



SOLARCHITECTURE
sun as a building material



Kita Wundernasa



Address

Lowinerstrasse 21, 3911 Ried-Brig, Switzerland



Location

46°19'02" N | 8°01'08" E



Altitude

925 MAMSL

with the support of

SWISSOLAR 



SUPSI

ETH zürich



A solar roof on a new day care centre






The building capitalizes on the steep slope of the land to be set up on two levels. The lower level is oriented towards the street with the public entrance and the school restaurant. The upper level, with the children's living room and the private outdoor space, faces the pastures. Spreading the school spaces over two floors is also an efficient way to meet the safety requirements of this type of educational facility.

On the western facade, with its playful geometry, two large windows stand out to underline the visual and spatial link between the kindergarten and the surrounding landscape, the Swiss Alps. The eastern facade consists of a bay window that runs the entire length of the building, providing an easy and natural connection between the living rooms and the playground. The single-pitch roof is covered with seamless photovoltaic modules fully integrated into the volume.



The building functions as a pivot, resolving both the street corner and the direct relationship with the sports centre.

Energy

			Energy production
Active solar surface	150 m ²	-	kWh
Active solar surface ratio	>75%	-	No information currently available
Peak power	38.6 kWp	-	
Building skin application	Solar tiles	-	Self-consumption
			 0%
			
Storage	-	-	



Building characteristics

Building typology

School

Construction typology

New

Year of construction

2019-2020

Energy reference surface

445 m²

Energy Index

18 kWh/m²yr (heating and electricity)

Energy labelling

-



The sheltered porch connects the indoor spaces of the kindergarten with the private playground

BIPV module

Product

Sunskin Roof Type L

Manufacturer

Swisspearl Schweiz AG

Cell technology

Monocrystalline

Front glass type/customization

ESD (solar tempered glass)

Cell colour

Black

Dimensions

1300x907mm

Nominal power

195 Wp

Specific power

165 Wp/m²

Weight

20 kg

Specific weight

17 kg/m²



Building skin

Roof

Application

Solar tiles integrated in a pitched roof

Description

Sloped concrete roof insulated with 20 cm of mineral wool

U value

n/a

Fastening system

Continuous fixing system (wooden battens)

Other

-

Facade

Application

None

Description

Concrete walls insulated with 16 cm of mineral wool.

U value

n/a

Fastening system

-

Other

-

Glass surface

Application

Windows

Description

Triple glazing with wooden frame.

U value

n/a

g value

n/a

Other

-



The surrounding sloping terrain enables to give dynamism to both the indoor and outdoor spaces



Costs

Total cost of the building

2,000,000 CHF

Price per m³

n/a



In contrast to the exterior, the interior is made entirely of wood, which provides comfort, warmth, and cosiness for both children and other users.

Parties involved

Owner

Municipality of Ried-Brig

Architect

COMAMALA ISMAIL

Photovoltaic Installer

Ewald Gatteln AG

Photo

Adrien Barakat / DMK
photographie

Awards & recognitions

Awards

-

Publications

-



Rear view of the building. Photo credits: Adrien Barakat / DMK photographie.