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

Cold facade

Louvres Balcony

Renovation of Swiss House of Beauty

Suhr, Kanton Aargau (CH)

Building Details

CONTACTS	Name	Website (or e-mail)
Owner	Samuel Wehrli ,Dobi-Inter SA	www.dobi.ch
Architect	-	
Energy Consultant	Energy Optimizer GmbH	www.energyoptimizer.ch
PV Installer	MGT-esys GmbH	www.mgt-esys.at

BUILDING

Completion year	1971 Building		2012 Plant	
Category	New	Renovation	Enlargement	Other
Typology	Residential	Administration	Industrial	Sport
	Agricultural	Urban	Historical	Other
Building Energy Performance		**kWh/m² y**	-	

Description

The requalification of the building in Suhr, site of a Swiss retailer of beauty products, was the main goal to reach high standards of energy performance. The old windows have been replaced with a wood-metal system including a hi-insulating glass (U = 0.7 W/m2K) according to the Minergie standard, with a low value of the solar factor (g = 22%) and a light transmission (LT) of 25%. The sub-window insulated glass integrates photovoltaics panels. The PV system is also installed in the bands between floors, integrating laminated glass. The 100sqm area of PV provides an output of about 10,000 kWh/y, covering about the 10% of the annual demand.
Attention was placed to the shading (due to the existing pilasters that are possible obstruction for the façade) installing a bypass system that put out the only single shaded cells .

Aknowledgments -

SOURCE: *www.mgt-esys.at; www.energyoptimizer.ch*

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 Constructive System	Facade opaque cladding ; Windows.			

ARCHITECTURAL EVALUATION

Color	Black
Transparency	Opaque(facade); 15% (window)
Frame	Framless (glass-glass)

COSTUMIZATION LANGUAGE AT COMPONENT SCALE

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

DESCRIPTION The stringing of the pv cells was carried out vertically to follow the projection of the external columns. It ensures a maximum efficiency, even following shading, due to the switching of the two outer rows of cells pv to its blocking diode.

SPECIFICATION

Photovoltaic	Monocrystalline	Multicrystalline	Thin Film
PV Module	**Cells**		
	Module	MGT-esys PV-ISO, 0,7 W/m² MGT-e railing sys PV	
Power	**kWp**	16.8	
Size	**m²**	100	
Energy production	**kWh/year**	10000	
Cost	**€/m²**		