



Conference

19th - 21st 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

Conference Program

18th October 2010

PhD students workshop

19th October 2010

OPENING

Opening of the Conference

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

What has been Achieved in Energy Efficiency?

Prof. Gerd Hauser, Director of the Fraunhofer Institute for Building Physics

Towards Energy Efficient Building and Communities

Dr. Morad Atif, Chair of IEA ECBCS (Energy Conservation in Buildings and Community Systems Programm)

KEYNOTE

The Role of Innovation for Energy Transition

Prof. Joachim Warschat, Fraunhofer Institute 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

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

BUILDINGS

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

Lowex Houses: The Next Step in Energy Efficiency

Prof. Hans Cauberg, Delft University of Tehnology, Faculty of Climate Design and Sustainability

COMMUNITIES I

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

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

21st October 2010

INTEGRATION AND FUTURE PERSPECTIVES

Integrated Exergy Concepts for Regional and Urban Planning

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

Importance of Education in Energy Transition

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

Minimisation of Costs and Environmental Impact Using Exergy Based Methods

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

Students conclusions

Feedback from their Workshop