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My name is Marta M Roy Torrecilla. I'm Senior Architect at RAU. And welcome to our office here in Amsterdam North.

What drew you to circularity?

I was at a moment in my career that I was looking for new challenges. Then I met Thomas, Thomas Rau, and I first got intrigued by how the principles behind the circular economy could be applied to architecture. And then also realizing that actually what is at the core of circularity is the re-definition of the relationship between humans and the natural environment.

So, when we also remember that the natural resources that we have in this planet are limited, what it is is what it is. Nothing is gonna come in or come out of this planet. When we realized that, then we need to start thinking how we are gonna make use of those resources.

And the final challenge, let's say, or what it really drew me to circularity, was to think how we as architects can facilitate what is limited in an unlimited way. And that's what I do now here at RAU with the projects that we do.

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

Last year, we finished a project in Amsterdam North. *Juf Nienke* is a residential project made out of pre-fab timber units. It is a project that actually was required to be circular. It was the first tender that was published by the Gemeente Amsterdam, the first circular tender in 2016.

Why this project is circular is because it's circular at different levels. At material level, we decided to build everything in wood. So that means that the pre-fab units are all made out of wood. What's even more interesting is also as a product level, this project is circular. We have stacked them, five units on top of each other. They are fastened with steel cables to a concrete plinth. That is half underground plinth, where the parking is. And that means that they can be later dismantled and reused, replaced in another time, individually or as a whole.

There were actually many challenges, because also the ambitions from the Gemeente were very high and brave. They were also very novel. The learning process was also for the whole team, for the aannemer, for the contractor, also for the advisors, and, of course, for us. Regulations were not ready for this kind of project. So they were, let's say, tested. For example, regarding fire or even noise transmission, horizontal and vertical, that is very important also in wooden construction, that was not very clear. Or even how

to calculate properly the MPG score, the energy efficiency of the building.

There were challenges, but there were also other opportunities. These ambitions that I mentioned from the Gemeente also allow us to bring new ambitions, in terms of nature-inclusive elements, like a bat hotel that we put on the top of the entrance of the building. We also installed a full circular water management system. Throughout the whole building, we managed to achieve energy neutrality.

But also what was very nice was with this idea of building with pre-fab units, with repetition, with standardization, what we managed is actually to bring quality for social housing that normally you don't get. How, for example, the repetition that all the windows, there were really large windows, they are all the same, that made them affordable. That was very nice to see how you can bring also quality through circularity to people directly with the standardization.

The whole team actually learned many things during the construction of this project. But what I would like to highlight as the biggest lesson we learned as architects was the process approach. We were building with pre-fab elements, with units, and then the contractor, the producer of the units, only thinks within the limits of this unit. So we were happy to be working with products at that level, but we were missing a figure of coordination that could oversee actually how all these pieces were coming together in the process, and how everything was coming at the logistic process, how everything was being arranged. Because every, let's say, unit was independent, self-sufficient, but when we are talking about that level, five stories, and all the amount of units that we have, that was not so intuitive how things were going, and that we learned during this process.

So for us, as architects, as a designer, maybe the product, and we said that we are for architecture as a product, not as a project, but maybe this product, the pre-fab unit, it is maybe too large to be flexible enough to be integrated in the logistic process that is a circular product.

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

Well, I think it not only challenges the role of the architect, but everyone involved in the construction industry, the construction chain. And as I said before, it's also the re-definition of the roles, based on responsibility that we all have in the process.

But for architects, what I would like to say, is that we need to start to think or to design in a more strategic way. What I mean is, in traditional design, you think only in discrete solutions, but when you do a strategic design, what you think is about how to approach the problems. Actually, what is the architecture of the problem? And that means that the decision you are taking has to be based more on facts and actually not on intuition or not on aesthetics.

What I also think, is important to develop as a skill for an architect is to think actually that circularity collapses time. It means the past, but mainly the future, the potential use of the products and materials you are using in a product, It has to be embedded already in the present decisions you take as an architect in the project. And that is a challenge and it's also a skill that you have to learn how you can fold the future back into the present.

That is also what I found very interesting, that the aim is not aesthetic, but the result it is. And maybe just to finish, there is a Japanese proverb that I like very much, that says that beauty is the consequence of what is right.