has provided many seatings, very convenient for older people to have rest (Figure 6-10).
Östra Vallgatan has a sidewalk and a line of parking cars on both sides (Figure 6-11). When I was walking there, I found it was a tedious and tiresomely long way, and the parked vehicles had covered my sights from the motor way. The sidewalks are narrow and evidently not accessible for older people and disabilities.

It is unexpected that, the layout of Kanalgatan appears to be the most interesting and richest among them. The street runs beside a river, making it very soft edge on one side. It is the greenest compared to the other two streets too. People can feel nature when strolling there, but always disturbed by passing automobiles. Kanalgatan is well designed for bicyclists with a two-way bike lane beside sidewalk (Figure 6-12).
6.2.2 Adjacent services and facilities

If adjacent services are convenient for people, it will attract more residents. For example, the UK government states that 10-minute is a comfortable walking time to reach services and facilities and calculates this is the time it takes to walk about 800m (Department of Transport, Local Government and the Regions(DTLR), 2001). Llewelyn-Davies (2000) also suggests that local shops, a bus stop, a health center and a place of worship should be situated within 10-minute (800m) walking distance.

In this case, the services around within 700 meters are illustrated in Figure 6-13 next page. It can be found that, bus stops are not far from the streets, only several minutes walking distance, and there are two main parking lots within a short distance too. Many cafes (outdoor or indoor) and restaurants are located near to the central square, making Östra Storgatan the liveliest street. Kanalgatan seems to be inherently used for traffic, the cycling center, travel center and a bus stop are distributed close by, while in Östra Vallgatan, no services along the street, only parking and passing cars. This is an important element that contributes to the boring surroundings.
6.3 Comfort needs

The factors which determine environmental comfort needs to include climate conditions and street conditions. It is understandable that climate condition is an important element, such as sunshine, temperature, humidity, wind, water and plants. In summers, we would like to walk under the shade of trees, and floated breeze would make us feel more comfortable. While in cold winters, we will feel better if there were shelters along the streets, which can protect us from cold wind and heavy snow.

On the other hand, comfort needs can also be satisfied by reasonable function of the streets, including the location, the morphology, the proportion, the scale and public infrastructures. Public seating, shelter and toilets are important factors in making a street comfortable, welcoming and easy to use for people of all ages and capabilities (Burton, 2006). When street design can meet people's comfort needs, "life between buildings" will be more colorful: purposeful walks from place to place, promenades, short stops, longer stays, window shopping, exercise, children play and street
Comfort needs are quite basic on the streets, and comfortable streets are calm, welcoming and pedestrian-friendly. Residents are not involved into the design of streets, but their behaviors are the only criterion to check out whether the street design is comfortable or not.

6.3.1 Soft edges
In his book *A Pattern Language* (1997), Christopher Alesander summarizes the importance of edges by saying: "If the edge fails, then the space never becomes lively." The treatment of edges, particularly the lower floors of buildings has a decisive influence on life in city space (Gehl, 2010). According to Gehl, edges can define space, act as exchange zones, staying zones and experiencing zones. People love to stay at edges, so that they can look around in front of them, without worrying things happening behind (Figure 6-14).

![Figure 6-14 People love to stay at edges](source: photographed by author in Karlskrona, city center)

Soft edges are presented by greenery along buildings, and active facades, especially the ground floor towards street. The edges and building facades in Östra Storgatan are quite active. In the day time, the shops in the street are all on their business, the shops usually have big French windows, from which people could look inside. Some open their doors and decorated with a few potted plants, and some put a basket of discounted products outside to attract their customers (Figure 6-15). A variety of storefronts and opened ground floors make the street so much attractive, that passers would like to stop and window shopping, or sit down, stay for a while.
In Östra Vallgatan, the edge is relatively hard, and building facade fails to attract people. The ground floor and windows are all closed (Figure 6-16), which make people walk fast to their destination, without stopping. The active and soft edges in Östra Storgatan are sending a massage of "stay", while the tedious and boring building facades in Östra Vallgatan are saying "walk".

From the last section we could figure out the layout of Kanalgatan is the greenest street, it really is. People can hear birds singing and the flapping sounds of ducks in the river when walking there. Only the vehicles passing by from time to time remind people that this is a heavy traffic street, and you should pay attention to safety. On the other side, the tall buildings stand there, without intersection with walking people. (Figure 6-17)
6.3.2 Fine scale

In urban design realm, the relationship between senses, communication and dimensions is an important theme. Small scale means eventful intense and "warm" cities (Gehl, 2010). Gehl (1987) asserts that when we talk about social range in vision, 100 meters is a boundary, the point at which we can see people in motion and their body language in roughly. 25 meters is another significant threshold, only under which we can precisely read facial expression and principal emotions.

In Östra Storgatan, the scale is quite warm and friendly (Figure 6-18), people strolling around everywhere. Lines of trees and flower beds make it more interesting, and some statues present a lively image of the city. The windows on the ground floor make the facades lively, and attract people standing and looking inside. They can do window shopping everywhere. Gehl (2010) found that, the squares are usually in magical size of 40×80 meters, which means that people can take in the entire scene, seeing the square itself and faces other people when they walk through the space (Gehl, 2010). The central square besides Östra Storgatan is quite close to the magical size.
space between buildings is in about 83×54 meters, a very friendly scale for leisure activities (Figure 6-19).

However, in Östra Vallgatan, the windows are all closed, only few trees planted there (Figure 6-20), but many cars are parked along. Boring layout and facade make the street deserted. The result is that few cars and few people pass by.

Fine scale is also expressed by a wide footway, that allows older people, children and wheelchair users to walk safely, and gives people a chance to walk a little further away from the fast traffic on the road (Burton, 2006). Kanalgatan has a footway of 1.2m and 2.8m on both side, and a two-way bike lane (about 2.5m) between the footway and motor way on one side of it (Figure 6-21). It should be noticed that, if two bikes come together or oncoming, they will occupy the space of footway, so the
width should be dependent on the population in city, and the flow in the street. In this case, the width of lanes is wide enough, because of relatively few bicycles.

According to Yoshinobu Ashihara, a professor of architecture at University of Tokyo, the ratio of street width to building height (D/H) is an important factor to determine the scale of street space, and a quantitative indicator for people to experience the friendly or spectacular street. A fine scale street will bring a sense of being protected, while large scale space or small space enclosed by high-rise buildings will make people feel unsafe and fearful. Ashihara states that, when D/H >1, as the proportion increases, it will gradually generate the sense of distance, and broad when the proportion exceeds 2; when D/H<1, as the ratio decreases, it will generate a sense of close; when D/H=1, street width and building height stay in balance and a pleasingly way (Yoshinobu, 1984). (Figure 6-22)
Many scholars have similar views and discussions on the issue of D/H, such as H. Murtens, a German architect in 19th century, W. Hegemann and E. Peets American Vitruvius (1996). They have discussed in detail about the angle of looking at a building and the corresponding feelings. Considering the three objective streets in this research, in Östra Storgatan and Östra Vallgatan, $D/H \approx 1$; while in Kanalgatan, $D/H > 3$.

To summarize the comfort factor of each street, Östra Storgatan has the most active facades than the others because of its commercial use, and the scale of it is the most people friendly. As for Östra Vallgatan, the scale is fine, but facades fail, so the street still subdued social life. Kanalgatan has the largest scale, the buildings are quite big, and most of the space is dominated by vehicles. However the edge on one side is quite interesting, but it is still disturbed by fast traffic (Table 6-3). Generally speaking, small scale and active facades are more friendly to people and better for social life.

<table>
<thead>
<tr>
<th></th>
<th>Östra Storgatan</th>
<th>Östra Vallgatan</th>
<th>Kanalgatan</th>
</tr>
</thead>
<tbody>
<tr>
<td>edges</td>
<td>active facades</td>
<td>boring facades</td>
<td>greenery</td>
</tr>
<tr>
<td>$D/H$</td>
<td>1</td>
<td>1</td>
<td>about 3 or 4</td>
</tr>
<tr>
<td>scale</td>
<td>good</td>
<td>Fine</td>
<td>big</td>
</tr>
<tr>
<td>feel</td>
<td>friendly</td>
<td>Tidious</td>
<td>distance</td>
</tr>
</tbody>
</table>

Table 6-3 Comfort conditions for each street
6.4 Legibility needs

Streets should help people understand where they are and to identify which way they need to go. When people walk around in the city, they need a guide system to figure out where they are. Legible streets have an easy way for people to understand network of routes and junctions with simple, explicit signs and visible, unambiguous features (Burton, 2006).

6.4.1 Signs

The objective streets have clear signs. People can figure out where they are by signs in the street. A legible street has sound signs clear and identifiable. (Figure 6-23)

Figure 6-23 The various signs on each street
(source: photographed by author in Kristianstad)

6.4.2 Paving materials

The paving materials on the three streets differ from each other. Östra Storgatan mainly use small bluestones, and its sidewalk use bricks, one can easily identify that this is a pedestrian street. Most of the space in Kanalgatan is paved by asphalt, because it mainly used for automobiles, include the sidewalk beside the bike lane. Walking people can recognize that "oh, I should walk carefully on the sidewalk, and sometimes should make space for the coming bikes". (Table 6-4)

<table>
<thead>
<tr>
<th></th>
<th>Östra Storgatan</th>
<th>Östra Vallgatan</th>
<th>Kanalgatan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Footway</strong></td>
<td>Small bluestone and brick</td>
<td>Brick</td>
<td>Asphalt pavement, or</td>
</tr>
<tr>
<td><strong>Bike lane</strong></td>
<td>×</td>
<td>×</td>
<td>Asphalt pavement</td>
</tr>
</tbody>
</table>
In my opinion, paving material is the most significant factor for legibility in streets for life. The change of paving materials can send a message that "the function of the street is changing" (Figure 6-24). Paving for motor ways is usually asphalt pavement, and a pedestrian-priority way usually use stones and bricks in different appearances and color.

<table>
<thead>
<tr>
<th>Motor way</th>
<th>×</th>
<th>Asphalt pavement</th>
<th>Asphalt pavement</th>
</tr>
</thead>
</table>

Table 6-4 Paving materials respectively

6.4.3 Distinctive streets

If we would recall the impression of a city, we usually think about the beautiful streets and squares, the traffic, the bustling commercial block, various building forms and diverse advertisements on the board. In other words, our impression of a city comes from the different characters of the streets.

A distinctive street reflects local character of the city, and gives people a clear image of where they are (Burton, 2006). People will feel a sense of belonging if the streets can express their local culture. And the aesthetic features also make a street distinctive and interesting, such as water pumps, fountains, village greens, ponds, attractive front gardens, trees, hanging baskets and flower tubs. They were used on the accompanied walks to identify the direction we were going in and the location of our destination (Burton, 2006).

Östra Storgatan is a distinctive street with characteristic buildings and many interesting and unique statues (Figure 6-25). These features present the history and culture of the city. The other two streets are not that distinctive compared to Östra.
Figure 6-25 Characters of Östra Storgatan
(source: photographed by author)

6.5 Participation needs

Through many years of city life and street space studies, there is no doubt that the conditions for walking have improved a lot, walking and biking activities in the streets have increased dramatically, as well as more obvious growth in social and recreational activities. People need to participate in street life, communicate with other people, get understanding, trust and help, to obtain the feeling of love and belonging. If we could provide better conditions in the streets, it would certainly invite more people to go outdoors, and enjoy a better social life.

A common characteristic of life in city space is the versatility and complexity of the activities, with much overlapping and frequent shifts between purposeful walking, stopping, resting, staying, conversing and playing (Gehl, 2010). People have participation needs in the streets. Everyone is on their way, watching other people and things happening around, and they will decide whether to keep walking, stay, or join in. It all depends on the surrounding conditions. Good street conditions are conducive to actively inviting people not only to walk, but also to participate in versatile and various street lives.

6.5.1 Street as meeting place

From a historical perspective, streets have played a role of meeting place for residents. People met each other, communicated, made deals, and sold goods. They also attend city events. For instance, they held a demonstration and public gatherings. Every activity was carried out in full public view. The streets act as meeting places since
ancient times.

In the contemporary society, electronic products and the internet are increasingly playing significant role in our life. As a result, some people may stay indoors, and work in front of a computer all day. Those people are anxious to go out to have fresh air and exercise to keep fit. Considering this situation, we urban designers should create more attractive places, so that more people would like to participate into street life. Thus we can have a lively, sustainable and healthy city.

Specifically, to make streets act as meeting places, according to Gehl (2010), we need to have interesting things to be seen at eye level. Streets can provide fine scale squares and outdoor cafes, interesting statues and attractive seats, to invite more people. In Östra Storgatan, there are more than five outdoor cafes and several sculptures along the street. The flowerbeds and seats also provide places for meetings. (Figure 6-26, Figure 6-27)

![Landscape facilities in Östra Storgatan](image1)

![Street as meeting place](image2)

Of all the staying activities in edge zones, sidewalk cafes play a particularly
significant role in modern streetscape (Gehl, 2010). There have been a dramatic growth in the number of cafe shops along streets around the world these years (Figure 6-28), investigated by Gehl. This is a new need and new way of using the street space. Even in winter, some cities like Copenhagen and Stockholm also provide outdoor seating cafes with blanket.

In the city center of Karlskrona, there is an outdoor cafe that opens for the whole year, but it is located inside a shopping mall (Figure 6-29). That is a good place to meet people and observe others.

Figure 6-28 The growth of outdoor cafe shops
(source: Gehl, 2010. Cities for People)

Figure 6-29 Outdoor cafe in the shopping mall
(source: photographed by author in Karlskrona)
From the section of "Adjacent services" discussed before (Figure 6-13), we can figure out most of the outdoor cafes are located in Östra Storgatan. A lot of people gather in the cafes in the afternoon, especially at weekends. When I sat in a cafe for lunch, I chose a seat that is close to the window, where I can see people both inside and outside. I found that, most of the customers would like to take the seats outdoor. Only three persons (including myself) sat inside (Figure 6-30).

![Figure 6-30 Outdoor cafe beside Östra Storgatan](source: photographed by author)

However, in the other two streets, Östra Vallgatan and Kanalgatan, it turns out to be almost no seats (only two seats in Kanalgatan), no interesting sculptures and of course no outdoor cafes. This kind of condition apparently subdued social life.

### 6.5.2 A good view

It is quite interesting to look at our city, glance at surroundings and people, whether when we are walking, standing or sitting. A good view is essential in streets. It should be noticed that our downward and upward sights are different. We look down to figure out where we step on, about 70-80 degrees below the horizon, while look up, the angle of vision is limited to 50-55 degrees above the horizon (Figure 6-31). In addition, our head is usually inclined about 10 degrees downward during normal walking so that we can better assess the situation around. By contrast, raising our head upwards is much more difficult (Tilley, 2002).
Gehl (2010) suggests one to design unhindered lines of vision on the streets, that is, our vision should not be confined by parking cars and buses, poorly located buildings, and mass landscape. And a good view on the street should always be at eye level, it will also satisfy our comfort needs.

Considering our Chinese classical garden design culture, the elements in a garden should be both seeing and being seen. Take a pavilion located beside water for an instance, if people see it from a distance, it should be a beautiful picture; and if people take a view from the pavilion, the scenery should be still enjoyable. This principle can also be used in street designs, in that people in the street are both seeing and being seen at the same time. In fact, a series of things that are seeing, and being seen compose social life in the street.

However, in Östra Vällgatan, the sights are hindered by parking cars, and in Kanalgatan, the moving traffic also disturb sights. People can hardly notice what is happening on the other side of the street.
6.6 Summary

Through the above analysis, the satisfaction level of the psychological needs in each objective street can be summarized by Table 6-5. All 5 psychological needs are very well satisfied in Östra Storgatan, but the satisfaction level in Östra Vallgatan and Kanalgatan are quite low. As a result, one can observe that fewer pedestrians can be found in Östra Vallgatan, and social life is quite restrained compared to Östra Storgatan.

<table>
<thead>
<tr>
<th></th>
<th>Östra Storgatan</th>
<th>Östra Vallgatan</th>
<th>Kanalgatan</th>
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<tbody>
<tr>
<td>Safety needs</td>
<td>☺️</td>
<td>☺️</td>
<td>☹️</td>
</tr>
<tr>
<td>Accessibility needs</td>
<td>☺️</td>
<td>☹️</td>
<td>☹️</td>
</tr>
<tr>
<td>Comfort needs</td>
<td>☻️</td>
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</tr>
<tr>
<td>Legibility needs</td>
<td>☺️</td>
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<tr>
<td>Participation needs</td>
<td>☻️</td>
<td>☻️</td>
<td>☹️</td>
</tr>
</tbody>
</table>

Table 6-5 Psychological needs of people in each street
7 Social life observation

7.1 Outdoor activities

Jan Gehl's classical book *Life Between Buildings*, describes essential elements that contribute to people's enjoyment of spaces in the public realm, and reveals the importance of designing urban public space with the fundamental desires of people as guiding principles. The purpose of the book is to create or preserve the public spaces as "a pleasant place in every respect" (p. 173). According to Jan Gehl, outdoor activities in public spaces can be divided into three categories, each of which places very different demands on the physical environment: necessary activities, optional activities, and social activities.

Necessary activities refer to the activities that people generally have to undertake --- going to school or to work, shopping, waiting for a bus or a person, running errands, distributing mails. In other words, all activities in this category involve those that are to a greater or lesser degree required to participate (Gehl, 1987). Necessary activities will happen under all conditions.

Optional activities are those pursuits that are participated in if there is a wish to do so and if time and place make it possible (Gehl, 1987). Like in a warm Saturday afternoon, people stroll around, stand up to get a good view of the city, and sit down to enjoy the sunshine. If outdoor conditions make walking and recreation possible, there will be more attractive and popular activities (Figure 7-1). In the book of *New
City Life, he discusses about today’s city life is an option instead of necessity, and the importance of quality of city space, which plays much of a role in transforming necessary activities into optional activities.

Social activities include all types of communication between people and require the presence of other people (Gehl, 2010). It includes children at play, greetings and conversations, communal activities of various kinds, and finally—as the most widespread social activity - passive contacts, that is, simply seeing and hearing other people (Gehl, 1987). If city space is isolated, social life will be subdued, and nothing happens.

7.2 Observation study

After the empirical investigation of the streets, I planned to study behavior and social life in the objective streets in Kristianstad, because they are quite different in physical appearance. By observation, we can focus on not only the immediate impact of an event and aspects of everyday life, but also the setting and behavior of individuals to get a directly view of reality. The types of observation include both participant and non-participant.

As to my observation method in this case study, the goal is to observe normal flow of events happening in the street. I sat inconspicuously on the bench, and recorded the behavior of people and social life, especially those who were staying or communicating for more than one minute. It was a non-participant observation for people were not told they were being observed. The observer is like an eavesdropper. In addition, the necessary activities, such as carrying out the garbage, or doing construction work, are taking place regardless of the surroundings. These kinds of activities are not recorded. The optional activities and social activities, such as sitting down and observing others, communicating and playing are recorded because they will only occur where the conditions of a street are supportive.

I selected sunny afternoons on Friday and Saturday, from 12:00 to 16:00, because outdoor activities are most active during that time. And each observation period lasted for one hour in each street. I recorded the different behaviors of each age group and their behaviors, where leisure activities happened, and where the communications
took place.

7.3 Observation results

7.3.1 Groups of street users and their activities

It should be clarified that different residents have different requirements in the streets, so passers-by, children, young people, and older people are considered to be the four main different groups.

Passers-by are belonging to necessary activities. They come and go to their own destinations. When the conditions of street are good, these necessary activities can turn into optional activities. Figure 7-2 shows a father who was walking by Östra Storgatan with his twin babies. When he passed by the square, he started a circular motion around a tree, and picked up a phone call. The babies were also looking around with great interests. In this case, his necessary activity changed to an optional activity.

![Figure 7-2 Necessary activity turned into optional activity](source: photographed by author in Östra Storgatan, Kristianstad)

Children are an important group of street users. They play in the street only if the conditions are safe and good (Figure 7-3). Preschoolers are especially dependent on the quality of the environment. They have little experience about the world, and are curious about surroundings. They usually play in small groups, two or three boys and girls with their parents nearby.
Older people, especially retired elderlies, are a group that needs our special care too. They have a lot of time at their disposal. They are eager to walk more, do exercises, particularly for those in poor physical conditions. They would also like to sit down, relax and observe other people if there are comfortable seats. But due to the poor physical condition of their body, older people need more time to adapt to new things, and it is difficult for them to respond rapidly to unexpected situations (Figure 7-4). Social life for older people also needs a safe condition, same as children.

Young people are the largest group strolling in the street in leisure time. They go shopping, meet people, communicate with acquaintance, sit down in an outdoor cafe and chat with each other. Young couples take a walk with their baby carriages, and meet their friends in the street corner, they talk and laugh, and children playing around. What a lively scene of life!

Overall, I divided the activities into five categories: building-related activities (such
as window shopping), communication, observing others and events, playing children, sitting down and relaxing. I observed all these activities happening in each street.

7.3.2 Social life in Östra Storgatan

This is really a lively street, the shopping center of the town. Many people go shopping, and lots of interesting things happen here. People were talking and laughing, and window shopping everywhere.

Building-related activities

People are so curious about what products are displayed in the stores along the street. They look inside through the big windows, even though the shops are already closed (Figure 7-5).

Gathering and communicating

The Figure 7-6 shows where people are gathering in Östra Storgatan during one hour and communicating for more than one minute in the street.

It can be seen from the picture that, the most active place is around the intersection with the square. They ran into meet their friends with surprise, greeted each other and
chatted for a while (Figure 7-7).

![Image](image.png)

**Figure 7-7 People gathering and chatting**  
(source: photographed by author)

Furthermore, people are more inclined to gather in front of the store entrance (Figure 7-8). Also, outdoor cafes are interesting places for pedestrians, where they can observe events happening in the street while drinking and communicating.

![Image](image.png)

**Figure 7-8 People prefer store entrances**  
(source: taken by author)

In addition, I realized it is very strange that the conditions of site A and site B are quite similar, both are intersections with the shopping street and the square, but there are more people gathering in site A rather than B (Figure 7-9). After the research, I find that there is an outdoor cafe along the branch path of site A, and a shopping mall at the end of the path. While at the end of branch path of site B, the pedestrian street ends, a parking lot and bus travel center bring cars and buses. These can explain the phenomenon well. In site A, there is larger flow of people, when they come to the intersection, necessary activities converted to optional or social activities. In site B, the traffic being not far away leads to less flow of people, so the activities are fewer.
At about 1 p.m. on 14th April, a band was playing music in front of Forex Bank, attracted a lot of people stopping, watching, and photographing (Figure 7-10). Some people were beating time to the music, some people were observing others with interest, and children were playing happily around their parents. Every passer was attracted by the unexpected music, and quite enjoyed it. Social life increased a lot by this music event. When the music ended, people also dispersed.

Near the square, there was also a band, playing attractive music every Saturday afternoon. They were trying to attract customers to buy their trinkets (Figure 7-11). The melodious music made the street livelier. One can hear it from adjacent streets.
Observing others and events

Figure 7-12 shows the behavior map of where people standing by to observe others and events in the street. Many people love staying in front of the building, facing the square, so that they can get a full sight about the events happening in front.

Most of the people prefer to standing against the wall, so called edge effect. If there is no seat, people tend to standing beside some facilities (Figure 7-13), such as advertisement board, small flowerbed, statues. And most of them would not stay in front of chairs, because that would block sights of sitting people.
Parents let their children play independently around without worrying if they would not hit by passing cars. Children prefer to play near the square, and where their parents gather (Figure 7-15). That is because of the basic need of safety. And children
love small statues in shape of animals near the square, they usually saw it meters away and ran to them excitedly, then climbed up and down with great interest (Figure 7-15).

**Sitting down and relaxing**

Near the square, people are more likely to stay for more than 10 minutes, and they would like to sit down and enjoy the sunshine (Figure 7-16).

![Figure 7-16 People love those benches in front of the square](source: photographed by author)

Seatings in front of the square are not enough, as they are never empty in a sunny afternoon. As my observation, people like those seats with backrests, so that they can lean on it, get more relaxed (Figure 7-17). They always choose the benches with backs if they can make a choice.

![Figure 7-17 People prefer the seat with backrest](source: photographed and made by author)

According to Gehl, the comfort of seating influence the choice of seating and length of stay. He divided the seats into primary and secondary seatings, and argued that a sufficient and varied selection of seating in the city can be established with a combination of primary and secondary seating (Gehl, 2010). Primary seating consists of actual furniture with backs and arms, and secondary seatings do not.
There are three kinds of seatings in this Östra Storgatan. Some have backs and arms, some not, others are wider ones without backs (Figure 7-18). All of them are in wood material, which is better than stone. Although the third one have no backrest, it is still popular near the square among children and teenagers. But apparently, the primary seats with backs and arms are more comfortable than the other two kinds of seat, especially for older people (Figure 7-19). In addition to comfortable, Gehl states that, well-situated primary seating, many secondary seating options are often needed. However, in this street, people need more primary seatings.

Figure 7-18 Three kinds of benches in Östra Storgatan

Figure 7-19 The seats with backrest are more comfortable
(source: photographed by author)

There was a man who sat on a bench for quite a long time. When I was observing social life, he was already there. After I sneaked out to shopping and spent as much time as I wanted, when I came back, he was still there and watching others. He was quite interested at what I was doing, because he noticed that I had taken a lot of pictures. He told me he lived not far from here, and he loved this lively street because it was interesting to see what different people were doing. The warm sunshine also makes the street quite comfortable.

Overall, the liveliest time in Östra Storgatan is between 12:00-16:00 on Friday, and
12:00-15:00 on Saturday. In this season, most places in the street were in shade after 15:00, and only the area beside the square was still in sunshine.

7.3.3 Social life in Östra Vallgatan

Social life in this street is subdued a lot (Figure 7-20). There are no building-related activities because of the closed ground floor and windows. Passers-by are walking fast to their destinations, they do not care what are happening in the street, and the car drivers come and go, just take the street as a parking lot. Only one restaurant opens in this street, but they have slack business.

Gathering and communication

However, at the intersections with the pedestrian streets, where walking people have priority, there are still some social activities happening (Figure 7-21). People who are gathering there always choose the corner places in front of the buildings, because they have to make way for passing cars. Edges and store entrances are still preferred.

Observing others and events
During the one hour in the observing time span, there are only two persons who stopped at the intersection. A man was leaning on the pillar, and looking around for quite a while (Figure 7-22).

**Figure 7-22 A man observing others in the street**
(source: photographed by author)

**Children**
Only a few children were playing in this street, around the benches in the intersection (Figure 7-23). And they just stayed for a short period of time. In front of a shop entrance, a child was playing with his mother for about ten minutes, and then went inside.

**Figure 7-23 Behavior map of playing children**
(source: made by author)

**Sitting down and relaxing**
Like other activities, sitting down and relaxing only happened at intersections with pedestrian street (Figure 7-21). Also, people usually stay for just a little while.

**7.3.4 Social life in Kanalgatan**
Social life in this fast traffic street is greatly subdued. Buildings are all in large scale,
and some of them are in some distance to the street. The buildings almost have no connection with walking people (Figure 7-24). Therefore, there could not be building related activities.

As expected, children do not like the street. As my observation, no children would like to stop and play in this street. They kept walking with their parents. Sometimes they were attracted by the ducks in the river, but it was just a short stopover.

**Passers-by**

Passers-by are walking very fast without stopping, not to mention observing others and events, and they have to watch carefully of the passing vehicles when crossing the street. Interestingly, the street is a good place for people to walk their dogs. During the observation time span, a lot of people were passing by with their happy dogs.

Another behavior worth noticing is that, people who come to the street from A, and B direction, most people will choose the route "a", instead of "b" (Figure 7-25), especially those with baby carriage.
I think the reason is safety needs and comfort needs of people. First, route "a" is quieter, away from the fast traffic. Second, the surroundings of route "a" are comfortable than "b", and the bridge above the river is nice to walk on (Figure 7-26).

![Image](image_url)  
Figure 7-26 Route "a"- more safe and comfortable  
(source: photographed and made by author)

**Gathering and communication**

Kanalgatan is dominated by vehicles, only a few people gather here, and stay for a short period of time (Figure 7-27). There are two benches in front of a residential building, some will choose to stay there for a while (Figure 7-28).

![Image](image_url)  
Figure 7-27 Behavior map of communication in Kanalgatan  
(source: made by author)

![Image](image_url)  
Figure 7-28 Few people gathering in Kanalgatan  
(source: photographed by author)
### 7.4 Summary

This section represented the results of observation and different social life in each street. In summary, in Östra Storgatan, necessary activities are more likely to change to optional and social activities, and in Östra Vallgatan and Kanalgatan, social activities are subdued, necessary activities accounts for the greatest proportion (Table 7-1).

<table>
<thead>
<tr>
<th></th>
<th>Östra Storgatan</th>
<th>Östra Vallgatan</th>
<th>Kanalgatan</th>
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</thead>
<tbody>
<tr>
<td>Necessary activities</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
</tr>
<tr>
<td>Optional activities</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
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<tr>
<td>Social activities</td>
<td>![Diagram]</td>
<td>![Diagram]</td>
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Table 7-1 Activities in each street

After theoretical study and research on the three streets in Kristianstad, a street which is enhancing social life rather than subduing it needs following conditions.

1) The first and most basic element is the speed and flow of cars and pedestrian priority. Streets are places that shared by vehicles, bicyclists and pedestrians. If the pedestrians can be given priority in the street. Without the interference of traffic, people will feel safe and relaxed, social life can be maintained and improved.

2) Soft edges and active ground floor will motivate the street conditions a lot. To some extent, active ground floor (shops, commercial activities or residents houses with opened doors), will strengthen the vitality of street space. The significance
of active facades overrides the scale of a street.

3) Paving materials are quite significant. The paving materials like stones or bricks are more friendly than an asphalt paving. A friendly pavement can stimulate the desire of walking, it is like a sign that tells people "this place is safe, walk here".

4) People need to participate into street life, not just pass by, but really involve in it. Streets worked as meeting places in ancient times, why not today? The active seats and outdoor cafes are good choice, and interesting statues are greatly welcomed. The life in streets can become colorful and lively!
Chapter 4 Conclusions

The voyage of discovery is not in seeking new landscapes but in having new eyes.
— Marcel Proust

The urban living streets account for the greatest proportion of the whole traffic system, and a lively street will enrich leisure activities and contribute to better social life. A lively street is not a static setting or scenery, but the "show" architecture of the last 30 years intended to build. The street is acting as a stage people actively live in.

The street, in the European culture, was originated from the roman "Urbis", which is a place for transport and infrastructure, but also a place to live in, people are seeing and being seen at the same time. The street is the "stage" of society. All human revolutions and renewals happened in streets or squares, La Bastille, Tien a Men, Tahir. Also, human tragedies happened in the streets and squares, latest September 11, the Mumbai attempts, the flooded streets of Banda Aceh or New Orleans. Streets play as the "human stage" in the long history.

Lu Xun, one of the major Chinese literates of the 20th century, once said "For actually the earth had no streets to begin with, but when many people pass, a street is made". A street is valuable when people using it, otherwise the street cannot be a real one. And Ai Weiwei, the contemporary artist, prisoner in his own home, who said, "I don't go out anymore, my courtyard and my garden have become my universe." Street have become part of life.

The previous chapters discussed the characteristics of three comparable streets in Kristianstad and adjacent buildings, based on psychological needs of different groups of people. The different social life in each street was also presented. In street design, we, designers, need to understand different needs of different groups of people to create lively streets in neighborhoods.

A precondition for a street to be lively is that it has to be well connected with other streets, and has vast surroundings of city fabric. Otherwise, the street may be nicely
arranged but not very frequently visited. Östra Storgatan and Östra Vallgatan are located in city center. The history of them is about 400 years, dates back to 1614, when the town of Kristianstad was originally established. Today, the city center is a vibrant hub for trade, service, industry and commerce. Östra Storgatan plays a pivotal role in the whole city network, and promotes the development of local economy. This pedestrian commercial street has the inherent advantage of attracting walking people. However, Östra Vallgatan is inferior to Östra Storgatan because of its poor physical conditions. Kanalgatan, which located beside the river near city center, is an important transport route in the overall traffic network. The street assumes the responsibility of city transport, and the most important distinguishing feature of it is the fast traffic.

Each of the streets has its own responsibility in the whole traffic network, and each of them is irreplaceable. By comparison, Östra Storgatan has a great advantage of attracting people over the other two streets, but Kanalgatan is also an important street for city traffic system. The role of each street in the overall traffic network is a vital element to judge whether a street can be lively and have better social life.

In conclusion, a lively street depends on the primary factors as following: the location and role in the overall traffic network in a city, the comfortable physical conditions, and adjacent services. When the conditions of a street can meet the needs and requests of people, the social life will be enhanced, and bring in lively street space.

I hope this thesis will play a valuable role in the urban street design realm, and inspire the future studies. But owing to the limitations of capacity of the author, the research objects and the weather conditions, the depth and breadth of the thesis are not enough. There must be some shortcomings, errors or omissions in the thesis, and I hope you as a reader, will point out these issues.
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