



### **KLEUSBERG GmbH & Co. KG**

#### HiCAD features for modular construction

Founded in 1948 as a carpenter's workshop, the family-owned company from Rhineland-Palatinate now carries out construction projects for industry and trade, for commercial and public clients as well as for the building industry at eight locations in Germany. The respective sectors include individual modular construction, mobile rental buildings, system containers and hall installations.

"The advantages of the modular design are obvious", says Chief Designer Ralf Baron. "Less construction time, a more cost-effective series production of the building components and an easier dismantling at the end of the period of use with subsequent recycling of the materials".

**KLEUSBERG** 

# REFERENCE REPORT



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Ralf Baron, Chief Designer at KLEUSBERG GmbH & Co. KG

### HCM variant technology for modular construction

“KLEUSBERG has a competitive edge on the market with regard to working speed due to its modular construction method”, summarizes Ralf Baron. “HiCAD speeds up the construction of the individual modules through the HiCAD Constraints Manager (short: HCM) and parameterization,” he adds. He came across the ISD Group - the developers of HiCAD - through Internet research: “After an on-site presentation in May 2016, we created a KLEUSBERG design with HiCAD. In June of the same year, several of our employees received training in Berlin, where the HiCAD functions were thoroughly inspected again during a three-month test phase.” From September 2016, HiCAD has already been used for the first projects. Currently, the company is working with the Steel Engineering suite premium, which includes tools such as the BIM-compliant IFC interface and the 2-D HCM variant technology. “It’s a good thing that the construction of parts recurring in different geometric dimensions can be automated”, says Ralf Baron. “And it’s also

important that rules can be defined for these different geometric dimensions.”

In his daily work with HiCAD and its integrated “3-D Part HCM” and “C-Edge HCM” tools, he particularly appreciates the possibility of being able to change the dimensions and positions of parts with functions that can be applied to multiple parts at once. “While feature technology is activated, all design steps are also recorded in a log. Subsequent adjustments - changes of constraints in the context of the assembly - are possible without any problems, which gives us a high degree of flexibility”. The fact that points can be selected in freely definable 3-D areas and moved variably is also perceived by Ralf Baron as a great advantage in his work with HiCAD: “This also helps to prevent an uncontrolled proliferation of part diversity, even though HiCAD provides us with an extensive standard parts catalogue.”

### Fast and successful steel frame construction

Prior to the implementation of HiCAD, KLEUSBERG had

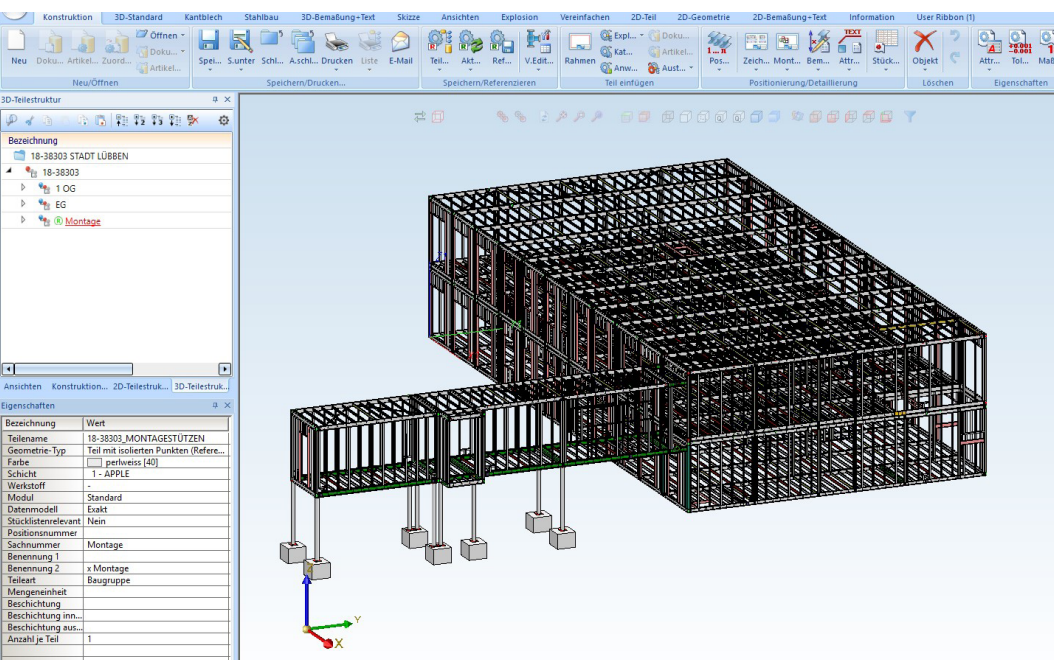


Image: © KLEUSBERG,

The complete room modules with a connecting corridor for a school building extension (Nursery & Primary school), in Lübben, Germany (24 modules, 1.200 m<sup>2</sup>)



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*Ralf Baron, Chief Designer at KLEUSBERG GmbH & Co. KG*

worked with AutoCAD 2D. But the combined 2-D/3-D approach of HiCAD in conjunction with its multi-industry capability provided the CAD engineers with the following benefits:

- › Error reduction through designing in 3-D
- › BIM-conformity thanks to the IFC interface
- › Collision checks during modelling of the building shell with components from various industries
- › Combined free and parametric modelling
- › Significant time savings through fast and easy referencing

“Considering that none of our ten designers had worked with HiCAD before, the introduction was very unproblematic and fast”, says Ralf Baron. “The ISD Group’s CAD software has been very positively received by all employees.” The step-by-step introduction in the daily business had worked without any problems. “Very precisely and under optimal conditions, for example, 24 steel modules for the 1,200 m<sup>2</sup> extension area of the

Friedrich-Ludwig-Jahn School in Lübben were pre-produced in our workshops”, explains the Chief Designer proudly. The finished stairwell module tower, with integrated elevator planning and office building for the Ludwig Freytag GmbH & Co. KG was also constructed with HiCAD at KLEUSBERG. “In the city of Eberswalde the extension of the nursery centre ‘Spielhaus’ was built in only three months”, says Ralf Baron. In the city of Zwickau, KLEUSBERG constructed a new administration building - the Job Centre - from a total of 236 steel modules. “Within only 28 days, the shell for the 8,800 m<sup>2</sup> building was erected,” recalls Baron enthusiastically. “And we are currently involved in the construction of the Munich Airport Craftsmen’s Building with modular room cells.”

#### **Efficient ISD support - PDM planned**

Because of the achieved goals Ralf Baron plans to purchase further HiCAD licenses. “The individual cooperation with the ISD works out excellently”, says the Chief Designer. “The ISD offers standard functions for solutions, holds regular training sessions and always

#### **A typical project cycle at KLEUSBERG:**

- › Calculation of the building statics
- › Preparation of execution planning in one of the five profit centres with the software Revit
- › Creation of static modules and the building with HiCAD
- › Extended implementation planning in the profit centre and integration of all elements such as heating, ventilation, stairs, elevators with Revit
- › Integration of the final, detailed design into the HiCAD drawing
- › Preparation of steel engineering drawings and manually created BOMs for production

Image: © KLEUSBERG, Modular extension of the Kurpfalz Bammental boarding school





solves problems promptly. We have achieved very good results with the combination of standard training and customer-specific training." The introduction of the PDM system HELiOS is still in progress. Since the medium-sized company is currently designing with more than 14 HiCAD licenses at three locations, a secure document and content management across locations, with precisely documented design processes - just like BIM - is part of its holistic digitization strategy.

#### Short company profile:

- › KLEUSBERG GmbH & Co. KG
- › Industry: Facades, Containers, Sheet metal
- › Software: HiCAD, Inventor, AutoCAD
- › Services: Modular construction, Rental buildings, System containers and halls
- › [www.kleusberg.de](http://www.kleusberg.de)



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Image: © KLEUSBERG, Finished staircase module tower including stair and elevator planning and the finished office building for the LUDWIG FREYTAG GmbH & Co. KG (27 modules, 1.200 m<sup>2</sup>)

