SOLARCHITECTURE
sun as a building material

Project by Kämpfen Zinke + Partner AG in Altstetten

Address
Zwyssigstrasse 7+9, 8048 Zurich – Altstetten, Switzerland

Location
47°23'03" N | 8°29'08" E

Altitude
419 MAMSL

with the support of

SWISSOLAR swissenergy SUPSI ETH zürich

A valuable balcony railing

The two apartment buildings consisting of 28 flats are fanned out towards the south. The windows provide different views and allow passive solar heat to radiate in. Four units of different layout are arranged on each floor. The apartments are oriented around corners and are thus lit from several sides. Individual, slightly slanted walls create spatial tension. From the basement ceiling upwards, the buildings are made entirely of wood; the solid wood ceilings are visible, while the walls are plastered white. An angled balcony, clad with glittering golden multi-crystalline photovoltaic modules, encloses the buildings on three sides, making them very distinctive and supplying the house with electrical power. Pellet heating, supported by solar collectors, provides the heating energy. The central ventilation system is controlled by CO2 sensors located inside each unit.
A versatile meeting space stretches out between the buildings. Valuable shrub borders complement the play areas and provide a habitat for many small creatures. Nesting boxes are embedded in the facades to accommodate swifts and bats.

Ground floor

View from the balcony

Energy

Active solar surface	83m² (STH)	n/a
Active solar surface ratio	<25%	>75%
Peak power	n/a	56 kWp
Building skin application	Flat roof	Railing
Storage	n/a	n/a

Energy production

25000

kWh

Source: Nachhaltig Bauen, 3/2018

Self-consumption

Not available **0%**

Building characteristics

Golden PV multi-cristalline modules are well matched with a wooden cladding.

Building typology
Residential

Construction type
New

Year of construction
2017

Energy reference surface
1835 m² (Zwyssigstrasse 7) and 1937 m² (Zwyssigstrasse 9)

Energy Index
n/a

Energy labelling
Minergie-P-ECO

BIPV module

Product
n/a

Manufacturer
n/a

Cell technology
Multi-crystalline

Cell colour
Gold-green

Front glass type/customization
Glass/glass BIPV modules

Dimensions
Custom made

Specific power
n/a

Specific weight
n/a

Building skin

Roof

Application
Solar thermal collectors are installed on both roofs

Description
Hollow box elements with 240 mm of mineral wool

U value
n/a

Fastening system
-

Other
-

Facade

Application
PV modules integrated into the balcony railing

Description
Hollow box elements with 240 mm of mineral wool

U value
n/a

Fastening system
-

Other
-

Glass surface

Application
Windows

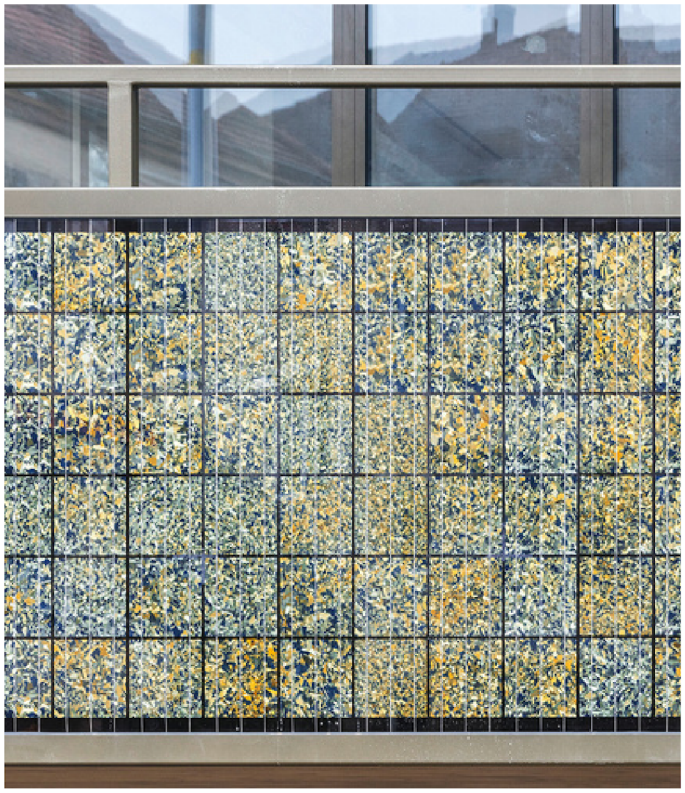
Description
Triple glazing with wood-metal frame

U value
n/a

g value
n/a

Other
-

The apartments are oriented around corners and are thus lit from several sides.



Golden PV multi-cristalline modules are integrated into the balcony railing.

Costs

Total cost of the building
n/a

Price per m³
n/a

The balconies run along the entire south, east and west sides and twinkle in the sunlight.

Parties involved

Owner
LIVEG Immobilien GmbH

Architects
Kämpfen Zinke + Partner AG

HVAC engineer
Hässig Sustech GmbH

Photovoltaic Installer
Gasser energy

Facade installer
1a hunkeler holzbau AG

Photo
Kämpfen Zinke + Partner AG

Awards & recognitions

Awards
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Publications
– Reflektierende Energieeffizienz. Nachhaltig bauen 3/2018 by Anita Bucher (only in DE)
– Architektur: Mit Gold verzierte Schoggibröckli in Altstetten. ee News 24.08.2018 by Anita Niederhäusern (only in DE)

North facade of the two buildings on Zwyssigstrasse.