

craft by creatives is a young company founded in 2021 with the focus on technical model making in all its facets and part of a joint workshop of interdisciplinary working craftsmen, architects and designers in Berlin - Lichtenberg. With over 20 years of professional experience as a model maker, the company develops and builds unique pieces (and small series) in the field of architectural model making, design model and prototype construction, as well as art realization and is active in the field of visualization.

In the production of a wide variety of models at *craft by creatives*, synergies from different disciplines are used, and digital (CAD, CAM, CNC, laser cutting, 3D printing) and classic craftsmanship are profitably combined.

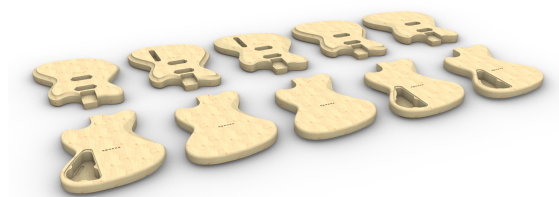


Fig. 1 Virtual construction of the electric guitar bodies in Rhinoceros.

CAD and CAM software applications are essential for the service offered, from the data basis through virtual design and CNC-controlled production to the finished product.

The use of Rhinoceros for CAD design and the simple implementation of BobCAM in the CAD software for controlling the CNC milling machine represent an integral pillar for professional work at the highest level in this complex craft.

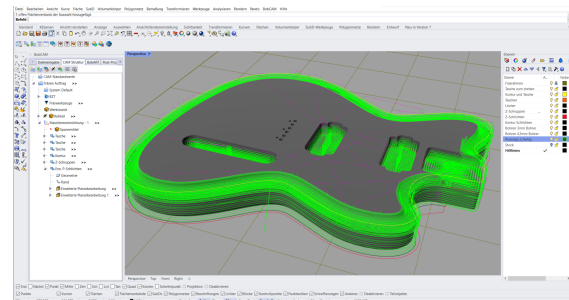


Fig. 2 Calculated toolpaths in BobCAM for machine production of the guitar body.

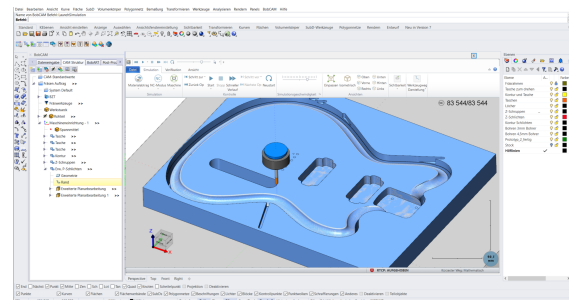


Fig. 3 Simulated toolpaths in BobCAM for checking the milling job.

For the production of the unique pieces of electric guitar bodies made of wood for the *American Guitar Shop Berlin* shown here, the main bodies were designed in Rhinoceros (Fig. 1). BobCAM generates the toolpaths (Fig. 2), based on various predefined milling jobs existing in the program. The CAM program also allows very realistic virtual simulations of the milling job so that errors in

the actual manufacturing process on the machine can be minimized (Fig. 3).

The single guitar body - milled from two sides - was then produced from solid wood on a CNC milling machine (Figs. 4) and after that fine sanded. The combination of the software and the machine used guarantees finest work. This is very important when working with a natural material such as wood. Finally, the electric guitar was individually designed and assembled by the customer (Fig. 5).



Fig. 3 Production of a guitar body on the CNC milling machine – milled from two sides.

For this type of highly individualized products manufactured at *craft by creatives* adjustments are often necessary at short notice. The direct connection of CAD and CAM by means of a plug-in allows a fast, flexible and reliable reaction even during production at the same time ensuring a high quality of the end product.

Rhinoceros has proven itself over the years in the production of technical models and is also used almost exclusively as the CAD

program in the new workshop: It is versatile, customizable and permanently being further developed. BobCAM, on the other hand, is new to the company, but was immediately convincing: It is easily accessible, offers a wide range of convenient functions and is a clear step forward compared to the CAM program used up to now.



Fig. 5 Finished lacquered electric guitar.

Both software packages were purchased from *MecSoft Europe GmbH*. Post-processors for the CNC machines can be written with little effort thanks to the templates available in the software and the support of *MecSoft Europe GmbH*.

Electric guitar body made for:

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