

Venue

Hotel Der Blaue Reiter
Amalienbadstrasse 16
76227 Karlsruhe
Germany
www.hotelderblauereiter.de/en/

Registration Deadline

30 September 2011

Registration Fees

incl. proceedings, coffee breaks, and lunches

Regular 160 Euros (180 Euros at box office)
Students 90 Euros (100 Euros at box office)
Dinner 50 Euros

Conference Website

www.sueddeutsches-klimabuero.de/cac/

Local Organizing Committee



South German Climate Office

Dr. Hans Schipper / Dr. Christina Endler
klimabuero@kit.edu
+49 (0)721 608 42831
www.sueddeutsches-klimabuero.de
(part of KIT Center "Climate and Environment")

Institute of Functional Interfaces

Prof. Andreas Gerdes
andreas.gerdes@kit.edu
+49 (0)721 925 1354

www.kit.edu

Welcome and Invitation

We kindly invite you to participate to the conference and workshops "Climate and Constructions". Climate impacts the construction sector in various ways. In this context, the construction sector includes not only construction chemistry, materials technology and building science, but also planning, construction techniques and urban climate.

The challenge is to identify which component is most vulnerable to changes in climate and how to respond to these changes. Many challenging questions are raised by scientists, policy makers, industry etc. For example, what do we know about climate change and its impacts on the construction sector? Which technologies are needed to respond to future climate conditions without neglecting ecological, social, and economical aspects? The conference establishes a platform to discuss scientific results in combination with practical examples, and therefore, contributes to an increased understanding of the two-way interaction between climate change and the construction sector.

The Karlsruhe Institute of Technology (KIT) is one of the leading research institutions in the technological sector. Its main focal points are research, teaching, and innovation. KIT is part of the Helmholtz Association and bundles its environmental research in the KIT Center "Climate and Environment", which supports the dialog at the conference.

Prof. Andreas Wagner

Prof. Dr. Christoph Kottmeier

Workshops

To encourage the dialog between climate research and the construction sector the conference offers workshops in which the role of the current and future climate is discussed.

Four key words are highlighted to define sustainable building management in the context of climate change. These are the subject of the following four workshops:

Technology

- To what extent can materials already cope with the present-day climate?
- Which technologies are particularly climate-sensitive?

Ecology

- What is the role of natural landscape units in the city and are these replaceable by sustainable buildings?
- What is the role of ecological activities in the context of sustainable building?

Economy

- What are the impacts on the economy in the long term of an ecological response to climate change?
- When is adaption more beneficial than mitigation?

Society

- To what extent is society willing to support sustainable building?
- What is the scope of action of society in the case of sustainable building?

Program Climate and Constructions

Conference and Workshops
24 and 25 October 2011
Hotel Der Blaue Reiter, Karlsruhe, Germany

COMPETENCE AREA
"EARTH AND ENVIRONMENT"



Monday 24 October 2011**10:30 Welcome**

Dr. Peter Fritz (chair KIT)
Klaus Stapf (mayor)

10:45 Climate and Constructions - an introduction -
Prof. Andreas Gerdes

11:00 Dialog Climate and Constructions

Prof. Christoph Kottmeier
Prof. Kevin Lomas
Prof. Ortwin Renn (moderator, requested)

12:00 Lunch break

13:30 Environmental sociology and technology assessment - Prof. Ortwin Renn (requested)

SESSION 1: BUILDING SCIENCE

14:00 Climate change and sustainable development - consequences for risk assessment and economic valuation of buildings - Prof. Thomas Lützkendorf

14:30 Extension of the heat health warning system by the indoor heat prediction - Dr. Jens Pfafferott and Dr. Christina Koppe

14:50 Projections of household energy consumption regarding land use and climate change - Prof. Iraci Pereira

15:10 Coffee break + Poster session

16:40 Openess to the sky as indicator for daylighting potential and thermal comfort of urban office buildings in mid-latitude and subtropical locations - Prof. Fazia Ali-Toudert

17:00 The climate role in shaping Islamic architectural and urban typologies - Dr. Hassan Radoine

17:20 Static shading design - methodologies and potentials for the optimization of passive climate protection for buildings - Oliver Hans

17:40 Urban strategies and potentials concerning climate change - Kirstin Barbey

SESSION 2: CONSTRUCTION CHEMISTRY

14:00 Modern transport infrastructure - Prof. Markus Stöckner

14:30 Computational chemistry - a powerful tool for the design of sustainable construction chemicals - Julia Süßmuth

14:50 Impact of climate change on the performance of building materials laden with salt mixtures - Dr. Hilde de Clercq

15:10 Coffee break + Poster session

16:40 Air hardened foam concrete - a multifunctional future-oriented building material - Prof. Bernhard Middendorf

17:00 Gypsum - the future of a traditional material - Christian Pritzel and Prof. Reinhard Trettin

17:20 Photocatalytic products for tunnels: evaluation of their long term efficiency - Prof. Albert Jornet

17:40 N.N. (requested)

CONFERENCE DINNER

Tuesday 25 October 2011

SESSION 3: URBAN CLIMATE

08:30 Energetic interactions in the urban boundary layer - Prof. Wilhelm Kuttler

09:00 Radiative and derived thermal properties of urban surface materials using APEX imaging spectroscopy data - Dr. Christian Feigenwinter

09:20 Study on reduction of urban heat island with sea breeze - visualization of the inland penetrating of the sea breeze front - Dr. Hiroshi Miyazaki

09:40 Subsurface urban heat island in Oberhausen, Germany and its implications for the urban climate in the context of climate change - Helene Püllen

10:00 Coffee break

10:40 Changes of urban heat island in USA cities over 10 years using MODIS and Landsat products - Ping Zhang

11:00 Influence of urban geometry on outdoor thermal comfort in tropical climate - Tathiane Martins

11:20 Microclimatic conditions in different geometry of urban open spaces: a case study in semi arid climatic region of Algeria - Dr. Saliha Abdou

11:40 Adapting cities to climate induced risks - Prof. Sofia Thorsson

12:10 Lunch break

13:10 Assessments of the outdoor thermal conditions in Szeged, Hungary: thermal sensation ranges for local residents - Dr. Agnes Gulyas

13.30 Calibration of the thermal comfort index physiological equivalent temperature (PET) for open spaces in the city of Belo Horizonte - Brazil - Simone Hirashima

13:50 Introduction to the workshops

SESSION 4: MATERIALS TECHNOLOGY AND CONSTRUCTION TECHNIQUES

08:30 Life cycle management of building structures as a tool for mitigation and climate change adaptation - Prof. Harald S. Müller

09:00 Replacement of cement clinker by limestone powders improving the sustainability of concrete structures - Dr. Michael Haist

09:20 Impact of cool materials in urban heat island - Prof. Aldo Fanchiotti

09:40 N.N. (requested)

10:00 Coffee break

10:40 A study on the thermal performance and construction method of the traditional wooden house with roof tiles - learning from the Nakamura House as cool roof technique in Okinawa, Japan - Dr. Hikaru Kinoshita

11:00 Sustainable construction in the Middle East - case study: United Arab Emirates - Traudel Schwarze-Funke

11:20 Vulnerability of constructions in the context of climate change by the example of pavement structures - Dr. Carsten Karcher

11:50 Alternative base and binder courses for urban roads with application of recyclable materials - Dr. Petr Mondschein

12:10 Lunch break

13:10 Performance characteristics of warm asphalt mixes and binders - Dr. Jan Valentin

13:30 Study of the reinforcement role of the fiber glass grid on the fatigue behavior of an asphalt mix - Prof. Cyrille Chazallon

13:50 Introduction to the workshops**14:00 Coffee break****14:30 Workshops****16:30 Discussion of the workshops' results****17:25 Closing****17:30 End**