



The second of three lectures on Designing Green Cities took place at the Faculty of Architecture and Built Environment at Delft University of Technology on 20 October 2022.

René van der Velde, associate Professor Landscape Architecture & Urban Forestry at TU Delft introduces the topic of forest urbanism.

This lecture proposes a next step, building on what was discussed in the first session on landscape urbanism last month. What can we do differently? What could be a new design perspective? How can we expand on this and how do we propose a radical next step?

Van der Velde defines urban forestry as: the art, science and technology of managing trees and forests in and around urban community ecosystems for the physiological, sociological, economic and aesthetic benefits that trees provide to society. We do this through forestry: research, planning, design, engineering and management of built (eco) systems as new forest complexes.

First, how do we see cities, urbanism. For ages we have looked at the city as a very complex artefact. Almost the antithesis of nature. However, there are other perspectives. With people, animals, trees, living in all sorts of ways. But perhaps the best way to look at the city is to say: "this is a forest".

He mentions the research project of urban forestry in Delft. A comparison of historical maps with modern ones of the city and its surroundings shows a cultural landscape where trees are the natural feature. They almost form the city's DNA. Remarkably, there are more trees in Delft than ever before, with a crown coverage of 22%. And there are gardens, canals, rivers and parks. All these green elements form a kind of forest.

Now, and in the near future, there are a series of major challenges, crises that need to be addressed. Their complexity is great. This calls for a Research Action Agenda Biocities of the future. What if you look at the city as the biocity of the future of the forest. Viewing it as self-sufficient, multi-layered, about healthy living, as a bioeconomy, a city that is connected and slow, etc.

In short: conceiving of the city as a forest in its own right. There are several perspectives to explore: the city as forested commons, as climate arboreta, as new urban ecosystems, as forest region-polis or as timber city. Either way, we need to rethink our place in the natural world.

Next speaker is **Wim Wambecq**, who teaches Urban Design, Urbanism, Landscape and Planning, at the Department of Architecture at KU Leuven.

His presentation is on forest urbanism in Flanders, Belgium. He highlights this topic from a historical and practical point of view. Forests in Flanders cover only 13% of the region's land, one of the lowest percentages in Europe. There are plans to expand the number of trees, but it is going too slowly, to get a higher percentage of forest. Wambecq: 'And we are so focused on future goals that we pay too little attention to the current problems.'

In addition, Flanders, especially the north, is struggling with pollution, erosion and drought. In fact, erosion and drought are comparable to countries in Africa in terms of water availability. 'If you add all these things together, you can conclude that if you want to tackle an ecological crisis that is happening now, forests are actually the cheapest way to achieve that. Because by planting forests, we can intervene in all those systems that we are now putting pressure on.'

Wambecq explains the project he did in Rotselaar, which focused on shifting to forest urbanism in that city. It was a 4-year project. Over the years Rotselaar has known a great shift in its forest stock. The location and quality of the forest depended on the topography and soil conditions. At the same time these landscape conditions also lead to different urbanization forms, creating a link between forest and urban. For new housing projects he designed a green structure that linked the patches of existing urban forests together, like streets. His purpose was to give equal volume to the trees as to the houses.

By closely examining historical maps of Flanders, Wambecq discovered that the number of trees has not really changed much over the past 250 years. Much more dynamic is the development of the soil. Wambecq: "Of the 13% forests we have, only 1.4% have always been forest. However, if we look at all the forests that have ever existed in the area, the maps show a much larger territorial coverage. This shows that forest cover over 250 years was not stable at all, but super dynamic. [...] As if the forest moved across the territory at an incredible pace over 250 years. All these forest changes were related to urban changes that go way back. Where people settled, in castles, abbeys, villages, they "domesticated" the forests.

Some themes on forests and urban environments. Both are characterised by multiplicity; the forest is as complex as the city; it can absorb all kinds of functions. There is the crucial aspect that forests and cities are image-driven. Wambecq concludes: 'And then there is the paradox. Initially people come to forests with a romantic vision. However, when they have to deal with its practical aspects, the forest is no longer important.'



Margarita Jover, professor of architecture, director of engineering and landscape architecture at Tulane University in New Orleans, shows the audience six projects in Spain in which she and her team have been involved. She lists these projects and research areas as projects on cities and rivers.

The first was the restoration of a waterfront in Zuera in 2001. The focus of this project was on the coexistence of architecture (public buildings, such as theatres, and houses) with floods. The second and third project was in Zaragoza, between 2008 and 2013. In 2008, her firm designed a water park in the city that also improved water quality in public spaces. The infrastructure was integrated into a natural system that improved water quality. Between 2011 and 2013, she and her team designed a tramline with trees resembling the facades of old compact cities. In 2010, they designed an urban forest in the city of Pamplona, called Aranzadi Park. The focus of that project was to design an urban forest resistant to flooding.

Two ongoing projects are in Madrid and Barcelona. In 2011, the latter city started a project to design a slow-mobility infrastructure, the Green Diagonal Park, to reduce the number of cars, and connect the city's parks. Last year, in 2021, the firm started work on the project in Madrid, where they are investigating and designing a metropolitan forest, using sewage treatment plants as springs.

Last part of this lecture is a roundtable discussion, led by René van der Velde.

Tomas Degenaar (BplusB urban planning & landscape architecture). Degenaar begins with an report on their project in Rome to plant 3 million trees, one for every inhabitant. His firm focused on the main roads and filled the empty spaces with trees. Only after these interventions landed did they start planting trees along the other roads. A second project the firm took on is in Hilversum and shows their attitude towards trees as a design tool. As a time signal that can take a project to another level. They designed a new square in the heart of a cluttered space and planted trees in three different design ways: signature trees, clustered trees and trees that form a forest edge, as it were, for tall buildings.

Marie-Laure Hoedemakers (Baljon landscape architects) adds that not all projects are about creating new spaces, but also embracing existing ones. She explains a project in Ede, a former factory site transformed into a residential area. Hoedemakers: "One of the things we very often have to deal with in urban transformations is contaminated soil. So you first have to raise the soil to build houses and that makes it very difficult to design with what is already there." They managed to preserve some trees at the edge of the construction site, although that required some discussion. But even one existing tree can have a huge impact on the area.

Shelley Long (West8 landscape architecture, urban design, infrastructure) tells the story of the long-term landscaping project at Schiphol. She explains the way West8 has developed a strategy for a green Schiphol Airport that is based on the systematic planting of birches in all empty and unused spaces. They planted smaller trees close together. In this method they were able to plant a million trees in a very short amount of time for very little money. "This is an amazing example of a novel landscape that became urban over time it has transformed itself and kind of maintained itself."

Madelon Pluis (West8 landscape architecture, urban design, infrastructure) explains the RIO project in Madrid. It involved a large plot lying between a forest and landscape and a large amount of infrastructure. The idea was to connect the two with a landscape park. They put the infrastructure underground and now there is a park connecting the two parts of the city, with the river through it. Along the boulevard, they chose pine trees because they do well in the ground and are not affected by the infrastructure underneath. The trees also relate to the identity of the place. Pluis: "You don't just take any suitable tree; you choose one that gives the sense of place."

After the presentations, there was a lively discussion on whether the trees at Schiphol form a forest or not; on the use of trees and urban forests as usps, on the responsibility of landscape designers, and the need for greening cities. Trees are very important in this regard.