

## Sophisticated wood-steel construction with a view

**A new landmark for the region of Mondseeland (Austria) - planned and designed with SEMA**

*The Kulmspitze mountain has been given a new lookout post. A lookout tower with four platforms and a total height of over 28 metres. The timber construction with steel parts from holz.bau.technik<sup>2</sup> was planned and designed using the SEMA software.*



It has been well over 100 years since the Mondsee Alpine Club section brought up ideas for a new lookout tower. From 1876 to 1907, there was a lookout point with a pyramid-shaped roof on the Kulmspitze mountain. After more than 30 years, however, this had to be removed due to dilapidation. All that remained for visitors to the Kulmspitze was a small bench for having a snack. Unfortunately, the beautiful view at this height was obstructed by the surrounding forest. New construction measures were refused due to the inaccessibility of the Kulmspitze.

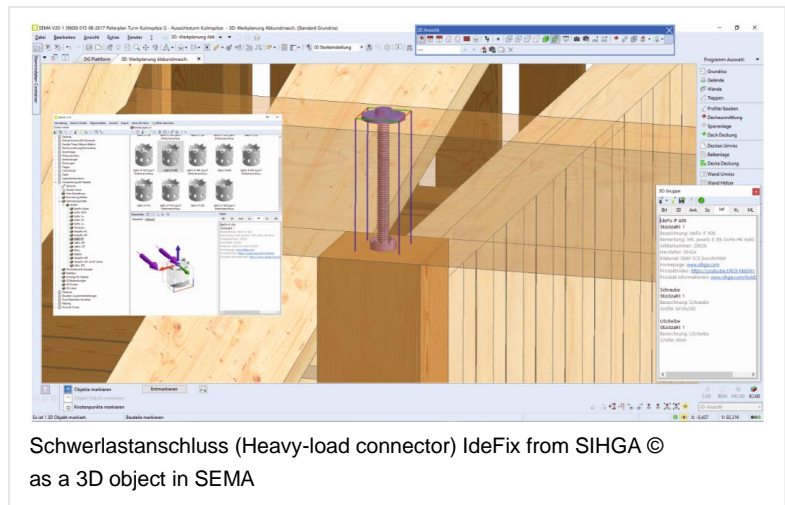
The situation changed after the construction of a forest road for forestry management by the Austrian Federal Forestry Office. It was thanks to this forest road that the project could be realised again after more than 100 years.

The communities of "Oberwang" and "Innerschwand am Mondsee" discussed the possibilities. After the property owners had given their approval, neither the nature conservation authority nor the forest authority had any objections to the project. Thus, nothing stood in the way of the new building of a tower. The green light for the construction of a timber building with steel parts at the summit of the Kulmspitze was given.

The design, including planning, cost estimation, construction and manufacturing data was carried out by the company holz.bau.technik<sup>2</sup>. Ing. HBmstr. Michael Widloither's design was based on the original shape of the tower as it had been built on the summit of the Kulmspitze over 140 years ago. Viewed from the outside, the contemporary wood-steel construction appears pretty simple but, at the same time, appealing and close to nature. The design of the building with a facade made of roughly sawn spruce is adapted to the environment. In order to protect structural nodes against the weather for a long time, Michael Widloither decided to build a vertical facade. The tower is divided into four platforms, from which visitors can enjoy the view in all directions even as they climb the tower. The top platform was made of larch wood and rises 24 metres. Situated at 1,119 m above sea level, the platform offers a fantastic view of the Mondseeland region and the

surrounding area. The supporting structure was made of glued-laminated timber, spruce and larch, coming from the region.

Various fasteners were employed for the hybrid construction made of wood and steel. SEMA software, for example, provides an extensive library for the fastening of wooden elements. Master data from various manufacturers is also available for download from the SEMA Data Store. Among other materials, support feet, wood construction screws and stainless steel screws from SIHGA® were used for the lookout tower. The steel connectors are transferred from the master data library directly into the design planning as 2D or 3D objects. All information, such as the article name and number, materials, size and a number of other data, is already stored in the master data. These are updated regularly by the manufacturer in order to always provide the user with the latest products. It is, for example, possible to hand over an automatically created material list to the supplier as an order after the design has been completed.



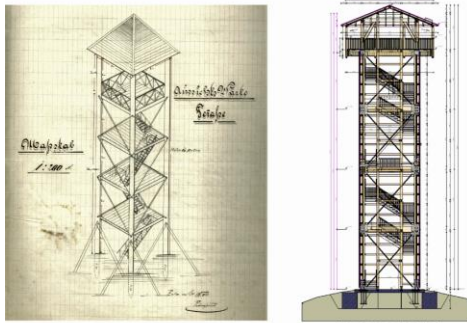
Other essential fasteners in the timber construction created are the steel tie bars, which reinforce the four structural components. The bottom tie bars have a tensile load of 600 KN, which corresponds to 60 tons.

The tower was completed in late summer and the official inauguration will take place in May 2020. The new lookout tower on the Kulmspitz mountain is already open to hikers and cyclists and can be visited. The tower is much more than just a lookout point for the region, where you can look into the distance. It is an enrichment for locals and tourists alike.

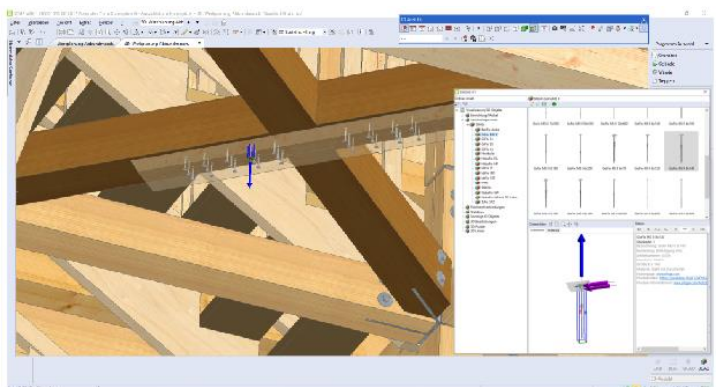
SEMA is proud to have contributed to this great building at 1095 metres above sea level and thanks the municipalities involved, the tourism association, the executing contractor Jakob Ebner Bau GmbH from St. Lorenz, and the company Holz Reisecker GmbH & Co. KG for the manufacture of wooden components. Sema's special thanks go to Ing. HBmstr. Michael Widloirther and his company holz.bau.technik² for their trust placed in SEMA and the planning, calculation and design using the SEMA software, as well as for the construction management and the local construction supervision.

SEMA wishes all visitors a lot of fun climbing the tower and enjoying the wonderful view of the Mondseeland region.

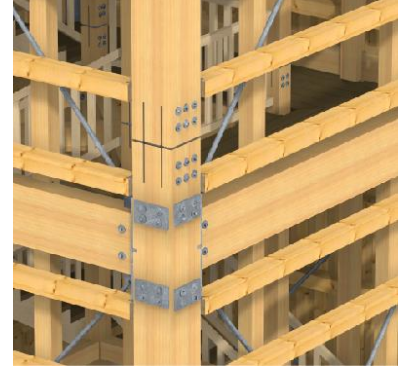
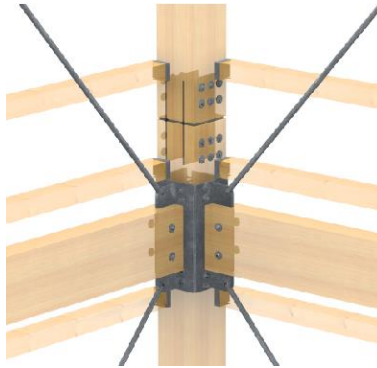




Blueprints of the lookout towers: Planning sketch from 1906 and construction plan from 2018



GoFix MS II from SIHGA® as a 3D object in SEMA and the master data



Source, pictures: Alpenverein (Alpine Club) Sektion Mondsee, SIHGA® holz.bau.technik², SEMA GmbH

#### SEMA Germany

SEMA GmbH Computer Software  
und Hardware-Vertrieb  
Dorfmühlstr. 7-11  
87499 Wildpoldsried / Germany  
phone +49 8304 - 939 0  
fax +49 8304 - 939 240  
e-mail [info@sema-soft.com](mailto:info@sema-soft.com)  
web [www.sema-soft.com](http://www.sema-soft.com)

#### SEMA Swiss

SEMA Soft- und  
Hardwarevertrieb GmbH  
Schillerstr. 30, im Techno-Z 10  
5020 Salzburg / Austria  
phone +43 662 - 4569 30  
fax +43 662 - 4569 55  
e-mail [info@sema-soft.at](mailto:info@sema-soft.at)  
web <http://www.sema-soft.at>

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