



SOLARCHITECTURE
sun as a building material



Two houses in Chigny



Address

Chemin de Vuideborse 1, 1034 Chigny, Switzerland



Location

46°31'11" N | 6°28'31" E



Altitude

445 MAMSL

with the support of

SWISSOLAR 



SUPSI

ETH zürich



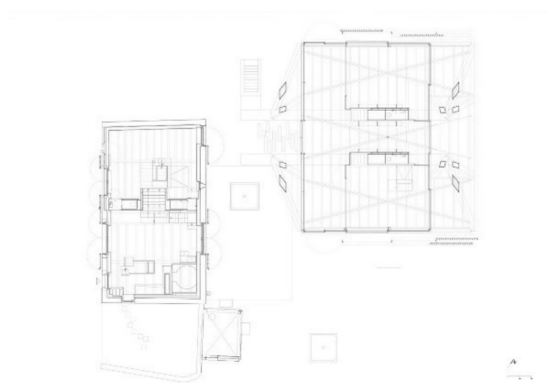
Sustainable architecture in a rural contest

The client requested a design which fostered the coexistence of shared and individual living spaces to provide an opportunity to live independently within a community of friends and their families. In response to the brief, the refurbishment of one of the 19th-century buildings, formerly a press-house, and the design of a new house was proposed.

The project follows the prevailing characteristics of this rural site, where solitary volumes in conglomerates provide space and shelter for everyday activities. By adding a house and following the typology of a barn, a further gravitational mass has been added to the interplay of volumes among the trees. The garden remains the locus of identity, where the refurbished Pressoir (press-house) and the new Grange (barn) articulate an interstitial court in the uninterrupted landscape. The layout of each house is structured around a generous-sized room that serves as a social hub for the people living in both houses. Thus, the two houses can be inhabited as one common place. Likewise, each house can be individually occupied, as both Grange and Pressoir are suited as work-and- living environments with a plan that plays on interstitial thresholds of voids, doors, curtains and sliding panels that gradually negotiate between public and private spheres.







The two buildings orient themselves towards the Lemanic landscape, opening views onto the vineyards and the surrounding orchard.



Ground floor of the refurbished Pressoir (left) and of the new Grange (right).

Energy

			Energy production
Active solar surface	227m ²	-	15200
Active solar surface ratio	>75%	-	kWh/yr
Peak power	21.9 kWp	-	Source: Hochparterre AG - Solaris #2
Building skin application	Solar tiles	-	Self-consumption
			0%
Storage	-	-	



Building characteristics



Building typology

Residential

Construction type

New and
Refurbishment

Year of construction

2017

Energy reference surface

590 m²

Energy Index

67.2 kWh/m²yr
(heating and warm water)

Energy labelling

-

Through the use of materials, the renovated house holds on to its heritage.

BIPV module

Product

Custom made

Manufacturer

Antec solar GmbH

Cell technology

Mono-crystalline

Front glass type/customization

Bronze-coloured Kromatix solar glass

Dimensions

250x1000mm; 250x660mm; 250x330mm

Specific power

n/a

Specific weight

n/a



Building skin

Roof	Facade	Glass surface
Application Steel exoskeleton, rafter roof mounted on steel substructure, wood-steel hybrid intermediate ceiling.	Stone walls (refurbished Pressoir) and framed wooden structure (new Grange)	Application Windows
Description Pitched steel structured roof insulated with mineral wool panels.	Description The stone walls of the renovated building are internally insulated while the building is completely composed of large wooden framed windows.	Description Triple glazing with wooden frame
U value n/a	U value n/a	U value n/a
Fastening system Flat rail mounting.	Fastening system -	g value n/a
Other -	Other -	Other -



The perimeter surface of the building is largely transparent.



The press-house is fully refurbished while maintaining its original structure, walls and carpentry.



Costs

Total cost of the building

3,100,000 CHF (for both houses incl. photovoltaic installation)

Price per m³

1,225 CHF/m³ (BKP2)



The modules between the hollow box sections were arranged rhythmically and sloped so that their edge, rather than the shiny surface, is visible. This gives the roof a lively expression, but at the same time harmonises with the tiles of the neighbouring houses.

Parties involved

Owner

Forel/Schärmli

Design Architects

Dieter Die

Photovoltaic consultant

Esquisse solaire Sàrl

Photovoltaic installer

Ciel Photovoltaïque

Photovoltaic consultant

Schnetzer Puskas

Steel construction

Stahl- & Traumfabrik AG

Photo

Adrien Comte and Mikael Blomfelt, Joël Tettamanti

Awards & recognitions

Awards

-

Publications

Hochparterre Solaris#2 – September 2018 – Fun palace – Axel Simon (in DE, FR, IT)

Online magazine swiss-architects.com – 11 April 2018 – Zwei Häuser in Chigny, Für eine grosse Gemeinschaft – dieterdietz.org (only in DE)

Espazium 14 May 2020 – Skelett im Weinberg – March Frochau (only in DE)



External view of the facade