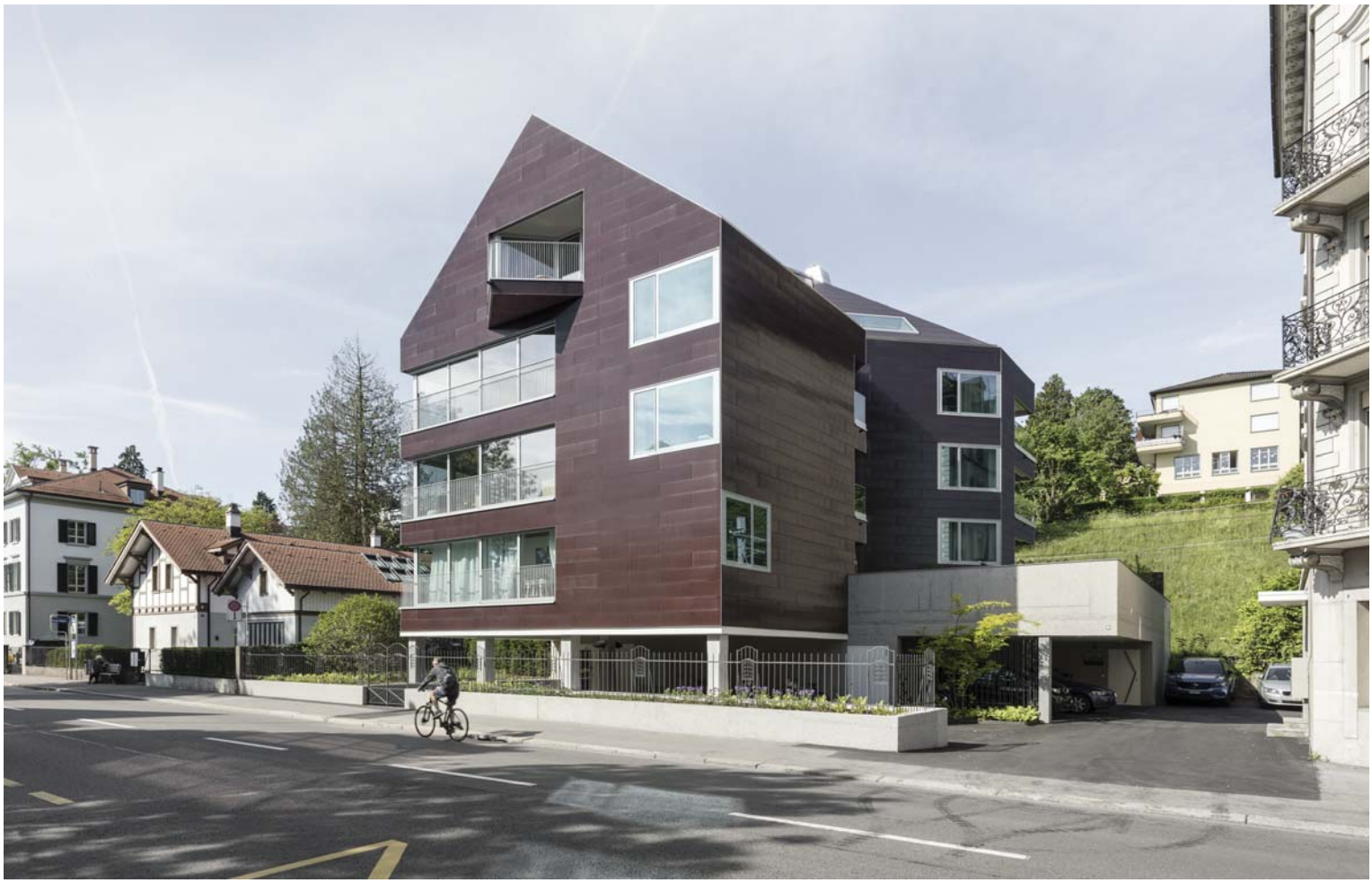
SOLARCHITECTURE
building solutions



Solaris 416

Address
Seestrasse 416, 8002 Zurich, Switzerland

Location
47°20’27” N | 8°32’08” E

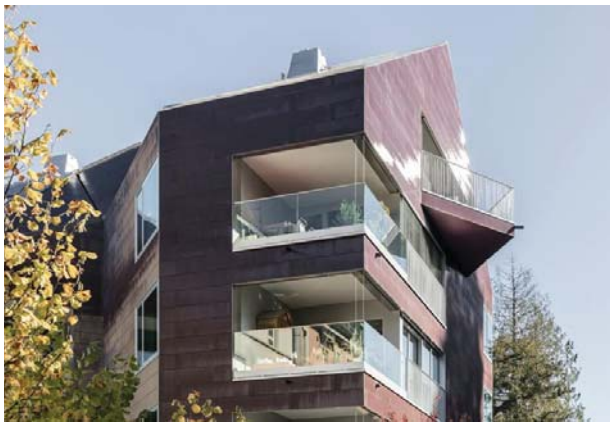
Altitude
419 MAMSL

With the support of

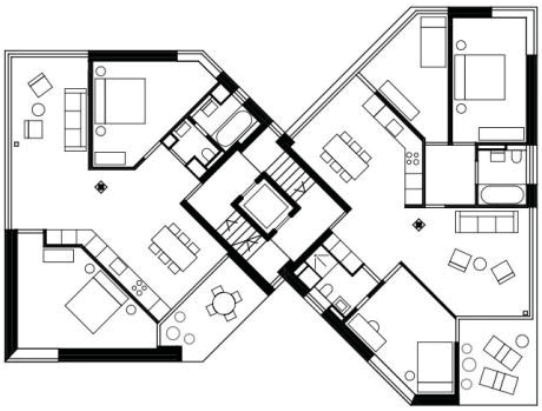
swissenergy SWISSOLAR SUPSI ETH zürich

The invisible BIPV

The whole building envelope has a homogeneous appearance thanks to glass elements used as cladding and tiles. Both the facade and the roof are fully covered with photovoltaic elements where the front layer is a laser printed brown glass which hides mono-crystalline silicon cells. The PV cells hidden by the front glass which reduce the electricity production by about 39%. These modules have been specifically developed for this project.



Building view.



Plan of the second.

Energy

Active solar surface	200 m²	400 m²
Active solar surface ratio	<75%	<75%
Peak power	25 kWp	46 kWp
Building skin application	Solar tiles	Cold facade
Storage	Electrical battery	10kWh

Energy production

31,832

kWh

Source: Solaragentur, Solar Preis Publikation 2018

Self-consumption

47%

Building characteristics

Building typology
Residential

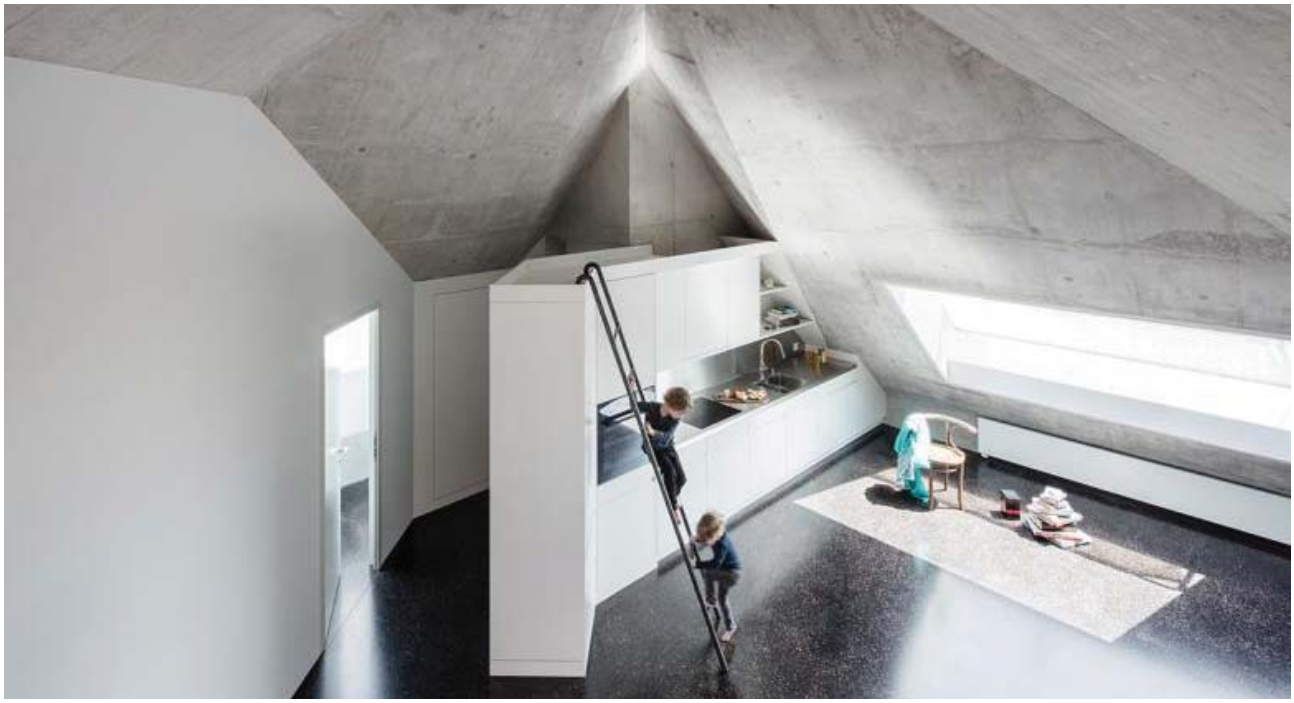
Construction type
New

Year of construction
2017

Energy reference surface
815 m²

Energy index
83 kWh/m²a (heating and electricity)

Energy labelling
Minergie-P



Interior view of the penthouse.

BIPV module

Product
VSG Laminated safety glass module

Manufacturer
Ertex solartechnik GmbH

Cell technology
Mono-crystalline

Front glass type/customization
Digital ceramic print on glass/glass BIPV modules

Dimensions
Custom made

Specific power
About 116 Wp/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
0.13 W/m²K

Fastening system
Continuous fixing system (aluminium tracks)

Other
The open joints between the elements are 6 mm narrow and there is no frame

Facade

Application
PV cladding integrated in a cold facade

Description
Concrete walls insulated with 20 cm of mineral wool

U value
0.15 W/m²K

Fastening system
Continuous fixing system (aluminium tracks)

Other
The open joints between the elements are 6 mm narrow and there is no frame

Glass surface

Application
Windows and skylights

Description
Triple glazing with wooden frame

U value
0.80 W/m²K

Installation of photovoltaic modules.

Costs

Total cost of the building
6,600,000 CHF

Price per m³
1,250/m³ CHF

Parties involved

Owner
Hbf futur AG

Architect
Huggenbergerfries Architekten AG

Research partner
Hochschule Luzern

Photovoltaic
Installer Suntechnics Fabrisolar; Scherrer Metec AG

Photovoltaic
consultant Sundesign GmbH

Facade installer
GFT Fassaden AG

Photo
Beat Bühler and Huggenbergerfries Architekten AG

Awards & recognitions

Schweizer Solarpreis 2018

Innovation Award for building-integrated photovoltaics

Publications

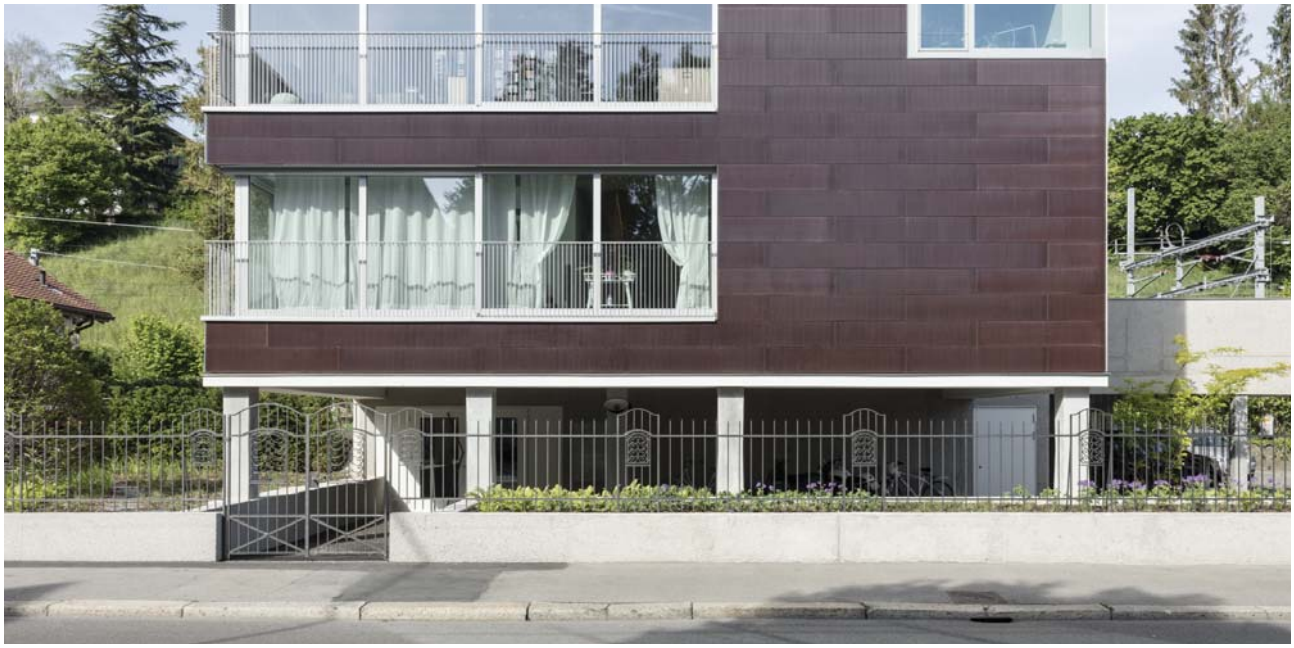
Solaris #01, Ein Silberstreifen am Horizont, Heftreihe von Hochparterre und EnergieSchweiz, 2018

Ein Haus, keine Maschine. Baumeister 07.2018 (only in DE)

Wasser, Licht und Raumfigur.

Modulor 05.2018 (only in DE)

Seismograf des Himmels. tec21 46/47.2017 (only in DE)



Side view of the building.

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