SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

2011 HIGHLIGHTS

SHC Task 41
Solar Energy and Architecture

THE ISSUE

Our vision - and the opportunity - is to make architectural design a driving force for the use of solar energy. Solar energy use can be an important part of the building design and the building's energy balance to a much higher extent than it is today. The development towards zero energy buildings will cause a more frequent use of building integrated solar energy systems. Due to the large size of such systems in relation to the scale of the building envelope, the architectural quality of their integration has a major impact on the final architectural quality of the building. Many solar systems do exist on the market, and with better and better energy performance. But, if they are not designed to be integrated into buildings in an appealing way, probably no building permit will be given, at least not in urban areas. And then – what is the use of a highly efficient collector if it will not be used?

OUR WORK

The main objective of this Task is to help achieve high quality architecture for buildings integrating solar energy systems: on one hand by improving the qualifications of the architects, their communications and interactions with engineers, manufactures and clients; on the other hand by enhancing manufacturers' awareness on building integration issues.

Criteria are defined and guidelines proposed for all the actors in the field; architects, collector and façade/roof manufacturers, tool developers, clients and public bodies (municipalities, city planners). Through various interactions with all these actors, the results of this Task should largely contribute to increasing the architectural quality of the products and of the integrations.

SHC Task 41 is a three-year collaborative project that will be completed in end of April 2012.

PARTICIPATING COUNTRIES

Australia
Austria
Belgium
Canada
Denmark
Germany
Italy
Norway
Portugal
Republic of Korea
Singapore
Spain
Sweden
Switzerland

Task Date	**2009-2012**
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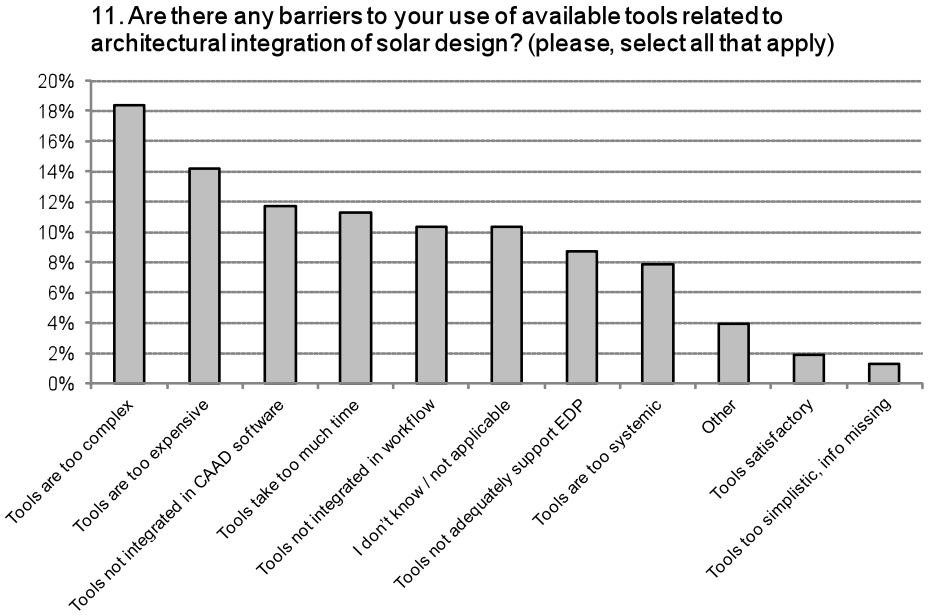
KEY RESULTS OF 2011

Architects Needs Related to Tools for Solar Design

A report was finalized based on a survey to identify barriers, needs and criteria to establish development needs.

The international survey was focused on architects' barriers, needs and criteria for tools and methods to support architectural design and integration at the early design stage. Results show that adequate tools for solar design, for use by architects in the early design phase, are still lacking. Respondents in the survey stated that available tools do not adequately support conceptual design, they are too systemic and they are not integrated in their normal workflow. Only 2% were satisfied with the existing tools. The report, *International Survey about Digital Tools Used By Architects for Solar Design* is available on the SHC website under Task 41.



The diagram shows the distribution of answers about barriers related to the use of the tools for the architectural integration of solar design.

Case Studies of Buildings and Urban Areas

More than 200 examples were collected. About 70 of these cases have been selected, representing the most inspiring architecture with high energy performance.

The examples of buildings and urban areas include integration of passive and/or active solar systems. A group of architects evaluated the architecture and the most inspiring examples, with high energy performance, were selected. The selected case studies will described more in detail and presented on the official website in 2012. The diagram shows a preliminary distribution of case studies based on building type.