rca 2018
research culture in architecture × international conference on cross-disciplinary collaboration
Program Booklet
27–28 September
Program
Thursday

09:00  Registration and Coffee

10:00  Welcome
Arnd Poetzsch-Heffter,
Vice President for Research, Technology and Innovation, TUK
Johannes Modersohn,
Dean of Faculty, fatuk

10:15  Michael Hensel, TU Wien:
Researching Research Cultures
in Architecture

Chair: Stephan Birk, fatuk

11:00  Coffee Break

11:30  Parallel Paper Sessions
A1  Practice and Research

Chair: Marco Zünd, fatuk

Tomas Ooms:
Public Debate: Public Interior: Circular Economy: Forms of Exchange:
Approaching the Reconversion of an Iconic 1966 Office Tower in Brussels

Charlott Greub:
Making Architecture Public - The Architecture Exhibition - an Environment
for a Radical Redesign of the Discipline

Marcin Luczkowski, John Haddal Mork, Steinar Hillersøy Dyvik and
Nathalie Labonnote:
Digital Workflows for Timber Free Form Structures - Gamification of Architectural and Engineering Design

Ragunath Vasudevan, Till Schneider, Kai Otto and Klaus Bollinger:
Practical Researchitecture - On the Role of Research in the Context of an Architectural Practice
B1  Structures and Sustainability

Chair: Angèle Tersluisen, fatuk

Viktor Poteschkin, Stefan Krötsch, Jürgen Graf and Christopher Robeller: Recycling of Cross Laminated Timber Production Waste
Steffi Silbermann, Hoa Nguyen, Daniel Kohl, Stefan Böhm, Philipp Eversmann and Heike Klussmann: TETHOK – Textile Tectonics for Wood Construction
Samira Aden, Rebecca A. Milhuisen, Muhammad Kalim Kashif, Udo Bach and Heike Klussmann: Dye-Sensitized Concrete – Solar Power from Concrete

C1  Architectural Space and Perception

Chair: Cornelie Leopold, fatuk

Beatrix Emo: Why Evidence-Based Methods are Useful for Architectural Design
Holger Mertins, Barbara Mertins, Renate Delucchi Danhier, Ansgar and Benedikt Schulz: The Role of Expertise in the Perception of Architectural Space
Andri Gerber, Michal Berkowitz, Beatrix Emo, Stefan Kurath, Christoph Hölscher and Elsbeth Stern: Does Space Matter? A Cross-Disciplinary Investigation upon Spatial Abilities and Spatial Knowledge of Architects
Giulia Vismara: Sound as a Space Generator

13:00  Lunch

14:00  Margitta Buchert, LUH Hannover: In-Between Realms

Chair: Heike Kern, fatuk

14:45  Christian Derix, Woods Bagot S., Sydney: The Spatial Turn in Design Computing

Chair: Helmut Kleine-Kraneburg, fatuk
**15:30**  Coffee Break

**16:00**  Parallel Paper Sessions

**A2**  Design Methods: New Approaches

Chair: Christina Jagsch, fatuk

Joost Meyer and Federico Garrido:  
Dexterity Controlled Design Procedures

Pradeep Devadass, Martin von Hilchen, Sven Stumm and Sigrid Brell-Cokcan:  
Re-Informed Design Process: Understanding Robotic Fabrication Constraints and their Influence on Design

Luise Rellensmann and Jens Casper:  
Making Heritage: Das Garagenmanifest

Dagmar Jäger:  
Asking the Task: Principles of Traditional Knowledge Production

**B2**  Material and Construction

Chair: Moritz Kaiser, fatuk

Reiner Klopfer, Christian Weisgerber und Jürgen Graf:  
Acetylated Beech in Structural Timber Constructions

Efilena Baseta and Klaus Bollinger:  
Digitally Fabricated Active-Bending Beams for the Rapid Assembly of Temporary Structures

Roman Polster, Lucas Büscher, Wigbert Riehl and Heike Klussmann:  
Botanical Concrete: Novel Composites for Urban Greening

Felix Lowin and Jutta Albus:  
Architecture without Architects: Rough Implementation Strategy / Supporting Residential Construction by Precast Building Systems

**C2**  Architectural Space and Human Body

Chair: Judith Leinen, fatuk

Maria da Piedade Ferreira, Andreas Kretzer and José Pinto Duarte:  
Embodied Emotions: a Methodology for Experiments in Architecture and Corporeality

Helle Braband:  
Dance with Space – Animate-Configuring

Katharina Voigt:  
Referring to ... Whom?

Liselotte Vroman and Thierry Lagrange:  
Design to Move, Move to Design: an Interdisciplinary Approach for Designing an Architectural Choreography
17:30 Coffee Break

18:00 Discussion 1

19:00 Research Culture in Architecture

  Michael Hensel, TU Wien
  Margitta Buchert, Leibniz Universität Hannover
  Christian Derix, Woods Bagot SuperSpace, Sydney
  Maria da Piedade Ferreira, fatuk
  Peter Spitzley, fatuk
  Ulrike Weber, fatuk
  Moderator: Georg Vrachliotis, KIT Karlsruhe

20:00 Dinner
Program

Friday

09:00 Parallel Paper Sessions

A3 Architecture and Visualization

Chair: Franziska Wilcken, fatuk

Isabell Schütz:
The Biorealistic Approach in the Settlement Architecture of Richard Neutra
Rachele Bernardello, Paolo Borin, Isabella Friso, Andrea Giordano,
Cosimo Monte Leone and Federico Panarotto:
Cultural Dissemination and Interoperable Management of Architecture
Shilong Tan, Yuxin Yang and Luigi Cocchiarella:
AR&VR, New Tools for Architecture Design and Architectural Visualization

B3 Digital Timber Construction

Chair: Christopher Robeller, fatuk

Jan Brütting, Julieta Moradei, Corentin Fivet, Aliz Fischer and
Nick Sherrow-Groves:
Reconsidering Traditional Timber Joinery for Sustainable Structures
Miro Bannwart:
The Gravitational Pavilion - Simplified Node Complexity
Dominga Garufi, Hans Jakob Wagner, Simon Bechert, Tobias Schwinn,
Dylan Marx Wood, Achim Menges and Jan Knippers:
Fibrous Joints for Lightweight Segmented Timber Shells
Dennis Röver and Jürgen Graf:
Densified Veneer Wood Reinforced Timber Joints

C3 Architectural Education

Chair: Oda Pälmke, fatuk

Angelika Jäkel, Susanne Gerstberger and Fanny Kranz:
Collaborative Tools. Adaptations from the Educational Sciences to Research in Architecture
Alexa Maria Kunz and Bernd Sum:
Research Architecture I Architectural Research – A Seminar Concept for Research-Oriented Education

Moritz Dörstelmann, Daniele Santucci and Ferdinand Ludwig:
Prototyping Based Research Methodology and Interdisciplinary Research-Oriented Teaching

Bettina Kraus, Nandini Oehlmann and Mathias Peppler:
Werkstücke – Making Objects into Houses / Understanding by the Way of the Hands in Design Teaching

10:30 Coffee Break

11:00 Eike Roswag-Klinge, TU Berlin:
Designing Natural Buildings

Chair: Stephan Birk, fatuk

11:45 Caitlin Mueller, MIT Cambridge:
Exploring Design with Data: Tools and Techniques for Performance-driven Architecture

Chair: Johannes Modersohn, fatuk

12:30 Poster Session

Jan Brütting, Gennaro Senatore and Corentin Fivet:
Re-Use in Architecture and Structural Design

Margherita Ferrari:
Headmade. The Transformation of the Wood Manufacturing

Anke Fissabre, Inga Hahn, Gesa Königstein, Heike Matcha, Günter Barczik and Nikolai Roskammi:
Teaming, Taming and Teeming: Teaming up People for Taming Complex Problems by Creating Environments Teeming with Possibilities

Fabrizio Leoni:
Leisure / Hospitality / Exhibition. Three mixed-use Projects for Milan, Olbia, Sanya, at the Frontier of Teaching, Researching and Professional Design

Manuel Pfänder:
Tailored Precast Concrete Structures – Experimental Design of Tailored Fabric Formwork for Precast Structural Concrete Elements

Clara Rellensmann and Alexander Römer:
Studio Bagan – Building in Heritage Contexts

Torsten Schröder:
Translating the Concept of Sustainability into Architectural Design Practices: The Case of London City Hall
Benoît Vandenbulcke: Savoir-faire/faire savoir: How to Engage Architecture Practice as a Research Tool?

Vera Viana: Topological Interlocking of Convex Regular Polyhedra

13:00 Lunch

14:00 Sigrid Brell-Cokcan, RWTH Aachen: Individualizing Production with DIANA - a Dynamic and Interactive Robotic Assistant for Novel Applications

Chair: Christopher Robeller, fatuk

14:45 Parallel Paper Sessions

A4 Mathematical and Structural Design Approaches

Chair: Cornelie Leopold, fatuk

Toni Kotnik: Architecture as Science of Structures
Hao Hua, Jiacheng Wang, Biao Li, Tingli Jia and Peng Tang: Pythagorean Carpenter
Cristoph Dijoux, Alexander Stahr and Martin Dembski: Form Finding of Grid-Shells with Straight, Equal Line-Length Rods
Corneel Cannaerts and Holger Hoffmann: Grounding Associative Geometry

B4 Robotics in Timber Construction

Chair: Christopher Robeller, fatuk

Samuel Leder, Ramon Weber, Oliver Bucklin, Dylan Wood and Achim Menges: Towards Distributed in Situ Robotic Timber Construction
Andreas Thoma, David Jenny, Matthias Helmreich, Augusto Gandia, Fabio Gramazio and Matthias Kohler: Cooperative Robotic Fabrication of Timber Dowel Assemblies
Benedikt Wannemacher and Philipp Eversmann: Intuitive Path Planning for Robotic Timber Beam Assembly
Bahar Al Bahar, Abel Groenewolt, Oliver Krieg and Achim Menges: Bending-Active Lamination for Spatial Timber Structures: Robotically Fabricated Elements with Continuous Fibre Alignment
**C4**  
**Sustainability and Climate Approaches**

Chair: Andreas Winkels, TH Bingen

Gabriela Celani, Sabine Hoffmann, Lucila Labaki, Watson Loh, Caio Gomide Otoni and Maikol Yabuki:  
Affordable Application of PCM for Passive Indoors Temperature Control in a Tropical Climate

Rosaria Revellini, Massimiliano Condotta and Francesca Cappelletti:  
Parametric Design for Bow-Windows Optimization According to Daylighting

Christoph Kuhn, Karsten Tichelmann, Edin Saronjic and Dieter Blome:  
Dammerstock 2020

Luyi Liu and Luigi Cocchiarella:  
Lifestyle Landscape Architecture

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16:00  
**Coffee Break**

16:30  
**Discussion 2**

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18:00  
**Research Culture in Architecture**

Elke Roswag-Klinge, TU Berlin  
Caitlin Mueller, MIT Cambridge  
Sigrid Brell-Cokcan, RWTH Aachen  
Cornelie Leopold, fatuk  
Christopher Robeller, fatuk  
Peter Spitzley, fatuk  
Moderator: Georg Vrachliotis, KIT Karlsruhe
Location
Building 1

C
R 004  C1–C4 Parallel Paper Sessions

A
R 160  Keynote Speakers
Michael Hensel, TU Wien
Margitta Buchert, Leibniz Universität Hannover
Christian Derix, Woods Bagot SuperSpace, Sydney
Eike Roswag-Klinge, TU Berlin
Caitlin Mueller, MIT Cambridge
Sigrid Brell-Cokcan, RWTH Aachen

A1–A4 Parallel Paper Sessions
Poster Session
Discussions
The Faculty of Architecture of the TU Kaiserslautern (fatuk) invites researchers to meet in a quiet and stimulating environment, on the edge of the only transboundary biosphere reserve in Germany, the Palatinate Forest. This conference serves to present current research projects from the various fields of architecture and to promote cross-disciplinary discussions on relevant issues: What is research in architecture? Do buildings contain innovations that have not been published because they were not understood as research? How does research relate to the practice of architecture? Does research in architecture happen exclusively at universities? Or also in practice?