

# New multi family house out of former barn, Aathal

2022

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An old barn was converted into a new apartment building using wood from the owners' forest. The result is a solid-wood house for four families.

## The Project

A barn in Ottenhausen was replaced by a new building. The existing structure was subject to townscape preservation regulations. Consequently, the dimensions and appearance (material selection) of the barn had to be replicated in the new construction. The client had moon-dried timber harvested from his own forest to build a solid-wood house for his family and three others. Like the barn, the house features multiple entrances. Each apartment has a separate exterior entrance. The ceiling heights within the apartments vary. This, too, is a reference to the barn, where the floor-to-ceiling heights were adapted to the building's purpose. Consequently, the living and dining rooms in the new building are higher than usual.

## Construction Method

The exterior walls are solid wood panels without glue or metal parts (Appenzeller wood). The interior walls are partly timber-frame construction and partly Appenzeller wood as well. The ceilings are exposed solid wood ceilings made of horizontal glued laminated timber. Above the building is a rafter roof constructed from prefabricated elements.

## The Challenge

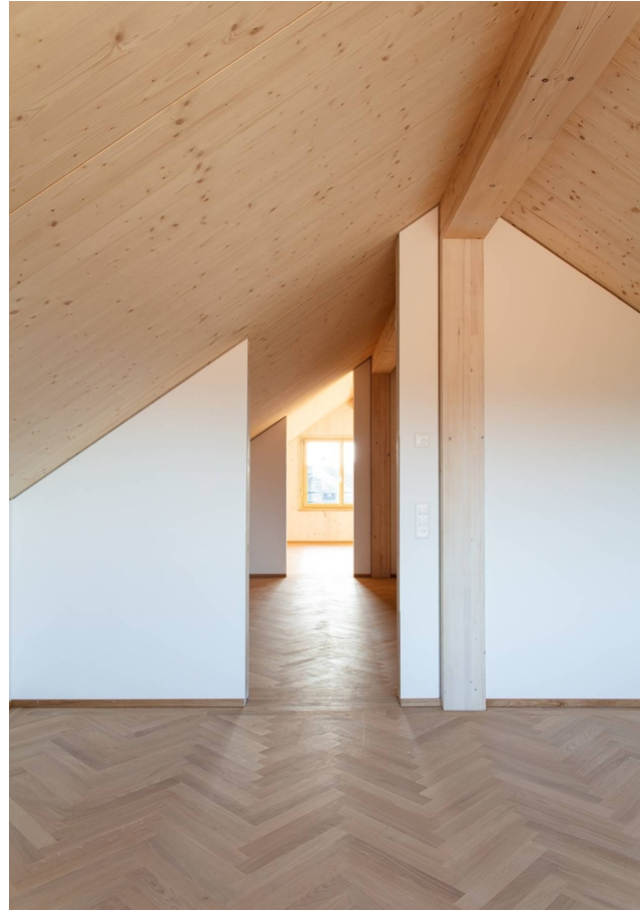
The fire safety distances to the neighboring building are insufficient. Therefore, a facade was constructed using non-combustible slate panels, and the facade of the neighboring building was retrofitted with a non-combustible panel.



Brandschutzfassade zum Nachbarhaus



Innenansicht Wohnzimmer



Innenansicht Dachgeschoss

#### Construction Data

- Solid wood exterior wall (Appenzell wood) 50 m<sup>3</sup>
- Solid wood ceiling (glued laminated timber) 50 m<sup>3</sup>
- Beam ceiling 140 m<sup>2</sup>
- Usable floor area 540 m<sup>2</sup>

#### Construction costs

- BKP 217: 940,000 CHF

#### Services of Timbatec

- SIA Phase 31 Preliminary Design
- SIA Phase 32 Construction Project
- SIA Phase 41 Tendering and Bid Comparison
- SIA Phase 51 Construction design
- SIA Phase 52 Construction
- SIA Phase 53 Commissioning
- Building Physics Design
- Specialized planning: Fire protection
- Structural engineering and design
- Fire Protection Quality Assurance QSS2
- Cost estimation

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