BIPV Connections in Europe:
European Networks - BIPV Alliance
&
a Guide for Architects and Engineers

Solar Power on buildings:

Making money by incorporating PV into Building design

BRE / London 20.10.2010

Prof. Arch. Silke A. Krawietz

SETA Network

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  - Use of the Guide
- CONCLUSION

EU Policy and meeting the targets

The EU is working to reduce the effects of climate change and establish a common energy policy. By 2020 renewable energy should account for 20% of the EU's final energy consumption.

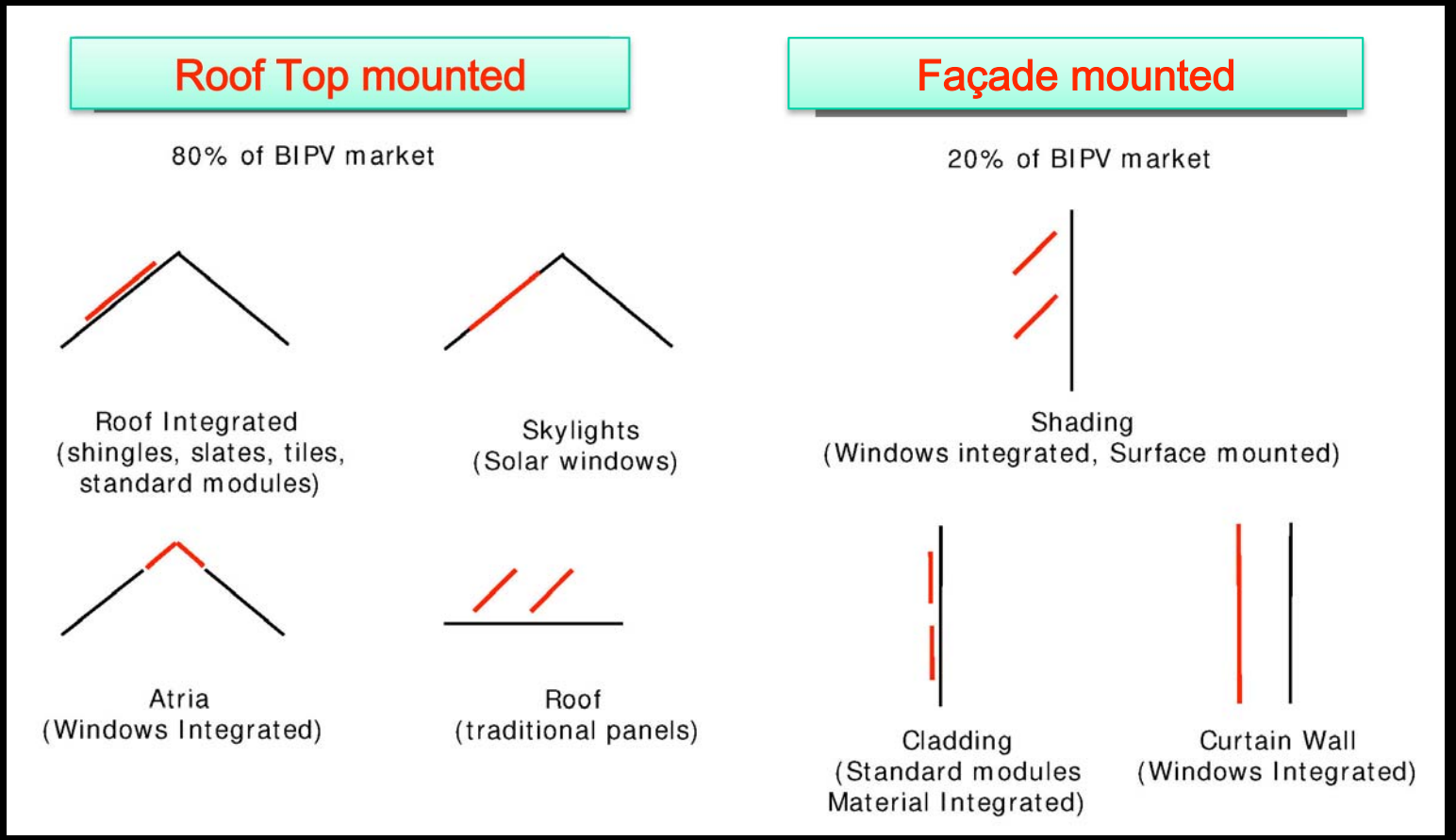
EU Targets until 2020:

- 20% Renewable Energies
- 20% Energy Efficiency increase
- 20% Reduction of CO

The Energy Performance of Building Directive (EPBD) is a unique opportunity to incorporate energy efficient and renewable energy technologies, such as BIPV applications into buildings.

BIPV Applications / Replacement of conventional building elements

- Facades
- Roofs (skylights, solar shingles/tiles, roofing systems)
- Balconies/awnings
- Other building elements



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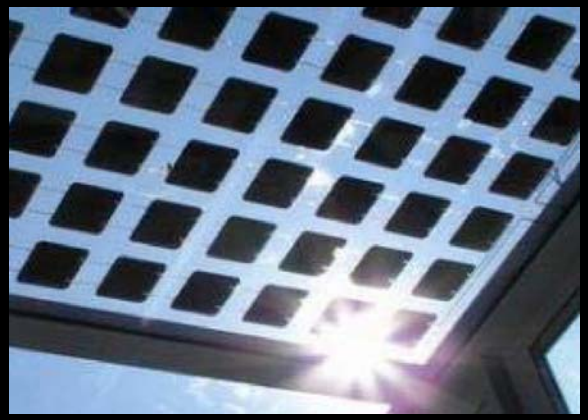
Architectural PV components / Facades

Roofs / skylights

Balconies

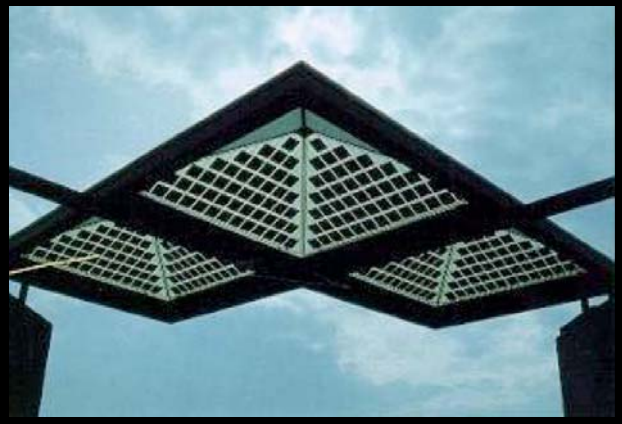
Shadowing systems

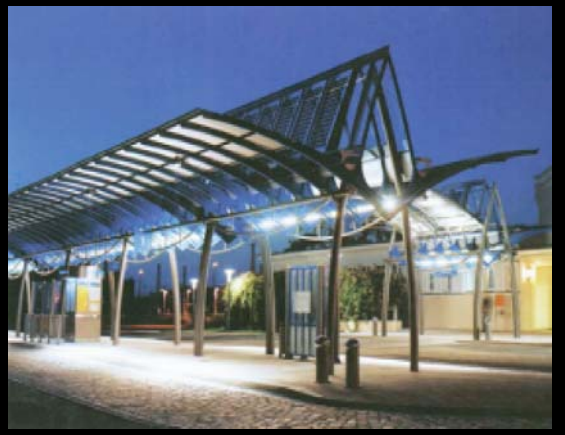




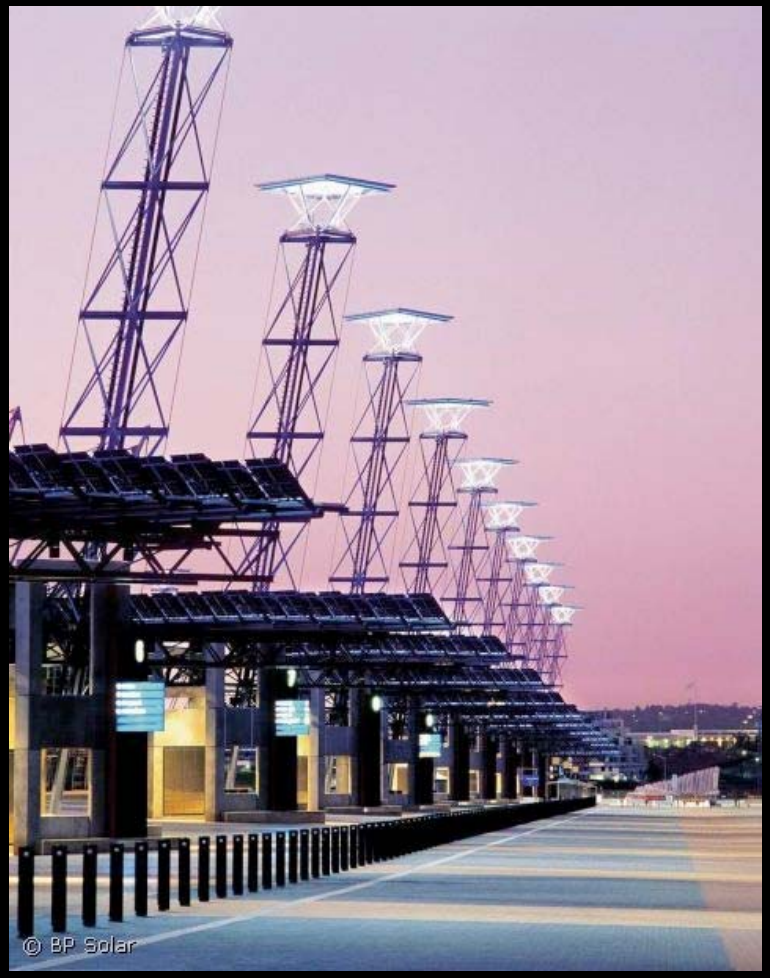

Architectural PV Components
Verandas

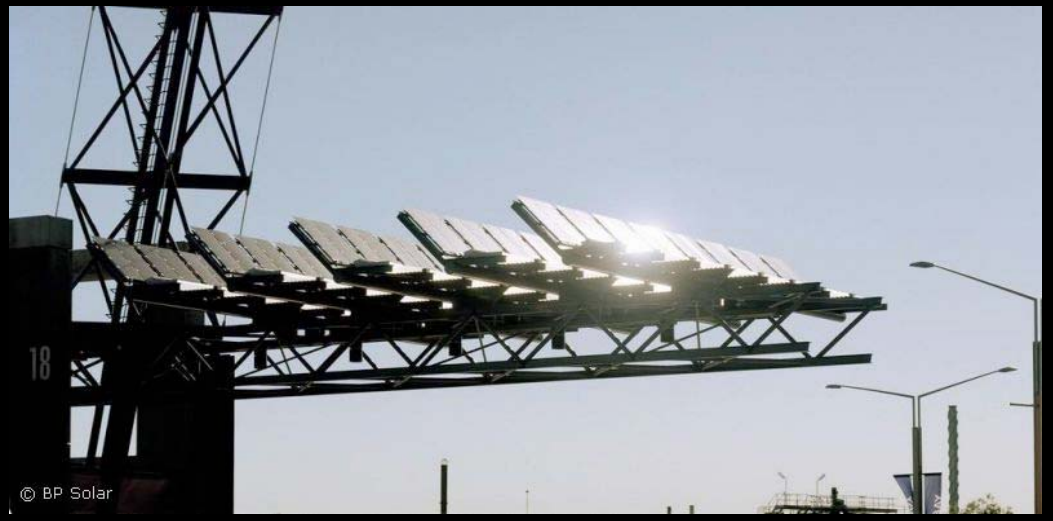
Architectural PV Components
Urban Furniture

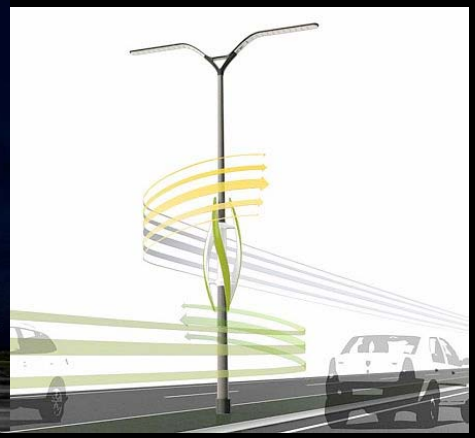




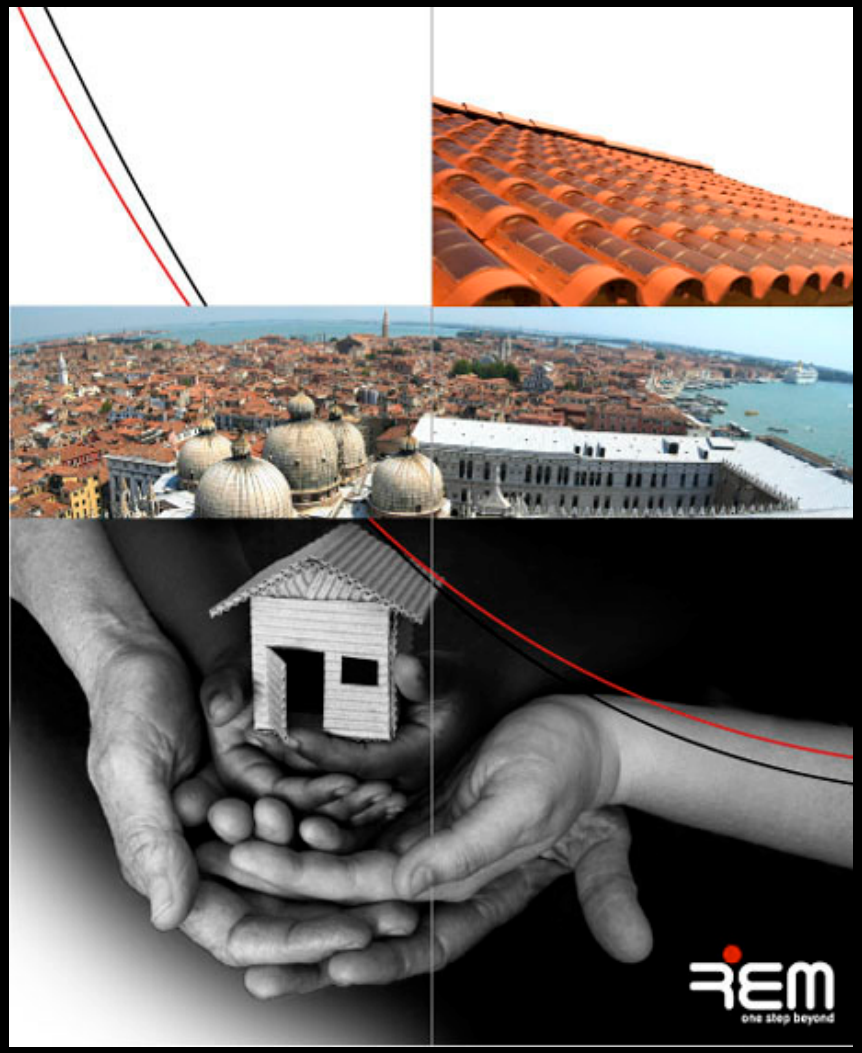

Architectural PV Components
Urban Furniture



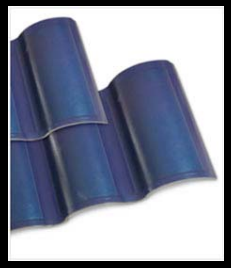


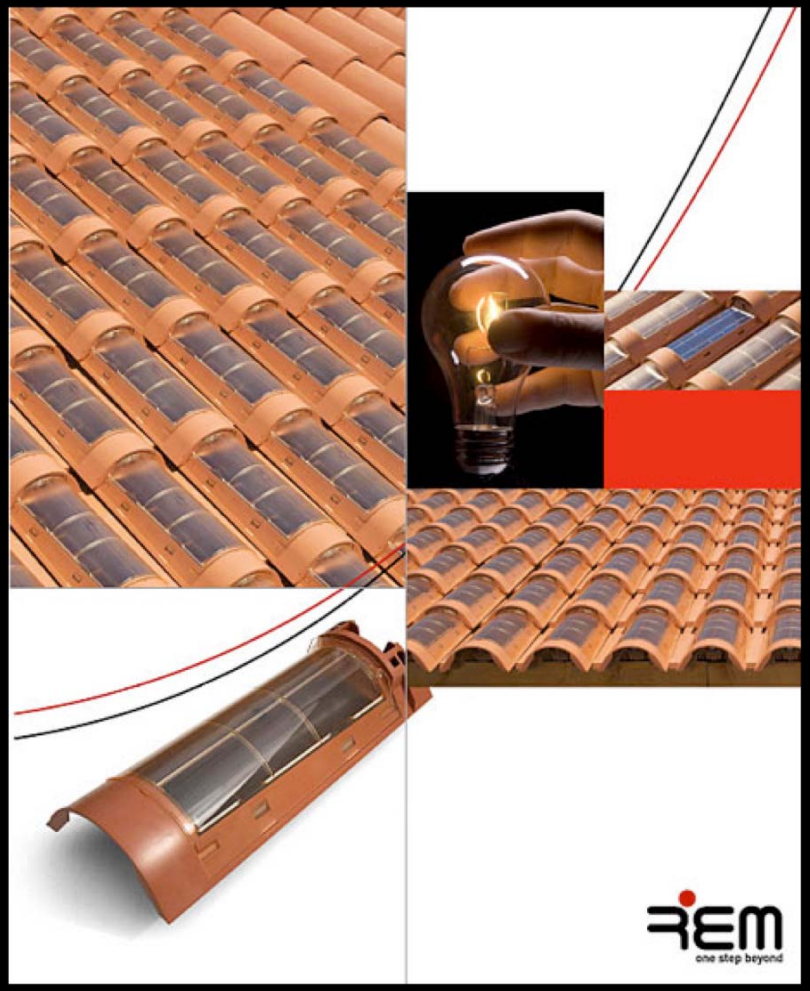


Architectural PV Components
Tiles

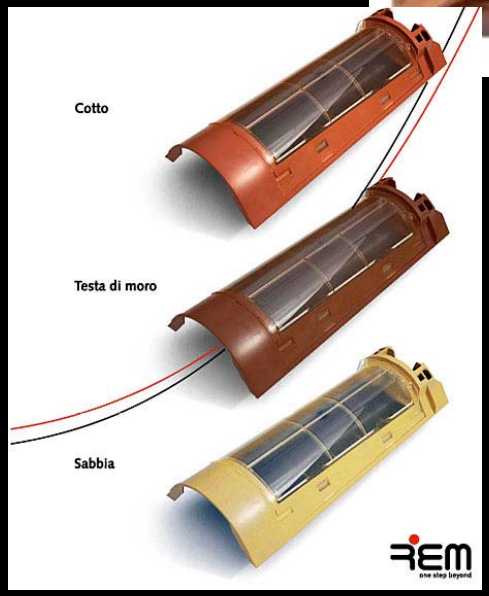


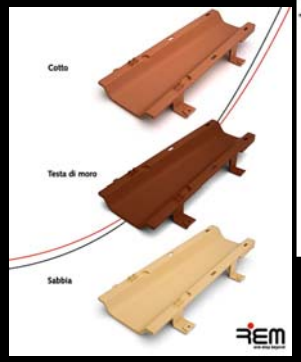
Architectural PV Components
Tiles





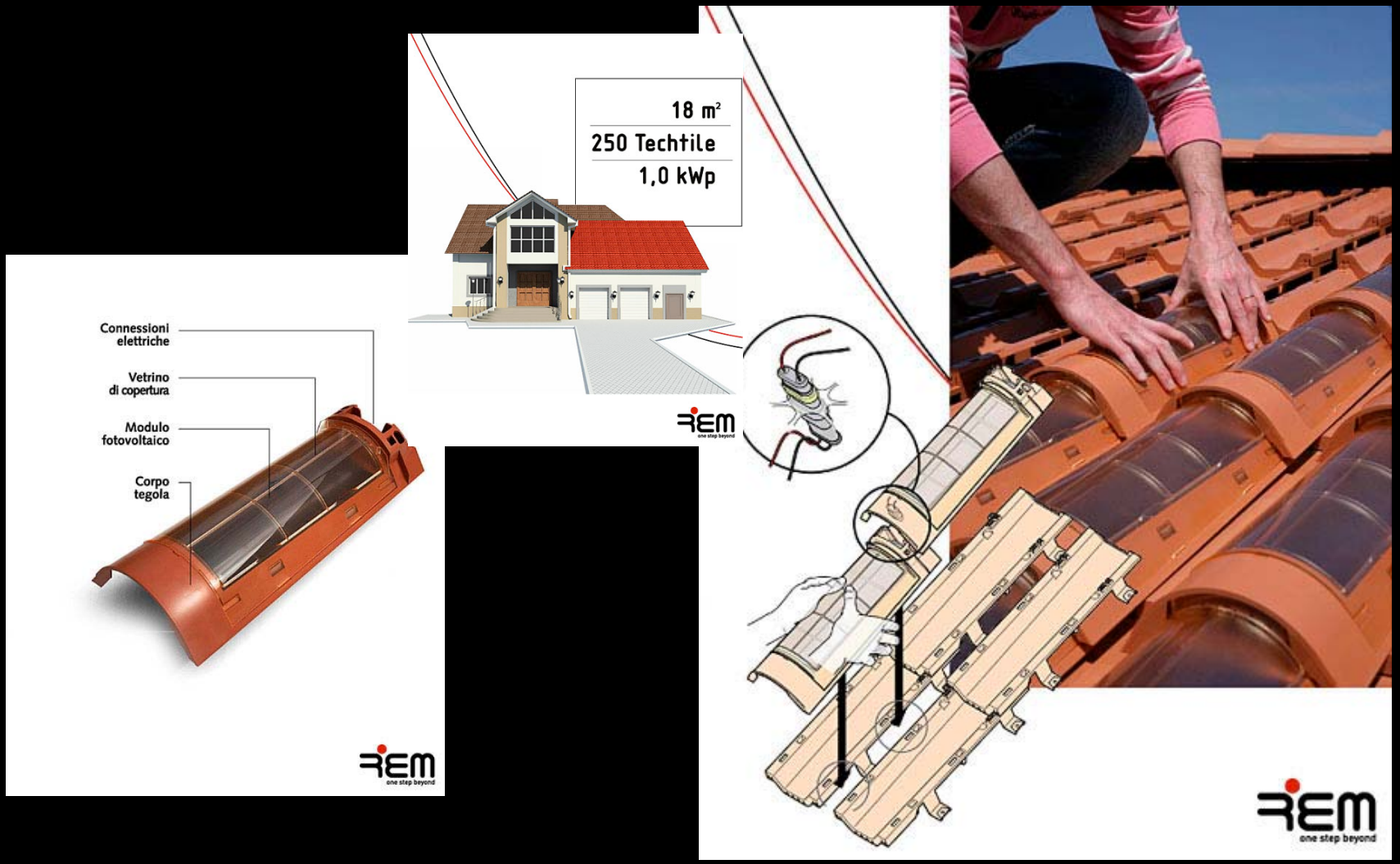
PV Tiles


Cotto
Testa di moro
Sabbia
REM
one step beyond


Cotto
Testa di moro
Sabbia
REM


REM
one step beyond

PV Tiles


18 m²
250 Techtile
1,0 kWp
Connessioni elettriche
Vetrino di copertura
Modulo fotovoltaico
Corpo tegola
REM
one step beyond

BIPV- Residential

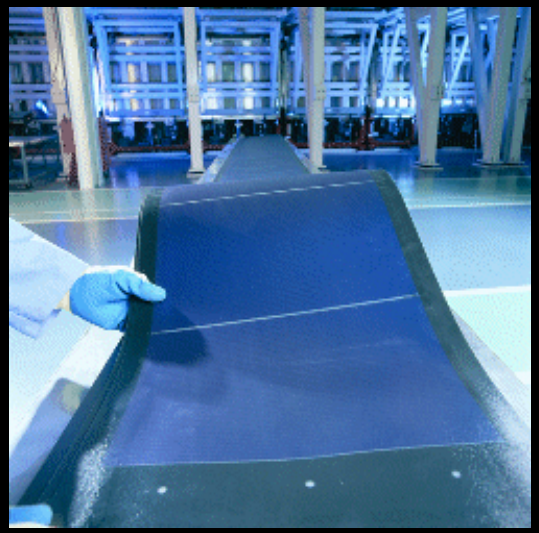
- Roof integrated Cristalline PV Modules
- Aestetical pleasant solution
- Easy to integrate

Residential Housing, Germania

BIPV- Residential examples

BIPV- Tertiary / industrial examples with BIPV

Tertiary / industrial examples with BIPV



Mont-Cenis, Herne

Mont-Cenis
Further Education Academy
Herne / Germany

‘Clouds’ effects with Semitransparent PV modules

Internal view

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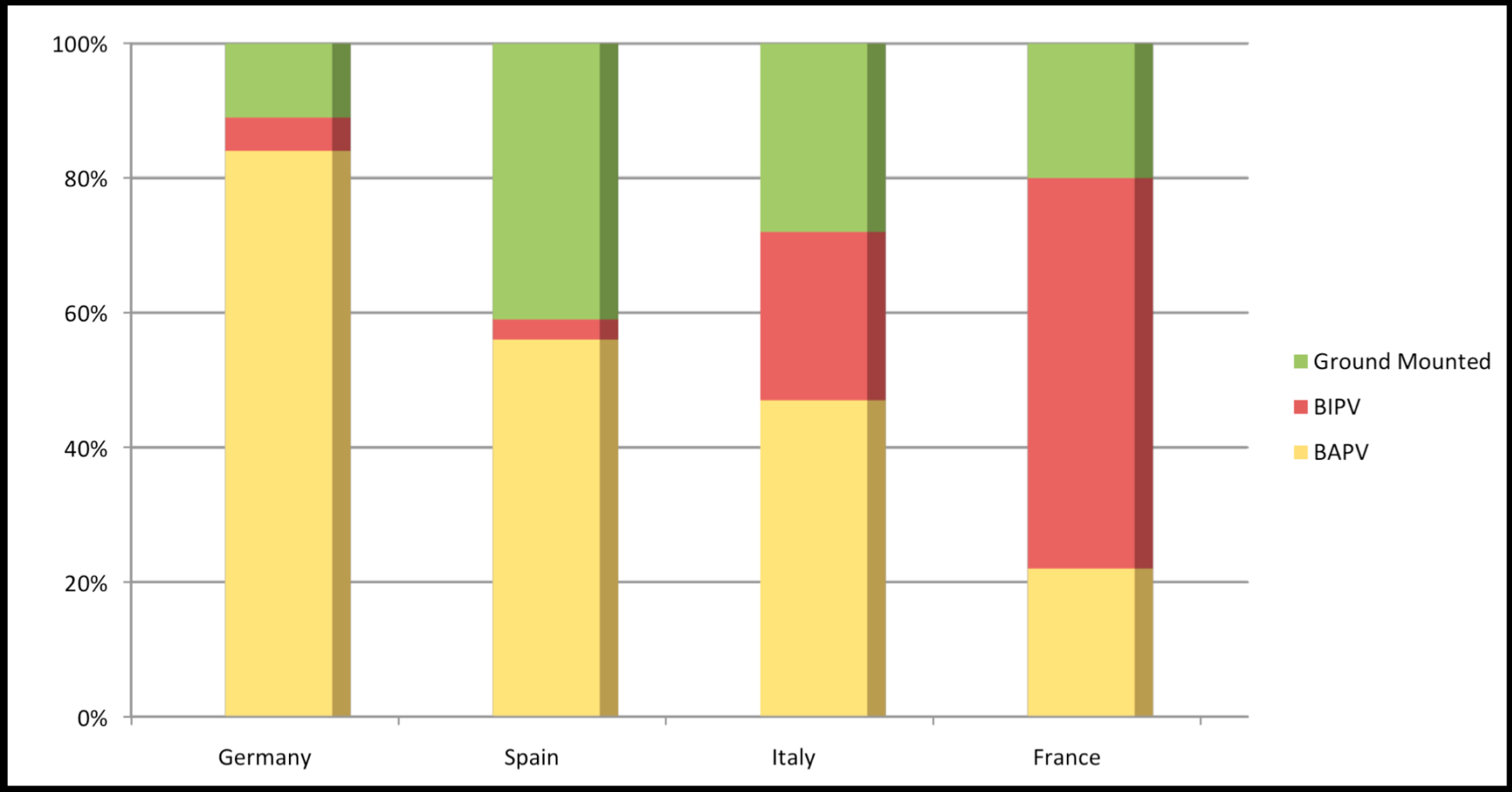
Market Segmentattion in Main EU PV Markets in 2008



Source: EUPD, 2008

What we have…

- Unlimited energy resource with huge potential for price reduction
- PV electricity generation cost close to retail electricity prices
- Enormous potential in terms of roof and façade space

Targets for tomorrow…

- Effective and true policy support for further market growth and price reduction
- Sustainable and well designed support mechanisms acknowledging BIPV potential
- Enlarge the cooperation with construction sector and architects to develop more suitable and competitive PV solutions for building integration

Source: EPIA (Sunrise project)

…. one of the responses to those is:

Inorder to achieve the above objectives, the solution is to build up an European structure for a better coordination of BIPV diffusion:

BIPV Alliance

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BIPV Alliance – Interested Categories

- PV manufacturers
- Construction industry
- Architects/Engineers and Professionals
- Glass and Façade manufacturers
- Building material manufacturers
- Universities / Research Institutes
- International Organisations
- Other European Network
- Utilities, etc.

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The Vision for the BIPV Alliance

Mission of the Alliance

- Maximise the BIPV application and develop new products to satisfy Arch/Eng. demands and requests together with
- Maximise the sustainability of the built Environment through innovative BIPV applications

Benefits of the Alliance

- Provide you with access to comprehensive data, advice, research, training and information / Promotion of BIPV

Organisations within the Alliance

- Committee of selected founding members
- Recurrent meetings of the committee
- Managed by SETA Network

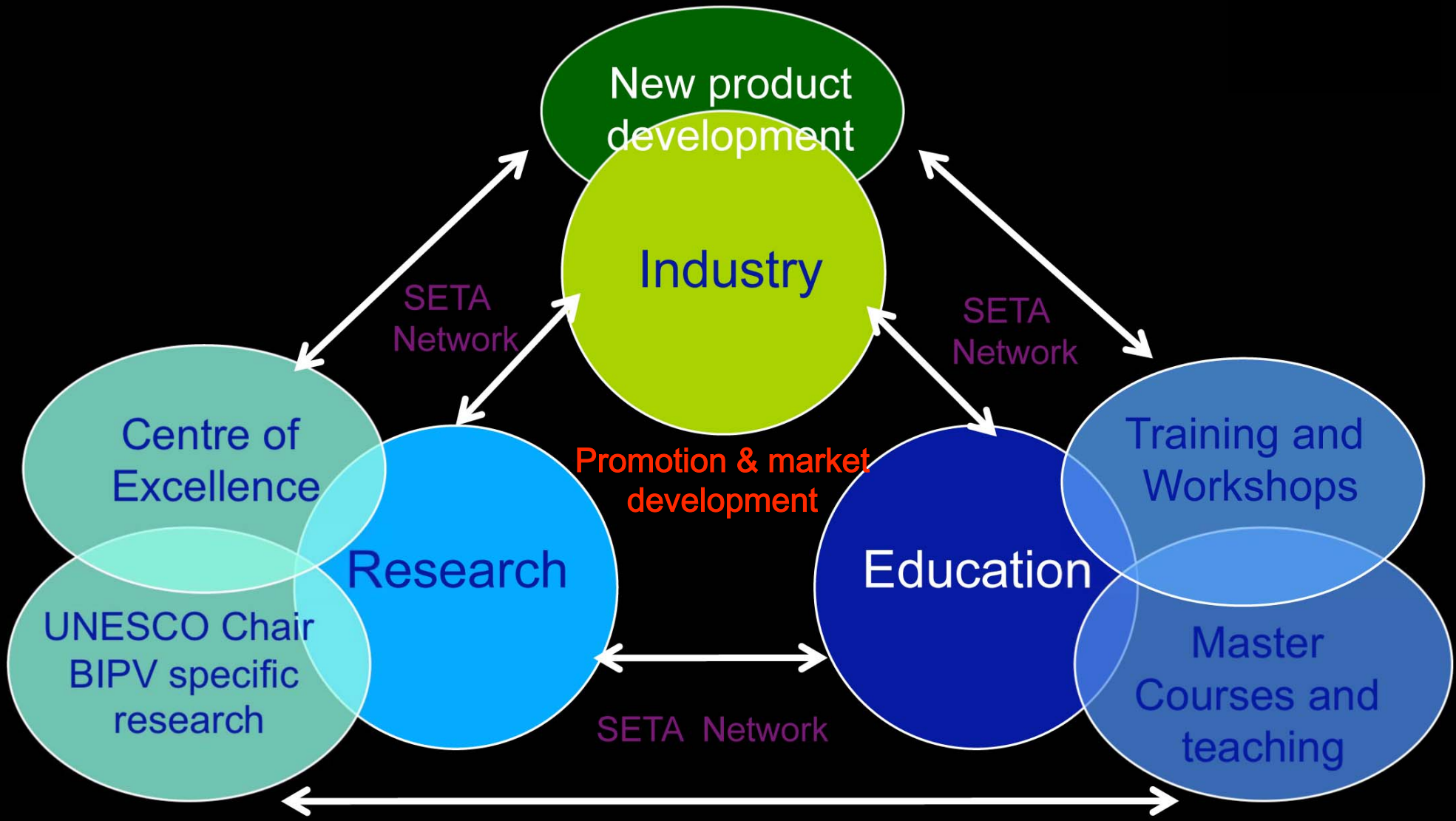
BIPV Alliance Objectives

- Provide members with an open source data standard to allow quality data to be aggregated from multiple sources
- Focus the common problems arising in different countries in one action for the benefit of the BIPV community and to have an official representation of the category
- Demonstrate through research the value and the importance of BIPV integration in sustainable buildings
- Enable members to be informed in respect of new and proposed environmental legislation
- Accelerate progress through independent researchers and manufacturers for new innovations, technologies, processes and techniques
- Provide excellent education and training in BIPV diffusion (for Arch., Eng. and professionals)
- Integration into University education programmes and Networks (like UNESCO Chair , Master courses and others).
- Promote and share best practice through regular conferences, seminars and newsletters.
- Connection to other European Networks

Planned Activities

- Research for new BIPV products / characteristics new Design Features
- International conferences and workshops
- Further development of BIPV
- Promotion of BIPV among Architects & Engineers
- Professional education
- Architectural Competitions
- Etc.

BIPV Alliance / key areas



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Joining BIPV Alliance the members will benefit from :

- Becoming one of a highly influential group supported by science based evidence, that will inform regulators and policy makers worldwide in matters concerning the BIPV applications and policy
- Comprehensive networking opportunities among members
- Common international " language" to help the members to keep up with legislation and regulation in Europe independently from nationality
- Communications strategy to keep you up to date
- Connections to other European Networks

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Connection to other European Networks like:

- UNEP SBCI (Sustainable Building and Climate Initiative)
- SB Alliance (Sustainable Building Alliance)
- GBC's (WGBC, UKGBC, etc.)
- ISA (International Sustainability Alliance)
- EREC (European Renewable Energy Council)
- UNESCO
- etc.

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Final Comments

- BIPV Alliance is a new structure, which will be very useful for a major diffusion of BIPV in the building sector
- Collaboration between PV and building material manufacturers, construction companies, universities etc.
- The BIPV Alliance will cooperate with other International Networks
- Collaboration with Architects and Engineers in the BIPV Alliance is essential

In order to know

how to integrate PV successfully…

BIPV Guide

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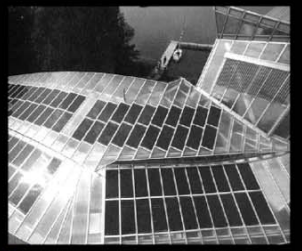
1 Solar Office


2 Tobias Grau


3 BP-Pavillon


4 ‚Steinhuder Meer'


5 UTZ Berlin


6 Fair hall Expo


6 Fair hall Expo


7a/b Expo-Tower


8 Üstra Works station


8a Üstra / Sheds

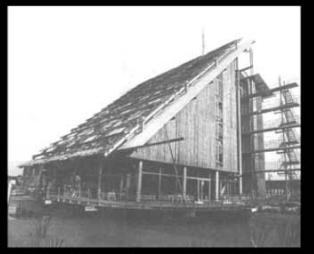

9 Mont-Cenis/Herne

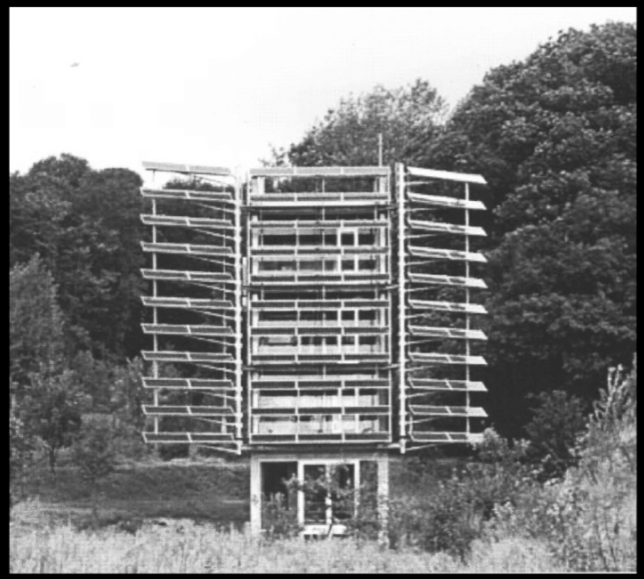

9 Mont-Cenis/Herne


10 KMF-Centre

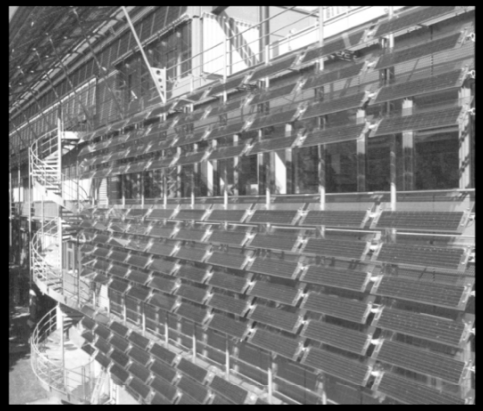

11 ‚Haus Sobek'


12 Fair hall roof Mun


13 Stadtwerke KN



EXPO-TURM / Hameln-Emmerthal / 52,10° N Projekt 7b
Niederwöhrmeier und Wiese, Darmstadt



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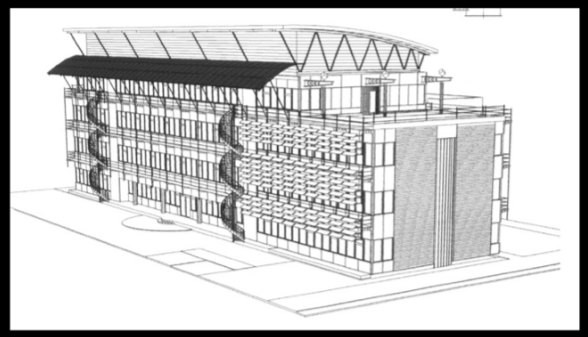
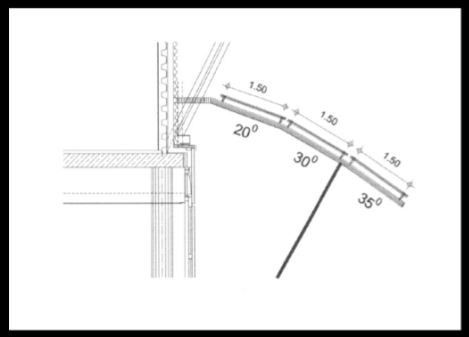
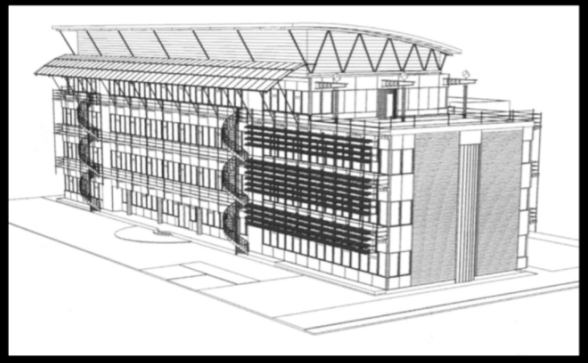
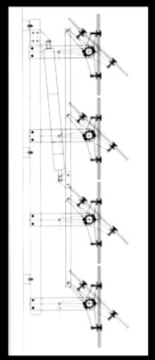
Projekt 10









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Conclusion

- BIPV diffusion will increase more and more
- The guide - helps to integrate PV in the best way
- The BIPV Alliance is the first step for further development
- Why not to join?

Thank you!

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