

# Multipurpose hall, Lenk

2015

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As a replacement for an old gymnasium, a modern multi-purpose hall was built in Lenk BE. The roof of the hall and its supporting structure are made of wood. The structure not only has to withstand high snow loads, but also the forces that arise when the sports equipment attached to the structure is used.

## The project

The former gymnasium in Lenk had long since ceased to meet requirements. The municipality in Simmental therefore had a multi-purpose hall built. On the one hand, it serves as a gymnasium for the local schools and sports clubs. In addition, the hall has a large, well-equipped stage that is over 10 meters deep. In addition, the hall also has a kitchen and various adjoining rooms and can thus be used in a very wide variety of ways.

## The construction

The walls and the foundation of the hall were built in solid construction, the window wall and the roof construction are made of wood. The supporting structure of the vaulted roof consists of trusses. The reason for this was that the ventilation ducts could thus be routed through the supporting structure in the middle of the hall. The building is braced by means of the concrete discs that lead up to the roof.

## The challenge

A rather low height was available for the supporting structure. At the same time, however, in Lenk, which is located at an altitude of a good 1000 meters, high snow loads on the roofs must always be expected in winter. The bottom chord of the truss curves slightly upward toward the wall, about 10 to 20 cm. This means that the structure has a greater static height in the middle of the hall and is therefore more resilient. In addition, the supporting structure not only has to bear the snow, but must also be able to absorb the vertical and horizontal forces generated by the use of the sports equipment attached to the trusses. For this purpose, an auxiliary structure with clamped crossbeams and a bracing cross above it was created to stabilize the trusses and to transfer the horizontal forces into the bracing roof slab.



More supporting structure height due to the slightly upward curved bottom chord of the trusses



Sufficient space for the ventilation pipes thanks to the truss construction



View into the 28 meter long hall. Behind the wooden wall is the stage



The stabilizing construction absorbs the forces of the sports equipment

### Construction Data

- Glued laminated timber 116 m<sup>3</sup>
- three-layer boards 975 m<sup>2</sup>
- OSB 515 m<sup>2</sup>

### Services of Timbatec

- SIA Phase 31 Preliminary design
- SIA Phase 32 Construction project
- Statics and construction
- SIA Phase 51 Implementation project
- Site management and site inspections

### Wood builders

Chaletbau Freidig AG  
3775 Link im Simmental

### Timber construction engineers

Timbatec timber construction engineers Switzerland AG  
3012 Berne

### Architect

Archart GmbH  
3613 Seffisburg

### Client

Residents' community Lenk  
3775 Link im Simmental