

Rotary Schutzhaus Michelsberg

Jugendzeltplatz am Michelsberg
86657 Bissingen
Gemarkung Thalheim
Flurstück 76



01 Location

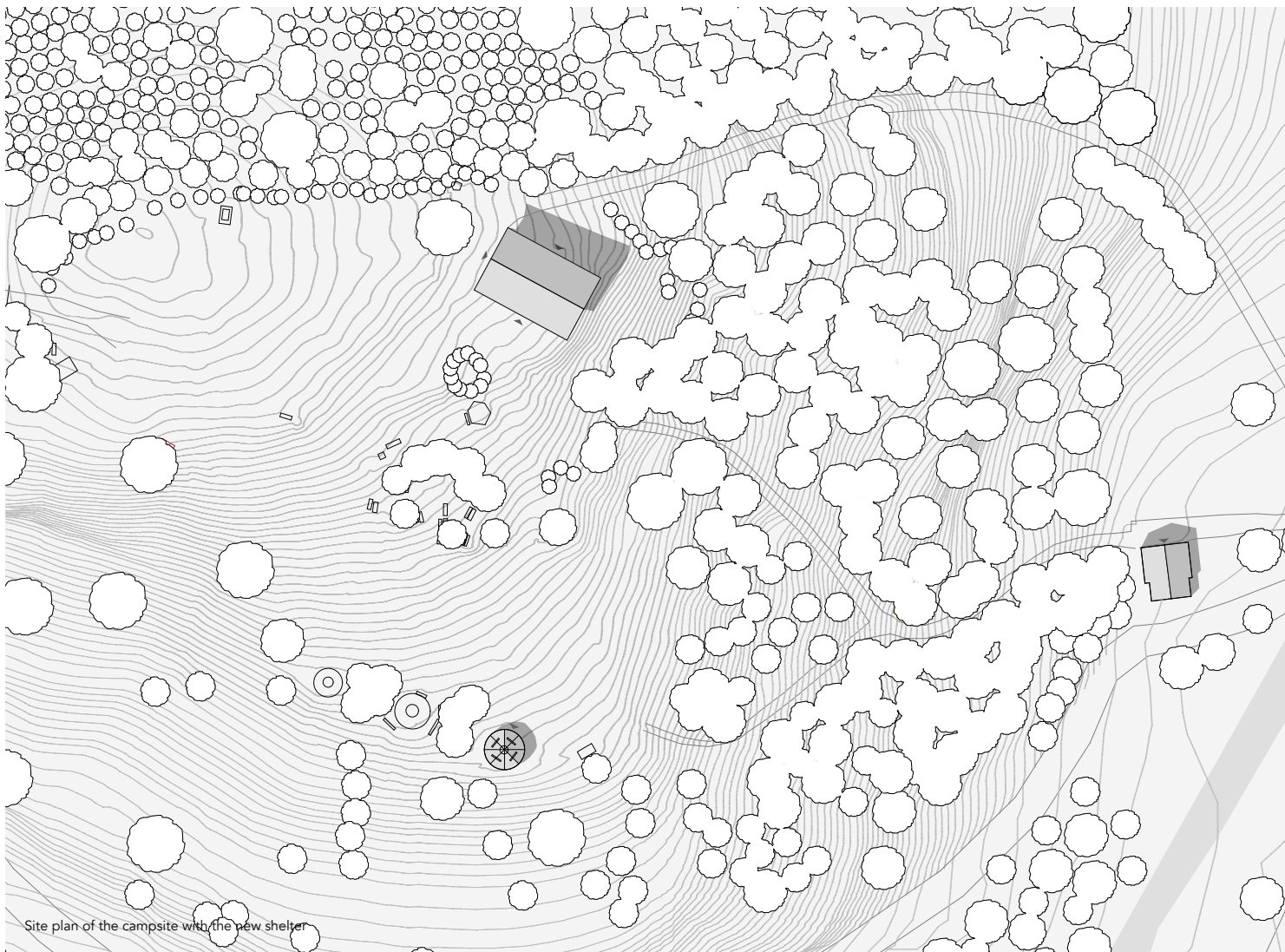
The Michelsberg lies above the Kesseltal near Bissingen in the district of Dillingen an der Donau. On a small elevation, surrounded by forest and meadows, the campsite offers a wide view over the valley and has for decades been a place of community in nature.

The new Schutzhaus fits respectfully into this grown environment. It stands at the northern edge of the campsite, slightly elevated on a terrain step, and is oriented with its longitudinal axis towards southwest and northeast. This orientation uses the sun and at the same time frames the view over the valley and into the forest slope. The archetypical, simple building volume follows the existing structure of the site and refers in scale and materiality to the surrounding forests and huts.

Thus, the building does not see itself as a dominant new construction, but as a continuation of the story of the place. A house that offers protection from weather as well as from uncertainty and at the same time continues the openness and sense of community of the campsite in spatial form. Its clear timber construction, circular building method and reduced formal language make it a natural part of the Michelsberg, both functionally and atmospherically rooted in the place.



Site of the Schutzhaus in Bavaria



Site plan of the campsite with the new shelter

02 Idea and Expression



Context model, photo credit: Eckhart Matthäus

The Rotary Schutzhaus Michelsberg is understood as a further development of a simple building type: a house for shelter and encounter. Its architectural idea arises from the direct engagement with the terrain, the use of the campsite and the constructive logic of timber construction. The elongated building volume follows the natural edge of the terrain at the border of the site. It mediates between the open meadow and the rising forest slope and thereby occupies a threshold in the landscape, neither exposed nor hidden, but naturally anchored in the terrain.

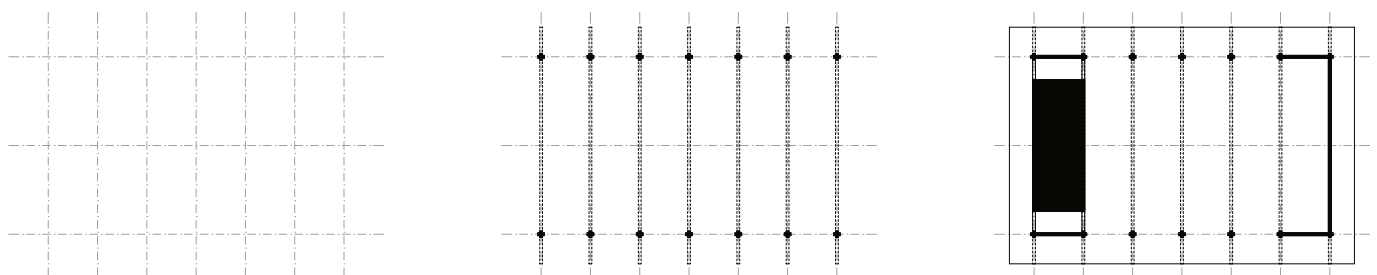
The building rests on a regular timber grid of columns and roof trusses with a centre distance of 2.50 metres. This grid is the ordering principle of the house. It structures the floor plan, determines the proportion and rhythm of the façade and remains legible in every detail. Between the wooden frames, translucent or closed wall panels are inserted, which are designed differently depending on function and orientation. In this way, a lively interplay of openness, filtering and protection emerges.

The central core zone of the building contains the service functions, storage, sanitary areas and circulation, and gives the structure stability. Around this core lies the large communal and shelter space, which in its spaciousness is rhythmically framed by the load-bearing structure. The visible construction gives the interior a clear order and a calm, handcrafted presence.

A continuous, covered terrace forms the connecting layer between inside and outside. It spatially and functionally encloses the building volume, offers protected outdoor areas and allows continuous circulation around the house.

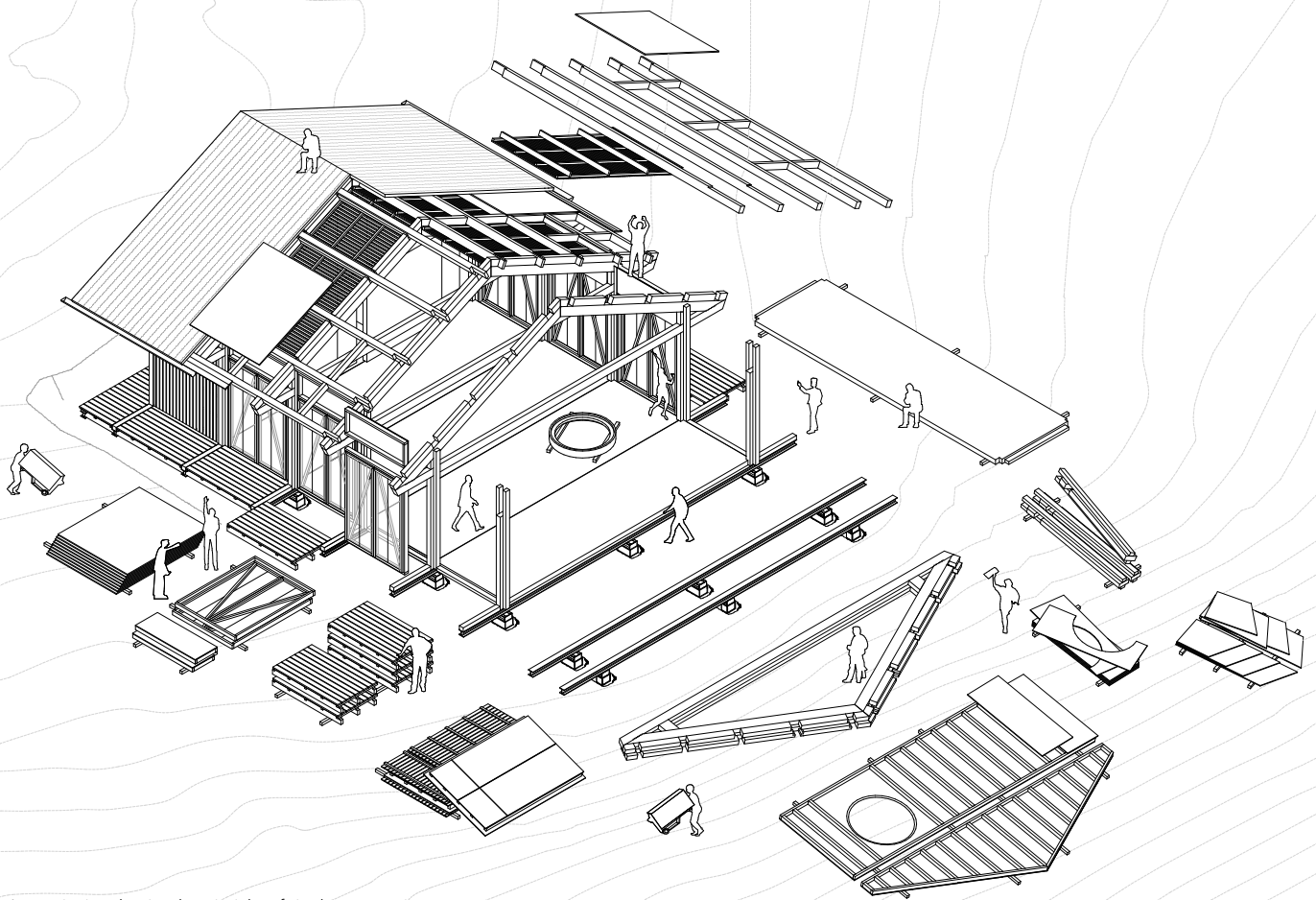
In its expression, the Schutzhaus remains restrained and precise. The structure remains visible, the material speaks for itself. Timber and polycarbonate are the defining materials. The rhythm of the columns and trusses, the depth of the roof overhangs and the light layering of the façades give the building its architectural language. The house is clear, calm and carried by a simple logic.

Thus, a building emerges that offers shelter without closing itself off, and allows openness without losing a sense of protection. It stands firm and yet light within the terrain, relates to its surroundings and translates the atmosphere of the campsite into a contemporary, sustainable form. The Schutzhaus Michelsberg is therefore more than a functional shelter. It is an architectural statement for the naturalness of building in harmony with place, material and community.



Grid as the conceptual and structural framework

03 Sustainability and Circularity



Isometric view showing the principles of circular construction

The idea of circularity at the Schutzhaus Michelsberg is not understood as an additional principle, but as a design-guiding concept that was consistently pursued from the first sketch to the last detail. Every connection, every layer and every material is designed to be demountable, separable by type and reusable. The building is conceived as a reversible system that understands the entire life cycle of a building, from assembly to possible deconstruction, as a design task.

The load-bearing structure made of visible glued laminated timber columns and beams follows a clear grid and was developed so that all elements can be prefabricated in the workshop and precisely assembled on site. The structural connections are made by means of conus adapters and screwed steel sleeves, which ensure high precision and at the same time complete reversibility. All joints are mechanically detachable, free of adhesives or composite materials, and can be separated again without destruction. The façade elements, roof structures and interior linings are also layered in a modular way and reversibly fixed. This constructive consistency extends to the design of the joints and fastening means. A continuously conceived system that combines simplicity and technical precision.

Sustainability here is expressed not only in the choice of material, but in the understanding of architecture as a circular process. Through its prefabrication, the building saves resources and construction time, minimises interventions in the terrain and can, if required, be adapted to changed uses or completely dismantled. In this way, the Schutzhaus becomes an example of a new generation of buildings that define durability not through mass, but through flexibility, reparability and a sense of responsibility.

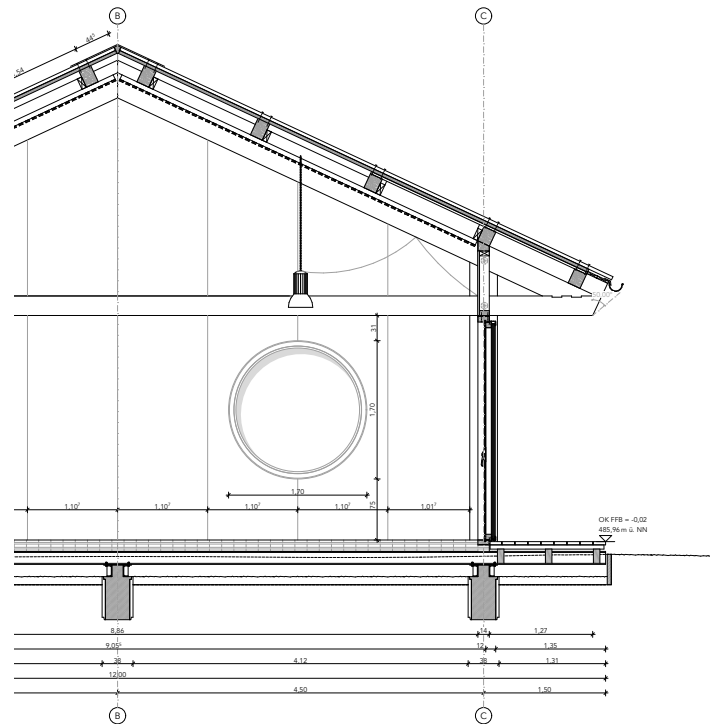
Circularity is thereby not only a technical, but also an architectural approach. The readable joints, the visible structure and the honest materiality shape the architectural language. Sustainability thus becomes an aesthetic principle. An architecture of clarity, precision and future viability that shows that innovation in building begins where construction and attitude become inseparable.

04 Façade and Structure

The Rotary Schutzhhaus Michelsberg is based on a clear tectonic order of crossed columns and collar beam trusses in a grid of 2.50 metres. The crossed columns carry the trusses over their fork-shaped heads and transfer the loads into the elevated floor slab made of cross-laminated timber. This slab rests on a steel beam grid and is permanently ventilated underneath according to the principle of a crawl space. Through coupling purlins, the trusses are connected into a continuous load-bearing structure, which is braced by three-layer panels in the roof and wall planes. The CLT wall on axis 2 and the timber panel walls on the gable sides take on the transverse bracing.

The façade follows the constructive logic of the structure. In the central grid fields of the longitudinal sides are large-format translucent wing doors made of timber frames with diagonal bracing and polycarbonate panels. They bring diffuse light into the interior and make it possible to open the building completely to its surroundings. The outer grid fields and gable sides are clad with vertical timber slats made of pre-greyed spruce, whose uniform colouring quietly integrates the building into the landscape.

A horizontal band unites the façades into a precise, coherent composition. Structure and envelope form a readable whole – functional, material-appropriate and atmospherically clear.



Excerpt of section C-C



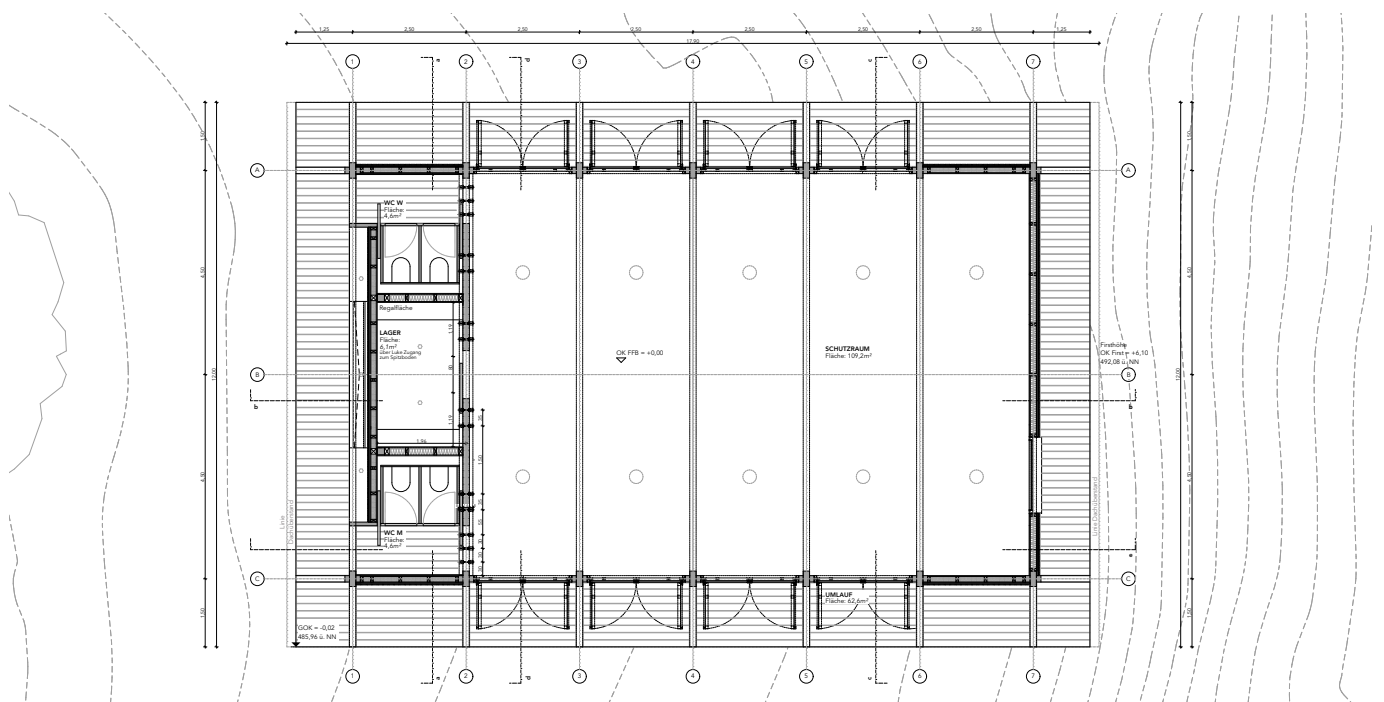


05 Plan and Function

The Schutzhaus is developed consistently in its organisation from the function of protection. It stands on the nature-oriented youth campsite at the Michelsberg and serves as a safe retreat in case of storms or on rainy days. At its centre is a large, open main room that, in an emergency, can accommodate up to 130 people lying down. This spatial openness gives the building its characteristic width and at the same time allows flexible use as a common, assembly or shelter space. The serving areas – sanitary, storage and technical rooms – are compactly arranged along the west side in a functional strip. They are deliberately reduced to a minimum size in order to keep the building volume small and the use efficient. The sanitary areas with toilets and wash-basins provide short routes for daily campsite operation and increase the comfort on site. The technical

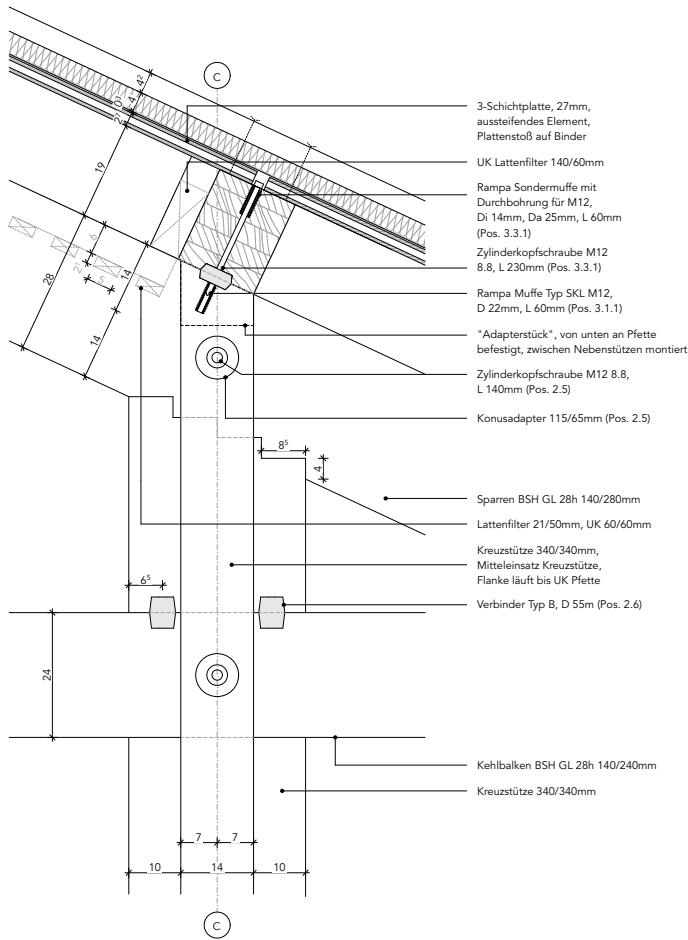
room houses the battery storage of the photovoltaic system. The energy generated on the roof supplies the campsite directly and replaces the generators previously used.

The floor plan follows a clear grid of 2.50 metres, which determines the structure, spatial order and façade rhythm. Large-format wing doors on both longitudinal sides open the space towards the landscape. A continuous, covered terrace connects interior and exterior, protects the façade and allows weather-protected circulation. In this way, a functionally precise, spatially open building emerges that naturally combines protection, community and sustainability.

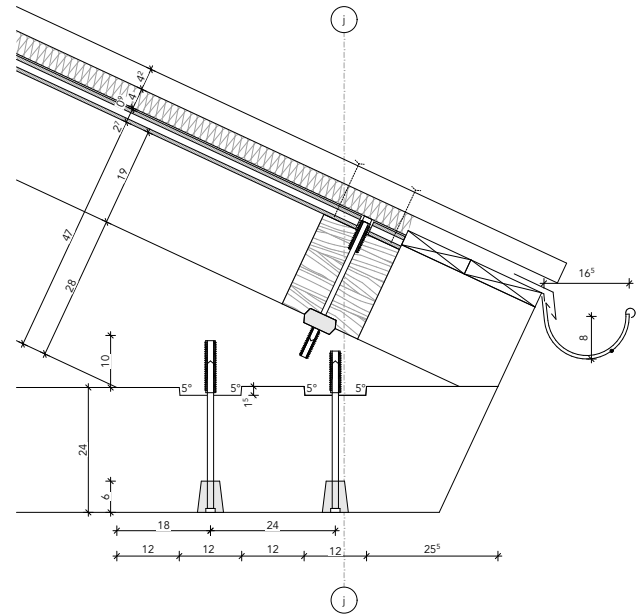


Floor plan of the Schutzhaus

06 Selected details



Connection cross column / roof truss

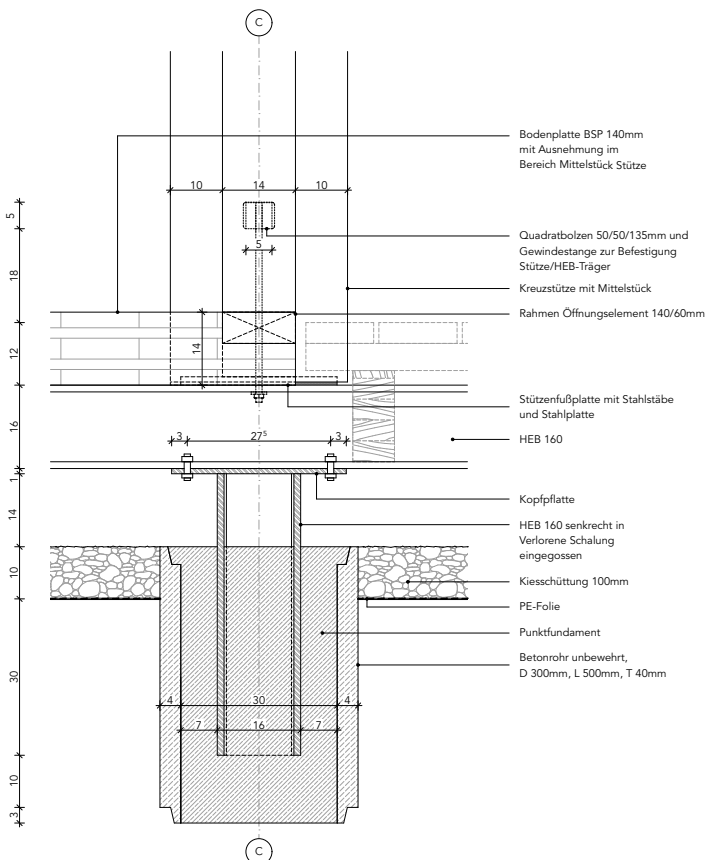


Connection collar beam / rafter

A central detail is formed by the connection between roof truss and cross column. The cross columns receive the trusses via their fork-shaped heads, into which the collar beam trusses are inserted in a tong-like manner. The connection is made as a form-fitting and force-locking joint by means of conical resin-pressed wood adapters and screwed sleeves, allowing the elements to be mounted precisely and completely disassembled. This design ensures both high accuracy of fit and complete reversibility of the structure.

The connection point between rafter and collar beam also follows this principle. Here, the inclined roof rafters and the horizontal collar beam meet in a precisely milled notch connection. The forces are transmitted form-fitted by dowels with threaded inserts, so that no gluing or permanent connections are required.

The clear formation of the joining points makes the structural relationships visible and shapes the constructive expression of the building. Thus, the details exemplify the basic idea of the project: craftsmanship precision, structural honesty and a consistent circular approach, in which technical intelligence and architectural clarity merge into one.



Connection cross column / floor slab

07 Realisation

The Rotary Schutzhaus Michelsberg emerged from a real need. For years, the youth campsite had lacked a weather-protected space that offers large groups safety and a sense of community. From this necessity, and in close exchange with the district youth association and local actors, a design developed that not only responds functionally but continues the special spirit of the place. Designed by us architecture students at the Technical University of Munich, the project was conceived and fully accompanied through to realisation in collaboration with Prof. Stephan Birk (TUM) and Prof. Dr. Jürgen Graf (t-lab, RPTU Kaiserslautern) as a teaching and research project.

Financed through donations, material sponsorships and voluntary contributions from the region, in particular by the Rotary Club Dillingen, the municipality of Bissingen and numerous local companies, the Schutzhaus was realised as a charitable building project. The construction process itself was an expression of collective commitment – from the first idea through design and execution planning to the manual realisation on site. The project thus stands as an example of a civic, academically supported charity project that connects teaching, research, craftsmanship and social responsibility, and at the same time shows how architecture can emerge from local solidarity and the desire for a place that fosters community.





Construction process, photo credit: Eckhart Matthäus



Recessed washbasin area



Construction process, photo credit: Eckhart Matthäus



Construction process, photo credit: Eckhart Matthäus