

# Urban Solutions to the Green Transition

Knowledge gaps and a research agenda  
from the Living Lab in Nordhavn,  
Copenhagen 2023



In the Nordhavn-based Green Solutions Centre Living Lab, Urban Solutions to the Green Transition, we invited researchers, practitioners, policymakers, and local stakeholders to a workshop to engage in our lab and help develop a new platform for exchange, collaboration, and solutions to pressing challenges.

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<b>More information about the living lab:</b>	<a href="#">The Urban Solutions to the Green Transition Living Lab webpage.</a>

# Urban Solutions to the Green Transition: Knowledge gaps and a research agenda from the Living Lab in Nordhavn, Copenhagen

*Workshop held on August 23, 2023 at COBE Orientkaj 4, 2150 København*

*How do we engage diverse voices and perspectives in sustainable urban development? How can biodiversity be integrated into the development of dense and green neighborhoods? Which types of data are needed, and how can data be used to balance neighborhood social and ecological identity in the face of rapid development? And how do we realize equitable access to housing and outdoor recreational spaces in the face of rising development costs? These questions and more were discussed at the launch of the Urban Solutions to Green Transitions Living Lab in Nordhavn. The results of the launch are described below including identified knowledge gaps and calls for a new research agenda focused on engagement forms and data to support just and inclusive approaches to sustainable urban development.*

## Introduction

On the 23<sup>rd</sup> of August 2023, 39 researchers, students, industry stakeholders, NGOs, and policymakers attended the launch of the University of Copenhagen's Green Solutions Center Living Lab on Urban Solutions to Green Transitions in Nordhavn, Copenhagen. The objectives of this launch and workshop were to:

1. Introduce and workshop the themes and infrastructure of the living lab
2. Better understand the knowledge gaps and opportunities associated with urban development in the green transition
3. Provide a platform for knowledge sharing and networking between researchers and practitioners to better identify solutions to pressing challenges in sustainable urban development.

At the launch, enlightening presentations on urban solutions to the green transition were provided by industry stakeholders, which identified current trends, challenges, and knowledge gaps in sustainable approaches to urban development. Researchers from the University of Copenhagen framed critical questions regarding pathways forward to sustainable urban development.

## Questions were focused on three main themes.

1. **Nature-based solutions** - How do we manage for diverse values, preferences, and visions for human well-being, social cohesion, and ecological sustainability in the development and management of urban nature?
2. **Digital infrastructure** - How does a digital approach to neighbourhood building mediate the configuration and development of urban sustainability? And to whose benefit?
3. **Post-industrial development** - How can we trace the links of the past to the present in models for circular economy and neighborhood development?

Presentations by industry stakeholders and researchers informed a workshop activity to identify the most pressing challenges and opportunities in urban solutions to the green transition and to identify new multi-form partnerships to generate solutions. This report presents a summary of the workshop outcomes and outlines major knowledge gaps. It also outlines a potential research agenda to support just and inclusive approaches to sustainable urban development.

**Group 1** identified the **biggest challenge** facing sustainable urban development in Nordhavn as **balancing support for biodiversity with urban densification**. This is specifically true around the area of Nordhavns Tippet, a former garbage dump now transformed into a public space characterized by biodiverse ruderal ecologies and red-listed species. The development timeline of Nordhavn stretches over the next 40 years, and adjoining open land to Tippet will continue to develop novel ecosystems to support biodiversity. Yet development plans slated for the lots around Tippet are almost impossible to change despite the biological and social value of evolving ecologies in the area. The main question the group aimed to address is how to document and legitimize this transitioning landscape while also generating data for landowners, citizens, and developers to support socially and ecologically acceptable approaches to urban development. The group therefore identified an opportunity to map multi-species data, interactions, and conflicts to ease the transition toward development while also securing space and legitimacy for a biodiverse landscape.

The next steps call for:

1. Methods to map the multi-species city
2. Data to support this project
3. Buy-in from private sector actors, residents, local stakeholders, and citizen scientists.



*Photo.1: Nordhavns Tippen with the Copenhagen Cruise Terminal in the background (credit: Natalie Gulsrud, August 2022).*

**Group 2** identified **approaches to citizen engagement as the biggest challenge** facing sustainable urban development. One member of the group summarized, “How can we plan for the future when we do not know what or for whom the future is.” Current citizen engagement processes for urban development are limited in that they tend to engage and capture local voices that fail to represent the full spectrum of needs in the community. Additionally, it is difficult to forecast future needs when future demographics are unknown. This challenge points to the need for new and innovative approaches to resident engagement that encompass larger and representative samples, and that also provide deeper insights into subjective perspectives on urban development and just and equitable futures. Finally, how do we engage the voices of nature in urban planning processes? This challenge aligns with broader societal challenges associated with intergenerational and multi-species justice. The group identified a momentum to explore citizen engagement through a futuring lens, drawing on novel methods to imagine the future through new voices and perspectives.

The next steps call for:

1. Methodological development
2. A workshop
3. Applications to scenario planning.



*Photo.2: Citizen engagement in the planning for the upcoming Nature park in Nordhavn (credit: Natalie Gulsrud, November 2021).*

**Group 3** identified **systems locks in urban development as the biggest challenge** facing sustainable development. Urban development is driven by short-term economic drivers that frequently clash with longer-term planning aims focused on social sustainability, affordable housing, and biodiversity. A key question that emerged in this group is, “How can we transform economic principles for growth into principles aligned with the planetary boundaries and in alignment with inclusive and feminist principles for urban planning?” This challenge opens for new approaches to planning and financing for sustainable urban development that extend over a 4-year budgetary model and into longer-term planning beyond market growth. New models of governance and economic planning are needed for this approach.

The next steps could include exploring

1. New governance models and multi-form partnerships between public, private, and the knowledge sector
2. Workshops focused on inclusive and feminist approaches to planning.



Photo.3: Urban development in Nordhavn seen from an aerial view.  
(Credit: By & Havn <https://byoghavn.dk/nordhavn/nordhavn-foer-og-nu/>)

**Group 4** identified **planning and designing with nature first as the biggest challenge** facing sustainable development. How do we make room for biodiversity in dense urban developments, and at which scale? How do we measure biodiversity, with whom and for whom? These are key questions that emerged for this group’s conversation at that point at larger societal challenges of planning and managing for biodiversity in the face of rapid urbanization and increasing urban density.

The next steps include investigating a “nature-first” approach to urban design and development which aligns with the grand societal challenge of biodiversity conservation.



*Photo 4: The urban fringe in Nordhavn (Credit: Natalie Gulsrud, November 2021).*

**Group 5** identified **new forms of citizen engagement as the biggest challenge** facing sustainable urban development. As one member of the group said, “When you build a city, you build a conversation about where it is going.” We currently lack tools to design and support a conversation that opens for how we see ourselves and our future. Additionally, we lack the processes to do this at a grander scale. Key outcomes that emerged from this conversation include generating a toolbox for citizen engagement that is smart and data-driven yet personal and based on everyday scenarios.

The next steps could include linking the development of this toolbox to specific design processes for urban greening and urban gardening where governance, design, and everyday experiences and meetings intersect. Such an approach aligns with the grand societal challenge of just and inclusive approaches to community engagement.





*Photo 5: Planning for the future, when the future is in many ways unknown. Tip of Nordhavn (Credit: Natalie Gulsrud, October 2021).*

**Group 6** identified **planning and managing for biodiversity while avoiding greenwashing as the biggest challenge** facing sustainable urban development. Biodiversity is currently a hot term in urban planning, design, and development. Design firms, architects, and urban developers are not only embracing the term but rapidly developing new approaches to measure and legitimate biodiversity in urban development. But what does the term actually mean in an urban context? Is there a continuum of how biodiversity is planned for and implemented across social, ecological, and technological practices? How can we be realistic about our aims and goals for urban biodiversity conservation in the face of rapid urban development? And how do we work ethically and responsibly within this practice of planning for biodiversity to avoid greenwashing?

These questions open for an investigation of:

1. Terminology and discourse analysis in planning and policy documents
2. Novel conceptualizations of urban biodiversity in practice
3. Just governance approaches to urban biodiversity.



Photo 6: Urban Solutions to Green Transitions Living Lab in Nordhavn launch workshop in August 2023 (Credit: Green Solutions Center, August, 2023).

## Next steps and contact:

The Living Lab team has identified two pilot projects that will build on themes identified in the workshop. Each project will engage researchers from different units within the University of Copenhagen as well as practitioners, policymakers, and other local stakeholders.

## Project 1: Planning for People, Place, and Planet: re-conceptualizing decision-making and planning processes with the voice of nature.

*Lead:* Natalie Gulsrud (SCIENCE) and Csilla Duray (SAMF)

*Partners:* Gehl Architects, Arup, DN, DOF, and others who are interested.

How do we engage diverse voices and perspectives in sustainable urban development? How can biodiversity be integrated into the development of dense and green neighborhoods? Which types of data are needed, and how can data be used to balance neighborhood social and ecological identity in the face of rapid development? Working across social, ecological, and technological systems, knowledges, and everyday experiences, we will work to answer these questions by:

1. Conducting a biodiversity inventory in Nordhavn using citizen science approaches

2. Engage sensors, cameras, and other digital tools to track ecosystem services underground and cameras/microphones to capture bird song, insect buzzing, and the sounds of trucks to bring the soundscapes of the area to the fore and represent them in “voice of nature” data
3. Training a large language model to understand preferences for “wild nature” in Nordhavn to provide visual data and policy scenarios for biodiversity futures in engagement processes and decision making.

This project will also be supported by teaching and seminars in the MSc course Strategic Planning for Urban Nature taught in November 2023 – January 2024. Outcomes for the project will be initial findings on citizen perspectives on biodiversity, more- than human actor mapping in Nordhavn, and big-data visualizations for biodiversity futures in Nordhavn, all of which will inform decision support for just and inclusive planning and development in Nordhavn.

## **Project 2: Sustaining Publics: learning from spheres of moderation and regards.**

*Lead:* Mark Vacher (HUM), Henriette Steiner (Science), and Søren Beck Nielsen (HUM)

*Partners:* Cobe Architects, Copenhagen Municipality, By & Havn, and others who are interested.

When highlighting sustainability within urban planning, the focus is often on promoting activities founded on participation, shared values, and engagement. We should sort waste, choose public transportation, and engage in communal activities taking care of the environment.

However, sustainability is not ensured through voluntary participation alone. In this project, we will explore if and how sustainable behavior can expand beyond civic engagement. This we will do by exploring the potentials of public space and public behavior. Unlike communities engaged in shared causes, public behavior is founded on a social contract between strangers.

In public spheres, the good citizen is not a devoted citizen but someone who earns their entitlements by following rules, giving way, staying in line, and respecting boundaries. In other words, through moderation and regards. These virtues of public life resonate with behavioral changes called for in relation to a sustainable future. In the pursuit of green solutions, this project sets out to examine if and how: public regards can embrace more than humans? Can public moderation transcend public spheres to encompass modes of consumption? Can a sustainable public be facilitated, supported, and expended through design?

As a borderland under transformation from a closed off industrial site to an area open to the public, Nordhavn constitutes a rich and complex location for spatial analysis. An emergent public can be studied taking place at specific locations such as public parks, contested waterfronts, transportation hubs, public institutions, etc.

In the process of becoming public, Nordhavn invites explorations of tangible and intangible boundaries, processes of appropriation, and counter measures from various interests groups and communities (including trespassing anglers, new residents, new businesses, underground communities, and artist collaborations).

Finally, Nordhavn's transformation is not a random process. It is heavily influenced by ideologies, visions, and imaginaries. This calls for explorative analyses of inherent conceptions of futures, pasts, and presents (e.g. in architectural renderings and municipal strategies but also in dreams and hopes regarding Nordhavn as a location of human and non-human existence).

The ambition is to provide tangible recommendations for urban planners and decision-makers. Through empirical examples the hope is to clearly identify not only foundational traits and conditions for a sustainable public but to expand these beyond the public sphere of humans.

## The Living Lab

If these themes and lines of inquiry are of interest to you, please contact the living lab. We have the capacity to connect you with researchers and students aligned with the above-stated themes. Additionally, we will organize speaker series and workshops to explore the outcomes of this launch workshop.

The Living Lab on Urban Solutions to Green Transitions is an initiative of the Green Solutions Centre at the University of Copenhagen. It is a space to generate transdisciplinary research, design, and engagement for more sustainable urban development in Denmark and beyond to support national and global green transitions.

We invite researchers, practitioners, policymakers, and local stakeholders to engage in our lab and help develop a new platform for exchange, collaboration, and solutions to these pressing challenges.

Nordhavn will serve as a focal point for lab activities to develop solutions specific to ongoing and rapid development and draw lessons that can apply to other sites of urban green transitions globally.

### Lab activities include:

- Pilot projects co-designed with partners
- A speaker's series and arrange field trips in Nordhavn
- Long-term data gathering and observations

- Connections to UCPH teaching/courses and supervision of students
- Special focus on engaging young scholars
- Develop applied research with private, public companies, NGOs and citizens

For more information, go to <https://greensolutions.ku.dk/living-labs/urban-solutions-to-green-transitions---at-ucph/>