JIA SHAO

Master Degree Project

BLEKING TEKNISKA HÖGSKOLA

Supervisor: THOMAS HELLQUIST

Examiner: ABDELLAH ABARKAN

Break Barriers:

Link Hyllie, Kroksbäck and Holma
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Introduction

Charles Dickens, “There were a hundred thousand shapes and substances of incompleteness, wildly mingled out of their places, upside down, burrowing in the earth, aspiring in the earth, moldering in the water, and unintelligible as in any dream”. It is thought to be the “best one-sentence description of Edge City extant” by Joel Garreau.

The term “edge cities” was first created by Washington Post journalist and author Joel Garreau in the book Edge City: Life on the New Frontier in 1991. These growing edge cities mainly distribute around major suburban freeways as the latest transformation of how we live and work. The “new suburban cities have sprung up like dandelions across the fruitful plain, they're home to glistening office towers, huge retail complexes, and are always located close to major highways”. According to Garreau, there are five rules for a place to be considered as an edge city. Firstly, the area must have more than five million square feet of office space (about the space of a good-sized downtown). Secondly, the place must include over 600,000 square feet of retail space (the size of a large regional shopping mall). Thirdly, the population must rise every morning and drop every afternoon (i.e., there are more jobs than homes). Fourthly, the place is known as a single end destination (the place "has it all", entertainment, shopping, recreation, etc.). Finally, the area must not have been anything like a “city” 30 years ago (cow pastures would have been nice). Hyllie is a new sustainable urban area in southern Malmö. According to the further plan, there will be around 8,000 attractive homes totally with parks and good schools. And there is scope for almost as many jobs. At the same time, office blocks, international exhibition centre, hotels and shopping centre will also be built. People from both southern Sweden and eastern Denmark will work, live, entertain and shop here. Overall, Hyllie looks like an edge city described by Joel Garreau although it does not strictly confirm to every rules above. With its expansion, this impression will be underlined.

Just like the analysis from Garreau, the rise of Edge City is one of results of suburbanization. People move their houses out past the traditional idea of what constituted a city. This transformation eases the central urban pressure and the gap between urban and rural areas to some extent. But there are also some questions need to be considered. First, what the relationship should be created between traditional urban areas and new suburban cities? And how they connect with each other? Next, these edge cities are mainly close to major highways and freeways which divide the cities into various districts with different size. How do they break the physical barriers and complete the regional integration, but not to be separated from each other as islands?

In this paper, I will take Hyllie linking with two typical Million Programme districts Kroksbäck and Holma as an example to discuss these questions. Now in this suburban area, there are all kinds of barriers from previous planning, infrastructure investment, and urban development which lead to the segregation and fragmentation in regional development. Specifically, the inner ring road Annetorpsvägen with the design of sunken road and six-lanes shapes a large physical barrier between Hyllie and Kroksbäck-Holma. The underused Kroksbäck Park is another barrier blocking the connection between Kroksbäck and Holma. And in the north, west, and east direction of these two residential areas, three major roads not only lead to Kroksbäck-Holma to be an island but also cut off the connection between Hyllie and Malmo centre. In this project, I will pay more attention to discuss and explain how to break physical barriers in the rise process of suburban area. For example, creating green structure and expanding the green effect are my approaches to resolve the problem of landscape fragments which is discussed by Garreau. In the book Edge City: Life on the New Frontier, Garreau also gives some methods and solutions. They will be thought in touch with the practical situation in Sweden through comparative methods with other theories. For instance, Garreau thinks that 150m is the longest distance of walking. To some extent, it is not possible to apply in Sweden. Jan Gehl believes that 5 minutes walk with about 300m is the limit. He also suggests that designers can distract pedestrians’ attention through enriching “experience routes”. In addition, some social barriers like ethnic background, educational levels, and income levels will also be involved. They will be discussed in Chapter Two. Some theories are also needed to be studied as research tools. Author will mainly apply the theories from Stephen M. Wheeler, Cliff Moughtin and Jan Gehl in this thesis and find an integrated way to resolve the questions.
Acknowledgement

I wish to express my deepest gratitude to my supervisor, Thomas Hellquist, who has supported me with his patience and knowledge throughout this project. At first, I was aimless to some extent facing to the large area. Thomas guided me to find the important points and help me to find my way.

Great thanks to the faculty and staff members of Urban Design, Department of Spatial Planning, Abdellah Abarkan, Gunnar Nyström, and Karl Bergman, who have always been nice and helpful during my unforgettable two years study.

Many thanks go to Mikael Wallberg from Malmö City Planning Office for sharing information about Hyllie area.

In addition, I would like to express my thanks to my close friends and my family. Especially thanks to Kajsa Rue Hallén, she gave me a lot of helps in the process of researching Hyllie.

Finally, thanks to my parents giving my shoulder to lean on. I love you.

Jia Shao
Lund, Sweden
May, 2011
Who drives me forward like fate? The Myself striding on my back.

—— Ranbindranath Tagore (1861-1941)
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Chapter One: Introduction
1.1 Background: Start from the City Tunnel

Achieve to travel a long-distance in the short time, expand the scope of people’s activities, and integrate the cities’ traffic system. These make the City Tunnel become a more and more important role in public transport. In December 2010, the five years project Malmo City Tunnel was opened. It transforms Malmo Central Station from a terminus to a through station. This change increases the capacity of Malmo railway. Moreover, two new stations Triangle and Hyllie were built. The former is located in the center of city. And Hyllie Station is in the heart of new urban area between Malmo and Copenhagen. Malmo is the third largest city in Sweden and the closest area to Copenhagen. The two cities are linked with Öresund Road and Rail Bridge across the Baltic Sea. With the construction of City Tunnel and Hyllie Station, the capacity of Öresund will be strengthened. It means that connection of southern Sweden and Eastern Denmark will also be increased. Hyllie’s unique location will make it possible to become a new urban centre. In the future, more people will work, live, and shop here. This is an opportunity for Hyllie and southern Malmo.
1.2 Introduction of Main Projects in Hyllie Centre

Plans of developing southern Malmo have existed for a long time. The construction of Hyllie Station is the moment for them to break the first ground. Around Hyllie Station, create a new urban centre in southern Malmo and drive the active development of the whole area. The ambition of Hyllie is to be a communication centre, business center, and tourist-oriented part of Malmo. Therefore, many related facilities should be built such as shopping centre, office space, and high quality housing.
**Hyllie Station**

Hyllie Station is located in the heart of the new urban area and 3 minutes to Malmo Centre. It was opened in December 2010. According to the calculation, every seven minutes during peak traffic 17 000 passengers travel to and from the station daily.

**The Station Square**

In the north of Station Hyllie, the station square is a meeting centre for both regional and local transportation. The square is decorated by light in the sky and wood seats for people’s rest. About 11 000m² area makes it has the capacity to be an active public space in the future.

**Malmo Arena**

Malmo Arena was started in January 2007 and opened in November 2008. The total area is 51 000m². It is a multi-use arena including sports, entertainment, and cultural events. It is also divided into some small units for office, restaurants, and training.

**Emporia Shopping Centre**

With the area of 93 000m² and unique location by the Station Square, the ambition of Emporia Mall is to become the most international shopping centre in Scandinavia. There are four stories and five indoor squares which will supply of 220 shops and restaurants. Especially, a green park is decorated in the roof of the building. This is an unusual experience for visitors. In the surrounding of the main building, there are also enough parking places for people to stop. The scheduled opening time is 2012.
**Hotel**
A luxury hotel with 600 rooms will be built by Hyllie Station Square. It is also next to Emporia and a foot bridge is planning to connect them. Through the foot bridge, guests will go to the roof garden of Emporia Mall.

**Water Theme Park**
The Water Park is built as “a green lung” of Hyllie centre. It locates in the both sides of railway and the water tower will be its main element. The aim of the park is not only a theme park for leisure but also an educational park on the basis of water.

**Office Space and Residents**
In the western of the Station Square, the office building Cliffs will be another architecture landmark because of its daring shape and structure. The area of the building is 20 000m². It will be consisted by three different buildings and just likes that a whole stone is cut. It will be started in 2012.

According to the further plan, about 8 000 new residents will move to Hyllie. Until 2014, about 2 500 apartments will be built in the Hyllie center.
Chapter Two: Site Analysis
Hyllie, as a new urban area in the future, its development is fascinating. In the next few years, the shopping centre, hotels, office buildings, and apartments will be completed sequentially. It will become one of the most active places in Malmo. This is consistent with the objective of development in southern Malmo, young, creative, and multicultural connection. Now in southern Malmo, there are outdated industrial areas, large scale Million Programme areas, and traditional living districts. The development of Hyllie is an opportunity for other areas to renewal. So Hyllie will play an important role in influencing the regional development and integration. How much the surrounding districts will gain and participate in its development becomes crucial. To Hyllie, connecting with surrounding areas actively will avoid itself becoming an island in urban landscape in the further development.
2.1 Why Kroksbäck and Holma?

Kroksbäck and Holma locate in the north of Hyllie. They are two typical Million Programme residential districts. The community structure organized by a similar way, a high degree of traffic separation, and much reception of buildings volumes, these are criticized today. At the same time, Annetorpsvägen with six lanes in the south and two major roads with four lanes in the west and east shape a large physical barrier for the connection of Kroksbäck and Holma with surrounding environment. Unlike adjacent districts, these two areas have a low employment rate and low average income. Migrants also occupy a large scale. To some extent, the residents’ composition becomes a kind of social barrier. These physical and social barriers lead to this area in an isolated position. Besides, an underused park between Kroksbäck and Holma blocks the connection of them. Therefore, many problems will drive these two areas to become an unsafe factor if they cannot integrate into the new development and achieve the renewal of themselves.

To Hyllie, break barriers and link with Kroksbäck and Holma also have significant value for successfully completing the new urban area’s expand. Firstly, the residents’ composition is mainly young people in Kroksbäck and Holma. It is important to attract them to participate in activities in new urban centre. Secondly, housing shortage is always a problem in Malmö. The expansion of Hyllie needs enough space to build a lot of apartments to meet the demand of development. Surface between Annetorpsvägen and Kroksbäck-Holma is a good choice. Next Kroksbäck Park with distinctive natural landscape is a potential place for supplying green neighborhood to construct high quality living communities.
2.2 The Current Situation of Kroksbäck-Holma

2.2.1 Streets and Traffic

Annetorpsvägen
As an inner ring road, Annetorpsvägen is an important part in Malmö’s overall traffic system. But the design of sunken road with six-lane makes it to be a large barrier between Hyllie and Kroksbäck-Holma. Especially in the future, with the development of new urban area, the segregation will be underlined. It will become a main factor to block the formation of a new urban corridor between Hyllie and Malmö Centre. In addition, because of this barrier there are no entrances to enter Hyllie centre form the north direction. So through linking Hyllie and Kroksbäck-Holma to create new entrances to urban centre also has important meaning. At the same time, the direct traffic of Hyllie, Kroksbäck, and Holma will ease the traffic pressure of major roads and highways. It means that appropriate separation of short-distance traffic and rapid transit will increase the efficiency and safety.

Hyllievångsvägen
Hyllievångsvägen locates between Korksbäck and Kroksbäck Park. As one of the first residential areas of Million Programme, the street pattern in Kroksbäck is characterized by a lengthy traffic separation. It means that pedestrians and cyclists are separated from vehicular traffic. Hyllievångsvägen is the only feeder street and it takes the cars into the area through north and south brook streets. The people can walk and cycle at a level of up to four meters below the ground floor. Because of the separation, there are three bridges over Hyllievångsvägen for walking and cycling between Korksbäck and Kroksbäck Park. The residents are able to get down to street level by stairs and ramps.

This road is a major barrier to impede communication between Korksbäck and Kroksbäck Park. On the road of 600 meters stretch, only three bridges may have a weak effect for visitors to the park. In addition to it is hard to get to the park, there is no reason to spontaneously get there. These remain the area and the park to be separated from each other as islands.
Traffic situation in Holma

In the north and east of Holma, two major roads as barriers cut off the communication of Holma and adjacent areas. In interior of housing area, there is a path that runs as a pedestrian and bicycle path through Holma from north to south and scatters to both sides. Pedestrian and cycle path network in general undertakes all housing estates in the central thoroughfare and to Kroksbäck Park. The design of the street network in Holma means that no vehicular through-flow housing and all parking spaces locate in a wreath on the edge of the area. This result is that the internal traffic is very quiet without traffic noise but also some problems. One is that creating appropriate driveways for waste disposal and disabled travel is a kind of resource waste. That means the surrounding traffic pressure is underlined. Now the only entrance to Holma from the main road network is via Årholmsvägen from a roundabout on Pildammsvägen. It leads to long distances for traffic from the south or from the Inner Ring Road. New entrances and the link with Annetorpsvägen should be created in Holma. The good position of Holma will become a complement to the traffic system and other meeting places in this area.

Flyover in Annetorpsvägen

With the expansion of new urban area, two flyovers are planned to build in Annetorpsvägen to connect with Kroksbäck and Holma. One linking with Holma is completed now. Another linking with Kroksbäck is just started. Obviously, only two roads are not enough for the area’s integration. Further plans about large projects should be considered.

Conclusion

There is no complete traffic system among Hyllie, Kroksbäck, and Holma. Build the short-distance street network is the first step to break regional barriers. To Kroksbäck, new entrance should be created from Lorensborgsgatan to Hyllievångsvägen which will connect with a new flyover in the future. To Hyllie, new entrance should be created from Pildammsvägen and appropriate driveways are also necessary to pass through the housing areas. About Annetorpsvägen, reducing the separation to minimum is priority. Decoration or constructing new buildings in the surface between this road and Kroksbäck-Holma both can be considered.
2.2.2 Existing Buildings Pattern

Kroksbäck
Kroksbäck was one of the first areas that were built within the framework of Million Programme. It consists of two parts. The north was erected by HSB with a uniform. This part was built largely unchanged architecture in yellow bricks. The south was constructed by ElA, which gets its character mainly through the façade changes. There are two neighborhoods with small houses in the north.

The buildings are located on a roughly rectangular area and surrounded by small houses neighborhoods, streets and parks. The recessed streets give the area an artificial elevation. Dwelling houses are on the top connected with underground garage. Residents can access by stairs and bridges, or through the garages.

The area has a strictly organized structure with some variation from the southern and northern part. In the south, lie a long stretch of houses with three floors. It acts as a barrier to the arable field. North of it, there are three rows with four buildings in each. Between these rows, there are U-shaped three-storey buildings and lamellar houses.

Holma
Holma is typically from the latter part of Million Programme. There are some major changes compared with Kroksbäck. Decrease the underground houses, the buildings are more integrated, and the color becomes bright. The buildings’ organization in this area is characterized by a transparent and rectangular structure with houses in three and eight storey forming open courtyards. A longitudinal north-south axis connects three building groups with minor variations. The material is brown and yellow bricks on the lower houses while the high rise buildings are primarily decorated by bright colors.
Conclusion
Just like many of Million Programme residential areas, community structure in a similar way, much repetition of buildings with few variations, more or less freely lying stairs entry in open space. Kroksbäck and Holma also provide an airy and spacious impression. This scattered layout is hard to attract people to meet together. Unclear classification of public space means that there are no specific objectives and places for people’s activities. The public space’s value is weakened.

Removing off the houses and building new living areas may be a method. But the expensive price is one aspect. Another is that this action will change the residents’ composition because of the high price or rent of new houses. This situation is easy to remind planners that promote the buildings integration and create different class of space through complement and intensify houses. In the further plans, constructing buildings along with the completed street network is a choice. At the same time, increase the variation of houses and create multi-used buildings. Through these actions, promote the people’s movements.

2.2.3 Green Structure
Kroksbäck Park is an important part in regional green system. Good location and unique natural landscape are its qualities. But the underused situation leads to it become a landscape island between Kroksbäck and Holma. Broadening the green effect to the surrounding environment is a vital question to be considered in the further plan. As a large meeting place, concrete functional areas should be divided. Through creating the high-quality public space, attract people’s activities and increase the connection of areas and residents.

There is a pupil school at the edge of hills in Kroksbäck Park’s southwest. In the west of it, sunken road Hyllievångsvägen locates between it and Kroksbäck. It means that this school is physically separated from the residential area. In addition, a footbridge over Hyllievångsvägen just faces to the school. Visitors who want to enter the park have to bypass the school. In part, it enhances the barrier effect of the sunken road and limits the people’s flow. Now the number of students is increasing and the old campus is not enough for it. New location is necessary to be thought.
Conclusion

In the process of urban development, green areas are important to be preserved and developed especially in the context of densification. Now new green parks and linkages will be created in Hyllie Centre. In the long run, linking new green areas with existing green structure will have significance which will be green neighborhood for many existing and new areas. At the same time, finding the potential places to expand the green effect to more communities is also possible. Surface between Annetorpsvägen and Kroksbäck-Holma is one of the best farmlands in Malmo. In order to meet the development demand, it must change its function. New green points can be created here.

Figure 2.3.4 Existing green areas in Kroksbäck and Holma and new green parks in Hyllie centre

2.3 Design Objectives

From Hyllie centre to Kroksbäck-Holma, it is a large area including Inner Ring Road and empty farmland. Firstly, the area should be divided according to different situations and functions. Then on the basis of analysis, resolve the important problems in every area and connect them together.

According to this map, design objectives are as following:

1 In traffic, break two main physical barriers. One is B between A and C. Another is the sunken street between D and F. To B, the major methods are constructing flyovers or new surfaces over the recessed road. To another, increase the number of footbridges and add new buildings on both sides of the sunken street to promote the integration of D and F. Then the street network will be designed to link A, D, E.

2 As the middle place between A and D-E, C is a potential area of meeting place and active district. It means that C should not only continue the influence from the urban centre, but also reflect the changes from the urban centre to residential areas. So, there will be public buildings, all kind of apartments and living communities, and green space. C plays an important role in regional integration.

3 The large green area F has a vital position in regional green system. At the same time, it is also an important link between D and E. Creating high-quality public space and attracting people to come here are the major objectives to it.

Figure 2.3.7 Zoning Map
Chapter Three: Design Theory
3.1 Introduction

Jan Gehl

A Danish architect and urban designer. He has focused on improving the quality of urban life by re-orienting city design towards the pedestrian and cyclist.

"Gehl first published his influential Life Between Buildings in Danish in 1971, with the first English translation published in 1987. Gehl advocates a sensible, straightforward approach to improving urban form: systematically documenting urban spaces, making gradual incremental improvements, then documenting them again." (Wikipedia, 2011)

In this book, Gehl researched and analyzed that how to use the public space in daily life like street, square, pedestrian road, park and so on. He also explained that how to support or hinder social interaction and public life in the urban planning and design. Through discussing the people’s special requirements to the physical environment in daily life, Gehl proposed an effective way to create a vibrant and humane outdoor space.

Stephen M. Wheeler

Assistant Professor of Physical Planning and Design at the University of New Mexico.

It considers the sustainable planning from different scales: international, national, regional, municipal, neighborhood, site and building. In this process, it explains how sustainability initiatives at different scales interrelate and how an overall framework can be developed for more livable communities.

Cliff Moughtin
Miquel Mertens

“This book offers a detailed analysis of urban design, covering the streets, squares and buildings that make up the public face of towns and cities. It includes the arrangement, design and details of these elements and the roles they play in city planning. Superb examples of streets and squares are examined in their historical context”. (Amazon.com)
### 3.2 Comprehensive Study of Main Theories

“Urban regions obviously cannot expand forever in the way that they have for the last century and a half, and their growth causes many secondary problems related to motor vehicle use, pollution, congestion, quality of life, and the segregation of groups from one another along the lines of income and race” (Wheeler, 2004). In this chapter, author will make a comprehensive study of related theories and find effective methods as design tools to resolve the current problems in Hyllie.

<table>
<thead>
<tr>
<th>Compact City</th>
<th>Traffic</th>
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<tbody>
<tr>
<td>(Stephen M. Wheeler)</td>
<td>Four traffic systems are discussed by Jan Gehl</td>
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<tr>
<td></td>
<td>Sustainability-oriented approach to transportation planning (Stephen M. Wheeler)</td>
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<tr>
<td>Building</td>
<td>“Infill” approach / High-quality houses (Stephen M. Wheeler)</td>
</tr>
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<td></td>
<td>Comprehensive methods of architecture composition (Cliff Moughtin / Miquel Mertens)</td>
</tr>
<tr>
<td>Public space</td>
<td>Three outdoor activities (Jan Gehl)</td>
</tr>
<tr>
<td>(or green area)</td>
<td>Sustainable development (Stephen M. Wheeler)</td>
</tr>
</tbody>
</table>

**Compact cities** represent a radically different model from most twentieth-century urbanization. If pursued rigorously this approach would call for most new development to be handled within the existing urban envelope through “infill”. This category encompasses several main forms of development: building on vacant lots within the urban area, redevelopment of underutilized lands where, say, small or deteriorating buildings exist, and rehabilitation or expansion of existing buildings. (Wheeler, 2004)
Traffic

Four traffic systems are discussed by Jan Gehl, Los Angeles, Radburn, Delft, and Venice. Through comparison, some ways of promoting traffic integration and safety are proposed. Transfer to slow traffic at the city limits, integrate local traffic on pedestrian terms, and integrate traffic and outdoor stays. Through these methods, a good connection is created between transit and outdoor activities. Street as an important public space will play its full role.

Los Angeles
Traffic integration on the terms of the fast-moving traffic. A straightforward, simple traffic system with a low degree of traffic safety. The streets are unusable for anything but vehicular traffic.

Radburn
Traffic separation system introduced in 1928 in Radburn, New Jersey: a complicated, expensive system involving many parallel roads and paths and many costly underpasses. Surveys of residential districts show that this principle, which in theory appears to improve traffic safety, functions poorly in practice because pedestrians follow shorter routes rather than safer, more lengthy, routes.

Delft
Traffic integration on the terms of slow-moving traffic. Introduced in 1969, the system is simple, straightforward, and safe, maintaining the street as the all-important public space. When cars must be driven up to a building, this system of integration is by far superior to the two systems above.

Venice
The pedestrian city. Transition from fast to slow-moving traffic on the outskirts of the city or the area. A straightforward and simple traffic system with a considerable higher safety level and greater feeling of security than any other system.

In Planning for Sustainability, Wheeler also gives approaches to solve the problem of automobile dependency from sustainable development. Together these approaches can help address the archetypal challenge of sustainability planning over the long term.

"Transportation systems have been a powerful force in determining the form and character of cities since the mid-nineteenth century, when first horsecar and then streetcar lines began the decentralization of urban areas. Some level of transportation infrastructure is certainly necessary. But our urban environments are now overly dominated by motor vehicles - in terms of the land area given over to roads and parking, the design of suburbs and street networks, the conversion of streets from multi-use public spaces to automobile thoroughfares, the generation of noise and pollution, the severe limits we currently have on walking or bicycling, problems with public safety, and the general character of our built environment". (Wheeler, 2004)

Five alternative transportation modes to ease the situation of excessive motor vehicles: walking, bicycling, bus, rail, informal transit.

<table>
<thead>
<tr>
<th>Changing approaches to transportation planning</th>
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<tbody>
<tr>
<td><strong>Traditional approach</strong></td>
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<tr>
<td>Engineering perspective</td>
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<tr>
<td>“Traffic oriented”</td>
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<tr>
<td>Focus on large-scale movements, often ignoring local trips (within zones)</td>
</tr>
<tr>
<td>Automobile as the priority</td>
</tr>
<tr>
<td>The street as traffic artery</td>
</tr>
<tr>
<td>Economic criteria for decision-making</td>
</tr>
<tr>
<td>Increase road capacity to handle projected demand</td>
</tr>
<tr>
<td>Consider road-user costs and benefits</td>
</tr>
<tr>
<td>Focus on facilitating traffic flow</td>
</tr>
<tr>
<td>Segregate pedestrians and vehicles</td>
</tr>
</tbody>
</table>

(Gehl, 2006)
Figure 3.1.5 The problem major roads lead to a separation of both sides.

Figure 3.1.6 Use roads with slow-moving traffic to connect the major roads and shape a basic traffic system.

Figure 3.1.7 Create rich pedestrian roads. In some places, limit the vehicle traffic.

Buildings

Architectural Composition
(Moughtin & Mertens)

Order
Unity
Balance
Symmetry
Scale
Proportion
Rhythm
Contrast
Harmony

Figure 3.1.8 Notre-Dame of Paris by Author

Figure 3.1.9 Versailles in Paris by Author

Housing
(Wheeler)

Decent housing is seen by many as a basic human right.

Pay more attention to landscaping which is crucially important to the livability of higher-density developments.

Provide high-quality houses to lower-income groups

Various levels of government can play a role in creating the context for better housing.
Greatly simplified, outdoor activities in public space can be divided into three categories, each of which places very different demand on the physical environment: necessary activities, optional activities, and "resultant" activities (social activities) (Gehl, 2006).

**Figure 3.2.1 Necessary activities**—under all conditions. They include those that are more or less compulsory like going to school or to work, shopping, waiting for a bus or a person and so on. In general, everyday tasks and pastimes belong to this group. Among other activities, this group includes the great majority of those related to walking. Image in Stockholm by Author.

**Figure 3.2.2 Optional activities**—only under favorable exterior conditions. This group includes such activities as taking a walk to get a breath of fresh air, standing around enjoying life, or sitting and sunbathing. Image in Paris by Author.

**Figure 3.2.3 Social activities.** Image in Stockholm by Author.

The relationship between the quality of outdoor spaces and the rate of occurrence of outdoor activities

<table>
<thead>
<tr>
<th>Quality of the physical environment</th>
<th>Poor</th>
<th>Good</th>
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</thead>
<tbody>
<tr>
<td>Necessary activities</td>
<td>![Circle]</td>
<td>![Circle]</td>
</tr>
<tr>
<td>Optional activities</td>
<td>![Circle]</td>
<td>![Circle]</td>
</tr>
<tr>
<td>“Resultant” activities (Social activities)</td>
<td>![Circle]</td>
<td>![Circle]</td>
</tr>
</tbody>
</table>

Figure 3.2.4 When the quality of outdoor areas is good, optional activities occur with increasing frequency. Furthermore, as levels of optional activity rise, the number of social activities usually increases substantially (Gehl, 2006).
According to Jan Gehl, physical arrangement in planning and design can promote or prevent people’s visual and auditory contact. There are at least five different ways.

<table>
<thead>
<tr>
<th>Inhibiting Contact</th>
<th>Promoting Contact</th>
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</thead>
<tbody>
<tr>
<td>Visual and auditory</td>
<td>Visual and auditory</td>
</tr>
<tr>
<td>1. Walls</td>
<td>1. No walls</td>
</tr>
<tr>
<td>2. Long distances</td>
<td>2. Short distances</td>
</tr>
<tr>
<td>3. High speeds</td>
<td>3. Low speeds</td>
</tr>
<tr>
<td>4. Multiple levels</td>
<td>4. One level</td>
</tr>
<tr>
<td>5. Back-to-back orientation</td>
<td>5. Face-to-face orientation</td>
</tr>
</tbody>
</table>

Figure 3.2.5 Five ways to inhibit or promote contact (Gehl, 2006).

Figure 3.2.6 Use glass wall to broaden the visual scope. Image in Gothenburg by Author.

Figure 3.2.7 Short distance increases the opportunities of connection. Image in Paris by Author.

Figure 3.2.8 Meeting places are created at the same level with pedestrian roads. Image in Paris by Author.
Chapter Four: Design Proposal
4.1 Master Plan

4.1.1 Master Plan

In the analysis, the sunken roads and large scale undefined space (farmland and Kroksbäck Park) are main physical barriers between Hyllie and Kroksbäck-Holma. Therefore, they will be the important points to be considered to break barriers. Some major methods are used in this design.

The first is creating new roads and distinguishing different urban streets to complement the existing roads network. The rich streets will increase the choices of people’s movements and encourage them to go to different urban space. By opening new areas for traffic and creating streets where traffic and people can be in a better urban environment is achieved.

The second is integrating the buildings to gather crowded. Buildings always are objectives to urban people, for living, working, or shopping and so on. Integrated buildings environment will strong the residents’ communication. And constructing multifunctional buildings is also a better way to attract different people.

The next is defining and creating characteristic public space. It means that the young people will find their sports space for physical activities, residents will find their comfortable urban environment for urban activities, and old people will find their quiet space for recreational activities. High quality public space will integrate people’s movements and promote regional activity.
4.1.2 Land Use

The farmland between Hyllie centre and Kroksbäck-Holma plays an important role in the transition from urban character to community life. In the plan, multifunction areas, high-quality communities, and green parks are created there. In addition, all kinds of squares and meeting places are designed in this area. It means that this site will become very active in the future and more people will be attracted to visit here. At the same time, a commercial walk street extends from the edge of Kroksbäck Park to the residential area. These will build a strong connection between Hyllie and Kroksbäck-Holma.
4.2 Roads System

4.2.1 New Streets Network

Figure 4.1.3 New streets network

Figure 4.1.4 Two new entrances are created in Lorensborgsgatan and Pildammsvägen. It means that opening new corridor in the north of Hyllie is possible. This action will ease the pressure in fast roads traffic.

Figure 4.1.5 In the new streets network, two flyovers in Annetorpsvägen continue to link the existing streets in Kroksbäck and Holma. Another boulevard is created between them to connect Hyllie centre and Kroksbäck Park. The three main roads strong the connection between urban centre and existing residential areas.
4.2.2 Main Streets Sections

Figure 4.1.6 Main Streets Sections

Figure 4.1.7 Section A-A’. Constructing new buildings and footbridges to decrease the barrier of the recessed street between residential areas and the park. At the same time, using the buildings to divide the space and create new public space to attract people to go outside.

The length of the deserted street between Kroksbäck and the park is about 600 meters. There are three existing footbridges over it. In the new design, another two bridges are added. Moreover, the width of bridges is widened and small stores are built on both sides which continue to link the buildings in the walk street. Through this design, the footbridge is developed to a good public space. In addition, visitors can enter the park directly through the footbridge. The connection is created between Kroksbäck and Kroksbäck Park.

Figure 4.1.8 Perspective A Walk Street

Figure 4.1.9 Perspective B Footbridge
Figure 4.2.1 Section B-B’. Flyover links Hyllie and Kroksbäck.

Figure 4.2.2 Flyover Perspective

Figure 4.2.3 Deceleration zone. It is usually put in the crossing or the crowded place.
Figure 4.2.4 Boulevard Section C-C'. The north-south boulevard links the new roads in north of Hyllie and the walk street in the edge of Kroksbäck Park. In the part of Trade Fair, it begins to limit the vehicle traffic. The traffic flow is directed to two flyovers. But the ambulance and fire truck still can enter. This design is to encourage the public transport and bicycle traffic. It is also a better way to create a safe and active urban space. In the middle of the boulevard, all kinds of small squares are designed. The plants can be a natural separation in the space. No vehicle traffic makes the interaction in different spaces more free.

Figure 4.2.5 Open seats in the side of street.

Figure 4.2.6 Use the street space to create a public space for meeting and leisure.

Figure 4.2.7 Road barrier to limit private transport but for the emergency traffic.

Section D-D'

Figure 4.2.8 Section D-D'. Flyover links Hyllie and Holma.
4.3 Building organization

With the development of Hyllie area, all kinds of apartments and communities are required for different people who work, travel, or visit Hyllie. Kroksbäck and Holma are typical districts of Million Program. The old buildings cannot meet the trend in the future. Therefore, the farmland between Hyllie and Kroksbäck-Holma should be a bridge to build a connection of them. To Hyllie, new and high-quality communities and different functional buildings should be built in the farmland to meet the development’s demand. To Kroksbäck and Hyllie, using the new communities to drive the transformation of old districts is one of objectives of the farmland’s development. In addition, through building the dwelling and small stores in the edge of Kroksbäck Park, ease the physical barrier of the sunken road and promote the communication of Kroksbäck and Kroksbäck Park. In the empty area of Kroksbäck, add the new buildings. These actions are a necessary complement of the farmland’s development and a useful way to promote the buildings’ integration.
The buildings in the side of the boulevard are typical multifunctional constructions. Normally, the first and the second floors are stores. The higher floors are offices for working or apartments for living.

Figure 4.3.2 Facade of Boulevard

Figure 4.3.3 The relationship of building and space

- Open space
- Private space
- Private space
- Semi-public space
- Semi-private space

Figure 4.3.4 Community perspective
4.4 Main Public Space

People gather in the different spaces because of various objectives just like working, living, shopping, and so on. Similarly, they need to shuttle in different spaces because of going to work, going home or shopping. Then different spaces have connections with each other through these movements. As Gehl said, these actions are necessary activities. To a person who is going home from office, if the street and the environment are not very good, he will largely go home directly. But, if the street is spacious and bright and a nice square is on the roadside, what will happen? Maybe he would like to take a coffee in the square and talk with someone in the surrounding. This is an optional activity. More optional activities happen in the space, the space is more active.

Squares are mainly distributed in the middle place between Hyllie and Kroksbäck-Holma along with the major streets. Firstly, these sites are all the places where optional activities take place in daily life. The squares will increase the opportunities of people’s connection. Secondly, according to Gehl, squares, parks, even beautiful stores can shorten man’s experience distance to a road. It means that people usually are attracted by some focus and ignore the street’s practical distance.

The green parks are all linked by major roads. They compose the green system in this region and provide the green environment for all kinds of communities in Hyllie, Kroksbäck, and Holma. Overall, it is an important part in whole green system in south Malmo.
Figure 4.3.8 Details labeled map

Figure 4.3.9 Children's garden images in Sweden by Author

Figure 4.4.1 Sitting place

Figure 4.4.2 Bicycle parking. Internet materials

Figure 4.4.3 Ideas source

Figure 4.4.4 Parts of the theme park
Conclusion

The unique location of Hyllie makes it have the potential to become another urban centre of Malmo. In this project, author researched Hyllie as well as the surrounding areas. Promoting the surrounding areas’ better development with the new urban centre’s rise is the main objective of this project. As one of the adjacent districts, two typical Million Program areas Kroksbäck and Holma with more problems had been mainly analyzed. In the process, Joel Garreau’s “edge cities” is the research context. As an edge city in suburban area, Hyllie has both the common problems and its specific questions. Some solutions of Garreau were considered through comparison. At the same time, Stephen M. Wheeler, Cliff Moughtin, and Jan Gehl’s theories were applied linking with the practical situation. A kind of multi-use urban space can be created in the new urban area. Different urban character also can be distinguished with the change of different areas. Through a serious of analysis and design, a good connection is built between Hyllie and Kroksbäck-Holma. These two areas will attend in this development with new images. Hyllie will complete its expansion and become an important bridge between Malmo and Copenhagen.

Of course, there are also some uncertain elements which may influence the development process. The fist is the Fair Trade (exhibition centre) which locates in the north Hyllie. The large scale of this building may be a physical barrier to block the people’s movements. So, how to play its role in urban life is crucial for this region. Just as what is its appropriate functions when there are no exhibition activities? The second is the walk-street with small stores in the edge of Kroksbäck Park. As the plan, it will be a commercial street where people can rent or buy rooms to sale commodity or make creation. There are also meeting places and coffee shops. But how many people would like to accept it and how to encourage the young people to attend it? In the analysis, young people occupy a large proportion in this region. Maybe some preferential policies need to be discussed.
Bibliography


