

"Sun and Sense" conference Earthscan "Bioclimatic Housing" Presentation
Berlin 12 March

The 12th march 2008 at the beginning of the Berlin "Sun and Sense" Conference, **Susan Roaf**, **Harald Rotsvic** and **Francesca Sartogo** present the book "*Bioclimatic Housing – innovative design for warm climate*"- Earthscan UK 2008, as the result of the work of the "*International Cooling Group*" from Iran, Malesia, Australia, Japan and Italy under the auspices of a 5 year IEA/SHC program on "Solar Sustainable Housing" coordinated and edited by Richard Hyde..

The book "**Bioclimatic Housing**" arrives at the right moment, when the actual *Climate Change* put on the table the important responsibility to redefine **concepts and principles** of the **City design**. It is always more and more difficult to ensure the urban comfort standard, that our society has reached in the last century, without compromise the future generations. The City is a complex organism, is not only buildings, roads, squares and gardens, is more than that, she is the mirror of the real citizens life and where everyone tell his history. Is not designed, but it grows homoeopathically during times physiologically very slow. Looking back at our urban studies, it appears evident how the **design** of the **city** was never a **chance effect**, but a precise result of the relationship between a system of rules, land division, building aggregation and road network, strictly connected with the climatic conditions and solar orientation. Today the progressive "**changing of climate**" force us to redefine concepts of "*sustainable and bioclimatic design*". During the recent years, the concept of bioclimatic housing has evolved to what can now be considered a "*sustainable housing*"; currently it appears to place emphasis on "*energy as the main environmental impact that should be reduced*". Un till now, such housing, in a advanced north European theoretical and applied research, achieved this performance, primarily by reducing heat losses through *compact building form, thick insulation and ventilated heat recovery*. If all that can be appropriate for **Northern climate**, for any other context of **Southern climates**, a different configuration of these parameters has to be achieved in designing "*Solar Sustainable Housing*". On **Northern climates**, where "*heating*" is the dominant requirement the imperative strategies are: maximising *solar gain*; reduction of the *northern building surfaces and on prevailing wind*; *tick insulation envelope*; northern "*buffer spaces*", *southern sunspaces*". On **Southern climates**, where "*cooling*" is the dominant need, the different strategies are: *minimising solar gain*; reduction of the *southern surfaces*; *shading building components*; *ventilated walls and roofs*; *solar chimneys* and technological opening for horizontal and vertical ventilation; *passive cooling system*; "*courtyards*" as *cool air storage* open to natural day lighting and *to prevailing wind*. In "**warm climates**" the "**urban planning design**" assumes an important "**role**" through appropriate "**bioclimatic building form**" and the "**relationship** between **buildings**" and "**external spaces**" in a different scale organization from the "**building**" to the "**district**" and the "**City**" as a hole.

Focusing on countries, in which housing require cooling for a significant part of the year, this book covers creative, vernacular architecture backed up by practical and applied good science. Having set out *new definitions of bioclimatic housing*, the book interweaves the themes of *social progress, technological fixes and industry transformation* within a discussion of *global and country trends, climate types, solution sets* and relevant low-resource utilization *technologies*. With new concepts, principles and case studies, from subtropical and sub artic Japan, Mediterranean complexity, Iranian ancient and modern architecture, hot humid Sri Lanka, Malaysia, and subtropical Australia, this is a truly international and authoritative work, providing an essential primer for building designer, developers and advanced students in architecture and engineering