How a new water paradigm is changing our cities

Building flood resilience – together

Kristina Hall, project leader at VA SYD

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It's better to ask for forgiveness than permission. With that as a guiding star I try to think outside the box together with my team. Our goal is to change the way the society and our clients think about stormwater and with that inspire them to action.

I am a civil engineer from LTH and have worked with cityplaning from a stormwater and cloudburst perspective for the last 15 years. Both as a planner, designer and project leader for pipes and stormwater facilities and for the last 10 years with strategic questions. Since 2014 the main focus in my work has been cloudburst management from different angels.

I am currently the project leader for VA SYD's flood management project *Building flood resilience – together.* The project has a heavy emphasis on communication in order to achieve behavioural change amongst clients, with the higher goal of reducing negative impact on the environment. I also work part time as a stormwater and cloudburst expert at Svenskt Vatten.

Nina Steiner, Communications officer at VA SYD

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Strategic and creative expert in the communications field, with a strong focus on sustainability. I have a passion for driving change in complex environments with many stakeholders. Convinced that courage, creativity and team work are important success factors, no matter what business you are in.

Degree in Media and Communications from Lund University, combined with political science, cultural geography and intercultural communication.

Almost 25 years of work experience, mainly from public sector, but also from five years of being self-employed.

Focus is on strategic communication in relation to sustainability, behavioural change and branding. Deeper knowledge of nudging techniques. For two and a half years I was responsible for external communications, web and media relations for VA SYD's research company, Sweden Water Research.

I am currently managing the communication for VA SYD's flood management project *Building flood resilience – together.* The project has a heavy emphasis on communication in order to achieve behavioural change amongst clients, with the higher goal of reducing negative impact on the environment.

Steve Moddemeyer

PRINCIPAL

Steve Moddemeyer is a principal of Collinswoerman with 30 years' experience leading governments, land owners, and project teams towards increased sustainability and resilience. He creates tools, policies and programs that empower communities to implement resilience principles into planning for land use and urban infrastructure. He works on climate change adaptation, sustainability strategies for large urban redevelopments, and advanced sustainability strategies for land owners, cities, counties, and utilities.

Years of Experience: 30

Years with CollinsWoerman: 11

Affiliations: Member: National Academies of Sciences Resilient America Roundtable; Advisor: University of Washington Masters in Infrastructure Management and Planning; Member: IUCS CEM Resilience Theme Group

Education: Bachelor of Landscape Architecture, University of Washington

COLLINS WOERMAN

SUSTAINABILITY / RESILIENCE PLANNING EXPERIENCE

Port of Seattle Maritime Clean Energy Strategic Plan Framework (CESP)
Seattle, WA
Planning team lead

LaConner Sea Level Rise
LaConner WA
Project Principal

King County Climate Adaptation Strategies for Fish Passage
Seattle WA
Project Principal

STARR
National
Subject Matter Expert

STARR 2
National
Subject Matter Expert

Resilience Design Performance Standard
Boulder County, CO
Project Principal

University of Washington Seismic Resilience Strategy
Seattle WA
Advisor

City of Seattle Pre-Disaster Master Plan, Phase 1
Seattle WA
Authored & Implemented

Cities of the Future, International Water Association
Global
Led, Facilitated & Developed

Yesler Terrace Sustainable District Study
Seattle WA
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Presidential Policy Directive 8 or National Preparedness | National Mitigation Framework
Seattle WA
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Technical Advisor

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CV Wolfgang Rauch

Wolfgang Rauch was born in 1959. He studied Civil Engineering at the Technical University of Graz, Austria and at ETH, the Swiss Federal Institute of Technology, where he also graduated in 1985. For the six succeeding years after graduation he has been working as a practitioner in the field of civil and environmental engineering consulting. During this period he also conducted part time doctoral research at the Institute of Environmental Engineering, University Innsbruck in Austria finishing 1991 on the topic of spreading patterns of temperature anomalies in the groundwater.

In 1994 he was awarded a post-doctoral fellowship (FWF Schrödinger grant) which he spent at the Department of Environment and Resources (formerly Department of Environmental Science and Engineering), Technical University of Denmark. His research on the behaviour of integrated urban drainage systems led not only to a successful collaboration with the Department but was also the topic of his advanced degree (Habilitation) in environmental engineering which he obtained in 1997 from the University Innsbruck.

In 1997 he was again awarded a fellowship, this time for research at BIOMATH, Department of applied mathematics, biometrics and process control at the University Gent, Belgium. Later this year he started working as Research Associate Professor at the Department of Environment and Resources, Technical University of Denmark and in 1999 he joined the environmental engineering group at EAWAG, Swiss Federal Institute for Environmental Science and Technology. In 2002 he returned to the University of Innsbruck as being appointed full professor for sanitary engineering. Since 2004 he is head of the Institute of Infrastructure Engineering.

During this whole period his research encompassed modelling and analysis of the complete urban water infrastructure system by focussing especially on water pollution, drainage and the integrative aspects of urban water management. Since being in Innsbruck he not only maintains an active research profile in the fields already mentioned but expands his research interest also towards application of innovative software methods in the field as well as modelling of urban water management on a city scale. His research group on modelling and systems analysis encompasses app. ten academic positions, mostly external funded.

Wolfgang Rauch has published more than 200 papers in peer-reviewed journals, among others in Science (345/6198). He holds an h-factor of 42 (Google Scholar). He is well known in the international community due to his activity in international organisations. Among others he served as a member of the IWA task group on river water quality modelling and chaired the Joint Committee of IAHR and IWA on Urban Drainage in the period 2002 to 2005. Between 2013 and 2016 he acted as Chair of the IWA Program Committee and was nominated as IWA Fellow in 2015. In 2014 he was appointed to chair the evaluation committee of the engineering sector of Norway. He served for more than a decade as editor of the most important journal in the field that is *Water Research* and since 2014 as Editor in Chief for the journal *Water Science and Technology*. In 2017 he got the award for extraordinary research achievements which stands for the highest scientific recognition from the University Innsbruck and in 2018 the IWA Outstanding Service Award.

Adjunct Professor **Lena Blom**, strategist and research and development manager, Gothenburg City department of sustainable waste and water. Lena is also an adjunct professor in sustainable water and waste water systems at Chalmers University of Technology. Her research and work focuses on working in the areas of sustainable drinking and waste water systems with a broad perspective focusing on decision support tools for complex decisions. *E.g.* planning for water in the city expecting climate change is a huge challenge where different stakeholders need to meet and understand each other to make it possible to make the right measure. Another great challenge is how to finance the needed measures.

dr.ir. Frans H.M. van de Ven

Frans van de Ven is team leader Urban Land & Water Management at Deltares, the Netherlands institute for delta technology, and he is associate professor Urban Water Management at the Faculty of Civil Engineering and Geosciences of Delft University of Technology. With his colleagues at Deltares he is working on flood and climate resilient, subsidence-free cities, while aiming at reduction of the environmental footprint of urban systems. This includes research into (1) improved concepts for resilient urban water management, (2) better methods for engineering urban water systems and for control of water quantity, water quality, demands and supply and (3) urban planning and design support tools to implement these improved concepts and methods.
Major research projects of him and his team are

- Urban flood risk management; effectiveness, planning and design of blue-green interventions;
- Climate vulnerability and resilience of urban areas; adaptation strategies and urban water planning;
- Heat stress and urban evapotranspiration / water as solar heat collector;
- Transition management to achieve more sustainable systems of urban water management and water supply;
- Urban water quality management; public health aspects of urban water systems
- Improving urban drainage modelling for risk assessment and system adaptation.

Maria Roldin

Maria Roldin has an MSc degree in Environmental Engineering with specialization in Water Resources Management from Lund University in Sweden (2007), and a PhD degree in Water and Environmental Engineering from the Technical University of Denmark (2012). She has been working as a consultant at DHI Sweden since 2012 with projects related to sewer and stormwater management and modeling, flooding and groundwater modeling.

During her PhD, Maria specialized in modeling of integrated stormwater-groundwater systems and effects of stormwater infiltration on local and regional groundwater levels. Her work was mainly related to small-scale open stormwater structures, so called Low Impact Development systems (LIDs) or Sustainable Urban Drainage systems (SUDS). Working with integrated water modeling has since then been one of her main fields of expertise, covering interactions between groundwater, surface waters, sewer systems, tunnel systems and mines. During her years as consultant she has also performed several studies related to stormwater pollutants, stormwater quality and stormwater treatment.

In the more recent years, Maria has been involved in several projects related to online real time control and forecasting systems of sewer networks, including development of new modeling concepts (so called surrogate models) to improve computational speed for large sewer tunnel models. The models are currently in operation for two of the largest cities in Sweden (Gothenburg and Lund), providing real time control possibilites for short time handling of high flow situations, as well as decision support for long term planning purposes.

Maria's expertise in integrated water modeling, in particular related to systems with sewer-groundwater interaction, is well known within DHI globally, and she is frequenty invited as an expert to assist with model and or software development for integrated modeling systems combining natural and urban waters.