



## Ernst Schweizer AG

### 3-D planning for greater potential

“Our success lies in being on the move,” is the credo of the Ernst Schweizer AG, whose history goes back to 1920. It is quite possible that thanks to this attitude it has ventured the step from 2-D to 3-D planning. Fortunately, the changeover was successful, so that in future the many complex projects of the traditional Swiss company can be planned even more precisely and implemented more efficiently than before.

#### The search for a 3-D CAD system

Delivering quality products that are as free of defects as possible in a short time is a desirable goal - also for the Ernst Schweizer AG. Their service portfolio suggests that this requires a suitable staff - and an efficient CAD tool. How else are sophisticated concepts for floor-to-ceiling panoramic glazing or

The logo for Ernst Schweizer AG, featuring the word "Schweizer" in a bold, black, sans-serif font, centered within a white rectangular box with a blue border. This box is set against a large white circle that is partially overlaid by a blue geometric mountain-like shape at the bottom of the page.

**Schweizer**

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prestigious window, door and mullion systems to be put into practice? Not to mention facades that surpass each other in functionality, energy efficiency and aesthetics to meet growing customer demands?

Before the Ernst Schweizer AG switched to a 3-D CAD system, designing was done exclusively in 2-D: Floor plans, sections, various views and details. “2-D software is very suitable for creating schematic drawings and layouts,” sums up Patrick Frei, Technical Manager. “I wouldn’t want to do without it completely. But the view in three-dimensional space offers a much deeper communication on a visible level, which promotes the understanding of everyone involved in the project and speeds up the step from sectional to detailed design immensely.”

### The selection process

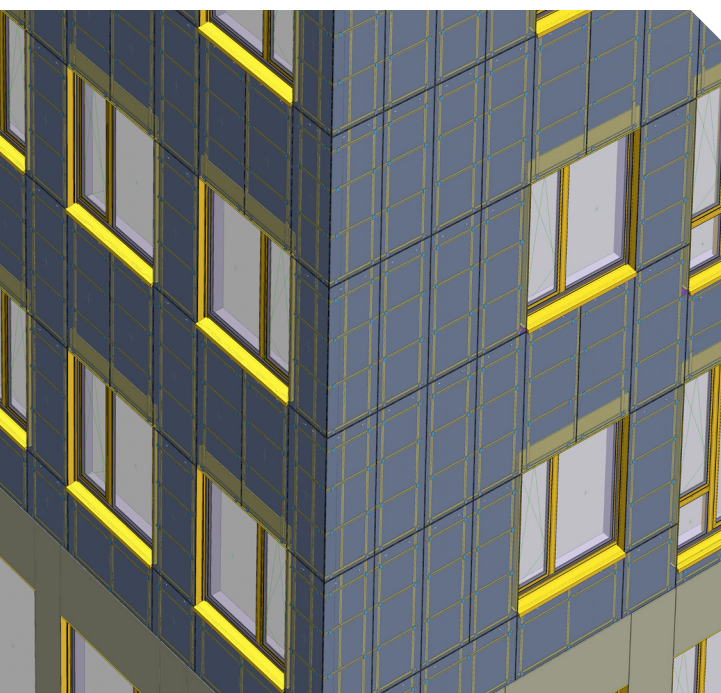
3-D design offers quite a few possibilities that cannot be fully exploited with 2-D drafting software alone: In addition to better visualisation, which enables the early detection of collisions and thus reduces the effort required for rework, the user gains access to numerous functions with which he can create drawings, bills of materials and necessary dimensions at the push of a button. In addition, coordination with different suppliers and trades is almost seamless because the exchange of different file formats can take place via numerous interfaces. “We compared four CAD software providers,” Patrick Frei explains about the evaluation process,

which took almost two years and consisted of many presentations and test phases.

In the end, the decision was made in favour of the Dortmund-based ISD Group and its CAD program HiCAD, a combined 2-D/3-D solution for mechanical, steel, metal and plant engineering as well as sheet metal processing. Training courses were completed and workstations were equipped accordingly. In the meantime, all employees in the facade area at the Ernst Schweizer AG had a HiCAD licence, including the trainees.

### HiCAD scores with LogiKal interface

The design of a facade has a considerable influence on the perception of a building and increases its value. If a building is not state of the art or contemporary in design, it is harder to let and even harder to sell - regardless of the location. To succeed in this demanding segment, comprehensive yet easy-to-learn CAD capabilities are essential. Patrick Frei cites a few reasons that influenced his decision to go with HiCAD: “With the option of a purchase licence rather than a rental licence, as well as a bi-directional interface to LogiKal, this combined 2-D/3-D CAD solution was exactly what we needed,” says the trained metal construction designer. With access to an extensive range of components, profiles and accessories, not only can most standard doors and windows be designed, but also more complex projects with, for example, sloping or polygonal facade walls. “HiCAD simply offers us the greatest potential for metal



Images: © Ernst Schweizer AG

and facade engineering needs,” says Patrick Frei. “I don’t necessarily have to work with rigid parameterisation, I can benefit from steel engineering functions with modules for profile installation, automatism for sheet metal processing and the possibility to design in both 2-D and 3-D in one central user interface.”

### **CAD for Innovation Center**

Without 3-D planning, the Innovation Center in Frauenfeld commissioned by a well-known high-tech company, could not have been accomplished. The Ernst Schweizer AG invested 1700 hours in the construction of an energy-efficient building shell that encloses 5000 square metres of office space. The entire construction was managed by a single employee.

The creation of the production plans could be distributed among several colleagues. “We generated 70 cutting plans, while the number of production plans was in the high three-digit range,” says Patrick Frei. The interface to LogiKal naturally came into its own in this project and quickly ensured the Ernst Schweizer AG the results-oriented selection of all components: Windows, frames, special profiles as well as the selection and segmentation of various facade systems - including PV, Cemfor and mullion-transom facades. Via the fast export of 3-D data as STEP files, information for production parts such as

flashings could be passed on and processed directly and unambiguously. “This and the flexibility to parameterise parts and assemblies in HiCAD or to insert changes with free modelling led to the successful completion of the project,” explains the project manager.

### **Clearer overview and fewer errors**

It can happen that the introduction of new software evokes scepticism and a lack of understanding among users. However, if you consider the advantages that a changeover brings, these reactions seem unfounded. “After our designers got used to the new way of working, the error rate decreased massively,” Patrick Frei reveals. “We have not been able to detect any measurable rejects that can be traced back to faulty planning. This is certainly due to the fact that important information became visible in good time, which led to early ordering of the required material. This is particularly valuable in times when delivery times can be very long.”

### **BIM is the concept of the future**

In the future, all new apprentices at the Ernst Schweizer AG will be introduced to the practice of 3-D design. “We offer annual training for new apprentices,” says Patrick Frei, who is very pleased that new paths to various projects have already been opened up since the switch to HiCAD. For him establishing HiCAD in the company

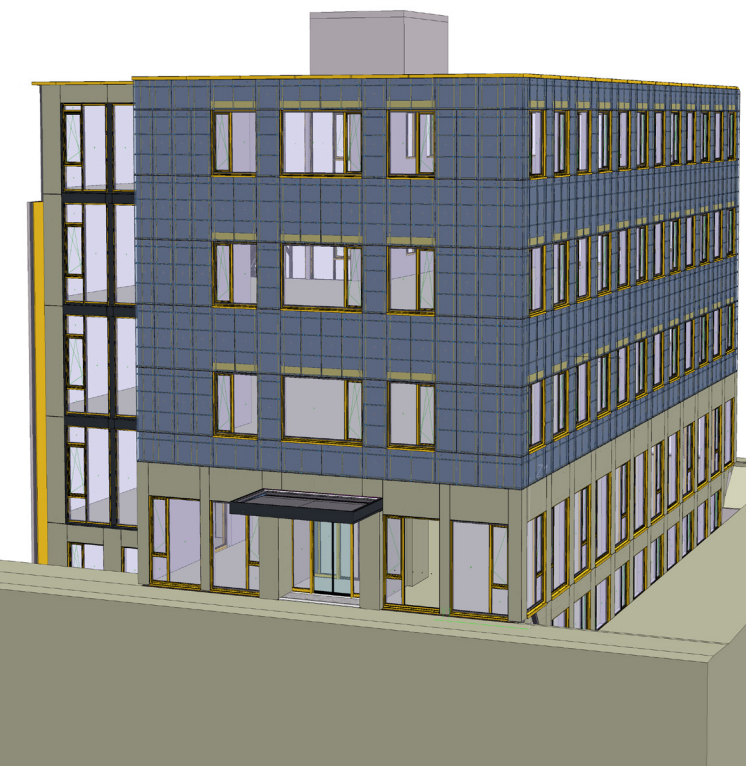


Image: © Ernst Schweizer AG

*“With the option of a purchase licence rather than a rental licence, as well as a bi-directional interface to LogiKal, this combined 2-D/3-D CAD solution was exactly what we needed.”*

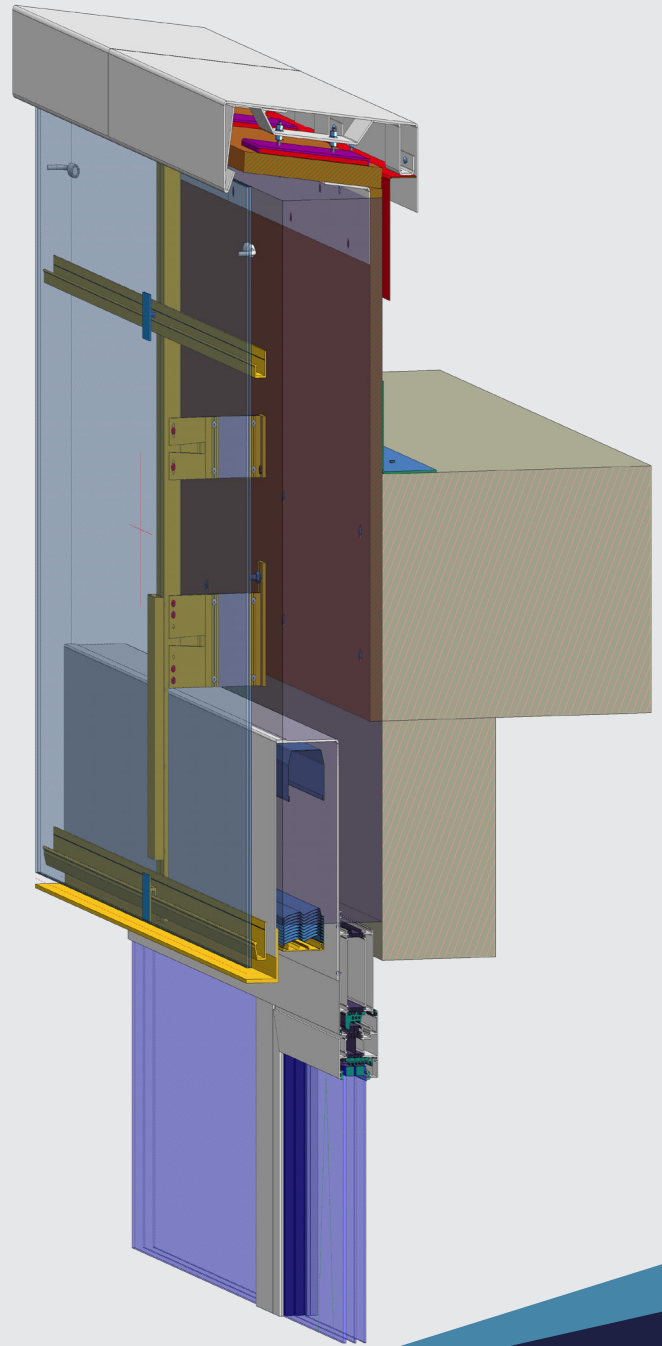
*Patrick Frei,  
Technical Manager, Ernst Schweizer AG*

also means taking a step further in the direction of PDM, and thus also in the direction of BIM. "We expect that the switch to 3-D will become much more important in the future and that the industry will increasingly demand BIM-capable planning. In order to remain competitive, it is therefore necessary to switch to 3-D and to continue to deal with the latest technologies in the future."

#### Brief company profile:

- > Ernst Schweizer AG
- > Industry: Metal Engineering
- > Software: HiCAD
- > Services: Windows, facades, glazing constructions etc.
- > [www.ernstschweizer.ch](http://www.ernstschweizer.ch)

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