Lidewij Lenders
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My name is Lidewij Lenders. I'm an architect and I'm the founder of MAATworks Architects in Amsterdam. My office is specialized in timber and biobased construction.

What drew you to circularity?

I think being in harmony with nature has always been a part of me. I grew up in Apeldoorn in the Veluwe region in the Netherlands and I used to go every weekend into the woods with my parents to make long walks.

In architecture it took longer. I think it was during my studies, we studied Lloyd and Le Corbusier, it was all concrete. In the firms I worked it was also only the traditional methods.

It was in 2004 that I got the chance to make my own personal project, it was the house for my family. That was the moment then that I started thinking about things that really matter. It wasn't that easy because we also had a small budget. I was used in using these traditional materials, making affordable buildings with it. I thought, let's design a house with concrete and sand lime bricks.But at the end it didn't turn out as cheap as we thought, so we had to redesign the plan and to think about what is really important. I was thinking why am I making these projects that have a huge impact on the environment, so we can do it differently.

That's when I designed the house made out of laminated floor slabs and timber frame construction insulated with flax. Now, 18 years later, we're still living in it very happily, because it's such a nice environment. It turned out to be cheaper than the other design, it was also the proof that building with these materials should not be more expensive.

Can you discuss one of your projects in terms of circularity?

I want to tell you about a project I designed in 2009. It's the Houten Herenhuis I designed for two clients. This project is circular because it's completely made of biobased materials except for the ground floor. It's made of spruce, the CLT and the LVL. It's insulated with flax and the cladding is made of thermal wood.

One of the main principles in my work is that the starting point is the climate and the human conditions. This project is designed with overhangs to the south side with large windows so you can have the passive solar energy but not in summer. You can see the staircase is also a solar chimney to get rid of the hot air in summer.

I think I was very lucky that the clients had lived in Sweden before, because they experienced the indoor climate and they experienced the warmth

of the material and they really loved living in it. They gave me the trust in this project just to experiment. It was also new for myself and they trusted it. That was really a big chance for me.

The biggest challenge was that there were not any companies in the Netherlands that could make the engineering and construction drawings. Thinking about it, at the end I decided to do it myself with some help from someone from Germany who had lots of experience. This opened my eyes to the potential of this material.

The biggest surprise for me was that you can model it in the computer and design it with zero tolerance. At first I didn't believe it. How is that possible? Zero tolerance. It's not possible. But when I was convinced I thought: "Oh, but this is a huge possibility of making furniture-like details in the project." That's when I decided to make a stairway for four stories. When I was at the assembly, at the construction place, I was really excited because I thought: "Oh, perhaps this doesn't work out, when it's a millimeter wrong, then you have a staircase like this and you don't want it." But it turned out to be fitting precisely, so then I was really convinced. You have control until the last phase by making the computer model yourself. So the way you draw it, it comes at the construction place, so it's fantastic.

During this project, but also during the other projects I made out of timber, the biggest lesson is from the very beginning of the project you should start from the material properties. The way we are used to design is to make a design and then choose the material. In timber we should do it the other way around. You should design from the properties of the material and only in that way you can make an efficient structure and also make it cost efficient.

How does the transition towards a circular built environment challenge the role of the architect?

I think the role of an architect has become more meaningful than ever. When I studied, architecture was about form, function, aesthetics. Nowadays it's about the existence of human beings at Earth.

The ecological and social sustainability should guide all your decisions. I feel the responsibility to accelerate the transition towards a biobased economy. And I have this 18 years experience, but I think it's also needed to pass this knowledge to other people and to young people. So that's why I'm involved in making educational projects at the University of Applied Sciences in Amsterdam.

I also work on research on the detailing of residential apartment buildings. I noticed a few years ago, designing my first apartment building, that there are a lot of challenges in detailing concerning the fire and acoustics, there are no reference details. So what we're doing in this research is we analyze 18 housing projects that are built in the last few years. We are going to make a handbook out of it to make these lessons learned of several projects and these detailing available for everyone who wants to design and build with timber. In that way, I could even have more impact and I could not do it alone. It's important to do it together.