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EXPERIENCE: Green Woodpeckers peck on straw (Germany) Carpenters convinced after first pilot project

Interview with Markus Wolf, carpenter and member of the board of the timber construction company.

The carpentry company Grünspechte e.G. has 44 employees and is committed to ecology, healthier building and sustainability. It has constructed well over a hundred residential units as single-family and terraced houses, as well as multi-family houses, extensions and annexes.

Since October 2019, the 'Green Woodpeckers' have been building their first straw-insulated building: eight residential units near Freiburg, which are prefabricated in the company's factory. Markus Wolf reports on the first straw building experiences, highlights and challenges as well as why it makes entrepreneurial sense to build sustainably.

Markus, why did you decide to get involved in straw construction even though your order books were full?

We at Grünspechte are an ecologically minded workforce and global issues are very important to us. For many of the world's challenges, such as climate change, scarcity of housing and resources, straw-building offers answers. We are pioneers in the building sector and want to change current construction industry standards in the direction of more sustainable construction. For some years now we have been looking for an even more ecological construction method, a new unique selling point. So we came to straw and clay. When a client showed interest in it, we got involved in the topic and decided to start the pilot project with this client.

And what are your first experiences with straw bale building?

First of all, straw is a sympathetic construction product. We only get positive reactions to this building method from outsiders. Our entry into the straw construction scene was great. Networking with enthusiastic people who want to make a difference is very fulfilling.

What's also very motivating is that even though the materials used in straw construction are more labour-intensive, the handling of them is more satisfying because you can add more value with a smaller variety of products. Compared to industrial building materials, straw building products are simpler and cheaper. The customer pays his money to the craftspeople for their work and not to the building materials industry.

Another thing that convinces us about modern straw bale building is that the construction method is very sophisticated. Straw insulated buildings are particularly sustainable and at the same time on the highest technical and design levels. That's what customers want nowadays.

Which technical approaches have been supportive for you?

We are used to working with a high degree of prefabrication and, for this approach, straw bale building is highly suitable. We build the wall elements in the workshop and are therefore protected from the weather for a long time. In the carpentry work, we can use our technical infrastructure and fill the walls with the bales in situ, which is much easier than on-site installation.

Our good fortune was that we found a straw supplier who could produce a special bale format. The manufacturer received from us a straw list with the dimensions for all compartments and adapted the bales to our wood construction plan. Due to the individual straw bale production and the quadruple lacing, we can install the bales relatively easily. It also ensures that we are flexible in



design and execution and that the individuality of the design is not constrained by the construction method. That was important to us.

You should pay attention to the weights, the deformations and the payloads on the large, insulated walls. The walls must not be too heavy for the crane and they must not be deformed by the load.

It is also important to think through the static solutions with regard to the stiffener early with the structural engineer, because in straw bale houses there might be other solutions for stiffening than an OSB plate.

What were other challenges that you faced in your pilot project?

Logistics are a challenge: with limited company sizes, the storage of straw and the prefabricated walls must be clarified in advance. Our solution was an external storage platform that served as a warehouse for the straw outside the factory. The cost of that storage has to be calculated in advance. And straw bale building creates a fair amount of debris in the workshop.

What would it take for more carpenters to learn to build with straw?

Awareness of the potential should be higher so that the demand arises.

CO₂ emissions should be priced into the cost of construction materials. Then straw bale building would be financially very attractive, as CO₂ is contained in straw during growth.

Carpentry companies, who look for skilled workers, need to be aware that building sustainably can bring competitive advantages in the labour market. Certain young and motivated construction professionals do not just want to have a job but a task that makes sense to the world and fits for the future. Besides the wish to earn good money, this can be an incentive for applying to a carpentry company that specializes in sustainable building.

With straw bale building, we have taken a new path after 35 years of company history and found a new unique selling proposition. We are happy about it and hope for the sake of our planet that we will not stay so 'unique' for too long. Straw bale building is ready for the market and can already be applied by all construction professionals and private as well as public builders.

