



**BAU** ONLINE

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Digital Platform for Architecture,  
Materials and Systems

## Facing the future

*Talks given in English, with German subtitles*

*Moderation: Boris Schade-Bünsow, Editor in chief Bauwelt*

### **Controlled Complexity**

Friedrich Ludewig, ACME

What we cannot communicate, we cannot build. For decades we have tried to translate 3d space into 2d data, by flattening, cutting, unrolling, and exploding space. Communicating exclusively in 3d, from concept to tender to manufacture to construction unlocks new potentials for complex form, for the coordination of design, and how we communicate spaces, illustrated in new projects in the UK, Australia and Germany.

### **Timber construction - completely normal**

*(Talk given in German, with English subtitles)*

Markus Lager, Kaden+Lager Architekten

We want to establish timber construction [again] as a normal construction method. With this goal in mind, we design and plan residential and commercial buildings as well as office buildings, schools and universities in timber or timber hybrid construction. In our designs we seek an appropriate balance between encounter and concentration. The presentation shows examples of our work and approach.

### **Energy Management for the Built Environment**

Prof. Thomas Auer, TU München / Transsolar

The balance between high- and low-tech determines the discourse; however, robustness provides a better definition. It is shown that the complexity in construction and operation leads to the fact that neither energy targets nor user comfort can be achieved. Technology reduces robustness when system failure and user influence significantly impact the result. Passive, user-controlled systems potentially lead to robust buildings.

### **What's next?**

Winy Maas, MVRDV

Cities in the future need to be lovely, beautiful, exciting – in short, wonderful. This implies a “bucket list” for the future as we desperately need to go from a blue planet to a green one. My main question would be: How can we go from “egoism” to “wegoism”?

## **LAVA – CAMPUS – GERMANY**

Prof. Tobias Wallisser, Dr.-Ing. Alexander Rieck, Lava Laboratory for Visionary Architecture

The lecture bridges the gap between concepts for the cities of tomorrow and the German Pavilion for Expo 2020 in Dubai. By abstracting processes and phenomena from nature, LAVA aims to gain a new perception of construction and spaces. This is independent of scale and applies to master plans as well as buildings. These concepts are implemented in the 'Campus Germany' pavilion.

## **Building with Paper**

Prof. Dr. Ing. Ulrich Knaack, TU Darmstadt / TU Delft

Paper has the potential to become the building material of the future: biobased as material and with a closed recycling process. However, we don't know enough yet to be able to realize projects beyond experimental buildings: what about fire and moisture? And structural performance. The lecture deals with experimental buildings to date, presents a research program of the TU Darmstadt on this topic and outlines future developments and potentials.

## **Energy Management for the Build Environment**

Dr.-Ing. Jens Schneider, TU Darmstadt / TU Delft

The decarbonisation of the build environment is proceeding too slowly. The efforts so far mainly concentrated on an improvement of the quality of the building skin with respect to its thermal properties and on a change in the energy supply with a shift to renewable types and energy converters used as "add-ons" on the buildings. Holistic strategies including the energy demand aspects require a new thinking in the energy management and a sector-coupling to improve the energy efficiency.

## **Climatic Architecture: recent work by Philippe Rahm architects**

Architekt EPFL Phillipe Rahm, Philippe Rahm architectes

Architecture and urbanism were traditionally based on climate, comfort and health, as we can read in treatises of Vitruvius, Palladio or Alberti, where exposure to wind and sun, variations in temperature and humidity influenced the shapes of cities and buildings. These fundamental causes of urban planning and buildings were ignored in the second half of the 20th century thanks to the enormous use of fossil energy by heating and air conditioning systems, pumps and refrigerators, that today cause the greenhouse effect and global warming. Sustainability and fight against climate change force the architects and urban designer to take back seriously the climatic issue in order to base their design on more consideration to the local climatic context and energy resources. Faced with the climatic challenge of the 21st century, we propose to reset our discipline on its intrinsic climatic qualities, where air, light, heat or humidity are recognized as real materials of building, convection, thermal conduction, evaporation, emissivity, or effusivity are becoming design tools for composing architecture and cities, and through materialism dialectic, are able to revolutionize esthetic and social values.

## **Panel discussion**