DESIGNING NATURE AS INFRASTRUCTURE

SYMPOSIUM. NATUR ALS INFRASTRUKTUR ENTWERFEN
TECHNISCHE UNIVERSITÄT MÜNCHEN

29. / 30. 11. 2012

FACULTY OF ARCHITECTURE
INSTITUTE FOR URBAN DESIGN,
URBANISM AND LANDSCAPE
TUM MAIN BUILDING, ARCISSTRASSE 21
VORHOELZER FORUM
FAKULTÄT FÜR ARCHITEKTUR
INSTITUT FÜR ENTWERFEN STADT
UND LANDSCHAFT
TUM HAUPTGEBÄUDE, ARCISSTRASSE 21
VORHOELZER FORUM

TUM Graduate School
Graduate Center of Architecture

Studienfakultät Landschaftsarchitektur
und Landschaftsplanung

bdla
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SYMPOSIUM. PROGRAM

THURSDAY | 29.11.2012

9.30 – 10.00 Coffee/Tea

10.00 – 10.40 **Welcome:** Regine Keller, Vice President TUM, Chair of Landscape Architecture and Public Space
Stefanie Hennecke, Speaker of TUM Graduate Center of Architecture

Introduction: Daniel Czechowski, Thomas Hauck, Georg Hausladen

10.40 – 11.10 **CAREFULLY RADICAL OR RADICALLY CAREFUL?**
Designing nature as infrastructure and infrastructure as nature
Greet De Block, Marcel Smets

11.10 – 11.40 **DESIGNING NATURE AS *ENERGY* INFRASTRUCTURE**
Envisioning new aesthetics of energy through landscape design
Daniela Perotti

11.40 – 12.10 Break/Pause

12.10 – 12.40 **THE GARDEN AND THE MACHINE**
Thomas Juel Clemmensen

12.40 – 13.10 **DISCUSSING LANDSCAPE MACHINES IN THE LIGHT OF EVOLUTIONARY THERMODYNAMICS**
Sven Stremke, Paul Roncken, Riccardo Pulselli

13.10 – 13.40 Panel Discussion

13.40 – 14.40 Lunch Break/Mittagspause

14.40 – 15.10 **PLANTING THE DESERT**: Cultivating Green Wall Infrastructure
Rosetta Sarah Elkin

15.10 – 15.40 **ECOLOGICAL NETWORK PLANNING IN GERMANY**
Manuel Schweiger

15.40 – 16.00 Break/Pause

16.00 – 16.30 **REAL-TIME METRICS**: **BEYOND GREEN WASHING AND ONTO PERFORMANCE OPTIMIZATION**
Liat Margolis

16.30 – 17.00 **INTEGRATED DESIGN AS AN OPPORTUNITY TO DEVELOP GREEN INFRASTRUCTURES WITHIN COMPLEX SPATIAL QUESTIONS**
Gabriëlle Bartelse, Susanne Kost

17.00 – 17.30 Panel Discussion

19.00 Dinner

FRIDAY | 30.11.2012

08.15 – 08.45 Coffee/Tea

08.45 – 09.00 **Introduction:** Sören Schöbel, Department of Landscape Architecture and Regional Open Space

09.00 – 09.30 **WATER-SENSITIVE DESIGN OF OPEN SPACE SYSTEMS**
Ecological Infrastructure Strategy for Metropolitan Lima, Perú
Eva Nemcova, Bernd Eisenberg, Rossana Poblet, Antje Stokman

09.30 – 10.00 **INFRASTRUCTURE DESIGN AS A CATALYST FOR LANDSCAPE TRANSFORMATION:** Research-by-Design on the structuring potential of regional public transport
Matthias Blondia, Erik de Deyn

10.00 – 10.30 **A GREEN INFRASTRUCTURE PLAN FOR LA PARGUERA, PUERTO RICO**
José Juan Terrasa-Soler, Laura Lugo-Caro, Mery Bingen

10.30 – 10.50 Panel Discussion

10.50 – 11.10 Break/Pause

11.10 – 11.40 **THE CURRENT LANDSCAPE OF GREEN INFRASTRUCTURE PLANNING AND ECOSYSTEM SERVICES:** the cases of Berlin and New York
Emily Lorance Rall, Rieke Hansen, Stephan Pauleit

11.40 – 12.10 **GREEN INFRASTRUCTURE:** performance, appearance, economy and working method
Jack Ahern, Paulo Pellegrino

12.10 – 12.40 **DESIGNING INTEGRAL URBAN LANDSCAPES**
Stefan Kurath

12.40 – 13.00 Panel Discussion

13.00 – 14.00 Lunch Break/Mittagspause

14.00 – 14.30 **THE CITY THAT NEVER WAS** – Catalytic Natures and Spain's incomplete urban peripher
Christopher Marcinkoski

14.30 – 15.00 **COUNTERPOINT: INFRASTRUCTURE OPTIMIZATION FOR RURAL/ URBAN EQUITY**
Matthew Skjonsberg

15.00 – 15.30 **LANDSCAPE OF VARIANCE:** working the gap between design and nature
Ed Wall, Mike Dring

15.30 – 15.50 Panel Discussion

15.50 – 16.00 Closing Remarks

16.00 Apero

SPEAKERS

CAREFULLY RADICAL OR RADICALLY CAREFUL?
Designing nature as infrastructure and infrastructure as nature
This paper critically examines recent shifts in design attitudes vis-à-vis the tripartite technology, space and society against the background of interplays between infrastructure and nature, engineering and architecture, technology and culture, in the nineteenth and twentieth century.
Greet De Block Postdoc at KU Leuven. She published on technology, space and society in eg Journal of Historical Geography and Technology and Culture.
Marcel Smets Professor emeritus at KU Leuven. Recent publications include „The Landscape of Contemporary Infrastructure".

DESIGNING NATURE AS *ENERGY* INFRASTRUCTURE
Envisioning new aesthetics of energy through landscape design
This contribution will explore the hypothesis of considering landscape as energy infrastructure both in action (in esse) and in potentia (in posse), with regard to new aesthetics related to the notion of nature as a production and supply system of different forms of energy (endo/exosomatic) and energy transformation processes.
Daniela Perrotti PhD, architect. Post-PhD fellow, French National Institute for Agronomic Research, (UMR SAD-APT, INRA– AgroParisTech). Lecturer (course Aesthetics), School of Architecture and Society of Politecnico di Milano (Department of Architecture and Planning).

THE GARDEN AND THE MACHINE
How can the concepts of garden and machine inform our understanding of the complex relationship between infrastructure and nature? Rather than being something accommodating our infrastructural machines, the garden is addressed as something that ultimately reveals how the machines work in the cultivated nature.
Thomas Juel Clemmensen is landscape architect MDL PhD and associate professor at the Aarhus School of Architecture, Denmark.

DISCUSSING LANDSCAPE MACHINES IN THE LIGHT OF EVOLUTIONARY THERMODYNAMICS
How can designers deal with sustainable green infrastructure if they don't take into account relevant scientific knowledge on, for example dissipiative structure and self-organization? We do not claim to have the solution ready. Rather, we will revisit the concept of the landscape machine (Roncken et al. 2011) and converge architectural imagination with scientific insights. A recent design proposal for a landscape machine will be assessed making use of key concepts from evolutionary themodyamics and energy systems diagrams.
Sven Stremke Dr., is Assistant Professor of Landscape Architecture at Wageningen University. Sven and his team conduct research and commissioned projects on sustainable energy landscapes. In 2012, Sven and his colleague Renée de Waal launched the 'NRGlab', a laboratory devoted to the design of (and research on) sustainable energy landscapes (www.NRGlab.net).
Paul Roncken Ir., is Assistant Professor of Landscape Architecture at Wageningen University. Paul focuses on design education and experiential aesthetics. He has recently (2012) founded the 'landscape machine research team: LaMa-research' to continue developing new agricultural products by natural succession and landscape regeneration.
Riccardo Pulselli Dr., is an architect and currently a research fellow at the University of Siena, Italy. He earned his PhD degree from the University of Siena (Faculty of Science), after a period at the MIT SENSEable City Laboratory. He is author of City Out of Chaos: Urban Self-organization and Sustainability (WIT Press, 2009) and The Moving City: How to Explore Urban Kinetics (Laris, 2011).

PLANTING THE DESERT: Cultivating Green Wall Infrastructure
The global challenge of rapidly declining vegetative cover is being addressed by massive replanting projects that cross territorial, political, and cultural boundaries. Although the forces of destruction and devastation are well known, the tactics for implementing cover remain obscured and seldom reviewed. By cataloguing two contemporary examples in different stages of cultivation "La Grande Muraille Verte" in the Sub-Sahara, and the '3 North Shelterbelt Program' in China, a critical perspective can be constructed which highlights the tension between engineering infrastructure and cultivating healthy ecosystems. These projects are the largest horticultural projects the world has ever seen, and they are forcing us to reimagine and rewrite entire territories.
Rosetta Sarah Elkin is the Daniel Urban Kiley Fellow in Landscape Architecture at Harvard's Graduate School of Design. Rosetta teaches in the core studio sequence leading seminars in representation and photography. Rosetta was formerly senior associate at Inside Outside, where she was responsible for Middle East, North Africa and China regions. Rosetta is a registered landscape architect in the Netherlands, and maintains a design consultancy focused on vegetative strategies that address complex large-scale proposals.

ECOLOGICAL NETWORK PLANNING IN GERMANY
Habitat connectivity concepts will be introduced at different scales and in several regions, relevant links between different scales and inherent conflicts in planning for connectivity can be illustrated. Taking projects as examples we give an overview of the condition of habitat connectivity projects in Germany.
Manuel Schweiger studied landscape architecture and environmental planning at TUM. Since 2007 he works for the ecological consultancy PAN GmbH and has been involved in several R+D-Projects for the Federal Agency for Nature Conservation.

REAL-TIME METRICS: beyond green washing and onto performance optimization
While an increasing number of landscape projects proclaim the term "performance" without providing post-occupancy quantitative evaluation, the approach described in this paper employs sensor technology to facilitate off-site monitoring and the acquisition of site metrics on an ongoing basis.
Liat Margolis is professor of landscape architecture at the University of Toronto and director of GRIT LAB, Green Roof Innovation Testing Laboratory.

INTEGRATED DESIGN AS AN OPPORTUNITY TO DEVELOP GREEN INFRASTRUCTURES WITHIN COMPLEX SPATIAL QUESTIONS
In the Netherlands the development of nature has become an element which unites economic, ecological and security-related (in the case of flood) interests. We want to explain some examples which show how complex spatial conflicts under the synonym of green infrastructure work out in an interdisciplinary way and lead to long-term solutions in rural and urban areas.
Gabriëlle Bartelse Ir., Landscape architect at the chair group of landscape architecture at Wageningen University, 15 years of designing and consulting experiences at private offices and the municipality of Deventer.
Susanne Kost Dr., University of Kassel, Department of Architecture, Urban Planning, Landscape Planning, Institute for Empirical Planning Research (AEP) Architect and Scientist in Landscape and Urban Planning Research, research fields and empirical work: landscape perception, landscape images related to social and cultural impacts.

WATER-SENSITIVE DESIGN OF OPEN SPACE SYSTEMS
Ecological Infrastructure Strategy for Metropolitan Lima, Perú
Metropolitan Lima is lacking green areas as well as water resources. This paper explores how the interplay of design and ecology in open space can address the challenges of water scarcity, environmental degradation and uncontrolled urban growth and develops the Ecological Infrastructure Strategy.
Eva Nemcova Dipl.-Ing., landscape architect, research assistant at the University of Stuttgart, working on the research project LiWa in Lima.
Bernd Eisenberg Dr., landscape architect and researcher at the University of Stuttgart, working on the research project LiWa in Lima.
Rossana Poblet MSc. Arch., Peruvian architect and urban planner, research and teaching assistant at the University of Stuttgart, working on the research project LiWa in Lima.
Antje Stokman Professor, landscape architect and director of the Institute of Landscape Planning and Ecology at the University of Stuttgart, director of the research project LiWa.

INFRASTRUCTURE DESIGN AS A CATALYST FOR LANDSCAPE TRANSFORMATION: Research-by-Design on the structuring potential of regional public transport
The research explores the strategic potential of the hydrological system and the landscape morphology in the definition of a new regional light rail network, as a guiding principle for transit oriented development. This is done through a research by design on different scales in a sub-region of Flanders.
Matthias Blondia (engineer-architect and spatial planner) is a researcher at KULeuven. He has a background in architecture practice and public institutions.
Erik De Deyn studied architecture and landscape planning. After working on different architecture projects, he started research in the field of urban and transport planning.

A GREEN INFRASTRUCTURE PLAN FOR LA PARGUERA, PUERTO RICO
La Parguera, a small coastal town in Puerto Rico, is home to some of the more diverse coral reef ecosystems in the Caribbean. We proposed a series of interventions to use the urban landscape as water treatment infrastructure and reduce environmental impacts to its near-shore ecosystems, while improving urban spatial quality.
José Juan Terrasa-Soler Advanced degrees in ecology, environmental studies, and landscape architecture from Michigan, Yale, and Harvard, respectively. Asstnt. Prof. of Landscape Arch. at Polytechnic University of Puerto Rico.
Laura Lugo-Caro Licensed horticulturist and landscape architect with over 6 years of experience. Also, an industrial and jewelry designer. MLArch from Polytechnic University of PR.
Mery Bingen Studied communications, visual arts, architecture, and landscape architecture. Landscape architect and painter. MLArch from Polytechnic University of PR.

THE CURRENT LANDSCAPE OF GREEN INFRASTRUCTURE PLANNING AND ECOSYSTEM SERVICES: the cases of Berlin and New York
Green infrastructure and ecosystem services are recent and promising concepts to address the challenges of urbanization. But have they been integrated into planning? Berlin and New York are used as case study cities to review how these concepts have been adopted in recent urban planning.
Emily Lorance Rall City planner; research associate at the Chair for Strategic Landscape Planning and Management, Munich Technical University
Rieke Hansen Landscape planner; research and teaching associate at the Chair for Strategic Landscape Planning and Management, Munich Technical University.
Stephan Pauleit Professor, leads the Chair for Strategic Landscape Planning and Management at Munich Technical University.

GREEN INFRASTRUCTURE: performance, appearance, economy and working method
Landscape architecture has an unprecedented opportunity to lead in the modernization and installation of urban infrastructure in both developed and developing urban contexts. To capture this opportunity, in both contexts, landscape architects will need to address performance, appearance, economy and working methods differentially.
Jack Ahern Ph.D., FASLA, Professor of Landscape Architecture, University of Massachusetts Amherst, USA
Paulo Pellegrino PhD, MSc and Bachelor of Arch., Professor at the School of Architecture and Urbanism, University of São Paulo, Brazil. LAB-Verde Co-Founder.

DESIGNING INTEGRAL URBAN LANDSCAPES
The distinction between "nature" and "society" as a relic of modern times turns out to be rather unproductive because human interventions in "nature" are perceived as destructive. If we add realism to this concept, "new" nature (infrastructure) elements can be created. In the lecture this claim will be backed up with examples of projects by ZHAW architecture students.
Stefan Kurath Dr.-Ing., Studied Architecture and Landscape Architecture. He holds a PhD in urban design. He teaches architecture and urban design at ZHAW. Owner of www.urbaNplus.ch, and partner at Iseppi-Kurath GmbH in Zurich and Graubünden.

THE CITY THAT NEVER WAS – Catalytic Natures and Spain's incomplete urban periphery
This paper uses the current urbanistic situation at the periphery of Spanish cities as a lens through which to consider the potentials of ecology-driven design logics as primary organizers of new settlement. Of particular interest is design's capacity to anticipate and negotiate the speculative formats of urbanization that have become instruments of economic production in both established and emerging economies.
Christopher Marcinkoski is an Assistant Professor of Landscape Architecture at the University of Pennsylvania. He is also founding director of PORT A+U – a leading edge urban design consultancy based in the U.S.

COUNTERPOINT: INFRASTRUCTURE OPTIMIZATION FOR RURAL/ URBAN EQUITY
As a counterproposal to the popular notion of self-sufficient cities, this essay proposes conceiving of rural and urban as fundamentally contrapuntal – cultural polarities of the same civilizing force, in a balancing act involving the regional landscape: hydrological, geological, and ecological.
Matthew Skjonsberg AIA, studied at Taliesin and ETH-Zurich, founded collab architecture and is a project leader at West 8 in New York and Rotterdam.

LANDSCAPE OF VARIANCE: working the gap between design and nature
In design processes that work with the land there are variances, deviations and gaps. These moments expose tensions and resistance between what is conceptualised and what is real to reveal complex landscape conditions and new design potentials.
Ed Wall teaches landscape and urbanism at Kingston University and is a visiting professor at Politecnico di Milano.
Mike Dring leads the MArch Architecture at Birmingham School of Architecture and collaborates across multiple disciplines in his research and practice.

Conference Organizers + Scientific Committee:
Daniel Czechowski Department of Landscape Architecture and Regional Open Space (LAREG)
Thomas Hauck Chair of Landscape Architecture and Public Space (LAO)
Georg Hausladen Department of Landscape Architecture and Regional Open Space (LAREG)
Technische Universität München, Faculty of Architecture,
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