

NORD GREEN



Smart Planning for Healthy and Green Nordic Cities

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Urbanisation is a key challenge for public health (WHO, 2016; Kuddos et al., 2020)

Approximately 70% of global deaths are caused by non-communicable diseases (WHO, 2021)

Even before COVID-19, around 27% of the adult population suffered from mental health (Wittchen and Jacobi, 2005)



The Scientific Evidence for Nature's Influence on Human Health and Wellbeing

Increasing life expectancy **M/H**

Decreased risk of mental illness **M/H**

Exposure to sun and daylight **M/H**

Increased physical activity **M/H**

Improved air quality **M**

Improving the immune system **L/M**



NORDGREEN supports integrated planning efforts for urban sustainability by developing and implementing smart planning and management solutions for well-designed, high-quality greenspace that promote equity, health and well-being.



SMART PLANNING

Focus on planning and governance rather than on technology

Focus on urban greenspaces as a planned mechanism for enhancing health and well-being.

Develop tools and guidelines that are applicable to *Nordic* cities and municipalities of all sizes, from capital metropolitan areas to towns in remote areas.



NORDGREEN PARTNERS

Research partners



Aalto University (Finland)
Professor Marketta Kyttä (@aalto.fi)



Nordregio
International research centre for regional development and planning.
Professor/ Director Kjell Nilsson (@nordregio.org)
Senior Advisor Ryan Weber (@nordregio.org)



Norwegian University of Life Sciences (NMBU)
Professor Geir Aamodt (@nmbu.se)
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Swedish University of Agricultural Sciences (SLU)
Professor Thomas Randrup (@slu.se)
Professor Patrik Grahn (@slu.se)

City partners



Aarhus (Denmark)

For the first time, rapidly growing Aarhus at eastern Jutland is developing an overarching green strategy – A greener Aarhus. The strategy is a new approach and harmonizes several strategic policies in the municipality, such as the climate strategy, mobility plan, health policy and equity strategy. The green perspective is at the basis for the overarching strategy which is closely linked to the health perspective. Such new approach generates many questions about how a municipality succeeds in implementing it effectively in the development of the municipality. Photo: Aidin Ismaeli



Espoo (Finland)

Espoo is the second largest city and municipality in Finland. It is part of the Finnish Capital Region, along with the cities of Helsinki, Vantaa, and Kauniainen. As part of the new municipal master plan, called the 'Espoo Story', the city is collecting residents' opinions about the development which has become its 'story-based strategy', giving voice to what types of urban environments are meaningful to residents and what areas should be developed and how.



Ii (Finland)

Ii is a small city north of Oulu, with a growing region consisting of approximately 10,000 residents. Ii attracts thousands of visitors each year, given the access to many outdoor and cultural activities that are available in the city. The municipality is known as one of the best-practice cases in Europe when it comes to bioeconomy initiatives, and has set an ambitious goal to reduce 80 percent of carbon emissions by the 2020. These environmental targets and ongoing efforts towards a zero-emission society combined with the ongoing development of plans and strategies will be key to Ii's health-promoting green space implementation.



Stavanger (Norway)

Stavanger is the fourth largest and most populous city in Norway. In recent years, the city has implemented a new planning system, and the development of a new spatial plan as part of the municipal plan (KPA) has been part of this process. A component of the spatial plan is Grønn plan, a comprehensive green strategy for the city focusing on maintain biodiversity, access to outdoor activities as well as sustainable green spaces. For Stavanger, cohesive green areas connected to its coastal landscape will strengthen the city's adaptive capacity to a changing climate, and increase the quality of public spaces that can promote well-being of its citizens.



Täby (Sweden)

Täby, located in the Swedish capital region, is growing fast and greenspace is challenged by rapid population growth and densification. The municipality is working with citizen participation in the development of the green plan that states that half of the municipality should be green. The organization of the governance system for greenspace is thus a topic on the agenda that can be further studied in NORDGREEN. Of interest for the municipality is also finding ways to evaluate the health impacts of greenspace.



Vilhelmina (Sweden)

Vilhelmina covers a vast area of northern Sweden, while being sparsely populated. The municipality has adopted a Green Comprehensive Plan with a holistic view of social, ecological and economic aspects. As a destination for outdoor tourism, Vilhelmina municipality needs to balance the expectations from seasonal population with the needs of the permanent population to support wellbeing for both groups. In particular, Kittelfäll area is going through a large development which generates many questions about the balance between physical development and maintenance of the greenspace. The municipality will benefit from NORDGREEN, not least via using PPGIS to gather additional data about the seasonal and permanent population. Photo: Emma Sandström

Duration: Jan. 2020 – Dec. 2023

OBJECTIVES

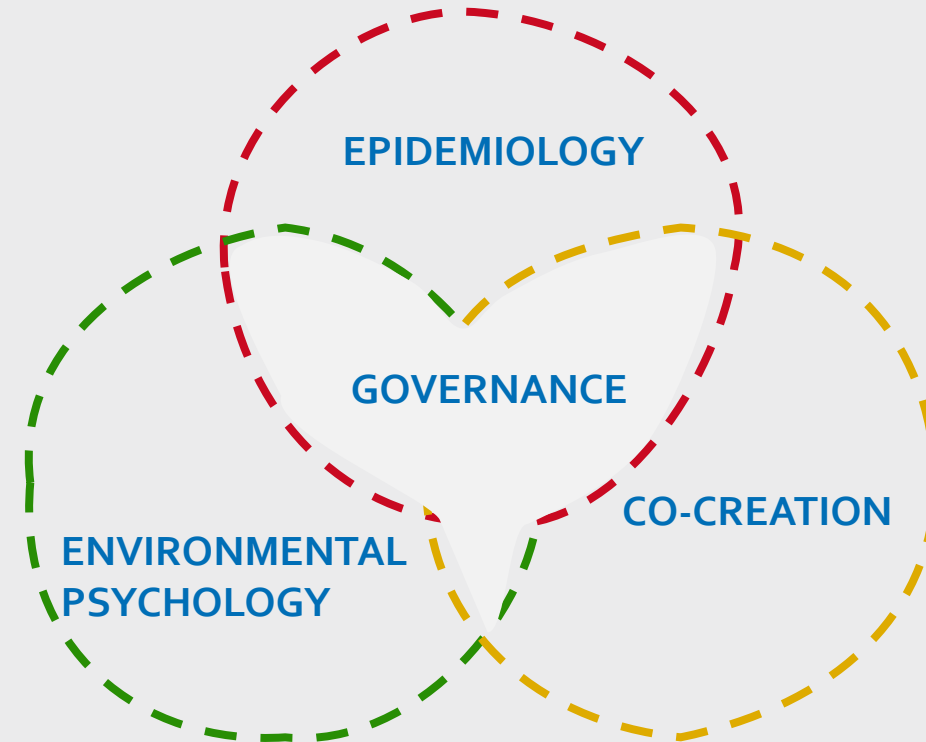
1. Measure the effects of greenspace accessibility on health, social inclusion and quality of life for residents in urban areas.

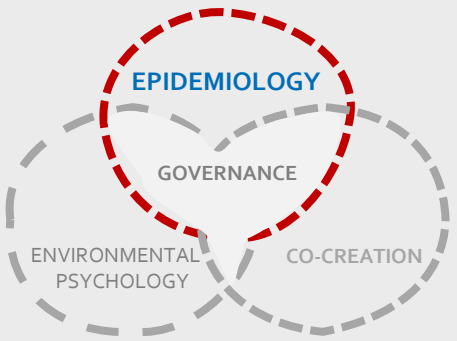
2. Provide knowledge of greenspace design and design processes for health-promoting outdoor environments.

3. Understand and integrate people's needs demands and use of greenspace into the planning process, through PPGIS

4. Expand knowledge on governance processes and provide know-how for municipalities to transform new and existing greenspace into restorative landscapes

INNOVATIVE RESEARCH



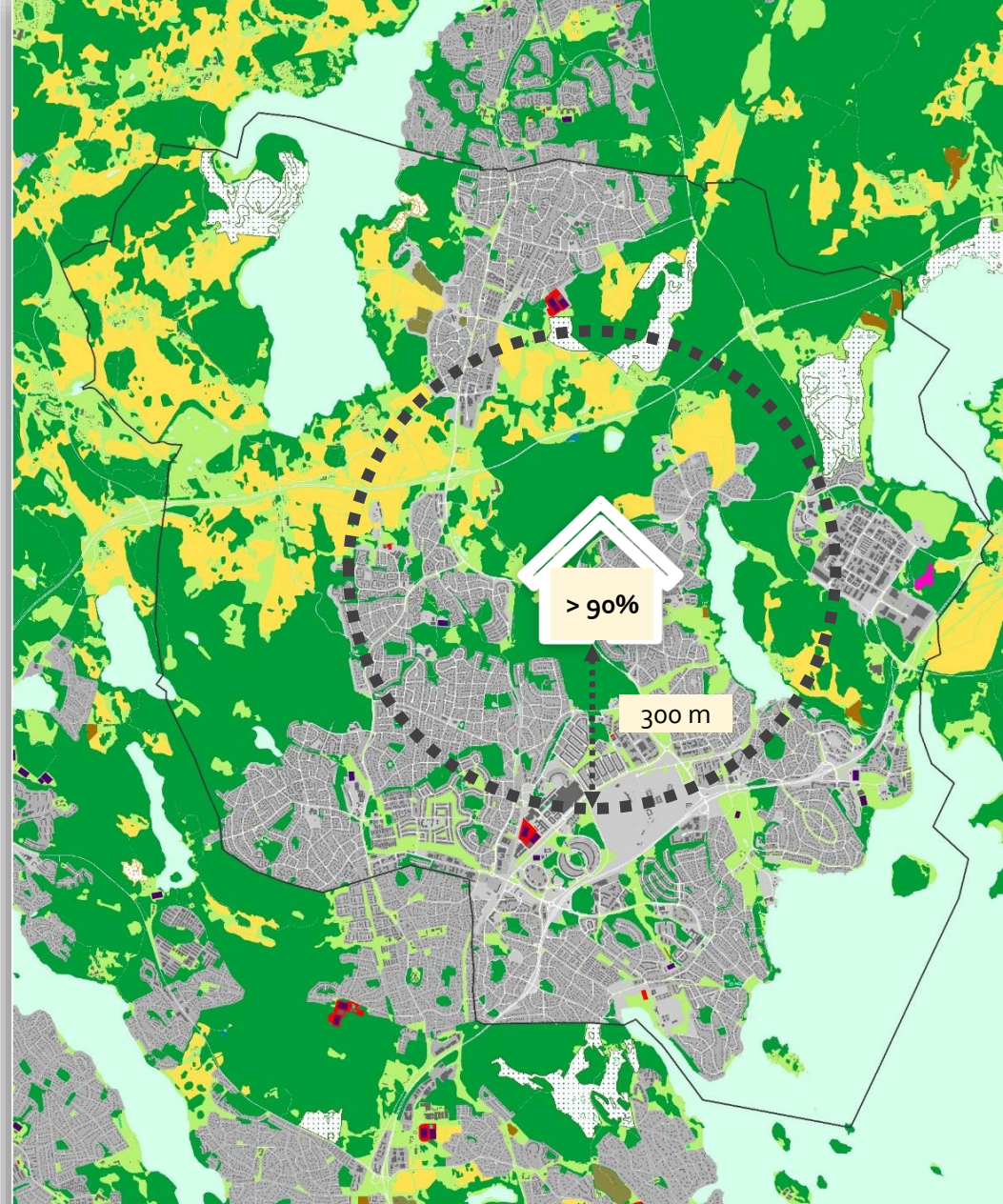


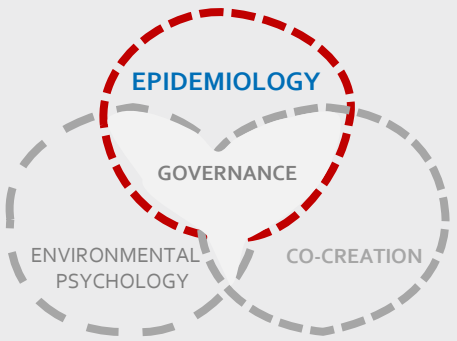
TWO LEVELS OF ANALYSIS

- Municipal
- Individual

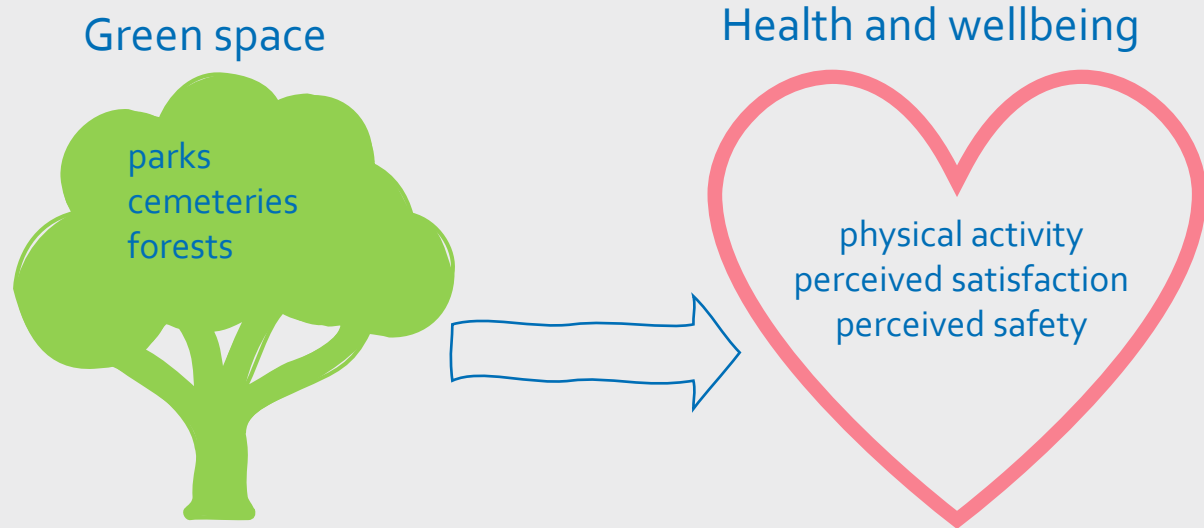
MUNICIPAL LEVEL RESULTS

- More than 90% of all dwellings have access to green space within 300 meters
- Green spaces located closest to the dwellings in Täby
- Espoo is the greenest urban municipality

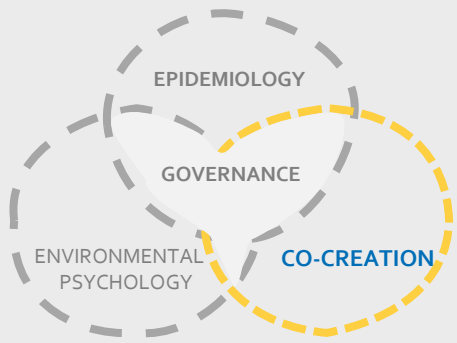




INDIVIDUAL-LEVEL RESULTS FROM CROSS-SECTIONAL STUDIES

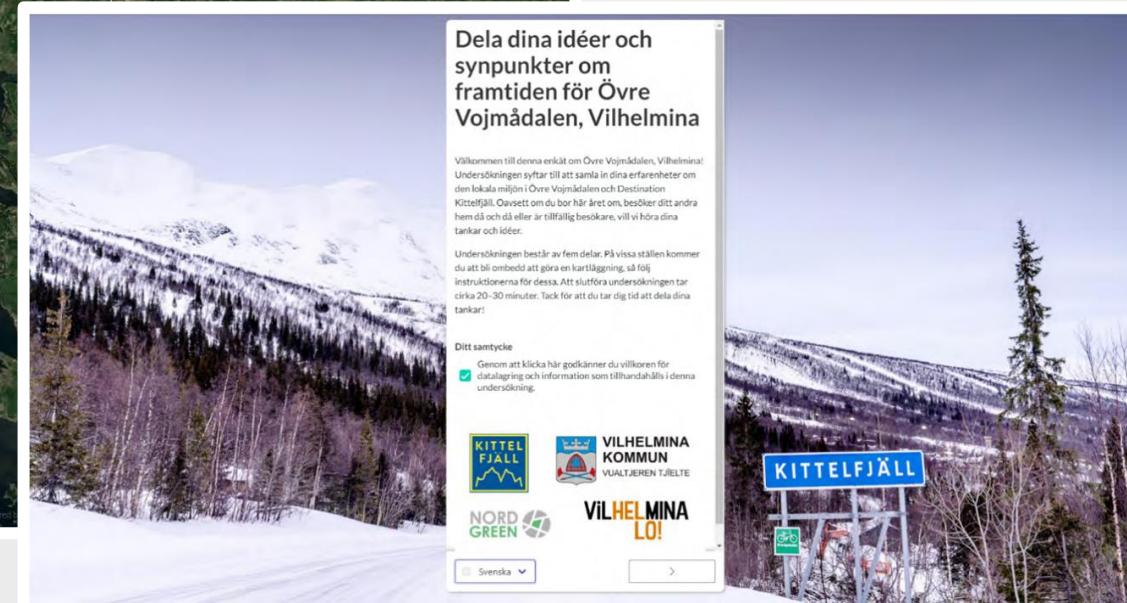
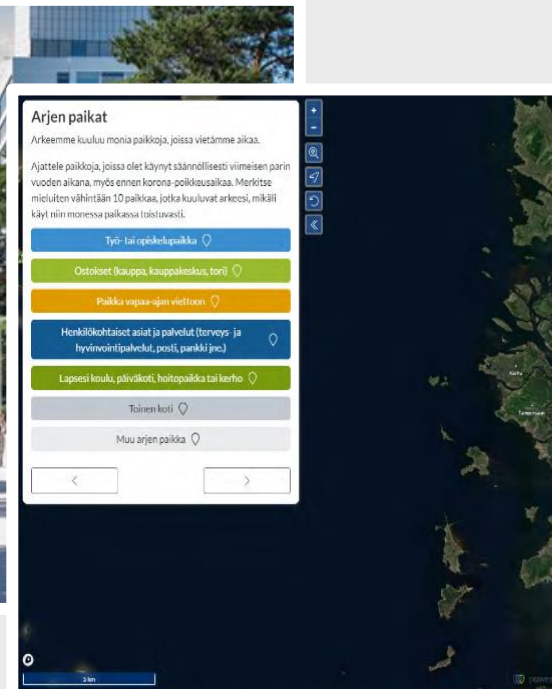
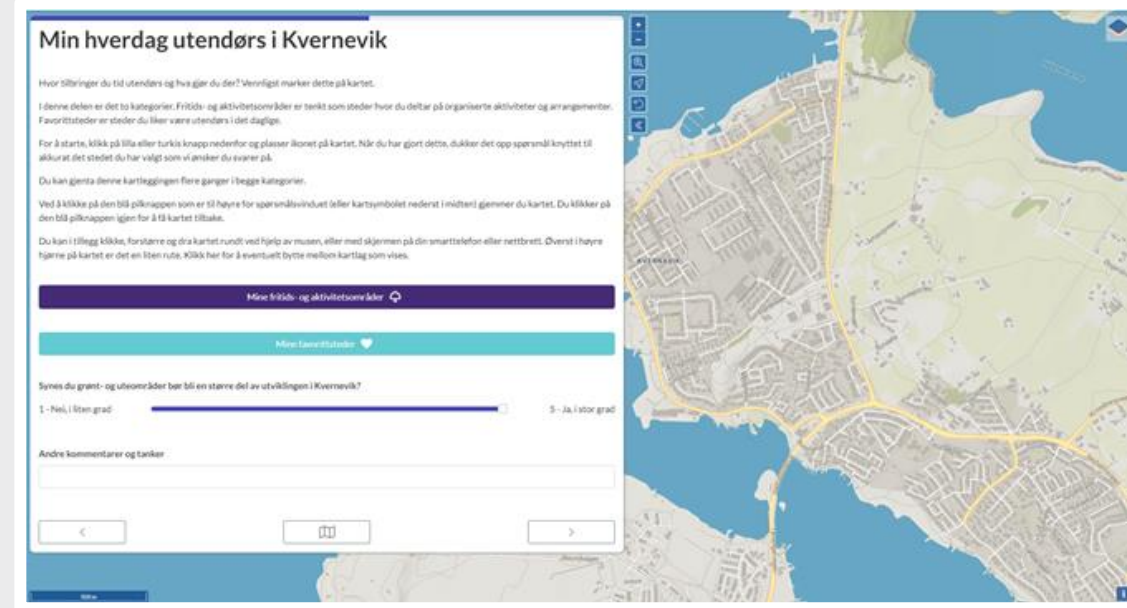


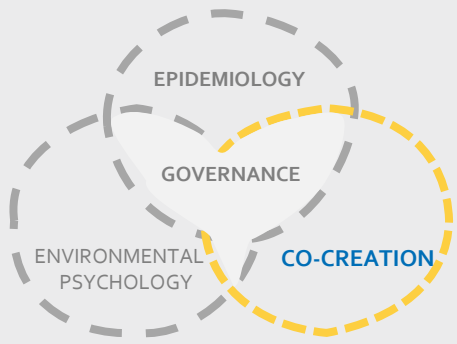
- Greater perceived access to green space was related to higher safety and municipal satisfaction among residents in Täby
- Residents in Stavanger living in greener neighbourhoods were more physically active compared to residents living in less green areas



PPGIS SURVEYS

- Espoo (n=6605)
- Ii (n=400)
- Stavanger (n=575)
- Vilhelmina (n= 340)





Modelling green space quality

Characteristics predicting positive quality of green spaces:

- presence of blue elements
- level of forest biodiversity
- green space maintenance level
- daytime noise exposure

Participatory planning practices with planners

- PPGIS data paired with any other GIS data
- Blog posts describing planners' experiences of using the PPGIS results

The My Espoo on the Map results showed the way for the future of Viiskorpi and Kalajärvi

City planning Participation and influencing
 Published: 14.12.2021 17:17 | Updated: 15.12.2021 9:09



A vision of the developing residential centre in northern Espoo. Photo: Espoon kaupunki

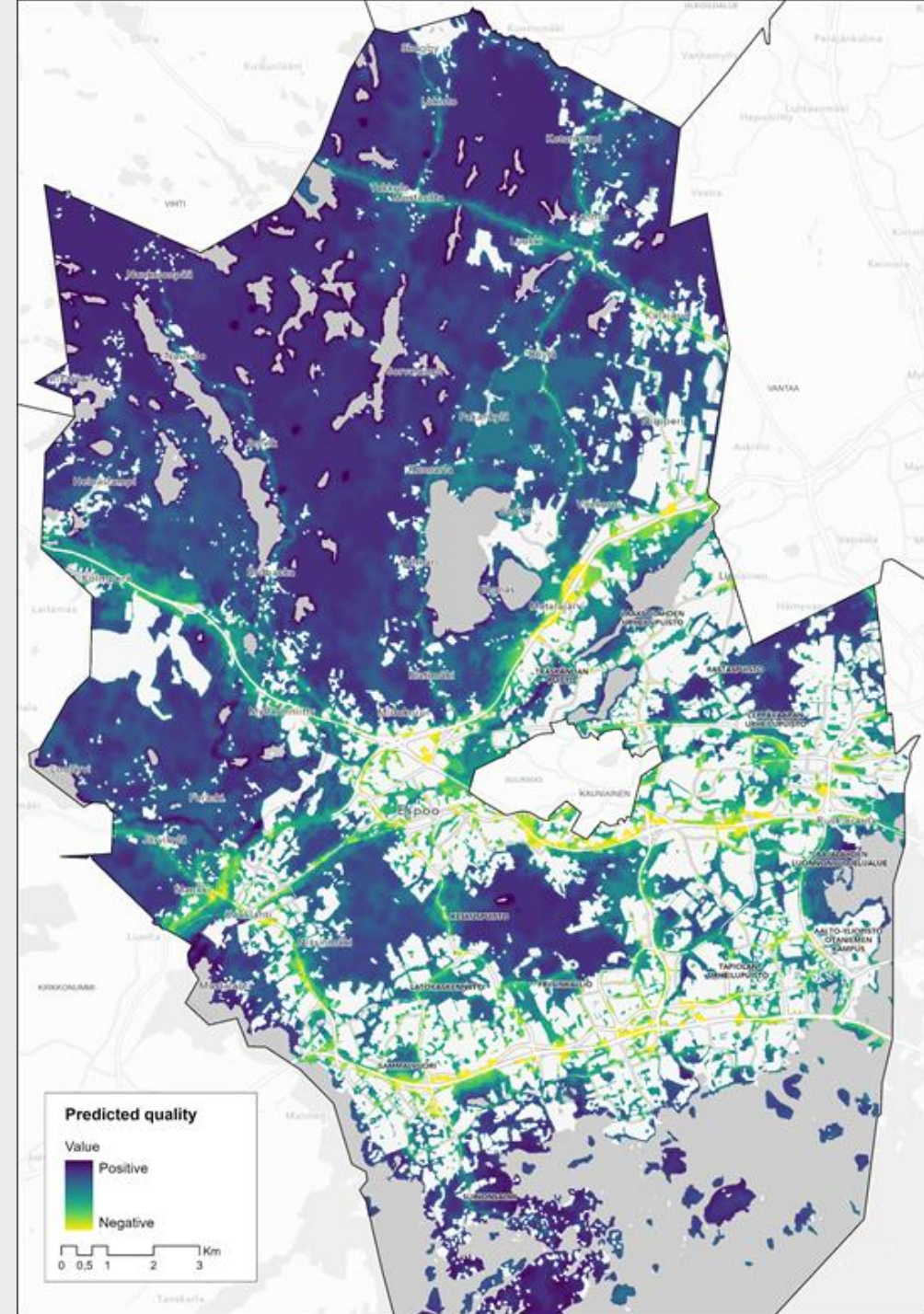
How the results were utilised in the future workshop

In addition to discussions, the purpose of the future workshop was to further develop the resident data received from the My Espoo on the Map survey. We wanted to give the residents the opportunity to have an impact on the future development of their own residential area. At the start of the workshop, planners presented the survey results from different angles. After the discussion, the residents were tasked with creating a future vision triangle based on the survey results in small groups.

The framework for the vision triangle was based on the My Espoo survey results. The maps with resident opinions on development ideas concerning the Viiskorpi and Kalajärvi area presented to the residents earlier formed the base of the triangle. The primary purpose of these maps was to support the discussions in the workshop and to also highlight the views of those residents who did not attend the workshop.

In the first task related to the vision triangle, the residents determined the current and future characteristics of the area. The maps could be used to support the discussions on the triangle.

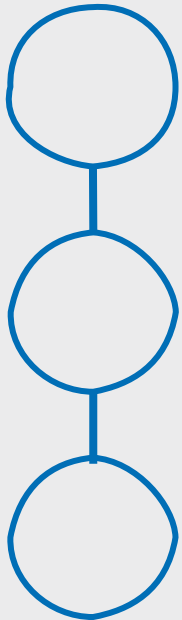
The second task included the creation of a future atmospheric map for the area. A map with locations of new residential construction marked by the respondents based on the My Espoo on the Map survey results was selected as the map base for the second task. The participants transferred various atmospheric images onto this map. The images had also been selected with the open-ended questions of the My Espoo on the Map survey in mind. Finally, the residents were asked to describe the two future centres in the area with a few key words, which were used to create word clouds by using the Mentimeter survey.





GOVERNANCE FOR HEALTH PROMOTING GREEN INFRASTRUCTURE

GI – HH&W NEXUS



POLICY LEVEL

Long-term goal development & norm setting
All city partners: analysis of comprehensive plan

TACTICAL LEVEL

Structures & Institutional relationships
4 city partners: interviews on perceptions, challenges and cross-departmental collaboration

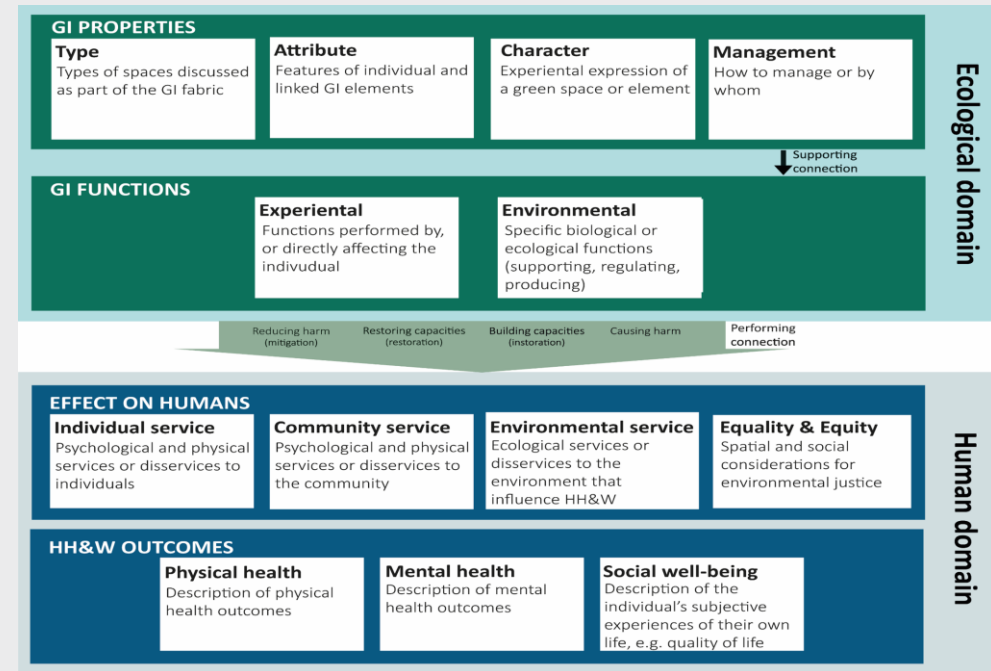
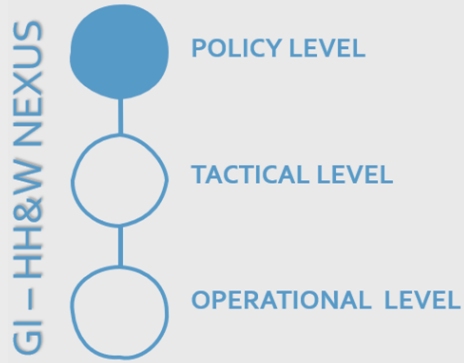
OPERATIONAL LEVEL

Implementation & Strategic action
1 city partner: observation, for knowledge on operational management

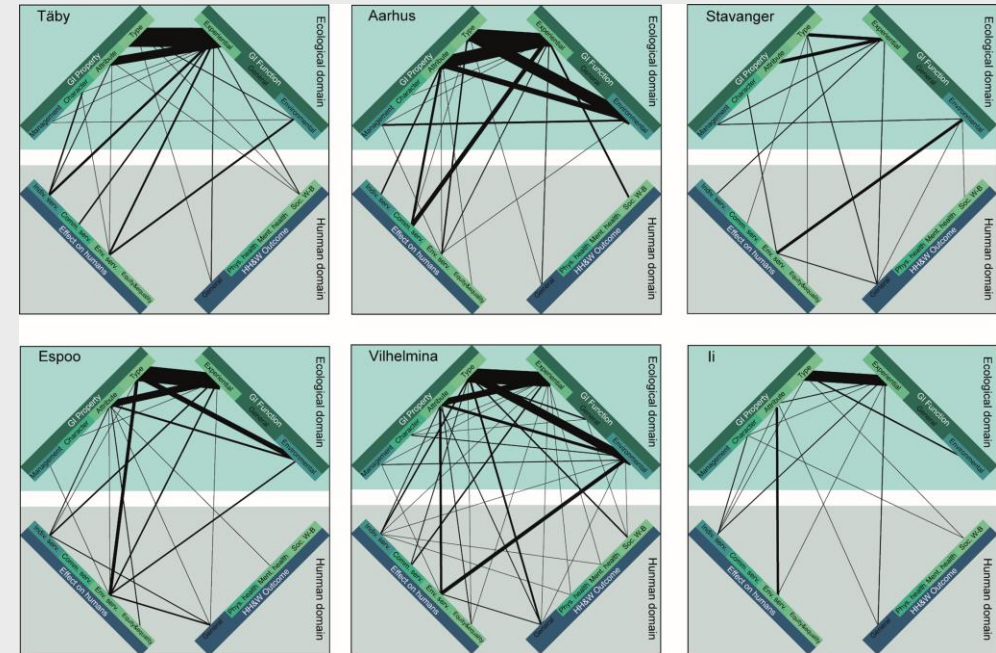


Policy document analysis

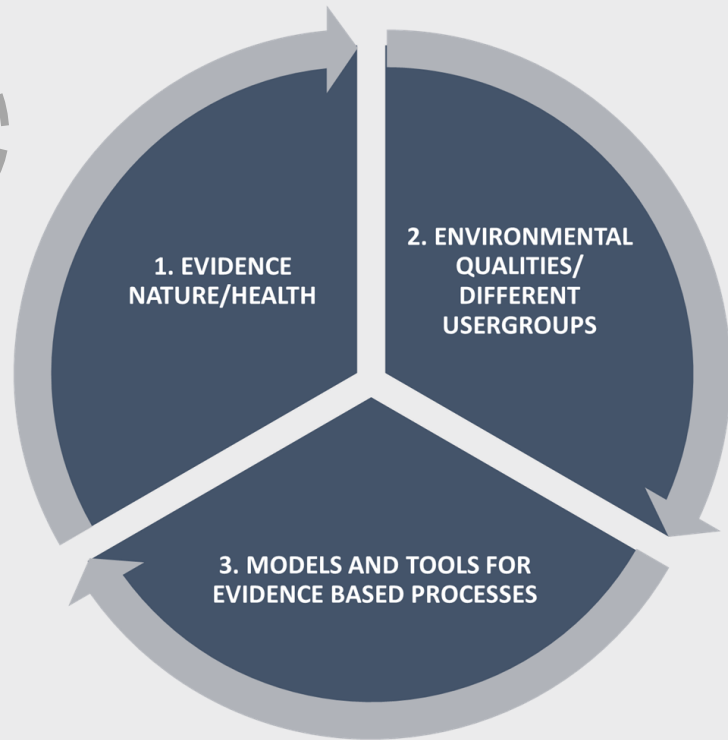
- Lack of focus on health outcomes, but primarily on properties and functions of GI
- Relating HH&W to the ecosystem service concept shows a way forward in a land use planning context



GI-HH&W pathway framework (adapted from WHO, 2016)



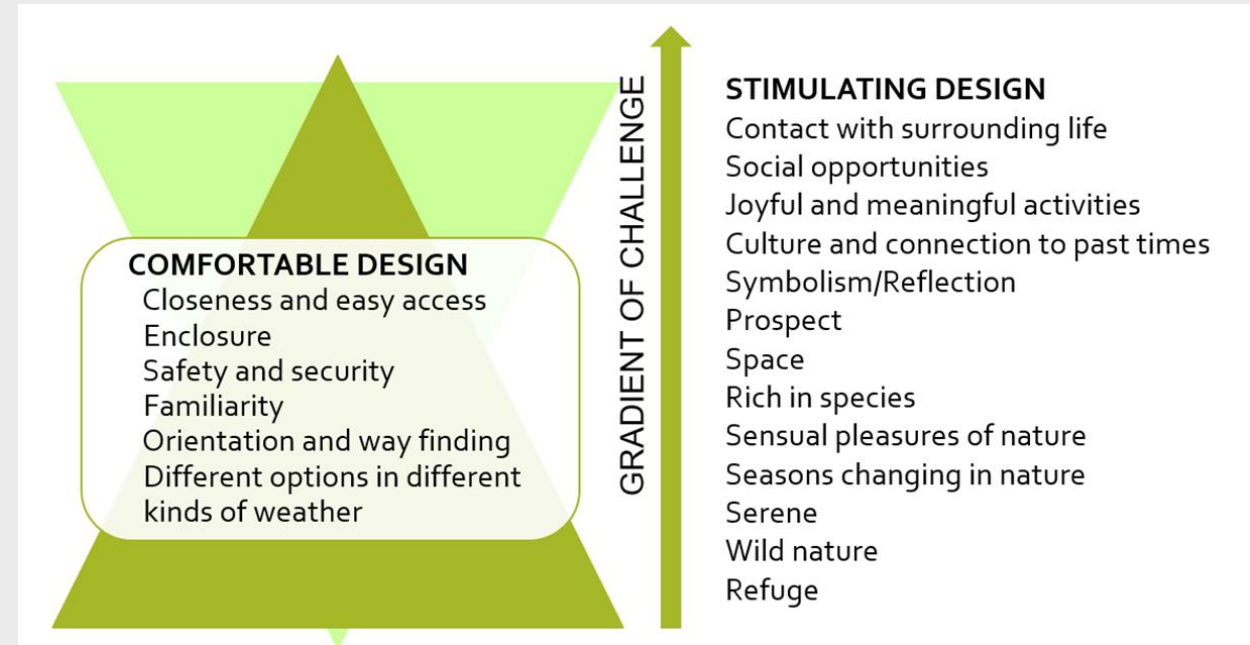
Strong, joint focus on properties and functions of GI
Scattered and shallow focus on health outcomes



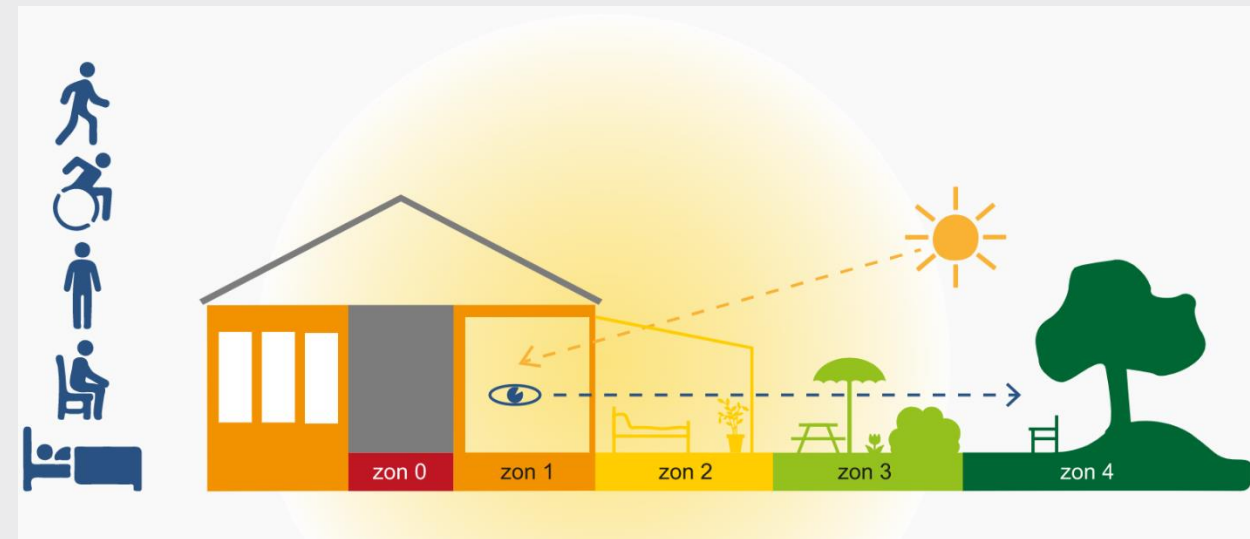
From evidence to evidence-based design (Bengtsson, forthcoming)

FROM EVIDENCE TO DESIGN

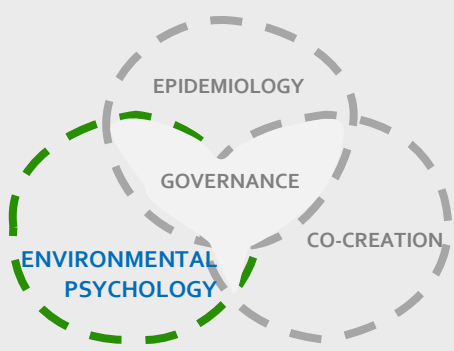
Relies on evidence-based models for local planning contexts to promote the development of healthy green cities.



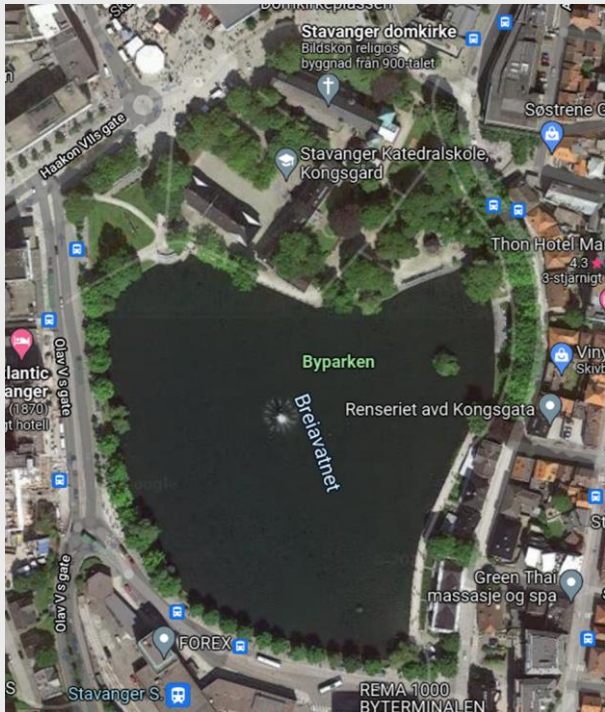
Triangle of Supportive Environment Model (Bengtsson, 2015)



Four Zones of Contact Model (Bengtsson/ Boverket, 2022)



THREE CASES IN STAVANGER



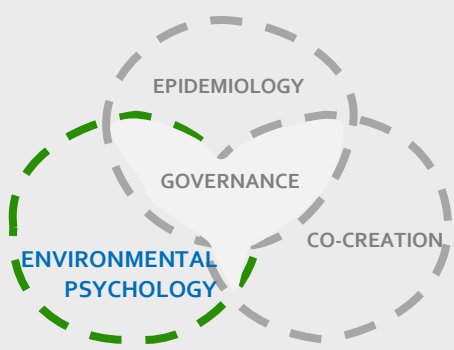
Byparken: renovation/new design of a central park in Stavanger



Essotomta: industrial area redesigned into a recreation area

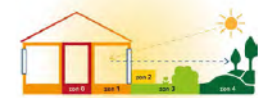
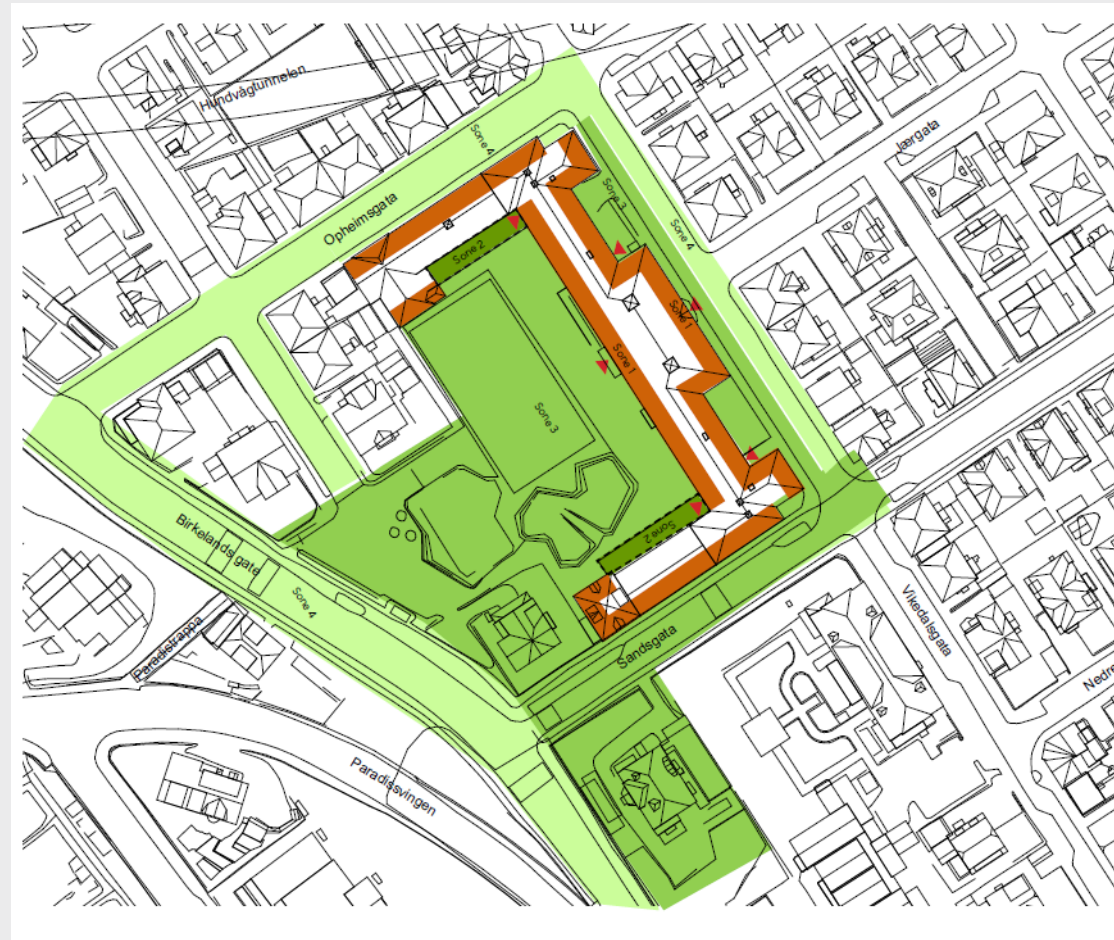
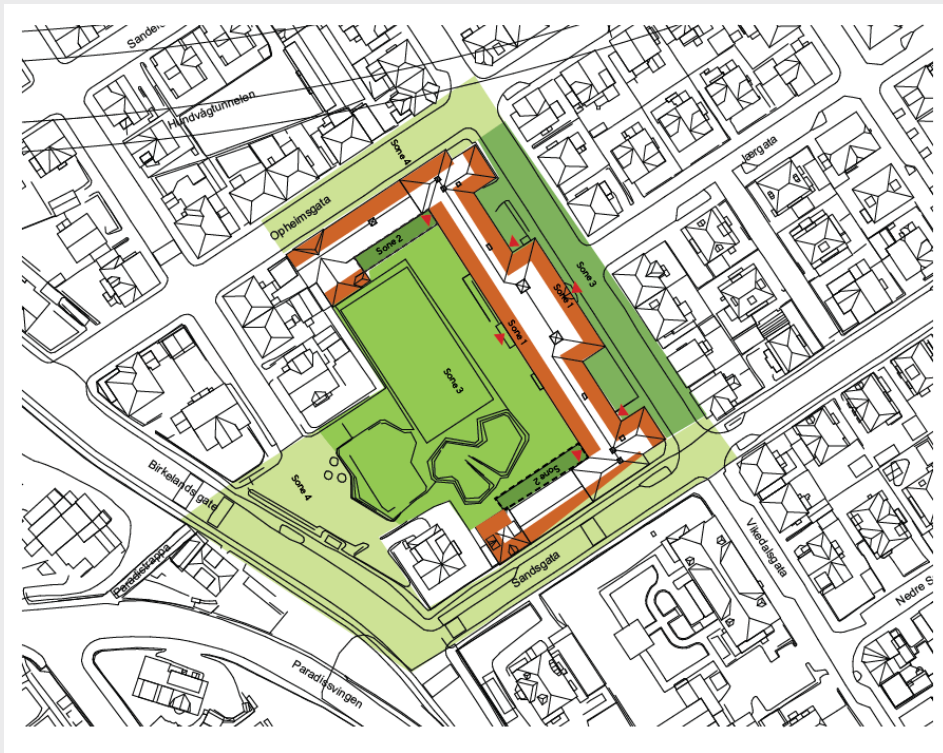


St. Svithun ungdomsskole: renovation/new design of a schoolyard

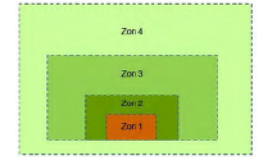


DESIGN PROCESS OF THE SCHOOL YARD

- Richer view of greenery from inside the building (Zone 1)
- Better use and stimulating experiences of the schoolyard (Zones 2 and 3)
- An expansion of the schoolyard (Z3 from 8,5 m2 to 15m2 per child)



"Principmodellen: Fyra zoner av kontakt med utemiljön" (Bergtsson, 2015). Illustration: Jenny Lijsa/Boveriet"



"Principmodellen: Fyra zoner av kontakt med utemiljön" (Bergtsson, 2015).

Sone 1

Ved etablering av miljøgate med trær og en grønn skolegård får klasserom utsikt mot grønne kvaliteter.

Sone 2

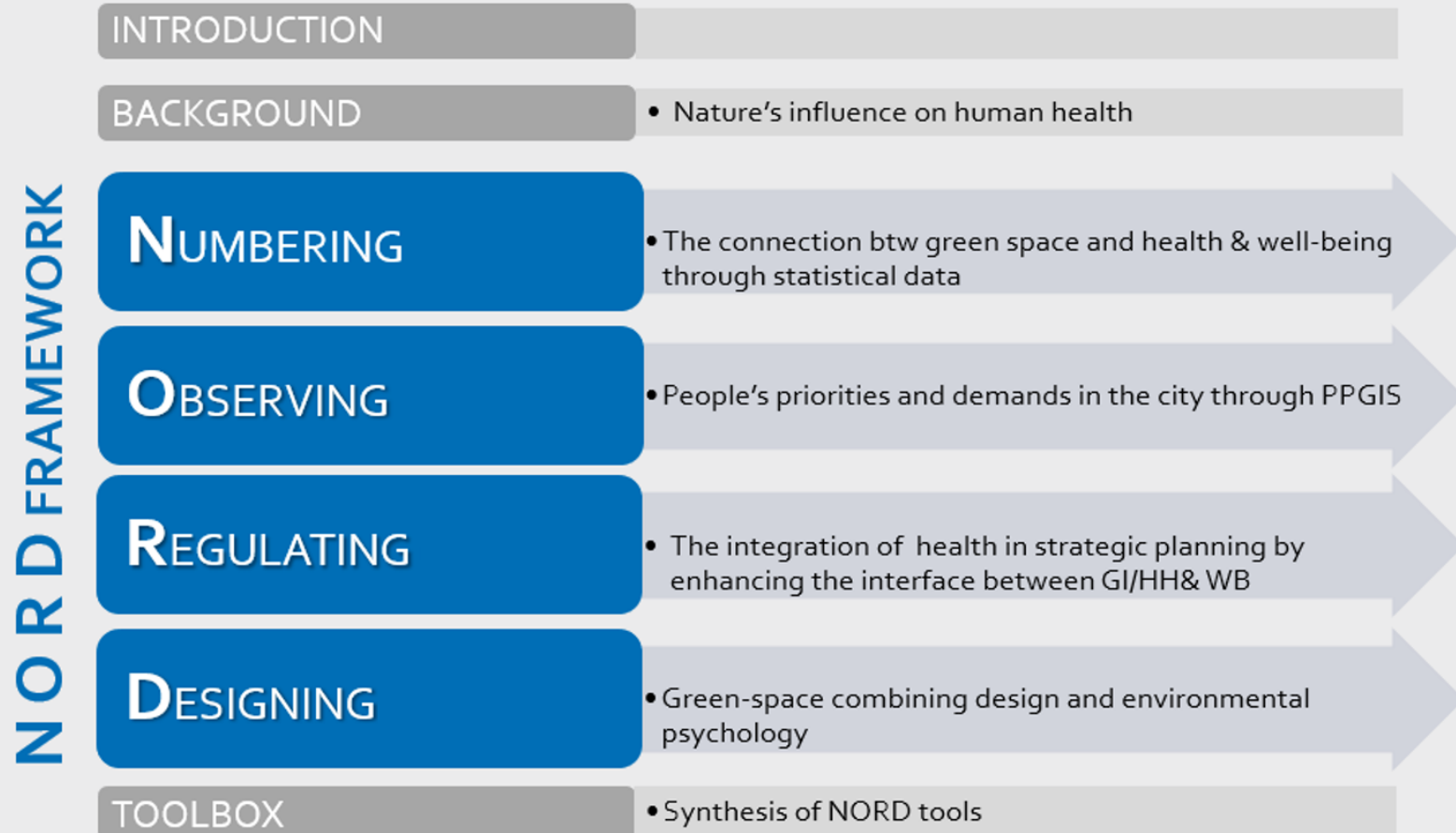
Sone 2 er en viktig overgangssone for å observere utearealet før man beveger seg ut i skolegården. Sone 2 oppgraderes for å gjøre denne sonen til en mer innbydende oppholdssone. Belegget dras utenfor det overdekkede arealet for opplevelsen av et mer romslig sted. Foran inngangssonen på østsiden etableres en møbleringssone foran fortau som skaper en bedre overgang til gatemiljøet. Inngangssonen foran hovedinngangen på vestsiden får en mer avgrenset rom, som skaper en overgangssone ut i sone 3.

Sone 3

Sone 3 får tydeligere funksjoner og rominndeling og utvides i areal. Parkeringsplassen på fremsiden blir en del av sone 3 som tidligere var sone 4.

NORDGREEN - next steps

- NORDGREEN City Talks
- NORDGREEN Handbook



Thank you!

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On behalf of NORDGREEN consortium