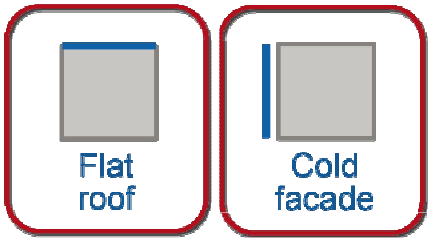
University of Applied Sciences and Arts of Southern Switzerland
Department of Environment Constructions and Design
Institute of Applied Sustainability to the Built Environment

SUPSI

Swiss BiPV Competence Centre



Hofberg 6/7

Wil, Canton St. Gallen (CH)

Building Details

CONTACTS	Name	Website (or e-mail)
Owner	Giuseppe Fent - Grubstrasse 13, Im Hosenruck 9515	giuseppe.fent@fent-solar.com
Architect	Fent Solare Architektur (Giuseppe Fent)	www.fent-solar.com
Energy Consultant	Lucido Solar AG	www.lucido-solar.com
PV Installer	Stromaufwärts-Photovoltaik Ertex Solartechnik GmbH	www.stromaufwaerts.at www.ertex-solar.at

BUILDING				
Completion year	2011	Building	2011	Plant
Category	New	Renovation	Enlargement	Other
Typology	Residential	Administration	Industrial	Sport
	Agricultural	Urban	Historical	Other
Building Energy Performance		**kWh/m² y**	-	

Description

The residential 7-storey building (4 of which aboveground) is located near the historic centre of Will, in Canton St. Gallen, on a very steep land in substitution of an existing single house. It is built according to Minergie-P standard and received the Norman Foster Award in 2012 for Plus Energy Building. Thanks to high-efficiency monocrystalline modules installed both on roof and on south façade, in correspondence of the floor bands, the building produces 186% of energy surplus, able to charge 16 electric cars. The solar architecture of façade allows operating only by interaction of element geometry with the seasonal position of the sun allowing summer comfort without additional energy use or mechanical control. All components used for façade are recyclable. There is also a heat pump system with two geothermal probes at 211 m depth that, at 14.5°C of temperature, produces enough heat for heating and hot water.

Aknowledgments Norman Foster Solar Award 2012 - Plus Energy Building

BiPV Details

LOCATION OF PLANT

Roof	Flat roof	Sloped	Curved	
Façade	Cladding	Balcony	Greenhouse	Curved
Glass	Façade	Roof	Solar shading	Canopy
Orientation	South	West	East	North
BiPV System	In Roof Solar Tiles (PV modules) - aluminium substructure; Façade opaque cladding (integrated in to Lucido®-Fassadensystems).			

ARCHITECTURAL EVALUATION

Color	Black
Transparency	opaque
Frame	Frameless

COSTUMIZATION LANGUAGE AT COMPONENT SCALE

PV CELL **MODULE LAYERING** **MODULE FEATURES** **DUMMIES**

DESCRIPTION Modules without PV are installed on floor bands of other façade.

SPECIFICATION

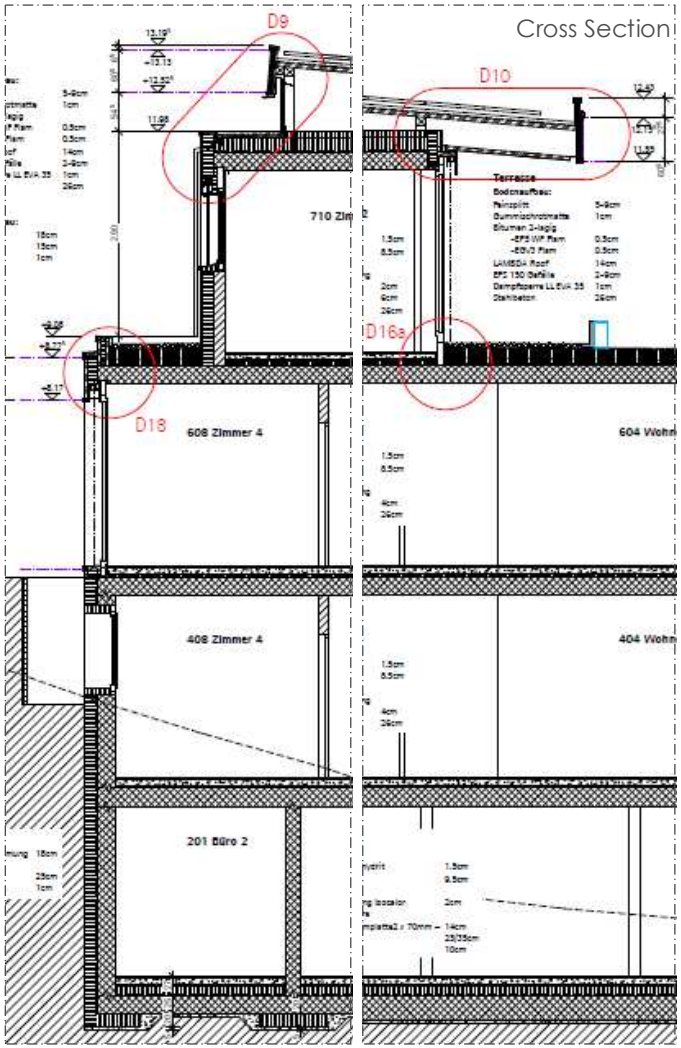
Photovoltaic	Monocrystalline	Multicrystalline	Thin Film	
PV Module	**Cells**	72 SunPower all-back contact monocrystalline (Roof)		
	Module	Sunpower SPR 238E-WHT-D (Roof); Sunpower Sondemodule (façade)		
Power	**kWp**	42.84 (roof); 8 (parapet)		
Size	**m²**	294 (roof); 51(façade)		
Energy production	**kWh/year**	49650 (roof); 5650 (façade)		
Cost	**CHF**	PV: 227`000 (Roof); 67`000 (façade)		

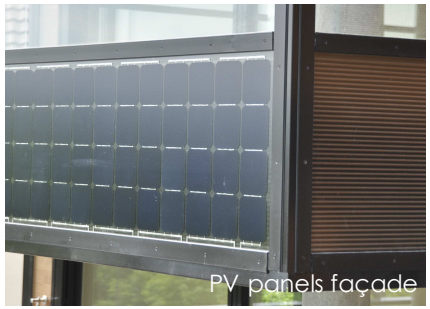
BiPV Details


PV panels roof

BUILDING SYSTEM INFORMATION

Trasparency	OPAQUE	TRASPARENT	G Value
Constructive system	MASSIVE BUILDING		LIGHTWEIGHT
Ventilation system	NOT VENTILATED	MICROVENTILATED	NATURAL VENTILATED
U value (W/m² K)	-		




PV panels façade