



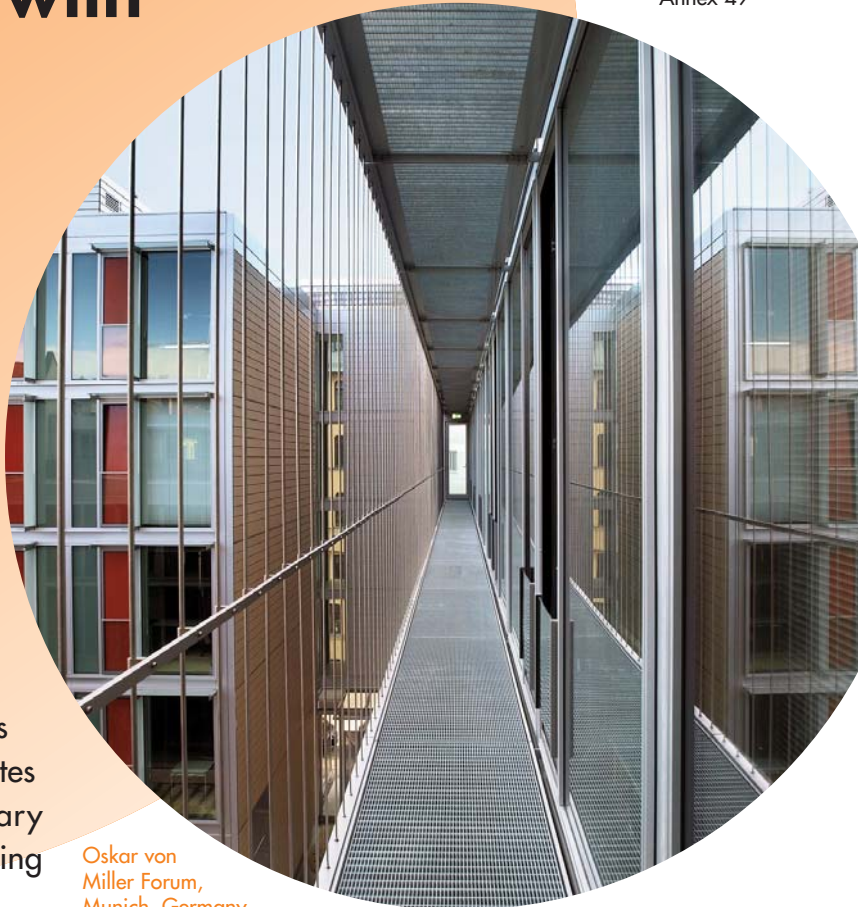
## Conference

19<sup>th</sup> - 21<sup>st</sup> October 2010  
Oskar von Miller Forum  
Munich, Germany

# The Future for Sustainable Built Environments with High Performance Energy Systems

This conference about the future for sustainable built environments and energy systems integrating a maximum amount of renewable energies provides front-edge technologies and solutions for buildings, communities and energy supply. In addition to the presentation of new results and technologies this is an opportunity for personal exchange with participants from politics, research institutions and industry. The conference therefore creates the chance for an open interdisciplinary discussion on how to address the upcoming challenges of energy transition.

The presenters represent a broad portfolio of competences in integrated energy solutions and give inside information on the state of discussion in the field of buildings, communities and energy supply systems. The conference is the final event of the Annex 49 "Low Exergy Systems for High-Performance Building and Communities" which is part of the Energy Conservation in Buildings and Communities Programme of the International Energy Agency, carried out in close cooperation with the European COSTeXergy project.



Oskar von  
Miller Forum,  
Munich, Germany

During the conference a new approach for the active participation of Master and PhD students is seized to interlink the research and engineering approaches with education and innovative student ideas.

**Conference Chair:** Dr. Dietrich Schmidt, Fraunhofer Institute for Building Physics - Department Energy Systems, Operating Agent ECBCS (Energy Conservation in Buildings and Community Systems Programme) Annex 49.

[www.conference.annex49.de](http://www.conference.annex49.de)

# Conference Program

18th October 2010

• Supervisor: Prof. Masanori Shukuya, Prof. Gudni Jóhannesson

PhD students workshop

19th October 2010

• Chair: Dr. Dietrich Schmidt

## OPENING

### *Opening of the Conference*

**Dr. Hans-Christoph Wirth**, German Federal Ministry of Economics and Technology (BMW)

### *What has been Achieved in Energy Efficiency?*

**Dr. Dietrich Schmidt**, Head of Department Energy Systems Fraunhofer Fraunhofer Inst. for Building Physics, Operating Agent ECBCS Annex 49 and Co-Chair C24 COSTeXergy

### *Towards Energy Efficient Building and Communities*

**Jürgen Gehrmann**, German Executive Committee member of IEA ECBCS

## KEYNOTE

### *The Role of Innovation for Energy Transition*

**Prof. Joachim Warschat**, Fraunhofer Inst. for Industrial Engineering

## CHALLENGES WITHIN THE TRANSITION OF ENERGY SYSTEMS

### *IEA Policies for Future Energy Systems*

**Peter Cunz**, Chair of IEA CERT (Committee on Energy Research and Technology)

### *Energy Transition – How to Convert Germany's Energy Supply?*

**Prof. Jürgen Schmid**, Director of the Fraunhofer Institute for Wind Energy and Energy Systems Technology

### *A New Future for District Energy Systems*

**Dr. Robin Wiltshire**, Chair of IEA DHC (District Heating and Cooling Programme)

### *A new Role of Utilities within Energy Transition*

**Peter Flosbach**, Vice President Technology, RWE Effizienz GmbH

20th October 2010

## METHODS AND DESIGN

• Chair: Mia Ala-Juusela

### *Exergy Thinking and Thermal Comfort*

**Prof. Masanori Shukuya**, Tokyo City University (FEIS-TCU), Yokohama, Faculty of Environmental and Information Studies

### *High Performance Indoor Environments with LowEx Demand*

**Prof. Bjarne Olesen**, Technical University of Denmark, Lyngby, Department of Civil Engineering

### *Practical Guidelines for LowEx Buildings*

**Prof. Saso Medved**, University of Ljubljana, Faculty of Mechanical Engineering

### *The LowEx Approach in Real Live Building Projects*

**Prof. Hansjürg Leibundgut**, Swiss Federal Institute of Technology, Zurich

### *Lowex Houses: The Next Step in Energy Efficiency*

**Eric Willems**, Delft University of Technology, Faculty of Climate Design and Sustainability

## COMMUNITIES I

• Chair: Christina Sager

### *The Use of Low Valued Cooling Sources - Drakelanding*

**Ken Church**, National Research Council Canada

### *Exergy based energy stations – Minewater Project*

**Peter Op't Veld**, Cauberg-Huygen R.I., Maastricht

### *Energy Transition in Parma City*

**Paola Caputo**, Politecnico di Milano, Building and Environment Sciences and Technology (BEST)

## COMMUNITIES II

• Chair: Peter Op't Veld

### *From a Military Property into a Zero Energy Quarter: Bad Aibling*

**Dr. Ernst Böhm**, B&O Wohnungswirtschaft GmbH & Co KG

### *Wolfhagen – 100% Renewable Energy Supply for a Typical German Town*

**Christina Sager**, Fraunhofer Institute for Building Physics, Department Energy Systems

### *Performance of Low Temperature District Heating Systems for Low Energy Houses*

**Prof. Svend Svendsen**, Technical University of Denmark, Department of Civil Engineering

## BUILDINGS

• Chair: Prof. Gudni Jóhannesson

### *Strategies for Integrative Building Design*

**Prof. Per Heiselberg**, Aalborg University of Denmark, Operating Agent IEA ECBCS Annex 44

### *Limits of Heat Pumps in LowEx Design*

**Prof. Hermann Halozan**, Technical University of Graz, Chair of IEA EUWP (End-Use Working Party)

### *Advanced Building Systems*

**Prof. Dirk Müller**, E.ON Energy Research Center (E.ON ERC), RWTH Aachen University

21st October 2010

• Chair: Prof. Masanori Shukuya

## INTEGRATION AND FUTURE PERSPECTIVES

### *Minimisation of Costs and Environmental Impact Using Exergy Based Methods*

**Prof. George Tsatsaronis**, Technical University of Berlin, Institute for Energy Engineering

### *Importance of Education in Energy Transition*

**Prof. Artūras Kaklauskas**, Vilnius Gediminas Technical University, Institute of Internet and Intelligent Technologies

### *Integrated Exergy Concepts for Regional and Urban Planning*

**Prof. Ronald Rovers**, Polytechnic University Zuyd, Heerlen, Netherlands, Built Environment

### *Exergy Analysis of Building restoration – A Case Study in Ljubljana, Slovenia*

**Prof. Christopher J. Koroneos**, Aristotle University of Thessaloniki, Laboratory of Heat Transfer and Environmental Engineering

### *Students conclusions*

• Chair: Prof. Gudni Jóhannesson