



Source: René Schmid

Umwelt Arena

Spreitenbach, Kanton Aargau (CH)

Building Details

CONTACTS

	Name	Website (or e-mail)
Owner	Umwelt Arena AG	www.umweltarena.ch
Architect	René Schmid Architekten AG	www.reneschmid.ch
Energy Consultant	BE Netz AG	www.benetz.ch
PV Installer	BE Netz AG	www.benetz.ch

BUILDING

Completion year	2012 Building	2012 PV Plant		
Category	New	Renovation	Enlargement	Other
Typology	Residential	Administration	Industrial	Sport
	Agricultural	Urban	Historical	Other
Building Energy Performance	kWh/m ² y		-	

Description

The Umwelt Arena in Spreitenbach (AG) is an experimental expositive centre, entirely focused on environmental issues and sustainability and it is the first Swiss competence ecology centre with the widest integrated PV plant. Building components have different functions. The concrete structure, besides to work as bearing system, is a thermal accumulation and a finishing system. The coverage, realized by prefabricated wooden sandwich elements and good thermal insulation, produces a relevant quantity of energy, twice of energy demand. The roof, with modern architectonic design arranged like the scales of a reptile, has an octagonal plant with 33 different surfaces, differently oriented, and with a slope from 6° to 62°. Almost stretches down to the ground, in the manner of a dome, is completely covered with PV modules. Other energy production systems are thermal solar panels and a kompogas process of food waste. The building, with 203% of energy production, CO₂ null balance, is a great example in which architecture, aesthetic and ecology are perfectly merged.

Acknowledgments European Solar Prize 2012; Norman Foster Solar Award 2012; Minergie-P;



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)			

ARCHITECTURAL EVALUATION

Color	Black
Transparency	opaque
Frame	Frameless

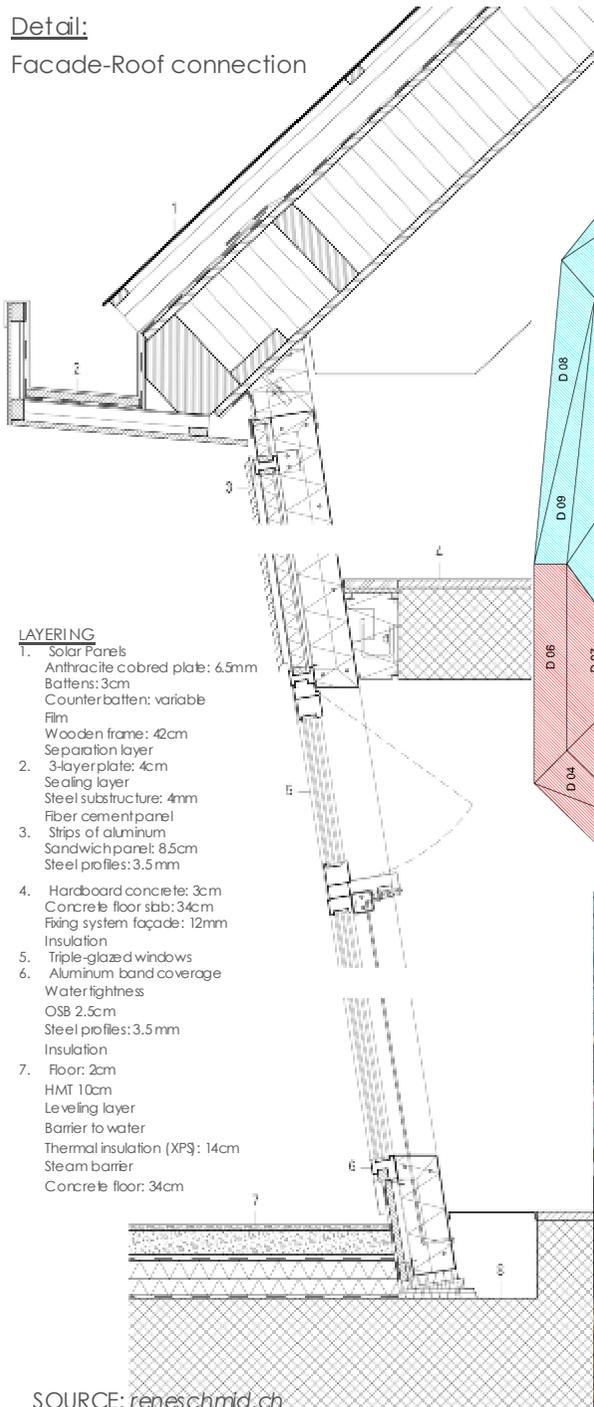
COSTUMIZATION LANGUAGE AT COMPONENT SCALE

PV CELL	MODULE LAYERING	MODULE FEATURES	DUMMIES
DESCRIPTION	3'663 standard modules and 1'644 special format modules		

SPECIFICATION

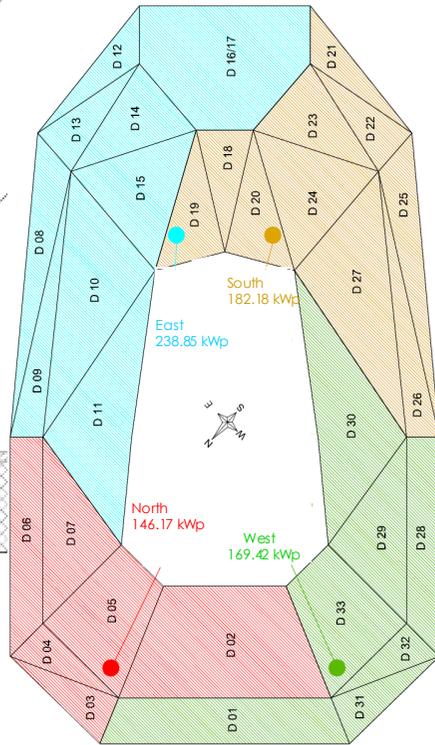
Photovoltaic	Monocrystalline	Multicrystalline	Thin Film
PV Module	Cells	Monocrystalline silicon	
	Module	3S MegaSlate® II 160 Wp	
Power	kWp	146.17(N); 238.85 (E); 182.18(S); 169.42(W); Total: 736.62	
Size	m²	1041(N); 1736(E); 1345(S); 1210(W); Total: 5333.50	
Energy production	kWh/year	540 000	
Cost	€/m²	-	

Detail:
Facade-Roof connection



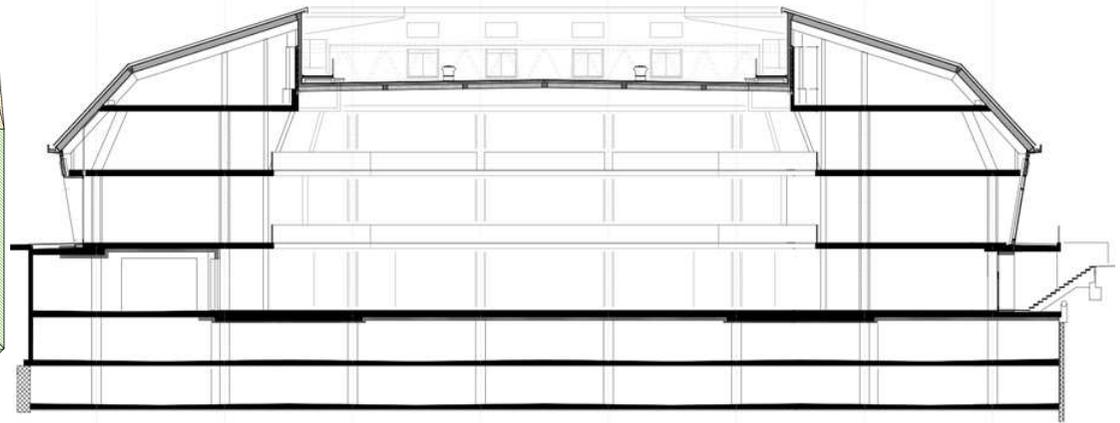
Roof plant

Source: BE Netz AG



BUILDING SYSTEM INFORMATION				
Transparency	OPAQUE	TRASPARENT	G Value	
Constructive system	MASSIVE BUILDING			LIGHTWEIGHT
Ventilation system	NOT VENTILATED	MICROVENTILATED	NATURAL VENTILATED	
U value (W/m²K)	0.16 (Facade)	0.14 (Roof)	0.17 (floor)	0.60 LT: 60% (Windows)

Transverse section



SOURCE: reneschmid.ch

SOURCE: www.umweltarena.ch