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

UNIFIMM Tower

Bologna (I)

Building Details

CONTACTS	Name	Website (or e-mail)
Owner	UNIFIMM srl (Unipol)	www.unipol.it
Architect	Open Project S.r.l.	www.openproject.it
Energy Consultant	Stain Engineering s.r.l.	www.stain.tn.it
PV Installer	FAR SYSTEMS S.r.l.	www.farsystems.it

BUILDING				
Completion year	2011 Building		2011 PV Plant	
Category	New	Renovation	Enlargement	Other
Typology	Residential	Administration	Industrial	Sport
	Agricultural	Urban	Historical	Other

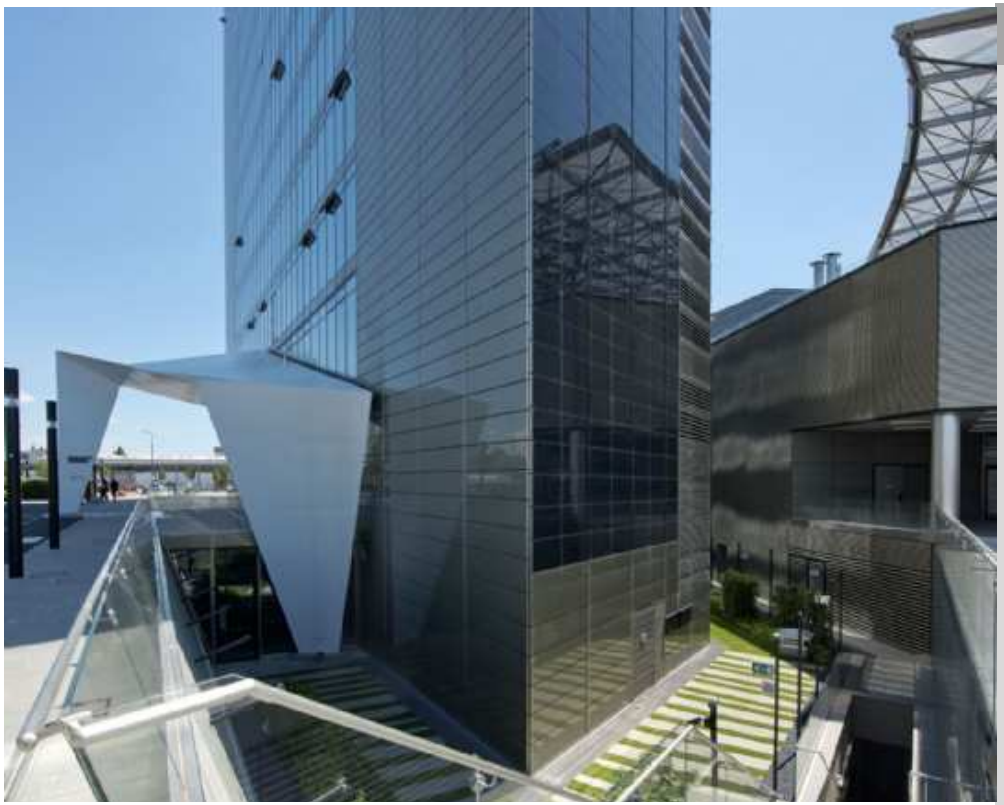
Building Energy Performance **kWh/m² y** -

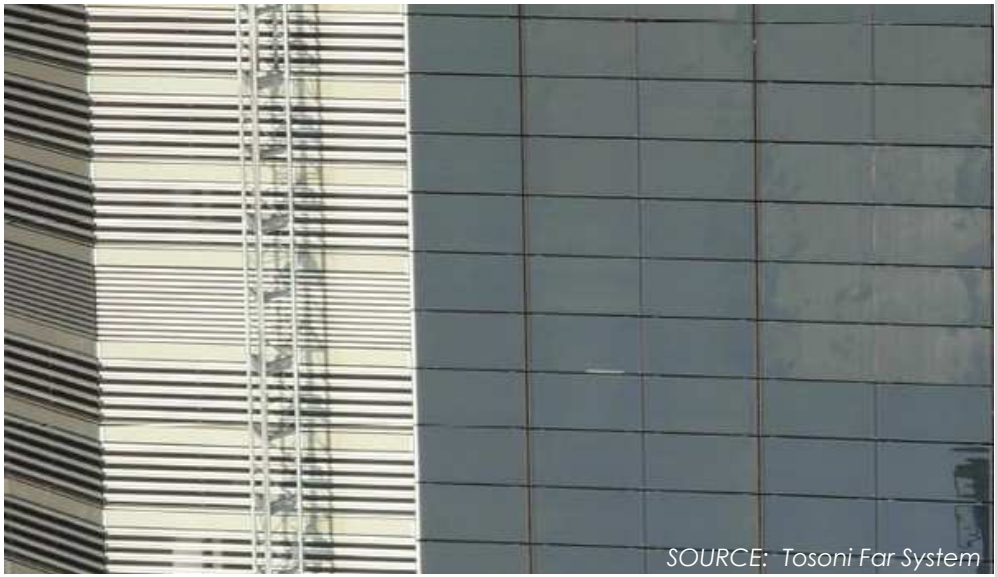
SOURCE: Open Project

Description

The Unipol office tower, built in the Italian city of Bologna, is characterized by a set of interesting design choices, among which the certification according to the protocol LEED 2.2 for New Constructions. A study on the building orientation for reducing the overheating in summer, favoring the winter sunshine and giving the best thermo-hygrometric condition all the year, has been done. The architect designed an energy-efficient double skin envelope with horizontal interspaces and with adjustable and automated slats. The external skin of facades is a composition of various elements, considering the different solar exposition during all the year. The south-west façade, mostly exposed to direct sunlight during summer, is an opaque ventilated façade with integrated PV system, aluminum panels and air vents for the technical rooms. The PV plants (including the plant on the roof) have a total peak power of about 100 kWp. During the construction phase the recycling of materials was promoted (44% of material used comes from the region) reducing the use of new materials and the emissions for transport.

Aknowledgments LEED GOLD 2013 - Protocol LEED for New Construction v2.2"





SOURCE: Tosoni Far System

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	Façade opaque cladding			

ARCHITECTURAL EVALUATION

Color	Black
Transparency	opaque
Frame	Frameless

COSTUMIZATION LANGUAGE AT COMPONENT SCALE

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

DESCRIPTION

SPECIFICATION

Photovoltaic	Monocrystalline	Multicrystalline	Thin Film
PV Module	**Cells**	sc-SI	
	Module	n° 5104 crystalline silicon modules (façade)	
Power	**kWp**	53 (façade); 40 (roof)	
Size	**m²**	495 (façade);	
Energy production	**kWh/year**	36503	
Cost	**€/m²**	-	

BiPV Details

BUILDING SYSTEM INFORMATION

Trasparency	OPAQUE	TRASPARENT	G Value
Constructive system	MASSIVE BUILDING		LIGHTWEIGHT
Ventilation system	NOT VENTILATED	MICROVENTILATED	NATURAL VENTILATED
U value (W/m²K)