



Precision meets design:
Floating table made of
two precast elements

Allplan in Practice

ANYTHING BUT ORDINARY: THE FLOATING CONCRETE TABLE

Prefabricated concrete furniture in a class of its own planned with Allplan

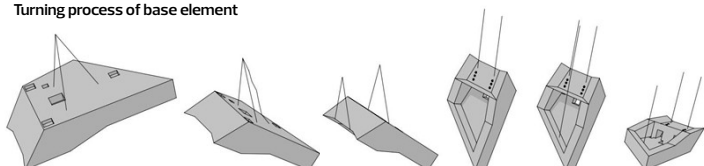
Nine meters long, weighing 16 tons and made from just two individual prefabricated concrete parts – these are the impressive dimensions of the designer furniture made from reinforced concrete. The architectural eye-catcher adorns the upper floor of the Upper Austrian company Sonnenschutz Rainer, serving as a communication meeting point for employees and guests. With built-in heaters and lighting, the concrete table keeps temperatures comfortable and inviting during the cooler winter months.

A bold architectural idea was transformed into a graceful masterpiece through the perfect interplay of design, the right choice of materials, comprehensive know-how, and skilled craftsmanship. HABAU Hoch- und Tiefbaugesellschaft m.b.H., a HABAU Group company, turned the design by the architectural firm SONOS Architektur ZT-GmbH and the static concept from the office Blauplanservice GmbH into reality. The two concrete elements were planned and produced at the precast plant in Perg.

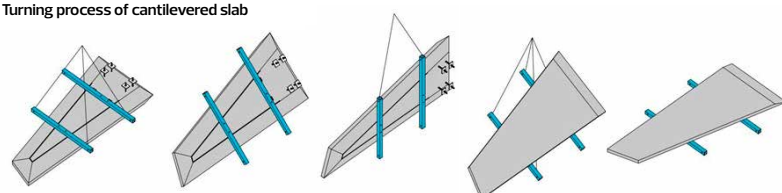


HABAU mastered the complicated turning processes with flying colors

Turning process of base element



Turning process of cantilevered slab



ALLPLAN ENABLES EXACT PRECAST PLANNING

Accuracy and precision were the top priority throughout the entire project – from the exact calculation of the focal points and the low construction tolerances to the millimeter-precise assembly.

HABAU relied on Allplan AEC and its integrated precast functions to plan these two structural precast elements. The company relies on Allplan Precast for the highly automated planning and production of precast walls and slabs. The planning of the two elements for the concrete table took around ten working days.

Precise alignment of the precast elements was important to prevent the table from tipping. A planted raised bed serves as a counterweight. Thanks to precise planning and implementation, the challenge of high point loads of eight tons each on the in-situ concrete slab could also be overcome.

The HABAU team for the formwork construction also faced challenges yet did an outstanding job. The result was a sharp-edged fiber formation with acute angles of less than 18 degrees. Turning the

precast concrete elements was a particular hurdle for the team led by HABAU planning manager, Christoph Haider. Special steel structures were produced for this purpose, which prevented damage to the elements thanks to additional transparent spacer and support plates. To be on the safe side, the turning process was simulated in advance. Using belts and chains, it was possible to turn the precast concrete elements without chipping. This preserved the flawless surface of the elements. HABAU also simulated the assembly process. This simulation was carried out quickly and easily in Allplan and delivered very clear results down to the smallest detail.

DESIGNER FURNITURE SCORES WITH INDIVIDUAL LIGHTING AND HEATING

The cantilever top was fitted with electronic heating elements that can be easily controlled using smart home technology. This makes the table a popular meeting place even in winter. The designer piece of furniture also has LED strips and sockets on the underside. This allows the concrete table to shine different light and color moods.



HABAU succeeded in planning, producing, and assembling the two precast concrete elements with millimeter precision.

CONCRETE AS A BUILDING MATERIAL

It is easy to explain why concrete was the right choice for the design table: concrete blends seamlessly into the overall design of the client Sonnenschutz Rainer and is highly weather-resistant. In addition, concrete enables the cantilevering of the tabletop in this unusual dimension as well as the column-free design. To achieve this, the two concrete parts were joined together with invisible screw connections. The surfaces were then treated with anti-graffiti protection to protect the concrete furniture from stains. A total of 700 kilograms of structural steel, around 200 kilograms of steel components and six cubic meters of concrete were used.

PROJECT INFORMATION AT A GLANCE

- > **Focus:** Prefabrication
 - > **Software for precast planning:** Allplan AEC
 - > **Planning and production of precast elements:**
HABAU Hoch- und Tiefbaugesellschaft m.b.H.
 - > **Number of precast elements:**
Two precast concrete elements
 - > **Planning duration:** Ten working days
 - > **Project duration:** Three months
 - > **Architectural office:**
SONOS Architektur ZT-GmbH
 - > **Client:** Sonnenschutz Rainer GmbH
 - > **Supporting structure:** Blauplanservice GmbH
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"With Allplan, we manage to push the boundaries of what is possible every day."

Christoph Haider, Group Manager Precast Construction – Planning, HABAU Hoch- und Tiefbaugesellschaft m.b.H.

THE CLIENT

The HABAU GROUP is active in the fields of building construction, civil engineering, pipeline construction, prefabricated construction, underground construction, timber construction, as well as steel and plant construction. The headquarters of HABAU Hoch- und Tiefbaugesellschaft m.b.H. is located in Perg, Upper Austria. In 2023, a 170-metre-long and 20-metre-wide production facility for hollow

core planks, a new social and office building, and a 7,500-square-meter outdoor storage area with three overhead cranes were also built at this location. HABAU relies on BIM-based 3D planning with Allplan Precast to control production. The precast plant produces, transports, and assembles up to 20,000 precast elements per year.

ABOUT ALLPLAN

ALLPLAN is a global provider of BIM design software for the AEC industry. True to our "Design to Build" claim, we cover the entire process from the first concept to final detailed design for the construction site and for prefabrication. Allplan users create deliverables of the highest quality and level of detail thanks to lean workflows. ALLPLAN offers powerful integrated cloud technology to support

interdisciplinary collaboration on building and civil engineering projects. Around the world over 600 dedicated employees continue to write the ALLPLAN success story. Headquartered in Munich, Germany, ALLPLAN is part of the Nemetschek Group which is a pioneer for digital transformation in the construction sector.

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