

Wolf and Edelweiss Apartment Buildings, Andermatt

2017



At present, there are no technical standards for shingle facades that establish design principles for fire protection. Fire tests were made possible by the shingle facade that extends over six stories on the Wolf apartment building.

The Project

The two new apartment buildings, Wolf and Edelweiss, are located directly on Andermatt's new village square. They were developed as a joint venture between Schmid Immobilien AG in Ebikon and Sawiris' Andermatt Swiss Alps AG. The Edelweiss building features 15 apartments ranging from 2.5 to 4.5 rooms and two spacious duplexes under the roof. The Wolf building comprises 23 residential units: four duplex apartments on the top floor, and units ranging from 2.5 to 4.5 rooms on the lower floors. Since state-of-the-art documentation on shingle facades is lacking, the measures must be derived from proven construction principles of similar wooden facades as well as from past experiences, such as fires in shingled buildings or fire tests.

The Construction Method

Shingle facades are particularly aesthetically pleasing when they envelop the entire building continuously, without being interrupted by aprons or fire barriers. The question then was whether a fire would spread too quickly or «self-climb» on the exterior. The spread of flames depends on the dimensions and layering of the shingles as well as their deformation behavior. The following principles had to be observed: a perforated facade with windows arranged one above the other, no interior corners, standard distances from neighboring buildings, and non-combustible cladding on the ground floor.



Heavy-duty roofs: Timbatec designed the roof structures



Wolf Apartment Building: Covered with wood shingles from top to bottom



Close-up: Part of the larch wood facade



A fire test of the shingle facade

Construction Data

- Roof area of the Wolf House: 760 m²
- Glulam used for the roof of House Wolf: 78 m³
- Wood used for the roof of House Wolf: 130 m³
- Shingled facade of the Wolf House: 1,100 m²
- Roof area of the Edelweiss house: 600 m²
- Glulam used for the Edelweiss roof: 23 m³
- Wood roof of Edelweiss House: 100 m³

Services of Timbatec

- SIA Phase 31 Preliminary design
- SIA Phase 32 Construction project
- SIA Phase 41 Tendering and comparison of offers
- SIA Phase 51 Implementation project
- Fire protection design
- Technical construction management and site inspections
- Structural analysis and design
- Cost estimation
- Conducting fire tests

Client

Saschi Immobilien AG, 6490 Andermatt

Architect

Müller Sigrist, 8004 Zurich

General contractor

Schmid Generalunternehmung AG, 6030 Ebikon

Carpenter, shingle facade of Haus Wolf

Otto Schuler Holzbau GmbH, 6467 Schattdorf

Timber construction, roof structure:

Holzbau Bucher AG, 6064 Kerns

Timber construction engineers

Timbatec Holzbauingenieure (Schweiz) AG, 8005 Zurich