Success Stories

Rood Metallbauplanung AG

Planning precision throughout thanks to HiCAD

Rood Metallbauplanung AG is a planning office for modern steel, metal and glass constructions and various building shells. It was founded in 2013 by Rochus Odermatt in Stans, Switzerland. Services such as submission planning, expertise and implementation planning are part of the range of tasks of the Swiss company, which has been using HiCAD - the CAD software of the ISD Group in Dortmund - for three years now.

The company became aware of the ISD through the SWISSBAU trade fair, finally acquired HiCAD at the BAU trade fair in Munich and currently uses the modules Metal Engineering suite premium and Profile Installation. “The possibility of combining different materials such as wood, steel and glass, the multitude of functions for complex sheet metal corners, the videos

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REFERENCE REPORT

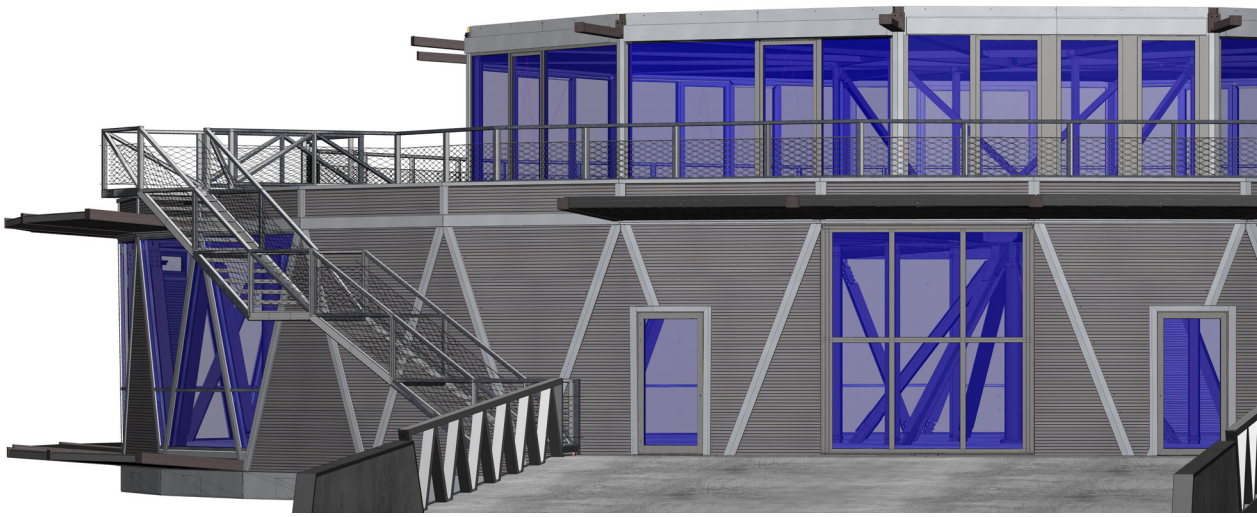

Image: © Rood AG; 3-D model of the Rorguet building in Meilen, Switzerland – planned with HiCAD

on YouTube and the positive customer feedback encouraged us in our decision to choose HiCAD," says Marcel Suter, Project Manager 3-D. For large projects, however, he still plans the layouts in AutoCAD 2D. After approval, the execution planning is then carried out in the combined 2-D/3-D CAD software of the Dortmund developers. "The combined 2-D/3-D approach of HiCAD is still very important today, as we often integrate 2-D sections into HiCAD and use them to create the model. On the basis of architect's plans, dimensions are partially taken from the control graphics and constructed in 3-D," he explains.

The Rorguet building project – Mullion-Transom construction plus stairs and railings

Rood Metallbauplanung AG was responsible for the planning and project management of the commercial building, which was completed in 2019 and has 800 m2 of facade area. They were allowed to take over the planning for the customer Mema Metallbau Marti GmbH.

The Montavor GmbH provided for the installation of 140 mm sandwich elements on a steel structure, fire protection, and heat-insulating plastic such as PIR. The number of components was approx. 140,000 parts - including external data from suppliers and manufacturers. "We were faced with the situation of successfully passing through the approval phase in 2-D and transferring all information from this phase to HiCAD after approval. A further challenge was to visualize the individual and demanding specifications transparently and clearly. Among other things, the 3-D PDF interface was used for this purpose in order to present details in an accurate manner. Misunderstandings could thus be ruled out", says Marcel Suter, who would not have tackled the complete cladding of the extravagant round building at all without the possibility of 3-D. "This would have been too complex," he admits. HiCAD, however, provided him with the required possibilities and functions. "In the Rorguet project, for example, the industry consistency and flexibility of HiCAD was fully utilised to the extent

"Without the possibility of 3-D we would not have tackled the project. This would have been too complex."

Marcel Suter, Project Leader 3-D at Rood AG

Image: © Rood AG; Marcel Suter

Image: © Rood AG; The Rorguet building in Meilen, Switzerland: Mullion-Transom constructions, glasses with different inclinations, about 3,000 sheets, stairs and fire protection elements - successfully planned with HiCAD.

that after plan approval, four further change requests were promptly taken into account. We had to implement the new requirements for this in a timely manner and discuss them with the contractors. Thanks to the automatic data output via 3-D STEP format, there was not a single scrap of the individual sheet metal parts - approx. 2,000 items - in the subsequent production."

The ETH Zurich project – Element facade

Rood Metallbauplanung AG again took over the planning and project management of the laboratory building, which is currently still under construction with 2.5 t steel façade elements and large-format glass block elements. Ruch AG - also a HiCAD customer - was responsible for the production, assembly and glazing of the 45 facade elements. The company from Altdorf also produced 550 steel frames for the glass elements. A tube laser enabled the frame parts to be cut to size with pinpoint accuracy, which were numbered and then welded together in a conveyor belt production process. 160,000 parts - with high demands on their sustainability - have been installed in this research building. For inspection purposes, the company Ruch had to exactly declare all materials that were to be used on the construction site.

From drafting in 2-D to modelling in 3-D

"Above all, the project security has improved thanks to the 3-D design", explains project manager Marcel Suter, who also designs with HiCAD from the home office, and emphasizes that Rood Metallbauplanung AG would not switch back to a pure 2-D working method. "Efficiency has also increased throughout the entire project phase - starting with the approval phase through to the final production and assembly". In his opinion, automatic functions for bills of materials generation and drawing derivation are particularly helpful in increasing productivity. "The output of design data as STEP files for smooth data exchange with clients and suppliers is just as important for us." A decisive point, however, was the introduction of HiCAD, Marcel Suter explains. The willingness to learn a new way of working is ultimately an essential factor for the successful transition from 2-D drawing to 3-D models. "We handled very large projects at an early stage and sometimes overtaxed our

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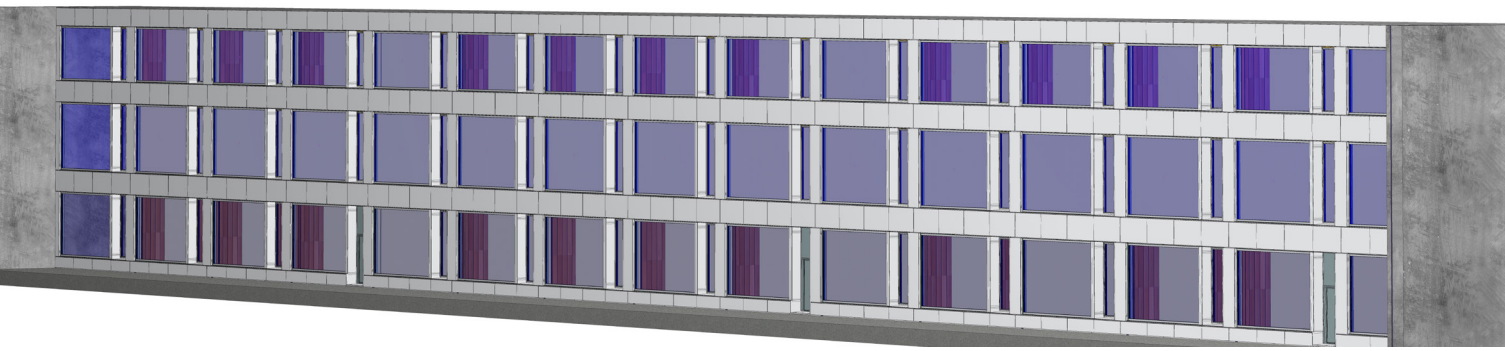

Image: © Rood AG; Element facade of the ETH Zurich

employees. However, the Swiss branch office of the ISD always swiftly responded to our requirements in this phase and provided great support". Also, one is well prepared for the future with HiCAD. "Currently essential information from the architect is still being transmitted as 2-D data," says Marcel Suter. "But here too, more and more data will be available in 3-D format in the future. Both the data transfer from 2-D DXF/DWG and the open BIM format IFC support the user in HiCAD. The implementation of the extension module HiCAD Point Cloud would possibly be an attractive measure for future projects."

Short company profile:

- Rood Metallbauplanung AG
- Industry: Metal, steel and facade construction, solar panels
- Software: HiCAD, AutoCAD, Antlog
- Services: Expertise, submission and execution planning
- www.rood-ag.ch

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