

NATURVATION
cities - nature - innovation



SNAPSHOT - MALMÖ: BIODIVERCITY



KEY POINTS

- Smart and space-efficient nature-based solutions (NBS) address the contradiction between densification and urban greenery
- Long-term organisational commitment is essential to integrate NBS in urban planning
- Competent property owners and early involvement of maintenance staff are key for implementation of biodiverse NBS
- Creating ideal conditions for project continuums, learning, and maintenance are critical for NBS

ABOUT THE PROJECT

NATure-based URban innovATIOn is a 4-year project involving 14 institutions across Europe in the fields of urban development, geography, innovation studies and economics. We are creating a step-change in how we understand and use nature-based solutions for sustainable urbanisation.

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Sustainability challenges and opportunities

Increasing heavy rainfall paired with a malfunctioning storm water management system, the lack of social integration in a growing and diverse population, and intense densification with weak integration of urban greenery and biodiversity in urban planning are major sustainability challenges in Malmö.

Malmö is an important economic, educational and cultural centre of southern Sweden. It is currently transforming to a service-oriented city, after its industrial past. Malmö is characterized by a young, diverse, multicultural, and growing population and increasing densification with a potential loss of urban greenery and biodiversity. These challenges call for urban revitalisation, restructuring and **“... a denser, greener and more diverse city”** with a mixed-use of spaces, **“where the residents will be close to nature and rich biological diversity.”**¹ In this context, biodiversity is also seen as an important natural asset for the city, **“which will be protected and used sustainably in 2020.”**² As part of Malmö’s transition, the green and blue nature-based solutions (NBS) of the BiodiverCity project carry invaluable social, ecological, and economic benefits and lessons to learn from for further projects.

Solution story and key actors

Supported by the discourse of densification calling for innovative solutions for urban greenery, BiodiverCity has delivered more than 30 multifunctional green and blue NBS across Malmö between 2011 and 2017 in five main domains: green roofs, green walls, mobile plant-systems, three-dimensional greenery and urban biotopes.

The BiodiverCity project was initiated at the Environmental Department of Malmö City, and led by an ecologist who has previously been responsible for the greenery of the Bo01 Sustainable City District (Malmö, Western Harbour, 2001). The recognised lack of focus on greenery and biodiversity in Bo01, a personal commitment, the use of previous networks, and funding from Vinnova (Sweden’s innovation agency) brought about BiodiverCity.

The aim of BiodiverCity is **“to bridge the gap between a vision of a greener, healthier, and more attractive Malmö with rich biodiversity and the reality of growing population, densification, and lack of green spaces through developing new products, services and processes; to create a basis for evaluation, learning, and later dissemination of nature-based interventions.”**³

Diverse actors, including the municipal and regional administration, research institutes, universities, consulting and housing companies, and building developers cooperated on the project by working in multidisciplinary groups. The continuous involvement of housing companies from planning through implementation and commercialization assured a project continuum by providing conditions for continuous learning, while the multidisciplinary working groups set the ground for horizontal and vertical knowledge development and dissemination.



Governance strategies

The project's strong linkages to local policy documents focused on urban greenery, combined European and national financial resources, strategic project management with committed leadership, and the use of formal and informal communication channels and existing networks have played key roles in the implementation of NBS.

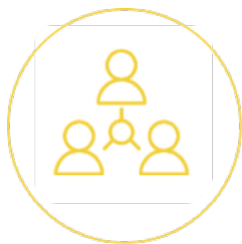
Malmö City has been part of different public-private collaborations, such as the Environmental Building Program South (*Miljöbyggprogram Syd*) and Living-Building Dialogue (*Bygga-Bo dialogen*). Actors in these networks have already been working with urban greenery (e.g. through the green area factor, a tool for environmental compensation). Some of the building developers ***“not only had some experience with green infrastructure, but they were also keen on doing something new, something different from business as usual.”***⁴ An active participation of committed and experienced people throughout the project, and the combination of engaged building developers and competent multidisciplinary working groups (also across municipal departments) have been important governance characteristics of the BiodiverCity project.



Business models

Pilot projects, such as BiodiverCity, often engage private companies to participate and encourage them to use the city as a test bed for products and services, which in turn results in a wide range of ***“best fit solutions”*** for the particular urban environment.

The BiodiverCity project is one of the vast number of EU and state-funded innovation pilot projects in Malmö facilitating sustainable transitions. One of the ***“best fit solutions”*** of BiodiverCity is an extensive green roof combined with a low-maintenance forest biotope courtyard in the Western Harbour area. The green roof has been developed, tested, and is currently being disseminated by a private business. The physical location of the two NBS was provided by the property-owning housing company, while the related maintenance is being shared between the property owner and the company that developed the NBS. Besides the benefits of roof longevity, reduced flood risk, and insulation, it offers local and seasonal low maintenance vegetation with high aesthetic values. Although it is still unclear how these values can be captured within business models, a number of representatives of local authorities are confident that ***“providing a platform for collaboration among different urban actors and facilitating testing their ideas is key for successful [uptake of] NBS.”***⁵ In addition, the integration of NBS maintenance into daily business practices and the long-term division of pro-project responsibilities among actors is critical in mainstreaming NBS.



Citizen engagement

Citizen engagement is important for the implementation of NBS, but is especially difficult in newly-built areas.

More than half of the BiodiverCity NBS were implemented in the newly developed Western Harbour area, with no or very minimal citizen participation. ***“To achieve good results, certain green structures, such as green roofs and green spaces around buildings shall be decided already in the planning phase [of new developments]... when citizens are often not yet present.”***⁶ There is a clear difference between citizen engagement in newly-built areas and already existing ones. In existing areas, the continuous engagement of citizens and local networks is sometimes even demanded by the community when introducing NBS. However, finding feasible processes of citizen involvement in existing areas and the timing of citizen involvement in newly built areas remains challenging.



Innovation pathways

“Retaining green qualities in a denser city is crucial ... it requires innovative thinking regarding planting sites, plants, and maintenance.”⁷

Each BiodiverCity NBS has its own characteristics following individual innovation paths. While these NBS often differ in the type of innovation (technology, social or cultural mechanism, policy, financial instrument, or the combination of these) and in their emergence, they also carry many common traits of transformative and incremental innovations, providing invaluable lessons for the future. Some of these include:

- using already existing networks where innovations originate and travel through;
- making technical, financial, and human resources available – e.g. the lack of substrates, species, skilled and committed developers, and ecological knowledge have been impeding factors for learning, innovation, and mainstreaming NBS;
- coherent project design and financial planning, the inclusion of maintenance in the project design, and well-defined goals and responsibilities (including after the project-term);
- continuity of leadership, commitment, and ecological knowledge;
- active participation of housing companies and building owners through the entire project to establish showcases and further learning.

The final product of BiodiverCity is a biodiversity maintenance manual for maintaining green structures and their qualities, while enhancing biodiversity and furthering ecological and technical knowledge.

^{1,2} Environmental Program of Malmö, 2009-2020; ^{3,4,5,6} Kruuse, A., Project Leader, 2016 & 2017; ^{5,7} Environmental strategist, Malmö City, 2015; Photo credit: BiodiverCity project