



## MetallArt Metallbau Schmid GmbH – Exclusive, custom-tailored stairs and metal constructions

Specialist for stair construction and metal engineering provides customized solutions

Steel, stainless steel and aluminium – these are the materials of which MetallArt creates its custom-tailored stairs, winter gardens and glass-aluminium facades. Using the multi-industry capable CAD system HiCAD, MetallArt always finds the perfect solution for every requirement.

MetallArt realises top quality stair constructions and metal engineering projects with the help of state-of-the-art technologies. The company in Salach, Germany, has earned worldwide reputation as a leading staircase manufacturer. Its distinctive stair constructions can be found in office buildings, private houses or cruise liners. The second business segment of the MetallArt consists in top quality aluminium constructions for modern house building and object construction. The German service provider has all required processes under one roof - from planning and statics calculation through to production and assembly. Another core competence of MetallArt is the processing of extruded aluminium profiles with the help of state-of-the-art 5-axis CNC machines. For more than 90 years, the family-owned company has been a pioneer in the field of innovative metal engineering constructions.



Customized spiral staircase with handrail in an office building in Munich, designed with HiCAD.

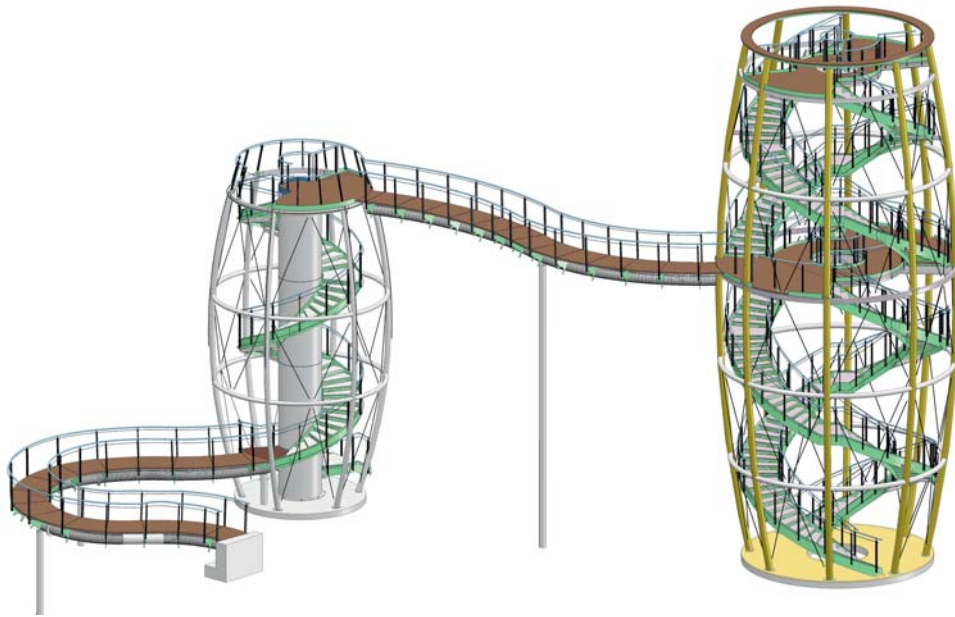
### » IN BRIEF

MetallArt Metallbau Schmid GmbH

- Industry: Metal Engineering
- Specialist in: Metal constructions, stair constructions, CNC technology
- Software: HiCAD
- Headquarters: Salach, Germany
- [www.metallart-gmbh.de](http://www.metallart-gmbh.de)

### HiCAD masters the combined complexity of staircase building and metal engineering

MetallArt has always kept pace with the times, and this refers not only to the field of metal engineering: Some years ago, the company switched from a classical 2-D CAD system to the 3-D CAD system HiCAD to be able to stay at the top of its game. Decisive reasons for the switch to HiCAD were the powerful 3-D functionalities in conjunction with the



Stair construction in the Zurich Zoo. Most challenging was the realisation of the connecting bridge between the two towers.

industry-specific modules. The Stairs+Railings, Metal Engineering and Sheet Metal modules can be effortlessly used in a combined manner for all kinds of design tasks in HiCAD. In this way, customer-specific objects can be realised rapidly and conveniently. “HiCAD’s abilities had impressed us right from the start. We were sure that we had finally found a software that perfectly matches the requirements of our company on a sustained basis“, says Johannes Schmid, owner and CEO of MetallArt.

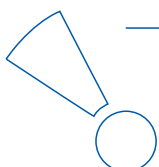
### Smooth changeover to 3-D

As early as 8 years ago, MetallArt switched from AutoCAD to HiCAD. In the last years, working in 3-D has become more and more important and has now become indispensable. The changeover to 3-D took place without any problems and, above all, very rapidly. At the beginning, working in 3-D was, of course, a bit unusual for the engineers at MetallArt, as it required a completely new way of working and thinking. But thanks to efficient training courses and close cooperation with the qualified ISD consultants,

the changeover to 3-D was finally very successful. The implementation of HiCAD in 2007 helped solve many problems at MetallArt: “Especially in the initial period we could reduce error rates dramatically. Times savings were enormous. And the 3-D modelling across different industries as well as other, individual modelling options opened up a whole new world of possibilities to us“, recalls Steffen Staudenmayer, engineer at MetallArt.

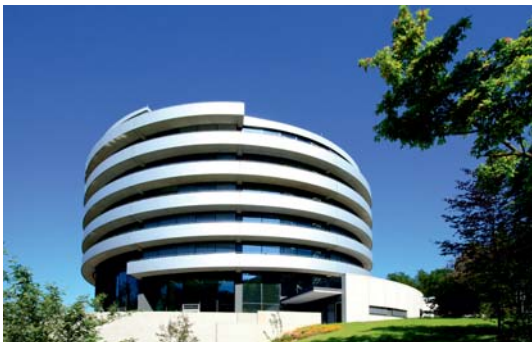
### Powerful Metal Engineering interface to LogiKal®

At MetallArt, metal engineering projects are first entered into LogiKal®, and the 2-D connection details are then automatically converted to 3-D in HiCAD for further processing. HiCAD also plays a crucial role for the generation of sectional views, production drawings as well as for detail and production planning. Before the implementation of HiCAD, dimensional problems used to reveal themselves not until the actual on-site production took place. Now, the correct dimensional tolerances can be specified beforehand. Possible problems can be detected right





from the start and can be solved already during the early process planning stage. This leads to enormous time and cost savings. Especially in large, complex facades, dimensional errors occurred quite often. Thanks to HiCAD, such sources of error can now be eliminated completely.



European Molecular Biology Laboratory in Heidelberg, exterior view. Staircase construction designed with HiCAD.

### Working across industries in stair construction and metal engineering

Today modern buildings are becoming increasingly complex, and their construction is getting more and more difficult and demanding. To be able to meet the requirements of modern architecture, practice-oriented tools and working methods are required. One of these is 3-D measuring, which plays an increasingly important role both in stair construction and in metal engineering. Via standard 3-D interfaces, Flexijet measuring data are directly read into HiCAD, which facilitates the realisation of the project-related, individual constructions. Sources of error can be detected and eliminated in advance, and not only afterwards, during on-site construction. At this point, the benefits of a precise and efficient 3-D measuring of complex geometries in close-up range, e.g. of freeform inside spaces or stairs, become obvious. This 3-D measuring provides the basis for

the CAD models in HiCAD, the derivation of production drawings, workshop drawings, and the final, released drawing for the customer.

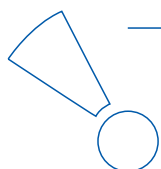
### Customizing extraordinary stair constructions

The first large project that was realised with HiCAD at MetallArt, was an impressive staircase for the European Molecular Biology Laboratory (EMBL), a genetic research institute in Heidelberg, Germany. The building has the shape of a double helix. A total of 66 levels have been built into two spiral strands running through the interior of the building and spiralling around its exterior. The helix strands, harbouring twelve segments on each level, each of which is in turn separated by a flight of three steps, are connected with each other by four glass bridges with railings. With a length of more than 30 m, these bridges extend horizontally high above the atrium.



European Molecular Biology Laboratory in Heidelberg, interior view. Staircase construction designed with HiCAD.

As this project did not only have an enormous volume, but also very complex geometries, it posed great challenges both to the statics calculation and the actual production. "HiCAD was the first software product that enabled us to actually realize such projects. In the past, this would not have been possible. One big advantage of HiCAD is that you can



## SUCCESS STORIES



also shape and process your CAD models outside of automatism. Of course, the realisation of the project took a lot of time and work, but - not least because of the support we got from the experts of the ISD - we can now really be proud of this truly unique stair and railing construction“, says Johannes Schmid. Several years have passed since then, during which MetallArt could successfully realise many other extraordinary and demanding projects with the help of HiCAD.



Staircase construction with handrail, designed with HiCAD.

### Keeping pace with the times

The demands made to design engineers and the CAD software they use are constantly changing, and keeping pace with these ever-changing requirements is of crucial importance. Therefore, the ISD always orientates its software development towards the needs of the users. MetallArt benefits from software updates on a regular basis. The focus of the company is always on performance increase, as the amount of data is constantly growing. The faster the working processes, the better. In permanent awareness of the needs of its customers, the ISD has increased the performance for view recalculations, zooming and

moving of objects in views of the type “Glass model“, “HiddenLine” and “HiddenLine dashed” in HiCAD 2014.

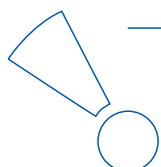
For large constructions, the performance could be increased by a factor of up to 10.

### Complete satisfaction

“With HiCAD we have found a software product that suits our requirements very well. The possibility to freely visualize our projects in HiCAD is of crucial importance for us, as is HiCAD’s unique “one-stop solution” enabling a combined working in the fields of stair construction, metal engineering and sheet metal processing“, explains Steffen Staudenmayer, key user at MetallArt. The data exchange with LogiKal and the Stairs+Railings module add up to a perfect combination. And HiCAD is the only product on the market that offers all these advantages in one package. “Thanks to HiCAD, there are no limits to our work anymore. Even if some minor problems may occur now and then, we are totally satisfied with HiCAD and the ISD“, concludes Johannes Schmid, CEO of MetallArt.

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