

2014 HIGHLIGHTS

SHC Task 51 Solar Energy in Urban Planning

THE ISSUE

A large portion of the potential for energy efficiency in existing buildings and the potential to utilize solar energy still remains untapped. The built environment accounts for over 40% of the world's total primary energy use and 24% of greenhouse gas emissions. The combination of making buildings (refurbishing and new developments) more energy efficient and using a larger fraction of renewable energy is therefore a key issue. Political statements and directives are already moving towards zero-energy buildings, communities and whole cities. An increased use of solar energy is one important part of the development ahead, where the urban fabric needs to utilize passive solar gains and daylight to reduce the energy use in buildings and for lighting outdoor environments, as well as to improve the inhabitants' comfort indoors and in urban outdoor areas. And, active solar energy systems integrated in the urban context to enable a supply of renewable energy primarily as heat and electricity, but also of solar cooling, helping cities reach sustainable solutions.

OUR WORK

The main objective of Task 51 is to provide support to urban planners, authorities and architects to achieve urban areas, and eventually whole cities, with architecturally integrated solar energy solutions (active and passive) that contribute a large fraction of the renewable energy supply in cities. Results will include processes, methods and tools to assist cities with developing a long-term urban energy strategy. Heritage and aesthetic issues and solar fields in sensitive landscapes will also be studied. Additionally, a goal is to prepare for and strengthen solar energy in urban planning education at universities. The material developed will also be useful for post-graduate courses and continuing professional development (CPD).

Participating Countries

Australia
Austria
Canada
China (observer)
Germany
Denmark
France
Italy
Luxembourg (observer)
Norway
Sweden
Switzerland

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Task Leader Maria Wall, Energy and Building Design
Lund University, Sweden
Email maria.wall@ebd.lth.se
Website <http://task51.iea-shc.org/>

KEY RESULTS OF 2014

Since we are in the phase of collecting information and having a dialogue with key actors, one important activity in 2014 has been seminars and meetings with cities, urban planners, architects, industry and other actors. The real cases and experiences are valuable input to our work developing guidelines and other support tools. When the Task was in Naples, Italy for the March meeting, bilateral meetings with the local industry were organized by ENEA.



In conjunction with the September Task meeting in Toronto, Canada the very interesting symposium “Solar Energy in the Urban Context: Planning, Design and Implementation” was organized by Ryerson University. The symposium was open to teachers, students and professionals – all having an interest in urban planning issues, and specifically on how to increase the use of solar energy.

Cases studies are very important for the Task. For each potential case study, we ask questions, such as:

- What is the vision of the case? – (aims and goals)
- What is the organization of the case? – (e.g., time scales, funding, milestones)
- Stakeholders: Who is involved in the case? – (e.g., municipalities, architects, researchers, etc.)
- What is the role of the researcher? – (e.g., influencing stakeholders, evaluating case).

Case studies are compared between regions and countries to identify the lessons learned and the need for development of knowledge, methods and tools. We include cases already planned and built as well as ongoing new planning where we are actively participating in the development (action research).



The new area Brunshög, Lund – an ongoing Swedish urban development to participate in (action research)



Drake Landing, solar community, Okotoks, Alberta – a finalized Canadian case study to learn from

SHC Task 51 is a 4-year collaborative project that will be completed in April 2017.