



Round Table Discussion | Second Lead Topic | May 20, 2022 | 4:30 PM

URBAN LIVING, PLANNING AND BUILDING

01

Sustainability Transformations – Challenges for and the Potential of Cities

Prof. Dr. Kerstin Krellenberg | University of Vienna

02

Mobile Phone Data Processing for Mobility Analysis and Urban Planning

Prof. Dr. Jaques Teller | University of Liège

03

Urban Mobility with Linear Motor Systems

Prof. Dr. Sandor Markon | Kobe Institute of Computer Science, Kyoto

04

Innovations by Travelers: Challenges for the Urban Mobility Infrastructure in the Greater Paris

Prof. Dr. Jérôme Monnet | Université Gustave Eiffel

++ ADDITIONAL ROUND TABLE TOPICS FOR DISCUSSIONS ++

05

Reinventing Cologne to Reclaim Cologne's City Center for the People

Relocating the main railway station to Kalk opens new perspectives for the whole city as well as for the national and international rail-systems. All major suburban, underground and regional trains converge underground as well as in several ring lines around the city and into the region. The Cologne Cathedral shines in a new setting, released from the iron railway-belt. Within ten years, a new main station is to be built in Kalk as a hub for long-distance, regional and suburban rail traffic. The vacated areas of the former railway lines function as green veins and contribute to improving the city's climate. The Hohenzollern Bridge will become a Living Bridge, a new tourism hotspot for the city. By relocating long-distance and freight railway functions outside the city to the former coal mining area, almost up to 100 hectares of new inner-city space will be created. In Parkstadt Nord, for example, new residential space is being created with direct access to the inner green belt. The districts on the right bank of the Rhine will become part of the city center. Thus the city center will be significantly expanded both spatially and in terms of its attractiveness.

Prof. Paul Böhm, Prof. Siegfried Mängel, Dr. Günter Harloff | neue mitte köln e.V.

06

Life Beyond Sustainability: Envision and Envisage

We live in a rapidly increasing urbanization while a massive awareness of sustainability concepts is on to save this planet from all ill effects. From the age of slow-moving people and non-motorized vehicles, we have marched to an age of fast-moving vehicles contaminating the atmosphere with carbon monoxide, the root cause of all environmental damage. Now a re-thin-



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king to go back to the roots and want to bring in more mechanical without motors are being contemplated by governments to promote healthy and sustainable transportation.

Research Questions

Based on the above concept two important research questions are formulated.

To what extent the sustainable transportation reduce social and environmental impacts in the city of cologne?

Would the urban infrastructure development help meet the growing demand of the community who depend on public transport? and will be it able to substitute the increasing use of private vehicles during peak hours?

Research significance

- Peak-hour Traffic
- Re-arranging maintenance work schedule
- Traffic lights with artificial intelligence
- Rescheduling office hours
- Travel incentives for the public consider at least one travel hour as a working hour

Prof. Dr. Binu Daniel, CBS International Business School

07

The Challenge to Include Young and Innovative Ideas in Future Mobility

Future mobility needs new solutions. Today's cities first emerged at ports or rivers, thermal springs, trade routes and eventually rail nodes. In the last century, automobile traffic played a significant role in urban and mobility development. In this respect, however, cities are now stretched far beyond their capacity limits.

There is widespread consensus in many places that the inner cities must be relieved. However, driving bans alone will not solve all the problems. In addition, the younger generations in particular, with their creative and sustainable ideas and approaches to solutions, should be involved in future planning on an interdisciplinary basis. All this is addressed by new forms of competitive teaching research, e.g. the SMC (Smart Mobility Challenge), which was developed at the TH Köln as a collaboration between the departments „Corporate Architecture“ (Prof. Siegemund) and „Vehicle and Mobility Concepts“ (Prof. Frantzen) with intense support from industry and business. A total of four young start-ups have already emerged from this and similar formats. More are in the planning stage.

Prof. Dr.-Ing. Michael Frantzen, Prof. Dipl.-Ing. Jochen Siegemund, Corporate Architecture), MSc. Marcel Heilich, cand. MA Eva Thümling | TH Köln

08

DACBE - Direct Air Capturing in the Built Environment

CBS launched a new research project 2021 with the aim to examine a novel concept towards sustainable urban infrastructure as well as carbon neutral fuels. The concept aims to combine last year's advances in direct air capturing technology with the urban sector resulting in interesting synergies.



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DAC describes the process of direct removal of carbon dioxide (CO₂) from atmospheric air based on a solid adsorber material. The new approach involves air streams from building's ventilation instead of atmospheric air. This offers several benefits:

- Air from building's ventilation is already mechanically moved and contains more CO₂ than atmospheric air.
- CO₂ free air can be recirculated into the building to save significant amounts of energy otherwise needed for heating and cooling
- Recirculation allows for better indoor air quality (IAQ) management

The yielded CO₂ is planned to be used as feed for a novel technology to transform water and CO₂ together with renewable energy into methanol, a green fuel for mobility.

We established a collaboration with partners from Germany and Switzerland. Our first feasibility study was published last year.

Prof. Dr Sascha Nehr, Lukas Baus | CBS Cologne Business School

09

PIONEER University Alliance - United by the theme of inclusive, sustainable and resilient cities

The PIONEER Alliance includes five complementary universities in the field of Social Sciences, Humanities, Information Technologies and Engineering – all providing educational offerings linked to Future Cities. The partners are Université Gustave Eiffel (France), ISCTE – University of Lisbon (Portugal), LAUREA University of Applied Sciences (Finland), University of Zilina (Slovakia) and TH Köln – University of Applied Sciences (Germany). By creating a holistic joint learning, research and innovation model for society, the PIONEER Alliance bridges activities and stakeholders across Europe to develop and mobilize a new generation of learners, knowledge producers and entrepreneurs for future cities, business life and citizens.

PIONEER addresses students and professionals to learn, co-create, experiment, validate services and solutions as well as it encourages sharing best practices, fostering entrepreneurship to enhance European competitiveness.

Prof. Dr. Stefan Herzig, Julia Schneider | TH Köln & Odile Arbeit de Chalendar, Dr. Agnès Julien | Université Gustave Eiffel