GREEN-URBAN BALANCE

A proposal for balancing green area preservation and urban development in the city of Uppsala

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Master's thesis, 30 HEC, Advanced level
Landscape Architect programme, Uppsala
2014

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Master's thesis for the Landscape Architect programme
EX0504 Degree Project in Landscape Architecture, 30 HEC
Level: Advanced A2E

Title in English: Green-urban balance: A proposal for balancing green area preservation and urban development in the city of Uppsala
Title in Swedish: Grön-urban balans
Supervisor: Camilo Calderon, Department of Urban and Rural Development
Examiner: Maria Ignatieva
Assistant examiner: Hildegun Nilsson Varhelyi
Cover image: Ryan Fung, Life will find a way. https://www.flickr.com/photos/ryan_fung/5429723375

Original format: A4, best read in digital pdf format
Keywords: Green area preservation, Urban development,
Online publication of this work: http://epsilon.slu.se

Abstract

Rapid urbanization causes competition over land use between green area preservation and urban development in cities and greatly affects ecosystems as well as human well-being. This conflict is significant all around the world as many cities are now replacing existing green areas with new developments. The area around Dag Hammarskjöld's väg in Uppsala is currently experiencing the same conflict, as the need that the city has for new housing represents a threat for the many valuable green areas that are in the site. The purpose of this project was to understand how the need of urban development and the preservation of green areas could be balanced. This understanding would thereafter be used to make a design proposal for the area around Dag Hammarskjöld's väg. First a literature study that focused on three urban design ideologies were made. The three urban design ideologies: The Compact city, the Garden city and Landscape urbanism, were best believed to provide answers for the problem of balancing green area preservation and urban development, and were therefore used to extract ideas as a foundation for six design strategies to help achieve this balance. The design strategies were used to produce a design proposal for the area around Dag Hammarskjöld's väg. The design proposal deals mainly with one issue: The balance between green area preservation and urban development and does not provide a holistic planning solution. The two main results are the design strategies for balancing green area preservation and urban development and the design proposal for the area around Dag Hammarskjöld's väg. The design strategies could be of future use in other projects dealing with similar issues. The design proposal can serve as an example of how to solve this issue in a real site. Furthermore, it could be used by the municipality to inform the future planning of the area.

Sammandrag

En allt högre urbaniseringstakt skapar konkurrens om utrymmet i våra städer mellan bevarandet av grönytor och behovet av stadsutveckling. Konkurrensen har stor inverkan på ekosystem samt det mänskliga välbefinnandet. Den här konflikten är märkbar i städer över hela världen då grönytor ersätts och exploateras. Området omkring Dag Hammarskjölds väg i Uppsala ställs nu inför samma konflikt eftersom stadens behov av nya bostäder utgör ett hot mot de värdefulla grönområdena. Syftet med projektet var att förstå hur behovet av stadsutveckling och bevarande av grönytor kan balanseras. Förståelsen för frågan användes sedan för att ta fram ett gestaltningsförslag för utveckling av området runt Dag Hammarskjölds väg. Först gjordes en litteraturstudie med fokus på tre urbana designideologier. De tre urbana designideologierna: Den kompakta staden, Trädgårdsstaden och Landskapsurbanism valdes för att de bäst ansågs kunna ge svar på problemet med att finna en balans mellan bevarandet av grönytor och behovet av stadsutveckling. Designideologierna användes som teoretisk grund för att utvinna idéer. Idéerna bearbetades till sex designstrategier som syftar till att balansera grönområden och stadsutveckling. Designstrategierna användes sedan för att skapa ett gestaltningsförslag för området runt Dag Hammarskjölds väg. De två huvudresultaten är designstrategierna för att balansera bevarandet av grönytor och stadsutveckling samt gestaltningsförslaget för området runt Dag Hammarskjölds väg. Designstrategierna skulle i fortsättningen kunna användas i andra projekt som berör liknande problem. Gestaltningsförslaget kan tjäna som ett exempel på hur frågan kan lösas på en specifik plats. Dessutom skulle det kunna användas av kommunen för att upplysa och inspirera framtida planering av området.

Summary

Background

The urban population of the world is rapidly increasing and is expected to grow with 72% in less than 40 years (DESA 2012). The current rate at which people are migrating to cities implies that urban landscapes are now facing major changes. While cities are growing, adding new neighborhoods, urban green areas are often reduced for the sake of development. Tzoulas et al. (2007) state that the diminishing urban and peri-urban green areas could have a negative effect on both human health and ecosystems. There is a conflict between green area preservation and the need for urban development. This challenge will be faced by the majority of all expanding cities in the world, including cities in Sweden. Uppsala is a University city in the expanding region of Mälardalen and is expected to increase with around 40 000 inhabitants in about 15 years (Kommunledningskontoret, 2013). Dag Hammarskjöld's väg is a major straight road in Uppsala that has many special characters and values tied to the green areas around. These values are now threatened as the area is facing major changes. Even though development is a great opportunity solving problems of urbanization, it poses a threat to the preservation of the green areas.

Purpose and research questions

The purpose of this project is to understand how the need of urban development and the preservation of green areas can be balanced. This understanding will thereafter be used to make a design proposal for the area around Dag Hammarskjöld's väg.

There is one main research question. To answer that question, two secondary questions are addressed.

- **How can a balance between urban development and green area preservation be achieved at Dag Hammarskjöld's väg in Uppsala?**

1. **How do different urban design ideologies address the conflict between urban development and green area preservation?**

2. **Which design solutions are provided by different urban design ideologies for creating a balance between urban development and green area preservation?**

Method

In order to find a proper answer to the main question the methodology was divided into two parts. The first part regards the gathering of knowledge on how to understand and find possible solutions to the conflicts between urban development and green area preservation. This was mainly done through a literature study and complemented by attending a seminar on the topic. The second part regards the creation of the of the design proposal. Here information that allowed for understanding of the specific prerequisites at the Dag Hammarskjöld's area where collected, analyzed and worked through a design process. This included analysis of policy documents, newspapers articles, websites, maps and field visits.

Literature study

In the literature study three different urban design ideologies and the impact and solutions that they propose for the relation between green areas preservation and urban development are discussed.

In the first section, Different forms of development, emphasis is put on how to describe why urban form is essential to the topic of urban development and green area preservation. In the following sections three types of urban design ideologies, relevant for answering the main topic are chosen and described. The chosen urban ideologies are; The compact city, The garden city, and Landscape urbanism. These three sections are all structured to answer to the research questions. After each section design ideas are extracted and later summarized and turned into six design strategies that will be used in the design proposal of Dag Hammarskjöld's väg. The six Design strategies are:

Dense urban corridors
They provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape improves these qualities by concentrating people, movement and public transport along corridors.

Coexisting system of green areas
To balance the dense urban structure and communities with complementing uses and qualities absent in those structures a large continuous system of green areas should be built in.

Integrate green areas in the urban fabric
Apart from larger green structures, greenery can also be used to provide qualities within the built components of the urban fabric. Green roofs, green streets and parks are some examples.

Meaningful green areas
To legitimize the urban green areas they must provide qualities meaningful to the urban landscape and the people. Therefore green areas can not only be preserved. They should also add values such as social and psychological qualities, health benefits and ecosystem services together with species protection.

Tranquility in green areas
To make the green areas complement the qualities of dense urban fabric, it must possess a different kind of experience. Since tranquility is one of the most appreciated qualities of urban green areas the noise and impressions from the dense urban structures must be reduced.

Communities around nodes
Along the corridors, community nodes are created. Within the communities different types of service, house typologies, work places, culture and public spaces should be provided.

Design Proposal

The area around Dag Hammarskjöld's väg becomes a denser but green urban environment, and an integrated extension of central Uppsala to the south. The renewed neighbourhoods possess attractions that the central city can offer and are furthermore always close to tranquil and meaningful green areas. This is due to a proposed interconnected overall system of the green areas that coexist within the urban structures. This system connects neighbourhoods, encourage sustainable conveyance by bike and foot and facilitates crossings over barrier roads through ecoducts. To sustain and benefit from the existing characters of the neighbourhoods, most existing structures are saved and utilized for new purposes if needed. The new development ties the neighbourhoods together and is constantly evaluated to improve every new addition in order to support community life. Through these measures a good balance between green area preservation and urban development are achieved.

Discussion

First the working process and the connection between literature, design features and design strategies are discussed. This is followed by a discussion of the results and the design proposal.

In the working process discussion it is concluded that using design proposals that are grounded in literature and theory is an approach useful in meeting the academic aims of a master thesis which can still be valuable and relevant for landscape architecture practice.

In the connection between literature, design ideas and design strategies discussion it was summarized that the design features were not so difficult to extract, because they where the natural consequence of the presented literature. The major decisions lay rather in what urban design ideologies to present in the literature study and which aspects of them to emphasize.

There are two main results of this thesis: 1) The design strategies for balancing urban development and green area preservation, and 2) the design proposal for the area around Dag Hammarskjöld's väg.
In the design strategies discussion, each strategy was reflected upon, for example with regard to their usefulness and how feasible they are to implement. The design proposal discussion problematized the fact that the result consists of a design proposal bound to a certain area. Even though an area description and analysis of the site is made, one must be aware that subjective choices are always made as expressed in the method section. Further, the area itself also contains specific characters like the topography, the historic traces, and the form of green areas that cannot always be transferred into other development projects. The fact that the two results comes from a qualitative study and that the design proposal is based on a certain location, makes the degree of generalization limited. However, the design strategies might work in other places and the design proposal can serve as example for other projects dealing with the issue of balancing green area preservation and urban development. Therefore it is more relevant to talk about generalization based on the transferability of the design strategies.

In the discussion of the design proposal it is expressed that a downfall of the proposal is the lack of access to all the information regarding the area that was studied, for example who owns the land, how the different areas in detail are being used, and how the municipality plans have proceeded. This is a problem as there might be important elements that greatly affect the general terms for how the area realistically could be developed. However the design proposal shows a different way of developing the area around Dag Hammarskjöld's väg and opens up for a discussion against future proposals following other ideas of how to develop the area. The design proposal could serve as an alternative to the current model of planning that the Uppsala municipality practices.

Future implications

In a further expansion of this project, it would be interesting to compare the design strategies to the upcoming development vision for Dag Hammarskjöld's väg. It would also be of interest to compare the design proposal to more concrete municipality plans. Getting more knowledge about the municipality planning and also more information on the preconditions at the site would probably enrich the design proposal. An alignment of this project with the municipality planning could help to inform the future planning of the area on how the prerequisites can be utilized to support aspects important to the balance of green area preservation and urban development. The design proposal can serve as an example of how to solve this issue in a real site. Furthermore, it could be used by the municipality to inform the future planning of the area.

Sammanfattning

Bakgrund

Värdens urbana befolkning ökar kraftigt och förväntas växa med 72% på mindre än 40 år (DESA 2012). Den nuvarande migrationstakten medför att de urbana landskapen ställs inför storskaliga förändringar. När städer växer och får fler nya områden offras ofta urbana grönområden som följd av exploateringen. Tzoulas et al. (2007) påstår att de minskande urbana och stadsnära grönområdena kan få negativa följder för folkhälsa och ekosystem. Det finns en konflikt mellan bevarandet av grönområden och behovet av stadsutveckling. Växande städer runtom i värden kommer att ställas inför utmaningen att lösa den konflikten och likaså städer i Sverige. Uppsala är en universitetsstad i den expanderande Mälardalsregionen och förväntas öka med 40 000 invånare på 15 år (Kommunledningskontoret, 2013). Dag Hammarskjölds väg är en rak, lång större väg som har många speciella egenskaper och värden knutna till de omkringliggande grönytorna. De här värdena är nu hotade eftersom området väntas förändras kraftigt. Även om stadsutbyggnad är ett bra alternativ för att hantera urbaniseringsproblem utgör det ett hot mot bevarandet av grönområden.

Syfte och frågeställningar

Syftet med projektet är att förstå hur behovet av stadsutveckling och bevarande av grönytor kan balanseras. Förståelsen för frågan används sedan för att ta fram ett gestaltningsförslag för utveckling av området runt Dag Hammarskjölds väg.

Arbetet innehåller en huvudfrågeställning. För att besvara den adresseras två sekundära frågeställningar.

- **Hur kan en balans mellan stadsutveckling och bevarandet av grönytor uppnås i området runt Dag Hammarskjölds väg i Uppsala?**

1. **Hur adresserar olika urbana designideologier konflikten mellan stadsutveckling och bevarandet av grönytor.**

2. **Vilka designlösningar tillhandahålls av olika urbana designideologier för att skapa balans mellan stadsutveckling och bevarande av grönytor.**

Metod

För att finna ett lämpligt svar på huvudfrågeställningen delades metoden in i två delar. Den första delen behandlar insamlandet av kunskap för att förstå och finna möjliga lösningar till konflikten mellan stadsutveckling och bevarandet av grönytor. Det gjordes främst genom en litteraturstudie som kompletterades med deltagande i ett ämnesrelevant seminarium. Den andra delen behandlar skapandet av gestaltningsförslaget. Här insamlades, analyserades, och bearbetades information som bidrog till förståelse för de specifika förutsättningarna omkring Dag Hammarskjölds väg. Insamlingen av kunskap innefattade analyser av olika styrdokument, tidningsartiklar, webbsidor, kartor och platsbesök. Kunskapen bearbetades sedan genom en designprocess.

Litteraturstudie

I litteraturstudien diskuterades tre olika urbana designideologier samt den påverkan och de lösningar som dom erbjuder för problemrelationen mellan stadsutveckling och bevarandet av grönytor.

I den första delen, Olika former av stadsutveckling, ligger tyngdpunkten på att beskriva varför urban form är väsentligt för problemrelationen mellan stadsutveckling och bevarandet av grönytor. I den följande delen presenteras tre olika ideologiska modeller som är relevanta för att besvara den frågeställningen. De tre valda designideologierna är: Den kompakta staden, Trädgårdsstaden och Landskapsurbanism. Beskrivningen av de tre designideologierna syftar till att besvara frågeställningen genom att extrahera designidéer som sedan bearbetades till 6 designstrategier. De sex designstrategierna är:

Täta urbana stråk
Stråken medför nödvändig befolkningstäthet för att skapa livliga gångvänliga samhällen med den täta staden utbud. Den urbana formen förstärker de kvaliteterna genom att koncentrera folk, rörelse och kollektivtrafik genom korridorer.

Samexisterande grönytesystem
För att balansera de täta urbana strukturerna och samhällena med kompletterande kvaliteter som de saknar införs ett sammanfogat system av grönytor.

Integrera grönytor i stadsstrukturen
Förutom ett större sammanfogat grönytesystem så kan grönytor användas för att tillföra gröna kvaliteter inom stadsstrukturen. Gröna tak, gröna gator och lokala parker är några exempel.

Betydelsefulla grönytor
För att de urbana grönytorna skall legitimeras måste de förses med kvaliteter som är betydelsefulla för det urbana landskapet och för invånarna. Grönytor bör därför inte endast bevaras så som de är, utan även tillskapa värden som sociala och psykologiska kvaliteter, hälsofördelar, ekosystemtjänster och artskydd.

Rogivande grönytor
För att grönområden ska komplettera kvaliteterna som finns i den täta stadsstrukturen så måste de erbjuda en annan typ av upplevelse. Eftersom stillsamhet är en av de mest uppskattade kvaliteterna i urbana grönområden så måste störande buller från den täta stadsstrukturen reduceras.

Samhällen runt noder
Längs de täta urbana stråken bildas samhällen runt noder. I samhällena finns olika typer av hustypologier, arbetsplatser, kultur och offentliga ytor.

Gestaltningsförslag

Området runt Dag Hammarskjölds väg blir tätare bebyggt men också en grönare urban miljö och en integrerad förlängning av centrala Uppsala i söder. De förnyade bostadsområdena besitter kvalitéer som den täta staden erbjuder men har också alltid närhet till rogivande gröna miljöer. Det beror på ett inbyggt system av sammankopplade grönytor som samexisterar i den urbana strukturen. Grönytesystemet sammanbinder bostadsområden, uppmuntrar hållbara färdsätt till fots och cykel och underlättar passage över vägar som i dagsläget fungerar som barriärer på ecoducter. För att upprätthålla och dra nytta av de befintliga områdesegenskaperna lämnas merparten av alla byggda strukturer och utnyttjas vid behov för nya syften. Nybyggnationer i området används för att knyta samman olika områden och de utvärderas ständigt för att förbättra varje nytt tillägg så att det stärker samhället. Genom de här åtgärderna kan en bra balans mellan stadsutveckling och bevarandet av grönytor uppnås.

Diskussion

I diskussionen återges först arbetsprocessen och kopplingen mellan litteratur, designidéer, och designstrategier. Sedan följer en diskussion om resultaten och gestaltningsförslaget.

I arbetsprocessdiskussionen dras slutsatsen att utnyttjandet av gestaltningsförslag som är förankrat i litteratur och teorier är en användbar metod för att möta den akademiska avsikten i en examensuppsats. Metoden kan även vara värdefull och relevant i praktiskt bruk för landskapsarkitektur.

I diskussionen om kopplingen mellan litteratur, designidéer och designstrategier summeras att designidéerna inte var så svåra att extrahera eftersom de kom som en naturlig konsekvens av den valda litteraturen. De stora besluten var vilka designideologier som skulle presenteras och vilka aspekter av dem som skulle framhållas.

Det finns två huvudresultat i det här arbetet:1) Designstrategierna för att balansera stadsutveckling och bevarandet av grönytor och 2) gestaltningsförslaget för området runt Dag Hammarskjölds väg.
I diskussionen om designstrategierna reflekteras det över varje strategi för sig, till exempel hur användbara de är och hur genomförbara de är. Diskussionen om gestaltningsförslaget problematiserar kring det faktum att förslaget är bundet till en specifik plats. Även om områdesbeskrivningar och analyser utförts måste man vara medveten om att subjektiva bedömningar alltid görs, vilket beskrivs i metoddelen. Vidare innehåller den valda platsen specifika egenskaper som topografi, historiska lämningar och formen på grönområdena vilka inte alltid går att överföra till andra stadsbyggnadsprojekt. Det faktum att de två resultaten kommer från en kvalitativ undersökning och att gestaltningsförslaget är baserat på ett specifikt område, gör generaliseringsvärdet begränsat. Likväl kan designstrategierna fungera på andra platser och gestaltningsförslaget kan tjäna som exempel för andra projekt med liknande problemställningar. Därför är det kanske mer relevant att tala om generalisering baserat på överförbarheten av designstrategierna.

I diskussionen om gestaltningsförslaget utrycks det att en svaghet med förslaget är att det saknar tillgång till utförlig information om det undersökta området, till exempel, markägarförhållanden och hur kommunens planering av området fortskrider. Det utgör ett problem eftersom väsentliga aspekter som styr hur området realistiskt kan utvecklas riskerar att inte beaktas. Emellertid visar gestaltningsförslaget en annan inriktning för hur området kan utvecklas och det inbjuder till diskussion och jämförelse med andra förslag, baserade på andra utgångspunkter, om hur området skulle kunna utvecklas. Gestaltningsförslaget skulle kunna utgöra ett alternativ till den planeringsmodell som Uppsala kommun för närvarande tillämpar.

Framtida användning

I en framtida utvidgning av det här projektet skulle det vara intressant att jämföra designstrategierna med den kommande kommunvisionen för Dag Hammarskjölds väg. Det skulle även vara intressant att jämföra gestaltningsförslaget med mer konkreta planer för utveckling av området. Att få bättre tillgång till kommunens planer och mer information om områdets förutsättningar skulle förmodligen berika gestaltningsförslaget. En syntes av det här projektet med kommunens planer skulle kunna inspirera den framtida planeringen av området och belysa hur platsförutsättningarna kan utnyttjas för att stödja balansen mellan stadsutveckling och bevarandet av grönområden. Gestaltningsförslaget kan tjäna som ett exempel på hur frågan kan lösas på en specifik plats. Dessutom skulle det kunna användas av kommunen för att upplysa och inspirera framtida planering av området.

Design strategies

Dense urban corridors

Dense urban corridors can be used to provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape improves these qualities by concentrating people, movement and public transport along corridors.

Coexisting system of green areas

To balance the dense urban structure and communities with complementing uses and qualities that are absent, a large continuous system of green areas should be built in.

Integrate green areas in the urban fabric

Apart from larger green structures, greenery can also be used to provide qualities within the built components of the urban fabric. Green roofs, greenery in streets and parks are some examples.

Meaningful green areas

Urban green areas must provide qualities meaningful to the urban landscape and the people to be legitimate. Therefore green areas can not only be preserved. They should also add values such as social and psychological qualities, health benefits and ecosystem services together with species protection.

Tranquility in green areas

To make the green areas complement the qualities of dense urban fabric, they must possess a different kind of experience. Since tranquility is one of the most appreciated qualities of urban green areas the noise and impressions from the dense urban structures must be reduced.

Communities around nodes

Along the corridors, community nodes are created. Within the communities different types of services, house typologies, work places, culture and public spaces should be provided.

Design proposal summary

The area around Dag Hammarskjöld's väg becomes a denser but green urban environment and an integrated extension of central Uppsala to the south. The renewed neighbourhoods possess attractions that the central city can offer and are furthermore always in reach of tranquil and meaningful green areas. This is due to the interconnected overall system of the green areas that coexist within the urban structures. This system connects neighbourhoods, encourages sustainable conveyance by bike and foot and facilitates crossings over barrier roads through ecoducts. To sustain and benefit from the existing characters of the neighbourhoods, most existing structures are saved and utilized for new purposes if needed. The new development ties the neighbourhoods together and is constantly evaluated to improve every new stage of development. Through these measures a good balance between green area preservation and urban development is achieved.

Design proposal

Dag Hammarskjöld's väg area

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DEVELOPMENT AND GREEN AREAS

Part one gives an introduction to the subject of this thesis. Thereafter, research problem, purpose, research questions, target group, limitations and method are presented. The introduction describes the conflict of land use between green area preservation and development. It is rendered from a general perspective to how this conflict affect the area around Dag Hammarskjöld's väg.

1.1 Background

According to the UN Department of Economic and Social Affairs (DESA) (2012), the urban population of the world is expected to increase from 3.6 billion in 2011 to 6.3 billion in 2050. This represents a 72 % increase in less than 40 years. Although the main part of the urbanization will take place in less developed countries, most large cities of the world are expanding. The main expansion will take place in larger cities, in conglomerates of cities and in the mega cities. To exemplify the rapid urbanization, in 1970 Tokyo and New York were the only mega cities in the world hosting over 10 million people. Today there are 23 mega cities and by 2025 the number is expected to be 37. In addition, by 2025 it is estimated that 19 new cities will have between 5-10 million inhabitants, there will be 178 new cities with 1-5 million inhabitants and 225 new cities ranging between 500 000-1 million inhabitants. This means there will be 669 cities with over a million inhabitants by 2025 (DESA 2012)

The current rate at which people are migrating to cities implies that urban landscapes are now facing major changes. While cities are growing, adding new neighborhoods with services and culture, urban green areas are often reduced for the sake of development. Tzoulas et al. (2007) state that the diminishing urban and peri-urban green areas could have a negative effect on both human health and ecosystems. The replacement of green areas by urban developments challenge many other important aspects of urban green areas. Chiesura (2003) especially addresses the social and psychological benefits of green area preservation. Thus, to conclude, there is a conflict between green area preservation and the need for urban development. This challenge will be faced by the majority of all expanding cities in the world, including cities in Sweden.

According to SCB (2014) in 2013 Sweden had its largest population growth since 1946 with an increase of 88 976 people and hence reaching a total population of 9 644 864. The growth occurred mainly in urban areas, although seven out of ten municipalities in the country also increased their population. Boverket (2012) expects that Sweden will have passed 10 million people by 2020, and 11.3 million by 2050. It is also expected that there will be a higher migration from the rural parts of the country to the larger cities. Thus, 70 % of the population growth is estimated to be concentrated in the regions around Stockholm, Gothenburg and Malmö. According to Boverket (2012) Stockholm will grow with 30 000 residents per year reaching 3 million by 2040. The city will have to double the rate of urban development. This implies crucial challenges for the preservation of green areas.

Uppsala is a university city in the expanding region of Mälardalen with Stockholm as its center for economic growth and urban development. In 2030 Uppsala city's population is expected to have grown with around 40 000 inhabitants (Kommunledningskontoret, 2013). Therefore development of new housing areas is needed. Even though Uppsala is smaller than the most rapidly growing cities in the world, the conflict between green area preservation and urban development is still essential as it constitutes a challenge to the conservation of green areas and the specific values presented by them such as tranquility, benefits for ecosystems and human health.

In 1643 Uppsala got a new grid system that replaced the older medieval city structure. Åström (1993) writes that in the early 1900s the compact over exploited Swedish cities was becoming increasingly more unsatisfying. The growing rate of urbanization was resulting in a expansion of the grid structure that where missing open places and parks. This deteriorated the sanitary problems and the health condition of the cities. As a response the problems, Swedish modernist planning that had a strong social agenda ended the tradition of compact building. Instead light air and greenery became the mantra of developing the new Swedish folkem (Åström 1993). In the 1960s a decision was made that stopped the continuous expansion of Uppsalas grid and resulted in neighborhoods separated by long distances and green areas. This can be seen in the southwestern parts of Uppsala where the Dag Hammarskjöld's väg is located. In 1965 the million-program was initiated as a response to the housing shortage and resulted in a hounded thousand apartments annually for ten years(Åström 1993). Gottsunda which is the largest Neighborhood in southern Uppsala is a result of the million program.Today the current norm of development has shifted back to the compact city ideal and this will affect the structure of the green areas around Dag Hammarskjöld's väg as the site develops.

Dag Hammarskjöld's väg is a major straight road that cuts through the distinctly defined valley of southern Uppsala which contains some of the city's greenest areas. There are many special characters and values tied to these green areas. These characters and values are not only worth preserving, but could also be enriched with new possibilities and uses meaningful to people. Kronparken containing 350 year old pine trees, Bäcklösa with its red listed species and the wooded esker together with the Fyris River are some special characters. Other uses adding up to the character along this relatively low exploited road are the many important university institutions. The easy orientation of the vast road in combination with Uppsala's image, closely tied to its universities, makes the road somewhat a landmark for higher education and knowledge. This is important since education and knowledge always has been a major part of Uppsala's history and the cause behind Uppsala's success.

The green values around Dag Hammarskjöld's väg are now threatened as the area are facing major changes. The municipality of Uppsala has listed the area as a zone of development (Öp, 2010.) Further, a municipality project leader for the development of Dag Hammarskjöld's väg Henrik Jhulin, claims that this could become one of Sweden's largest city extension projects . Housing plans for Norra Bäcklösa, which is within the listed zone of development, is already out as an examination document waiting for approval (Planhandling, 2014). In the Rosendal area the construction work has already started. On the opposite side of the road the municipality recently bought 774 000 square meters of land for 1.8 billion Swedish kronor in Ulleråker expecting to build 8000 new apartments (Fredrik Ahlstedt, 2014). Even though development is a great opportunity solving housing problems, it poses a threat to the preservation of the green areas.

[1] Henrik Jhulin, Uppsala municipality, seminar on landscape urbanism at white architects in Uppsala march 13, 2014.

1.2 Reserch Problem

The competition between green area preservation and urban development creates a conflict over the use of land close to our cities. Development is needed to solve the housing problems caused by the rapid urbanization. Further, development could also add new opportunities and possibilities to our cities. On the other hand, the green areas carry many functions, important for the urban environment and its dwellers. Green area preservation and urban development compete against each other in this conflict of land use. However, rather than focusing on this as dichotomous variables, where one is chosen at the expense of the other, the question could be: How can the need for green area preservation and urban development be balanced?

1.3 Purpose

The purpose of this project is to understand how the need of urban development and the preservation of green areas can be balanced. This understanding will thereafter be used to make a design proposal for the area around Dag Hammarskjöld's väg.

1.4 Research questions

There is one main research question. To answer that question two secondary questions are addressed.

- How can a balance between urban development and green area preservation be achieved at Dag Hammarskjöld's väg in Uppsala?

1. How do different urban design ideologies address the conflict between urban development and green area preservation?

2. Which design solutions are provided by different urban design ideologies for creating a balance between urban development and green area preservation?

1.5 Target groups

This thesis presents relevant ideas for landscape architects, architects, urban planners and policymakers. These are groups that professionally deals with related issues and influence the current ideological planning practice, in their everyday to work to achieve better plans and designs.

1.6 Limitations

Since time is a limiting factor, and the design proposal for the area shows one possible solution at this very early stage of planning, the information presented in the proposal will be approximate. This means that the graphics presented on maps are intended to communicate the overall core of how the design strategies could be implemented but not exactly how in terms of scale, location and final shape. For instance the buildings will be presented as blocks in the proposal although no judgment is put into the final shape of the different house typologies at the site. Moreover, on the site visits my impressions of the different areas will be the foundation of how to adapt the area to the design strategies. Hence, no user observations or other types studies that ask local inhabitants for their opinion will be made. Moreover, the area will not be assessed by character thoroughly, although the main features will be described. The thesis will not include an economic discussion on the proposal. Neither will the thesis discuss a realistic time perspective for the implementation of the plan.

1.7 Method

In order to find a proper answer to the main question the methodology was divided into two parts. The first part regards the gathering of knowledge on how to understand and find possible solutions to the conflicts between urban development and green area preservation. This was done through a literature study and by attending a seminar on the topic. The second part regards the creation of the of the design proposal. Here information that allowed for understanding of the specific prerequisites at the Dag Hammarskjöld's area where collected, analyzed and worked through a design process. This included analysis of policy documents, newspapers articles, websites, maps and field visits.

Understanding the conflict : Literature study and seminar

The first part describes the methods used for understanding the conflict between urban development and green area preservation. These methods are literature study and seminar.

Literature study
The literature study carried out in this thesis looked at the relation between green area preservation and urban development. The focus was to understand how different urban design ideologies address the tension between urban development and green area preservation. The ambition of the study was to ground the design proposal for the area of Dag Hammarskjöld's väg in relevant literature. This was done by extracting design strategies that could inform the design proposal. The design strategies are presented in section 2.7 on page 36.

Databases used to find the literature were Google scholar and Primo SLU. The key words used in the search were: green area preservation, and urban development, urban green areas, urban development and green areas, urban form and green areas. These key words where combined and tested in different compositions and orders.

The results of the search showed that there was no literature dealing explicitly with the conflict between green area preservation and urban development. Therefore, a broader search was made into other related subjects in order to answer the topic of this thesis. At this stage the literature focused on scientific papers in more narrow fields, such as reasons for green area preservation, impact of urban development and comparison of different urban design ideologies. For the later Carmona et al. (2010) and Wheeler and Beatley (2009) was of great use since they compare different urban design ideologies and highlight their different features. These books together with a more general internet search helped to identify three different urban design ideologies that were relevant to the conflict of green area preservation and urban development. The selected urban design ideologies were: The Compact city, The Garden city and Landscape urbanism. Their ideas of how to structure urban development strongly addresses the issue of green area preservation with different approaches. After the three ideologies were decided, additional literature was searched for through Google scholar and Primo SLU. Here, journal articles that supported the argumentation under the different ideologies were used. The ideologies provided answers for the presented research questions and were used to extract design ideas that enabled the creation of design strategies.

Seminar
Since the subject of Landscape urbanism is fairly new, it proved difficult to find good information in the existing literature, especially when it comes to real large scale urban projects related to the research focus. Thus I attended a seminar on the subject of Landscape urbanism. The seminar was named Landscape urbanism and sustainable urban development, and was organised by White architects in Uppsala on March13, 2014. The seminar contributed to the thesis by strengthening the underlying argumentation in the specific topic of Landscape urbanism. The focus was to gather information and use this to develop design strategies for the proposal of Dag Hammarskjöld's väg.

Clara Oloriz and Alfredo Ramirez, teachers AA school of architecture in London, and also founder of the landscape architect practice Ground lab, held lectures and where available for discussion.

This seminar assisted with information on Ground labs Landscape urbanist approach that was of use for the topic of green area preservation and urban development. Both theoretical background and examples of realised projects where presented.

Understanding the site: Analysis of policy documents, newspaper articles, Internet pages and site visits.

The second part describes the methods for understanding the site by using analysis of policy documents, newspaper articles, Internet pages and site visits.

Analysis of policy documents, newspaper articles, Internet pages
Analysis of policy documents, newspapers articles, Internet pages and maps where performed in order to get information about the area around Dag Hammarskjöld's väg. These analyses are described below. The focus was to obtain a better understanding of the current planning and development situation, the characteristics of the green areas, and how the green areas relate to each other as an overall system . The ambition of the study was to ground the design proposal on the site specific conditions. This was done by adapting the design strategies extracted from the literature study to the prerequisites of the site.

The analysed policy documents came mainly from the municipality of Uppsala. The comprehensive plan (Öp, 2010) was the most significant source. Newspaper articles came from the Uppsala based newspaper UNT (Uppsala Nya Tidning) and described the most recent planning events at the site. Homepages visited were Vattenmyndigheten, Länsstyrelsen, Uppsala kommun and Upplandsstiftelsen, where the local green areas were described. Maps used were Google maps and Lantmäteriets orthophoto with higher resolution. This gave a comprehensive picture of the site .

The planning of the area around Dag Hammarskjöld's väg is still at a very early stage. Therefore the municipality can not present a detailed plan for the area that could be evaluated. Hence, Information on how the area might develop had to be found through other channels. Older policy documents such as the comprehensive plan and descriptions from areas being developed within the site, where used to get a clearer idea of the future development. Further, political decisions that had impact on the area and were communicated through the newspaper also enabled insight into the future plans. To get a better understanding of the inherent values tied to the local green areas, different web pages that described these areas were important. Since the project of the design proposal deals with a large complex area, the study of maps that describe the comprehensive structure of the area was of great use. This facilitated the transformation of the designs strategies to proposed physical structures that were in line with the existing prerequisites of the site.

Site visits
Site visits were made to get better understanding of the site. The focus was to learn about, experience and analyze the area in general, at different occasions. The aim was to find ideas and solutions for how to balance green area preservation with urban development with site specific solutions.

Three main site visits where made on February 22, April 3 and May16 2014.

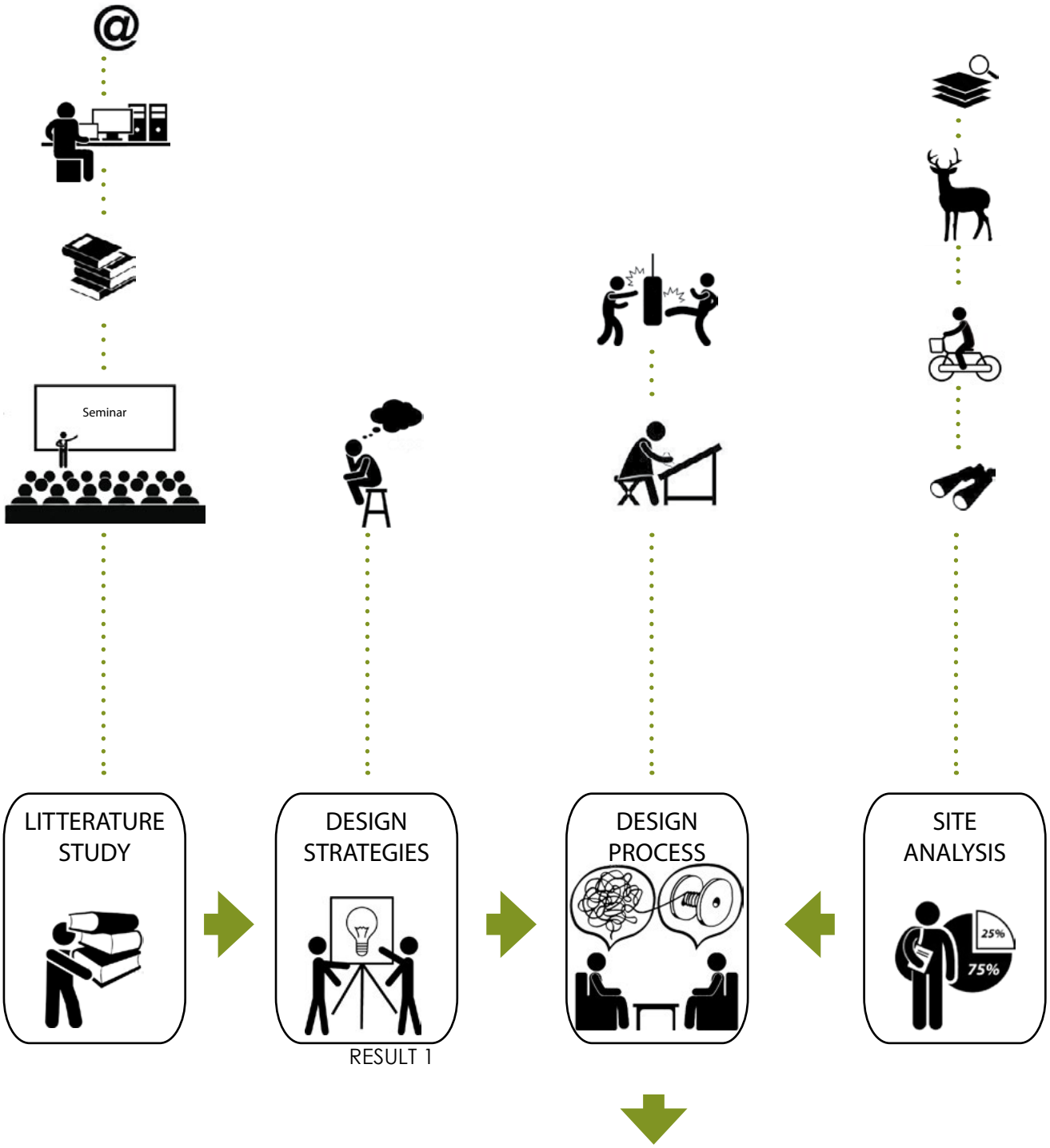
The first visit was an inventory of the neighborhoods, and the green areas in order to get to know all the sites around Dag Hammarskjöld's väg. Traveling through the area was done by bicycle and on foot in order to experience and cover the whole area. During the visit, notes and photography helped to document the impressions. On the second visit certain locations were studied in order to see in what parts of the area that could be suitable for implementation of specific design ideas. The third visit controlled that the developed design proposal was made according to the prerequisites of the area and in line with the design strategies.

Work process

To understand how societies develop has always been intriguing. Now, when the globalised economy is driving the urbanisation further, and the environmental problems are getting more evident, the forming of societies is facing new challenges that will impact how we develop our urban landscapes. In Uppsala the demand for urban development is increasing and in order to meet up to the demand without totally reshaping the inner-city, new urban areas must be developed. The area around Dag Hammarskjöld's väg possess large extensively used areas that would be suitable for development, but the area also contains valuable green areas. The problem is how to balance the development with green area preservation and this problem inspired further investigation.

In this work the problem of the studied area around Dag Hammarskjöld's väg was how to develop the area with consideration to the need for the development and the preservation of the valuable green areas. Therefore the general topic of the thesis became how to balance green area preservation and urban development. This topic was chosen because, besides being area specific, it would also deal with a more general issue that could be relevant for many other sites.

The first step of the study was to get familiar with the topic of the balance between green area preservation and urban development. This was investigated through a literature study and seminar. In parallel information about the proceeding planning of the Dag Hammarskjöld's area was gathered and analyzed and the area was researched mainly through policy documents and site visits. As I understood more about the about the Dag Hammarskjöld's väg area, this helped to point out what to focus on in the literature study. When the outcome of the literature study began to emerge, six design strategies formed a theoretical base for the design proposal. This enabled a leap forward in the constantly ongoing design process. Through this non linear design process the theoretical design strategies and analyses were processed through mapping and sketching and tested in various different ways before reaching a final solution. The design proposal was now grounded in theories from literature that were adapted to the site and worked through a design process.



Work process

Method discussion

The literature study and the seminar used in this thesis contribute to a theoretical informed design proposal that is grounded in the understanding of a conflicting issue: the balance between green area preservation and urban development. This researched issue in synthesis with the analysis of policy documents, newspaper articles, Internet pages and site visits, lead to a continuous narrative that combines understanding of the topic from the literature, and a site analysis to result finally in a design proposal. The legibility of the narrative depends on how well the main research question is answered and how relevant it is to the site. Thus, the two component of the thesis (literature study and site analysis) could produce both strong and weak threads depending on how they are interpreted and performed by the author.

How the methods have been combined in this thesis to achieve the understanding that forms the base for this design proposal, leaves a large amount of creative freedom of how to form the narrative. This is something that is of great use in the designing of a place since it is does not become restrictive. However, with this creative freedom comes the fact that many subjective decisions are made. This could include how the literature is interpreted and how the area of design is analysed. Criticism could be directed to the fact that, two similar projects on the on the same topic and with the same area of design, could produce results that greatly differ.

To conclude, the strengths of these methods combined, is not that they can be repeated to create designs with similar results. The strength is that it allows to create a theoretical and project based narrative that informs the choices made throughout the design process. However, the design proposal should be seen one possible solution of among many other where how well the solution answers the main problem is crucial to the legibility.

2

Photo: NASA,Moscow, Russia at Night (NASA, International Space Station, 01/29/14) /www.flickr.com/photos/nasamarshall/12346690934 (Licens Creative Commons BY-NC-ND 2.0)

THE URBAN FORM OF THREE DESIGN IDEOLOGIES

Part 2 describes three different urban design ideologies and the impact and solutions that they propose for the relation between green areas preservation and urban development. The aim of the literature study is to answer the following questions

1. How do different urban design ideologies address the conflict between urban development and green area preservation?

2. Which design solutions are provided by the different urban design ideologies for creating a balance between urban development and green area preservation?

In the first section, Different forms of development, emphasis is put on how to describe why urban form is essential to the topic of urban development and green area preservation. In the following sections 3 types of urban design ideologies, relevant for answering the main topic are chosen and described. The chosen urban ideologies are; The compact city, The garden city, and Landscape urbanism. These three sections are all structured to answer to the research questions. After each section design features are extracted and later summarized and turned into 7 design strategies that will be used in the design proposal of Dag Hammarskjöld's väg.

2.1 Different forms of urban development

Urban form is the spatial organization of our built environment, dictating both the functional properties and our emotional impression of cities. Different forms of urban development varies in the properties they contain. Historically, different urban forms come as a result of either structural reforms, functional advantages, or ideological beliefs. Over time, aspects of what drives city development has shifted and so has the urban form. Today, traces of different ideological views can be seen through the built environment in the cities. Traces of the organic medieval towns, the compact pre-industrial city, the decentralized modernist building and the following post-modernist return to the compact city. Carmona et al. (2010) reviews different types of historical and ideological aspects of urban design. The authors state that the views on cities are changing over time and that we cannot predict what the future will hold, but they also conclude:

"...there seem to be a cultural choice between urban form that is concentrated and urban form that is dispersed." (Carmona et al.2010)

This relates to the idea that different urban forms have different properties. A dispersed form can provide more space and a concentrated form can bring people together. These properties are highly relevant in the discussion of finding a balance between green area preservation and urban development. There are many ideas and theories that could be discussed that relates to the conflict of urban development and green ara preservation. In this thesis three ideologies will be used as a basis of discussing the topic and find ideas that could be extracted and used in the design proposal.

I will now present 3 urban design ideologies relevant to provide answers of how to answer the main research question of how to balance urban development with green area preservation. The compact city, the garden city and landscape urbanism are all ideologies that, in comparison to other ideologies, are either more relevant for the present situation or more relevant for the concept of balance green urban balance

The compact city was chosen because it is based on a traditional European way of organizing cities that during the last decades has become increasingly more popular again in Swedish planning. The compact city ideals revived as a response to the previous modernist city building ideals that had great impact on Swedish urban development during the 60s and 70s. The current trend of adopting compact city ideals affects the shape between green areas and urban development and are therefore relevant for the topic of this thesis.

The garden city was chosen because its original ideas aimed to find a balance between the qualities of living in the city with the qualities of living in the country. The garden city is traditionally a English movement that responded to the problems of rapid urbanization during the 1800s. The garden city holds ideas of how to structure urban communities that can still preserve large shapes of green areas and are therefore relevant for the topic of this thesis.

Landscape urbanism was chosen because it is a growing movement that view cities as a dynamic part oft the landscape. Landscape urbanism origins from America and argues for incorporating green structures as a part of the urban landscape and are there fore relevant for the topic of this thesis.

2.2 The compact city

The compact city advocates an urban form that benefits from the effects of people living close together in limited space. It is inspired by traditional pre-car cities where people had inferior alternatives to connect over large distances. Carmona et al. (2010) describes that current high density cities might be a spatial consequence of the oil depletion. As traveling becomes more expensive, more local centers will be created in low density areas. One of the main arguments for the compact centralized city is that it reduces emissions by shorter travel distances as people get more closely connected. This is however discussed because how we travel also depends on how our urban form is structured. People living more concentrated could also be a way of reducing the spatial impact that development has on green areas because less impact is made per person. The closeness would facilitate walking, cycling and the use of public transportation. This could in turn have beneficial effects supporting the local economy for shops and businesses increasing human interactions leading to a more sociable community. Wheeler and Beatley (2009) claim than one of the main challenges of sustainable development is building within the city boarders rather than expanding outward. Infill development, as they refer to it, could together with green area protection of certain valuable areas, be a way of accomplishing smart growth. Further they authors claims, that infill development with increasing population densities often has been viewed as something negative, as more people moving in, although it often strengthens the local businesses and improves local safety.

The compact city however constitutes a great challenge to green area preservation because it reduces the amount of open space available for the green areas to exist upon. Jim (2004) describes how the cities, historically, always has been viewed as the central spot for cultural achievements and lately also for technological progress. Until recent decades, he argues, the green areas have always been an important part of our cities and settlements. Jim describes historical aspects of land use and compare it to the current trend of compact development.

“Variations in land use and development mode have generated green spaces of different geometry, distribution and composition. The compact city incurs inherent physical and institutional obstacles, restricting the quantity and quality of amenity vegetation” Jim(2004).

Photo: Aldas Kirvastis, Torre Agbar and la Sagrada Familia
https://www.flickr.com/photos/aldask/2287663328
(Licens Creative Commons BY-NC-ND 2.0)

Example

High density are in general threatening green areas as seen in this picture of Barcelona. But high density can also provide attractions that's makes a city more diverse.

The large expansion of cities has affected the green areas relation to our built environment in a negative way (Jim 2004). Cities have handled this situation in different ways, but there seems to be a greater loss of green areas in cities adopting a compact urban form. As more people move to the cities, pursuing economic growth has become increasingly more important. This is resulting in higher densification rates which are challenging the preservation of green areas. Carmona et al. (2010) suggests that there are more ways of viewing building densities than from a centralized compact urban form with infill development. Many people suggest an urban form that has a certain concentration along corridors or nodes. These could be smaller walkable neighborhoods, but it is of importance that they carry certain population densities in order to connect to a larger urban structure using public transportation.

Jim further argues that cities adopting the traditional compact urban strategy should pay more attention to incorporate greenery because it could work as a mean to achieve economic revival, as the demand for attractive urban green areas increases. This is also supported in a Swedish study made by Spacescape and Evidence (Bernow and Ståhle 2011) where the willingness to pay for living close to urban green areas is shown. Their investigations indicate causality for closeness to urban green areas to increased apartment selling prices.

In the context of balancing green area preservation and urban development, compact city form could be used together with green area protection. This could support social, walkable communities with good public transportation solutions with closeness to the attraction of green areas as well as city life. The spatial solution for achieving this is to concentrate development around nodes and corridors and use in-between spacing for tranquil green areas.

Extracted design Ideas

From the design ideology of the compact city the following design ideas are extracted for the use forming design strategies

- Building more dense and compact cities are in general threatening urban green areas.
- High density can be used together with green area protection.
- High density can support local businesses, walkable neighborhoods and use of public transport.
- Concentrating development around urban corridors and nodes can support the dense attractions of urban development and still have the closeness to green areas.

2.3 The garden city

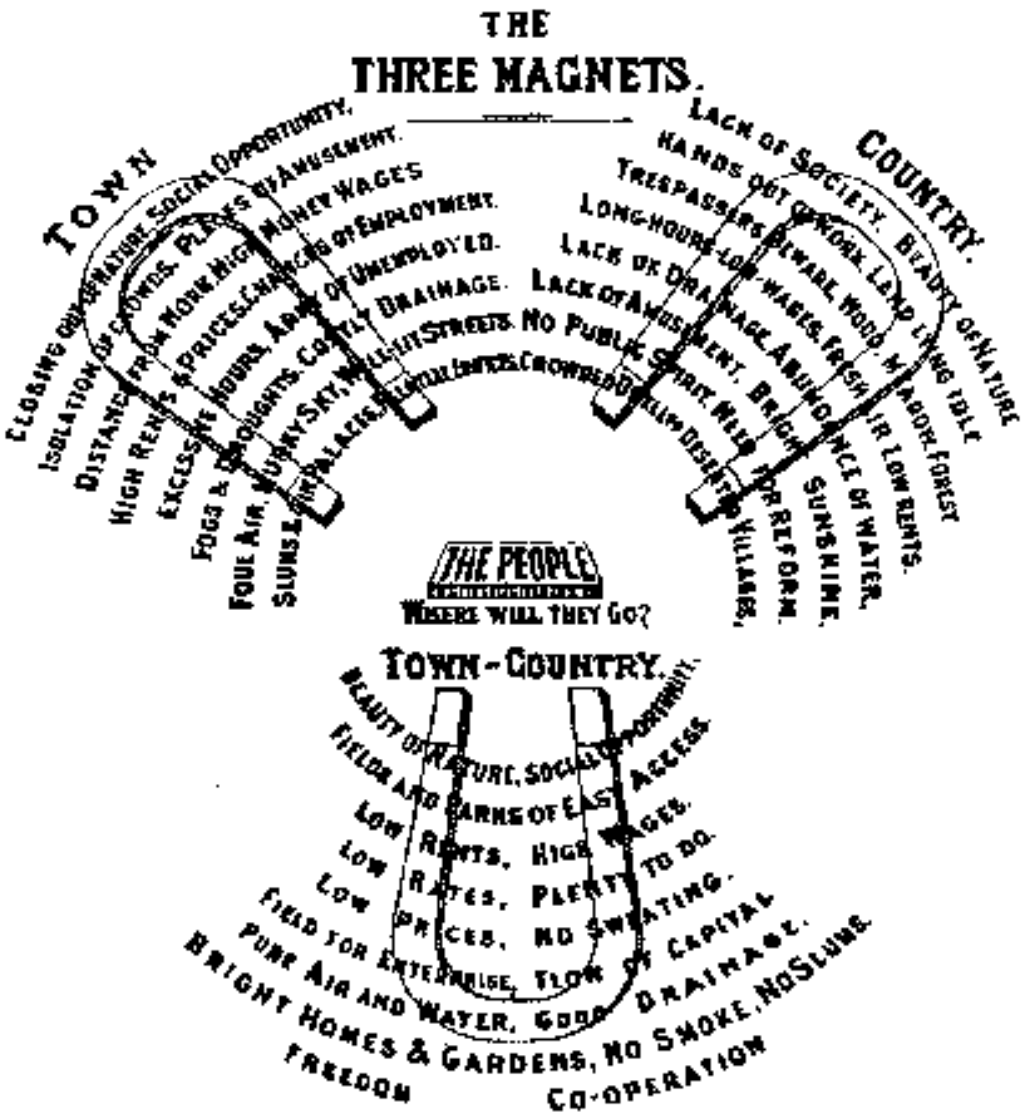
The garden city movement promotes an urban form that connects the everyday life of people and communities with surrounding green areas. The thought of balancing development is however not new. More than a century ago ideas of how to solve the problem with compact overcrowded cities by balancing development with green areas were present. The book, The garden city of tomorrow was originally published in 1898 as a reaction to rapid urbanization during the industrial era. The author Ebenezer Howard was trying to find a new way of organizing cities to improve the quality of life for its inhabitants. Commenting the book, Wheeler and Beatley (2009) describe Howard's work as one of the most important works in planning history stating that:

"..Howard outlined a strategy for addressing the problems of the industrial city, one that attempts to balance city and country in what we might view today as a sustainable fashion." (Wheeler & Beatley, 2009)

With the concept of finding a new better balance between city and country life, Howard addressed problems of the late 1800s such as overcrowded cities, sanitary problems, dirt, and a lack of community. Fascinated why people wanted to live under those conditions Howard understood the reason, or attractions as he named it, driving the migration to the towns. The social opportunities and higher wages were attractions existing in the cities but not in the country. The country on the other hand had attractions such as clean air and water, low rents and the beauty of nature. Howard put forward the question: If the country could have the same social- and working opportunities as the towns and also a higher physical comfort, where would people then choose to live? (Wheeler and Beatley 2009).He proposes that it is not only a matter of living in the town or on the country. There is a third alternative which contains both the attractions of the town as well as the attractions of the country. With a smart diagram of three magnets, on for the town, one for the country and one for the third alternative, town-country, Howard lets the reader further understand his point of view, by illustrating the pros and cons of both the town magnet and the country magnet. He then adds the pros of both the country and the town in the third town-country magnet. Continuously he describes the humans as needles in the middle in between the magnets, and asks the rhetorical question where will they go? The obvious answer as he presented it was to the new town-country alternative. (Wheeler and Beatley 2009)

Howard's thoughts on how to balance the town attractions with the attractions of the country is in many ways similar to the topic of balancing development with green area preservation. Reviewing the intents of Ebenezer Howard and putting it in a context of present time Wheeler and Beatley (2009) concludes.
"Howards search for a balance between city and country life is still essential to the task of creating more sustainable communities, but the emphasis has shifted. Instead of the extremely dense nineteenth century city with a frequent shortage of decent housing, clear water and basic sanitation, we now have relatively low density automobile-dependent suburbs with a much higher quality of housing and infrastruc-

ture, but with many other problems. So the question now at the turn of the nineteenth century remains how to rethink this balance, perhaps creating a new form of garden city that avoid the problem of both overcrowded industrial cities and low density suburban sprawl. " (Wheeler and Beatley 2009)
Wheeler's and Beatley's description and argumentation of how to organize and balance the cities in a more sustainable fashion seem to be about how to structure the urban form. Although they argue that suburban sprawl is a problem, the concern for urban green area preservation is, as later described, more related to the recent trend of densification and centralization in cities. The problem with densification



Howards diagram of three magnets

Image s-ource: http://en.wikipedia.org/wiki/File:Howard-three-magnets.png This was published in the book Tomorrow: A Peaceful Path to Real Reform in 1898, and is now out of copyright.

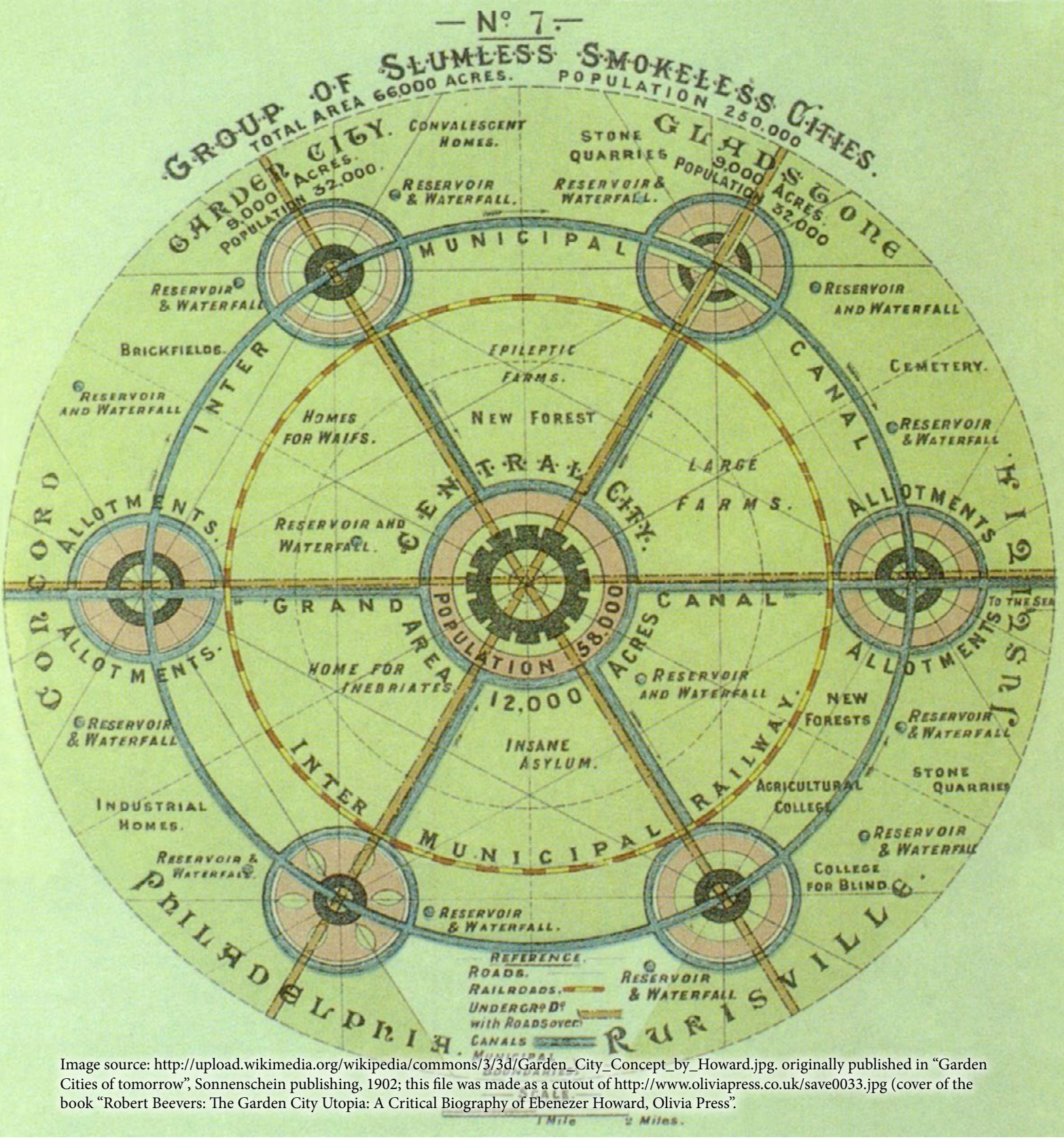


Image source: http://upload.wikimedia.org/wikipedia/commons/3/3d/Garden_City_Concept_by_Howard.jpg. originally published in "Garden Cities of tomorrow", Sonnenschein publishing, 1902; this file was made as a cutout of http://www.oliviapress.co.uk/save0033.jpg (cover of the book "Robert Beevers: The Garden City Utopia: A Critical Biography of Ebenezer Howard, Olivia Press".

Example

According to the garden city idea, communities would be formed around city centers. The communities would then be interconnected by different types of infrastructure. This would allow green areas and urban development to coexist and offer a more diverse set of attractions.

and centralization is that infill development, a sort of development that focuses on building within the existing city boarders, might reduce and fragment public green areas. Suburban sprawl however, does also fragment green areas, contain little public space and has extensive claims on the land use. So urban forms that do not reduce and fragment urban green areas and that are not too extensive are important factors to balance green area preservation and urban development. These are also ideas recognized by Howard. But Howard's ideas of balancing the country and the town also had a strong focus on building more social communities. Not many of these thoughts of community were present in what became to be known as garden cities. (Wheeler and Beatley 2009). Carmona et al. (2010) reflects that the garden city ideals where rarely realized in practice.

." ...the Garden Cities concept pursued a strong social agenda of creating socially mixed, working communities in healthy, green environments. In practice, built examples often failed to meet their social aims..." (Carmona et al. 2010).

Instead of the good intention of building close communities that balanced the needs for the country and the town, the projects often ended up with houses on large green yards, something that today could be described as urban sprawl. The representative image of the green garden city was built but the performative aims of the social agenda were never met. This was due to the fact that the urban form Ebenezer Howard proposed almost never became realized. According to Carmona et al. (2010) This was because the incitement for developing and selling land was higher than for organizing hole communities.

In the context of balancing green area preservation and urban development, dense development together with green area preservation could extract the attractions of both parts and avoid the disadvantage of each element separately. The urban form Howard supports that has communities formed around nodes with clearly pronounced boarders, and green areas in between, supports the coexistence of an urban structure parallel with a green area structure.

Extracted design ideas

From the design ideology of garden city the following design ideas are extracted for the use forming design strategies.

- Balancing dense development with green areas could extract the attractions of both parts and avoid the disadvantage of each element separately.
- Howard's way of structuring the urban development around centers with pronounced borders, interconnected by infrastructure allows green areas and development to coexist.

2.4 Landscape urbanism

Landscape Urbanism is an idea in planning where the organization of the landscape becomes the main planning tool for urban development. Rather than focus on classical urban structures, the theory acknowledges a more organic approach to what urban structures should provide. A river or an urban forest area could just as well as a road be recognized as important urban infrastructure that could supply necessary services to the quality of the urban landscape .
A London based Landscape urbanism practice called Ground Lab are dealing with problems of the present urbanization. Ramirez describes the methodology of Ground lab from the point of view of how they perceive the concept of landscape. They see the landscape as the dynamic relation between human and natural process over time. To describe this Ramirez uses two terms, land and ground. Land is the social construct in the everyday interactions and relations between people. Ground is the physical morphology of a place setting the rules for interactions. The morphology of a place is either constantly processed by nature or created by human processes. Therefore the meaning of landscape for Ground lab are social relations and dynamics. This means that everything processed by either humans or nature is landscape. This includes more or less everything, and accordingly both dense urban environments and widespread areas perceived as nature are landscape.

Ramirez continue to explain that Landscape Urbanism as they see it does not have distinct features preferring high or low building densities. Instead, Landscape urbanism works rather like a framework in which aspects as, diversity, community, mobility, density are handled to ensure sustainability. Ground lab describe their use of landscape urbanism as a response to the contemporary social, economical and environmental conditions. They view the city structures as a part of the landscape in an ever changing natural process. Castro et al. (2013) are criticizing temporary city developments as standardized procedure creating urban forms that ignore public space and follow the same economic and political patterns. This is something that can be linked to the contemporary urban development that is happening in Sweden. In many Swedish cases the existing character of a landscape, formed by human and natural processes are completely erased when new uniform development projects are taking place. Harbor areas industrial sites, green areas and old houses are replaced by new development erasing the existing identity and values that these areas provide to a community. Often this is motivated with economical arguments by politicians. Hammarby Sjöstad is an example where little character of the former site was left and this trend of urban development contributes to the replacement of green areas. As a response to this type of problems Ground lab is instead interested in creating a new methodology to incorporate and express ecological systems in a larger territorial urban context. They view ecological systems as green infrastructure which creates the base of urban design

[2] Alfredo Ramirez, Ground lab, seminar on landscape urbanism at white architects in Uppsala march 13, 2014.

This larger territorial organization of the landscape could help to ensure that negative short term effects of economic and political fluctuations could be reduced. A large territorial green structure could provide sustainable solutions reducing opportunist possibilities for development and providing a structural long term clarity in where to build. This could help to reduce shortsighted development and avoid to fragment and dissolve specific values tied to the green areas. The green areas could instead be structured to carry out values important to improve the situation for the contemporary social, economical and environmental conditions. Adding social values and environmental performances to the green areas could carried out in a way that improves the attractiveness of an area.

The concept of public green areas are central to landscape urbanism. Tzoulas et al. (2007) has synthesized various aspects of the role of green areas and stresses that green areas are important for both ecosystems and human health. The importance of green areas are further expressed by Tyrväinen et al. (2007) in a study where they aimed at making a simple method for measuring residents experienced qualities of green areas. They argue for the need to investigate the social values and meanings of green areas for the urban population. They state that this type of information is often absent in planning. In times of urban expansion, it is of high importance that remaining green areas possess high quality. According to the authors this does not have to mean that new parks must be built. Their results imply that people appreciate areas perceived as natural, mostly forest areas. The most appreciated qualities in the study where: tranquility, the feeling of being in a forest and naturalness.

Van Herzele & Wiedemann. (2003) continue in the same fashion, stressing the importance of linking green areas to planning practice. They point out that there is already plenty of results showing the public appreciation of urban green space. The problem is that the format of the information is not in such a state that it can be applied easily in planning and policy practice. Normally barriers and fragmentation arguments are used to describe negative aspects of development on ecology. Van Herzele & Wiedemann also lift the consequences of social barriers and social fragmentation in the lack of accessibility to green areas. My interpretation of Tzoulas et al, Tyrväinen et al, and Herzele & Wiedemanns conclusions is that they are looking for ways to implement improved standards for ecosystems, human health, social values and meaning in urban green areas. Adopting a landscape urbanist approach where the green features of the landscape are used as the foundation of urban development, this could more easily be realized. Hence, the green areas should not only be seen as something static only for preservation. Instead it should be seen as something dynamic that could change and add ecological, social and health values to the urban environments.

Image source: http://groundlab.org/portfolio/groundlab-project-deep-ground-longgang-china/

Example

In this competition winning proposal for development in the Chinese city of Shenzhen, The green areas form a ecological framework around which the city is developed.

The representative value of how we perceive the nature can be expressed to enrich our dense urban environments with the performative aim of creating tranquility. The representative image of nature can also be important itself. Chiesura (2003) addresses the significance of urban nature and puts it in relation to more rural and extensive nature conservation plans.

"Much less attention is being paid to that type of nature close to where people live and work, to small-scale green areas in cities and to their benefits to people. Increasing empirical evidence, however, indicates that the presence of natural areas contributes to the quality of life in many ways. Besides many environmental and ecological services, urban nature provides important social and psychological benefits to human societies, which enrich human life with meanings and emotions." Chiesura (2003).

Cheisura makes two conclusive remarks. She says that urban natural environments are valuable society resources. This is because urban nature carry out many social functions and psychological needs. She also stresses that the needs of different groups in society varies. Therefore different types of recreation should be available in the green areas. Cheisuras view that green areas should remind of nature is something that could be supported by Landscape Urbanism. Besides, the image of nature is often perceived as something positive and the processes affecting natural areas often come more as a result of environmental conditions and human use. This could be compared to high maintenance green areas with a more park-like fashion.

In the context of balancing green area preservation and urban development, a framework of ecological infrastructure with outset from the existing landscape could help to ensure that many values coming from green areas are linked to the urban environment. To benefit from the existing character when developing new areas, not only green areas should be respected but also, present natural or man made structures. This could be used as the basis from which to continue urban development of existing communities. Incorporated in the city, green areas can provide benefits to health, ecosystems, meaningfulness, psychological and society values.

Extracted design ideas

From the design ideology of landscap urbanism design ideas are extracted for the use forming design strategies.

- The landscape can be used as an ecological framework and the main struc ture around witch to develop the city.
- Communities can be developed by expanding the urban fabric from the social construct of the already existing communities.
- Green areas are important for human health and ecosystems but there needs to be a better way of implementing this knowledge to improve the urban environment.
- The feeling of tranquility and the experience of urban nature are important and meaningful to people.
- Urban nature besides strengthen ecology also bring important social and psychological values to society and are much appreciated.

2.5 Summary of design ideas from the study

- Building more dense and compact cities are in general threatening urban green areas.
- High density can be used together with green area protection
- High density can support local businesses, walkable neighborhoods and use of public transport.
- Green areas are important for human health and ecosystems but there needs to be a better way of implementing this knowledge to improve the urban environment.
- The feeling of tranquility and the experience of urban nature are important and meaningful to people.
- Urban nature strengthens ecology and also brings important social and psy chological values to society and are much appreciated.
- Balancing dense development with green areas could extract the attractions of both and avoid the disadvantages of each element separately.
- Howard's way of structuring the urban development around centers with pronounced borders, interconnected by infrastructure, allows green areas and development to coexist.
- Concentrating development around urban corridors and nodes can support the dense attractions of urban development and still have the closeness to green areas.
- Communities can be developed by expanding the urban fabric from the social construct of the already existing communities.

2.6 Strategies made from ideas

- **Dense urban corridors**
- **Communities around nodes**
- **Coexisting system of green areas**
- **Integrate green areas in the urban fabric**
- **Tranquility in green areas**
- **Meaningful green areas**

2.7 Strategy description

The strategy description is one out of two main results in this thesis. It is the the theorethical answer to how to balance green area preservation and urban development.

Dense urban corridors

Dense urban corridors can be used to provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape improves these qualities by concentrating people, movement and public transport along corridors.

Coexisting system of green areas

To balance the dense urban structure and communities with complementing uses and qualities that are absent, a large continuous system of green areas should be built in.

Integrate green areas in the urban fabric

Apart from larger green structures, greenery can also be used to provide qualities within the built components of the urban fabric. Green roofs, green streets and parks are some examples.

Meaningful green areas

Urban green areas must provide qualities meaningful to the urban landscape and the people to be legitimate. Therefore green areas can not only be preserved. They should also add values such as social and psychological qualities, health benefits and ecosystem services together with species protection.

Tranquility in green areas

To make the green areas complement the qualities of dense urban fabric, they must possess a different kind of experience. Since tranquility is one of the most appreciated qualities of urban green areas the noise and impressions from the dense urban structures must be reduced.

Communities around nodes

Along the corridors, community nodes are created. Within the communities different types of services, house typologies, work places, culture and public spaces should be provided.

Concentrating development around urban corridors and nodes can support the dense attractions of urban development and still have the closeness to green areas.

High density can be used together with green area protection

Building more dense and compact cities is in general threatening urban green areas

High density can support local businesses, walkable neighborhoods and use of public transport.

Balancing dense development with green areas could extract the attractions of both parts and avoid the disadvantages of each element separate

Howard's way of structuring the urban development around centers with pronounced borders, interconnected by infrastructure allows green areas and development to coexist.

The landscape can be used as an ecological framework and the main structure around which to develop the city

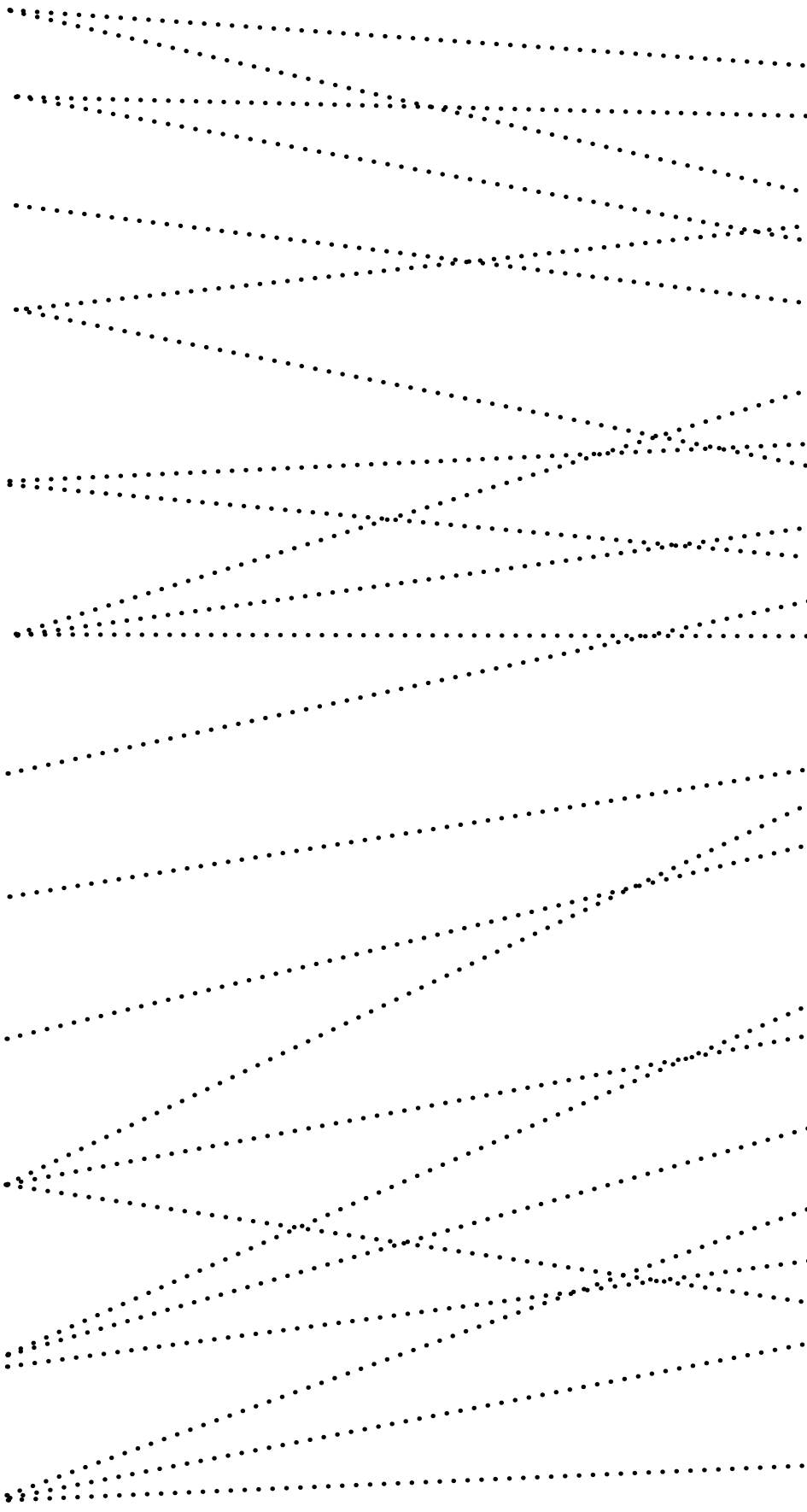
The forming of well functioning communities with social agendas are prioritized before economic development.

Communities can be developed by expanding the urban fabric from the social construct of the already existing communities.

Green areas are important for human health and ecosystems but there needs to be a better way of implementing this knowledge to improve the urban environment.

The tranquility and the experience of urban nature are important and meaningful to people.

Urban nature does besides strengthening ecology also bring important social and psychological values to society and are much appreciated



TO

STRATEGY

Dense urban corridors

Coexisting system of green areas

Communities around nodes

Integrate green areas in the urban fabric

Tranquility in green areas

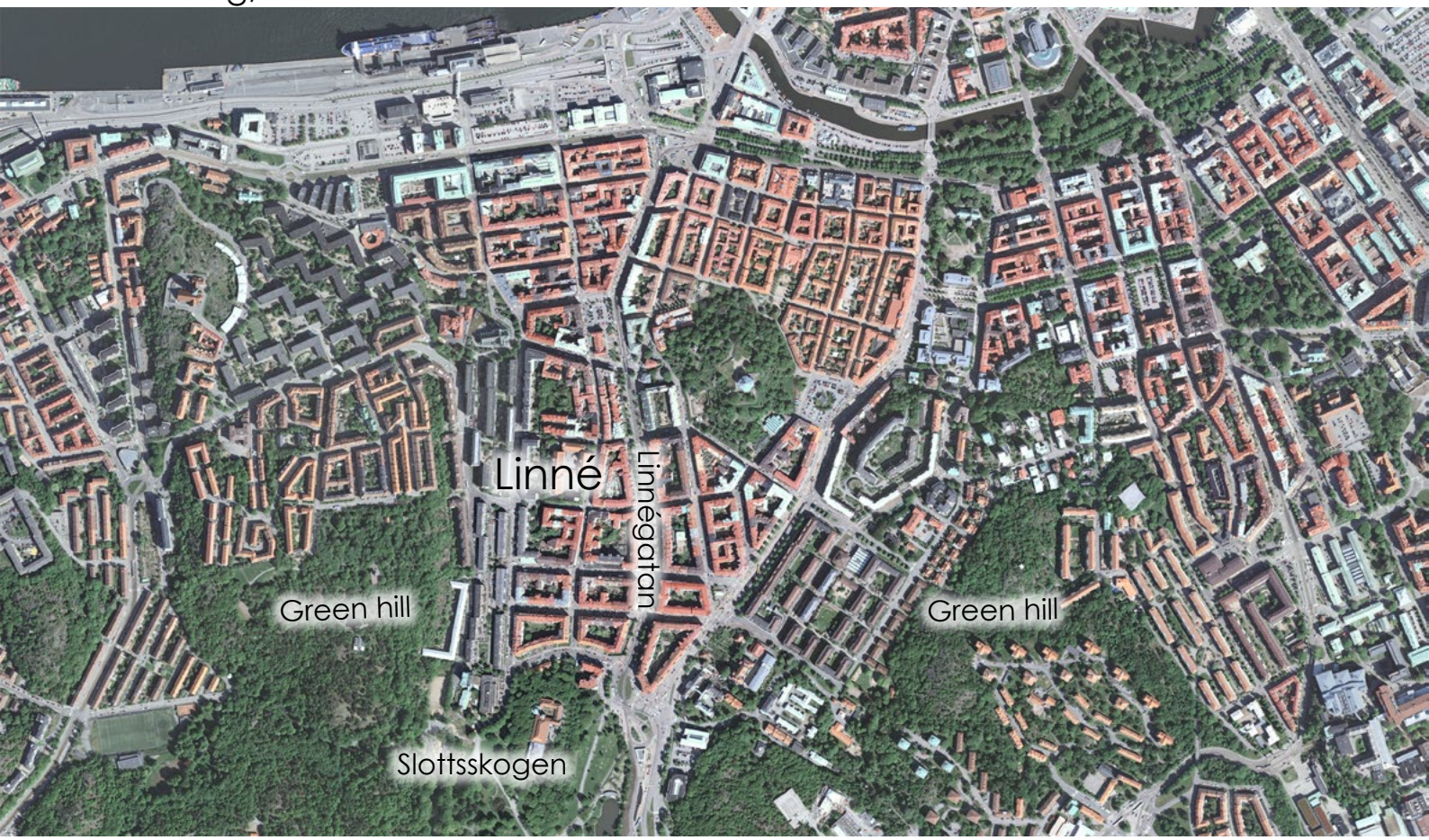
Meaningful green areas

2.8 Case studies

Stockholm, Södermalm

Södermalm is a lively urban district in Stockholm, although Södermalm is a island with only a few connections to neighboring districts it possess the necessary density to provide a diverse set of urban qualities. Here water are surrounding the district limiting its expansion but the water is providing visual and emotional qualities that compliments the existing urban qualities. Södermalm indicates that urbanity can be achieved on isolated shapes of land where the adjacent space holds other qualities. This suggests that developing areas like the one at Dag Hammarskjöld's väg could both achieve urbanity and still have adjacent space that holds qualities that comes of green areas.

Göteborg, Linné



The area around Linnégatan is a attractive vital urban environment with shops restaurants and much people. The district are has a grid system of streets and just like Dag Hammarskjöld's väg the Linné is located at the bottom of a valley surrounded by green heights. The fact that movement and people are concentrated along the road strengthens the vitality and variety of business allthough the area is separated from the most central parts of the city. To Linné, the close location to the green area of Slottsskogen in combination with range of urban qualities makes the area a sought after place to live in. The Linné area could work as a example of how to combine dense development with access to green areas.

3

GREEN-URBAN BALANCE

The design proposal will be presented in two different scales. the city scale and neighborhood scale. In each of the scales, a brief area description and analysis is followed by a design proposal. The design proposal presents how the strategies can be realized at the specific scale. The city scale focuses on how to organize the green structures and the urban fabric according to the landscape and surrounding green areas and neighborhoods. The neighborhood scale focuses on the structures at the site around Dag Hammarskjöld's väg.

City scale

Description

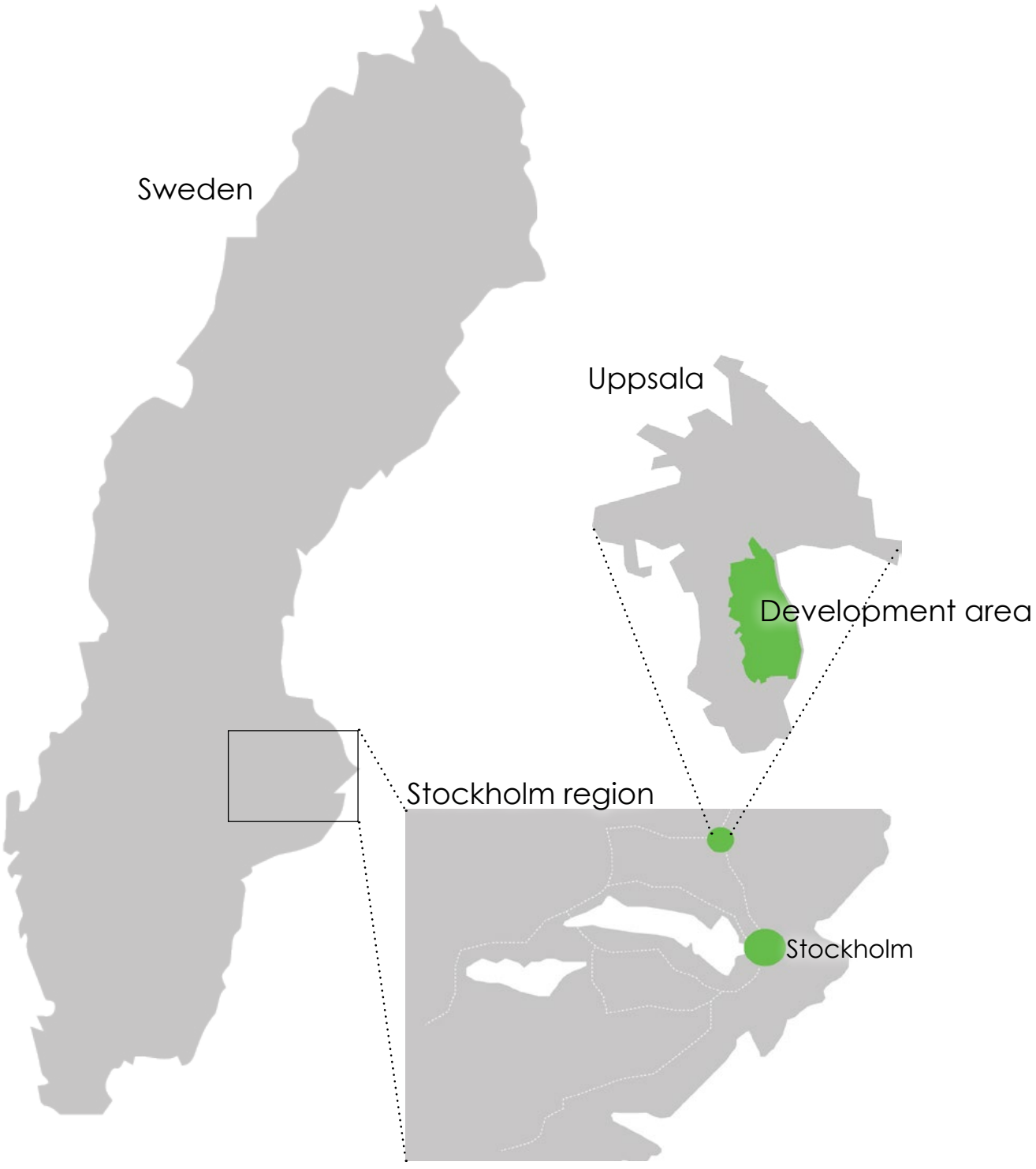
Analysis

Proposal

The description and analysis will focus on the outlines of the green areas and the developed areas. The focus of the proposal is to show an approximate solution for how development can be balanced with green area preservation at a overall level.

Description

Uppsala is the fourth largest city in Sweden located 80 km north of Stockholm. In 2012 the city reached 202 625 inhabitants. (Kommunfakta 2013).The city has two universities and is closely located to the airport of Arlanda. This makes Uppsala attractive for development.



3.1 The Uppsala municipality development vision.

According to the municipality of Uppsala the urban development will be more compact. The city expansion will mainly take place within the current urban structures. Buildings, transportation systems, technical supply systems and green structures will be concentrated to strengthen urban qualities. The aim is to increase the quality and diversity of the built environment and improve the accessibility between different neighbourhoods (ÖP 2010). Uppsala will have more of an inner city character with good assets of parks and green areas. The availability of the green areas should be strengthened by interconnected green infrastructure. The public space should provide identity by emphasizing cultural and natural environments encouraging physical and social activities. Areas will gain new functions promoting social encounters, activities and outdoor stay. The intersections between different types of characters need to be treated with great care, for example the transition between green areas and developed areas. When a line of green structure intersects with a dense urban structure, both should be perceived as continuous after the point of crossing. The crossing should be given a function and form that creates an experience. (ÖP 2010).

The municipality's vision can be understood in the following points.

- Build more compact within the city
- Improve accessibility between neighbourhoods
- Build new parks
- Strengthen green infrastructure
- Strengthen cultural and natural environments
- Encourage social and physical activities
- Propose solutions for green area intersections

The municipality development vision shares similarities to how the compact city is described in the literature study. This poses a threat to the green areas, as the compact city often dissolves the overall structure of them. Out of the seven points listed above, the first two would probably oppose the intention presented in the design proposal. First, because one intention of developing the area is to ease the pressure on developing too compact in central Uppsala. Second, compact development should not be used as an aim, instead it should be used as a mean to achieve certain goals, for instance supporting local businesses, public transportation and the attractions that comes from having people concentrated. If the compact city is the aim, less room is left for diversity in the urban structure and hence possibility of other ways of living in a city. Further, improved accessibility is frequently used as a argument to revive neglected neighbourhoods. However, often the solution are presented by connecting neighbourhoods by dense development. This might reduce the isolation but it also risks to deteriorate the situation for the green areas. The intention to build new parks, strengthen green infrastructure, strengthen cultural and natural environments, encourage social and physical activities and propose solutions for green area intersections is something that is shared by the municipality vision and the six design strategies. Nevertheless, the design strategies are much more likely to fulfil those intentions as they are based on how to organise the urban form according to balance between green area preservation and urban development rather than adopting the compact city, which holds obstructive structures.


City scale
Description
Stadsskogen
Årike fyris
Hågadalen
Gottsunda
Sunnersta
Norra Lunsen
Developed areas
Green area
5 km

3.2 Description

Southern Uppsala is a vast area and there are many important aspects that could be described. This description will mainly focus on the green areas around the Dag Hammarskjöld's väg area. The Neighbourhoods and green areas within the area will be described on page 55.

The landscape of southern Uppsala contains large natural green areas. The neighbourhoods are mostly residential areas that are partly disconnected from the central city. The topography in Uppsala is known to be very flat with wide open space. However, the landscape in the southern part of Uppsala distinguishes from that, with shallow valleys stretching towards Lake Mälaren.

The city areas of Gottsunda and Sunnersta are surrounding the area of Dag Hammarskjöld's väg. These two areas represent the south-western part of Uppsala and are located separated from the central city. The area around Dag Hammarskjöld's väg inherits an open landscape that is partly developed and contains the Neighbourhood of Ulleråker and the University area of Ultuna. The straight road of dag Hammarskjöld's väg and Kungsängsleden are the most dominating infrastructure that leads traffic through the area. In southern Uppsala many valuable green areas can be found.

Hågadalen-Nåsten is a 17 square kilometer wide nature reserve in south western Uppsala. It consist of forests and open agricultural land with the Hågaån River at the bottom of the valley. There are over 100 red listed species of plants and animals in Hågadalen-Nåsten. This nature reserve borders to the city's urban fringe at its eastern edge. In the reserve, running, walking, skiing and riding tracks can be found. There are also longer natural trails crossing the area and leading on outside the reserve. The tranquillity together with its closeness to the city are emphasised as one of Hågadalen-Nåstens main attractions. (Folder Hågadalen-Nåsten 2012)

Stadsskogen is a much appreciated natural forest within in the urban parts of Uppsala. Traces of previous use can be found for instance ditches, military structures, signs of a previous pastoral landscape and quarries. In Stadskogen, steady populations of fox, roe deer, hare, squirrels and bats live. A variety of birds can also be found here of which the tawny owl and the northern goshawk often breed. The fact that people live close by, makes the forest attractive for recreation like promenades, running, horseback riding, bicycling, picnicking or just being. The forest has a huge qualities in that its central parts are assessed to be the quietest in Uppsala. (Folder Stadskogen, n.d.)

Årike Fyris is a landscape that includes the Uppsala Esker, the Fyris Rriver, the open lands and forests that stretch from central Uppsala to the Lake Mälaren. The area is 8,5 square kilometres and contains trails for walking and bicycling, slopes for skiing and possibilities for canoeing. The area is of high natural, cultural and recreational value. (Folder Årike Fyris, n.d.)

Norra Lunsen is a forest rising above Lake Mälaren and the agricultural land south of Uppsala. The area consists of trees in nutrition poor soil between exposed plain bedrock. The whole area of 13 square kilometres is a protected Natura 2000 area. elk, roe, deer, hare, hazel grouse, capercaillie and the pygmy owl are some of many valuable animals living in the area. The reserve is only 10 km away from the central city. There are many prepared nature trails for walking and skiing, picking mushrooms or staying overnight under a windshield. Also here, enjoying the tranquillity of nature are highlighted. (Folder Norra Lunsen, n.d.)

City scale
Analysis

3.3 Analysis

The green areas described, contain many recreational and natural values. The green areas should be saved and utilized as a resource when the area is developed. The partly isolated residential areas are suitable for connecting to the central city. The character and topography of southern Uppsala is clearly different from the open plain in which the central, eastern and northern part of the city spreads out. The southern part is characterized by oblong shallow valleys mainly in north-south direction. The valleys are important to green area preservation because they form landscape rooms that contain clearly pronounced boarders. Clear landscape boarders are easier to read and understand. This makes it more difficult to break an intact green area with development than it is to develop already fragmented areas. A clear intact green area are more probable to be made aware to the public and thus are more likely to be an epitome for green values and hence more meaningful to people. Out of the three valleys that stretch trough southern Uppsala, Hågadalen, Dag Hammarskjöld's väg and Årike Fyris, Dag Hammarskjöld's väg is most suitable for development. This is because both Årike Fyris and Hågadalen make up clear boarders for the city and are much appreciated green areas were as the open landscape of the valley along Dag Hammarskjöld's väg is already disrupted by elements of development and therefore impact of further development would not harm the area as much as developing the other more valuable parts. To conclude, when development is taking place it is more important to save untouched and clearly defined green areas to fortify their position as symbols and recreation areas, than it is to save already partly developed areas. Therefore the area around Dag Hammarskjöld's väg is more suitable for development than any of the other valleys in southern Uppsala. By concentrating development around the Dag Hammarskjölds väg area more people will be in distance to benefit from the value of Hågadalen and Årike Fyris. The green areas described, contain many recreational and natural values. Although the area around Dag Hammarskjöld väg is developed, the area does not have to become a barrier for green areas. Instead it is located so that the green areas could be linked to a larger system.


City scale
Proposal
Stadsskogen
Årike fyris
Hågadalen
Gottsunda
Sunnersta
Norra Lunsen
Urban corridor
Green area system
5 km

3.4 Proposal

Dense urban corridors

Strategy description

Dense urban corridors can be used to provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape improves these qualities by concentrating people, movement and public transport along corridors.

Strategy implementation of the area

Development of urban corridors suits the oblong form of the valley along Dag Hammarskjöld's väg. This could extend the inner city south-ward making, Gottsunda, Sunnersta and the University Institutions at SLU an integrated part of the city as well as meeting the demands for needed development. Development enables larger offering of service and culture and is connecting people at a walkable distance. This would reduce the negative effects of everyday car use and instead support the use of public transportation.

Co existing system of green areas

Strategy description

To balance the dense urban structure and communities with complementing uses and qualities that are absent, a large continuous system of green areas should be built in.

Strategy implementation of the area

The symbolic value and usefulness of these green areas could be increased by connecting them into a large system of natural urban green areas. This could become a unique new type of garden city where larger biological systems of green areas coexist with the dense urban fabric. The larger green areas outside Uppsala are connected through the development site along Dag Hammarskjöld's väg. Developing the area would reduce large parts of the open farmland space. However, people would get closer to the surrounding green areas making them a more valuable asset to the urban landscape.

Recreation corrodors

The green area structure follows the Fyris River- strengthen the recreational connection betwen the city and Lake Mälaren

Intersection

By connecting the green areas and the urban development with care through intersections, both structures can be perceived as continuous

Urban corridor

The development extends the central parts of the city connecting it to the existing areas of Gottsunda, Sunnersta through Ulleråker and Ultuna.

Neighborhood scale

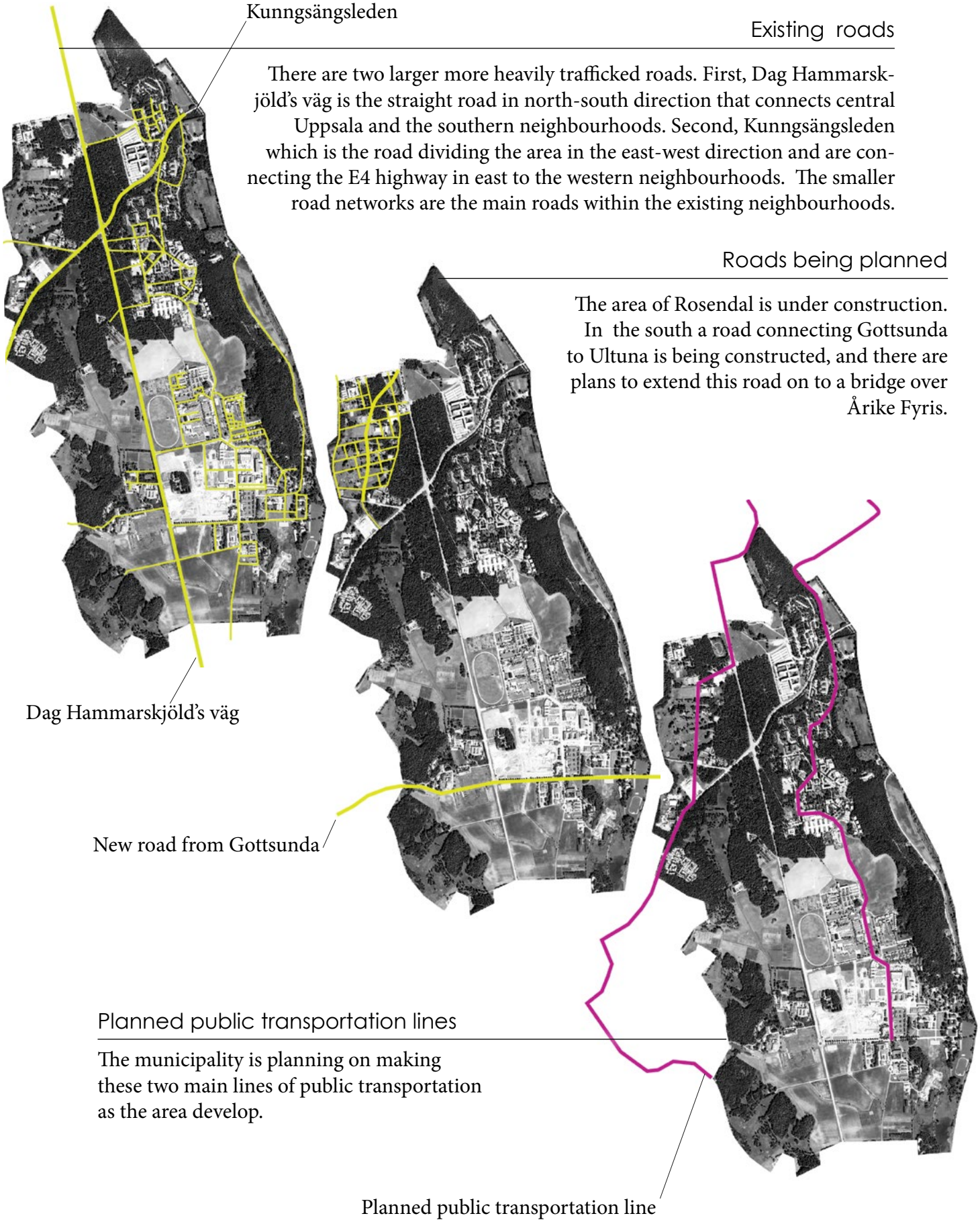
Description

Analysis

Proposal

The description and analysis will focus on the outlines of the green areas and the developed areas. The focus of the proposal is to show an approximate solution for how development can be balanced with green area preservation.

Description



Existing roads

There are two larger more heavily trafficked roads. First, Dag Hammarskjöld's väg is the straight road in north-south direction that connects central Uppsala and the southern neighbourhoods. Second, Kunngsängsleden which is the road dividing the area in the east-west direction and are connecting the E4 highway in east to the western neighbourhoods. The smaller road networks are the main roads within the existing neighbourhoods.

Roads being planned

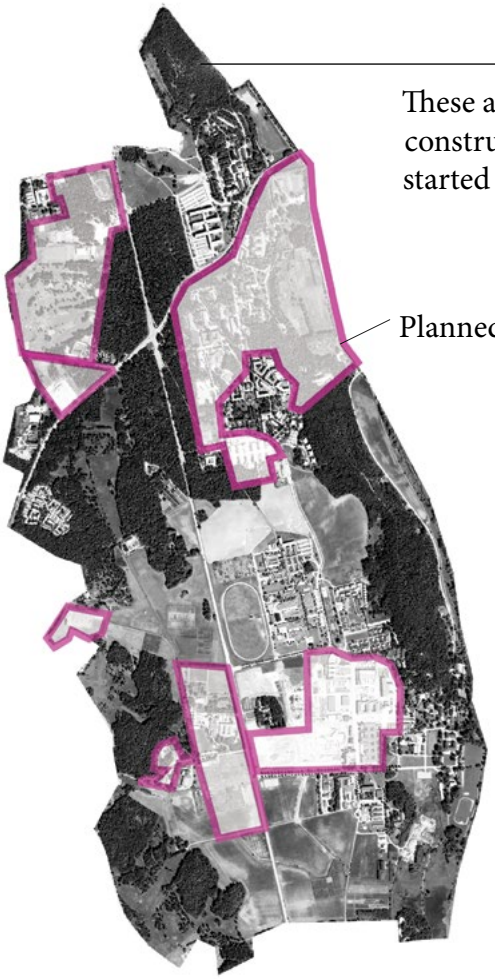
The area of Rosendal is under construction. In the south a road connecting Gottsunda to Ultuna is being constructed, and there are plans to extend this road on to a bridge over Årike Fyris.

Planned public transportation lines

The municipality is planning on making these two main lines of public transportation as the area develop.

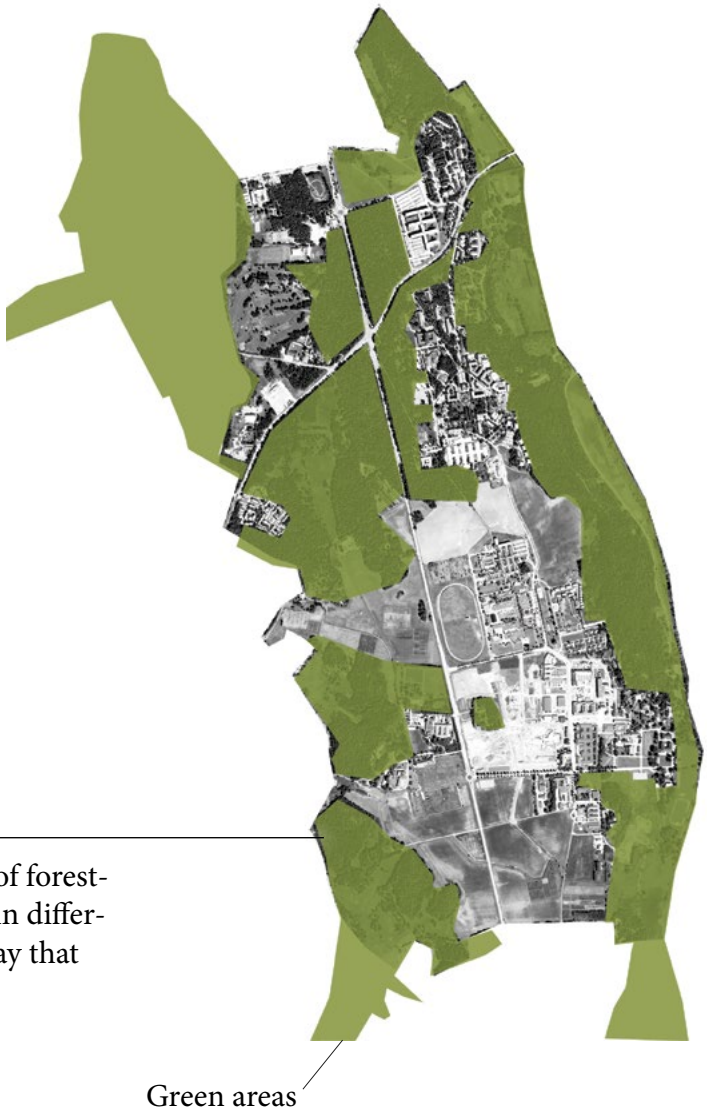
Planned areas

These are areas that are either being planed or constructed and show how development have started to claim land around Dag Hammarskjöld's väg.



Green areas

This shows the structural prerequisites of forested green areas. These green areas contain different characters but are structured in a way that almost form a coherent structure.



Neighborhood scale
Description

Area pictures

The numbers marks the place for example photos of developed elements and neighbourhoods at the site. The Letters show example pictures of some green areas. The pictures are shown on the next 4 pages.

Photo point Neighbourhood

Photo point green area

3.5 Description

Neighbourhoods

Ulleråker is a housing area south of central Uppsala. Until 1980 the area was strictly a hospital area for mental illness, and many of the old buildings are a witness of that. There are about 500 apartments. The character of the area is a mix of the buildings from the hospital institutions and some, up to six storey quarter shaped apartment houses built after1980. The atmosphere is rather calm and the many pine trees of the area shade the streets.

Ultuna is a University area south of Ulleråker surrounded by farmland. The area holds University institutions of the Swedish University of Agricultural Sciences and only a low share of residential areas are found. The character is dominated by the institution buildings aggregated in the open space separated from the rest of the city. The atmosphere reminds of a business complex where it is lively between working hours and thereafter it becomes quiet.

Green areas

From having been a rather open pastured landscape, lately a natural forest character has developed in Bäcklösa extending the woodland of Kronparken southward. Parts of the area now share similarities with natural fir tree forests containing the biologically important ingredient of dead wood in different states of decay. There are some red listed species living within these areas. The most important one to protect is Cucujus cinnaberinus, a beetle which in its caterpillar stage lives under the bark of old aspen trees. The forest is a Natura 2000 area which means that it is a core area for habitat and species protection. (Länsstyrelsen Uppsala län n.d.)

The Uppsala Esker (Uppsalaåsen) is stretching from north of Uppsala through the central parts and down to Lake Mälaren. South of Uppsala between the central parts and Lake Mälaren the esker consist of two main parts, Ultunaåsen and Sunnerstaåsen.
Ultunaåsen is emphasising the difference in altitude by being located on the top of an underlying ridge. This makes the top of the esker 30-45 m above the plains of Kungsängen on the west side while the difference on the eastern side only is 10-20 m. The esker is a dominant feature in the landscape and it mostly consist of boreal forest. There is also a rich flora of vegetation on the forest floor. (Ultunaåsen n.d.)
Sunnerestaåsen is an area close to the Fyris River effluent in Lake Mälaren. The area consists of forested esker slopes as well as a large dug out gravel pit that is no longer in use. The special topography makes Sunnerstaåsen useful for recreation. Forest paths, ski slopes, mountain bike areas, illuminated tracks, ski tracks, sledge slopes and public fire places are some structures enriching recreational possibilities. (Upplandsstiftelsen. n.d.)

The reach of the Fyris River from central Uppsala to Lake Mälaren is of high value for bird, animal and aquatic life. According to the Water Authorities (Vattenmyndigheten) the river is the most important plain land watercourse in the Uppsala region. The river functions as a passage trail for different species of fish to the upriver lakes. The red listed Aspen is one fish species using the trail. The river is also a place for reproduction for many species of fish from Lake Mälaren. Furthermore the river is a path of communication for boats and canoes as well a as a important symbol in Uppsala's urban environment. (Vattenmyndigheten.n.d.)

Kronparken is a pastured forest containing large 350 year old pine trees. The park is the State of Sweden's first protected green area appointed by Gustav III in the 1700s. The reason for the trees growing so big is the combination of pasturing animals keeping competitive plants away and the early protection of the park. The area was before its protection a royal ground for hunting animals. The aim is now to keep the area in between the large trees open. (Uppsala Kommun 2013)

Neighborhood scale
Description

PHOTO EXAMPLES
Neighbourhoods

1 Ongoing construction in Rosendal

2 Ongoing constr

5 Dag Hammarskjöld's väg is dominant in the open landscape

6 Character buildings used for ongoing activities

7 Old manor in Ul

10 Small scale settlements in Ultuna

11 University institution Ultuna

12 workplaces in

15 Local street in Ulleråker

16 Large scale institution in Ulleråker

17 Small scale ins

ruction in Rosendal

3 Dominant traffic intersection, Dag Hammarskjöld-Kunngsängsleden

4 New road that connect Gottsunda to Ultuna

tuna

8 The SLU University in Ultuna

9 The SLU University in Ultuna

Ultuna

13 Flats aligned with the landscape in Ulleråker

14 Small scale houses in Ulleråker

stitutions in Ulleråker

18 Former mental hospital Ulleråker

19 Kunngsängsleden divides Ulleråk-er from central parts of Uppsala

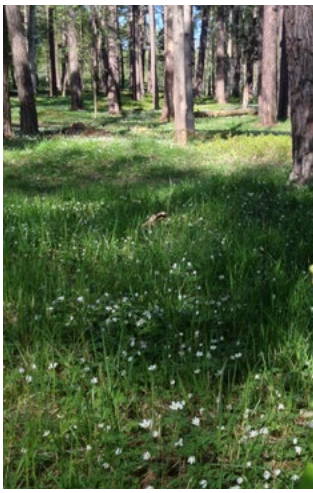
Neighborhood scale

Description

PHOTO EXAMPLES

Green areas

A Pastured forest in Kronparken



B Pastured fores

E Open field enclosed by a frame of green trees.

F Cultural land close to Bäcklösa

G Part of the op around of the

J The popular nature trail Gula stigen

K A view of the landscape north of Sunnersta

L In the other di extends to the

O Wetlands and the Fyris River

P The Fyris River

Q The Esker slope

st in Kronparken

C Accessible nature trail through forested area

D Glade between Rosendal and Bäcklösa

en landscape in the area

H Cultural land close to Bäcklösa

I Dense forest in Bäcklösa

rection the view e Fyris River area

M Stream that stretches through arable land

N Wetlands along the Fyris River

e

R View from the Esker of Årike fyris, and south-western Uppsala.

S Field along the Esker and the Fyris river that risks development


Neighborhood scale
Analysis
Central Uppsala
Kronparken
Rosendal
Kunngsängsleden
Ulleråker
Fyrisån
Dag Hammarskjöld's väg
Norby
Uppsalaåsen
Bäcklösa
Ultuna
Valsätra
Gottsunda
Sunnersta
Green area
Neighbourhood

3.6 Analysis

The neighbourhoods of Ultuna and Ulleråker are separated from the central parts of the city. They are facing major development as the city expands and this is an opportunity to link the neighbourhoods to the central city. Ulleråker is mainly a housing area that that will soon become a connected part of the inner city. Hence, services, playgrounds and other qualities need to be added. Currently, Ultuna is mainly a workplace. The area could develop a more diverse composition by adding housing and local businesses. The character of the areas are an important part of the neighbourhoods. Therefore, development should pay respect to the existing qualities of the houses and the functioning communities by adding qualities rather than replacing.

The green areas consist of valuable but separated parts that need to be tied together. The green areas could become more important by tying them together to form a more distinct overall structure. In these areas new possibilities for how people can use them should be provided.

Presently Dag Hammarskjöld's väg and Kungsängsleden are two dominating structures in the landscape which make up barriers and claims to much focus of the area. This is inefficient use of urban land and does not provide pleasant environment to people. However Dag Hammarskjöld's väg is a historically important structure that should be included in new development.

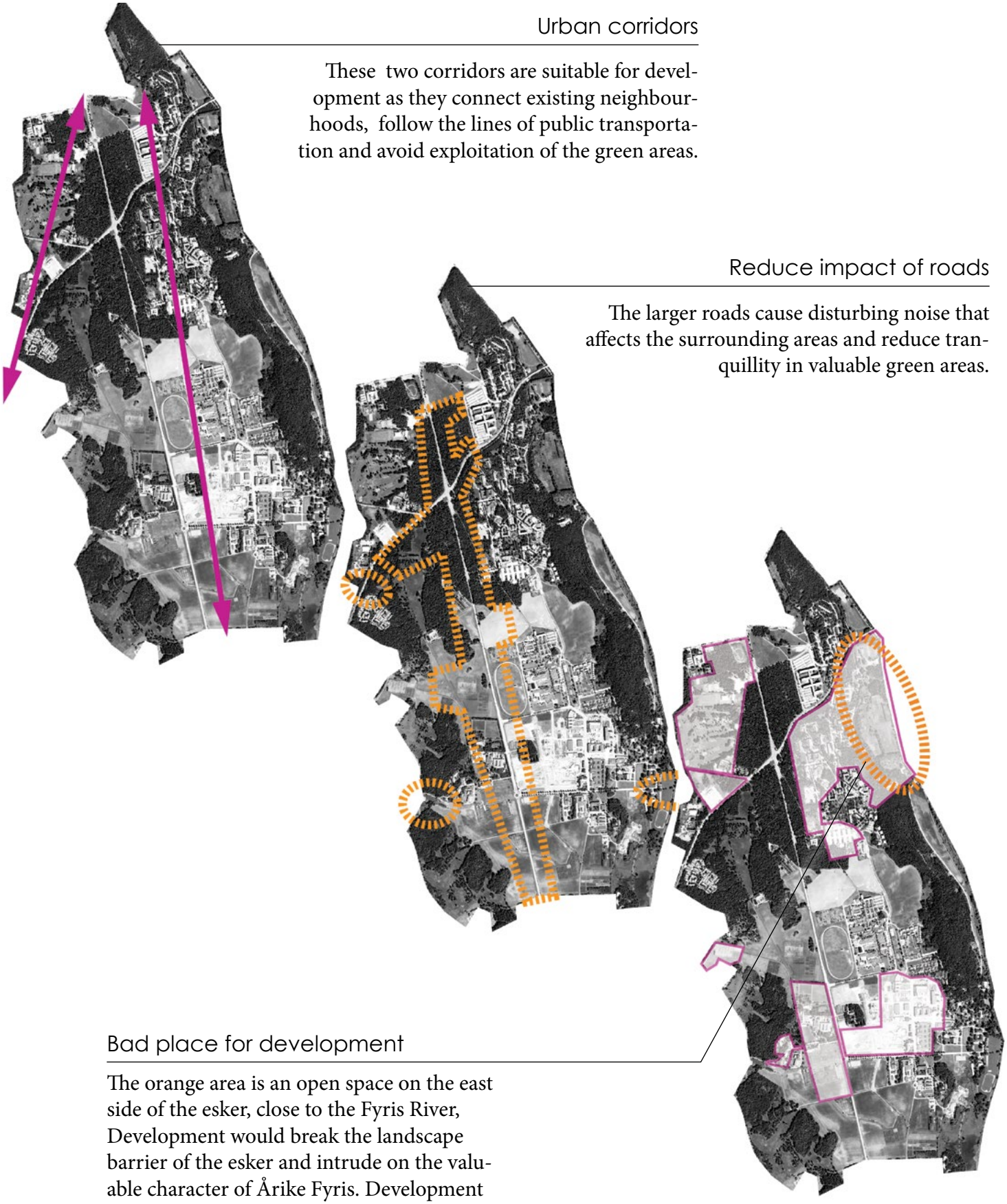
3.7 Proposal Neighbourhood scale

Urban corridors

These two corridors are suitable for development as they connect existing neighbourhoods, follow the lines of public transportation and avoid exploitation of the green areas.

Reduce impact of roads

The larger roads cause disturbing noise that affects the surrounding areas and reduce tranquillity in valuable green areas.



Bad place for development

The orange area is an open space on the east side of the esker, close to the Fyris River, Development would break the landscape barrier of the esker and intrude on the valuable character of Årike Fyris. Development would also break the undisrupted recreation belt of green areas between central Uppsala and Lake Mälaren

Areas suitable for development

The purple areas are better alternatives for than development that would break the green belt between Central Uppsala and Lake Mälaren. These areas follow the proposed corridors of development, are structured to reduce the spread of noise from the roads and does not intrude on the green areas..

Connecting green areas

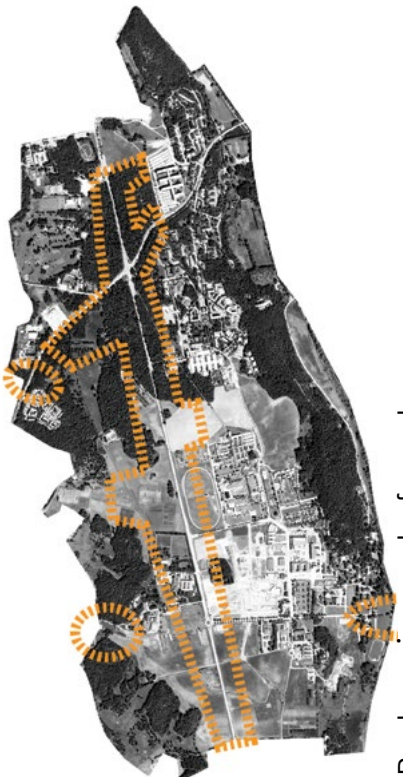
If the green areas are structured to connect to the surrounding larger green areas, the biological, social, and recreational and psychological values are strengthened. The arrows show suitable connections where it could be beneficial to conecting green areas because of the short distances between the green areas.

Neighborhood scale

Proposal

The area around Dag Hammarskjöld's väg becomes a denser but green urban environment and an integrated extension of central Uppsala to the south. The renewed neighbourhoods possess attractions that the central city can offer and are furthermore always in reach of tranquil and meaningful green areas. This is due to the interconnected overall system of the green areas that coexist within the urban structures. This system connects neighbourhoods, encourages sustainable conveyance by bike and foot and facilitates crossings over barrier roads through ecoducts. To sustain and benefit from the existing characters of the neighbourhoods, most existing structures are saved and utilized for new purposes if needed. The new development ties the neighbourhoods together and is constantly evaluated to improve every new stage of development. Through these measures a good balance between green area preservation and urban development is achieved.

Urban corridors



Reduce impact of roads

Bad place for development

Areas suitable for development

Connecting green areas

Neighborhood scale

Proposal

Central green areas

Centraly locatded green areas are incorporated to form a green structure that strech-es from the city core through the development area all the way to Lake Mälaren

Pastured forest

River area

Forest

Open Landscape

Since much of the open land-scape is used for development, the most valuable parts can be preserved and made more public. The open imbedded pastureland reminds in charac-ter of Hågadalen.

Open pastureland

Restored stream

Wetlands

Preserved green area

New developed green area

Co existing system of green areas

Strategy description
To balance the dense urban structure and communities with complementing uses and qualities that are absent, a large continuous system of green areas should be built in.

Strategy implementation of the area
The green areas are linked together to form a larger system. The form of the system makes the green areas feel more evident. It becomes possible to move through larger territories within green areas. This could help animal and species migration between the green areas as well as strengthen the ecology of the urban landscape. This green structure balances the coming development with different types of green areas stretching between forest, pastured forest, open pastureland, wetland and river area.

Activities

Stadskogen

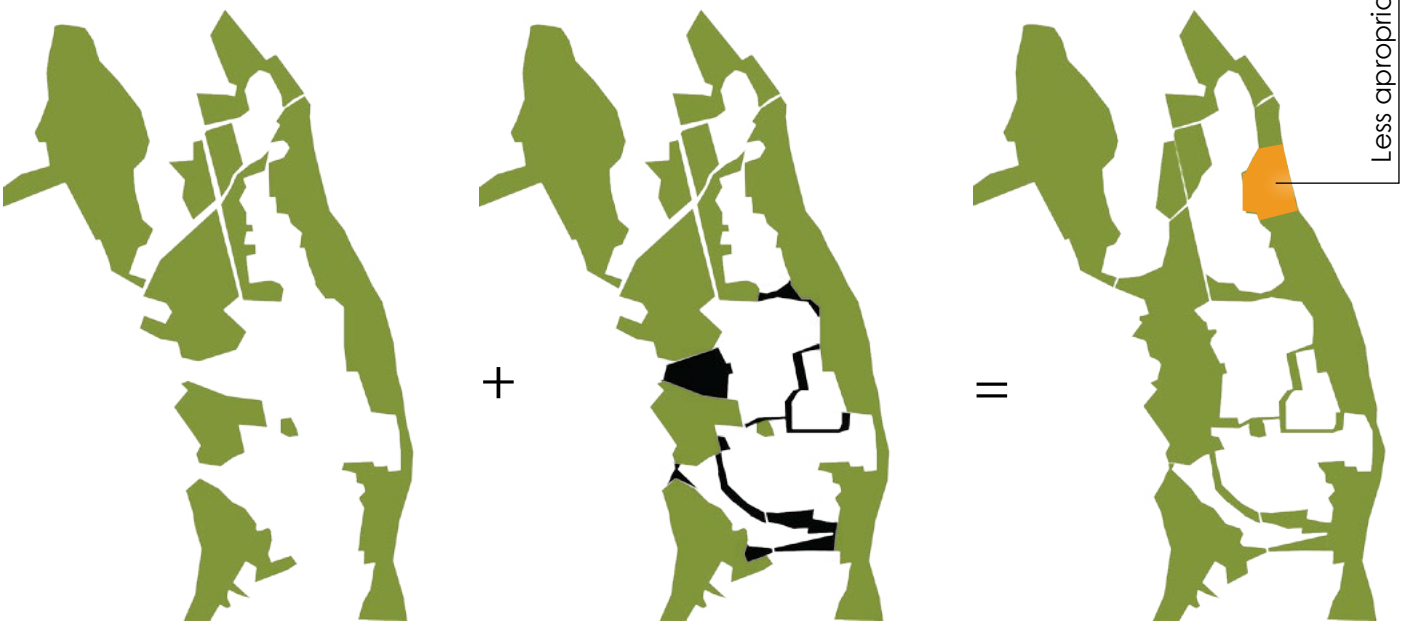
The Central Forest is conected by ecoducts and becomes a part of the green structure.

The esker

The esker is kept untouched and preserved as a green infrastructural landscape element. Together with Fyris River it forms the most valuable green area for the developing communities and creates a recreational passage between the city and Lake Mälaren.

There are plans of breaking the patterns of the current landscape by building on the east side of the esker. This would break the green area system. The area should instead become an extension of the activity corridor along the river with sports fields, playgrounds and a public outdoor bath.

Less appropriate area to develope



Existing green areas + Green connections = Green area system

Neighborhood scale

Proposal

Dense urban corridors

Strategy description

Provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape improves these qualities by concentrating people, movement and public transport along corridors.

Strategy implementation of the area

The development expands the central city southwards in Uppsala creating a new type of urban landscape integrated with green areas that can still provide the necessary density to sustain the offerings of a downtown environment. The development links the south-western and central parts of Uppsala together with the University institutions in Ultuna and connects to the planned train station in Bergsbrunna. The built environment is structured to reduce the noise caused by traffic to surrounding green areas. Schools, child nurseries, offices, service and commercial activities are mixed within the urban facric at suitable locations, allthough comercial service is more concentarted in the community centers and allong the public transportation routes.

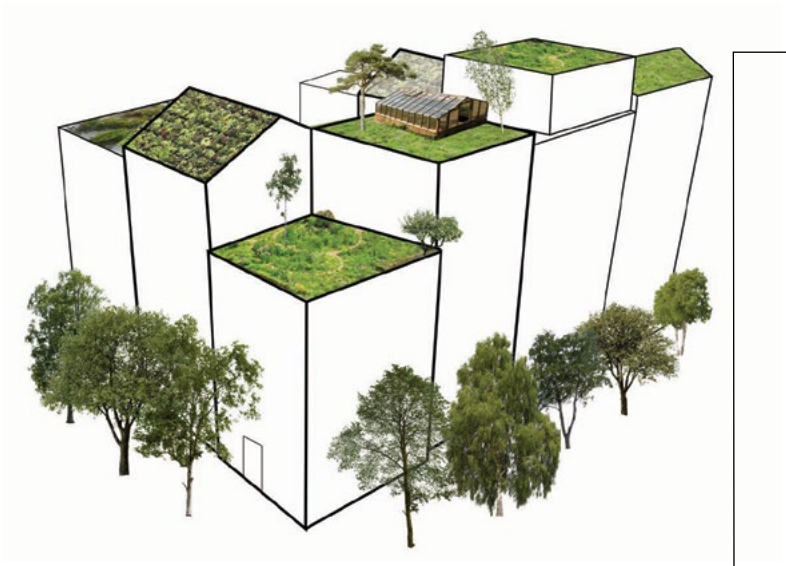
Integrate green areas in the urban fabric

Strategy description

Apart from larger green structures, greenery can also be used to provide qualities within the built components of the urban fabric. Green roofs, greenery in streets and parks are some examples.

Strategy implementation of the area

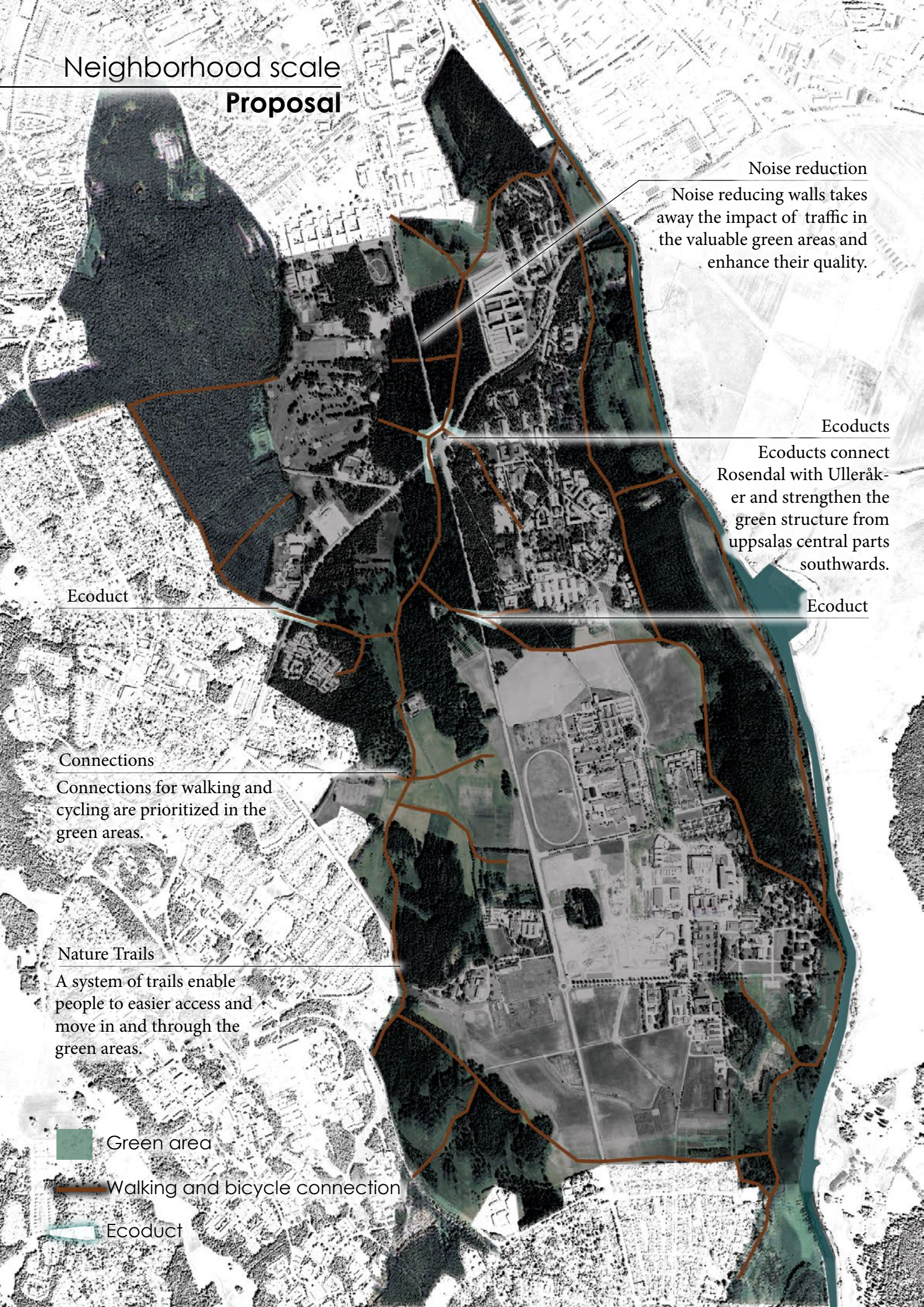
Within the urban fabric new green areas are created. These green areas differ from the lager green area system because they are built as an integrated part of the premises of the urban fabric. Examples of these areas are local parks, green roofs, visible storm-water systems and vegetation around roads. These green areas are created to handle technical issues that come from the impact of the urban structures, but also to improve the character, identity and visual experience of a place. The focus of the parks is to support urban life and provide public space and they are therefore designed as social meeting places with relevant activities for different groups in society.



Green urban spaces

Green roofs enable social and recreational use of a normally neglected space. The rooftops provide biodiversity by adding new types of biotopes. Storm water can be sustained by plants and soil before it is led to the open storm water system along the streets which in turn is watering the trees. This reduces the impact on traditional storm water management and upholds and filters the water before it reaches the streams.

Neighborhood scale
Proposal



Noise reduction

Noise reducing walls takes away the impact of traffic in the valuable green areas and enhance their quality.

Ecoducts

Ecoducts connect Rosendal with Ulleråker and strengthen the green structure from uppsalas central parts southwards.

Ecoduct

Ecoduct

Connections

Connections for walking and cycling are prioritized in the green areas.

Nature Trails

A system of trails enable people to easier access and move in and through the green areas.

Green area

Walking and bicycle connection

Ecoduct

Meaningful green areas

Strategy description

Urban green areas must provide qualities meaningful to the urban landscape and the people to be legitimate. Therefore green areas can not only be preserved. They should also add values such as social and psychological qualities, health benefits, ecosystem services and species protection.

Strategy implementation of the area

The green area system is used as connections between different urban areas. Gravelled cycling and walking paths that have little disturbing effect can easily be laid out. This supports the use of sustainable means of conveyance and gives a less disordered alternative to moving through the urban fabric. Ecoducts connect the green areas, reduce the number of stops and enable easy crossings in-between the green areas over the roads. Connections through the green areas make people use them more, and the green areas become part of people's everyday landscape when travelling to job or school. This can provide psychological and health benefits as well as a more diverse everyday experience. The ecoducts could become the corner stone for connecting the green areas and would also support movement of wildlife. Parts of the green area fringe provide recreation of formal activities such as playgrounds, skate parks, sports activities and social and cultural meeting places. The inner parts of the green areas provide more informal types of recreation. As the urbanisation proceeds, these green areas will become increasingly important to more people.

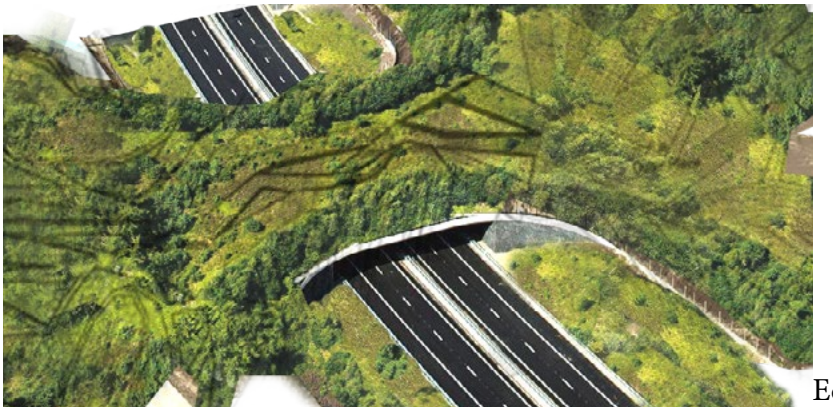
Tranquility in green areas

Strategy description

To make the green areas complement the qualities of dense urban fabric, they must possess a different kind of experience. Since tranquillity is one of the most appreciated qualities of urban green areas, the noise and impressions from the dense urban structures must be reduced.

Strategy implementation of the area

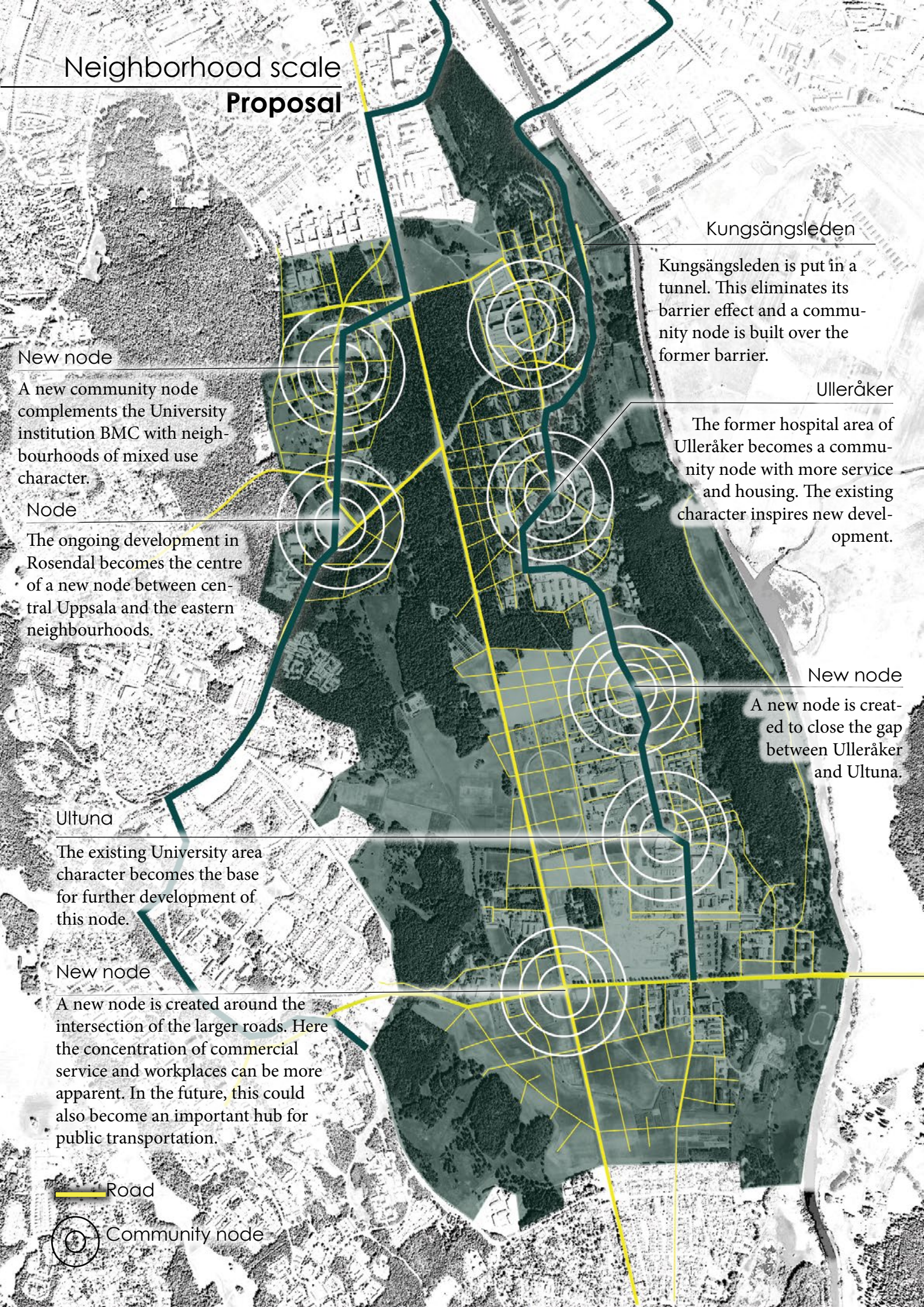
Connecting the green areas with ecoducts creates a more coherent green structure that reduces the negative impression from urban structures such as noise from traffic and the barrier effects of crossing obstructive roads. Tranquillity is fundamental to an environment that greatly wants to differ from the urban fabric and adds other types of qualities. Tranquillity provides meaning and psychological benefits to green areas. Therefore, the urban fabric is structured to reduce noise from the larger roads. Measures are taken to reduce negative urban impact by building noise reducing walls and by planting more trees to reduce the visual impact of the urban structures in the green areas.



Ecoduct

Neighborhood scale

Proposal



Kungsängsleden

Kungsängsleden is put in a tunnel. This eliminates its barrier effect and a community node is built over the former barrier.

New node

A new community node complements the University institution BMC with neighbourhoods of mixed use character.

Ulleråker

The former hospital area of Ulleråker becomes a community node with more service and housing. The existing character inspires new development.

Node

The ongoing development in Rosendal becomes the centre of a new node between central Uppsala and the eastern neighbourhoods.

New node

A new node is created to close the gap between Ulleråker and Ultuna.

Ultuna

The existing University area character becomes the base for further development of this node.

New node

A new node is created around the intersection of the larger roads. Here the concentration of commercial service and workplaces can be more apparent. In the future, this could also become an important hub for public transportation.

Road

Community node

Communities around nodes

Strategy description

Along the corridors, community nodes are created. Within the communities different types of service, house typologies, work places, culture and public spaces should be provided.

Strategy implementation of the area

The community nodes are local centres where the access to different types of service is higher than in the rest of the urban fabric. The nodes should all provide a variety of house typologies, schools, commercial service and public squares. The community nodes are mainly located along the public transportation lines. They either complement existing communities with new service or close gaps in the urban corridor. The communities should function as individual units that can develop in different directions and support everyday life. Together they form a multi centred and diverse urban landscape.

The nodes are strengthened by proceeding the development from already existing communities, taking advantage of their identity and benefit from their existing formal and informal structures. Some new nodes are also created to close the gaps in the urban corridor. The grid system is a created landscape element that provides accessibility within the communities. It is a structure that divides the land into blocks and that is adaptable to change in land use within the blocs. This makes the grid system a resilient urban landscape element that allows buildings within a community to change and develop over time. The grid system is constructed to connect the roads to the existing roads in the communities. This helps the newly developed areas to benefit from the existing offerings, character and identity. Since many newly developed areas, no matter quality and intentions, feel alienated from the impact of communities forming over time. In early phases of development, less useful buildings are saved and turned into premises for business start-up or cheap temporary apartments. This way, character and identity in the area are kept over time, and not replaced and all at once. Public facilities that support cultural and societal associations are provided. A program for how different stages of development are formed over time should be made to ensure that every new stage an improvement update, with the lessons learned in previous stages. The development should continuously be evaluated to ensure that the lessons learned during the process are taken into account. Every new stage of development should be an updated version of the previous stage.

New Bridge

If the already planned bridge must be constructed it should cause as little visual and auditory impact on Årike Fyris as possible. Otherwise it risks to disturb the tranquillity of the area. The bridge connects the nodes to a new train station in Bergsbrunna.

4

Discussion

In the discussion, the working process and the connection between literature, design ideas and design strategies are discussed. This is followed by a discussion of the results and the design proposal. In the end further implications are presented.

4.1 Working process

Starting up this master thesis I was unsure if the design proposals that I wanted to do should follow the same academic process as other master theses at SLU. As the focus lies on a structure that is not adapted for landscape architectural design proposals, I feared this could strain my proposal, weakening its ties to the site, reducing the time to process it and instead only focus on a specific subject. However, I learned how to structure a design proposal based on theory and literature. What I did was to relate the main problem of the area where the design proposal would be developed to a general issue that is found in other cities and therefore discussed in theory.

In this work the studied area was located around Dag Hammarskjöld's väg. The problem was how to develop this area with consideration to the need for development and the preservation of the valuable green areas. The general issue became how to balance green area preservation and urban development. The general issue was investigated, and the outcome of the investigation became the base for how to create the design. Thereafter, a design proposal was made using the knowledge that was gathered in the study of the general issue and applying it to the specific site.

This way of working gave more insight of how green areas relate to different urban design ideologies, and how the urban form of these ideologies relate to the form of green areas. However this took a lot of time that maybe could have been spent on further development of the final proposal. One reason that it took a lot of time was that this way of working was new to me. Consequently it took a lot of effort but at the same time meant an opportunity for professional development.

On the other hand, this way of working helps to reduce the amount of time spent on re-evaluating decisions that are made during the design process. This work method clearly shows a close relation of the theory with the decisions made during design process, making it easier to understand and evaluate it. This type of approach is suitable to balance the academic traceability with a design proposal, and this could be very useful when writing a master thesis in landscape architecture. However, given that time is limited in projects, I am not sure that this is the most efficient way to work. The fact that one issue becomes the main theme restricts the freedom of action in the proposal. It could be good to narrow down the options of possible solutions to focus, but the proposal could fail short as urban projects often have to handle a complex web of situations affecting society. Moreover, one well researched issue provides legibility to the work and if used with care and experience, the result could become very precise and could inspire and strengthen the argumentation for a certain design. This way of working does not need to be repeated for every project but as a designer it is good to build strong theoretical foundations for making design decisions. This could in turn result in better designs and more assignments. In the end, in planning and architecture, it is the quality of a design proposal that is judged. How useful it is to work with proposals that are grounded in literature and theory depend on how much it strengthens the final proposal. This would vary depending on the context in which the proposal are made, and according to the final quality. As a professional working method it would probably consume too much time. To conclude, using design proposals that are grounded in literature and theory is an approach useful in meeting the academic aims of a master thesis which can still be valuable and relevant for landscape architecture practice.

4.2 Connection between the literature, extracted design ideas and design strategies

There are different ways of creating design proposals. One aim of this study has been to make a design proposal that is informed by and based on studies and theories related to the topic. Often proposals are not directly grounded in theories but are the result of the knowledge, preferences and ideas of the designer. A design proposal based on studies and theories demands a clear thread between the literature and the final product. As mentioned in earlier discussions, the steps of selecting literature, extracting design ideas and creating design strategies, all contain, decision-making, with a high content of subjectivity. Therefore questions could be raised regarding whether the choices made in the process where right? Or why other important aspects related to the subject were not investigated? These questions are very relevant. The point of a design proposal based on studies and theories, is not that it claims to hold the truth. Instead it is that it clearly shows the thread of the decisions made, and that those decisions are supported by linking the selected literature to the final proposal. The essence of this type of academic work is that it easily can be evaluated and questioned, often on solid foundation, as the thread of decisions between the literature and the proposal are transparent and clear. Thus, the validity of the outcome depends on how consistently the proposal follows the literature.

The design features extracted from the literature study were my own interpretation of how to summarise each section of the three urban ideologies. Some of them were general statements for example: Building more dense and compact cities are in general threatening urban green areas. Whilst others were closer to design strategies, for example: Howard's way of structuring the urban development around centers with pronounced borders, interconnected by infrastructure allows green areas and development to coexist. The design ideas were not so difficult to extract, because they where the natural consequence of the presented literature. The major decisions lay rather in what urban design ideologies to present in the literature study and which aspects of them to emphasize.

Applying the extracted design features into design strategies proved to be more difficult. From the start there were much more than six design strategies of which many had similarities to each other. The strategies had to be sorted and rephrased in order to get clearer distinctions and be of relevance to the main research question. One design strategy was called: Landscape as the main planning structure. This sought to state that the cities should be planned according to the process and morphology of the landscape. This strategy was more of a general statement and not concrete enough to turn into a design strategy. Out of the six strategies, two describe the balance between green area preservation and urban development better from the perspective of an overall urban form. These strategies imply dense urban corridors together with coexisting system of green areas. They provide the general structure of how to balance green area preservation with urban development, while the other four describe how the green and urban areas should be programmed. However the later four have great importance for adding values that clearly distinguish the quality of green areas from the urban areas which makes the urban landscape more diverse.

4.3 Discussion of the results

There are two main results of this thesis: 1) The design strategies for balancing urban development and green area preservation, and 2) the design proposal for the area around Dag Hammarskjöld's väg. These two results will be discussed in the following sections.

The design strategies

The design strategies for balancing urban development and green area preservation are the result of the literature study. Different design ideas were extracted from the studied urban design ideologies and made in to strategies that would serve as a basis for the design proposal.

The first design strategy was called *dense urban corridors*. It aimed to provide the necessary density to create living walkable communities with the offerings that the compact city can provide. The urban shape is supposed to improve these qualities by concentrating people, movement and public transport along corridors. I believe that this way of organizing development can be used in situations where there is a need to widen the range of offered service and diversify qualities of the urban landscape. This could also be used in other contexts of urban development as it could regenerate neglected areas with new possibilities. The point of concentrating development and movement is that it allows for non concentrated adjacent space. In this thesis the adjacent space is used to inherit the values that comes from green areas, but in other cases this area could also support other uses like less densely populated neighborhoods or agricultural land. It is naive to think that concentration of development itself can support a large variety of downtown offerings, but the chance of achieving some of them becomes more probable.

The second design strategy was called *coexisting system of green areas*. It aimed to balance the denser urban structure and communities with complementing uses and qualities absent in those structures using a large continuous system of green areas. This strategy is the essence of balancing green area preservation with urban development as it exist within the urban structures and provides qualities based on green areas to the urban population. This strategy advances the positions of how to view green areas in urban development as it makes an overall claim on how to structure the urban landscape. This strategy could be difficult to implement in existing dense urban structures because it would claim space that is already in use for other purposes. However, it might be in these dense urban contexts that the green area qualities would stand out the most and best complement the existing qualities of the city. Although it is not always possible to introduce a coherent green area structure, an over all strategy for how urban green areas relate to each other could be useful. This could be of particular interest for north and east Uppsala because many neighborhoods

there are underrepresented in terms of green areas, compared to the west side of city. In planned and developing areas, this strategy ought to be implemented already from the start. If this is not done, the chance of doing it later is negligible.

The third design strategy was called *green areas in urban fabric* and aimed to provide qualities within the built components of the urban fabric. Green roofs, greenery in streets and parks are some examples. This strategy is excellent for claiming space that normally are underutilized as the roofs, or only designed for accessibility as the streets. It is embodying the idea of society existing in balance with nature as well as providing technical solutions for storm water treatment. The planting tradition is deeply rooted in our culture and many people have strong relations to certain types of plants and green areas. Therefore the green areas within the urban fabric helps to enrich and beautify the urban environment. This is something that could be realized to a much higher extent than it is today. An antagonist approach to this strategy might be that greenery on roofs is damaging properties or that planning for including greenery is to expensive. Further, the extent to which greenery has been included in development tradition the last decades also speaks against the realization of this strategy. However, given the high urbanization rates and the recent trend to build more compact, this is a much needed strategy that adds complementing qualities. The highly prized urban land should result in more efficient use of space and thus in the ideal case result in more greenery. Furthermore, given the long period of time that the built structures will last, the technical and economical issue of integrating greenery seems insignificant.

The fourth design strategy was called *meaningful green areas* and aimed to legitimize urban green areas by provide qualities meaningful to the urban landscape and the people. Therefore green areas can not only be preserved. They should also add values such as social and psychological qualities, health benefits and ecosystem services together with species protection. Even though species protection is of great importance, this can not be the only element dictating the form and use of urban green areas. There has to be ways of combining existing interests of green areas with making it useful and accessible to the urban population. This could be done by more programmed and formal green areas in some parts, and extensive informal green areas in other parts. Where conflicts of interests in the green areas can not be solved, the uses meaningful to people should be prioritized. Adapting this strategy is an efficient way of improving the current value of a green area. I believe this strategy will become increasingly more important as globalization drives the competition over attracting people between cities. With a growing service sector, where knowledge and the human capital provides monetary value, the need for providing attractive environments becomes a way of sustaining economic growth as it attracts people.

Since making places more meaningful to people is an important part of the landscape architects job, the prospects for this strategy, and for the practice of landscape architect are bright.

The fifth design strategy was called *tranquility in green areas* and aimed to complement the qualities of dense urban fabric, and provides a different kind of experience. Since tranquility is one of the most appreciated qualities of urban green areas, the noise and impressions from the dense urban structures must be reduced. In a way, tranquility in green areas could be argued to be a way of making green areas more meaningful to people and should thus be included in the previous strategy. However, there is a great problem of green areas that are exposed to disturbing effects, often traffic noise. This reduces the willingness to spend time and use those areas, and may lead to a situation where the importance of the green area is disregarded. Therefore the strategy of creating tranquility in green areas needs to be emphasized, spread and deserves a strategy of its own. By building walls that reduce noise from roads, many green areas can be given a more tranquil experience. Noise reducing walls are a difficult element that has to be designed with sharpness and great care to avoid a clumsy and dominating landscape element. If made with quality, the walls could have a huge potential of reclaiming many green areas close to roads that prior have been of little use.

The sixth design strategy was called *community around nodes* and aimed to support living communities with different types of service, house typologies, work places, culture and public spaces. It reminds of the dense urban corridor strategy as it concentrates offerings to a certain area. The reason for having nodes is that they support local communities with identity where people can root themselves and be part of a territorial specific identity. Having various nodes therefore supports the idea of creating diversity by letting the communities develop in different individual directions.

The design proposal

The design proposal is based on previous results from the literature study but also on the site study, together with creative input.

The proposal is presented in two different scales, the city scale and the local scale. Within the scales an area description and analysis are made but emphasis is put on implementing the strategies in the proposal part. The balance between the literature study and the on-site study may seem skewed because much attention is focused on the first and quite little on the second. The reason for this is that the topic of this thesis deals with an overall balance between green area preservation and urban development. This makes the discussion of general strategies more relevant to the topic than a detailed description and analysis of the studied area. The overall understanding of the studied area is valued to be more important since the development of the Dag Hammarskjöld's väg area is at an early stage and the preconditions will probably change many times in the emerging project. A more detailed description risks to come closer to a final solution at a premature stage rather than becoming a tool for discussing and evaluating the current and future plans for the studied area. Further, a problem with going into greater detail is that it takes focus from the overall design structures of the vast area. However, details, descriptions, analyses observations, and knowing the area are crucial parts of developing a site.

The scientific value of the results from the literature study, is that ideas are extracted from literature that has to do with other related topics, but they are put in a new context where the main aim is to support the topic of balance between green area preservation and urban development. This way of exploring a new subject through analysis of nearby but not directly related literature, is more ground covering from a scientific sense than to only review one subject and adapt already existing design strategies to a new location. This work has produced its own relevant subject based on a specific problem, and researched the problem by comparing and evaluating different types of solutions from different perspectives. This has customized the design strategies to Dag Hammarskjöld's väg since the specific problem comes from the specific preconditions of the area. Criticism cold be directed to the fact that the work only focuses on one specific topic which is the balance of green area preservation and urban development. This could restrict the proposal since development of large areas requires a complex set of solutions for different problems like the character and structure of the development, organization of public space, economic issues, land ownership and comprehensive infrastructure solutions. However, there is a need to have a main topic in which to ground a proposal. If the topic would be of another kind, related to only one of the three urban ideologies, for example the compact city, the aims would only be to reduce urban sprawl, the distance people travel and to support local businesses. In that case, the topic would lead to a different result.

The planning of a vast area is complex and deals with many different important topics like economical restrictions and technical infrastructure demands that could result in different solutions. Hence, in order to find the result of this thesis valid, the topic of balance between green area preservation and urban development must be recognized as important among all the topics that influence urban planning. If so, the conclusions and strategies presented in this thesis could be useful. The scientific value of the design proposal is that it becomes a platform for discussion where the topic of green area preservation and urban development is presented in a physical shape at a specific location. This highlights the topic of this thesis, and enables it to be evaluated among the other topics of interest at a specific site of development.

This is a qualitative study, which means that the thesis can highlight different important aspects of green area preservation and urban development by argumentation, supported in literature. Whether it is valid or not depends on how well the presented literature supports the specific project since it does not generate quantitative data that can be tried for statistical significance. The results of this thesis are based on research of a topic where selections, rather than empirical testing are made. As argued in the method discussion, this makes the result of the thesis more subjective compared with more quantitative research. However an important advantage of using a qualitative approach at this early stage of research is that it enables an exploration of a problem without being limited by the current pre-understanding.

The result consists of a design proposal for a certain area. Even though an area description and analysis of the site is made, one must be aware that subjective choices are always made. Further, the area itself also contains specific characters like the topography, the historic traces, and the form of green areas that cannot always be transferred into other development projects. The fact that it is a qualitative study, that it is a design proposal and that it is based on a certain location, makes the degree of generalization limited. However, the design strategies might work in other places and they can serve as example for other projects dealing with the issue of balancing green area preservation and urban development. Therefore it is more relevant to talk about generalization based on the transferability of the designs strategies. On that foundation, the design strategies, supported by the design proposal, probably can be generalized into other development projects and sites.

4.4 Design proposal – reflections

Before starting this research project, I had already thought of ideas for how the area around Dag Hammarskjöld's väg could be developed. One example was ideas of how to create a continuous web of urban fabric that could link the existing communities of the area to the central parts of the Uppsala. This idea was based on my knowledge of the area and also the awareness of the guidelines for urban development that the municipality practices and my wish to create an alternative. However, the many green areas at the site constituted a challenge because they were valuable and might get deconstructed by development. Both the need for green area preservation and urban development were important. By looking to the literature dealing with how these two interests could be balanced, I realized this problem was not exclusive to Dag Hammarskjöld's väg, but also to many cities around the world. Hence, the study was related to a broader phenomenon which made the issue, and also the design proposal, more relevant.

The aim of the design proposal was not explicitly to protect green areas around Dag Hammarskjöld's väg. Many of the existing green areas were already protected. The quality of the proposal is rather, that with small improvements in form of connections between the different green areas, the value of the existing green areas could increase. At the same time the proposal aimed to make the green areas an integrated and important structure of the expanding city. A downfall of the proposal is the lack of access to all the information regarding the area that was studied, for example who owns the land, how the different areas in detail are being used, and how the municipality plans have proceeded. This is a problem as there might be important elements that greatly affect the general terms for how the area realistically could be developed. However the design proposal shows a different way of developing and opens up for a discussion against future proposals following other ideas of how to develop the area around dag Hammarskjöld's väg. The design proposal could provide an alternative to the current model of planning that the Uppsala municipality practices.

4.5 Future implications

In a further expansion of this project it would be interesting to compare the design strategies to the upcoming development vision for Dag Hammarskjöld's väg. It would also be of interest to compare the design proposal to more concrete municipality plans. Getting more knowledge about the municipality planning and also more information on the preconditions at the site would probably enrich the design proposal. An alignment of this project with the municipality planning could help to inform the future planning of the area on how the prerequisites can be utilized to support aspects important to the balance of green area preservation and urban development. The design proposal can serve as an example of how to solve this issue in a real site. Furthermore, it could be used by the municipality to inform the future planning of the area.

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