

# 15 Blümlimattweg, Thun

2021

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Switzerland's first apartment building with a wooden basement featuring TS3 joints was constructed at Blümlimattweg 15 in Thun. The building also serves as the living lab for the DeepWood research project and incorporates innovative approaches to building physics.

## The Project

An apartment building full of innovations was built in Thun. Concrete was not used anywhere in the entire building, which has five residential units—not even in the basement. Cross-laminated timber panels serve as the floor slab, laid over a 160 mm thick insulation board. The wood is permanently protected from moisture ingress by the “black tank” principle. In the basement, only the exterior walls and individual columns are load-bearing; the interior walls can be arranged freely. This makes the basement highly flexible in use and, thanks to the exposed wood surfaces, provides a pleasant indoor climate.

The house in Thun also serves as the Living Lab for the DeepWood research project in collaboration with the Lucerne University of Applied Sciences and Arts and the Bern University of Applied Sciences. DeepWood is advancing the development of Building Information Modeling (BIM) planning methods

## Construction Method

The basement is a solid wood structure made of cross-laminated timber panels. Using TS3 technology, the individual panels were structurally connected to form a large-scale floor slab. The exterior walls of the basement are also constructed of cross-laminated timber. Starting from the ground floor, the apartment building was constructed using a highly insulated wood-frame construction method. This made it possible to eliminate the need for a conventional heating system throughout the entire building.

## The Challenges

At Blümlimattweg, TS3 joints with 45° miter joints were cast for the first time in a construction project. TS3 had previously only gained experience with this through research projects. Another challenge of this project was the cold temperatures during casting. To address this, winter construction measures were developed and implemented. The joints were heated locally.



From the outside and inside: Timber remains visible and gives the building a pleasant atmosphere.



TS3 technology allows for a column-and-slab construction method. The TS3 joints remain visible in this project.



What seemed impossible for a long time is now a reality: Thun is home to the first apartment building with a basement made entirely of timber.



Timber in the basement creates comfortable spaces for various uses

### Construction data

- Number of floors: 3
- Gross floor area: 998 m<sup>2</sup>
- Cross-laminated timber: 178 m<sup>3</sup>
- TS3 technology: 360 m<sup>3</sup>

### Architecture

HLS Architects, Inc., Zurich

### Client

Yamanakako AG, Thun

### Timber engineer

Timbatec Timber Engineering Switzerland AG, Zurich

### Timber construction

Stuberholz AG, Schüpfen

### GU/TU

Stuberholz AG, Schüpfen

### Photography

Nils Sandmeier, Biel