

**Green infrastructure and ecological networks: teaching landscape planning in collaboration with municipalities in Helsinki Region two examples of Vantaa and Sipoo**

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**Introduction**

The Bologna Declaration, a new European two-cycle degree system was adopted in Finnish universities in 2005 (The Bologna Process...2010). The W5W2 project (2007-2009) supported the implementation of the Bologna process in the Finnish Universities in order to strengthen their the positions in the European Higher Education Area and to strengthen quality assurance in universities and polytechnics (Five Years, Two Degrees...2010). The project has concentrated on cumulative learning. Knowledge should accumulate in the long-term memory during the studies. In landscape planning education the aim has been to pedagogically support this cumulative process.

Since 2005 there has been a co-operation between Aalto University and the municipalities in Vantaa and Sipoo. A successful co-operation is a mutual process. In University's perspective this process has given an excellent opportunity to introduce green strategies in co-operation with professionals and real planning situations. On the other hand co-operation with universities and university students has given municipality a possibility to get fresh and modern ideas in variable levels of landscape planning and green strategies. The people involved to this joint operation are Professor Maija Rautamäki and university teacher Kati Susi-Wolff and a group of students from the Aalto University, School of Technology and Science, landscape planning and management; landscape architect Anne Mäkynen from the city planning of Vantaa as well as landscape architects Heidi Saaristo and Sirkku Huisko from municipality of Sipoo. The aim of this paper is to present two results of this cumulative, three year long journey; Two different bachelor thesis concepts by Virva Kajamaa and Kaisa Laine, for a green network in Helsinki Region. In these two projects the main scope has been how the green strategy and developing the greenways could support regulated growth of the communes in Helsinki region.

**Background, Goals and objectives**

Green strategies have become significant in planning in the 21th century (Costa, C.M. et.al. 2008:2). The issue of green and green infrastructure is current also in Finland. 70% of Finland's biggest cities have a green strategy; all of them are made after 1999.

Urban green strategies and greenways have developed an integrated concept in urban planning during the last few decades in Europe. This concept has a potential of becoming a general and legitimate part of urban planning. However, urban green has a much longer background in history, in the development of public parks in the and the American parkways in the 19<sup>th</sup> century, garden city planning in the 20<sup>th</sup> century (Howard 1902), as well as the Nordic ideas of “Green finger plans” and green structure in urban planning in Germany after the second world war (Nilsson 2006:106-109), Jörgensen 2005: 226-229). In Helsinki, Finland from the beginning of twentieth century until the 1960s there was also an ambitious planning and building aimed at increasing the volume planned green space in the city. However by the 1960s the expert lead consensus was starting to break down (Lento 2006: 205-206). This could have been one reason for the development where urban green was considered more as a free land resource rather than an equal tool in planning. Recently there have been attempts to create regional strategies, where urban greenways have a significant role (Regional Strategy 2006, Greater Helsinki vision, (2008).

Vantaa and Sipoo are a part of the Helsinki Region. During the past 100 years Vantaa population has decupled and it has a now population of 198 000 inhabitants. The annual population growth exceeds 1, 2 percent and it is the third fastest growing in Finland. Geographically the population growth is emphasized in Western Vantaa, where the increase is estimated up to 27000 inhabitants in the near future.



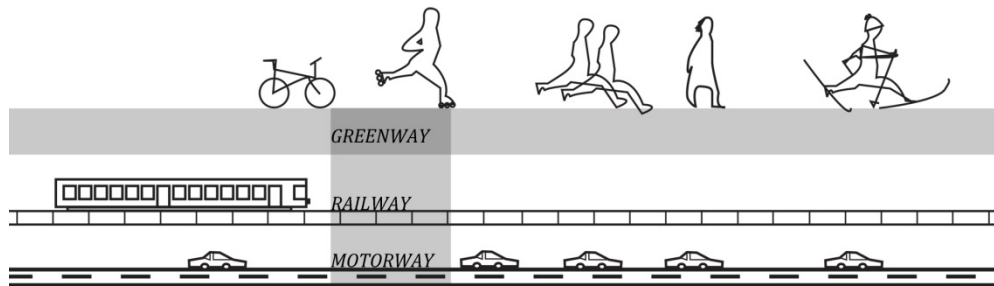
**Figure 1. The cities of Vantaa and Sipoo are located north and northeast from Helsinki. They are growth regions in Helsinki metropolitan area.**

Year 2007 municipality of Sipoo made a strategic decision to triple its population by the year 2025. In plain numbers this means up to 35 000 new inhabitants on top of the current amount of little over 18 000. This means that in some parts of Sipoo rural becomes urban. Most of the growth is concentrated to the three small centers in Nikkilä, Söderkulla and Talma and a small amount to surrounding villages. These villages are mostly loosely bound settlement condensations that possess minimal public and/or private services. It is acceptable, in some extent in Finnish legislation to place settlement scattered outside the centers and villages. Thus some of the Sipoo’s growth will be dispersed, despite it is officially unwanted.

These characteristics combined to rapid population growth causes a need to plan green areas to meet the needs of recreation and to prevent the risk of losing continuous ecological network and valuable agricultural and natural landscapes. To cope with this challenge, municipalities of Sipoo and Vantaa need variety of different kinds of public-private partnerships and co-operation with residents and third sector.

### Method(s): Two case studies in landscape planning

#### Vantaa – Green corridor on the northern edge of Helsinki Region (by Virva Kajamaa)



**Figure 2. A concept for a plan: greenway, railway or motorway. The City of Vantaa lacks one of these means of transport**

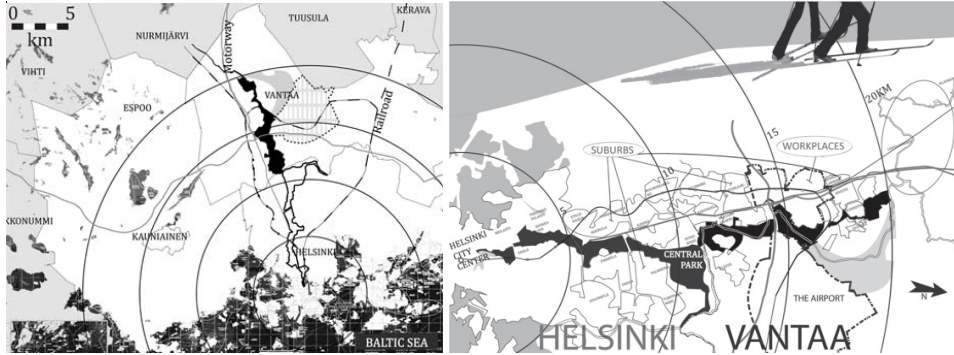
As a northern part of the coastal Helsinki region Vantaa is a continental transport city (Rönn 2008). Vantaa is characterised by three crossing railroads. One of the oldest agricultural river valleys in Finland has been changing due to the crossing main national railroad. There is also another more western rail connection, which will be in the future connected to the main one and form a ring rail line around the Helsinki metropolitan area. The Helsinki airport in the middle of Vantaa will be connected to the city with this ring rail.

Vantaa had plans to build housing along the new rail route, but aircraft noise from the airport prevents residential development in a big area of the north-western Vantaa. Therefore, the aircraft noise zone is developed for employment, offices, service and small industry. The municipality has chosen to develop densely built residential areas in the north instead.

The main question in this scenario of the green area structure in western Vantaa is how could a green structure work best in a city? How would it work if people would get a chance to act differently in their everyday life?

An average human travels 1,1h every day. In a global perspective, daily travel time does not vary a lot, even if the mode and speed of travelling changes (Schafer 2000). This strategic plan argues that in everyday life instead of distinguishing urban green from travelling, these could be combined. This scenario brings up the idea of linking travelling and leisure time activities

together. The study encourages to innovate new ecological ways of travelling in the new agri-urban site. The distance from the Helsinki city centre to Northern Vantaa exceeds twenty kilometres. Helsinki Central Park, a forest, covers a half of this way and leads straight to the beautiful agricultural river valley in the Vantaa municipality edge.



**Figure 3. Helsinki region, main rail line and a twenty kilometre long park axis through residential areas to the the main airport and the river valley of Vantaa**

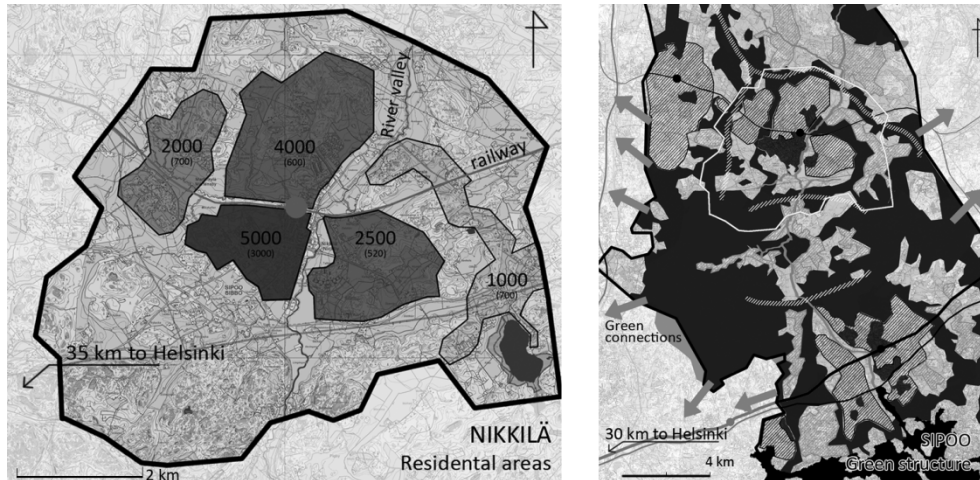
The main idea is to create twenty kilometre green route system connecting two communes, Helsinki and Vantaa, two different landscapes and also inhabitants to their workplaces. The idea of this connection is as much mental as physical. A green axis connects the housing areas. Well planned environment improves the inconstant image of the employment area as well. Local business could participate in the green project by arranging facilities, services and marketing as a part of an ideal green work environment.

To create an extensive green route with forest and agricultural character would mean arranging public trespassing and small services on properties which are now cultivated and private. However, the cultivation would remain and inhabitants would be able to enjoy the agricultural value of it. Main routes could be multifunctional. Cross-country-skiing and running as well as biking and roller-skating would be enabled just by arranging proper routes. A greenway in addition to the railways, airways and motorways brings added value to the city of Vantaa.

### **A Green strategy for a rapidly growing Nikkilä in Sipoo (by Kaisa Laine)**

In Helsinki region, urban sprawl is causing the rapidly growing municipality Sipoo to encounter the risk of losing solid greenways and valuable agricultural landscapes. Administrative centre of Sipoo, Nikkilä, needs a green area plan which regulates the future growth and makes Nikkilä attractive in the eyes of future residents. This bachelor's thesis studies the possibilities of the green area plan of Nikkilä in

supporting the ecological integrity of the future green structure of Helsinki region and preventing urban sprawl.



**Figure 4. The commune centre of Nikkilä is dependent on railway traffic. Commune centers are surrounded by green areas which regulate the future growth.**

In order to develop the optimal plan, many approaches were studied; current regional strategies and objectives plans of Southern Finland, the Helsinki region, as well as the municipality of Sipoo (Regional Strategy 2006, Sipoo 2025 – Strategy, 2007). The significant background material to green area planning was evaluated. The study showed that in Helsinki region the future urban structure is dense and commune centers lean on railways and public transport. Tendency towards energy

efficiency and traffic reduction increases the density of cities. To maintain the quality of the urban environment, various green areas, large and small, are located near the residential areas. Greenways have to be developed to protect ecological integrity and regulate the growth of the commune centers.



**Figure 5. Suggested green structure of Helsinki region. Each ring symbolizes a commune centre.**

In the suggested green structure plan, in Figure 5, the commune centers and residential areas are encircled by green areas which enclose the urbanization inside thus protecting the agricultural landscapes from the sprawl. The green circles are connected to each other or to larger green structures and creating a network. The green area network protects ecological integrity and brings large green areas close to the city centre. To restrain urban growth by using green areas has earlier appeared in

also the classic city planning ideas of Ebenezer Howard's *Garden cities of tomorrow*. (Howard 1902/1985)

### Discussion and conclusion

Rapid population growth and unwanted urban sprawl causes a need to plan green areas to meet the needs of recreation and to prevent the risk of losing solid greenways. This gives a fruitful base to co-operation between communities and university in variable levels of landscape planning and green strategies. A fruitful discussion platform and win-win situation was created during the years 2005-2010.

These example Bachelor studies presented two cumulative work processes; two attempts for strategic green area plans in two communes in Helsinki region. An extensive, both growth balancing and regulating urban greenway plan for the whole Helsinki region calls for a more wide-ranging survey, a landscape strategy. A "greenery" is in many cases still seen as an antithesis to urbanity and green structure planning and is therefore difficult to integrate into urban planning. A planning concept is needed, where total green structure private or public is regarded as an integrated part of the urban fabric and as a tool for urban development (Jørgensen 2005:229). Something similar was proposed also in *Greater Helsinki vision 2050 international ideas competition* further study. (Helsingin kaupunki 2008). A large regional landscape strategy would increase the sustainability and coherence of future green area plans. In order to create functional, large scale green structures, the strategies show that it is important to keep the strategies focused and create sustainable urban greenways.

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