



## Program

- **All times in this program document are referred to Zurich's time** (Central European Summer Time – CEST = UTC + 2). Conversions to some selected time zones are available on the last page of this document
- **Once you enter in the talque network as participant, the schedule on the talque platform will be shown according to your local time**
- This program is still subject to minor changes/additions
- A version of the program including more details on the speakers and the contributions is available at [this web page](#)

## Wednesday, 2 September, 2020

- 8.15 – 9.00      **Opening and Keynote lecture 1**  
**Andreas Schönborn** and **Ranka Junge**, ZHAW, Switzerland  
The wonders of closed cycles – an introduction
- 9.00 – 9.15      *Break*
- 9.15 – 10.45     **Plenary Panel 1**  
Education in Ecological Engineering – A need whose time has come  
**Chair: Glenn Dale**, Verterra, Australia  
Panelists: Glenn Dale, David Austin, Ashanta Goonetilleke, Martin Regelsberger, Gaby Dotro, Peter Head
- 10.45 – 11.00    *Break*
- 11.00 – 12.30    **Task / Case study Space 1 (in parallel)**  
**Anja Bruell**, Euregio Mass-Rhein, Belgium  
Bio-economic wastewater recycling as a potential solution to cross-border water quality issues in the Three Countries Park (Belgium-Netherlands-Germany)  
**Pascal Geiger**, VBAU Architektur AG, Switzerland  
Sano Prakash - Education in a closed cycle – School in Butwal, Nepal  
**Jochen Hack**, TU Darmstadt, Germany  
**Petra Schneider**, Hochschule Magdeburg-Stendal, Germany  
Multifunctional and Co-Designed Green Infrastructures in Urban Contexts  
**Nikolas Hagemann**, Ithaka Institut, Switzerland  
Cascading uses of biochar  
**Martin Anda**, Murdoch University, Australia  
Closing the Cycle on Flyash from Coal-fired Power Stations - A Transition Strategy to a Low Carbon Future in Collie, Western Australia  
**René Altorfer**, **Yves Moser**, ZHAW, Switzerland  
Closing Cycles – From Idea to Market – Day 1
- 12.30 – 14.15    **Global Café:**  
Welcome message of Urs Hilber  
Community & free activities (to be defined)
- 14.15 – 15.00    **Plenary Keynote lecture 2**  
**Eberhard Morgenroth**, ETH Zurich / Eawag, Switzerland  
Opportunities for greywater reuse at different scales
- 15.00 – 15.15    *Break*

15.15 – 16.45      **Task / Case study Space 2 (in parallel)**  
**Serge-Étienne Parent**, Université Laval, Canada  
Machine learning in ecological engineering  
**Rafael Vazquez-Burney**, Jacobs Engineering Group, USA  
The 4G Ranch Wetlands recharge aquifers: 3 years of operation  
**Kimmerly Nace**, Rich Earth Institute, USA  
An interdisciplinary approach to developing community-engaged systems for urine diversion and reuse  
**Martin Schmid**, Oekozentrum Langenbruck, Switzerland  
Resources Creating Society – your action beyond sustainability  
**Nick Esseiva, Tine van Laere**, ZHAW, Switzerland  
Possibilities to implement biodegradable materials for beverage bottles – Day 1

16.45 – 17.00      *Break*

17.00 – 18.30      **Session Space 1 (in parallel)**

### **Blue is the new Green – Ecological Engineering of Urban Waterfronts & Coastal Infrastructure**

Chair: Shimrit Perkol-Finkel, ECONcrete Tech, Israel

17.00 – 17.30      **Shimrit Perkol-Finkel**, ECONcrete Tech., Israel  
The Role of Biomimicry in Ecological Engineering of Urban Waterfronts

17.30 – 18.00      **Sylvain Pioch**, University Montpellier 3, France  
Eco-design marine construction with a bio-mimetic approach: first experience with artificial reef in Corsica

18.00 – 18.30      **Jon K. Miller**, Stevens Institute of Technology, USA  
Living shorelines in urban environments - can it be done

### **Nature-based solutions for wastewater reuse**

Chair: Tess Thompson, Virginia Tech, USA

17.00 – 17.30      **Alexandros Stefanakis**, Technical University of Crete, Greece  
Nature-based solutions to promote water circularity in the industrial sector

17.30 – 18.00      **Tjasa Griessler-Bulc**, University of Ljubljana, Slovenia  
Introducing Green technologies for wastewater treatment and reuse for agricultural irrigation

18.00 – 18.30      **Ruud Kampf**, Rekel/water, The Netherlands  
The Waterharmonica, over 20 years experience with Reuse of waste water through natural processes

### **Going into the real world**

Chair: Matthias Stucki, ZHAW, Switzerland

17.00 – 17.30      **Elena Margineanu**, Free International University of Moldova  
Implementation of innovative engineering solutions in Moldova

through the prism of the existing legal framework.

17.30 – 18.00

**Jürg Rohrer**, ZHAW, Switzerland

Decarbonization of the Swiss energy system: An interactive calculator

18.00 – 18.30

**Martin Regelsberger**, Technisches Büro Regelsberger, Austria

Integrated urban water management - transforming knowledge

## Thursday, 3 September, 2020

- 8.15 – 9.00            **Plenary Keynote lecture 3**  
**Maria Wirth**, alchemia-nova, Austria  
The fabrics of a circular city
- 9.00 – 9.15            *Break*
- 9.15 – 10.45          **Task / Case study Space 3 (in parallel)**  
**Ariane Krause**, IGZ, Germany  
Quality assurance of recycling products from dry toilets for use in agri- & horticulture through standardization  
**Mark Dyer**, University of Waikato, New Zealand  
Engineering with Tokomaru Bay Community: Restoration of Historic Wharf and Buildings  
**Glenn Dale**, Verterra, Australia  
Sustainable recycling of embodied nutrients and carbon in biosolids  
**Johannes Kissler and Gaetano Bertino**, alchemia-nova, Austria  
Buildings as ecosystem services providers - Drivers and barriers for implementation and transferability of sustainable temporary pop-up living systems  
**Anke Domschky, Nathalie Baumann, Chiara Catalano**, ZHAW, Switzerland  
A new curriculum — Merging architecture/design and ecology  
**René Altorfer, Yves Moser**, ZHAW, Switzerland  
Closing Cycles – From Idea to Market – Day 2
- 10.45 – 11.00        *Break*
- 11.00 – 12.30        **Session Space 2 (in parallel)**
- Building integrated ecosystem services I - building greening cycles energy, water and nutrients (COST session)**  
Chair: Thomas Nehls, TU Berlin, Germany
- 11.00 – 11.30        **Paul Osmond**, University of New South Wales, Australia  
Blue and green infrastructure planning
- 11.30 – 12.00        **Michael Blumberg**, Blumberg Engineers, Germany  
Wetland roofs – a multifunctional green roof type - Basics and engineering practice
- 12.00 – 12.30        **Rocio Pineda Martos**, University of Seville, Spain  
Using Earth observation satellites for identification and assessment of green roofs in European cities - Copernicus programme data and Google Earth Engine

## **Evaluating greywater reuse as a strategy towards closed cycles**

Chair: Stewart Dallas, Murdoch University, Australia

- 11.00 – 11.30      **Stewart Dallas**, Murdoch University, Australia  
Role Residential Greywater Reuse
- 11.30 – 12.00      **Devi Buehler & Christoph Koller**, ZHAW, Switzerland  
Water and energy self-sufficiency of a laundry greywater closed-cycle pilot facility
- 12.00 – 12.30      **Noémie Probst**, ETH Zurich, Switzerland  
Temporal and spatial variability of urban heat and insights into blue, green and grey mitigation strategies

## **Biochar-based products and materials to close cycles**

Chair: Nikolas Hagemann, Ithaka Institut, Switzerland

- 11.00 – 11.30      **Christoph Hiemer**, carbonauten GmbH, Germany  
Biochar-based plastics
- 11.30 – 12.00      **Kathleen Draper**  
TBA
- 12.00 – 12.30      **Nikolas Hagemann**, Ithaka Institut, Switzerland  
Carbon Sink City
- 12.30 – 14.15      Global Café: IEES assembly, free activities, poster session
- 14.15 – 15.00      **Plenary Keynote lecture 4**  
**David Austin**, Jacobs Engineering Group, USA  
Engineered remediation of the Baltic Sea: Confronting massive scales with green hydrogen and the circular economy
- 15.00 – 15.15      *Break*
- 15.15 – 16.45      **Plenary Panel 2**  
**Chair: Gunther Geller**, IOeV, Germany and **Petra Schneider**, Hochschule Magdeburg-Stendal, Germany  
Eco-Engineering Network of Universities (IOeV session)  
Panelists: TBA
- 16.45 – 17.00      *Break*
- 17.00 – 18.30      **Task / Case study Space 4 (in parallel)**  
**Mona Mijthab**, MOSAN, Guatemala  
Mosan - Circular Sanitation System and Biochar  
**Nick Esseiva, Tine van Laere**, ZHAW, Switzerland  
Possibilities to implement biodegradable materials for beverage bottles – Day 2  
**Claudio Reinhard**, ETH Zurich, Switzerland  
Phenoliva: Treatment and valorization of olive mill wastes

**Andre Sobolewski**, Clear Coast Consulting, Inc., Canada  
Holistic design of wetlands for water treatment and enhanced biodiversity

18.30 – 18.45 *Break*

18.45 – 20.15 **Session Space 3 (in parallel)**

### **Modelling**

Chair: Ignasi Rodriguez-Roda, ICRA, Spain

- 18.45 – 19.15 **Tess Thompson**, Virginia Tech, USA  
Wetbud: A model for wetland design
- 19.15 – 19.45 **Rebecca Humborg**, ETH Zurich, Switzerland  
Influence of water availability for irrigation on the evapotranspiration and heat mitigation potential of vegetated walls
- 19.45 – 20.15 **Ignasi Rodriguez-Roda**, ICRA, Spain  
Water 5.0: a new paradigm in the framework of the circular economyTBA

### **Reducing the environmental footprint through closed cycles**

Chair: Kai Udert, ETH/Eawag, Switzerland

- 18.45 – 19.15 **Jojo Linder**, Kompotoi, Switzerland  
A transdisciplinary process to establish urine fertilizer in Swiss agriculture
- 19.15 – 19.45 **Ariane Krause**, IGZ, Germany  
Fertilizer potential urban waste compost
- 19.45 – 20.15 **Abraham Noe-Hays**, Rich Earth Institute, USA  
Using freeze concentration to reduce the volume of urine-derived fertilizer

## Friday, 4 September, 2020

8.15 – 9.00            **Plenary Keynote lecture 5**  
**Mark Dyer**, University of Waikato, New Zealand  
Up-Scaling Public Participation for Co-Development of Closed Cycles

9.00 – 9.15            *Break*

9.15 – 10.45         **Session Space 4 (in parallel)**

### **Carbonization as element of closed cycles**

Chair: Andreas Schönborn, ZHAW, Switzerland

9.15 – 9.45            **Reut Yahav-Spitzer**, Ben-Gurion University of the Negev, Israel  
Hydrothermal carbonization of human excreta- effect of process severity on hydrochar properties

9.45 – 10.15         **Claudio Reinhard**, ETH Zurich, Switzerland  
Phenoliva: Treatment and valorization of olive mill wastes – A circular waste management concept for the olive oil industry

10.15 – 10.45        **Eya Damergi**, EPF Lausanne, Switzerland  
A combined hydrothermal gasification-solid oxide fuel cell system for sustainable production of algal biomass and energy

### **Large scale closed-cycle strategies**

Chair: TBA

9.15 – 9.45            **Chris Oughton**, Kwinana Industries Council, Australia  
Water circular economy at Kwinana Industries, Western Australia – World's best practice industrial symbiosis

9.45 – 10.15         **David Finger**, Reykjavik University, Iceland  
Circular economy solutions in Iceland (working title)

10.15 – 10.45        **Maria Wirth**, alchemia-nova, Austria  
Potential nutrient conversion using nature-based solutions in cities and utilization concepts to create a circular urban food system

### **Integrated design and planning approaches**

Chair: Paul Osmond, University of New South Wales, Australia

9.15 – 9.45            **Heinz Bernegger**, ZHAW, Switzerland  
Scenario-based digital modeling of sustainable transformation processes of urban eco and material systems towards closed cycle systems

9.45 – 10.15         **Dorothee Spuhler**, Eawag, Switzerland  
A tool to generate sanitation system planning options considering Novel technologies and to quantify their resource recovery potential

10.15 – 10.45        **Simon Damien Lloyd**, University of New South Wales, Australia  
Swimming in urban rivers: development of a Bayesian belief network to predict public health risk to recreational users



- 10.45 – 11.00 *Break*
- 11.00 – 12.30 **Plenary Panel 3**  
**Albin Kälin, EPEA Switzerland**  
 Case studies on the implementation of the cradle to cradle concept from Switzerland  
 Panelists: Tietje Voss, Markus Vögeli, Karin Lanz, Stefan Hunger
- 12.30 – 14.15 Global Café: IEES General Assembly 2020 Community & free activities (to be defined)
- 14.15 – 15.00 **Plenary Keynote lecture 6**  
**Linda Romanovska, University of New South Wales, Australia**  
 Application of life-cycle-thinking for urban green infrastructure valuation
- 15.00 – 15.15 *Break*
- 15.15 – 16.45 **Task / Case study in parallel**  
**Klara Hauser, RethinkResource GmbH, Switzerland**  
 Can cross-industrial networks be reconciled with the concept of regionality?  
**Isaac Owusu-Aguyeman, KTH, Sweden**  
 UASB - Energy recovery from municipal wastewater  
**Tjasa Griessler-Bulc, University of Ljubljana, Slovenia**  
 Environmental and health risk due to wastewater reuse in agriculture  
**René Altorfer, Yves Moser, ZHAW, Switzerland**  
 Closing Cycles – From Idea to Market (1) – Day 3  
**Nick Esseiva, Tine van Laere, ZHAW, Switzerland**  
 Possibilities to implement biodegradable materials for beverage bottles – Day 3  
**Gaby Dotro, Cranfield University, UK**  
 Combining treatment wetlands and renewable energy sources for off-grid water quality improvement
- 16.45 – 17.00 *Break*
- 17.00 – 18.00 Farewell & Panel of the Societies  
 Co-Organizers IEES, ZHAW, IOeV, COST

## Posters

### **Jan-Reto Abplanalp**

*ZHAW, Switzerland*

Energy, material and economic model for pyrolysis plants

### **Anna Liza Blum**

*TU Berlin, Germany*

Sustainable irrigation methods for vertical green systems: Comparing the potential of grey water usage vs. rainwater harvesting. A case study of the inner City of Berlin

### **Chiara Catalano**

*ZHAW, Switzerland*

DeMo - A spatial based approach to integrate habitats in constructed ecosystems - Fundamentals

### **Magdalena Sophia Engl**

*TU Berlin, Germany*

Potential analysis of soil-based facade greening systems as compensation measure in Berlin

### **Esther Felgentreff**

*TU Berlin, Germany*

Contributions of Vertical Greening Systems to Environmental Justice: A case study on an exemplary quarter in the city of Berlin

### **Florentina Gartmann**

*ZHAW, Switzerland*

Bioaponics – A soilless cultivation method with organic fertilizer to close nutrient cycles

### **Roman Hüppi**

*ETH Zurich, Switzerland*

Compost quality and pathogen risks from human faeces

### **Ruud Kampf**

*Rekel/water, The Netherlands*

Two years experience with a 'No discharge dairy through recovery of milk and food-chain approach'

### **Isabelle Antonia Merz**

*ETH Zurich, Switzerland*

Integration of small-scale circular agroecosystems on buildings in a high density urban context presented on a system design proposal

### **Thomas Nehls**

*TU Berlin, Germany*

The impact of façade greenery design on the cooling effect for greened buildings

**Isaac Owusu-Agyeman**

*KTH-Royal Institute of Technology, Sweden*

Optimization of volatile fatty acids production from sewage sludge and food waste for up-scaling purposes: closing the loop for treatment plants

**Diplina Paul**

*North Carolina State University, USA*

The fate and transport of novel Coronavirus in the urban water cycle: a review

**Bogdan Popov**

*Ecosolutions Forge, Ukraine*

Biopot. Bringing together landscape art and closed loop eco-sanitation.

**Luca Regazzoni**

*ZHAW, Switzerland*

Denitrification using internal carbon in recirculating aquaculture systems

**Matthias Stucki**

*ZHAW, Switzerland*

Combining agroforestry and livestock farming as an adaptation from a linear to a circular agriculture

**Jagannatha Venkataramaiah**

*Jain University, India*

Eco Sense is Climate Resilient and Real Urban Water Secure

**Adrian Wiegman**

*University of Vermont, USA*

Phosphorus dynamics in restored riparian wetlands within an agricultural basin

**Danielle Winter**

*Purdue University, USA*

Identifying design elements that increase denitrification capacity in restored riverine floodplains

**Gaetano Bertino**

*alchemia-nova GmbH, Austria*

Framework conditions and solutions for sustainable temporary pop-up living systems

**Mark Dyer**

*University of Waikato, New Zealand*

Engineering with Indigenous Communities: Case Study for Provision of New Housing in Tokomaru Bay

## Time zones

PDT	EDT	CEST	IST	AWST	AEST	NZST
UTC-7	UTC-4	UTC+2	UTC+5:30	UTC+8	UTC+10	UTC+12
San Francisco	Boston	Zurich	New Delhi	Perth	Sydney	Hamilton
22:00	01:00	07:00	10:30	13:00	15:00	17:00
23:00	02:00	08:00	11:30	14:00	16:00	18:00
00:00	03:00	09:00	12:30	15:00	17:00	19:00
01:00	04:00	10:00	13:30	16:00	18:00	20:00
02:00	05:00	11:00	14:30	17:00	19:00	21:00
03:00	06:00	12:00	15:30	18:00	20:00	22:00
04:00	07:00	13:00	16:30	19:00	21:00	23:00
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10:00	13:00	19:00	22:30	01:00	03:00	05:00
11:00	14:00	20:00	23:30	02:00	04:00	06:00
12:00	15:00	21:00	00:30	03:00	05:00	07:00
13:00	16:00	22:00	01:30	04:00	06:00	08:00
14:00	17:00	23:00	02:30	05:00	07:00	09:00
15:00	18:00	00:00	03:30	06:00	08:00	10:00
16:00	19:00	01:00	04:30	07:00	09:00	11:00
17:00	20:00	02:00	05:30	08:00	10:00	12:00
18:00	21:00	03:00	06:30	09:00	11:00	13:00
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