

# Blümlimattweg 15, Thun

2021

---



At Blümlimattweg 15 in Thun, Switzerland's first apartment building with a basement made of wood was built. The building is also the Living Lab of the DeepWood research project and has innovative approaches to building physics.

## The project

An apartment building full of innovations was built in Thun. No concrete or steel was used in the entire house with 5 residential units - not even in the basement. Cross-laminated timber panels lie on top of a 160 mm thick insulation board. Black insulation encases the wood for moisture protection. The interior walls are non-load-bearing; columns and the exterior walls support the cross-laminated timber floor slab. Thus, the basement is very flexible in use and can be used in many ways, thanks to the pleasant indoor climate due to the visible and tangible wood. The house in Thun is also the living lab of the DeepWood research project together with the Lucerne University of Applied Sciences and Arts and the Bern University of Applied Sciences. With DeepWood, the planning methods Building Information Modeling (BIM) are being further developed.

## The construction

The basement is a solid timber structure made of cross-laminated timber panels. TS3 joints allow the floor slabs without joists. The exterior walls in timber frame construction are optimally insulated, which makes it possible to dispense with a heating system. Therefore, there is no conventional heating system in this building; a warm air supply is available as a backup.

## The challenge

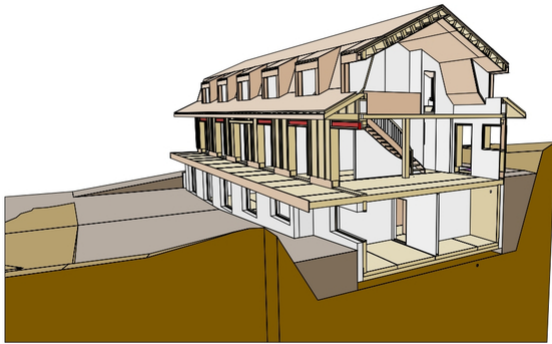
The Blümlimattweg was the first time a 45 degree TS3 joint was grouted in a construction project. TS3 had experience with this only from research projects. Another challenge of this project was the cold temperatures during grouting. For the first time, winter construction measures had to be developed and used. The joints were heated locally.



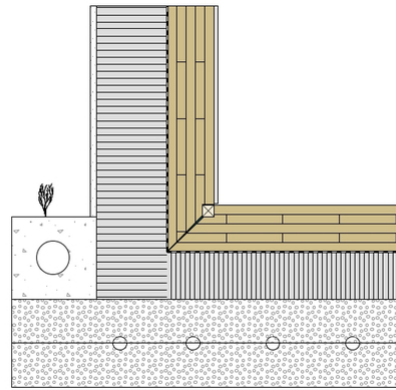
Timber basement



Flight photo timber basement



Section through the building from CATIA 3DExperience



TS3 Mitre joint at basement level

### Construction Data

- Number of floors: 3
- Gross floor area: 998 m<sup>2</sup>
- Glulam: 178 m<sup>3</sup>
- TS3 technology: 360 linear meters of joints

### Services of Timbatec

- SIA Phase 11 Condition analysis
- SIA Phase 21 Structural analysis
- SIA Phase 31 Preliminary design
- SIA Phase 32 Construction project
- SIA Phase 41 Tendering and comparison of offers
- SIA Phase 51 Implementation project
- SIA Phase 52 Execution
- SIA Phase 53 Commissioning

### Client

Yamanakako AG  
3600 Thun

### Timber construction engineer

Timbatec Holzbauingenieure (Schweiz) AG Zurich  
8005 Zurich

### Timber construction

Stuberholz AG  
3054 Schüpfen

### Architects

HLS Architekten  
8004 Zurich

### Photography

Nils Sandmeier and André Maurer