SOLAR SHADING WITH PV

A perfect marriage or just making a difficult task even harder?

RISE Research Institutes of Sweden
Built environment
Energy and Circular economy
Houston, We have a problem!

Project "ELSA"

• Litterature study
• Collecting experience
• Analysis
• Demonstration
• Info
• "Follow up research/ Meta study"
Objectives and planned results

OBJECTIVES
• To increase interest, knowledge and acceptance with regard to solar PV + Solar shading
• To support collaboration between key actors in order to create new opportunities
• To develop new knowledge concerning innovation of products and processes in the building industry

EXPECTED RESULTS
• Guidelines for architects, builders and developers
• Better products at less cost
• Demo of 3-4 PV Solar shading devices at our office in Borås

PARTICIPANTS
RISE, architects, building contractors, developers, solar entrepreneurs, business organizations and universities

TIME SCHEDULE
2015-07-01—2018-06-30
Results so far…

A BROAD COLLECTION OF EXPERIENCES

• Six PV+Shading installations, six stakeholder categories
• Interviews based on a questionnaire RE process, expression/integration, energy production, system design, O&M and indoor environment

- Complex map of requirements → Tight collaboration between stakeholders required
- Practical experiences in general positive
- Solar PV seen as an "add-on" that would not have been realized without subsidies
Results...

LITERATURE STUDY WITH COMPLEMENTARY PERSPECTIVES

- Chalmers Architects: Aesthetics and integration (70 articles)
- PV+ Solar shading virtually non-existent!
- LTH: Technology and the user (30 articles)
- Still a lot to be done in a northern european context!
- RISE/ Solkompaniet: Standardization, building codes and innovation (TBD)

A Method for assessment of architectural integration qualities
Results...

DEMONSTRATING SOLAR SHADING WITH PV

Two products based on the same PV module and console, one fixed mounted, one dynamic

Still to be found:

Innovative company to deliver one or two vertical screen solutions
Approaching the final stretch and moving on…

- A guide to solar shading with PV based on our findings (to be finalized)
- A design/ innovation competition among Architect students (Coming autumn)
- Holistic evaluation of Demo-installations: Aesthetics, power production, indoor environment, user acceptance etc...

- Expanding the Demo into a living lab for solar shading (w/wo PV)
- Develop advanced test facility for solar shading devices
- Software for visualization and communication of PV Solar shading and BIPV products in general
THANK YOU FOR LISTENING!

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