

# 0110 2013

## PHOTOVOLTAICS FORMS LANDSCAPES

a special event 28th EU PVSEC

Paris, France

08h30 - 12h30

Auditorium 515 A/B

## CALL FOR CASE STUDIES

Astrid Schneider

Solarspeicher / Energiespeicher (energy centre / multifunctional convention hall), Nechlin (DE), 2013



Solar Renovation of an historic granary – today a convention hall and local energy center  
Building Integrated Photovoltaics:

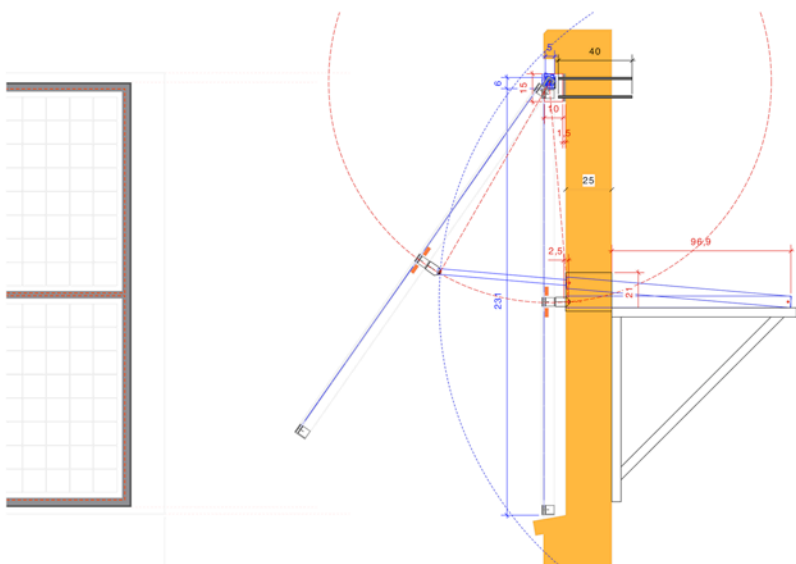
- South-West facing main roof: 9520 W – with amorphous triple junction thin film Si-solar cells
- South-East facing roof: 1632 W – the a-Si-cells are incapsulated and bonded to metal roofing
- South-West facing facade: 3200 W – mono crystalline Si-solar cells incapsulated in custom made glass-glass modules with 4 mm glass, glued with EVA – the modules are sun tracked



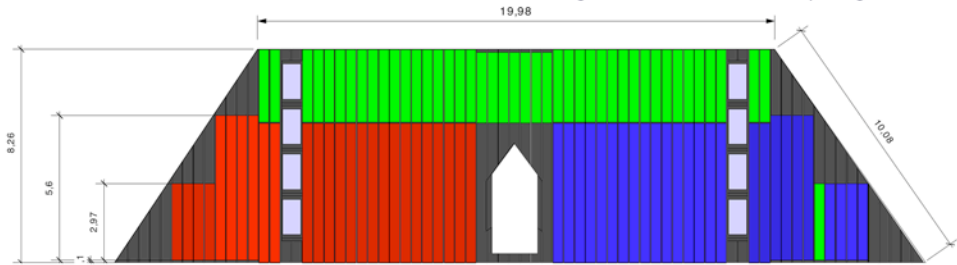
Historic Magazine Building after solar renovation with Photovoltaic Solar Panels at the facade and as roof integration



Architect's Solar Design: this illustration of the future look of the building convinced the clients



The metal structure to hold the BIPV-facade-modules and the tracking mechanism are individually designed



The differently coloured areas mark the correlation between the solar modules and the 3 string-inverters



The historic magazine building in the German village 'Nechlin' was used as a granary – today it is a local energy center and a convention hall



Before renovation



After solar renovation



The facade modules are suntracked

### The historic magazine building

is today occasionally used as a convention hall in the ground floor. As second use the magazine functions as a local energy network center. The building shelter produces solar electricity. The inverters of the neighbouring 'Schnitterkaserne', the apartment building directly beside, are located in the first floor of the magazine. In the cellar of the former granary is now a set of combined heat and power plants and boilers located. They are fired with different sorts of biomass, such as wood pellets and biofuel. The renewable heat is fed into a local district heating system, which is actually under expansion with a solar thermal system to supply all the village with heat. For the BIPV-Systems it was essential, that the PV-modules fit exactly into the measurements of the historic building. Otherwise the esthetic look would not have been achieved. Custom sized glass-glass modules as well as steel panels with attached thin film solar modules fitted perfectly. The choice was however difficult.

**Client:**  
ENERTRAG Wärme für Nechlin GmbH & Co KG, Uckerland, Germany – [www.enertrag.com](http://www.enertrag.com)

**Planning:**  
Solar Facade and Roof Design – BIPV-system engineering: Astrid Schneider, Solar Architecture, Berlin, Germany – [www.astrid-schneider.de](http://www.astrid-schneider.de)  
Renovation Building: Gerhard Krekow Architect, KM Planung, Prenzlau, Germany – [www.krekow-planung.de](http://www.krekow-planung.de)

**Companies:**  
Sun Tracking System and Linear movers, consultant PV-facade: Walter Mikesch, Solventure AG, Wettingen, Switzerland – [www.solventure.ch](http://www.solventure.ch)  
Custom Sized Glass-Glass Solar Modules Facade: Solarnova GmbH, Wedel, Germany – [www.solarnova.de](http://www.solarnova.de)  
Standard BIPV Roofing System: Unisolar aSi-triple-junction-modules, included in steel roofing elements by Hösch Contecna Systembau GmbH