



SOLARCHITECTURE
sun as a building material



HQ Rhienergie AG



Address

Energieweg 1, 7015 Tamins, Switzerland



Location

46°49'41.5" N | 9°24'38.4" E



Altitude

621 MAMSL

with the support of

SWISSOLAR 



SUPSI

ETH zürich



An interdisciplinary project

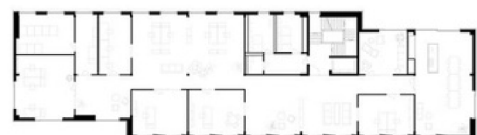
The new headquarters of Rhienergie AG at Kantonsstrasse was built in 2019-2020 in Tamins. It houses offices, warehouses, workshops and garages. With its simple, modern lines, the use of wood cladding and integrated PV plans on both roof and facade, allow the building to blend in well with its environment.

The photovoltaic modules are fully integrated into the facade through custom-made photovoltaic modules for creative building integration by Ertex Solartechnik GmbH and also into the roof thanks to Megasol InDach solar tiles and represent Rhienergie AG's interest in innovative energy concepts.

Thanks to the intensive cooperation between the architects, the client and all the planners and specialists involved, both the preliminary design and the construction project phases were able to be led to the required target in terms of cost, quality, project design and detailing.







View of the east facade of the building.



Plan of the ground floor.

Energy

		
Active solar surface	371 m ²	96 m ²
Active solar surface ratio	>75%	25-50 %
Peak power	66.3 kWp	8.8 kWp
Building skin application	Solar tiles	Cold facade
		
Storage	-	-

Energy production

87.050 kWh

Source: Solaragentur, Schweizer Solarpreis 2021

Self-consumption



Self-efficiency





Building characteristics

Building typology

Administrative

Construction typology

New

Year of construction

2019-2020

Energy reference surface

1.612 m²

Energy Index

62,4 kWh/m²yr (heating and electricity)

Energy labelling

-



Photovoltaic modules are used as decorative elements.

BIPV module

Product

Roof: Megasol Indach module
Facade: Custom-made ertex VSG Design modules

Manufacturer

Roof: Megasol Energie AG
Facade: ertex solartechnik GmbH

Cell technology

Monocrystalline

Front glass type/customization

Screen-printed glass. The back pane is beige, the front side is printed with a distinctive line pattern.

Dimensions

Roof: 221x Megasol Indach modules
Facade: 22x VSG ESG 5/6 sized 1460x1480mm, 11x VSG ESG 5/6 sized 1480x3000mm

Power

Roof: 300 Wp
Facade: 424 Wp for the 1480x3000mm modules

Specific power

Facade: 95 Wp/m²

Weight

Facade: 128 kg for the 1480x3000mm modules

Specific weight

Facade: 29 kg/m²



Building skin

Roof

Application

Solar tiles integrated in a pitched roof

Description

Wooden sloped roof structure on concrete beams with 32 cm insulation

U value

0.16 W/m²K

Fastening system

Modules are laid similarly to conventional roof tiles

Other

The two pitches have an inclination of respectively 30 and 42 degrees towards the south

Facade

Application

PV cladding integrated in a cold facade

Description

Wooden frame structure with 24 cm insulation

U value

0.17 W/m²K

Fastening system

Continuous fixing system (vertical wooden battens)

Other

-

Glass surface

Application

Windows

Description

Triple glazing with wood-metal frame

U value

0.75 W/m²K

g value

n/a

Other

-



Installation of photovoltaic modules.



Costs

Total cost of the building

10.2 mio CHF (BKP 1-9)

Price per m³

840 CHF/m³ (BKP 2)

Parties involved

Owner

Rhienergie AG

Architect

Büro Krucher
Architekten AG

Site management

Fanzug AG

Photovoltaic installer - facade

Meli AG Gebäudehüllen

Photovoltaic installer - roof

Hassler Energia
Alternativa AG

Photo

Georg Aerni

Awards & recognitions

Awards

Swiss Solar Prize Diploma
2021 – Category B: New
buildings

Publications

Hochparterre Solaris#5 –
Faltwerk und Kraftwerk
by Axel Simon – January
2021 (in DE, FR, IT)



Main facade.