



A Bridge of Sustainable Urban Greening

A case study of Frederiksberg park .Copenhagen and Västra Hamnen Bo01 Malmö



Zhao Huang

Supervisor: Prof. **Roland Gustavsson**

Alnarp.Malmö 2007

Master thesis in the subject of
Urban Forestry and Urban Greening(UFUG)
Dept .of Landscape Management and Horticultural Technology
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FOREWORD

The master program in Urban Forestry and Urban Greening during the period Autumn 2006 - summer 2007 and was arranged by the Swedish University of Agricultural Sciences(SLU), Alnarp, I have chosen the subject “A bridge of Sustainable Urban Greening” as my degree thesis. The particular study locations are Frederiksberg park and surroundings ,Copenhagen ,Denmark and Västra Hamnen Bo01 ,Malmö ,Sweden. The Urban Forestry and Urban Greening masters program has the code LP0401. The whole one year program gives 40 credits (60 ECTS) and the actual degree project is valid 10 credits (15 ECTS) within this program. Faculty of Life Sciences of Copenhagen University(KUL), Denmark, has hosted half the courses in Copenhagen.

The master degree project’s Supervisor is Professor **Roland Gustavsson** from the Department of Landscape Management and Horticultural Technology, SLU, Alnarp.

Acknowledgements

With a deep sense of gratitude, I wish to express my sincere thanks to my supervisor and teacher Professor Roland Gustavsson at SLU, Alnarp, who kindly and generously guided and encouraged me during this work .who kept an eye on the progress of my work and always was available when I needed his advice.

My teachers at KUL, especially , Professor Christian Nørgaard ,Professor J. Bo Larsen and Anders Busse Nielsen, and at SLU, Dr. Matts Karlsson and Guest professor Kine Halvorsen Thorén, whom during the whole program were able to share lots of inspirations. I am appreciate for the memorable experience with them during the project excursions.

To Professor Dr. Bengt Persson and Angelika Blom at SLU, for their assistance and guiding during the elaboration of this project document.

I also want to thank my parents, who taught me the value of hard work by their own example. I would like to share this moment of happiness with them. They rendered me enormous support during the whole tenure of my research.

Finally, I would like to thank all whose direct and indirect support helped me completing my thesis in time.

*Zhao Huang
Alnarp .Malmö June 2007*

SUMMARY

Urban growth causes various environmental problems. In order to ameliorate this problem, the idea of the compact city has been introduced nowadays. However, densification can imply a loss of other important urban quality factors, such as green spaces. And high pressures has been input .A disconnection of urban green structure. Parks, green spaces and trees are more than the “lungs of the city” or “pollution scrubbers.” They affect our everyday moods, activities and emotional health. They improve our quality of life in ways that are sometimes understood, often underestimated. Whether we are active in urban nature (planting trees, growing gardens) or passively encounter city green (such as a stroll through a park), we experience personal benefits that affect how we feel and function. Proof of psychological and social benefits gives us more reasons to grow more green in cities in a sustainable ecological human way!

In this master thesis, main focus is on the roles of green structure in the urban environment with a real case analysis. A theoretical study is carried to review the functions of the green network within cities .In the case of Frederiksberg Park ,Copenhagen,Denmark,and Västra Hamnen Bo01,Malmö,Sweden. By several approaches which has been used in the study to discover the underlying problematic and potentials of green structure. The two landscapes with different properties ,Traditional classical landscape in a historical context(central of city) and contemporary landscape in a brand new context(fringe of city). To analysis these two totally different situations. furtherly to visualize new developmental plans by combining of both paradigms based old context on sustainable ecological point of view.

Key Words: urban growth ,compact city ,green structure, green network ,psychological and social benefits, human ,Frederiksberg park ,Västra Hamnen Bo01.

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1. Introduction

1.1 Background

Some people love cities; others hate them. While Henry David Thoreau considered cities to be places where “millions of people are feeling lonely together” (cited by Ponting 1990), others have praised cities as centers of innovation and learning, transmitting accumulated knowledge on which future achievements can be built (Girardet 1993). Whether one likes cities or not, the reality is that the majority of the world’s population now lives in them and that further urbanization cannot be halted. By 2030, 60% of all people are expected to reside in cities and towns (Töpfer 2001) (Figure 1). Urban areas grow three times faster than their rural counterparts (Palijon 2002; WRI 2004). Urbanization is no longer an industrialized-world Phenomenon.

Urbanization continues in an already heavily urbanized Europe, and as more people or choose to live in town and cities, the quality of urban environment becomes increasingly important. People do not have so many choices to select the space to give physical and mental releasing in everyday lives. Green spaces are a vital part of any urban conglomeration, providing a range of environmental, social, culture and economic benefits.

Sustainable development -a generally accepted definition and good point to begin an exploration of this concept is from the Brundtland Report:” Sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”(World Commission on environment and Development ,1987)

1.2 Problem statement and aim

Many post-war city developments right across Europe have been built for mass housing with dense populations living in high or medium rise apartment blocks. Access to green spaces has often been at a premium but it has not always been either readily available or designed to good standard, despite the best intentions when they were constructed (Fairbrother 1970). Many of the open spaces around housing blocks can be depressing because of lack of good green structure.

This disconnection between green space and housing areas. What reasons form such disconnection? And how to bridge a green connection between housing area and green space? How to improve the quality of space where people doesn’t like or never knows? From a long term planning strategies. It aims to create an ecological and sustainable image.

1.3 Research Methods

In this master thesis paper, different research methodologies have been used. Chapter 2 (urban greening and broader analysis of function and definition) are mainly based on the literature review and information attained from internet. Chapter 3 (materials and methods) are complemented by data collection from library and site observation and basic site assessments. Chapter 4 (vision and objectives) mostly is present the vision and objectives of this thesis paper. Chapter 5 is commenced from site analysis in-depth, interviews, direct site observations and basic assessment made during the site visiting. The new developmental plan is made in chapter 6 based on serial analysis of chapter 5. The analysis is based on my few year’s professional working experience and relevant link-

With the consideration of urban planning and strategies making. The interviews carried on 20 April 2007 with inhabitants in Frederiksberg park area Copenhagen(which covers both areas in central park and housing area). Both interviewers chosen by the reason of distance to the park. They present views and knowledge. A lot feedbacks which are highly implied in the suggested planning. The detained information regarding to the interview attached in appendix.

1.4 Delimitation

This thesis paper, research project mostly covers the urban greening part of the master program (Urban Forestry and Urban Greening). Only to discover some strategies in a highly urban context. It commences from the urban greening planning, Space, aesthetics, environment, social aspects and so on. Without the involvement of economy and professional urban silviculture knowledge.

The reason of time schedule (8 weeks) and materials, and language limitation (Danish and Swedish). The level of research might be superciliousness. Maybe the outcomes of expectation are not totally reflected by analysis and suggestions in the final master plan.

Why to choose these two areas as the case of study area? A case study area is one, which is investigated to answer specific research questions and provide a range of different kinds of evidence.

The choice of Västra Hammen was motivated by the fact that the urban planning is well combined between housing and modern landscape. The city, therefore, represents an interesting and many cases with challenging exposition of the study phenomena. Well-planned public parks and green area make this area's information rich in terms of basic data sources when compared to other cities within the country. The choice of Frederiksberg park and surroundings was aimed to solve the typical problematic, this area is as the typical traditional landscape. A huge contrast of both sites. A classical and traditional landscape and contemporary modern landscape. But they are touched in different situations and playing different roles in the urban dweller's daily life.

2.Theory

The chapter will give overview of urban greening. And To introduce the urban greening structure and its impact to relevant aspects in an European context.

2.1 Urban green structure historical development in Nordic countries

The green structure in Nordic context today have developed during the last 200 years and have their origin in the development of the modern town in the 19th century (Bucht and Persson, 1994). It was mainly for aesthetic, social and hygienic purposes that green structure like parks and strolling areas were laid out or restored. In the second half of 19th century, parks such as city parks and parks close to railway stations were designed with ideas from England forming what is called the English Park (Bucht, 1993; Bucht and Persson, 1994), and from Germany (Bucht, 1997). In 1926, Rutger Sernander who is one of the Swedish professor in plant geography, he was one of the first in Sweden to suggest preservation of green habitat corridors from the city centre to nearby green recreation areas and nature reserves (Sernander, 1926). In the 1960s and 70s a major feature of urban green space planning in Sweden and Denmark were the green spaces with accompanied the ‘million-homes programme’ developments, a national programme which aimed to build a million new homes. The concept of the ‘city park’ became an archaic notion in Swedish and Danish urban design circles, replaced by large reserved areas for outdoor recreation. Nature was considered more important than it had been, and many green spaces were left in their natural state. These concepts laid more importance on activities than social interaction. In the 1970s a renewed interest in city parks could be seen, possible as a result of town planning ideas from Denmark, where the concept of ‘dense and low’ development had emerged. This concept was a part of some million-programme developments, but did not infiltrate Swedish planning to the same extent as in Denmark. (Geraint, 1998). In 1992 the United Nations Environmental Conference in Rio focused its attention and globally sustainable development, and quoted physical planning as being a possible means of maintaining the biodiversity. On a national level, the importance of the “green aspects” in the planning context has been attracting growing attention. The planning and Building Act was revised in 1996 to incorporate the concept of “an appropriate structure of green areas”. The green structure is equated with buildings and infrastructure, and other facilities (Regionplane and Trafikkontoret, 1998).

2.2 Frameworks of European definition

The framework for defining urban greening within the context of this publication called “urban forestry matrix” embodies the integrative and multidisciplinary character of urban greening in Europe. A long-lasting debate on concepts and definition has characterized urban greening. However, in spite of the debate about definitions .many agree on the key strengths of urban greening:

- It is integrative, incorporating different elements of urban green structures into a whole(the “urban greening”)
- It is strategic, aimed at developing longer-term politics and plans for urban trees resource ,connecting to different sectors, agendas and programs.
- It is aimed at delivering multiple benefits, stressing and economic, environmental and sociocultural goods and services urban forestry can provide.

- It is multidisciplinary and aiming to become interdisciplinary, involving experts from Natural as well as social sciences.
- It is participatory, targeted at developing partnership between all stakeholders.

2.3 Definition of Urban Green Structure

Urban green structure is a concept used in most Nordic countries, however with varying Interpretations and legal status. Urban green structure contains all land of the urban landscape that is neither covered nor sealed, including parks, playgrounds, sport fields, allotments, private gardens, green space of housing districts, industrial properties as well as along streets and rail roads etc.

In Sweden, green structure as a hidden resource, is often used in discussions related to urban development. The concept was introduced in the Swedish planning discussion in the beginning of the . Ulf G. Sandström defined the green structure in an urban environment refers to all non-hard and non-built areas, including surface water areas as well as a zone of 1-2 km between town and countryside, that are more or less connected to each other. The structure should be organized with an overruling strategy, i.e. it must be possible to recognize a system in the structure. Accordingly a green infrastructure is a network of patches of natural character including surface water and green ways, penetrating an urban built-up area. The concept should not be limited by administrative considerations; i.e. both public and private lands are including in a green infrastructure (Sandström, 2002).

The City Architect Office in Lund, Sweden supports the approach stating that. Green structure includes both the landscape and its nature in the city neighborhood as well as all non-hard ground in the city. This means that the green structure in a local government plan includes not only determined green areas but also non-hard areas in housing areas, day nursery gardens, school yards, institutions and sports grounds, cemeteries, verges, green squares, allotments and adjacent sectors of the landscape. Also non-hard ground without any value for recreation, e.g. safety zones for traffic or industrial establishments, belongs to this category? (Stadsarkitektkontoret in Lund, 1996:5)

2.4 Classification of Green Structure

The green structure can be classified as following (Beer, 2000):

- Paved city spaces with plants: courtyards & patios, roof gardens & balconies, tree-lined allees, promenades, city squares and schoolyards
- Parks, gardens and sports grounds: public parks, pocket parks, gardens, public sports grounds, public recreation areas and public playgrounds
- Burial places: crematorium, burial ground and churchyard
- Private open spaces: institution grounds, residential home grounds, health services grounds, private sports grounds, private estate grounds, local authority services grounds and commerce grounds
- Domestic gardens: house gardens, allotments, communal semi-public gardens and communal private garden
- Farmland and horticulture: arable, pasture and orchard
- Transport corridor verges: canal sides, rail sides and roadsides
- Water margins: wetland, riversides and lakesides
- Water: still water, running water

- Woods: woodland, timber/bio-fuel woodland, wild wood and semi-natural woodland
- Urban forests also can be divided into four categories according to the placement and function they have (Rydberg & Falck 1999):
- Trees near houses, i.e. groups of trees that stand close to buildings and have a high esthetical value.
 - Neighborhood green area, i.e. small forests within the residential areas that can create opportunities for children to play.
 - District green area, i.e. medium sized forest that are frequently used by walkers and bikers for passing through, or for short dog walks.
 - The recreational area, such as central park, which is often on the urban fringe and people might travel there for recreation as well as use it for longer walks and exercising.

Normally, it can be values such as the mystique of wild forests, forests harmonies, freedom and space, diversity of species and nature's teaching, cultural history, activity and challenge, facilities and meeting places. green areas occupy a big part of the city area. However, formal green structure represents merely the green areas that are maintained by the local authorities, while the actual green structure represents all areas that fit the general definition of green structure.

2.5 Benefits of Green Structure

In relation to a sustainable urban development, green structure is important as functions and meanings for (Alm, 2004):

- Urban climate, noise moderation, air cleaning and handling surface water
- As an indicator of environmental changes
- Cultivation of energy plants
- Trees also have an aesthetic benefit with different colors and forms of the trees and the different seasons can be experienced.
- Biodiversity: to save valuable urban species, as refuges for species from rural biotope and as spreading corridors, give possibilities for flora and fauna to exist in the cities.
- Social and cultural values: for health, recovering and rehabilitation, to give beauty and comfort, to give room for passivity and activity, as a cultural heritage, as an arena for citizenship, for education and for communication.
- Urban design: to give a city understands able structure to connect different scales and parts of the urban landscape. Be as most important elements while planning.

Urban green structure is especially important for children and elderly people, as these groups often are limited to stay in the city while other groups easier can go to bigger nature areas outside of cities. Urban green structure is a vitally important link between nature and human.

2.6 Key concept

Greenery

Greenery understood both as single green elements such as trees; bushes etc and green environments (larger green area such as woods, sport fields and shrubberies) constitute a large amount of the urban landscape.

Green corridor

Green corridor is a system of balanced natural urban areas linked to the suburban green areas by linear street greenery and elongated green areas, often of great recreational and/or ecological value. The nature that exists in the landscape is the source use for disseminating wild plants and animals into urban areas. That is why green corridors out in the countryside and leading into urban areas are vital, as is the transitional zone between urban and rural.

Green wedge

The most important function of the green wedges is to form continuous green corridors containing both cultural and scientific values as well as attractive countryside for the enjoyment of people. beings.

Pocket park

Pocket park is a small green space that can be found in an unexpected place. Its properties can be defined as (Brent Council, 2004):

A small site often secreted between houses or buildings

- Will generally contain formal bedding
- High level of horticultural maintenance regardless of the type of planting
- Often has limited access due to its location
- Will often have a fairly high level of facilities considering its size
- Normally would be heavily used, especially by local people

3.Materials and methodologies

3.1 Maps

The maps which are from internet and library are vital resource to relate the project. And the maps cover several aspects such as history, culture and so on .They give numerous relevant and valuable information on landscape.

3.2 Literature research

The reviewed literature had broad spectra within this work and has included history, culture, forestry, landscape, geography, flora, fauna, aesthetics and humanity among other.

3.3 Documentations

All documentations include hard copies, Medias and so on. Photography is widely used to present and support the project.

3.4 Site direct survey and observation

Since the project is case study. I have to visit the sites often and to collect information and data. Most vital data are gathered on site. Including some physical and non-physical data. The observation of site helps me to understanding deeply .To sense the hidden relationship level of humanity and nature.

3.5 Interviews with mainly stakeholders

I made few interviews in the Frederiksberg park area in personal way. Randomly to interview with some people who live in this park area. The two interviewers (Birgitte and Rasmus) The detail see The appendix.

3.6 WS Analysis

The fundament of WS is to discover the strength, weakness analysis of case area. There are huge differences between two landscape concepts. Initially, I made analysis of frederiksberg park and its surroundings . Try to focus on the weakness on this area .based on urban planning and psychology point of view .Then I analyzed strengths Västra Hammen Malmö. The approach of analysis is taken by interviews and observations, and urban planning skills of personal few years working experience. Gathering data and making some improvements. The goal of these comprehensive analysis of WS at Frederiksberg Park and surroundings and Västra Hammen is to dig out the typical problematic and stress the potentials of both areas. To map the positive elements into a new developmental plan on Frederiksberg Park-based.

The phenomena of traditional landscape and the contemporary landscape are present by both areas. I analysis them and merged the values to the high density housing surrounded area of Frederiksberg Park. The new and optimized vision of this area is to be done by visual creation based on the analysis.

4. Vision

4.1 Definition of task

The below diagram indicates the initial concept of the study case. I highly concern the area between housings. I abandon the urban forest part since I chosen the urban greening as my research direction. As an urban dweller, participate activities in everyday urban life. How good or bad of life is it effected by environment perception directly or indirectly.

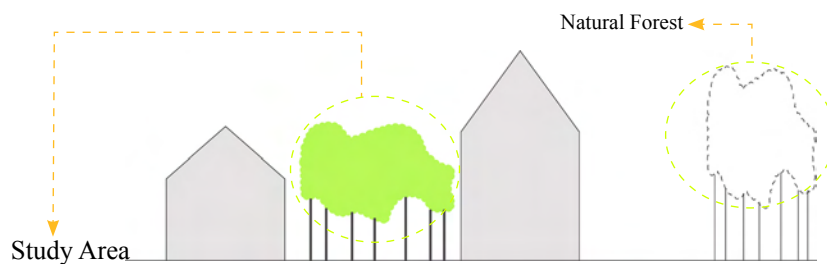


Fig.4.1 Concept of study .This figure represents relationship of two fabric -architecture and landscape in urban area. How do they be coherent in people's everyday life?.

The everyday urban landscape is much more important than nature wide forest to urban people .so This study is going to discover the relationship and its potentials in urban circumstance .

4.2 Visions

Green area development is to improve conditions of living, working and recreation for habitants. Taking into account of Aesthetic factors. To increase ecological, sustainability stability and biodiversity of urban environment. To increase attractiveness of the urban environment. To develop relevant green network or connection. So the particular challenge for the future will be to establish links and networks between the physical environmental ,social ,economic and aesthetic functions of urban green spaces.(See fig.4.2 Structure model of green network)

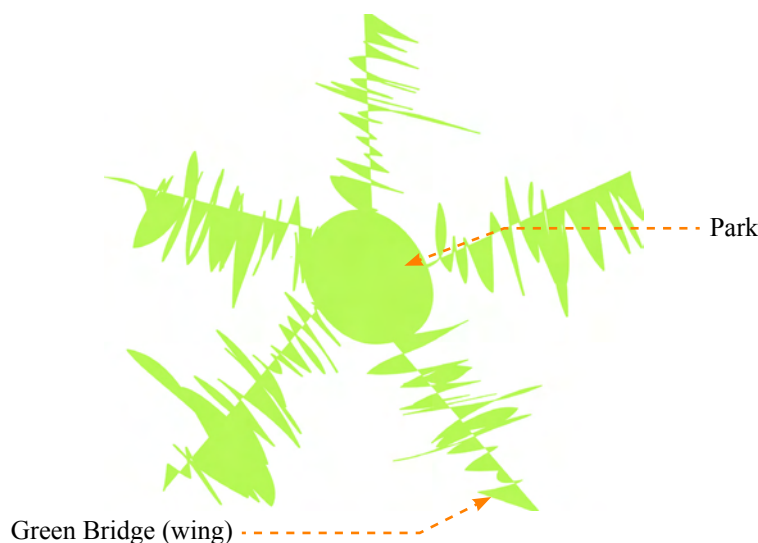


Fig.4.2. Green network.This diagram gives the vision of this study. the central part is central park (Frederiksberg Park) and several wings which are the urban green network are going to be. The wing urban planning structure aims to the future .

4.3 Process of research

The following diagram is the frame of this study. It works by system and organized way. The whole procedure maintains four parts. Which are general introduction, contextual analysis, developmental plans making based on further site analysis and finalization of this research. In the introduction part, Frederiksberg park will take the first to be analyzed, then goes to the Västra Hamnen Bo01; In the analysis part, firstly to make several physical plans which is based on the Frederiksberg park and considered the intervention of the interview which made in the Frederiksberg park area. The new developmental plans are combined by all positive aspects. The new plans are generalized by few visual models.

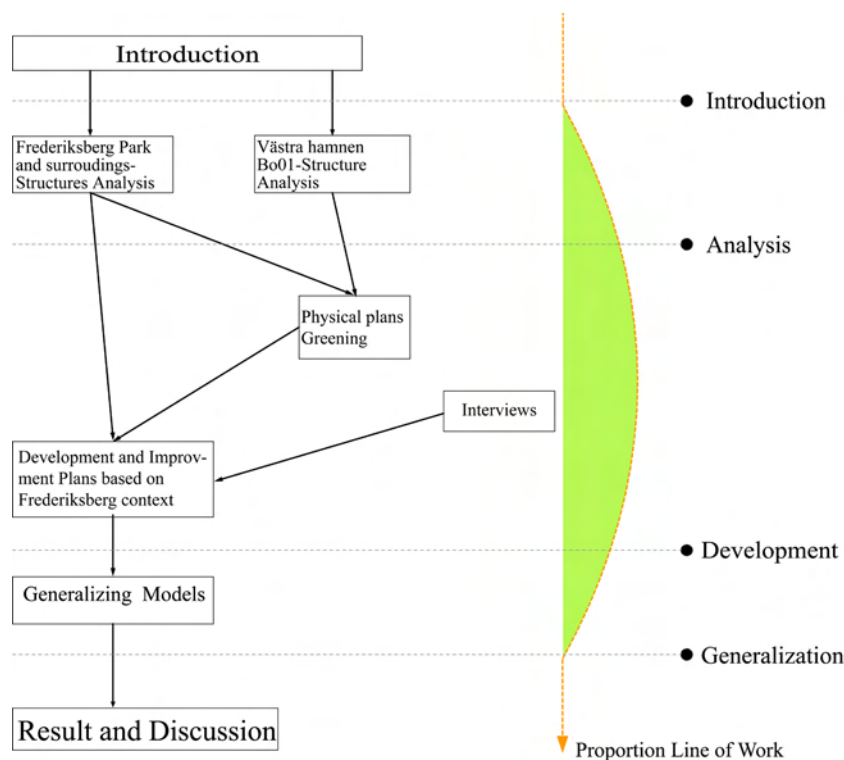


Fig.4.3.Framework of Research

5. Presentation of Analysis

This chapter introduces and analysis the two comparative plans based on the green Strategy (Frederiksberg Park Copenhagen and Västra Hamnen Bo01 Malmö). It is composed by 3 parts: a general introduction of both project areas; Analysis plans of each area, a new development plan based the Frederiksberg park context. According to the process of research in the chapter 4, Frederiksberg Park will take be first analyzed.

5.1 General introduction

5.1.1 Basic data of both project areas

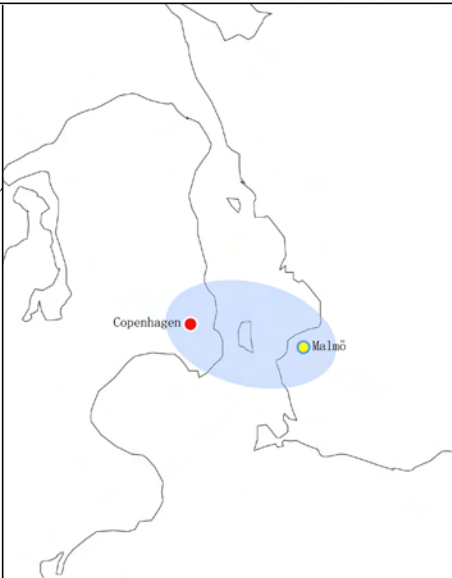
Frederiksberg		Västra Hamnen
<i>.Population: 92,000</i> <i>.Site area: 900 ha</i> <i>.Density :10,477 inhabitants /sq.km</i> <i>(Nationwide 126 inhabitants /sq.km)</i> <i>.Green area: 230ha</i> <i>.Green Coverage Ratio:</i> <i>25.5%(25sq.m/person)</i> <i>(Great Copenhagen .wide</i> <i>15%(15sq.m))</i> <i>.The most density area</i> <i>Of Copenhagen</i> <i>(Frederiksberg Kummun</i> <i>Statistic 2006 ,</i> <i>Copenhagen</i> <i>Statistic 2006)</i>		<i>.Population: 2,000</i> <i>.Site area: 25 ha</i> <i>.Density :8,000inhabitants /sq.km</i> <i>.(Malmö.wide1739inhabitants/sq.km)</i> <i>.Green area:7ha</i> <i>.Green Coverage Ratio:</i> <i>28%(35sq.m/person)</i> <i>(Malmö.wide 33sq.m/person)</i> <i>.The most density area</i> <i>Of Malmö</i> <i>(Malmö Statistic 2006)</i>

Fig.5.1.Basic facts of two project areas

5.1.2 Frederiksberg Park

One of the Copenhagen's largest and most attractive breathing holes. At the main entrance at the end of Frederiksberg Allé, King Frederick VI (statue made by Herman Wilhelm Bissen in 1858) extends a welcome to the more than 300-year-old park .The park was originally laid out in baroque style but around 1800 the park was reconstructed in romantic style. This is the style of today's park, with winding paths, canals and magnificent trees. In the park are two structures, the Temple of Apis built in 1802, and the Chinese pavilion built in 1799. Overlooking the park is Frederiksberg Palace. It located in Frederiksberg, Denmark, was constructed during the period 1700-1735, serving as the royal family's summer residence for a period up to the mid-1800s .Since 1869 the palace has been used as the base of the Danish Royal Military Academies palace and adjacent Frederiksberg Palace Chapel contain imposing stucco work, ceiling paintings, an elegant marble bathroom with secret access staircase, and the Princesses' pancake kitchen, etc .In 2004 an artificial waterfall on one of the small islands in the park, that originally was part of the romanticist garden, has been recreated .Every year on Midsummer Eve, the park is a rallying point for thousands of people who attend community singing, speeches, music and a witch-burning bonfire at the lake side in front of the palace. Adjacent to the park is Søndermarken, which was designed and landscaped at the same time. Søndermarken

Common and Frederiksberg Park are now separated by a road, Roskildevej, but together they form one of the largest park areas in any city of Northern Europe.



Fig.5.2 Satellite map of study area in local municipality (illustrated by Zhao huang).

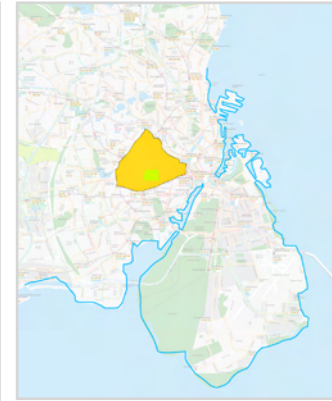


Fig.5.3 Location of study area In Copenhagen
(©<http://www.copenhagencity-tourist.com/images>.illustrated by Zhao Huang)

5.1.3 Västra Hamnen Bo01

The change from harbor, shipyard and industrial area into a new urbanized district has started. There are plans for housing for 10,000 people and 20,000 employees and University students in the area. The first stage, the Bo01 housing estate, was built and completed for the European housing expo in 2001 as the “City of Tomorrow”. The site shows a multitude of architectural solutions, forming an exciting and sustainable urban environment. Measures for a renewable energy supply and increased biodiversity go hand in hand with other initiatives to create a strong sustainability concept for the whole area. The project has already received a great deal of international attention and recognition.

Malmö is the third largest city in Sweden with 265,000 inhabitants, strategically situated in the centre of the Öresund region, with good communications in all directions. The city is a centre of culture, commerce and education. Malmö is inhabited by people from all over the world, 160 nationalities speaking over 100 different languages live here. Structural changes in Malmö’s economy have distanced the city from its traditional industrial background. Modern day Malmö has small and medium sized industrial, service and trading companies, the IT-business being the largest sector. Several strategic decisions have led to a positive development for Malmö, amongst them the bridge to Copenhagen, which was completed in the year 2000, and Malmö University with over 20,000 students bringing new ideas, research and knowledge to the city. Västra Hamnen (the western harbor) is a developing urban area. A new modern city district, with housing, offices, shops and local services is emerging. Västra Hamnen continued development is focused on the sustainable society based on the lessons learnt from the first phase development in Bo01. The aim is to make Västra Hamnen an international leading example of a densely populated, environmentally sound neighborhood.



Fight Base map of Västra Hamnen Bo01
(©<http://www.greenguide.nu>. City of Malmö, 2003-06-04)

Fig.5.5 Location of Västra Hamnen Bo01
(©<http://www.malmo.se/>)

A city district that inspires creativity develops further knowledge and stimulates economic growth. Västra Hamnen is a high priority development area in the city and an important part of the plans to improve Malmö as an attractive city in which to live and work.

5.2 Analysis plans

5.2.1 Frederiksberg park and surroundings

A. Historical references

The two pictures present the image of the expectation in the ancient time to the central park (Frederiksberg Park). The perspective we perceived today. Maybe there are some different understandings on it. We should do have some new desires and willingness for it. But we could not abandon the historical context when making new planning. So the consideration of the park would not be the key point of this research. It severs well to people right moment. Only it needs some touchable improvements.



Fig.5.6 Gouache painting in Frederiksberg Park
(Photo: Z .Huang)



Fig.5.7 Gouache painting in Frederiksberg Park
(Photo: Z .Huang)

B. Study boundary

Since the Frederiksberg community is the most high density district in Copenhagen. I chose the study area with 1.0km radius. To build the analysis database Based on the satellite maps of Google earth as model provided by Google Company. See the below map. The focus area will be the marked circle area with 1.0 km radius.

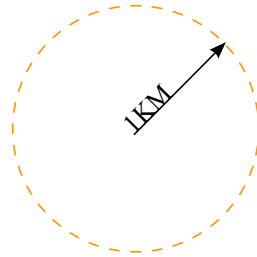


Fig.5.8 Study boundary
(Illustration:Z. huang)

Left both diagrams shows the study boundary. Hörnsten(2000) suggested that residential areas should be with one but not exceed two kilometers of the closed green space .which is similar to respondents' preferences that forests should be located within one kilometers of dwellers .This is the reason why choose 1m as the study boundary. It is easy to measure and assess one complete life system.

C. Structure analysis of current situation

A basic survey to collect all the site and context information is followed by a thorough analysis. Analysis of these existing structures will help determine the development of the design concept ,together with objectives.(Below illustrations :Z. huang)

Existing structures

a.Fig.5.9 The housing Fabric represents the relationship between the study area and Surrounding housings.



Fig.5.9 Housing Fabric

b.Fig.5.10 The existing green structure .it contains the summer park, two church yard and two commercial green spaces.



Fig.5.10 Green Structure

c.Fig .5.11 The traffic system comprises the network of possible movement .The block structure outlines the movement possibility people could go.



Fig.5.11 Circulation System

d.Fig.5.12 The social structure Presents how the green space has been used. Different brightness of color means the frequency level of visiting the green space.

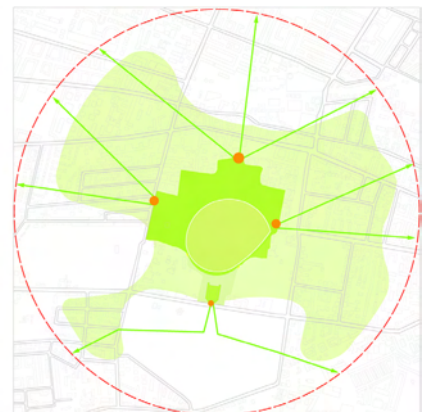


Fig.5.12 Social Structure

D. Problem analysis in-depth

1. Gray urban greening and urban housing structure

• Corridor Experience



25%

Fig.5.13 The images is taken with the purpose of green space research . Photo is taken in Gammel Kongevej Copenhagen DK (Photo: Z .Huang)



Fig.5.14 This image presents the 25% nature view we have. The naked street without any green elements. how is the feeling when people walking in this grey corridor? (photo:Z.Huang)



Fig.5.15 It gives the current phenomenon in urban area. people got depressed with full of cars (air pollution and noise making) and less of greenery .People want have quality life. where the green space could go?



75%

Fig.5.16 Another 50% views is produced by creating streetscape .Street trees are planted and maintained within housing corridor ,between buildings within the urban fabric .How nature is it ! From 25%(sky) to 75%(3D world except the road surface) .The benefit and potential is considerable.

• Urban linkage

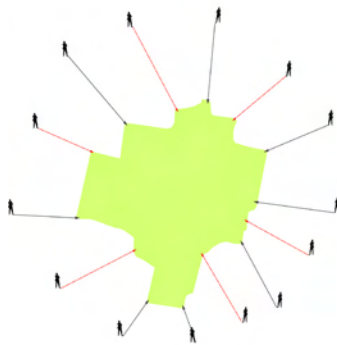


Fig.5.17 Influence flow of urban green space

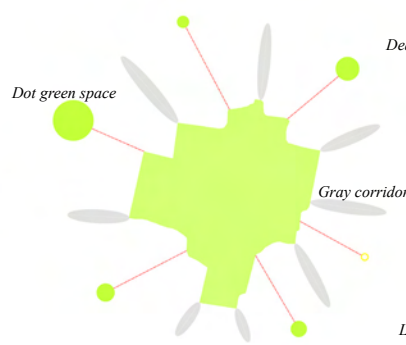


Fig.5.18 Physical linkage model of urban green space

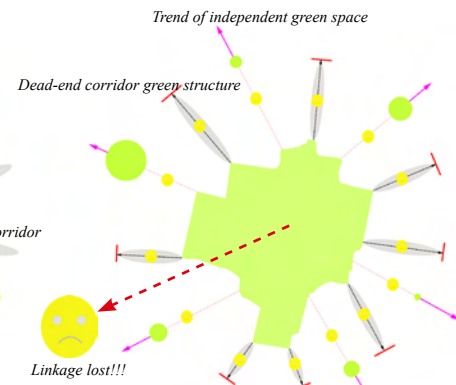


Fig.5.19 Disconnection model of urban green space



Fig.5.20 Interests and distribution model of green space



Fig.5.21 Gray corridor

Fig5.17-19 These figures present the visual explanation of urban green linkage. Urban form is outlined by two types of space :Gray corridor structure and independent dot green layout .Both of them suppose to build an expression of the green network .But the phenomenon of whole system is linkage lost .Urban green is broken down.

2. Interface (Edges) of Frederiksberg Park

During the site survey I found there is barry in the Frederiksberg park. It is fenced by brick walls and metal meshes walls. Which are with certain height in case people entered in. The edges are sharp to people and the sad perception people easily get .The green space is separated and ruled to people(see below figures .5.22-24 ,illustration : Z .Huang).



Fig.5.22 Fence Structures



Fig.5.23 Fence distribution

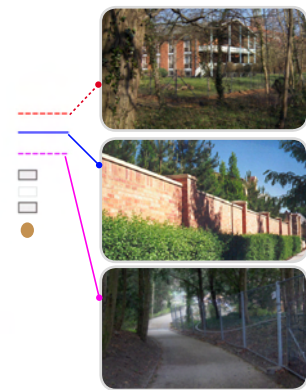


Fig.5.24 Fence types

3. Basic space analysis of Inner Park and its improvements



Fig.5.25 Masterplan of Frederiksberg Park

This park is mainly open space set aside for recreational purpose, both formal and informal, with a significant component of trees to provide visual screening, shelter shade and aesthetic pleasures. As well as trees, grass is likely to be a major vegetation elements together with shrubs, water, surface areas such as roads and paths and possible buildings and other structures provided as amenities for the public.

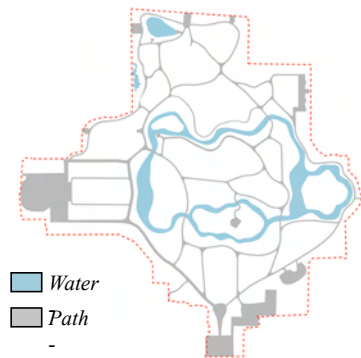


Fig.5.26 Circulation system

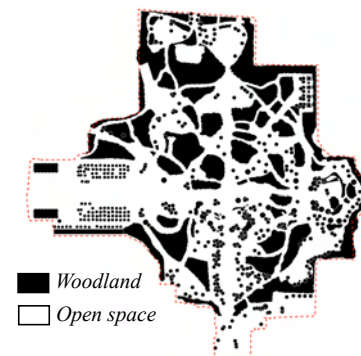


Fig.5.27 Proportion of Openness and woodland



Fig.5.28 Functionalities

It reflects the design movements or style that prevailed at the time it was designed. according to the diagrams .we could see the structure dose not so fulfill with the needs of modern people. The path system, the proportion of openness and closure and the assistant facilities need to be developed and improved.

4. Impacts of surrounding housings with approach of psychology

I have to clarify the historical background of the housing before I start the paper. Another approach, which has influenced planning and design of residential environments since the 1970s, is what may be called the freedom of choice approach (Ibid. p.14). It comprises concepts such as privacy and territoriality. Privacy includes a need for contact as well as a need for isolation and (Gehl, 1971, p.168-169) and a freedom to choose between them. Territoriality refers to persons or groups of persons' defending" an area, which is particular for them, i.e. they feel responsible for the area and act accordingly (Summer, 1969, e.g. p.43). Proshansky in 1970 argued that to maximize their freedom of choice residents must spatially be able to control their level of privacy. Restrictions may cause frustration.

The relevance of this general approach to control of the immediate housing environment seems clear. Demarcation of private, semi-private, semi-public and public domains or areas of responsibility (Chermayeff and Alexander, 1963; Newman, 1973) may be operationalised through a conscious hierarchical structuring of green space. This structuring becomes an important means of allowing for freedom of choice of behavior and activities and thus a basic part of a healthy outdoor environment.

This study of relationship between the housing and landscape commence from the two typical typologies of house. Deeper reading the inter-influence of each other. The multi-storey and single villa in an urban context.

•Multi-storey (4-6 storey)

The way in which the blocks are designed and the land use mix within the blocks also effects the quality of the built environment .The below block pattern is typical in study site.(Cliff Moughtin 1996).The block structure of the traditional nineteenth century city received great criticism during 1920s and 1930s from the leaders of modern movement in architecture .Le corbusier ,for example ,said of the street block structure : 'out streets blocks no longer work .the blocks are an obsolete notion .There ought not to be such a thing ;we have to create something to replace them(Le Corbusier 1967)'.



Fig.5.29 Typical Multi-storey housing block structure (illustration:Z. huang)

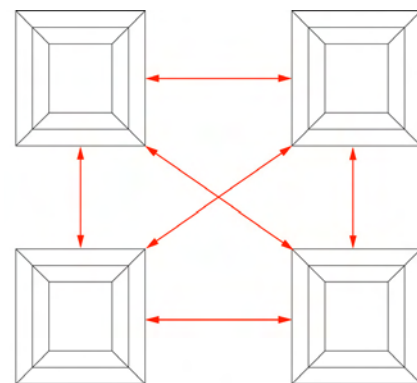


Fig.5.30 Interactive map between blocks. The interface between the public world and inner life of courtyard and its surrounding buildings. (illustration:Z.Huang)

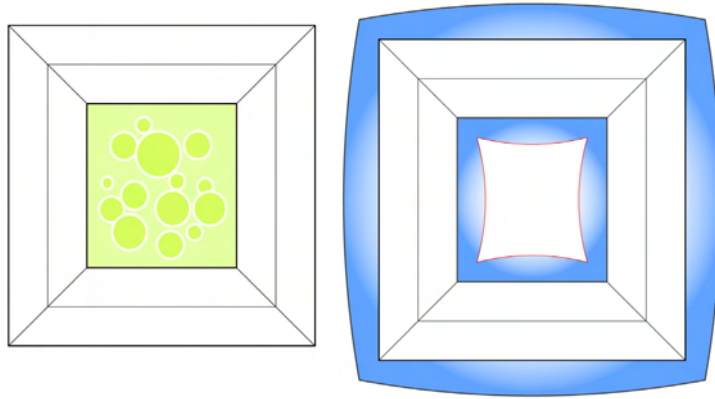


Fig.5.31 The inner courtyard space of block which formed a space with sunlessness and serves as a playground for children. the considerable efficiency of function and the composition of vegetation species is limited applied in this space with reason of spatial. (illustration: Z. Huang)

Fig.5.32 Wall surface with cold expression. the bended curve and gradient color images the degree of human perception on this cold wall. Light color implies the high depression. Both the outer-ring and inner-ring, they present same perspective to people. (illustration: Z. Huang)

- Single villa (1-3 storey)

The reason of history and the growth in private provision of social housing there is a tendency for the communal areas provided by such schemes to be managed by private companies rather than social housing companies. Such housing landscape and green space can be defined as “club” landscape – they are only open and available to a few (note that this implies lack of accessibility is not so in reality, as all open land can be walked on by anyone). This pattern of housing shows that in the housing built in the 1940s and 1950s terraced houses.



Fig.5.35 Typical single housing structure (illustration: Z. Huang)

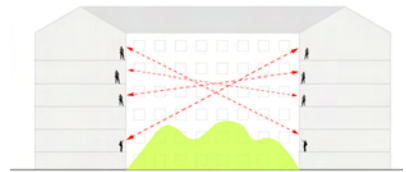


Fig.5.33 Inner courtyard space analysis. Instead of the ground-floor windows looking on to blank walls, only expectation is to catch a clear view of sky over the shallow, shady and expanse of grass and trees. (Gropius, 1935) (illustration: Z. Huang)

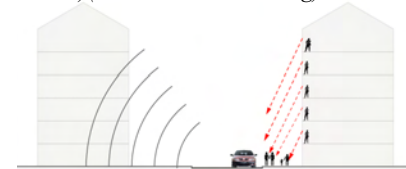


Fig.5.34 Negative effects of street corridor. The noisy and bare block-scape. People can not really participate the activities under the circumstance. No reason to stay any longer in such un-human space. The cars play the key role within the block corridor and discretionary produce bad elements. (illustration: Z. Huang)

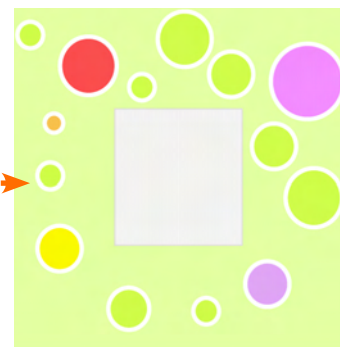


Fig.5.36 Independent single housing. The structure with the high privacy and ownership. It is the most weak part of the green network – Contribution is the key consideration. But it is also opportunity to green network. (illustration: Z. Huang)

5.2.2 Västra Hamnen Bo01 Malmö

Sweden has a long tradition of preserving original nature and nature structures in the urban areas. In a way biodiversity is one of the pillars on which the traditional Swedish park planning policy is based. But when it comes to re-creating nature. This phenomenon that is popular to talk about, but not that often seen in practice. An old, but still valid definition of recreation from an environmental psychology perspective is: a state of mind. Driver and Tocher (1970) "The areas next to the dwelling unit provide for the most readily available "nature" and, therefore, the most obvious spaces for people to use and manipulate to obtain their recreation experience ." (Bertelsen, 1977, p.14).

The green space within the housing areas is mostly communal in the form of residential courtyards with small private gardens or balconies. A Green Area Factor system was introduced to ensure that all developers met an adequate standard in relation to ensuring design and management solutions which support an enhanced level of biodiversity. Green spaces are seen as essential to enhance the level of biodiversity within the site.

The Bo01 area uses the most up-to-date modern concept of landscape design and ecotechnologies. The location in the city is unique — Västra Hamnen, a former industrial estate by the ocean, within walking distance of both the city center and the beach. The district consists of landfill, and is currently flat and desolate, apart from a narrow park along the sea front. There are already some industrial enterprises, offices, and university buildings by Västra Hamnen, such as the enormous workshop building that currently houses the Malmö trade fair. The permanent part of Bo01 makes up the first stage of Västra Hamnen's conversion into a complete, new district for living, work and study. The aim is to create a centered around how we live today and how we will live in the future. Bo01 is showing provocatively imaginative visions of future living, where high demands on aesthetics, ecology and high technology are combined.

In this part I will study from several factors to present and analysis this innovational concept of landscape design combined with the new housing development. The advantages include such aspects: **Roof garden, courtyard space. Public open space, Impact on housing, Biodiversity, Rich species mixture, new green concept.**

- *Roof gardens*

Others are more adventurous with substantial roof gardens using a wide range of plant material - these areas are maintained by the house owners.



Fig.5.37 Roof garden. This photos are the application of roof garden in Västra Hamnen Bo01.
(Photo: Z. Huang 2006-2007)

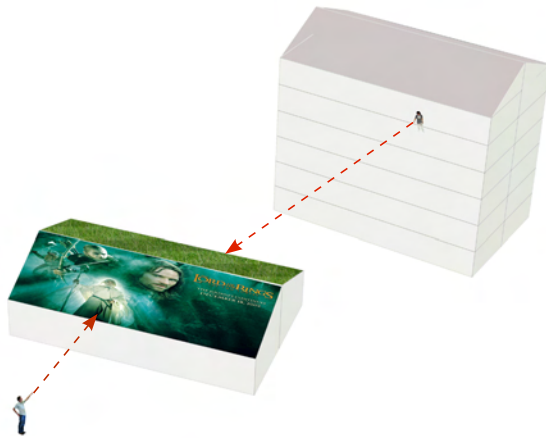


Fig.5.38 Further creative idea of roof design. The design of roof could consider about the ecology and aesthetic. The possibility of accessibility ought to be assessed from human eye level and overlooking level. The roof design should contribute positive and passive feeling. (illustration: Z. Huang)



Fig.5.39 Green roof with art. This example is combined the consideration of green roof and aesthetic. Both commuters and owners are happy to accept the tiny art sign on the roof .and green roof with simple and chromatic layer. (Photo: Z. Huang 2005)

- *The Courtyard space*

The courtyard areas vary: each is laid out according to a points system which gives a higher grade for “greener” features, e.g. a tree or a water feature counts for more points than a square meter of grass; this system has encouraged variety in the gardens. Point system is the special program used in this area to evaluate the fact of green space. As a model to measure the quality of green environment. Because the site is mostly like a housing development project. The :”green landscape” design of courtyard design is vital important in the whole. As the first doorstep landscape, the courtyard landscape should be more consideration on the basic human demands to environment. To a detailed level the landscape covered all green elements such as green on the ground, on the wall and transition space between indoor and outdoor.



Fig.5.40 Green Courtyard. The courtyard green as shown below is an open space Surrounded by housing. It contains green lawns ,pedestrian path benches for passive Recreation .(Photo: Z .Huang)

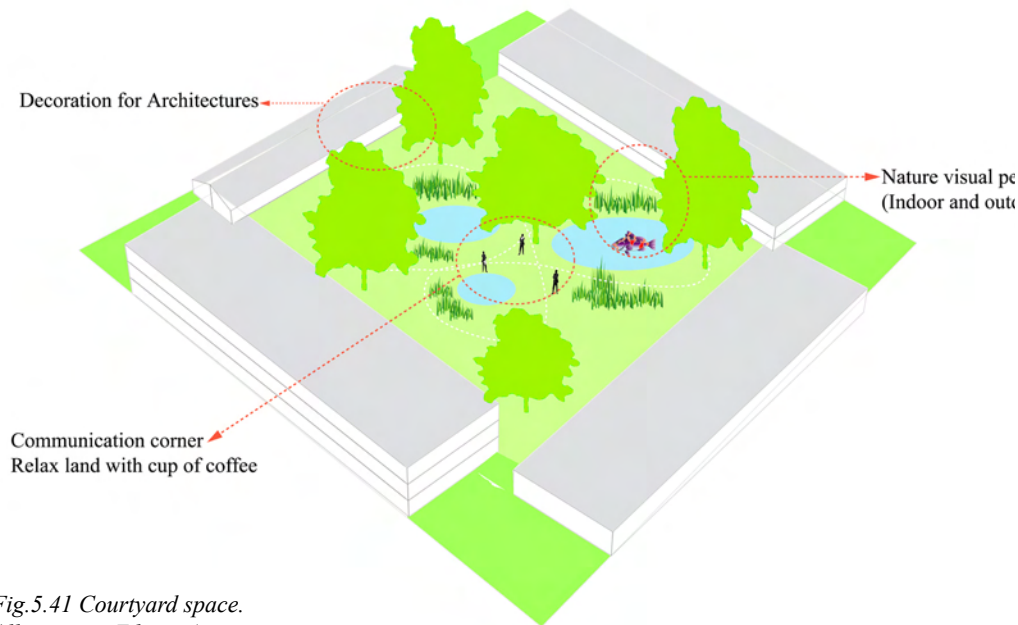


Fig.5.41 Courtyard space.
(illustration:Z.huang)

This courtyard is part of 4 outdoor spaces: front and back gardens, 1st floor balcony and an upper roof terrace. As the diagram shown that the courtyard performs a role of communication, mental and physical relaxing and interaction between architectures and landscape.

There are also some low rise small dwellings on this mixed site - many of these have very small gardens which open out onto a communal green space. The whole site is pedestrian only; parking of residents' cars will be in designated parking areas outside the housing area itself. So it has no impact from parking problem.

From the beginning the intention was that greenery or water should be visible from all dwelling units. The result is an interesting complexity of interlinked Green spaces at the core of the housing - with open expanses of water, retention basins, biotope variation, transit opportunities for wildlife between courtyards and the public space, private patios, sunlit spaces for play, and meeting spaces for socializing. The designers and developers were allowed a fairly free hand so that sufficient diversity of design solution could be achieved. However, the city and Bo01 organizers were insistent about two aspects in relation to Green spaces within the housing areas.

- *The public park (Ankar park-second doorstep landscape)*

With Ankar Park in the new quarter Västra Hamnen in Malmö, a luxuriant living park has been created, that functions as an open, attractive city space for everyone. The quarter has been constructed around the old industrial harbor with the same name. The park gives the buildings sensory delights and changes with the seasons and uses. A new type of City Park has been created, a hydrology park. Inspired by the diversity of Swedish nature, different types of biotope have been established such as alder marshes, oak woods and salt-water biotope with crayfish – spaces that merge into each other and spaces that invite

Play and contemplation. The park invests the area with a different sense of time. Subtle changes that can be registered every day, which allow for new experiences with sharpened attention and an increased sense of presence.

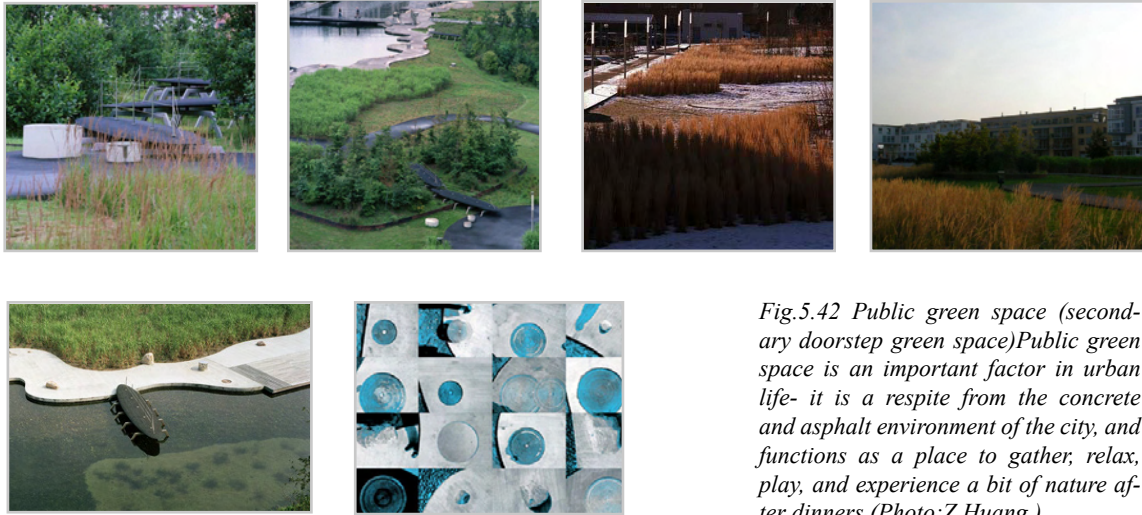


Fig.5.42 Public green space (secondary doorstep green space)Public green space is an important factor in urban life- it is a respite from the concrete and asphalt environment of the city, and functions as a place to gather, relax, play, and experience a bit of nature after dinners.(Photo:Z.Huang)

- *Impact on housing*

The appreciation of landscape impacts much on the housing. From physical and mental, visually, direct and indirectly, aesthetics, ecological and so on. Environmental thinking is ever present in the construction of the district's properties. Substances listed in the Swedish Chemicals Inspectorate's list of hazardous materials will not be used in the building process. The buildings will be built so that inhabitants and users can utilise them in an environmentally friendly and resource efficient way. Building materials should be reusable when the buildings are demolished. The below images give a view about the relationship between both elements of environment.



Fig.5.43 Impact on housing. This photos show the impact of landscape on housing directly and indirectly.Live landscape can be reflected on any place. see the left image the trees are reflected on the window. how amazing is it! (Photo: Z .Huang)

- *The Biodiversity*

The district is being built with the aim of containing a diverse range of natural life. A number of habitats are being created for many different plant and animal species. Roofs and walls will be covered with plants in order to increase the green space. Rainwater and seawater will be used in public spaces to support a broad range of species. A district ecologist will be employed in the Western Harbour area.

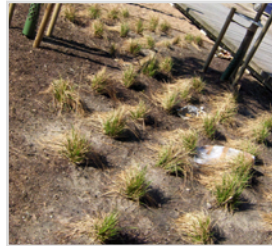


Fig.5.44 Biodiversity -rich species
(Photo: Z .Huang)

"Natural feelings "

Wildlifes

- *Inspirations of landscape*

How To understand and experience the essences of landscape impacting on life?

(See below photos)

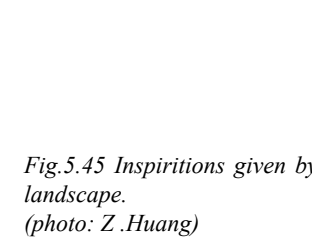
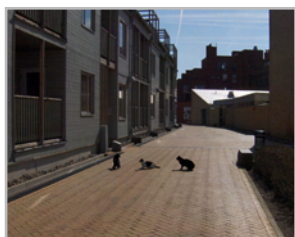


Fig.5.45 Inspirations given by
landscape.
(photo: Z .Huang)

- “Green facilities”

In the park housing area, the public facilities are widely used as the green elements of design. It gives enhancement to people’s needs on good environment. The below images show the atmosphere of these green facilities.



*Fig.5.46 Green facilities. By applying these innovative facilities, it makes people really enjoy and participate the life in built environment, just steps out the room. Great landscape which are natural and artificial.
(photo: Z .Huang)*

- Green space factor and Green points

A concept of “green space factor” has been employed, partly inspired by experience in Berlin during the . This factor is measured as an average value for the whole area of the plot, with values of between 0.0 and 1.0 awarded to the different sub areas, according to the opportunities they afford for vegetation, ecology and local storm water management .The rule for these housing areas was that the average value for any green space or courtyard within the housing must not be less than 0.5.

There are many possible ways of making such a scheme work - green roofs and walls, for example. It was noticeable that the developers and architects liked this scheme, even if some ecologists and landscape architects remain dubious about reducing green space provision to a series of rules. Note: it may well be that local residents in other areas would also like what would be to them a “clear guidance” on the qualities that their adjacent Green spaces should have.

Every residential courtyard in Bo01 had to be provided by the developer with at least 10 green measures from the list entitled “Green Points”. The aim of these points is to give Bo01 a distinct and interesting profile as regards the ecology and sustainability.

Green Points focus above all on measures helping to reinforce biodiversity.

Example from Bo01 of calculating the Green Factor for the residential courtyards - the following is only an extract from the full scoring system - there are many more items which can gain a point (the original list is available in Swedish from Malmö city).

	m2	Factor	Score for a site
A garden plot	951	0.5	476
Green on the ground	129	1,0	127
Green on the wall	112	0,7	78
Green roof	330	0.8	264
Open water	23	1.0	23

6. Result and Discussion

6.1 Psychological models

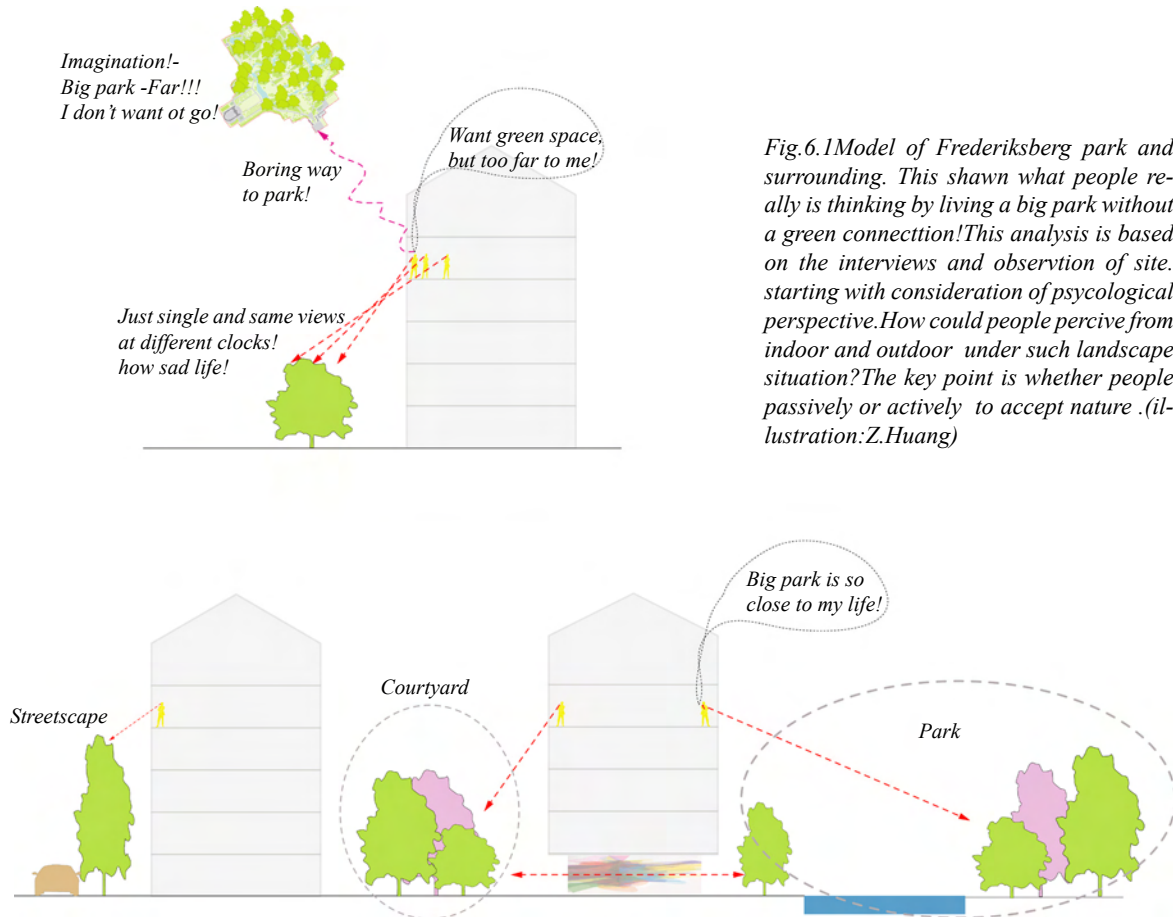


Fig. 6.2 Model of Västra Hamnen In the diagram the use of trees to break down the scale of modern urban green space is demonstrated. In (figure .6.1) there is nothing to give a transition between the human size and that of the large scale, simple buildings. The negative perception will be given.

This dwarfs the person and can lead to discomfort. The use of trees, while themselves dwarfed by the buildings, creates an intermediate, more human scaled space at street level (Urban forests and urban trees, a reference book 2005)

The psychological approach has been used in this study where dimensional analyses of people's preferences for different landscapes are performed. These studies have demonstrated that various psychological constructs such as complexity, mystery, legibility and coherence are important predictors of human landscape preferences (Buhyoff et al., 1994). The psychological model refers to the feelings and perceptions of people who inhabit, visit, or view the landscape. A high-quality landscape evokes positive feelings, such as security, relaxation, warmth, cheerfulness or happiness; a low-quality landscape is associated with stress, fear, insecurity, constraint, gloom, or other negative feelings (Daniel and Vining, 1983).

Because psychological methods use multiple observers and yield one or more quantitative scale values for each assessed landscape, their reliability and sensitivity can be precisely determined. This is an important advantage, since users of these assessments can know the degree of precision and to prove confidence in the landscape values produced. The methods base landscape assessments on the reactions and judgements of the people

who experience and/or use the landscapes. In this regard there is an important element of validity inherent in the method (Daniel and Vining, 1983).

6.2 Result

By the several analysis plans and diagrams made in the previous chapter. The result about how to bridge a connection between architectures and landscape is indicated. A concept called Environmental Housing and Built environment is introduced. It aims to provide places for people to live in an environmentally-friendly way. And a quality built and natural environment. The following ideas are finalized based on the comprehensive analysis:

- Efficient use of resources now and in the future in the built environment and service provision, Frederiksberg Park as the most attractive public space, which people could enjoy and participate everyday. The efficiency function should take the first consideration.
- Protecting and improving natural resources and biodiversity.
- Having due regard for the needs of future generations in current decisions and actions.
- Creating a sense of place (e.g. a place with a positive ‘feeling’ for people, and local distinctiveness). and enhancing the positive feeling by reducing the negative effects.
- Well-maintained, user-friendly public and green spaces with facilities for everyone. including children and older people.
- A high-quality, well-designed built environment of appropriate size, scale, density, design and layout that complements the distinctive local character of the community.
- High quality, mixed-use, durable, flexible and adaptable buildings.

How far to be realized and applied in a possible way in the Context of Frederiksberg park? The following paragraphs will answer to these several questions. To rebuilt an image of how to be coherent and harmonious between green spaces. To fix up the disconnection of them. the implemental plan will contain the following points.:

•*To build streetscape with introducing green elements and relevant facilities.* Of which means streetscape to combine with the architecture facade design, the integration of them will renovate the grey corridor to a dramatic picture.

•*To enhance the courtyard space to be more attractive and efficiency used.*

This concept will challenge the tradition about the definition of courtyard where is with privacy. no way to touch and share to other totally or partly.

•*To employ the concept so called “Elevated green landscape”*

Which means to apply the green roof and green wall. the elevated way presents the ecological and aesthetical benefits. Interactive interface between human and landscape by perceiving this pattern.

•*To introduce more species to enrich the biodiversity.*

To employ more green species and wildlives to enrich the biodiversity. both the housing area and central park. people gets the nature “feeling” and to live more naturally.

•*To redesign or reorganize the primary and secondary public space. (Parks)*

The current situation of Frederiksberg park(primary park) is lack of efficient design and organization. the spaces is not maximized to use. and people can not fully participate in it. and the community level park(secondary park) is less the design and high independent.

•*To remove the edges of Big green space. and to soften the edges by reducing the pressure of traffic. change few lanes to single way.*

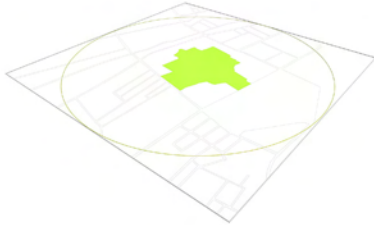


Fig.6.3 Park without boundary

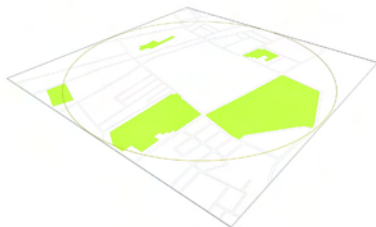


Fig.6.4 Surrounded parks

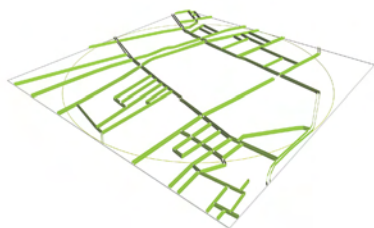


Fig.6.5 Linear Green structure(street)

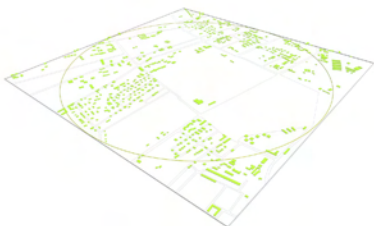


Fig.6.6 Green roof (elevated green spaces)

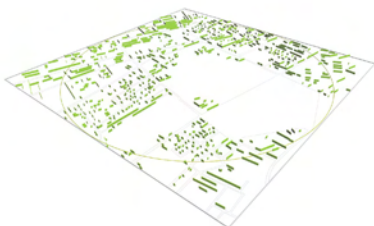


Fig.6.7 Espalier (elevated green spaces)

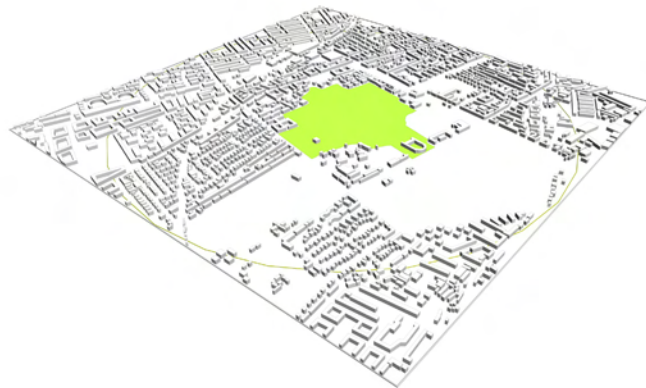


Fig.6.8 Existing housing fabric and green structure in three-dimension

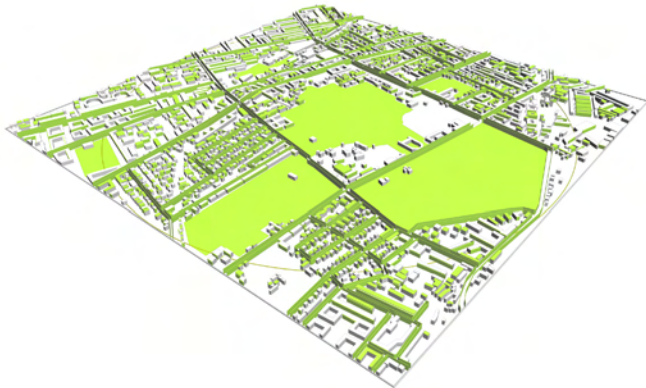
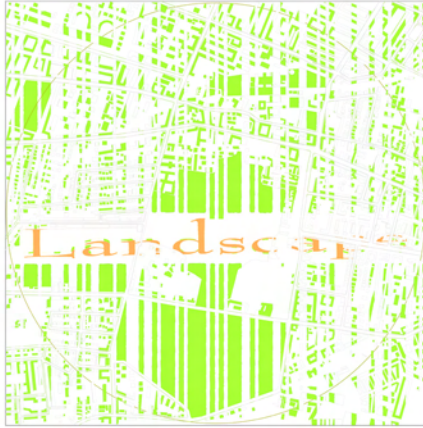
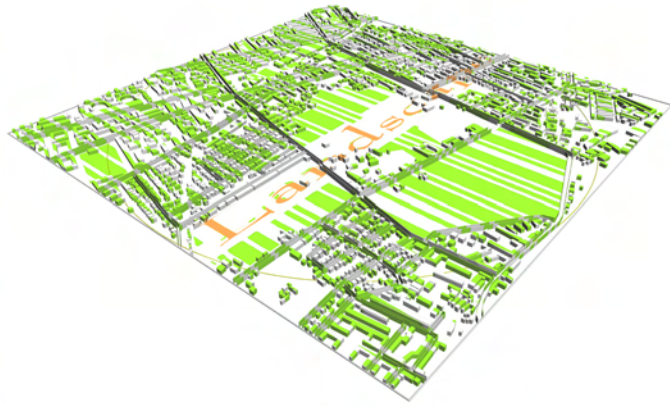


Fig.6.9 New green structure (systemic green network)

These below figures shawn that the green space contains the range of trees shrubs and other plants species and compositional patterns and layers found in nature .and these produce more biodiversity values and are easier to manage and maitain(Forestry commission 1991). It outlined of :floor plane,the walls of streets and squares;corners,rooflines,roofscape and skyline,corners;together with a discussion of the design and distribution of the three-dimensional ornaments that are placed in streets and squares(Cliff Moughtin 1996).
(illustrations 6.3-6.9:Z.Huang)



*Fig.6.10Barcode perspective of green network
(illustration:Z.Huang)*



*Fig.6.11Visual model of green city
(illustration:Z.Huang)*

The diagrams are the layers of several green options could go in this study. Through the three dimensional illustration , The pattern of green space changed from original to another version.It create more opportunities to effect the urban landscape lie in the series of public spaces that form the glue holding the built environment together and provide the conduits for the movement of people and areas for outdoor city life and social intercourse. To occupying this network of public spaces,can form a matrix,unifying all those spaces with each other and with the built environment.Each constituent space should have its own character and reflect its context, but they also ought to follow a systemic network.

See the above diagrams ,the whole system green network seems like a barcode. The green space is marked by themselves.It present the objective of harmony of each individual green elements. Each of them should be part of network.it is linked by an invisible connection ,but touchable!The challenge is to make the urban forest accessible to everyone,no matter where they live,their age,ethnicity or economic situation.This means matching the urban trees resource to the places where people live and work so that the urban forest can become part of every citizens life,should they choose to take up the opportunity offered to them. it do not occur by accident;some form of planning and design is needed to ensure that such green space enhancing the cityscape and provide settings that encourage people to use them as part of their everyday life. They must be welcoming,attractive and conducive to a wide range of uses.

6.3 Discussion

In this degree thesis, Landscape ecological and sustainable principle has been employed as a key part of the design process,employing devices such as linking corridors to connect scattered habitat fragments and allow wildlife species to move from one to another (Mcharg 1969;Forman and Godron 1986;Gustavsson and Ingelög 1994;Forman 1995;Komulainen 1995) .another (Mcharg 1969;forman and Godron 1986;Gustavsson and Ingelög 1994;Forman 1995;Komulainen 1995) .

In urban areas there are possibilities to develop the ecological and sustainable values at several levels. In the city scale, there are opportunities to develop a green network within an urban areas, connecting parks and wood via linear corridors, the use of street trees and also gardens (Tummers and Tummers-Zuurmond 1997). Trees can provide the connecting matrix with which patches of different habitats can fit and be linked to one another. In the habitat scale a variety of habitat can be created and protected, many of which are not necessarily natural; in fact many habitats can be artificially created quite successfully in urban areas and be very valuable ecologically and educationally. Wooded areas can incorporate wetlands, ponds, grassy spaces and a variety of edge habitats. Parks can include ponds, which are important for birds as well as providing the chance for people to experience wildlife close at hand (Bianes and Smart 1991).

A park is often an idealized landscape character type, and its design may be easy to comprehend, but it might also be that the questions on how to develop design in the long term is not put forward. In the case of Frederiksberg park, it might be difficult to grasp by previous chapters of analysis. The theme of green linkage (Ecological and sustainable urban greening structure) has been introduced. "every city with pride should have its own 'Ecological and sustainable park' as part of its city center, showing how central it is regarded in urban culture" (Kendel and Forbes 1997). Frederiksberg park as the central park of Frederiksberg municipality of Copenhagen, it does play the vital role right now. The question is not enough to only have a central park. It might put much pressure on it. We must have a relevant and equal green space to be unified. In this case study, Västra Hamnen Bo01 project area in Malmö which is the most successful paradigm to be the reference landscape, framed the structure in contextual approach. And extra further improving study are integrated too.

In the future, large scale projects, by developing creatively with nature, we can realize all kinds of benefits for people and rebuilding biodiversity will be a glorious bonus. The more important it is to balance this with direct contact with nature and wilderness as centrally located as possible within the city (Leopold 1999). Looking back at what has happened during the last fifty years, few other knowledge fields have contributed so much to the change in management strategies as ecology and sustainability. They have led urban people to learn to appreciate flora, fauna and biodiversity aspects much more than before. Much could still be gained (cf. Dettmar and Ganser 1999) however, if ecology and sustainability could be applied in an extended and more integrated way.

Finally, Working with nature has been promoted to enhance ecology and sustainability; to adapt the new concept to a historical situation. However, People loves city getting green! Like definition of the word "Greening" in British Oxford library:

Greening (noun):

1. *Restoration of vitality or freshness; rejuvenation.*
2. *An adoption or alignment with the ideals or practices of the Green movement.*

7. Conclusion

The essential point I hope to establish in this study is bridge the connection between green natures. Each green space will be linked as a systematic network of parks to expand as well as consolidate city fabric. The methodological concept discussed in this paper has been analyzed in the context of related ecological planning. I proposed a framework that crosses all planning themes. the integration of methods to address specific planning activities into a common situation. it has been considered as a step forward in the application of sustainable ecological-methodologies into planning and an advance in planning theory.

Sustainable ecologically based approach to planning and management are desirable, and their application is widely advocated. Sustainability as a theoretical aim is challenge by virtually no one, yet problems and questions arise with its implementation (Cena 1999). Application tools are needed to apply sustainable principles to planning and management. Landscape ecological concept is likely to be useful to address the spatial dimension of sustainable planning. In response to this need we propose a conceptual framework for sustainable landscape planning and design to frame the operational objectives, i.e. Why, where, how, and which landscape ecological concepts should be applied in the future planning.

The main purpose of the sustainable green planning framework is to provide for unified framework for planning for sustainability, incorporating (landscape) ecological knowledge, and other advanced planning methods and techniques, applicable to all physical planning activities. Its basic assumptions are: (a) planning more sustainable is essential and urgent in order to plan for a sustainable and enduring habitat for humankind, (b) (landscape) ecology is an appropriate scientific basis to introduce sustainable principle in physical planning, (c) those principles should and can be applied in all planning activities, (d) one single framework to apply them to all planning activities has potential advantages compared to having several, and (e) there is a lack for tools to implement these principles to planning.

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Interviews

(Interviews with Birgitte Redin and Rasmus Rodam on 20 april 2007)

Brigitte(below) is 52 years old retired women living just side of the frederiksberg park. and **Rasmus** is 32 years old architect living 800m to the park (*see the following location illustration*).



1.How often do you visit this park? And how much time do you stay in the park?

Brigitte:I came to this park everyday after evening dinner with my wife for a while jogging here, normally I ran about half hour each time.

2.Why do you come here?

Brigitte:I like to run in this park. I can get fresh air and keep me at health status all the time. So I could have enough energy for next day's working. Other important reason I love this park is to communicate with my wife and others.

3.Dose the park give you lo fun? Is it part of your everyday life?

Brigitte:The park doses give me lot fun and memorable time since I lived here. It is the connection with my families. I can clearly remember the stories which my grandfather told to me at this place. It is my life; I think I would also go with my rest of life.

4.Would you like to improve the park?

Brigitte:If there would have some changes in this park. I don't think so much to do. Only thing is to enrich the public facilities. It is little less of facilities when I got a long walk. I don't have much choice of resting place to stay. And I have another is the park should be more awareness to people who doesn't live around here.

5.When had you visited Frederiksberg Park? And do you like it?

Brigitte:I went the park around two weeks ago with my girlfriend .Actually it was amazing experience with her. We had nice walking and sunlight in the park. I do like the park. But it is far to my apartment. I seldom visit it. Only I was really tired. Need some space to release and refresh.

6. Do you like doing some excises after work?

Rasmus: Sorry, I don't do much excise after work. Probably, the reason of work. I don't have much time to do sport staffs. Same reason as before, I can not go pass by so long distance, just for the park. I like to think on the way. But there are only buildings and people without nature on the way. How boring is it!

7. Do you like the courtyard green space you have right now?

Rasmus: I also like my tiny courtyard. It is only place I could go after work. But I won't be satisfied with the facilities and plants. The courtyard seems like kindergarten right now. And sunless in such block. Like A well. And sometimes I felt I was seen by some hidden eyes. So close to face each other. Just through the window. I felt sad and depressed!

8. Supposing you have a single house, how would you do? Do you want to share or fence the garden? And what are you going to do with garden? A lot plants?

Rasmus: If I have a single house, first thing is to fence it and plant lot of trees and flowers which are my favor and family. Making it as picturesque as possible! It is not so nice to share the green space of mine.

9. If there would have some improvements, what suggestions could you give?

Rasmus: I hope the first changes are the streetscape should be more green and attractive for outdoor participation. To enjoy and doing communication in the green space with other people. Not anymore the picture of naked street. And possible introduce some green roof since I am living on 6 floor. I want to have some green view from my window. Not people's attention. I need more nature around my life.

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