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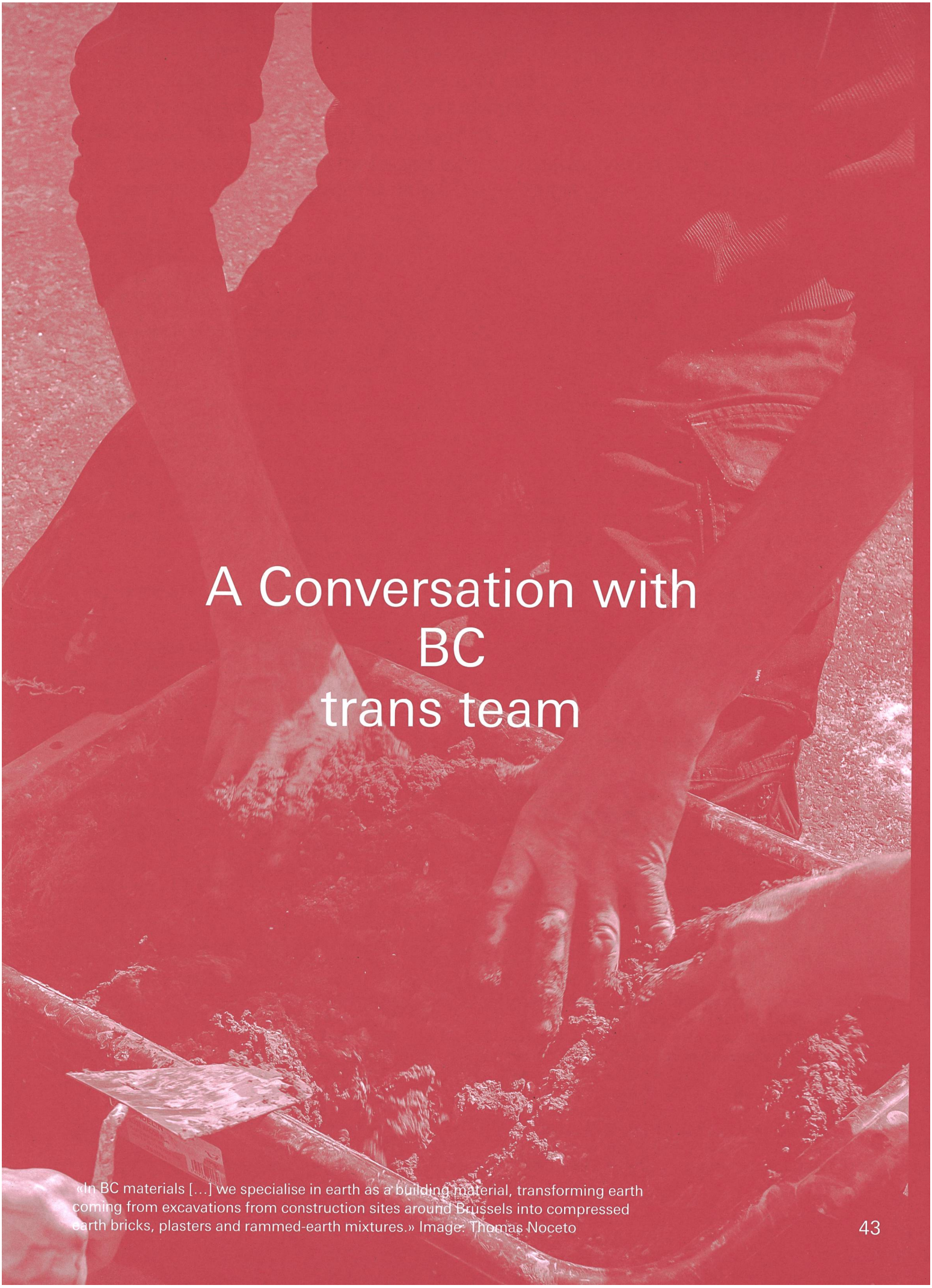
A Conversation with BC trans team



«In BC materials […] we specialise in earth as a building material, transforming earth coming from excavations from construction sites around Brussels into compressed earth bricks, plasters and rammed-earth mixtures.» Image: Thomas Noceto

The trans editorial team had the opportunity to speak with Nicolas Coeckelberghs. He is one of the founders of BC architects & studies and BC materials. One could say that in the case of the BC practices the conversation revolves around an absence of fire, since their extensive investigation of earth construction is based on the transformation of a raw material into a building material without any heat required.

TT Spanning the field of architecture, research and material production, BC's development and ongoing mode of running three distinct companies, serves as an original example of what the possibilities of young architects are in their professional endeavors. Could you introduce the three legal entities of your practice? What is the reason to keep them separated?

NC We have created BC architects, BC studies and BC materials. The architecture office is called BC architects. Within that company we do everything to do with architecture, mostly focusing on sustainable architecture. Architecture where we can experiment in building materials and processes. We dare to investigate participatory approaches in certain aspects of our projects. BC studies is the second company we founded. It is a non-lucrative association. Nowadays, we use BC studies to organize events, workshops, talks, exhibitions and education. Before Covid, we did a few non-profit projects abroad through BC studies. The money for the projects comes to us and then we are responsible for the construction of the building. The non-lucrative association as a legal entity allows us to do this kind of work in particular. But this aspect describes only the administrative background. BC architects is about architects doing architecture and BC studies is about doing workshops, events, talks, exhibitions, education. Legally, they are two identities: one is an association, the other an enterprise. But you cannot divide BC architects and studies clearly. The people working for both companies are the same, they are all part of one system. Then there is BC materials. It is a cooperative enterprise and the third sibling of the BC family. Legally, it is different in structure from the other two. It consists of several shareholders and the most important are the employees. After two years of working for BC materials, they are asked to buy some shares. There are also external shareholders of the company. In BC materials we are material producers. We specialise in earth as a building material, transforming earth coming from excavations from construction sites around Brussels into compressed earth bricks, plasters and rammed-earth mixtures. BC materials was born through the research and the projects we developed within BC architects & studies. We were doing hyper local projects for ourselves, where we discovered earth as a material. Eventually, we started to offer consultancies for other architects who want to design buildings with soil found on the site. In the beginning, it was perfect within BC studies, but soon it matured from being experimental to professional. One of the big issues we had doing consultancies was that we sold the recipe instead of the mixture. Often we had to go on the construction site to check the contractors work, because they were not trained to create the mixture well. It meant that we couldn't guarantee the quality. The creation of BC materials allowed us to not only sell the recipe, but also the material.

TT Do you also offer your services as builders or are you just a material producer?

NC At that time we did think about becoming a material contractor who not only produces but also places the material for the building. But in Belgium there is a conflict of interest when you are both architect and builder. Most of our clients as architects are in competition with contractors. Therefore they would hesitate to employ us, if we were both architect and contractor. That conflict does not occur, when you combine the architect and the material supplier. So now, we are material suppliers of earth plasters, rammed earth mix and earth bricks that we produce with the excavations from Brussels city. We carried out a big study of the geology of Brussels, which showed that it provides all the types of soil we require to make our ready-to-use mix that we are selling within Benelux. Every year we are doubling our production. That's good but it's still less than half of the revenue we make. The biggest part of the revenue we get is with three other activities. Firstly, we do consultancy and research, we study and analyse earth coming from other cities and countries. Usually, we organize the production ourselves but if it's far away, we prefer to find a partner there that could produce it for or with us. Second, we do workshops or training for architects and for contractors. Third, we do design and prefab.

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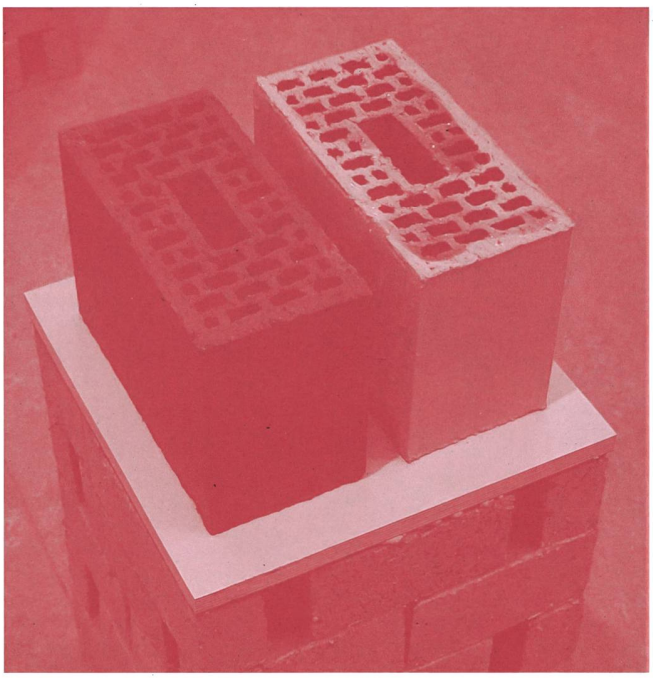
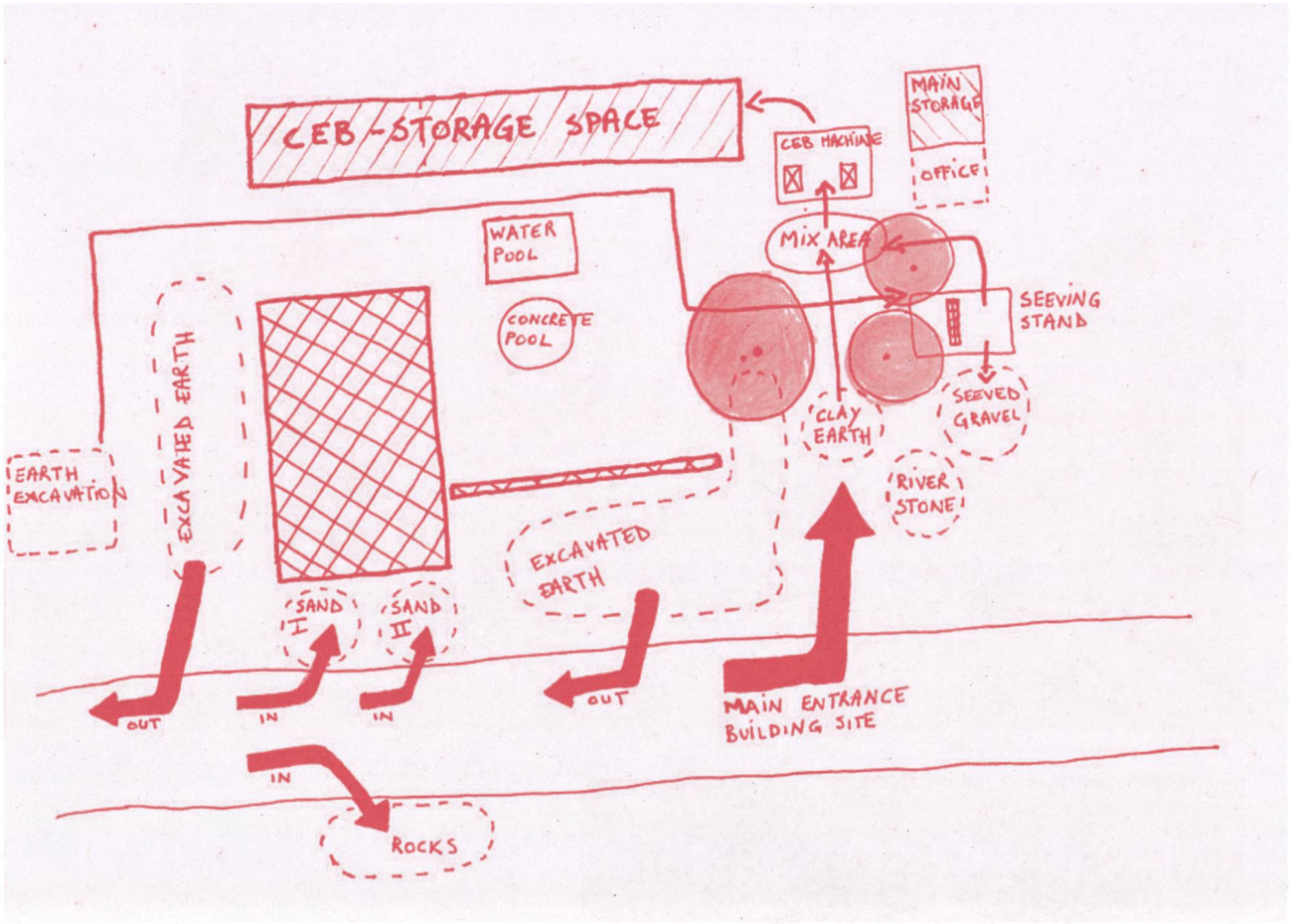


A «We just pick up old ways of working because these concepts feel logical. They feel human.» Case Design Rammed Earth Workshop. Image: Dieter Van Caneghem

B Comparison earth compressed brick (left) and fired brick (right). «The concept is to avoid creating new machines and factories, but rather try to use the existing machinery to produce earth blocks.» Image: BC materials

C



C «That is how we started to develop our way of building: looking around, talking to people and redesigning together with them.» Image: BC architects & studies

For example we design and construct a small interior such as a bar counter or furniture in rammed earth. These are the three main activities we are pursuing within BC materials. Essentially, they are not about material production, but we do them in order to develop the market. The market for earth construction is not very well established, therefore we need to find ways to promote our product and to educate our potential clients. We believe that earth has a lot of potential for the general building market because it's a circular building material that requires comparatively low amounts of CO_2 to process and build with. Additionally, we translate norms for the Belgian building sector. And we do some research on new materials, like screeds and new types of stabilizers.

TT Could you tell us more about the founding moment of BC architects?

NC BC is founded by the four of us: Laurens Bekemans, Ken De Cooman, Wes Degreef and myself. We were studying at the same university in Brussels. Towards the end of our studies, we started to do small projects together such as exhibitions. BC was born at that moment in Brussels. That is why we called it Brussels Cooperation. We finished studying, and everyone went to work to do internships. Then we had this fantastic opportunity through Laurens to build a library and a school for deaf children in Muyinga, Burundi. It was through the boarding school where Laurens was studying when he was younger. The monk responsible for the school always told him: «If you finish university and become an architect, I might have a project for you in Burundi». After graduating, we let him know and he said: «Yeah, maybe...» Through our good friend Thomas Lommée from Open Structures we found a way to convince him. At Open Structures they had developed a design that functions through a grid: An open modular construction system that promotes circular material flows and facilitates re-use and repair. While Thomas was working on that concept he had the opportunity to have a solo exhibition in Z33, a museum for contemporary art in Hasselt, Belgium. He was very confident about the design part, but for the architecture he asked us if we could think of something. That is how he gave us the opportunity to exhibit an idea for Burundi. We translated the grid into a modular structure which used local materials. For the exhibition we then invited the priest to come and he said: «Oh, wow, it's very interesting. But look, when do you have time to come to Burundi?» We decided then that we would go to Burundi. That is how the first built project of BC started.

TT Once arrived, how did the design and building of the School progress?

NC When we arrived there, we realised that the modular building with laser cut pieces we had drawn was complete nonsense. We discovered that we had to build with what we could find around us. The design changed radically with the building material: not modular anymore but embedded in the locality and the craftsman's skills and techniques. Then we had to go back to Belgium and look for money, because the priest didn't have money. Or maybe he didn't trust to invest in us at first. So we did the fundraising. Six months later, we left again for Burundi with €20,000 in our pockets in order to build the building with the people there. We ended up living there for a year. In the way we decided to approach how to build we were very naive – just as young architects that never built something, are. We drew some lines during our internships. Then we arrived there and saw that there are no commercial catalogues for materials. We had to search for the building materials and we had to search for people that could build for us. It's completely based on the local material and human resources. That is how we started to develop our way of building: looking around, talking to people and redesigning together with them. On the construction site, our inexperience was shining through all the time. First of all, there was no building permit, there were no contractors, everything was done in certain confidence together with each other. We had Salvator, our foreman: a wise man who knew where to find a good carpenter, a good mason. If he needed to have 50 labourers in order to shovel – because it was cheaper than having a machine on site – he would go to find 50 people in his village. Then going there as white males from Belgium thinking we might help the locals by building this social project... In the end, I don't know who helped whom. I think it was more them teaching us about a different way of building, a different way of thinking. That's definitely the foundation on which BC architect and studies and materials grew into what they are today.

TT What do you think comes next? Where do you see future potential in earth construction?

NC That's a good question. I will try to answer through the eyes of BC materials, because on BC architects and studies' side I don't have the answer yet. With BC materials our mission is to bring this niche market of earth construction toward the developing market. That means to democratise our product is very important because, at the moment, the biggest issue of earth construction is that it's up to 300% more

expensive than the conventional alternative. I think about baked bricks and concrete hollow blocks. Those materials are cheap. How do we manage to use our unbaked soil coming from excavation and transform it into a material that is democratically accessible? We do see an answer to this question in earth blocks, because in the western market standard sized blocks are maybe the best selling building material. Comparing the production of an earth block to a baked block one finds by default that it should be cheaper to leave away the baking process. We visited many factories in Belgium and one of the questions we asked was how much the cost of baking the blocks was. We found out that 50 percent of the cost of one block goes into buying the gas to fuel the firing process. In other words: if we didn't bake the soil, we could make a block that's 50 percent cheaper. The issue we have with earth blocks is that we cannot establish a scale of production similar to the one of baked blocks just yet. These companies are running seven days a week, 24 hours a day, but they can still not meet the demand. It requires a very big investment to upscale a production of a new building material like that. And as I explained before, we don't like to take such big steps. That is why BC materials is investigating the approach of industrial co-working at the moment.

TT What is industrial co-working?

NC Working together with another company. As I said, we are visiting all the different companies in Belgium that produce fired clay and concrete hollow blocks. We are negotiating with them to use their facility during one day. The concept is to avoid creating new machines and factories, but rather try to use the existing machinery to produce earth blocks. The ones producing hollow concrete blocks would be perfect for making compressed earth blocks. The ones that create fired clay bricks could be used to make what we call «extruded earth blocks». They extrude the block and if you let it dry instead of firing it you get an extruded earth block. The challenge lies then in finding the right mix of earth that works with their machinery. It should be the first step for earth construction to go out of the niche and through working together with the existing industry enter the mainstream market.

TT What kind of advice would you give yourself ten years ago?

NC You learn so much from mistakes. If you have a dream, then try to execute your dream. But do it bit by bit. Don't go for everything in one go. Invest just a little bit of money to do a first project and if the project goes well continue. Let it grow organically. When we thought about BC materials, we could have done a fundraising of 2 to 3 million Euro to build a factory in Brussels and start producing. I'm happy we didn't do that because I prefer to work together with someone who is already established in that market sector. We bring the vision and maybe the brand but they take care of the production. For them it's not new because they know the market, and know when they have to make investments. We can be more focused on the training, on the consultancies. And we have less work on the production side and we can opt for more tailor-made projects. This is what I am more interested in doing.

TT Are there people you're looking up to personally and professionally?

NC There's a lot of people we looked up to. First of all, we are not alone; for example there are «Terrabloc» from Geneva or «Cycle Terre» from Paris. We are in contact with them and try to exchange knowledge and learn from each other's mistakes. Then, I should mention Martin Rauch, because he is the reason that I became an earth freak. You probably know him – he is a very emblematic figure in the rammed earth world. Retrospectively, I see that his research and projects with rammed earth helped me to understand the potential of earth construction in western countries. I think I'm not the only one whose mind he changed. And when you start to dig deeper, you see that there are a lot of other architects interested in earth being the material of the future. You will find that there are people in France that – even before Martin Rauch – worked on that material for 40, 50 years of their lives. They made several books about the work «CRAterre». Those people did so many crazy projects that you could not imagine. They developed complete housing projects in the overseas regions of France in the seventies. Hundreds of apartments made of compressed earth blocks. They created banks just to get loans for the people in order to produce their blocks. Crazy projects that somehow got lost over time. And then outside of earth construction I observe other pioneers of Belgium with great admiration. For example Lucien Kroll who has been pioneering in participatory processes for developing architecture. But most of those pioneers were a bit too early. I have a feeling that with BC we are lucky to be at the right moment in time to reintroduce a concept which is actually very old. We just pick up old ways of working because these concepts feel logical. They feel human.

BC stands for Brussels Cooperation and points at how BC grew – embedded within place and people. BC is a hybrid practice, designing and undertaking «acts of building» towards systemic change in the construction sector. We strive for bioregional, low-tech, circular, beautiful and inclusive design. We work with our minds and our hands, undertaking activities such as community organisation, material production, teaching, prototyping.