VISION

Stockholm 2050

A resilient metropolitan region

P4 - Reflection

Student: Kristian Spasov
Studentnr.: BK - 1245643

11/05/2017

Case study

The project was carried out within the department of Urbanism.

The Metropolitan Region of Stockholm is one of the fastest-growing regions in Europe, and its population is expected to number 2.6 million by 2025 and 3.4 million by 2050. . The region is home to around 21% of Sweden's total population, and accounts for about 29% of its gross domestic product. The almost total absence of heavy industry makes Stockholm one of the cleanest capitals in the World.

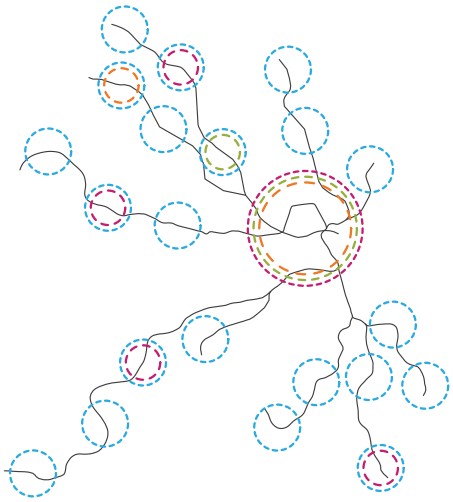
As the population has increased, the housing market has barely done anything to accommodate the newcomers with housing. Today Stockholm is facing a record high housing shortage of 122.000 dwellings (from 2014, source: chambers.se). The average waiting time for a rental apartment is between 7 and 10 years, for a housing cooperative between 10 and 20 years (source: bostad.stockholm.se).

The development of city has been inspired by the Copenhagen Finger-Plan and today Stockholm has become a radial city. Along the radials, subway lines connecting the outer suburbs with the city centre. This has led to Stockholm becoming a monocentric city. More than 54% of the regions workplaces and most of the regions commercial and public services (source: rufs.se & scb.se) are located in the city centre. This and due to urban sprawl, has made the areas outside the city centre to become commuter suburbs.

Due to Stockholm being a radial and monocentric city, more and more people are using the car as a mean of transportation. The radials of the city are not well connected with each other, due to urban sprawl people tend to live further away from the city and the public transport is reaching its maximum capacity. These are some of the reasons why the amount of cars has increased. In 2015 the amount of cars on the road has never been this high and it could increase by 80% by 2030 (source: scb.se). Owning a car in Sweden comes at a high cost for the households and the environment In average 17% of their income goes to the car (source: spacescape.se) and traffic on the road stands for almost 44% of the total co2 emissions in the region (source: scb.se).

The urban sprawl of the region comes at a high cost for the households and environment. It is quite useless to talk about cheap/affordable housing, if you don't include transportation costs. The more time people spend on travelling time, the bigger consequences it has on their economy. But also for the state, social services for a household in the dense city centre costs the state 15.000 SEK/year, meanwhile in the suburbs the costs can go up to 35.000 SEK/year (source: spacescape.se). It is more efficient and cost-effective to serve a larger number of people in a smaller area, than to serve a smaller number of people in a larger area.

The challenges of the region lies firstly in the urban development. Where and how should the city expand or densify. The region has to ensure its citizens with affordable housing. Efficient and mixed land use is needed to provide inhabitants with commercial and public services. As the city becomes more compact and densified, there is also a need to provide people with attractive public spaces. Secondly the region needs a strong and robust infrastructure network, ensuring people access to the region by car, bicycle and public transport. An efficient street network and create more space for pedestrians to promote walkability. Thirdly but not last the environment. What are the necessary steps to become fossil fuel free by 2050? How can the environment be integrated into the urban fabric, in order to protect it, ensure people access to the green areas and preserve biodiversity in the region.



54% of the regions **workplaces** are located in the city centre. Most of the regions **commercial services** and **public services** are located in the city centre. Due to urban sprawl, areas outside the city centre have become **commuter suburbs**.

Analytical drawing made by author

The goal of this project is to present a vision for the Metropolitan area of Stockholm 2050, with several strategies that will work as guidelines for the region, on how it can become resilient to environmental threats, due to the growing population, the devouring of green spaces by the demand for urban development and infrastructure needed for mobility.

Research and design

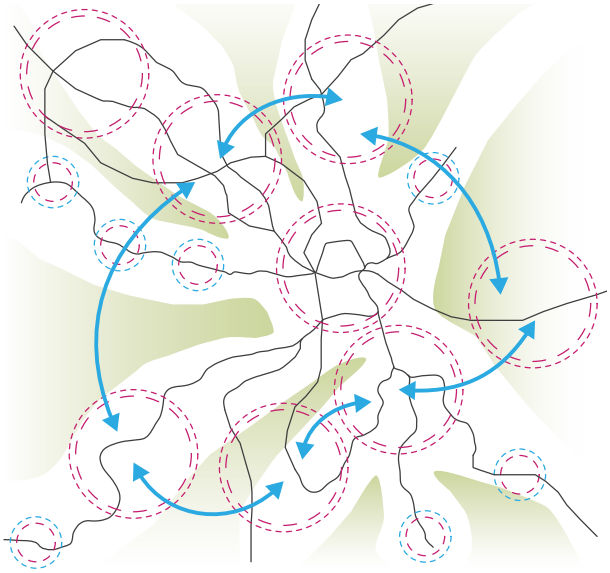
The aim of this research is to investigate how a strategic vision can be achieved within a time plan, in this case by 2050, and investigate the Swedish administrative division, to understand who does what and when. The objective of this project is to set up a detailed time plan and develop several strategies which will work as guidelines for the development of the region, in order to achieve the goals to become a connected, an accessible and a sustainable metropolitan region by 2050.

Throughout the project the focus will be on three aspects and these three has one common ground: the growing population.

Densification: To prevent urban sprawl, densification of the region is needed, in order to ensure housing, jobs and services to the people.
Mobility: The public transport is reaching its maximum capacity and many infrastructural investments are needed to ensure people access to the region.
Environment: Measurements are needed to protect the environment and at the same time it has to be accessible to the people.

These three aspects will be translated into three goals that the region needs to achieve by 2050 in order to become a resilient metropolitan region.

An Accessible City: Each citizen of the region should have access to affordable housing, commercial and public services and other services for their daily needs.
A Connected City: The region should be well connected and public transport should be the main mean of transportation
A Sustainable City: The region should be able to develop and expand and protect its unique environment, without increasing the carbon footprint caused by the growing population.



Author's vision on Stockholm 2050, a polycentric region, with dense regional centres, connected through a intensive network of public transportation

Throughout the graduation project I have worked on three different scales: the national scale, the regional scale and the city scale. An intervention at one scale will have an effect on the other two scales. Therefore it is important to clarify what happens at what scale and what the implications are on the other scales.

Design and research are connected to each other in multiple ways. On one hand the design proposal stems from the extensive research carried out in the beginning, and relates to it as an almost natural step towards a solution for the researched problem. On the other hand, while outlining my design proposal, new questions came out that needed further investigation.

Methodical line of approach

The studio offered me lot of freedom to fill in my own project and method.

The main research question is: How can the metropolitan region of Stockholm become resilient to environmental threats, due to the population growth, urbanisation of land and car dependency?

1. *How can the vision be implemented and become a feasible project?*
1.1 *What is the role of the government and what are their responsibilities?*
1.2 *What is a reasonable time plan to implement strategies?*

These questions has been investigated through a literature review of governance in Sweden, the Swedish administrative division and their role and responsibilities for urban development, infrastructure and environment. Moreover an analysis on the Swedish Negotiations, where public and private organisations cooperate to find solutions for co-financing of projects in Sweden. These negotiations clarifies which projects has priority and sets a time plan, which should lead to greater efficiency and a faster completion of the projects.

2. *How can the city be developed towards a polycentric city?*

This question will be investigated through collecting data and mapping. The goal is to find several areas in the region that has the potential and possibility to become regional centres. A regional centre that provides the citizens with housing, in proximity to work, services and other amenities they need in their daily life.

3. *How can urban sprawl be prevented in a region where urban development is inevitable?*
3.1 *What are the possible strategies to tackle the housing shortage & segregation?*

These questions will be investigated firstly through collecting data and mapping. The goal is to find areas in the city that has space and possibilities for urban development and densification. Moreover to present some examples on how it could be realised through a set of drawings. Secondly through a literature review on densification. Higher density has economic, social and environmental benefits. It can slow down the gentrification process by building affordable housing in the attractive areas. It can stop the segregation process by building diverse housing, with public and commercial services in the poorer suburbs.

4. *How can public transport become the main mean of transportation and equally accessible throughout the region?*

This question will be investigated through collecting data and mapping. When the second and third question have been answered, an analysis has to been done on how to connect these new regional centres, new urban developments and areas that have been densified, with each other. The analysis will answer what kind of public transport is necessary, where and how it has to go and what the advantages are.

5. *What are the strategies to protect the environment in a growing metropolitan region?*
5.1 *How can these strategies help the region to achieve its climate goals?*

These questions will be investigated firstly through collecting data and mapping. Define the green spaces in the region and make an analysis on how the green spaces can be better integrated into the existing urban fabric and future urban developments. Moreover to present some examples on how it could be implemented through a set of drawings. Secondly through a literature review on biodiversity and ecosystems in cities and how urbanisation can minimize the global impact on the environment.

Being almost at the end I feel that my approach to the project mostly proved successful, especially in the research and analysis part. However, even though it is easy to find extensive amount of data from almost all 26 municipalities in the county of Stockholm, not all of them provide accurate, detailed and up to date data. I have to make assumptions and estimate certain outcomes. Though the maps are quite accurate, unfortunately they are not 100% accurate. Which I found a bit pity.

Societal and scientific relevance

From a societal point of view, the region needs a strong vision for the future. Not only because of the development of the region, but for the people living in it and the future population. An accessible region where citizens, live in an integrated, fair and inclusive society, have access to an affordable and diverse housing market and have access to a labour market that is prosperous and innovative. A connected region where an extensive and robust network of public transport is the main mean of transportation, a compact region with regional centres that are walkable and cyclable. A sustainable region that is resilient to future environmental

threats and sets an example to other regions in the world, on how climate goals can be achieved.

From a scientific point of view, this research is relevant because it investigates the cooperation between different governmental divisions, regional and local businesses and citizens, where they work together to come to agreements on how and in which direction the country should develop. The Swedish Negotiations has just taken its first steps and but has already been applauded for its success by everyone involved. Now it is interesting to investigate how this could become a permanent feature in the development of the country and how it can become a guideline for future cooperation's.