

TU Delft

LECTURE SERIES

FOREST URBANISM

SESSION CHAIR: RENÉ VAN DER VELDE

GREEN CITIES
EUROPE



Lecture series Designing Green Cities

3. Forest Urbanism

The last of three lectures on Designing Green Cities took place at the Faculty of Architecture and Built Environment at Delft University of Technology on 14 December 2023.

After being welcomed by **Prof Steffen Nijhuis**, research leader at the Department of Urban Planning at TU Delft, **Dr René van der Velde**, associate professor of Urban Forestry at TU Delft, introduces the topic of forest urbanism in his presentation 'Trajectories of forest urbanism: towards a practice of symbiosis'.

His speech deals with answering the following key questions: in what ways did city and forest work together in the past, and in what ways could they work together in the future?

At first glance, city and forest do not seem to have much in common. We see the two as different environments. But looking at macro level, where do we see most of the trees? Not in the countryside but in the cities. This has to do with a long tradition of planting trees and working with trees in cities. Zooming out, together these city trees might look like a hybrid kind of forest. The same goes for other European countries. So, forests and cities do co-exist. This observation makes that we have to rethink how we define forests.

At present, in the Netherlands there are 18 million trees in the urban forests. There is 16% crown cover in urban areas, which amounts to a total of 30.000 ha crown cover. The total hectare of forest cover in the Netherlands is 365.000. Another starting point for looking at forest urbanism is re-imagining the 21-century city. For instance, can you make a model for a city. He shows some studies that script a city as a forest. It is still hypothetical, but it shows the potentials.

There are several design approaches for forest urbanism. One is to look at it from a land-scape based urbanism (LBU) perspective. For instance, LBU is thinking big, in terms of scale – from region to locality – and ideas – bold plans that provide conditions for a healthy, liveable green-blue environment. Forest urbanism can in that perspective re-write the (bio) city, as wooded environment and shape the (bio) city as multi-species woodland. And when LBU is about design and planning process that utilizes knowledge of the natural and urban system to shape visions and make it tangible through design, forest urbanism is about engaging the urban and natural system in a novel forest complex and cultivating processes of growth and change in the (bio) city of the future.

Van der Velde also briefly discusses the pressing challenges and tasks facing the Netherlands in terms of housing and how these may affect the growth of green areas in our country.

According to him, there are three possible 'flavours' about forest urbanism as an outcome of today's lectures:

- forests and woodlands far away from cities
- forests and woodlands in and around cities
- the most radical route could be the city as forest

He concludes his speech by introducing the three guest speakers. The first is **Prof Sonja Dümpelmann**, Chair of Environmental Studies at the Ludwig-Maximilians-Universität in Munich (Germany - no summary available). Second speaker is **Prof Dr Ellen Braae**, Professor of Landscape Architecture at the University of Copenhagen. Last speaker of this afternoon is Ir Gerwin de Vries, director of Flux landscape architecture in Utrecht. At the end of this meeting, there will be a roundtable discussion with the speakers and guests (no summary available).

In her lecture 'Urban-Forest relationships in Denmark: genealogy of coexistence', Prof Ellen Braae takes a closer look at the relationship between urbanisation and forests in Denmark. First of all, a good understanding of the concept of city is needed. Modern cities emerged from industrialisation in the 19th (steam/gas engine), 20th (oil) and 21st centuries (green renewable energy). How these cities relate to their immediate surroundings or to the landscape in general differs from period to period.

Urbanisation in Denmark took off after WWII. Prof Braae describes the development of Danish landscape architecture in general and forest urbanism in particular. She identifies five generations. The first generation started with the publication of The Green Report in 1936: how to design green spaces in Copenhagen. In 1947, there was the so-called finger plan: wherever you live, you have easy access to public green spaces. The second generation was when remote green and recreational areas far outside cities were developed. The 3rd generation developed forests close to the city. The 4th generation is characterised by bringing urbanisation and forests much closer together. It is about villages being built in a new forest area. First the forest, then the houses. On a small scale, food is grown, chickens are raised.

The 5th generation includes the development of micro-forests in cities. Braae describes a recent strategy, a vision for Copenhagen to tackle the problem of sea level rise. In 2023, a wide range of researchers presented a new and alternative strategy for Copenhagen: 'Copenhagen Islands'. It is a research-based future scenario for a long-term change of direction for the capital, focusing on nature and how the city connects with it. The plan is based on nature-based design principles. Learn more: https://dac.dk/wp-content/uploads/2023/07/Catalogue_Copenhagen-Islands-20230511_low.pdf



Preservation of existing forests	Largescale afforestation afar	Close to city Afforestation	Forest urban district	Transforming city into forest
1st generation	2nd	3rd	4th	5th
1920-1940	1960s	1970s-1990s	2000s	2020s
Segregated city	Segregated city	Segregated city	Mixed city	Mixed city
Curbing urbanisation in an attractive landscape	Creating natural attraction for large scale urbanisation	Ecological corridors, securing groundwater drilling areas	Creating attractive living areas and increasing Danish tree cover	Large scale/micro scale climate change adaptation, increasing urban living conditions
Reflecting the existing landscape Hydrology, topography	Building new landscape	Large scale plotbased	Plotbased	Reflecting the existing landscape/ plotbased
Aesthetic approach	Production forests	Production forests	New principles	Mixing of species

General characteristics of urban-forest relationships in Denmark

She continues her presentation with some observations on forest urbanism in Denmark. First, the main reasons for afforestation are: preserving and enhancing natural beauty; timber production; recreational value; protecting ecologically sensitive areas - especially groundwater for drinking water; strengthening local identity, both in a welfare state and neoliberal context; CO2 storage; increasing biodiversity and improving urban living conditions for people.

Furthermore, there are two general strategies: 1) Preserving forest and afforestation on a large scale. 2) Afforestation strategies are currently evolving from production-oriented strategies to bottom-up strategies for CO2 storage and increasing biodiversity. Finally, much more attention needs to be paid to the natural base: for example, soil conditions and groundwater levels.

Prof. Braae ends her speech with several valuable lessons for the future:

- We need our cities and urbanisation to reflect the local natural off-set and consider the integration of water, trees and other non-humans
- We need to revisit current urbanisations from this perspective
- We need to develop afforestation in a way that can accommodate many purposes, and that can create local engagement in terms of promoting care and a sense of belonging.

· To be able to talk about forest urbanism, we need to expand on our ideas of what forests are and could be and take that as a premise for future urbanisation

Last speaker is **Ir Gerwin de Vries**, of Flux landscape architecture. In his presentation 'Planting for biocities: new Dutch woodlands for next-generation cities', he shows some of the projects his firm is working on, mainly focusing on forests. He also focusses specifically on urban forests. He explains that his office not only designs, but also conducts research. One of the research projects is 'Holtland'. Flux has worked with many other organisations on this research. Despite the many plans for new forests in the Netherlands, there is still too much talk in numbers and a lack of spatial impact of the plans. The central questions in 'Holtland' are: where should new forests be located, how do they influence current land use and perceptions of the landscape, and how can they contribute to major issues in the Netherlands. The study considers forests not only as spatial elements, but also as design tools to address certain challenges, such as water safety, food production, increasing biodiversity, timber production or CO2 storage. It conducted several test cases throughout the Netherlands. Different types of forests were designed for different challenges, with different types of trees. Key recommendations from the research programme include:

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- Look closely at soil and landscape as a basis for new forests.
- Forests are not just a claim on space, but become part of the landscape.
- Forests can contribute to major challenges in the Netherlands.

Focussing on urban forest projects of Flux, De Vries describes a project in Lelystad. For that project the design challenge was to combine the need for more housing with the need for more green space. The fragmented forests around Lelystad didn't have a connection with the city. In the new design the forests will be densified, like a wide edge along parts of the city and be much more linked to the urban space. In these new forests housing could be developed.

He ends his presentation by describing a recent research project 'Landscape Parks. This plan proposes to create 15 new landscape parks, on the edges of several Dutch cities, where spatial quality is under pressure. Together, these landscape parks form a kind of family: they all differ but share the same 'roots', principles. According to the plan, landscape parks can play a crucial role in major landscape tasks such as water storage, food production and increasing biodiversity. At the same time, they can create new recreational routes between city and countryside and offer opportunities for housing. The concept thus addresses both landscape challenges and the demand for new housing. The essence is to connect the forest to the city. De Vries shows proposals for landscape parks near Amsterdam, Tilburg and Nijmegen.

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