

# AUTOMATION OF PRODUCTION IN TIMBER CONSTRUCTION NOAH HAUS IMPLEMENTS MACHINE MANUFACTURING

The German specialist for architectural design houses, NOAH Haus, climbs to the top of the market by automating their production. The company utilizes Compass Software's timber construction software for CNC control of their production. By adopting machine manufacturing, NOAH Haus was able to achieve a significant increase in efficiency. The enterprise NOAH Haus GmbH was founded in 2009. With about 30 employees the builder produces some 30-40 houses annually in Northern Germany. NOAH Haus builds individually designed single family houses or duplexes, as well as apartment buildings and in rare cases even commercial properties. Even though most businesses in the housing construction industry still build manually today, NOAH Haus left this production method in the past.

## Successful by Combining Different Systems

Before the company decided to buy a machine, they were producing all parts by hand or purchased them from other companies. Since May 2017 the timber builder is manufacturing with a Krüsimatik CNC center, which is controlled with Compass Software.

The biggest challenge was to keep the planning process as simple as possible. The task was to fully automate the path from drawing to machining, while also keeping it transparent. Furthermore, the company had

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to avoid additional work and loss of time. The controllers' job was not to be paying attention to the programming of the machine, but they were supposed to be able to concentrate on the product itself. Therefore, the processing programs for the CNC machine had to be created fully automatically. Nonetheless, there had to be room for the controllers to influence the way of production and to be able to interfere at any time.

The machine manufacturer and the company Woodsolutions collaborated to create an individual software package for NOAH Haus. The drawing and planning process of the houses is managed with the SEMA timber software. The finished drawings are exported in BTL format and are seamlessly imported into Compass Software for CNC processing. After import, the individual parts are prepared for the CNC in a self-determined order, the CNC programs are generated fully automatically, and they are transferred to the machine.

Further perks of the production software are selection of parts, 3D visualization, and customization of production. If users detect any errors during the visual control, they can delete existing processes or add new ones at any point in time. Furthermore, it is possible to turn parts into the precise processing position. Detailed graphical depictions in the software help users to assign all processing details correctly.

### **Increasing Efficiency with Modern Technologies**

After only one week of producing with the new method, Mr. Bruhn, CEO at NOAH Haus, can already draw some conclusions: “The degree of precision is completely different. Before, we could only pre-fabricate walls, now we will be able to pre-fabricate ceilings and roofs as well and of course we are also faster.”

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### **20% time saving achieved**

All in all, Mr. Bruhn estimates the savings of time to about 20% compared to before. Next to being able to produce faster, the company can now also utilize their staff more flexibly, since they spent less time doing manual labor and the planning process and transfer to the machine is easy and straightforward. Furthermore, producing with new technologies motivates staff, everything regarding the production is more efficient and innovative. The company is also able to realize more individual customer requests. The house builder can clearly distinguish itself from the manually producing competition in the region by utilizing a machine for production in combination with the right CAM/CNC software from Compass Software.

NOAH Haus is producing faster and is able to offer a wider range of products and parts. The new method of production also reinvigorates traditional timber connections, such as dovetail connections, which can be produced with the machine and used for modern timber construction once again. NOAH Haus now produces and sells parts to other carpenters in the region. The bottom line is more than positive for the house builder, they are sure they have made the right decision.