IAHR/IWA JOINT COMMITTEE ON URBAN DRAINAGE (JCUD) – MARCH 2026
NEWSLETTER 39

Once per year IWA/IAHR Joint Committee on Urban Drainage (JCUD) publishes a newsletter to inform the community about recent and upcoming activities, events, conferences, and publications in urban drainage.

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Chairman's Thoughts

Chairman's Thoughts

Dear members of the Urban Drainage community,

The past year has once again demonstrated the strength, vitality, and global reach of our field. It was a particular pleasure to witness the success of the 13th Urban Drainage Modelling Conference in Innsbruck, Austria. The conference brought together researchers and practitioners from across the world, highlighting cutting-edge developments in modelling, data integration, uncertainty analysis, and digital tools for resilient urban drainage systems. The strong engagement, lively discussions, and high scientific quality clearly showed how dynamic and forward-looking our community is.

Looking ahead, our calendar remains both ambitious and inspiring. The upcoming Sewer Processes and Networks (SPN) conference in Trondheim in May 2026 will provide an important forum for advancing our understanding of sewer system processes, monitoring, and operational optimisation. Shortly thereafter, the renowned Novatech Conference in Lyon (June/July 2026) will continue its long tradition of fostering integrated and sustainable urban water management approaches. Both events reflect the diversity of our field — from fundamental processes to system-scale planning and governance.

Further ahead, preparations are well underway for the International Conference on Urban Drainage (ICUD 2027) in Ningbo. ICUD remains the flagship event of our community, and we are confident that 2027 will once again provide a platform for scientific excellence, international collaboration, and exchange across generations of researchers.

At the same time, we are already looking even further into the future: planning discussions for ICUD 2030 have begun. We warmly invite institutions and motivated colleagues to express their interest in hosting this important global event. Organizing ICUD is both a responsibility and a unique opportunity to shape the agenda of urban drainage research and practice for years to come.

Across all these activities, the mission of the Joint Committee on Urban Drainage remains clear: to connect people, advance science, and translate research into practical impact. In times of climate uncertainty, rapid urban transformation, and technological disruption, our expertise is more relevant than ever. By combining advanced modelling, process understanding, digital innovation, and nature-based solutions, we can contribute meaningfully to resilient and sustainable cities worldwide.

I encourage all of you to stay engaged — participate in our conferences, contribute to our journals and working groups, and help us strengthen our truly global network. Together, we continue to build a vibrant, collaborative, and impactful Urban Drainage community.

With best regards,

Manfred Kleidorfer

Chair, Joint Committee on Urban Drainage

From the Secretary's Desk

General JCUD information. The Joint Committee on Urban Drainage (JCUD) is an active Specialist Group working under both IWA and IAHR. It has, at present time, 12 members including the chair, each offering different global perspectives on urban drainage. The JCUD organizes, once every three years, the International Conference on Urban Drainage (e.g. 2014: Malaysia, 2017: Czech Republic, 2021: Australia, 2024: Netherlands, 2027: China). Furthermore, the JCUD oversees various working groups, many of which organize its own three-yearly conference (e.g., Sewer Processes and Networks; Urban Drainage Modelling). Everyone is most welcome to get engaged in the activities of the JCUD and its working groups.

Changes in membership.

In 2025 we said goodbye and many thanks to John Okedi and John Hathaway, and we welcomed Yu Qian, Job van der Werf and Daniel Xu.

The search for new committee members was especially exciting as well as challenging this year. After working hard to extensively advertise the vacancies, we were overwhelmed with good applications and had to introduce a two-stage process of selecting candidates. A long list of candidates was given the opportunity to briefly present themselves during the open JCUD meeting at the UDM conference in Innsbruck. After that followed a challenging selection process, we took into account the geographical spread of candidates and their activity in the JCUD working groups and events. It meant that this year, we did not do so well on improving the gender balance of the committee.

The current roles and responsibilities of the JCUD committee members are:

- Chair: Manfred Kleidorfer
- Secretary: Alma Schellart
- Treasurer: Daniel Xu
- Awards: Franz Tscheikner-Gratl
- Newsletter: Seith Mugume and Frederic Cherqui
- Webmaster: Wan Hanna Melini Wan Mohtar
- IWA link/Specialist group connector: Frederic Cherqui
- IAHR link/Specialist group connector: Maria Sambito
- Young Water Professionals: Maria Sambito
- Working Groups: Sylvie Spraakman and Daniel Xu
- Events: Job van der Werf and Yu Qian
- Social Media: Veljko Prodanovic and Maria Sambito
- Education: Frederic Cherqui and Veljko Prodanovic

Our current Young Water Professional members are Thiruni Thirimanne and Baiqian (Luke) Shi.

How to contact us? Should you have any questions about or any suggestions for the JCUD, please do not hesitate to get in contact with me or with any of the JCUD members (see page 1 and 2 for contact details).

How to share exciting news and opportunities

Please help us foster international collaboration by sharing all your exciting news such as workshops, conferences, PhD and research job vacancies, new books…
You can do so through:

- Our urban drainage email list. To use this, you first need to subscribe (simply email listserv@jiscmail.ac.uk with your first and last name and the text "subscribe urban-drainage"). To send a message to the list, simply insert urban-drainage@jiscmail.ac.uk in your "To:" box and the email will be sent to all members. Please do **not** use for commercial purposes. If you would like more information, visit www.jiscmail.ac.uk/urban-drainage.

- Our LinkedIN group

- Using your IWAConnect+ account, **please do link yourself to JCUD on IWAConnect+ and help us show visibility of the urban drainage community activities to IWA**

About this committee Newsletter. The main purpose of the newsletter is to facilitate communications and interactions among specialists in our field, rather than to present detailed information. The most recent, and previous, newsletter(s) can be found on our website http://www.jcud.org. Both IWA and IAHR now distribute newsletters only electronically, and we share our newsletter on the IWA JCUD Group on IWA Connect+ and on the IAHR website. Please do share this newsletter with your colleagues, or refer them to the IAHR, IWA Connect+ and JCUD websites. Your comments on this newsletter issue and contributions to future newsletters are most welcome.

Our activities. After 2025's Urban Drainage Modelling (UDM) in Innsbruck, we look forward to the 11th SPN in Trondheim, Norway, followed by NOVATECH in Lyon, France, and ICUD 2027 in Ningbo, China.

In addition to these conferences, we would like to maintain a series of webinars, such as the "The Pitfalls of Sampling and Analysis of Micropollutants and Microplastics/Tire Wear Particles in Urban Water Systems", scheduled for 2 February 2026 by the International Working Group on Emerging Contaminants. Please do let us know if you have a great idea for a webinar and would like JCUD to endorse it and help you advertise it.

JCUD website. We invite you to explore our website: https://jcud.org/ and please keep sending us your feedback and do also keep an eye on our revitalized working groups, who are still in the process of populating their webpages.

Involvement of young members in the management team. We invite young members (PhD students, young PostDocs) to get involved in the committee. The idea is to have young people work closely together with experienced members in the roles mentioned above. If you are interested, please send your CV and a short application (half a page) stating why you are interested to join JCUD and in which role you are interested to manfred.kleidorfer@uibk.ac.at (chair) or a.schellart@sheffield.ac.uk (secretary). Applications are always possible.

Best regards,

Alma Schellart

JCUD secretary

Upcoming Event Announcements
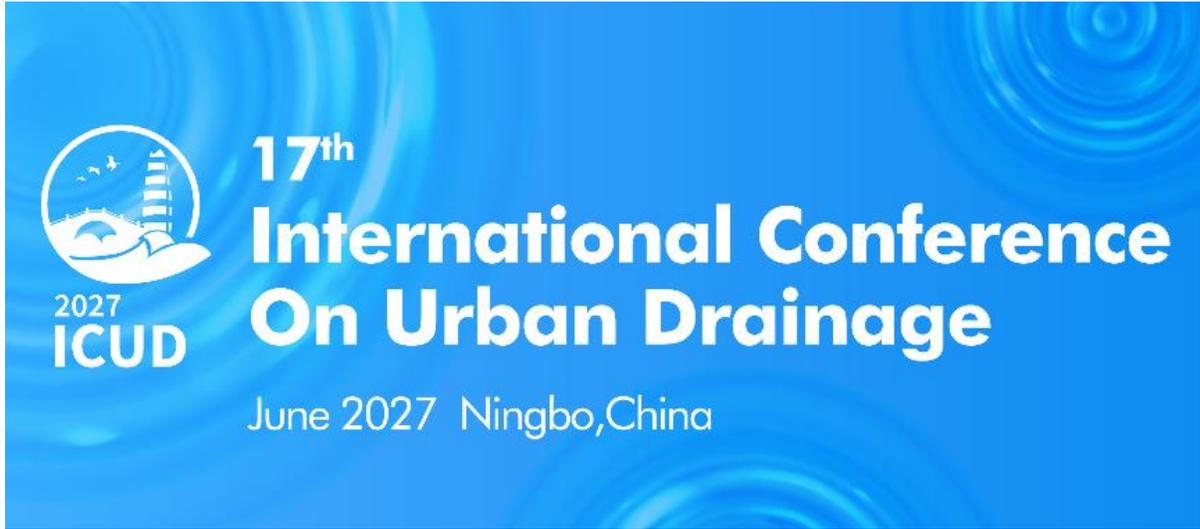
ICUD 2027 | https://icud2027.cn/
17th International Conference on Urban Drainage (ICUD) in 2027 in Ningbo, China

We are pleased to announce that the 17th International Conference on Urban Drainage will be held in Ningbo, China in the summer of 2027.

The proposed theme "For a Green and Sustainable Future" will primarily focus on future approaches and solutions to urban drainage encompassing a broad range of topics with specific attention on sustainable urban development and planning. The conference's local organizers will be Ningbo University, Tsinghua University, Zhejiang University, and Tongji University. The conference chairs are Dr. David Z. Zhu (Ningbo U. / U. Alberta), Dr. Haifeng Jia (Tsinghua U.), and Dr. Jean-Luc Bertrand-Krajewski (INSA Lyon, France). The chairs of the International Scientific Committee are Dr. Joseph Lee (IAHR President), and Dr. Zhiguo Yuan (Hong Kong City U.). They are world leading researchers on urban drainage with very strong connection to both IWA and IAHR. Tentative themes for the conference are: Urban Hydrological Processes, Urban Flooding Modelling and Mitigation, Climate Adaption and Resilient Infrastructure, Sewer Infrastructure Renewal & Asset Management, Integrated Urban Water Management, Urban Water Ecology and Environment, Artificial Intelligence and Digital Twins among others.

Conference key chairs and members got together in Ningbo, after the 4th International Symposium on Sustainable Urban Drainage in Jiashan, China, Dec. 12-14, 2025, and discussed the conference dates, venue, programme and themes. In additions, setting up of scientific committee, modalities for reviewing submitted papers and publishing of conference proceedings were discussed. More meetings will be scheduled for further discussion. The official website, social media, conference logo, and detailed information of the 2027 ICUD will be availed in due course. Suggestions or communications with us on the 2027 ICUD is sincerely appreciated. If you have any suggestions on the 2027 ICUD, or would like to get involved in organizing this important event, please feel free to contact us at: dzhu@ualberta.ca (David Zhu) or qianyu@nbu.edu.cn (Yu Qian). **We are looking forward to seeing you in Ningbo in 2027!**

Novatech, 12th International Conference 29th June – 3rd July 2026, Lyon, France

We are pleased to remind you that the next Novatech conference will be held in Lyon, in 2026, from 29 June to 3 July (in a new and very comfortable venue, very close to public transport!).

For more than 30 years, the Novatech conference has been regarded as an international benchmark in the promotion of solutions for integrated and sustainable urban water management, through the intersection of approaches and dialogue between practitioners, policy-makers and researchers. Novatech promotes a dynamic of innovation, from nature-based solutions to water-wise cities, towns and regions! It is a great opportunity to present and discover recent results on asset management, performance assessment, real-time control, monitoring, urban landscape integration, water and biodiversity, impacts on waterways, etc. And, at last but not least, Novatech is a great chance to make new friends or catch up with old ones!

The 2026 edition is already shaping up to be a great success, with a record number (400) of papers submitted. The programme and registration will be available by mid-March at the latest on the conference website : https://www.graie-novatech.org. Early bird registration will be available until the mid of April.

Novatech will be held in a new and prestigious venue, very close to the Perrache train station and the historic heart of Lyon: we will be pleased to welcome you in comfortable, relaxed and easily accessible premises. Don't forget to save the conference dates: 29 June - 3 July 2026 and see you in Lyon!

Elodie Brelot, Tim Fletcher and Frederic Cherqui

SPN 11 2026 - Sewer Processes and Networks Conference in Trondheim, Norway

The Department of Civil and Environmental Engineering of the Norwegian University of Science and Technology in Trondheim, Norway is pleased to invite you to the 11th International Conference on Sewer Processes and Networks (SPN) of the Joint IWA/IAHR Working group on Urban Drainage from the **19th to 22nd of May 2026**. This meeting of international experts in the field is timely given the large challenges ahead of our field. In the light of rising investment needs caused by ageing sewer infrastructures and changing regulations, regarding the need for treating and monitoring the outflows, novel ideas and state-of-the-art research can help to address the most pressing issues. Representing these challenges, the main themes for the conference are:

- Sewer system impacts

- In-sewer processes

- Design and operational issues

- Monitoring and associated technologies

- Inspection techniques to obtain information on the functioning of sewer systems

- Emerging issues and new technologies related to sewers

- Sewer repair, renovation, and rehabilitation techniques

These topic areas have been selected to encompass all the scientific and technical areas (physical/chemical and biological processes, operation, monitoring, and management) that are important for sewer networks. The topics cover pure scientific topics as well as more technical fields of interest, such as sewer asset management and inspection techniques. If you want to **sponsor** this event, please don't hesitate to contact us as well. We have different possibilities to facilitate this to spotlight your organization's dedication to advancing research in the field and increasing exposure. Presentation and poster acceptance decisions have been sent to the authors. So the next step for everyone interested, register yourself at https://spn11.com/. To underline the virtues of being a specialist conference there are no parallel tracks so as to allow all attendees to participate in discussions. Additionally, three workshops will take place at SPN on different topics:

- **Bring your own Data: Making the data and codes of researchers FAIR:** Have you already finished a project without properly taking time to clean and document your data? Have you already received data from someone else and been left with many questions to the point of not being able to use the data efficiently? The international working group on data and models has been coordinating efforts in standardising metadata for urban drainage. The concept of the workshop is simple: We will present our current data model, and the participants will apply it to their own various data-sets. We will then discuss together on improvement needed, and tools for improving data management practices among researchers.

- **Stormwater Management for Highly Urbanised Areas - Toronto Exfiltration System (TES):** Highly urbanised areas pose stormwater management challenges due to space limitations and adjacent utilities. This workshop provides an overview (planning, design, construction, maintenance, and performance) of the Toronto Exfiltration System (TES). Two 200 mm perforated pipes (with their

downstream ends fitted with removable plugs) are installed below the storm sewer between two connecting manholes within the sewer trench. Runoff enters the perforated pipes at the upstream manhole, fills the pore space of the trench-filling materials between the manholes, and exfiltrates into the underlying soil. TES can be applied to existing or new urban developments to reduce the downstream stormwater pond storage capacity.

● **Self-healing pipes or more AI, let's discuss the future of sewer asset management:** What could be the future of sewer asset management in the next 50 years? Do we need more inspections? Do we require more modelling? Should we use autonomous robots in pipes? Can we have self-healing pipes? Starting from business-as-usual practices, we have established different scenarios. Scenarios' parameters have been elaborated by long-term sewer asset management specialists and generated using artificial intelligence in order to be more neutral and homogeneous. Join us to discuss these scenarios, their interest, credibility, and consequences. A fun journey in the future, made by humans and AI, to reflect on the past, present and future trajectories.

Also, we are honored that the **keynote speakers** have just accepted our invitation: **Dr. Alma Schellart** from the University of Sheffield (UK) and **Prof. José Anta Álvarez** from the University of A Coruña (Spain).

Dr. Schellart will provide a keynote on: **How to measure Combined Sewer Overflows?** In several countries there is a growing public concern about combined sewer overflow (CSO) spills and their impacts on the environment and public health. At the same time, water utilities are concerned about the costs of improving deteriorating urban drainage systems, as well as the implementation of complex regulation. There are also increasing calls to make governance and investment decisions more transparent. The performance of CSO structures and the impacts of spills are, however, complex to assess; and opening up performance data can come with unintended side effects. This talk will explore different views on the performance of CSO structures, the ways in which this 'performance' can be measured, and the uncertainties involved in doing so.

Prof. Anta will talk about: **What we can achieve together through a collaborative Research Infrastructures network.** This keynote reflects on why shared large scale Research Infrastructures (RIs) are essential for advancing urban drainage science, and how collaboration across different actors can significantly amplify impact. By opening access to large scale facilities, RIs allow us to generate better evidence, test ideas more quickly, and accelerate innovation pathways for industry. They also provide a neutral and trusted environment where regulators, utilities, technology developers and researchers can meet, compare approaches, and collaboratively design solutions with real impact for policy and practice.

Franz Tscheikner-Gratl, Marius Mølller Rokstad, Thomas Meyn, Vincent Pons

Reports from 2025 Events

13th Urban Drainage Modelling Conference, 2025, Innsbruck, Austria

The 13th Urban Drainage Modelling Conference (UDM) was held in Innsbruck, 15-19 September 2025 (see https://www.uibk.ac.at/en/congress/udm2025/).

1. Overview

The 13th Urban Drainage Modelling Conference (UDM 2025) took place from 15 to 19 September 2025 at the University of Innsbruck, Austria. Hosted by the Faculty of Engineering Sciences, the conference continued a long-standing tradition of bringing together the international community dedicated to advancing modelling and management of urban drainage systems.

The event was co-organized with the International Working Group on Data and Models (IWGDM) under the IWA / IAHR Joint Committee on Urban Drainage (JCUD).

UDM 2025 attracted a broad and diverse audience and served as a major platform for scientific exchange and collaboration:

- 244 submissions were received from 52 countries.

- 141 papers were accepted for oral presentation and 88 for poster presentation.

- A total of 285 participants attended the event

- The venue, the Technological Campus of the University of Innsbruck, offered modern lecture halls and excellent accessibility by public transport, bike, or foot.

The conference programme emphasized themes of digital transformation, resilience, and sustainability, fostering collaboration between researchers, practitioners, and policy-makers working toward climate-adaptive and resource-efficient urban water systems.

2. Keynote Speakers

- Prof. David Butler (University of Exeter, UK)

Opened the conference with his keynote 'Building Resilience in Urban Drainage Systems.' He discussed strategies to strengthen the resilience of urban water systems by integrating sustainability, adaptability, and risk-based planning.

- Prof. Ana Deletic (Queensland University of Technology, Australia)

Delivered 'From Publish to Perish: A Comedy of the Scientific Publishing World.' Combining reflection and humour, she addressed challenges in academic publishing, including quality, openness, and the influence of digital technologies.

- Dr. Riccardo Taormina (Delft University of Technology, Netherlands)

Presented 'AI for Urban Drainage Systems: Recent Advances and Real-World Applications.' He highlighted how artificial intelligence and data-driven approaches are transforming the water sector, from predictive modelling to asset management, and discussed transparency and trust in AI-based tools.

3. Scientific Programme Highlights

The scientific programme combined a broad range of technical sessions, interactive workshops, and networking activities. The conference opened with seven pre-conference workshops addressing climate data use, robotic inspection, parameter estimation, real-time control, collaborative infrastructures, and open-source GIS applications.

From Tuesday to Thursday, 24 thematic sessions featured 229 oral and poster presentations. Topics included blue-green infrastructure, flood and water quality modelling, digital twins, AI applications, real-time control, model calibration, uncertainty, and integrated planning.

A poster reception on Wednesday evening encouraged informal discussion, and the event concluded on Thursday with plenary reflections summarizing the week's outcomes.

4. Social and Networking Events

UDM 2025 placed strong emphasis on networking and informal exchange among participants. The social programme combined academic interaction with opportunities to experience Innsbruck's culture and landscape. The conference opened with a welcome reception. The conference dinner was held on Thursday evening one of the highlights of the week, offering excellent food and a relaxed setting for strengthening professional and personal connections.

On Friday, two optional tours were offered: the Bergisel Ski Jump Experience, featuring a live demonstration, and the Hafelekar Tour, a scenic trip to the historic high-altitude research station established by Victor Franz Hess. Both were well attended and provided a memorable conclusion to the conference.

5. Participation and Statistics

UDM 2025 hosted 285 participants, including keynote speakers, sponsors, and organizers. Participants represented 52 countries and a balanced mix of academic, professional, and public-sector backgrounds. About one third were early-career researchers or students, highlighting strong engagement from the next generation.

6. Sustainability and Local Impact

Sustainability was an integral element of UDM 2025, both in organisation and in content. Measures included electronic materials, encouragement of public and active transport, use of local catering, and the provision of reusable drinking bottles in each conference bag. Innsbruck's high-quality mountain spring water was available throughout the venue.

Sustainability was also reflected in the scientific content, with numerous presentations addressing climate adaptation, blue-green infrastructure, and circular approaches to urban water management.

7. Awards

Best Poster Award

- 1st Place – Helieh Abasi: Cost-efficiency of integrating network separation and source control solutions to reduce combined sewer overflows

- 2nd Place – Ekaterina Andrusenko: Balancing Climate Adaptation and Urban Water Demand in Dutch Cities

- 3rd Place – Mohammad Mahdi Noroozi: Experimental modelling of a stormwater gully pot: Hydrodynamic evaluation

Combat of Retrofitting Urban Drainage Networks with Nature-Based Solutions

- 1st Place – Graz Drainage Gladiators

- 2nd Place – UNIPV – University of Pavia

- 3rd Place – RainRangers

Best Student Paper Award (awarded by IWGDM)

- Ying Song: Event-based urban runoff prediction and interpretation using raw commercial microwave links data

These recognitions highlighted the diversity, quality, and real-world relevance of the work presented at UDM 2025.

8. Acknowledgements and Outlook

The successful organisation of UDM 2025 was made possible through the commitment of many individuals and institutions. The organising committee – Manfred Kleidorfer, Robert Sitzenfrei and Wolfgang Rauch - extends sincere thanks to the University of Innsbruck, technical and administrative staff, and student volunteers for their essential support. Gratitude is also extended to all session chairs, scientific reviewers, sponsors, and partners. The organisers further thank the International Working Group on Data and Models (IWGDM) and the Joint Committee on Urban Drainage (JCUD) for their collaboration and continued support throughout the conference.

UDM 2025 demonstrated the vitality of the international drainage modelling community. Participants highlighted the importance of collaboration between research and practice, integrating data-driven and nature-based approaches, and advancing climate-resilient urban drainage systems. The next Urban Drainage Modelling Conference (UDM 2028) will be hosted by the University of Exeter, United Kingdom, continuing the tradition of scientific excellence and cooperation established in Innsbruck.

Prof Manfred Kleidorfer, Prof Robert Sitzenfrei and Prof Wolfgang Rauch

International Symposium on Sustainable Urban Drainage, 12 - 14 Dec 2025, Jiashan, China

From December 12 to 14, 2025, the 4th International Symposium on Sustainable Urban Drainage (ISSUD 2025) was successfully held in Jiashan, Zhejiang Province. The conference was jointly organized by Ningbo University, Zhejiang University, Tongji University, the University of Alberta (Canada), and the International Association for Hydro-Environment Engineering and Research (IAHR). It was co-hosted by the Zhejiang University Yangtze River Delta Smart Green Valley Innovation Center, the Provincial Key Laboratory of Urban Water System Intelligent Regulation, the Ministry of Education's "Water System Security in Coastal Cities" Innovation and Talent Introduction Base, and the Shanghai "Water Purification Technology" Magazine. Focusing on key themes such as *Climate Adaptation and Resilient Infrastructure, Stormwater Management and Low Impact Development (LID), Modernization of Urban Drainage Systems, Urban Water Environment and Ecology, and Artificial Intelligence Applications in Sustainable Urban Drainage*, the symposium aimed to gather industry expertise, share advanced technologies and innovative ideas, and promote technological progress and experience exchange, contributing wisdom and solutions to enhancing urban drainage capacity and sustainable development.

The symposium brought together over 200 leading experts, industry leaders, and young talents from 13 countries and regions, including Academician Xu Zuxin of the Chinese Academy of Engineering and Professor at Tongji University, Professor Jay Gan from the University of California, Riverside, Professor Jean-Luc Bertrand-Krajewski from INSA Lyon, Professor Peter Vanrolleghem from Laval University, and Professor Simon Tait from the University of Sheffield. Together, they explored the challenges and future directions of urban water systems.

As one of the conference chairs, Academician Zhu Zhiwei of the Canadian Academy of Engineering and Dean of the Institute of Water Resources and Ocean Engineering at Ningbo University presided over the event. Welcoming remarks were delivered by Cao Huiming, Member of the Standing Committee of the Jiashan County Committee and Deputy Director of the Jiashan Demonstration Zone Management Committee; Zhang Tuqiao, former Vice President of Zhejiang University, Conference Chair, Qiushi Distinguished Professor, and Director of the Future City (Future Water) Laboratory at the Yangtze River

Delta Smart Green Valley Innovation Center; and Liu Jingqing, Qiushi Distinguished Professor, Director, and Deputy Party Secretary of the Yangtze River Delta Smart Green Valley Innovation Center.

Key note presentations were received from Academician Xu Zuxin who presented on *"Resilience Analysis and Intelligent Regulation of Urban Water Environment Governance,"* ; Professor Jay who presented on *"Urban Drainage as a Conduit for Micro-contaminants,* Professor Jean-luc Bertrand-Krajewski who presented on *"Adopting Metrology Best Practices in Urban Hydrology with the UDMT (Urban Drainage Metrology Toolbox),"* Professor Peter Vanrolleghem who gave a presentation on *"Modeling the Fate of Particle-associated Pathogens for Improved Wastewater-based Epidemiology: Focus on Particle Sedimentation and Resuspension."* and Professor Simon Tait who presented on *"Pipebots: Robotic Inspection and Maintenance of Sewer Systems,"*

Parallel sessions delved into topics including urban flooding, urban hydraulics, water environments, smart monitoring, and artificial intelligence. These sessions fostered in-depth discussions, consolidated industry consensus, and shared the latest research findings and practical cases, providing theoretical and practical pathways for advancing urban drainage systems. The poster session showcased cutting-edge research from numerous universities and institutions, covering topics such as pipeline detection algorithm optimization, adsorption material development, hydro-water quality modeling, and green infrastructure assessment. The symposium also featured the *"Camp for Future Leaders in Urban Drainage (CFLiUD),"* which included expert lectures, simulated experiments, academic presentation drills, and technical visits, empowering young scholars and fostering international collaboration. Adopting a *"1+N"* multidimensional format, the event centered around a high-level international academic symposium, complemented by parallel sessions, the CFLiUD training camp, and poster exhibitions. This integrated approach facilitated top-tier academic dialogue, youth talent development, and multi-dimensional knowledge exchange.

Group Photo 1 of CFLiUD Participants　　　*Group Photo 2 of CFLiUD Participants*

Innovative Water Sensing; reflecting on the Sensors for Water Interest Group (SWIG) Global Webinar, 3rd December 2025

This year's global SWIG webinar brought together speakers and case studies from **all seven continents**, with a strong focus on how sensing, data and AI are reshaping **urban drainage** and wider water management. Across the day we saw how continuous monitoring is moving from isolated sites to full catchments and city-scale programmes, with low-cost sensors, solid QA/QC and clear dashboards enabling a shift from reactive maintenance to genuinely proactive, risk-based management of stormwater and combined networks. A strong theme was the move from "data for its own sake" to **sensing-to-decision** workflows. AI applied to CCTV footage is now detecting defects and infiltration within minutes; image-based and neural velocimetry methods are bringing us closer to real-time surface-velocity and discharge estimates; and all of this is being deployed with careful attention to uncertainty, calibration and real-world constraints.

Contaminants of emerging concern also featured prominently. New portable platforms for PFAS detection, alongside work on wastewater reuse, highlighted that traditional bacterial thresholds can miss antibiotic-resistant organisms and genes - making a strong case for including resistance parameters in standards for treated wastewater, especially where irrigation involves uncooked produce.

Infrastructure and climate-resilience discussions drew on long-term monitoring of nature-based solutions, the transition from grey to green infrastructure, and the value of participatory approaches. We also explored smart-city innovation pipelines that co-develop and field-test new sensing systems before adoption, and saw how hardware advances (from wireless subsurface communication to radar-based discharge sensing in extreme environments) are keeping pace with progress in analytics and AI.

Globally, the picture that emerged was one of **uneven but accelerating progress**. In some regions, limited budgets, connectivity and technical capacity continue to constrain large-scale IoT and sensor deployment, yet there are promising initiatives that show how targeted pilots, local manufacturing, training and collaboration can unlock progress. At the same time, open-source machine-learning models for river health and water quality are lowering the barrier to advanced analytics, allowing regulators, utilities and researchers to share tools and build on one another's work.

What tied all of this together was the clear value of **interdisciplinary collaboration**: ecologists working with data scientists, utilities partnering with technology developers, cities co-designing solutions with researchers, and communities being brought into the conversation about what information is actually needed to manage risk. The discussions and breakout sessions repeatedly came back to the importance of relationships, trust and shared language between disciplines if we want sensing and data to translate into better decisions on the ground. For those who would like to revisit the detail, the **full agenda and speaker list** are available via the SWIG website: www.swig.org.uk.

Finally, I would like to offer a sincere thank you to everyone who made the day so productive and enjoyable: to our speakers for sharing such impressive work so openly; to my fellow chairs ([Mike Strahand](#) and [Sarah Brooks](#)) for steering the conversations; and to all the participants whose questions and comments sparked thoughtful, sometimes challenging, but always constructive discussion. I'm excited to see the new collaborations and ideas that grow out of this year's event.

Dr Andy Nichols (University of Sheffield), Organiser and Chair – Global SWIG Webinar 2025

CSDU-CSSI DAYS 25

The CSDU-CSSI DAYS 25, chaired by Prof. Patrizia Piro and Prof. Bruno Brunone, was hosted by the University of Trieste, Italy, from 17 to 20 November 2025 and organized by the CSDU - Centro Studi iDraulica Urbana - (www.csdu.it) and CSSI - Centro Studi Sistemi Idrici – (www.cssi.unicas.it). The XVIII International Short Course on Water Management in Resilient Cities, the II International Conference on Challenges and Perspectives in Urban Water Management Systems, and the final event of the SUNRISE Project, were held during CSDU-CSSI DAYS 25 (https://csducssidays25.wordpress.com/). The core idea of the organizers was to create an international forum to promote discussions among researchers, practitioners, and professionals to discuss recent advances in urban water systems.

The **XVIII International short courses - Water management in resilient cities (17 November 2025)**, a training course organized by the University of Trieste in collaboration with Centro Studi iDraulica Urbana (CSDU), funding PNRR-RETURN-SPOKE1, hosted 8 presentations from different experts in the field and a roundtable discussion on resilient water systems.

The **II International Conference on Challenges and Perspectives in Urban Water Management Systems (18-19 November 2025)** focused on the following main sections: *Urban water processes*, including the sub-sections Hydrological Dynamics & Climate Change and Water Quality & Environmental Impact of Water Infrastructures; *Urban water management*, including the sub-sections Sustainable Water Infrastructures & Nature-Based Solutions and Integrated Urban Water Systems & Water Governance. The keynote speakers, whose contributions were highly inspiring, were Prof Petra Amparo Lopez Jiménez from Universitat Politècnica de València, Spain, with a lecture on "*Steps for sustainable urban water networks*" and Prof Yiping Guo from McMaster University, Canada, with a lecture on *"Alternative Computational Approach for the Designing of Low-Impact Development Practices"*. A total of forty-five peer-reviewed papers were selected to be presented during the conference and they will be published in a volume of MDPI's Engineering Proceedings. The "Best Presentation Award" was assigned to Dr. Maria Cristina Morani (University of Naples Federico II) and to Dr. Valentina Marsili (University of Ferrara).

The **final event of the SUNRISE** (Sustainable Urban areas by Nature-based solutions implementation to mitigate climate impacts and achieve a Resilient, Innovative and Smart Environment) **Project (20 November 2025)** aimed to present the main findings achieved by this Project, that involves 10 Italian Universities. The SUNRISE Project is a cascading project of the Project Multi-Risk sciEnce for resilient commUnities undeR a changiNg climate" (RETURN) funded under the NRRP, Mission 4 Component 2 Investment 1.3.

In addition, on October 9, 2025, within the framework of AccadueO, Italy's leading international exhibition dedicated to the water service sector, held in Bologna, the Centro Studi di Idraulica Urbana (CSDU) organized the conference "Innovation, Sustainability and Resilience in Urban Drainage Systems". AccadueO represents a key national and international forum for professionals, institutions, and researchers working on water management, hydraulic engineering, and environmental sustainability. The conference was highly successful and well attended, fostering a lively exchange of ideas on current challenges and innovative solutions in urban drainage systems.

Young Researcher Profiles

This is a new section of the newsletter to recognise upcoming leaders in the Urban Drainage field. Check out the profiles of these folks who are currently or have recently completed their PhDs, and send them a virtual kudos!

Dr Ivan Mantilla
Doctor of Philophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Temporal dynamics of dissolved organic micropollutants in combined sewer overflows
Supervisors: Maria Viklander, Kelsey Flanagan, Tone Merete Muthanna
Date of Defense: **30th October 2025**

Abstract: Climate change is expected to lead to more intense and severe rainfall events in the future and thereby significantly increase the risk of urban flooding. This change, characterized by spatial and temporal changes in precipitation patterns, challenges the capacity of existing urban drainage systems, which may be exceeded by higher runoff flows than originally anticipated. Relying solely on enlarging stormwater infrastructure to address this issue is costly and may change flood risk downstream rather than effectively resolving it. Furthermore, climate change may result in prolonged dry periods, potentially causing soil compaction and reduced infiltration capacity. In cold-climate regions, rising temperatures are projected to increase the frequency of rain-on-snow events and mid-winter snowmelt, leading to more rapid runoff and elevated risks of surface flooding. These processes can also contribute to the formation of impermeable frozen soil layers, reduce infiltration, and increase the likelihood of ice-lens formation. Given these challenges, urban drainage systems must be both adaptable and space-efficient, capable of managing not only increased rainfall volumes and intensities but also the hydrological effects associated with snowmelt and freeze–thaw dynamics under a changing climate. As awareness of the hydrological and environmental impacts of urbanization on catchments grows, there has been a paradigm shift towards adopting green infrastructure solutions. These approaches diverge from traditional end-of-pipe strategies, by emphasizing more holistic and sustainable methods. This thesis reports on a combination of modelling and field experimentation aimed at providing a better understanding of the influence of local climate (e.g., humid continental, oceanic, and subarctic climates), soil permeability (e.g., spatial and temporal variability), and initial moisture content (degree of saturation) on the water retention capacity of a grass swale and a biofilter cell. These factors were evaluated on a long-term basis using historical meteorological time series and on an event basis, using design storms to represent a range of rainfall intensities from 1- to 50-year return periods. This analysis made it possible to identify conditions that lead to the occurrence of overflow events and to test the implementation of an outflow control structure that aims to increase retention capacities of grass swales. Results showed that robust estimates of infiltration rates and a clear understanding of the local climate and its influence on soil moisture dynamics are prerequisites for designing well-functioning infiltration-based stormwater facilities. Design strategies should include a trade-off between selecting permeable soils for locations characterized by evenly distributed rainfall and prioritizing surface storage for areas with intense, short-duration events. Results from field irrigation experiments demonstrated that retrofitting an existing grass swale with a controlled outflow control release can enhance its retention capacity and reduce peak flows in downstream urban areas. Additionally, a characterization of grass swale infiltration rates revealed long-term changes in infiltration—driven by sedimentation and vegetation density. While no strong statistical correlation was found between the depth of the unsaturated zone and swale infiltration capacity, lower saturated hydraulic conductivity values were observed in shallower water table conditions. The study underscores

the trade-off between selecting or modifying permeable swale soils to reduce runoff and protect groundwater quality. Finally, results from snowmelt modeling in a location with a humid continental climate showed that overflow dynamics in a biofilter cell varied significantly by the event type. Rain-on-snow events were the most frequent triggers of overflows but produced the lowest overflow volumes per event, suggesting that the snowpack buffered and delayed runoff.

Dr Ivan Milovanovic
Doctor of Philosophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Solids and Metals Treatment in Stormwater Control Systems: Laboratory Methods and Field Applications
Supervisors: Annelie Hedström, Godecke-Tobias Blecken
Date of Defense: **26th September 2025**

Abstract: Suspended solids and metals are recognized as key pollutants in storm water runoff. Thus, storm water treatment systems have become increasingly vital components of urban infrastructure, playing a key role in reducing pollutant loads entering receiving water bodies. This thesis focuses on evaluating the treatment of solids and metals in storm water systems, through both controlled laboratory experiments and field-based assessments. Synthetic storm water is widely used as a substitute for real runoff in both laboratory and field experiments. Its main advantages are the ability to control influent quality and quantity, as well as to improve the repeatability of experiments. However, no standardized formulation currently exists. A critical review which was conducted to evaluate the use of synthetic storm water in experimental storm water research revealed substantial variation among studies. Based on these findings, a narrower set of pollutant concentration ranges was suggested to enhance the comparability, repeatability, and reproducibility of future experiments. The experiments evaluating design parameters of a suggested Bottom Grid Structure demonstrated that hydraulic modifications of settling areas in the storm water treatment systems could enhance sedimentation, though the results were not directly scalable to field conditions. Among the variable factors in the experiment, inclined cell walls of the Bottom Grid Structure had the strongest effect, increasing sedimentation by up to 22% compared to control runs. Column studies showed peat and bark to be the most effective filter materials for dissolved Zn removal, although the use of peat is associated with significant drawbacks regarding other pollutants and uncertainties about its long-term performance. Evaluated zeolite filter system treating copper roof runoff achieved high removal of Cu (49–85%) and Zn (48–94%) but exhibited declining performance over time. A field study examining the performance of two EcoVault facilities revealed relatively low TSS removal (40–46%), substantially below both previous EcoVault studies and manufacturer claims. Dissolved metals were inadequately removed, likely due to elevated hydraulic loading rates and progressive filter clogging. Sedimentation was identified as the dominant treatment mechanism, while the zeolite filter cassettes provided negligible additional metal removal. The field experiments underscored the importance of site-specific design of storm water treatment systems, especially in cases where the influent is dominated by dissolved metals. Despite their limited performance, underground treatment systems remain a practical solution in densely built urban environments where surface space is constrained. However, targeted design improvements are essential to enhance treatment efficiency. Furthermore, comparisons with commonly used models for the prediction of the performance of storm water treatment systems revealed that actual removal rates were approximately 50% lower than estimated values, highlighting the need for additional field-based data to improve model calibration and support the development of more reliable and context-sensitive storm water treatment strategies.

Dr Mashreki Sami
Doctor of Philosophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Decentralized greywater treatment systems: performance, microbial risks and microplastics
Supervisors: Inga Herrmann, Annelie Hedström and Elizabeth Kvarnström
Date of Defence: **5 September 2025**

Abstract: Greywater originates from kitchen sinks, dishwashers, handbasins, showers, and laundry. Greywater can account for 70–90% of the domestic wastewater volume and contains organics, nutrients, pathogenic microorganisms, micropollutants, and microplastics. Effective treatment can unlock the potential of greywater for non-potable reuse purposes like urban landscaping or irrigation. The overall aim of this thesis was to investigate on-site greywater treatment systems which included on-site systems, two green walls, and a treatment wetland, and investigate the treatment in terms of organic matter, nitrogen (N), phosphorus (P), pathogenic microorganisms and microplastics (MPs), including the potential resource recovery and safe reuse of greywater.

Among the eight on-site systems (1–5 persons) investigated, commercial systems included three type A, two type B, and C system. Type D was a conventional sand filter. After the pre-treatment septic tanks, the treatment unit of type A consisted of a geotextile-fitted trickling filter over a sand bed, type B contained a mineral wool filter, and type C had fine-meshed plastic filters. The two green wall studies were conducted at a testbed facility, RecoLab, which received greywater from a newly developed urban city district (ca 1000 people). The treatment of an indoor vertical flow (VF) green wall with five filter materials (pumice, biochar, hemp fiber, spent coffee grounds, and composted fiber soil (a paper industry byproduct)) was investigated with the flow rates of 4.5, 9, and 18 L/d. The outdoor horizontal flow (HF) green wall with four levels filled with biochar, pumice, and LECA as filter material was investigated for one year, using a subsurface horizontal flow of 430 L/d. A long-term evaluation of the performance of a constructed wetland for treating greywater from a residential building (ca 100 people) in Norway was conducted, using data from the period 2001–2024. The constructed wetland consisted of a biofilter with Filtralite® material and a horizontal subsurface filter with Filtralite®P, for enhanced phosphorus removal. The treatment efficiency of the systems was highly influenced by the filter material and flow rates, while seasonal temperature changes had a low impact. All the systems demonstrated effective treatment of greywater and met the local discharge guideline of 80% BOD reduction and <3mg/L of P in the effluent. However, only the VF green wall and constructed wetland could produce an effluent with <1 mg P/L, a limit for facilities located in sensitive areas. Among the studied filter materials, sand, biochar, and Filtralite® were the most efficient (log10 reduction up to 4) in the bacteria Escherichia coli, enterococci, Clostridium perfringens, Pseudomonas aeruginosa, Legionella spp., and met the European Commission's guideline for reuse of reclaimed water in agriculture. The quantitative microbial risk assessment (QMRA) on effluent greywater from the constructed wetland, for multiple exposure scenarios (16 exposures/year) of accidental ingestion of 1 mL, indicated safe reuse in a water cascade during the summer season with regard to E. coli and C. perfringens. In addition, using TED-/Py-GC/MS, high variability of MPs was observed in greywater from the different sources of generation, while all the filter material of the respective treatment systems effectively retained the MPs, except for mineral wool and hemp.

The findings of this thesis could contribute to the development of a more resource-efficient wastewater management and Water-Food-Energy nexus by demonstrating the potential of decentralized greywater treatment systems

Dr Ali Beryani
Doctor of Philosophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Organic Micropollutants in Stormwater and Biofilter Systems: Treatment, Accumulation, and Dynamics
Supervisors: Godecke-Tobias Blecken, Maria Viklander
Date of Defence: 21st March 2025

Abstract: Anthropogenic activities impact the quality of storm water in urban areas. Urban runoff usually contains high concentrations of organic micro pollutants (OMPs), which can adversely affect public health and the ecology of receiving waterbodies. The work described in this thesis aims to evaluate the concentrations, occurrences, and environmental risks of OMPs in storm water runoff. It contributes towards identifying, monitoring, and controlling their environmental impacts and risks through mitigation strategies that protect human health and water resources. Storm water bio filter (bioretention) systems have been developed and implemented in recent decades as a mitigation strategy for in-situ storm water treatment. The studies in this thesis seek to improve field-scale understanding of the fate and transport behaviours of OMPs in storm water bio filter systems, assess bio filters' design performance for OMP treatment from both design suitability and maintenance perspectives, and evaluate their potential to mitigate OMP risks to receiving waterbodies. This research explored/validated the treatability, short-term intra-event variations (IEVs), long-term accumulation, and environmental risks of OMPs in 27 sand-based bio filter facilities located in various catchment types and with different design features (including amendments with vegetation, chalk, and bio char). Some of the key findings revealed by the thesis are as follows: Various OMP families, such as polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs), phenolics substances, organotin compounds (OTCs), and perfluoroalkyl substances (PFASs), were present in storm water runoff at concentrations often problematic for receiving waterbodies. Intra-event concentrations varied substantially during rain events. The rain intensity was one of the most influential factors affecting IEVs during short rainfall events. Depending on the pollutant's physio-chemical properties and the treatment unit's design features, the performance of the studied bio filter systems ranged from weak (negative removal efficiencies) to sufficient (up to 98%) in removing OMPs. Among the amendments used in the sand-based bio filters, the presence of a vegetated layer increased the removal (>30% improvement compared to non-vegetated or partially-vegetated bio filters) and reduced IEVs. However, no differences were observed after bio char or chalk amendment. The field observations revealed several complexities associated with applying bio char that must be considered/adapted for storm water treatment. The long-term accumulation of hydrophobic, particle-bound OMPs, such as heavier PAHs, PHCs, and phthalates (only DEHP), in the filter materials was dominant (with higher occurrence/concentrations atop the bio filters), as they achieved higher removal from storm water. Conversely, the removal or long-term accumulation of more mobile, hydrophilic, and slow-adsorbing OMPs, including bisphenol A (a phenolic substance), monobutyltin (an OTC), and PFASs, was lower and inconsistent in both amended and non-amended bio filters, showing a need for more effective bio filter design and maintenance strategies for these challenging compounds.

Dr Saida Kaykhaii
Doctor of Philosophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Membrane technologies for treatment of urban wastewater streams and resource recovery
Supervisors: Inga Hermann and Annelie Hedström
Date of Defence: 7th March 2025

Abstract: Storm water and blackwater are two urban wastewater streams with potential as valuable resources. The stormwater quality varies depending on catchment, actual rain pattern, pollutants sources, etc. Blackwater contains nutrients and energy that can be recovered. In addition, it contains organics, metals, micro pollutants and microorganisms which might affect the efficiency of downstream processes. Efficient removal of contaminants from both storm water and blackwater is essential for their reuse and recovery of resources, including water and nutrients. Membrane technology offers an advanced solution to improve the quality of storm water and blackwater. While a number of studies have explored the application of membranes for storm water treatment, the varying quality of storm water raises questions about membranes' efficiency in separating pollutants from different qualities of storm water. More research is needed to understand the reusability of treated storm water using membranes as well as the recovery of metals in the concentrate. The overall aim of this study is to improve the quality of storm water and source-separated blackwater, which has a direct impact on the reusability of stormwater as water resource and of struvite as a biofertilizer. Nutrient recovery from blackwater after membrane treatment is a new concept requiring further attention. Membrane cleaning is essential for maintaining membrane efficiency. For storm water, regular backwashing with different durations and chemical combinations were tested, and the fouling layer on the membrane was analyzed, using a scanning electron microscope. Backwash water was characterised. For blackwater, the membrane cleaning method used included backwashing combined with aeration, raising the question about its adequacy. The ultrafiltration membrane was able to separate total suspended solids, oil, particulate metals, total phosphorus, turbidity and microorganisms from storm water and effectively reduced organic compounds. After hygenisation, ultrafiltratered stormwater has a significant potential for non-potable uses, and its quality approaches potable standards, based on Swedish Food Agency. The struvite produced from membrane treated digestate resulted in struvite with more uniform struvite crystals, free of organic substances and metals (As, Ca, Cr, Cu, Pb and Si) stepping towards reusing this struvite as biofertilizer. The optimal backwash duration after storm water treatment, for these set of experiments was 45 s considering membrane productivity. Chemical cleaning with sodium hydroxide, and with or without sodium hypochlorite followed by hydrochloric acid were compared which indicated that addition of sodium hypochlorite did not improve the efficiency of chemical cleaning. Analyses of the backwash water showed a high metal concentration which might indicate the potential for metal recovery. Combinations of backwash and aeration was an efficient method to preserve membrane initial flux after digestate blackwater treatment.

Dr Robert Furén
Doctor of Philosophy, Urban Water Engineering Group, Luleå University of Technology, Sweden
Thesis Title: Stormwater bioretention systems: Water quality treatment and long-term pollutant accumulation
Supervisors: Godecke-Tobias Blecken, Maria Viklander
Date of Defence: 28th February 2025

Abstract: Urban areas are affected by anthropogenic activities and produce pollutants that are transported to receiving waters bodies during precipitation. Greater awareness of pollutants has increased interest in treating storm water. Organic micropollutants (OMPs, e.g., PAH, PCB, phthalates, and phenols) and metals (e.g. Cd, Cr, Cu, Ni, Pb, Zn) have been identified as potentially harmful to aquatic organisms and humans. Storm water bio retention systems are popular and considered effective for storm water treatment. However, there are significant knowledge gaps in bio retention systems' long-term function, performance of storm water treatment in cold climates, impact of road salt on pollutant treatment, and issues related to operation and maintenance. Furthermore, pollutants have been found to accumulate in the filter material and are also a potential source of pollution. Thus, to understand the long-term function of bioretention systems, it is also important to understand occurrence and mobility of pollutants, and the processes of pollutant accumulation in bioretention systems, particularly in the filter material. To answer these questions, this thesis includes studies of storm water sampling from 18 bioretention in Malmö, and three bioretention in Sundsvall (both in Sweden), along with a comprehensive field study involving sampling of 29 bioretention systems in the USA (filters that had been in operation for 7–16 years at the time of sampling). Filter material samples were collected from 31 bioretention facilities (37 filters in total), of which 28 were equipped with a forebay. A total of 277 samples were analysed for metals commonly found in storm water (Cr, Cu, Ni, Pb, and Zn), and a five-step sequential extraction method was used to assess the metal mobility in the filter material. Additionally, 116 samples from 12 sites were analysed for 38 OMPs, including 16 PAHs, 7 PCBs, 13 phthalates, and two alkylphenols. The results from these studies showed that there was a high occurrence of metals (Cr, Cu, Ni, Pb, and Zn) and OMPs (16 PAH, 7 PCB, 13 phthalates, and two alkylphenols). The highest concentrations were detected in the top layer of the filters and in the forebays, particularly of the OMPs. It was also shown that there is a risk of metal leakage from these systems over time, both from the filter material during operation and from filter material and/or sediments removed during maintenance. The studies in Malmö and Sundsvall was performed on two bioretention systems in with different design and filter configurations, where storm water was sampled during a period of two years. The results show that storm water treatment in general is effective in a bioretention system, especially for particle-bound pollutants, but also in filters specifically adapted for cold climates. De-icing with road salt increases the risk of metal leakage from these systems, however continuous maintenance can reduce these risks. A forebay may facilitate operation and maintenance and thus maintain the treatment function over a longer period. Filter materials with high hydraulic conductivity were effective for metal removal in cold climates. Furthermore, filter material with vegetation and with chalk amendments was more efficient for metal removal than filter materials without. In general metal removal is efficient and both metals and OMPs accumulate in the filter material over time. Even if metals can leach the accumulation studies indicated a long-term accumulation of metal in the filter's ant thus, bio retention facilities generally have a positive effect on storm water treatment over time.

Dr. Mingzhuang Sun
Doctor of Philosophy, Tsinghua University
Thesis Title: Long-sequence forecasting and control of urban water body based on phase space analysis
Supervisor: Haifeng Jia
Submission date: June, 2025

Abstract: Urban water body networks are influenced by complex factors such as precipitation, water supplementation and drainage, and hydraulic infrastructure management, making intelligent management a challenging. To assist in building an intelligent decision-making optimization framework for urban water body networks, this research conducted a series of studies focusing on current state perception, future prediction, intelligent control, and decision optimization. The aim was to address the insufficient accuracy and speed in predicting long-sequence water quality data, a key issue in intelligent regulation. Firstly, this study innovatively proposed the concept of water-quality phase space and developed a long-sequence forecasting algorithm specifically tailored for water quality data, capable of fore- casting the next 144 data points. Secondly, by integrating hydrological models, this study extended point predictions to basin-wide predictions and innovatively introduced a data assimilation method that significantly improved the prediction accuracy of hydrological models. Thirdly, using graph attention networks, this research innovatively proposed a model light weighting method based on attention weights, efficiently and accurately simulating control strategies to support the development of intelligent decision optimization systems. The research area is the Yinchuan urban section of the Diannong River in Ningxia. Utilizing the water-quality phase space theory, a long-sequence forecasting algorithm named Aquaformer was developed specifically for water quality datasets. The application of transfer learning effectively resolved data scarcity at certain monitoring stations. The prediction performance of Aquaformer was evaluated using real-world online monitoring datasets, and ablation studies verified the effectiveness of its key modules. Compared to other state-of-the-art Transformer-based methods, Aquaformer enhanced interpretability and prediction accuracy, achieving optimal predictions in 27 out of 30 scenarios. To achieve long-sequence water quality predictions across the entire basin, this study utilized Aquaformer's capability to characterize phase-space evolution patterns and proposed the ADAPT, a data assimilation method, significantly enhancing the predictive capacity of hydrological models. ADAPT demonstrated superior performance and high assimilation effectiveness in both designed and real-world scenario experiments, reducing prediction errors by 41.97% and 56.95% compared to the baseline data assimilation algorithm and the static model, respectively, in the real-world scenario experiment, and enabling stable error control. To improve the prediction speed of hydrological models, this study proposed the PRUNE algorithm, combining Aquaformer's analytical results with graph attention networks and spectral clustering for model grid simplification. The resulting lightweight model accurately approximated the original model's predictions while increasing prediction speed by 3.39 times. Both lightweight and original models were used to construct an intelligent decision optimization system, tested in a typical scenario, where intelligent management strategies required less supplemental water, reduced costs, and achieved better pollution control outcomes compared to manual control. Through innovative water-quality phase space theory and dynamic parameter calibration mechanisms, this research achieved efficient and accurate long-sequence water quality forecasting, providing robust theoretical support for intelligent management of urban water body networks

Dr Qimeng Jia
Doctor of Philosophy, Tsinghua University
Thesis Title: Simulation and Optimization of Basin Water Pollution Control System with Synergy of Pollution Control and Carbon Reduction
Supervisor: Haifeng Jia
Submission date: December, 2024

Abstract: With the proposal of the "dual carbon" target, basin water environment management has entered a new stage of pollution control and carbon reduction. It is of great significance to explore effective methodologies for precise simulation of basin water environment and carbon emission, as well as to optimize regulation measures for pollution control and carbon reduction. However, three major issues exist in the current simulation and optimization of basin water pollution control system. In terms of water environment simulation, there is a lack of environmental models suitable for urban-rural mixed basins with high urban share, resulting in low simulation accuracy. In terms of optimization objectives, there is a lack of synergistic consideration of the three-dimensional objectives of water environment - carbon emission - economic cost, leading to potentially large carbon emissions of the regulation scheme. In terms of optimization calculation, there is a lack of water environment surrogate models that combine both computational speed and spatial structure, resulting in an inability to optimize the spatial location of measures. Based on the research idea of "process simulation - cost-benefit accounting - synergistic optimization", this study proposes a methodology of simulation and optimization for basin water pollution control system with synergy of pollution control and carbon reduction, which is applied into the Dianchi Lake Basin. Firstly, an urban-rural water environment (URWE) model is developed by integrating the material flow analysis model with the SWAT model to simulate both the urban organized discharges and the rural natural discharges. The URWE model can accurately simulate the urban and rural water environment processes in the Dianchi Lake Basin. Compared with the traditional SWAT model, the average determination coefficient (R^2) in water environment simulation is increased by 8.5%, and the average Nash coefficient (NSE) is increased by 67.4%. Secondly, based on the outputs of the URWE model, the spatial and temporal distribution of pollution loads is evaluated, as well as the operational status of various water pollution control facilities. By incorporating the cost coefficient of facilities dur- ing their construction and operation stages, a cost-benefit accounting model for water environmental system regulation measures is constructed. In the Dianchi Lake Basin, measures of urban LID construc- tion and river ecological restoration have lower marginal carbon emission for reducing unit pollutant concentration; measures of Niulanjiang-Dianchi ecological water supplement and storage capacity ex- pansion have lower marginal economic cost. Finally, a multi-objective optimization model considering water environment quality, carbon emission, and economic cost is constructed based on graph convolutional long short-term memory networks (GC-LSTM) water environment surrogate model, cost-benefit accounting model, and non-dominated sorting genetic algorithm II (NSGA-II). The GC-LSTM water environment surrogate model can capture the spatial and temporal structure of the URWE model, with the simulation R^2 and NSE greater than 0.9 on the test set. The single simulation time is reduced from the URWE's 8 minutes and 24 seconds to 1.6 seconds. Under the pollution control and carbon reduction optimization scheme, the concentration of pollutants entering the Dianchi Lake is reduced by 33.5% and the carbon emission is reduced by 12.5% compared to those in 2022. Results indicate that the Dianchi Lake Basin should reduce the inter-basin water diversion and focus on the micro- circulation within the basin by improving the water pollution control facilities, thereby achieving coordinated reduction of pollution and carbon emission.

Working Group Reports

During 2023 the JCUD has carried out a review of all the working groups. As a result, some of the working groups which were no longer active have been closed down or are in the process of a 'rebirth'. We have one brand new working group on Emerging Contaminants, and more new working groups are currently being formed.

To create a streamlined and transparent process of maintaining a vibrant and dynamic set of active working groups, the JCUD has created a 'JCUD working groups good practice' document, which is shown at the end of this section.   We have reports from several working groups (below), and the list of active working groups and contacts of leadership for those working groups is shown following the reports. If you are part of a working group and have not been in touch with us, please contact the chair and secretary of JCUD with your information.

Call for new working groups!

People interested in creating a new working group under the JCUD, on topics not covered by existing WGs (see here for the list of existing WGs), are welcome to contact the JCUD to discuss such an initiative (JC Chairman, Dr Manfred Kleidorfer (Manfred.Kleidorfer@uibk.ac.at), copied to JC secretary Dr Alma Schellart (a.schellart@sheffield.ac.uk).

Large Research Infrastructure in Urban Drainage (UDRAIN) Working Group

The UDRAIN Working Group, launched during the 16th International Conference on Urban Drainage (ICUD 2024, Delft), continues to consolidate the first global network of large research infrastructures (RIs) dedicated to urban drainage systems. Its leadership structure was formalised in late 2024 and includes: José Anta (Universidade da Coruña, Chair), Kelsey Flanagan (Luleå University of Technology, Co-Chair), James Shucksmith (University of Sheffield, Secretary), Marius Møller Rokstad (NTNU, Co-Secretary), Jakob Benisch (TU Dresden, Young Water Professional Representative), and Matteo Rubinato (Aston University, Industry Liaison).

1. Mapping Research Infrastructure

In 2024 and 2025 an initial survey was conducted to assess interest in participating in the Working Group and to map available research resources. Responses were received from 63 institutions across 30 countries. A large majority of respondents (83.1%) were research centres or universities, reflecting strong engagement in large-scale experimentation research for urban drainage. The main thematic areas identified through the survey were SuDS, urban flooding, and run-off pollution, which together accounted for more than half (≈53%) of all responses.
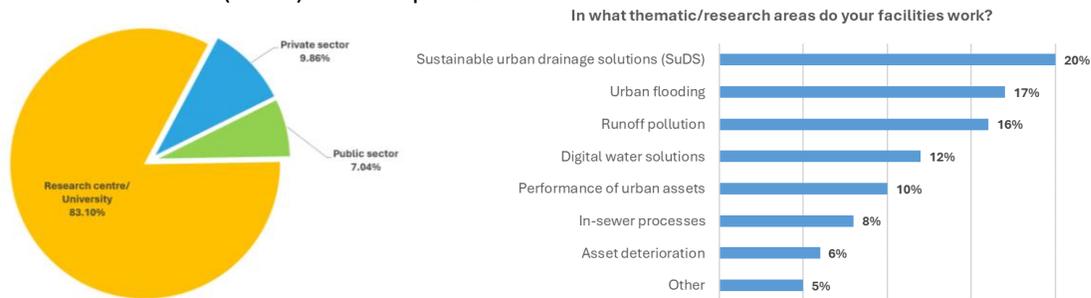

Figure 1. Types of entity/institutions and Thematic areas of survey respondents to UDRAIN survey

The information collected during 2024–2025 enabled UDRAIN to publish the **first digital edition of the Atlas of Large Research Infrastructures**, which is openly available on Zenodo (https://zenodo.org/records/16782095). Produced with support from the H2020 Co-UDlabs project, the Atlas provides an initial global mapping of major experimental facilities around the world, serving as a baseline inventory that highlights infrastructure capacities, thematic coverage and the diversity of experimental resources accessible to the community.

In September 2025, the Working Group participated in the Urban Drainage Modelling Conference (UDM 2025, Innsbruck), where it co-organised a workshop on data standardisation and FAIR principles together with the JCUD Working Group on Data and Models (IWGDM) and the Co-UDlabs consortium. A key outcome of this workshop was the launch of a **new web-based- version of the UDRAIN Atlas**, developed with technical support from **EAWAG** and now available at https://udrain.eawag.ch/. This online platform enables continuous updates, improved navigation and broader participation by institutions wishing to contribute information on their experimental facilities.

2. Planned activities for 2026

Looking ahead to 2026, UDRAIN will expand its activities by launching a series of community webinars to present the results of the survey and showcase the Atlas of Research Infrastructures for experimental studies in urban drainage. These webinars will also serve as an entry point for researchers, practitioners and industry stakeholders interested in engaging with the WG's objectives, either by making their infrastructures available or by making use of existing infrastructures at other institutions.

The webinar series will be promoted through a newly stablished LinkedIn group, which will function as a communication hub for sharing case studies, training opportunities and updates on Atlas developments. Additionally, UDRAIN will hold an in-person meeting at Novatech 2026 (Lyon) to reinforce synergies with other JCUD Working Groups, strengthen links with international partners and discuss future steps towards a more coherent and integrated ecosystem of RIs.

Working Group on Urban Drainage Asset Management (UDAM)

UDAM is an active working group of the Joint Committee on Urban Drainage, whose goal is to give a platform to everyone working on Urban Drainage Asset Management. Formed in 2018, it now gathers >65 members from 16 countries. If you want to participate join us on https://form.jotform.co/udam/join

UDAM members map

1. EJSW workshop in Pico Island

In October 2025 took place the 27th European Junior Scientist Workshop on Urban Drainage Asset Management for Grey and Blue-Green Systems on the beautiful Pico Island, Azores, Portugal. This workshop offered an excellent platform for junior scientists to present their work, engage in discussions, and participate in hands-on sessions and demonstrations of advanced asset management methods. Over five days, participants worked on topics such as sewer condition assessment, monitoring techniques, machine learning for flow prediction and proactive asset management. Dedicated sessions addressed large sewer inspection, inflow management, ageing processes and the integration of green and blue infrastructure with conventional networks. Several hands-on activities allowed participants to test sensor placement tools, analyse field inspections, and investigate incidents in water pipes. Writing workshops supported the development of scientific papers, while short talks by senior researchers shared lessons learned from research careers. Field excursions complemented the technical program and strengthened exchanges between disciplines and countries, reinforcing a shared understanding of future challenges in urban drainage asset management.

*Some activities during the ESJW in Pico*
More information https://udam.home.blog/ejsw-udam/

2. Workshop at UDM in Innsbruck

As part of the PIPEON project a workshop was conducted among researchers at UDM in Innsbruck, Austria, following a 'world café' model. This was a dynamic and participatory discussion format that encouraged collaborative dialogue through rotating small-group conversations on focused questions:
(i) Looking into the future, make a wish on what data autonomous robots should deliver for our hydrodynamic and deterioration models,
(ii) How do you think the new asset and monitoring data opportunities offered by robotic inspection and sensing will change the ways we model our systems?
(iii) How do you see the feedback loop from modelling back to the robots?
This workshop received twenty participants representing ten different countries, mostly from Europe, but also from America, Africa and Asia, forming an extensively varied group within the scientific community. The workshop included two presentations as an introduction to the topics, as well as about the PIPEON project, followed by the presentation of the three discussion topics. After which, the individual reflection on the three subjects began, where the participants were provided with post it notes and pens to write

down their individual reflections for fifteen minutes. Subsequently, the participants were assigned to four groups: one group with seniors/experts and the other three groups with early career/juniors. These groups discussed the three topics for one hour, wherein the participants wrote their responses as a consensus response within the group on blank papers. At the end of that session, the notes taken by each group were gathered, and a wrap-up of the discussion was presented.
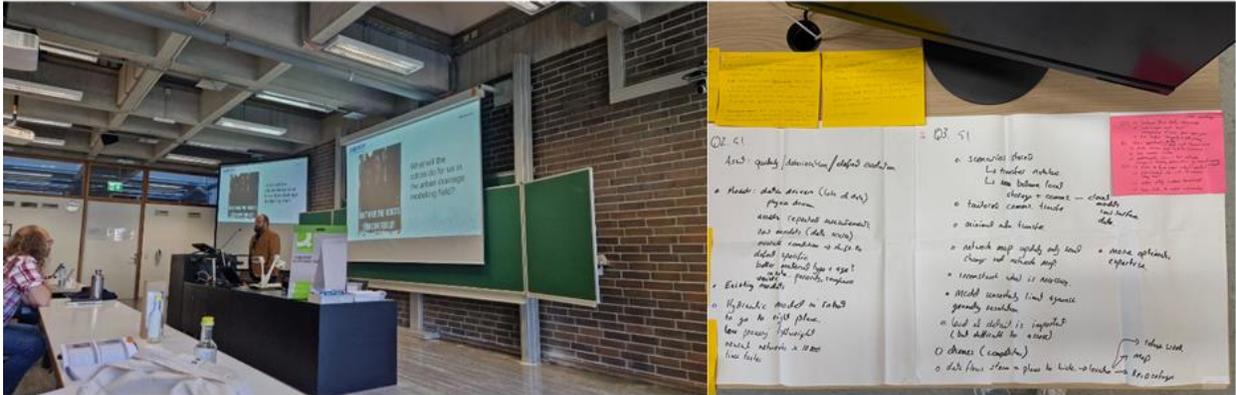
Impressions from the workshop

3. LESAM conference in Paphos

The LESAM conference took place in May in Cyprus and offered a fantastic moment of reflection and exchange on asset management for water infrastructures. Researchers and practitioners gathered to share methods and experiences aimed at improving performance, resilience and long-term asset value. One highlight was the keynote by Franz Tscheikner-Gratl on urban drainage asset management. The discussion focused on the growing role of nature-based solutions for stormwater management and the lessons learned from their implementation. While blue green infrastructures are now widely promoted for flood mitigation and climate adaptation, experience shows that their success depends on more than design. Maintenance practices, reliable data, and clear governance structures are essential to ensure lasting performance. The conference also featured an inspiring keynote by Kala Vairavamoorthy from IWA on the future of water management. He highlighted the potential of large language models for asset management in the water sector, in particular their ability to structure unorganized information such as complaint logs, operator databases and records related to pipe construction quality.

Picture of the bay from Paphos, Nico Caradot ©

3. New European projects on sewer asset management

Two major European research projects started in 2026, marking an important step forward for sewer infrastructure asset management. Over the past fifteen years, many EU projects addressed water and digitalization but the topic of infrastructure service life received less attention. After early initiatives such as CARE S and CARE W in the 2000s, these new projects indicate a renewed European commitment to long term, sustainable management of critical water infrastructure.

The project **AI:Liner** is coordinated by Kompetenzzentrum Wasser Berlin, with the cities of Madrid and Berlin as core partners. AI Liner aims to enhance the full asset management life cycle of sewer networks through the design, development, and validation of advanced digital and technological solutions. The project delivers a modular and interoperable end to end tool chain supporting planning, operation, maintenance, and investment decisions, while reducing costs and risks related to unexpected failures. AI Liner promotes repair and rehabilitation techniques over excavation and places strong emphasis on trust, transparency, and responsible use of data.

Visit website https://ailiner.eu / follow us https://www.linkedin.com/company/ailinereu

In parallel, the project **PIPEON** focuses on robotics and artificial intelligence for sewer inspection and maintenance. The project develops robust autonomous robots able to operate in harsh sewer environments, install flow monitors, remove blockages and navigate using advanced sensing and machine learning. By significantly lowering inspection costs, the project enables more frequent observations, better targeted maintenance, and faster response to failures, with expected benefits for flood prevention and river protection.

Visit website https://pipeon.eu

PIPEON is transforming sewer inspection and maintenance with autonomous robots and AI

4. Chapter X of the UDAM book on going

Having the handbook (https://doi.org/10.2166/9781789063059) published on an open-source platform removed a first barrier to practitioners. However, while readers of this open-source handbook should theoretically be able to create their own UDAM systems, it was recognized from the start that this will not be easy for someone without any experience. The editors therefore envisioned utilizing the expertise within the UDAM Working Group to publish a 'living' document with relevant checklists that practitioners may consider when creating their own Asset Management (AM) and Operation and Maintenance (O&M) Plans. Readers and session participants were invited to participate in this endeavour.

This 'living' document is envisioned to provide a comprehensive, though digestible, overview of 'things to be done' when starting from scratch in say, a small municipality or by a private asset owner who wants to create a professional system without relying on commercial products or proprietary software. Hitherto however, the impression (based on an absolutely not representative sample of opinions) lives that the original goals have not yet been convincingly met. That said, in the book, Chapter 10 continues to offer an opening to 'fix' this omission. Chapter 10, from the start, has provided the opportunity for readers and professionals to provide feedback on the contents of the book, ask questions that they need resolved, share examples of relevant documents, or share case studies discussing practical solutions found in day-to-day practice.

The few questions received so far asked for examples of Strategic and Tactical Asset Management Plans (with the latter addressing individual asset types) or asked for guidance on where to start with evaluating the criticality of the myriad of urban stormwater assets (e.g., pipes vs overland drainage vs ponds vs blue-green infrastructure), or asked for guidance on appropriate investment levels. From discussion with practitioners, we understand there are many more questions out there. Taking as a starting point 'that you will not have your problem solved by the same people who caused it', the editors of the book are calling on those who are active in practice to contribute to this endeavour. We feel that in this manner we can contribute to a much-needed, improved dialogue between needs of practitioners and potential solutions in academia.

This communication is therefore an invitation to (using https://udam.home.blog/contact/):

- Provide feedback on the contents of the book;

- Ask your urban drainage asset management questions;

- Suggest case studies and relevant documents that should be of interest to the professional community; and, ultimately,

- Join us in making the 'living' document reality.

5. Where do we meet in 2026?

In 2026 we will organize the next EUROSAM session in France, more news coming very soon.
In the meantime, several opportunities to reconnect are coming up:
- SPN (https://spn11.com), the **11th International Conference on Sewer Processes and Networks, from 19th to 22nd of May 2026 in Trondheim, Norway,**
- Novatech (https://www.graie-novatech.org/en/), **the 12th International Conference on Stormwater, Science and Management, from 29 June to 3 July in Lyon, France.**

We look forward to meeting many of you there!
See you soon!
Nicolas Caradot (chair) from KWB Berlin,
Frédéric Cherqui (vice-chair) from INSA Lyon / University of Melbourne
Franz Tscheikner-Gratl (secretary) from NTNU Trondheim,
Nathalie Hernandez (secretary) from STEIN Infrastructure Management GmbH,

International Working Group on Urban Rainfall (IGUR)

IGUR Annual Meeting 2025

The annual meeting of the IGUR in 2025, took place during the 13th Urban Drainage Modelling Conference (UDM) in Innsbruck on the 16th September 2025 as partly hybrid event. The next annual meeting is scheduled to be held at Pontresina during the UrbanRain 26 workshop.

IGUR activities

The IGUR currently has three subgroups:
o The IGUR publication subgroup for a publication on ***Rainfall-related Consequences of Climate Change on Applications for the Urban Population***
   In the beginning of 2026, the activity has been relaunched due to the long delay by the designated publisher (IWA) and the retirement of Simon Beecham, the coordinator. Currently, a new team is being established, which has started to take contact with the designated authors. This team is still in its phase of construction – we will communicate about it when it is consolidated. Monthly meetings have started – more infos can currently be obtained from the Chairman and his Secretary.
o State-of-the-Art publication on ***Climate data for the urban drainage community***
   A subgroup headed by Vincent Pons (NTNU Trondheim) and Lauren Cook (EAWAG) has started to focus on the adequate data preparation from climate models in order to have a state-of-the-art document and project support so that further work can concentrate on climate model run consequences. The sub-group has met during UDM, organised a successful workshop entitled "Addressing climate change in urban drainage using climate data and communication to the public" and will also organise a pre-conference workshop at NOVATECH, June 29-July 3, 2026, Lyon, France (https://www.graie-novatech.org/en/).
o IGUR internal statutes
   The third subgroup has finalised its work on the IGUR statutes which were updated and voted in 2025.

Activities with participation of IGUR members

o EGU 26 Vienna,
   The 2026 General Assembly of the European Geosciences Union will be held in Vienna from 3 to 8 May (https://www.egu26.eu). Many sessions will be devoted, at least in large part, to urban precipitation. They include interdisciplinary sessions and/or sessions organised by IGUR members.
o OPENSENSE
   On the initiative of Czech Technical University CTU, the OPENSENSE COST action on opportunistic precipitation measurements has started in August 2021 and ended in 2025 (https://opensenseaction.eu/, chairman: Vojtech Bares). Objectives were to make data from different sources and devices openly available and to maintain a comparable quality standard. The second OpenSense conference will take place on 23rd and 24th June 2026 at KNMI in De Bilt (The Netherlands) (https://indico.kit.edu/event/5317/abstracts/)
o UrbanRain 2026
   The UrbanRain International Workshop on Precipitation in Urban Areas will take place on 24-27 November 2026 in Pontresina, Switzerland. Abstracts are due by 1 May 2026 – more information at https://urbanrain.ethz.ch/

Chairman: Prof. Daniel Schertzer, Hydrology Meteorology and Complexity lab (HM&Co), Ecole Nationale des Ponts et Chaussées, Institut Polytechnique de Paris, France, Daniel.Schertzer@enpc.fr, https://hmco.enpc.fr

Secretary: Dr. Thomas Einfalt, hydro & meteo GmbH, Lübeck, Germany; e-mail: einfalt@hydrometeo.de.

Group's web site: https://igur.org/ and maintained by Martin Fencl (CTU Prague)

International Working Group on Data & Models (IWGDM)

Ico Broekhuizen and Ben Hodges

The Urban Drainage Modelling conference was held September 15th – 18th in Innsbruck, Austria, organised by the University of Innsbruck. See the report elsewhere in this newsletter for more on this very successful and well-organized conference with many interesting presentations and discussions.

During UDM, Joao Leitao (EAWAG, Switzerland) completed his term as chair of the group. Many thanks to Joao for his work as secretary and chair over the past seven years! The new chair is Ico Broekhuizen (Luleå University of Technology, Sweden, ico.broekhuizen@ltu.se), the new secretary is Ben Hodges (University of Texas, USA, hodges@utexas.edu) and the new young scientist representative is Daneish Despot (Helmholtz Centre for Environmental Research, Germany, daneish.despot@ufz.de). The location for the next Urban Drainage Modelling conference was also announced at UDM and will be organised at the University of Exeter, United Kingdom, in 2028.

One topic discussed during the working group meeting is the future development of SWMM in the face of staff and budget cuts at the USEPA. Committee members have had informal discussions with some EU agencies about potential funding streams to for EU support of public-domain SWMM as the US support for the model has become questionable. As yet, the discussions have not identified a clear path forward.

Throughout the year, a series of workshops was organised by Jörg Rieckermann, Alfredo Chavarria, and Joao Leitao (EAWAG) about FAIR sharing of data from Urban Drainage Systems. The goal is to improve open access to data and being able to re-use datasets more easily. Discussion has focused about what attributes should be included to sufficiently describe different types of measurements such as water level, flow, and combined sewer overflows. A manuscript about the data model is currently being prepared.

International Working Group on Urban Streams

The International Working Group on Urban Streams (IWGUS) aims to promote joint collaborative research and scientific knowledge transfer among the JCUD community. This includes the dissemination of scientific findings and innovative technologies related to urban stream restoration, including urban watershed environmental planning and management, urban runoff control, and LID BMPs. IWGUS is open to all the experts and professionals practicing in urban-stream-related fields. Several distinguished senior professors will be invited and act as advisors, along with many active midcareer experts that will contribute as the main body of this working group. Many young scholars or PhD students will also be recruited as volunteers. The diverse expertise, roles and responsibilities of various individuals within the group is key to contributing to the success and in achieving the goals of the working group.

The activities of IWGUS will include: (1) Organizing one annual meeting in JCUD flagship conferences: ICUD, Novatech, SPN and/or UDM, (2) Hosting a special session in ICUD conference every three years, (3) Organizing workshops and webinars relating to urban streams in different countries (4) Organizing special issues in international journals, and (5) Publishing newsletters of the working group regularly to promote it in different social media, such as LinkedIn, ResearchGate, twitter, IWA connect+, and WeChat.

Highlights and lessons learned from conferences attended by IWGUS members

International Climate Resilience Conference (iCARE) at LMU Munich

The International Climate Resilience Conference (iCARE) took place on the 26th to 29th October 2025. The conference was hosted at the Ludwig-Maximillians-University of Munich (LMU), located in the heart of one of Europe's most vibrant cities. The Conference was organized by Liang Emlyn Yang (Senior Researcher at LMU Munich, Germany), Matthias Garschagen (Professor at LMU Munich, Germany) and Haifeng Jia (Professor at Tsinghua University, Beijing, China).

Climate change research has been dominated by warning about risks, vulnerabilities, and damages, often overlooking the significant efforts made by human systems to build and sustain resilience. This conference addressed the gap by highlighting the achievements, progress, and innovative solutions in climate resilience, emphasizing successful strategies, best practices, and achievable potentials that enable communities, organizations, and governments to thrive amid climate impacts.

The conference brought together leading academics and emerging scholars to discuss the latest research in the scientific field of climate resilience. It also welcomed policymakers, practitioners, and community leaders to share strategies and innovations in real-world settings. The conference provided a platform for collaboration on climate resilience studies, to establish a community for resilience researchers, and to promote a resilience thinking instead of risk thinking in the narrative of climate change. Overall, 17 sessions on multiple subtopics of climate resilience were organized by renowned experts, and over 200 oral and poster presentations were presented for sharing and discussions.

15th International Conference on Environmental and Public Health in Asian Mega-cities (EPAM 2025)

The 15th International Conference on Environmental and Public Health in Asian Mega-cities (EPAM 2025) was hosted by East China Normal University, Shanghai, China. As the premier global academic platform in environmental and public health research, the EPAM International Conference remains dedicated to advancing sustainable development in Asia's mega-cities. It has been held once a year since 2009 in rotation between Japan, Korea, and China. EPAM 2025 was held in October 16th-18th, 2025 in, Shanghai,

China. The aim was to redefine ecological governance for Asia's future cities. The conference was attended by academia, policy, and industry converge to shape a sustainable tomorrow. The main themes of the conference were: Circular Economy and Zero-Waste Cities, Carbon Neutrality and Carbon Mitigation, Sustainable Urban Development and Resilient Cities, Artificial Intelligence and Environment Mega Data, Environmental Risk and Public Health, Emerging Contaminant Control and Management, Sustainable Energy and Environment. Professor Hyunook Kim was a Chair of the Event, Professor Haifeng Jia was a Plenary Speaker. George Zaimes also participated and presented his current research.

Webinar on "Environment friendly Seoul by Cheonggyecheon restoration"

The IWGUS also organised a webinar titled "Environment friendly Seoul by Cheonggyecheon restoration" is organized by IWGUS in July 31, 2025. The webinar is chaired by Haifeng Jia (Professor at Tsinghua University, Beijing, China) and Huiling GUO, （Senior Lecturer at Ngee Ann Polytechnic, Singapore. The main speaker of the webinar was Professor Noh

Engineering (CGEEE 2026) will be held in University of Seoul, South Korea from July 09 to 11, 2026. CGEEE 2026 offers a platform for delegates from diverse areas to engage in face-to-face ex- change of new ideas, share application experiences, establish business or research relations, and seek global partners for responding to climate change and achieving global carbon-neutrality.

The 16th International Conference on Environmental and Public Health Issues in All Mega-cities (EPAM 2026) will be held in Kyoto University, Kyoto, Japan from Nov. 11 to 14, 2026. As the prem- ier global academic platform in environmental and public health research, the EPAM International Con- ference remains dedicated to advancing sustainable development in Asia's mega-cities. It has been held once a year since 2009 in rotation between Japan, Korea, and China. In 2026, EPAM 2026 is being held in the most historical, beautiful, and magical city in Japan. The 12th International Conference on Water Resource and Environment (WRE 2026). It will be held in University of Seoul, Seoul, Republic of Korea from December 1–4, 2026.

New education initiatives

Capacity Building for Response to Climate Change: The Korean Ministry of Climate Change, Energy, and Environment, in cooperation with the Korea Environment Corporation (K-eco), has initiated a special graduate program to train students. This program focuses on educating specialized knowledge in climate change adaptation, greenhouse gas inventory analysis, and national strategy development to make the students to contribute to their country's efforts to her carbon neutrality goal.

The University of Seoul is one of the universities that participate in the education initiative. Its education focus is placed in the management of water resources under climate change.

New research exchange collaborations

Scholar Exchange between Tsinghua Univ. and Univ. of Seoul: Prof. Haifeng Jia has been invited to University of Seoul as an Affiliated Professor of the graduate program specialized in climate change adaptation.

Haifeng Jia, Hyunook Kim, George N. Zaimes and Georgios Gkiatas

International Working Group on Emerging Contaminants (IWGEC)

Lena Mutzner, Kefeng Zhang, Helene Österlund

Over the past year, the JCUD Emerging Contaminants Working Group has focused on strengthening community engagement and advancing methodological rigor in urban water quality research, particularly in relation to data interpretation and reproducibility. A key activity has been the organisation of an upcoming international webinar, "The Pitfalls of Sampling and Analysis of Micropollutants and Microplastics/Tire Wear Particles in Urban Water Systems", scheduled for 2 February 2026. The webinar brings together leading researchers to discuss analytical challenges, sampling biases, and best-practice approaches for emerging contaminants in urban drainage systems, and reflects the working group's commitment to capacity building and knowledge exchange across disciplines and regions.

In parallel, the working group has been developing a community paper titled "A Blind Dive into the Unknown: Water Quality Without Metadata", led by Vincent Pons, Lena Mutzner, Kefeng Zhang, Luca Vezzaro, Helene Österlund, etc. The initiative addresses the widespread challenge of analysing urban water quality data with incomplete or inconsistent metadata. The concept and initial framework were presented and discussed during an in-person (hybrid) working group session at the 2025 Urban Drainage Modelling (UDM) conference, focusing on interoperability, FAIR data principles, and applicability across diverse monitoring contexts. Community participation is actively encouraged, particularly through testing the framework on existing datasets.

The working group also held an in-person (hybrid) meeting during the 2025 Urban Drainage Modelling (UDM) conference. This meeting provided an opportunity to discuss working group priorities, refine the scope and direction of the metadata paper, and strengthen connections between members. An additional in-person discussion at UDM further supported collaboration and momentum around these activities.
Through these efforts, the Emerging Contaminants Working Group continues to foster critical reflection on data quality, promote open collaboration, and support the urban drainage community in addressing emerging contaminant challenges with greater transparency and robustness.
Everyone is welcome to join the working group. To sign up, please click the link (https://forms.office.com/r/3Sy9BdtCqA)
 Or contact Lena Mutzner (lena.mutzner@eawag.ch) and Kefeng Zhang (Kefeng.zhang@unsw.edu.au)

International Working Group on Blue-Green Infrastructure

Lessons learnt from 2025 conferences

IWA Urban Drainage Modelling Conference (UDM) 2025, Innsbruck Austria

The Blue-Green Infrastructure (BGI) sessions at last September's Urban Drainage Modelling Conference in Innsbruck marked what feels like a pivotal moment for our field. We are finally moving beyond the question of whether BGI works, to dealing with the messier reality of how it performs "in the wild". What struck us most was the honest confrontation with our blind spots: the gap between what we design on paper and what actually gets built on the ground, the sobering realization that our current design standards may already be obsolete and the persistent challenge of translating elegant site-scale models into meaningful watershed benefits. Yet, alongside these findings came genuine innovation—from improved hydraulic conductivity functions that better capture real soil behavior, to agent-based models simulating the human dimension of maintenance, to integrated frameworks that simultaneously assess flood, drought, and heat risks. The message is clear: BGI's next chapter won't be written by hydrological models alone, but through a more integrated approach that embraces climate uncertainty, accounts for the complex realities of construction and long-term performance, designs explicitly for multi-functionality rather than hoping that co-benefits emerge by accident, and recognizes that the success of these systems is as much a socio-technical challenge as an engineering one.

IWA World Development Congress 2025, Bangkok Thailand

The IWA World Development Congress in Bangkok in December 2025 saw major activities in the topic of BGI, organized by the IWA NBS Cluster (co-chaired by Sylvie Spraakman from JCUD and of which iBGI has three members on the steering committee – Peter Bach, Veljko Prodanovic and Anacleto Rizzo). The IWA NBS Cluster recently launched and the conference provided the opportunity for it to exchange knowledge on the perceived trends of BGI in urban liveability, stormwater management and river basin management. Outcomes from the workshop provide a roadmap for the cluster's future activities, of which the iBGI Working Group will play an active role. Furthermore, the IWA Alliance for Water Sensitive Design and Planning facilitated a workshop on retrofitting BGI for flood resilience and improving urban districts across the world, leading to deep discussions and design work. Three case studies (UK, India and Brazil) showed

how different urban contexts required different solutions, but that similarities in thinking do exist and there are ways to formalize best practices and still achieve context-sensitive solutions.

New Research/Articles

A selection of papers from various iBGI Management Committee Members in 2025:

- Beryani, A., Flanagan, K., You, S., Forsberg, F., Viklander, M. and Blecken, G.T., 2025. Critical field evaluations of biochar-amended stormwater biofilters for PFAS and other organic micropollutant removals. *Water Research*, *281*, p.123547.

- Combeaux, R., Cherqui, F., Tondera, K., Lassabatere, L. and Bonneau, J., 2025, September. Monitoring and modelling of stormwater trees to study their water balance under present and future climate. In *Urban Drainage Modelling 2025*.

- Girot, E., Tscheikner-Gratl, F., Curt, C., Taillandier, F. and Cherqui, F., 2025. Scattered seeds, missing garden: a critical review of asset management for nature-based stormwater solutions. *Blue-Green Systems*, *7*(2), pp.558-579.

- Gobatti, L., Bach, P.M., Maurer, M. and Leitão, J.P., 2025. Impact of soil moisture content on urban tree evaporative cooling and human thermal comfort. *npj Urban Sustainability*, *5*(1), p.26.

- Lippera, M.C., Khurelbaatar, G., Despot, D., Kouyi, G.L., Rizzo, A. and Friesen, J., 2025. Spatial-economic scenarios to increase resilience to urban flooding. *Water Research X*, *26*, p.100284.

- Muni-Morgan, A., Lusk, M.G. and Bean, E.Z., 2025. Dissolved nitrogen and organic carbon fluxes from urban stormwater runoff and rainfall into harmful algal bloom-prone waters: seasonal variability and insights into dissolved organic matter composition. *Water Research X*, p.100431.

- Pucher, B., Brunhoferová, H., Cross, K. and Rizzo, A., 2025. Worldwide experience on NbS in the water sector. *Blue-Green Systems*, *7*(1), pp.210-237.

- Rioux, A., Lacroix, S., Kuller, M., Bichai, F. and Dagenais, D., 2025. Urban tree planning: Can MCDA-driven approaches help improve current practices? A Canadian case study. *Trees, Forests and People*, p.101029.

- Shetty, N.H., Wang, M., Elliott, R.M. and Culligan, P.J., 2025. Comparative Performance of Green Roof Systems with Smart Cisterns: Balancing Stormwater Capture and Irrigation Supply. *Water*, *17*(20), p.2987.

- Uribe-Aguado, J., Patiño, J.N., Wild, T., Kozak, D. and Sánchez, J.P.R., 2025. A decision support tool for the selection of biophysical methodologies to assess urban nature-based solutions using regulating ecosystem services. *Urban Forestry & Urban Greening*, *112*, p.128842.

Also, there are some Special Issues opened during 2025/early 2026:

- **Land Use Policy** Special issue on "Social aspects of green stormwater infrastructure in a resilient urban environment" – editors Bill Hunt, Juan Pablo Rodriguez Sanchez and Luis Sañudo Fontaneda among others – deadline for papers was 31st December 2025

- **Blue Green Systems** Special issue on "Catchment-Scale Impacts of Integrated Nature-Based Solutions" – editors Sylvie Spraakman, Maryam Imani, Seith N. Mugume and Veljko Prodanovic – deadline for papers 22nd May 2026

- **Water Research X** Special Issue on "Generative AI in Water Systems" – editors Peter M. Bach, Veljko Prodanovic, Lina Sela, Riccardo Taormina, Boyan Xu – deadline for papers 31st July 2026

Working Group updates

The iBGI Management committee has had regular catchups in 2025 to organize communication channels. There are now two major communication channels by which people can join the network:

- LinkedIn Group (112 members as of Jan 2026): https://www.linkedin.com/groups/

- A Discord Channel: https://discord.gg/xQpECdzj

Some highlights of 2025 included a formal catchup at the UDM 2025 conference in Innsbruck, supporting the formation of the IWA NbS Cluster, a contribution to the upcoming IWA Global Trends Report that will be released at the World Water Congress in Glasgow in October 2026 and the planning of a workshop, which will be hosted at Novatech from June 29th to July 3rd 2026 in Lyon, France.

Upcoming events, webinars, conferences:

Several events are on our radar this year including:

- **EWRI International Low Impact Development Conference**, Jacksonville FL, USA 1st to 4th March 2026

- **6th ESP Europe Conference 2026** – 18th to 22nd May 2026, Prague, Czechia

- **Novatech 2026** – 29th June to 3rd July in Lyon, France (iBGI will be hosting a workshop and our annual catchup meeting)

- **19th International Conference on Wetland Systems for Water Pollution** – 13th to 17th September, 2026 in Chania, Greece

- **IWA World Water Congress & Exhibition** – 4th to 8th October 2026, Glasgow, UK (stay tuned for activities by the IWA NbS Cluster)

Chair: Dr. Peter M. Bach (EdenCT, Switzerland/Monash University, Australia)**; Co-Chair:** Luis Angel Sañudo-Fontaneda (University of Oviedo, Spain) **iBGI Website:** https://ibgi.group/ ; **LinkedIn Group:** https://www.linkedin.com/groups/13199300/ **Discord Channel:** https://discord.gg/xQpECdzj

Real-time Control Working Group

The Real-time Control (RTC) Working group is excited to announce a new year of activities promoting the research and practice of active control in urban drainage systems. Last year, the working group convened at the 2025 Urban Drainage Modelling conference in Innsbruck, Austria, for a 'bring-your-own-data' workshop focused on developing standardized datasets and test cases for RTC studies. The workshop was attended by more than 20 researchers and practitioners from around the world and resulted in a collection of 11 benchmark datasets that will enable improved inter comparison of RTC research. Over the next year, the working group aims to translate the results of this workshop into an accessible database of benchmark test cases that can be used by the larger RTC community. The working group will be holding virtual meetings throughout the year. If you are interested in getting involved, please contact Matthew Bartos (mdbartos@utexas.edu) or Luke Shi (luke.shi@qut.edu.au).

JCUD working groups: how they work & best practices

The IWA/IAHR Joint Committee of Urban Drainage (JCUD) aims for a vibrant and dynamic set of active working groups. The JCUD appreciates that each working group will have their own ways of working suitable to their scope and aims, however, from years of experience the JCUD has gathered examples of good practice. General good practice that the JCUD would expect all their working groups to follow is described below.

Vision and mission. Each working group has its own purpose and goals, and so the activities they take on will vary. Typical activities include: international workshops, webinars, and conferences, joint publications such as conference papers, white papers or books.

Chair and secretary. Each working group shall appoint a chair and a secretary for a 3-year period. After the 3 year period, a new chair and a new secretary should be sought. For continuity, the secretary may be appointed as the new chair, however everybody can apply. We expect the chair and secretary to work in different countries. Working groups may also wish to appoint a co-chair and a co-secretary, which may help with attendance of, and visibility in conferences. New appointments should follow a democratic process, with consideration of past chair/secretary geographies and gender.

Reporting. Each working group is to provide a brief summary of their activities and any key developments in their field to the yearly JCUD newsletter, as well as advertise their activities on IWAconnect+ and through the urban drainage mailing list.

Annual meetings. It is expected that each working group has at least one annual meeting (suggested to be held at our flagship conferences: ICUD, Novatech, SPN and/or UDM). The group should make every effort to attend our main ICUD conference every three years, either to host a workshop, a special session or hold a meeting.

Duration. The working groups may be short-lived, come together for a specific aim and then dissolve, or, the working groups may be long standing. However, JCUD will go through a working group evaluation process every 3 years, whereby inactive working groups will be closed down. Inactivity might be defined as those WGs that do not regularly attend our flagship conferences, those that do not contribute to the

newsletter, those that do not organise workshops or other events (such as webinars). JCUD can assist with advertisement and organisation of activities to 'regenerate'/'rejuvenate' working groups.

New working groups. To become a new working group, the chair and secretary (or advocate/champion) shall provide a half-page summary of their scope and aim to the JCUD, as well as a 100 words short description of their scope. This scope will be considered by the JCUD in their next meeting (which occurs roughly every 3 to 4 months). Once approved, the group will be listed on the JCUD's website working groups landing page (https://jcud.org/89-2/). The JCUD landing page can then link through to a working group's own platform (which could be e.g. a website, mailing list or social media), but we do not require each working group to have their own platform.

News from Related Organizations and Projects

Co-UDlabs closing Note: A Collaborative RI Ecosystem for Urban Drainage

Co-UDlabs **(Building Collaborative Urban Drainage research labs communities)** has concluded, after four years of work integrating 7 Research Infrastructures across Europe, accelerating innovation in urban drainage systems (UDS), granting Transnational Access (TA) to all users at high-level research facilities, coordinating networking and community-building initiatives, as well as innovative Joint Research Activities. **Co-UDlabs has brought together 17 unique large- and full-scale urban drainage experimental facilities**, hosted by seven organisations in Europe: University of Coruña (Spain), University of Sheffield (UK), INSA Lyon (France), Aalborg University (Denmark), Deltares (Netherlands), EAWAG (Switzerland) and IKT (Germany), with the support of GRAIE and Euronovia (France).

Across three **Transnational Access Calls**, Co-UDlabs supported 31 user projects, engaging 227 users from 26 countries (≈33% from non-academic institutions) and delivering 1,201 access days. At the end of the project, Co-UDlabs partners and users had produced over 70 datasets available at our Zenodo community. Datasets are complemented by tools, reports and scientific outputs.

Co-UDlabs organized a series of **training activities** and initiatives throughout its implementation organizing 6 webinars, 5 early-stage researcher activities and 5 industry and practitioners oriented workshops and seminars. The **Joint Research Activities** strengthened Co-UDlabs' role as a driver of scientific innovation in urban drainage research, through the analysis of emerging monitoring technologies, delivering the Urban Drainage Metrology Toolbox, by stablishing new tools and procedures for assets deterioration or by producing consensus-style test protocols for hydrodynamic and pollution performance and new experimental insights into sediment transport during urban floods.

Lastly, the **governance** work strengthened the connection between scientific evidence, regulation, and practice specially in the field of CSO monitoring and analysis. Two policy briefs on the European RI landscape and CSO management were prepared during the projec. Co-UDlabs partners prepared two publications that highlight the value of open data in improving CSO regulation and supporting future research directions. The first, "*The role of open data in regulating combined sewer overflows*", examines how open CSO datasets can enhance transparency, regulatory approaches, and public engagement. The second, "The value of urban drainage systems data: facts, discussions and recommendations", synthesises community insights from a workshop organised during the IWA World Water Congress and illustrates how shared data can guide future research agendas.

The project leaves a stronger European community linking academia, utilities, SMEs and public authorities, with tangible assets—datasets, tools, methods, and a lasting network which will continue working in the **new Joint JCUD Working Group on Large Research Infrastructure in Urban Drainage - UDRAIN**. **Many thanks to all partners, users, authors and colleagues who have made Co-UDlabs possible during the last +4 years**

Jose Anta (Project Coordinator) and **Andrea Ciambra (Project Manager)**

+info: www.co-udlabs.eu & Final press kit

Making Urban Drainage Data FAIR – From individual datasets to the Co-UDlabs project to JCUD Working Groups

Jörg Rieckermann, Vincent Pons and Alfredo Chavarria

There are two basic reasons to make the data we collect FAIR – Findable, Accessible, Interoperable and Reusable: i) data are expensive and ii) to benefit from recent advances in data-driven modelling, one needs millions of high-quality datasets, which must be compiled from domain experts. Regarding the cost and value of monitoring data, we would all agree that models are powerful tools to summarize knowledge, integrate process understanding, and explore future scenarios. However, nothing beats reality. Unfortunately, in urban drainage research, observing reality through monitoring campaigns is very expensive, especially when high-resolution water quality information is required. Therefore, the value of monitoring data must extend beyond a single project, and their structured sharing and reuse become essential. Regarding the data-driven modelling aspect, the required data annotated data archives are missing [1,2]. Therefore, over the past years, the community has started different efforts to making urban drainage monitoring data FAIR – Findable, Accessible, Interoperable and Reusable [0].

CoUDLAbs

Within the EU H2020 project Co-UDlabs ("Building Collaborative Urban Drainage research lab communities"), harmonization of laboratory as well as routine data from water-oriented urban living labs was explicitly addressed as a central objective [3].

Bringing together 17 research infrastructures across Europe, the project revealed that urban drainage datasets are highly heterogeneous with respect to sensor types, naming conventions, sampling frequencies, metadata structures, and uncertainty reporting. Without harmonization, cross-site comparison, benchmarking, and model transfer remain limited.

At the same time, rigorous metrological principles have long been emphasized in urban drainage research. Measurement uncertainty, calibration procedures, traceability, and validation of sensors are well-established components of high-quality monitoring [4,5]. The current FAIR movement builds directly upon this foundation, extending the concept of quality assurance beyond measurement accuracy to include semantic consistency, machine-readability, persistent identifiers, and standardized metadata.

JCUD working groups

In this context, the **JCUD Real Time Control (RTC) Working Group** increasingly recognizes that advanced control strategies depend fundamentally on interoperable, high-quality data streams. RTC applications require consistent definitions of hydraulic and quality variables, transparent documentation of sensor uncertainty, harmonized metadata for model calibration, and standardized exchange formats connecting monitoring systems and control algorithms. Without such harmonization, the transferability of RTC solutions between catchments remains constrained. To support benchmarking activities, they organized a "Data Potluck" at the UDM 2025 in Innsbruck.

Similarly, the **JCUD Emerging Contaminants Working Group** addresses the specific challenges of water quality monitoring at very low concentration levels. The detection of micro pollutants, PFAS, pharmaceuticals, and transformation products is method-dependent and sensitive to sampling strategies, detection limits, and matrix effects. To enable meaningful cross-study comparison, harmonized reporting of limits of detection (LOD/LOQ), analytical uncertainty, sampling protocols, and quality control procedures is required. This effort reflects a direct continuation of established uncertainty analysis approaches in urban drainage metrology [4], now embedded within FAIR data principles. Similarly to the RTC group, increased interoperability is crucial for research progress: understanding pollutant sources,

pathways and impact require increased efforts in multidisciplinary which interoperability through the development of metadata standards will help achieve.

Building on the development in Co-UDLabs, the **JCUD Data and Models Working Group (IWDGM)** has run a series of workshops in 2025 to promote standardized repositories, version-controlled workflows and reproducible analyses, e.g. through open science platforms such as RENKU. We have also screened available standards for uniquely describing urban drainage monitoring data and are currently finalizing our efforts in a joint publication on data models for simple use cases, such as sharing level and flow monitoring data, data from combined sewer overflows and, to benefit from data-driven models, outputs from 2D flood models. A first draft has been developed by the IWGDM and we hope to finalize it in Q2 2026. In industry, we see a strong movement in the UK-based STREAM [6] initiative. As sharing data in the finance sector has triggered substantial innovation, STREAM wants to replicate this success through a collaboration "between UK water companies, supported by industry and civil society partners with a vision to unlock the potential of water data to benefit customers, society, and the environment". This is a rather broad initiative, also including standardized annual performance reports, and drinking water data. For urban drainage, standard data models are suggested for CSO spills ("Event duration monitoring") and "Sewer flooding Incidents".

Outlook

The movement toward FAIR urban drainage data is no longer optional — it is becoming a prerequisite for effectively using our available resources (and not repeating the same rainfall-runoff monitoring campaigns over and over again to develop novel algorithms for model calibration) and tapping the advances of machine learning, which requires massive labelled data archives.

Open questions regarding these data archives remain:

Who has the authority to suggest a common data model for the community, when it is already difficult to harmonize asset condition classes across countries? We think that either a working group under JCUD or IWA should propose a data standard. Or, probably better, the JRC should benefit from the recast of the Urban Wastewater Treatment Directive in Europe to propose a common approach to data harmonization, possibly in connection with the lessons learned in STREAM. Where data should be hosted? Currently, we can recommend to deposit data on zenodo, although a common repository for the UDS community is still missing. Ultimately, it would be desirable to have a domain-specific platform, such as the MaterialsCloud, where data, models and common codes for data analysis are hosted together with educational material. However, the development and maintenance of such a portal was a coordinated decade-long effort with multiple large research projects.

The next steps are already on the horizon: a coordinated data model draft for simple use cases and a workshop at the Sewer Processes and Networks Conference in Trondheim to demonstrate tools for data harmonization as well as improving the practice in data management in the urban drainage research community.

References

[0] https://essd.copernicus.org/articles/13/4779/2021/
[1] https://www.trinnex.io/insights/a-look-behind-using-machine-learning-for-anomaly-detection
[2] https://engrxiv.org/preprint/view/3520
[3] https://zenodo.org/records/14717840
[4] https://www.amazon.co.uk/Mesures-en-hydrologie-urbaine-assainissement/dp/2743003804
[5] https://iwaponline.com/ebooks/book/835/Metrology-in-Urban-Drainage-and-Stormwater
[6] https://www.streamwaterdata.co.uk/

Dataset containing concentrations of storm water-driven substances in urban streams

This dataset presents the concentrations of a wide range of substances in urban streams in Sweden. Contaminant concentrations in the water phase were measured during both dry and wet weather conditions in three Swedish urban streams: Fyrisån in Uppsala, Ljurabäck in Norrköping, and Storån in Söderköping. Sediment samples were also collected from these three streams, along with an additional stream: Kättstabäcken, a stream near Stockholm Arlanda Airport that receives stormwater discharges through a pond system. The collected data included 34 targeted **PFAS**, 13 **phthalates**, 10 **organotin compounds** (OTCs), 16 **polycyclic aromatic hydrocarbons** (PAHs), and 9 **phenols** (i.e., nonylphenols, octylphenols and -ethoxylates) in water phase. Bottom sediment data included analysis results for 35 targeted PFAS as well as 30 **PFAS precursors** (by using TOP assay), 13 **phthalates**, 10 **OTCs**, 16 **PAHs**, and 8 **phenols** (excluding BPA).

Link:

https://researchdata.se/en/catalogue/dataset/2024-619

Related papers:

Kali, S.E., Österlund, H., Viklander, M., Blecken, G., 2025. Occurrence, concentration and distribution of 50 organic contaminants in water and bottom sediment from urban streams affected by stormwater discharges. Water Research 283. https://doi.org/10.1016/j.watres.2025.123847

Kali, S.E., Österlund, H., Viklander, M., Blecken, G.-T., 2025. Stormwater discharges affect PFAS occurrence, concentrations, and spatial distribution in water and bottom sediment of urban streams. Water Res. 271. https://doi.org/10.1016/j.watres.2024.122973

OTHU: Urban Hydrology Field Observatory (https://www.othu.org)

Since 1999, 12 research laboratories from Lyon (France) have developed a long term field-observatory (named OTHU) with the support of the Greater Lyon city council and the Rhone-Mediterranean Corsica water agency. This observatory gathers a multidisciplinary team with competencies in climatology, hydrology, fluid mechanics, hydraulics, geography, soil sciences, chemistry, biology, microbiology, and social sciences. It is dedicated to the study of a wide range of phenomena associated with urban drainage. OTHU undertakes intense continuous monitoring of climatic parameters, water flows and pollution in three experimental sites, in addition to many regular and specific monitoring campaigns. More than ten other sites are also monitored but in a less intensive way.

In 2026, the OTHU celebrated its 26 years, 2026 will be marked by a new phase, full of challenges and commitments concerning in particular:

- the implementation of the new research program of the OTHU in support of the observatory's sites and data.

- Increased capitalization of our metadata and data (a chronological database is available at https://data.othu.org/OTHU/. It contains various data since 2003 on the quantity (rainfall, water level, velocity, flow rate) and quality (temperature, pH, electrical conductivity, turbidity) of water in urban water management facilities).

- The organization at the end of the year of the eighth meeting of the Scientific Council.

- The development of the scientific activity report presenting all the achievements and advances of the Observatory for the period 2022/2025.

- The publication of a collective summary work to enhance and better transfer the results of the observatory produced during this double decade

And of course the Novatech conference in Lyon in June, where we will be happy to introduce ourselves. see you there!

OTHU publication are gathered here: https://hal.science/OTHU

For more information on the OTHU project or collaborations, do not hesitate to contact us (https://www.linkedin.com/in/othu-la%C3%ABtitia-bacot-9851559b/ - laëtitia.bacot@graie.org - Nicolas Walcker nicolas.walcker@insa-lyon.fr) and visit our new Website http://www.othu.org.

Updates from the OPUR program – recent achievements on storm water NBS hydrology

By Jérémie Sage and Marie-Christine Gromaire

We are pleased to share with the urban drainage community recent research achievements from the OPUR program on the hydrological performance of stormwater nature-based solutions (NBS). OPUR is a long-standing French research initiative in urban hydrology, involving academics and practitioners, focusing on both i) urban water and public health challenge and ii) decentralized water management, including NBS runoff source control systems.

As part of our ongoing research efforts on this later topic, 2025 has seen the successful defense of two PhD theses:

- **Tinghao Huang**, on **bioretention systems**, and
- **Hayath Zime-Yerima**, on **stormwater trees**.

The first investigated the functioning of 3 pilot systems under constrained underground conditions, with either limited or no possibilities for exfiltration, and evaluated the ability of a HYDRUS-1D based modelling approach to represent their functioning under various assumptions regarding the knowledge available on the system (e.g., soil and vegetation characteristics).

Studied stormwater tree and bioretention system

The second thesis involved the monitoring of an experimental stormwater tree facility to assess its performance, with particular attention given to tree transpiration (through soil water storage and sap-flow measurements) and to the influence of waterlogging periods (via an *ad hoc* pot experiment), while also proposing a typology for systems incorporating street trees.

Together, these works provide insights into the impacts of key design choices; help clarify what can realistically be expected from transpiration in terms of volume reduction; and illustrate the potential complexity of water flows within the system and at its boundaries, including situations that may depart from initial expectations.

Observations associated with these different sites will be made available in 2026 as part of the GreenStorm data deposit (https://zenodo.org/communities/greenstorm)

Further references:

1. T. Huang, J. Sage, D. Técher, M. C. Gromaire (2025). Hydrological performance of bioretention in field experiments and models: A review from the perspective of design characteristics and local contexts. Science of the Total Environment, 965, pp.178684
2. T. Huang, J. Sage, E. Berthier, D. Técher, P. Dubois, M.-C. Gromaire (2026) Hydrological performance of bioretention systems under constrained subsoil: A study based on three bioretention prototypes in Paris, France. Journal of Hydrology: Regional Studies, 104, pp. 103124
3. H. Zime-Yerima, M. Seidl, A. Bensaoud, E. Berthier, M.-C. Gromaire (2025) The stormwater tree: analysis of an emerging concept whose boundaries remain to be defined, Techniques Sciences et Méthodes [In French]

A pan-European storm water NBS monitoring database from the GreenStorm project
By Jérémie Sage and Marie-Christine Gromaire

Nature-based solutions (NBS) are now widely accepted as means to support urban transition, through the multiple benefits they can provide. However, when implemented for stormwater control, a tension may arise between the need for rapid storage recovery to reduce runoff volumes and the objective of maintaining enough water to keep vegetation healthy and preserve its thermal benefits during droughts or heatwaves – a challenge likely to be exacerbated under climate change. In this context, improving our understanding of how NBS for stormwater management (NBS_{SW}) respond to climate extremes, depending on design and climate conditions, is critical to ensure their efficiency and resilience.

The GreenStorm project (https://arceau-idf.fr/en/projects/greenstorm), funded under the EU Driving Urban Transition Partnership, aims to addresses these challenges through the development of improved NBS_{SW} designs, across a range of European climates. A key step in the project is to build on the existing monitoring datasets to i) gain insight on NBS_{SW} behavior under different climate and ii) identify modelling approaches for the assessment of NBS_{SW} performance and resilience under climate extremes. To this end, a database of NBS_{SW} observations has been established by pooling datasets from experimental monitoring conducted by the project's scientific partners over the past few years.

We are happy to announce the upcoming release of this unprecedented database, bringing together long-period observations from twelve sites across four European countries (France, Sweden, Greece, and Italy), covering seven NBS_{SW} families. While individual datasets will be progressively made available in 2026, an overview of the database is already available through the GreenStorm community on the Zenodo platform at: https://zenodo.org/communities/greenstorm

By sharing this database with the urban hydrology community, we aim to support its use by other research teams, for example as reference data for future experimental monitoring studies or for model evaluation.

The Grand Challengers Podcast

How did you end up doing the job you do today?

How did you overcome challenges?

Where did pizza-ovens, karate, knitting, mushrooms, hockey, canoes, medieval cities, spirituality, t-shirts and the magic number 30 come into this?

And much more….

Be inspired… and be reassured when things don't go to plan.

Listen to the 'life journey' of some JCUD committee members and loads of other professionals tackling today's global challenges in **The Grand Challengers Podcast** hosted by Peter Marcus Bach.

1st China – Africa Symposium on Urban Water, Kampala and Johannesburg

By Seith N. Mugume, Qian Yu and David Zhu

The 1st China–Africa Symposium on Urban Water was held on 8 August 2025 at Makerere University, Kampala, Uganda. The event was hosted by the Department of Civil and Environmental Engineering (DCEE), which welcomed five academics and researchers from Ningbo University, China, from 7th – 12th August 2025. The delegation was led by Prof. David Zhu and Dr Qian Yu.

The symposium provided a platform for knowledge exchange on emerging challenges in urban water management. Presentations addressed a range of topics, including the impacts of climate change and urbanisation on hydrological extremes, multi-phase flows in deep tunnel drainage systems, modelling of internal system failure effects on urban flooding, and machine learning approaches for simulating two-phase flows. The discussions highlighted the importance of combining physical process understanding with advanced computational methods to improve the resilience of urban drainage systems. In addition to the academic sessions, meetings were held with industry stakeholders, including the Kampala Capital City Authority. These engagements focused on identifying opportunities for applied research and collaborative projects aimed at addressing pressing urban drainage challenges in rapidly growing cities.

Following the visit to Kampala, Prof. David Zhu travelled to South Africa to continue discussions on trilateral research collaboration between Ningbo University, Makerere University, and the University of Johannesburg. The meeting was arranged by Dr John Okedi (University of Cape Town) and hosted by Dr Rebecca Alowo (University of Johannesburg), further strengthening academic links across China and Africa. The symposium marked an important step towards sustained China–Africa collaboration in urban drainage research, with a shared commitment to advancing knowledge, capacity building, and practical solutions for resilient cities.

Cold Climate Storm water Centre of Excellence by the U.S. Environmental Protection Agency

The University of New Hampshire and the University of Minnesota have been awarded the Cold Climate Stormwater Center of Excellence by the U.S. Environmental Protection Agency. It is one of four established in the USA and will be co-directed by Jamie Houle (University of New Hampshire) and Andy Erickson (University of Minnesota). Research directed by the center will initially include developing a new biofiltration media that will grow plants and not release phosphate. The objective is to limit the amount of compost media used. Another research activity is to quantify the benefits and success of road salt reduction education and certification programs in reducing road salt application and using their costs to estimate the cost of establishing and maintaining a similar program in other cold climate jurisdictions. Other research will be determined with advice from a Technical Advisory Committee. Technical assistance activities and collaborations include hybrid seminars, such as the Minnesota Stormwater Seminar, workshops, training, and certification activities, the development of minimum control measure guidelines and templates, online learning modules and an inventory and catalog of stormwater needs of communities. The Center is collaborating with the National Municipal Stormwater Alliance, the Technical Advisory Committee, and the Fond du Lac Tribal and Community College. Individuals who are interested in serving on the Technical Advisory Panel should contact Andy Erickson or Jamie Houle. A new hydrologic technique for quantifying storm intensity, termed the 'Minimum Duration of Accumulation', has been developed at the University of Minnesota by Dr. Noah Gallagher (advisors Andrew J. Erickson and John S. Gulliver). New design storm distributions (hyetographs) created using this technique are designed to fit well with risk analyses and help describe the full range of precipitation intensities and durations, something that is currently a challenge for the application of green infrastructure. For example, current design storm technology does not allow infiltration practices to infiltrate much water because the design storm is quite intense. Dr. Gallagher found that the intensity of the typical design storm is in the upper 10% of actual precipitation in the upper Midwest, USA. The MDoA technique results in design hyetographs for a range of storm intensities and durations, resulting in probabilities that can be directly input into risk analyses. A paper describing the MDoA technique is currently in preparation.

Novatech 2026: A Conversation with the Conference Committee on Bridging Science, Policy and Practice in Urban Water Futures

By Thiruni Thirimanne – JCUD Young Water Professional

Frédéric CHERQUI

INSA Lyon-DEEP - FRANCE
President of Novatech

Tim FLETCHER

University of Melbourne - AUSTRALIA
President of Novatech

Elodie BRELOT

GRAIE - FRANCE
General Secretary of Novatech

Since 1992, Novatech has been held in Lyon every 3 years, establishing itself as a leading international conference on sustainable urban water management. Initiated by GRAIE under the scientific leadership of Drs. Bernard Chocat and Jean-Luc Bertrand-Krajewski at INSA Lyon, the event was founded on rigorous, practice-oriented research and interdisciplinary exchange. Over time, contributions from researchers such as Dr. Sylvie Barraud have further strengthened its multidisciplinary foundation. Novatech 2026 is led by Dr. Elodie Brelot (conference general secretary), Director of GRAIE and a leader in translating urban hydrology research into policy and operational practice; Dr. Frédéric Cherqui (co-president), Associate Professor at INSA Lyon and expert in sustainable urban water management, stormwater control measures, and monitoring systems that bridge modelling and practice; and Dr. Tim Fletcher (co-president), Professor at the University of Melbourne and leader in urban hydrology, water-sensitive design, and integrated management.

A Conference Defined by Multidisciplinary Perspectives

Novatech's strength lies in connecting research, policy, and practice. Urban hydrology may begin with engineering, but its challenges extend to planning, landscape architecture, and governance. This multidisciplinary outlook has guided the conference since its founding and continues under Dr. Brelot's leadership. Her ability to unite technical teams, researchers, and policymakers exemplifies the collaborative spirit that keeps Novatech both rigorous and human-centred. Co-presidents Drs. Fletcher and Cherqui ensure academic rigour while curating sessions that promote meaningful exchange across disciplines. Their sessions bridge technical precision with practical collaboration, demonstrating how both can coexist when addressing urban water challenges. Over three decades, the conference has grown from engineering-based urban hydrology into a genuinely multidisciplinary platform tackling the systemic challenges of climate change and urban sustainability. Dr. Fletcher's sustained engagement has provided him a front-row view of this evolution, observing its shift from discipline-specific discussions to applied, outcome-driven research.

Evolving with Society and Climate

As climate pressures intensify, Novatech remains responsive to the needs of its global community, fostering collaborations that translate scientific innovation into scalable urban solutions. Dr. Fletcher shared that his long association with Novatech has been both inspiring and motivating, strengthening his commitment to applied science driven not only by curiosity but by the responsibility to deliver tangible outcomes for communities. The conference continues to embody this spirit, serving as a catalyst for research that informs action and for collaboration that advances sustainable urban futures.

Building a Community of Mentorship

Novatech's identity rests on its community ethos. Beyond scientific sessions, the event cultivates genuine connections through mentorship, early-career networks, and a welcoming conference culture. The Young Water Professionals initiative, renewed for 2026, aims to create opportunities for early-career scientists and practitioners to engage with mentors, build networks, and develop professional ethics. Initiatives such as mentor and early-career badges, informal discussions, and structured networking ahead of the gala encourage openness and belonging. For many participants, Novatech becomes more than a conference. It becomes a professional home that encourages collaborative learning and lasting professional relationships.

Advice from Dr. Fletcher for Young Water Professionals

Entering the field of urban water governance can be demanding, with complex scientific, technical, and societal challenges. Dr. Fletcher offers several pieces of guidance for emerging researchers navigating this landscape:

Focus on your values: Align your work with personal and professional principles; sustainable careers are grounded in purpose, not metrics alone.

Seek mentors, sponsors, and build networks: Mentors provide advice, perspective, and guidance. Sponsors are well-established professionals who actively advocate for your advancement, using their influence to create access, visibility, and new opportunities. Engage with colleagues who share your interests to foster collaboration and knowledge exchange. Cultivating a broad network is crucial for personal and professional growth.

Engage selectively: Learn when to say "yes" and when to say "no." Choosing opportunities that align with your purpose allows you to contribute to growth without compromising your own focus or integrity.

Embrace learning moments: Pursue experiences that challenge assumptions, expand knowledge, and strengthen judgment. Novatech provides both a space for learning and a springboard for collaboration and action.

Looking Ahead

The defining challenge for Novatech's future lies not in generating new knowledge but in ensuring its effective implementation, including exploring how best practices in stormwater management can be scaled to achieve catchment-wide impact. By combining research, field insights, and policy guidance, Novatech serves as a global forum where expertise converges to translate innovation into practice.

Open Data Sets for Urban Drainage

This section provides a list of sources from which open data for urban drainage can be accessed.

Fluorescent dye traces in four UK sewer networks
Description: This dataset describes experimental fluorescent dye traces (temporal concentration profiles) recorded in manholes within combined sewer networks located in four different cities across the United Kingdom. It accompanies the journal article entitled "Quantifying mixing in sewer networks for source localisation" (Sonnenwald et al., submitted). This dataset was collected by Professor Ian Guymer and colleagues. This archive was funded by EPSRC grant EP/P012027/1 and the UK Health Security Agency. **Ref**: Guymer, I., J. Shuttleworth, O. Bailey, M. Williams, J. Frankland, B. Rhead, O. Mark, M. Wade, and F. Sonnenwald. 2022. Fluorescent dye traces in four UK sewer networks. V1. Sheffield, UK: The Univ. of Sheffield Online Research Data. https://doi.org/10.15131/shef.data.20480241.
The Bellinge data set: open data and models for community-wide urban drainage systems research.
Description: A comprehensive data set from a combined sewer system in a 1.7 km2 suburban area is presented. Up to 10 years of observations (2010–2020) from level sensors, a flow meter, position and power sensors, rain gauges, X- and C-band weather radars, and a weather station; distributed hydrodynamic models; and CCTV pipe network data are included. This will enable independent testing and replication of results from future scientific developments within urban hydrology and urban drainage system research. **Ref:** Pedersen, A. N., Pedersen, J. W., Vigueras-Rodriguez, A., Brink-Kjær, A., Borup, M., and Mikkelsen, P. S. (2021). The Bellinge data set: open data and models for community-wide urban drainage systems research. Earth System Science Data, 13, p. 4779-4798. https://doi.org/10.5194/essd-13-4779-2021
A decade of monitoring micropollutants in urban wet-weather flows
Description: A paper and dataset published this year showed results from micropollutants data in wet-weather discharges from different papers resulting in data from 77 sites from around the world **Ref:** Mutzner, L., Furrer, V., Castebrunet, H., Dittmer, U., Fuchs, S., Gernjak, W., Gromaire, M.C., Matzinger, A., Steen Mikkelsen, P., Selbig, W.R., Vezzaro, L. 2022 A decade of monitoring micropollutants in urban wet-weather flows: What did we learn? Water Research, 223, 118968. https://doi.org/10.1016/j.watres.2022.118968 (Open Access), Data and code shared in a repository: https://doi.org/10.5281/zenodo.6808401
Urban Drainage dataset from The Brussels Capital Region (Belgium)
Description: FLOWBRU, the monitoring network of the Brussels' river and wastewater network, is managed by HYDRIA (https://hydria.be/fr/flowbru-fr/).FLOWBRU monitors rainfall (16 stations), levels and/or flows in the sewer network and storm basins (>50 stations), levels and/or flows of natural water courses (>20 stations), amongst which 5 also measure the surface water quality. All data can be consulted and downloaded freely via de webiste (French and Dutch): Flowbru.be

Open access water related datasets, including of dye traces undertaken in manholes

Description: open access water related datasets, including of dye traces undertaken in manholes, https://doi.org/10.15131/shef.data.13373039 and sewer network . They are all available on the University of Sheffield's Online Research Data site, ORDA, https://orda.shef.ac.uk/.

FloodCitiSense project

Description: The European FloodCitiSense project (Funding: JPI Urban Europe – Smart Urban Futures) explored the potential of citizen observations to monitor urban rainfall and pluvial flooding via the use of low-cost sensors and app reporting.
Website link: http://www.floodcitisense.eu/

Event Duration Monitoring (EDM) for CSOs in England and Wales

Description: In England and Wales, an openly available database of annual summaries of Event Duration Monitoring (EDM) for most CSOs in England and Wales was made accessible by the Environment Agency: https://ckan.publishing.service.gov.uk/dataset/event-duration-monitoring-storm-overflows-annual-returns. This data has been used by NGOs such as the River Trust to reveal the spatial extent and size of CSO emissions: https://theriverstrust.org/sewage-map. In 2021 around 372,000 spill events with a combined duration of 2,667,452 hours were recorded.

Urban Water Observatory (UWO)

Description: The "Urban Water Observatory" (UWO) is a research project by the Department of Urban Water Management (SWW) of Eawag that collects data on precipitation and discharge processes in the sewage system. The project is supported by the municipality of Fehraltorf, CH. The data is analyzed to improve water protection and optimize municipal storm- and wastewater management. The project will provide an open dataset from January 1st 2019 - December 31st 2021 that includes rainfall data from 13 locations, 6 flow observations, 12 water level measurements, 5 storage tank data, 20 thermal-hydraulic measurements and the wireless sensor network performance (https://uwo-opendata.eawag.ch/). The UWO - Open dataset also contains geographical and SCADA data from the municipality of Fehraltorf and the WWTP of Fehraltorf-Russikon. The data and necessary metadata are expected to be available in the first quarter of 2023 on the Eawag Research Data Institutional Collection (https://opendata.eawag.ch/) and will be made public under a license for scientific and educational purposes.

OTHU: Urban Hydrology Field Observatory (https://www.othu.org)

Description: The urban hydrology field observatory is a multidisciplinary facility for in situ observation of water and pollutant flows. It contributes to a better understanding of discharges during dry and wet weather and their impact on various receiving environments.
A chronological database is available at the following address: https://data.othu.org/OTHU/. It contains various data since 2003 on the quantity (rainfall, water level, velocity, flow rate) and quality (temperature, pH, electrical conductivity, turbidity) of water in urban water management facilities.

Call for Papers: Catchment-Scale Impacts of Integrated Nature-Based Solutions

Guest Editors:

Sylvie Spraakman (City of Vancouver, Canada)

Maryam Imani (Anglia Ruskin University, UK)

Seith N. Mugume (Makerere University, Uganda)

Veljko Prodanovic (Institute for Artificial Intelligence of Serbia, Serbia)

Key dates:

Deadline for manuscript submission: 22 May 2026

Articles will be published online as soon as possible after acceptance.

Call for Papers:

Nature-based Solutions (NbS) are increasingly used in the water sector to harness natural processes for managing complex challenges. NbS encompass the objectives of related concepts such as Sustainable Drainage Systems (SuDS), Water Sensitive Urban Design (WSUD), Low Impact Development (LID), and Blue-Green Infrastructure (BGI), which have emerged independently across regions and disciplines. NbS can provide multiple benefits such as urban flood reduction, alternative water supplies, urban greening, mitigation of the urban heat island effect, and enhanced liveability in cities.

This Special Issue, initiated by IWA's new Nature-based Solutions for Climate-Resilient Water and Sanitation Management Cluster, explores how researchers and practitioners are planning and modelling NbS at the catchment scale.

We welcome original research, case studies, and modelling approaches that assess multi-functional benefits, trade-offs, and governance or implementation strategies for scaling up and integrating NbS.

We are particularly interested in widespread NbS implementation, regional planning, networks of NbS across urban and rural contexts, and their policy implications. Contributions that integrate biophysical, socio-economic, and policy dimensions are especially encouraged, as are interdisciplinary studies demonstrating how NbS can be embedded in watershed planning and management frameworks.

We welcome submissions on NbS and flooding; interactions between surface water and groundwater; spatial optimisation of NbS placement in urban catchments; distributed treatment solutions and their impacts on water quality; coastal protection and planning; and approaches for incorporating NbS into future planning and projections.

Relevant topics include but are not limited to:

- Assessment of hydrological, water quality, and ecological impacts of NbS at the catchment or watershed scale
- Integrated modelling approaches for simulating the cumulative effects of multiple NbS interventions
- Multi-functional benefits of NbS (e.g. flood mitigation, drought resilience, water reuse, biodiversity enhancement, carbon sequestration)
- Scenario analysis for climate change adaptation and mitigation using NbS at catchment level
- Governance, planning, and policy frameworks enabling watershed-scale NbS deployment

- Socio-economic assessments, cost–benefit analyses, and co-benefit evaluations of NbS

- Nature-based and hybrid solutions for urban–rural watershed interfaces

- Participatory approaches and stakeholder engagement in watershed-scale NbS planning

- Comparative studies between conventional grey infrastructure and integrated NbS strategies

- Decision-support tools and optimisation methods for NbS siting, design, and scaling

- Integrated multi-objective approaches for modelling flood risk, urban heat island mitigation, and drought resilience

- AI and Machine Learning models for spatial allocation, optimisation, and prediction of NbS performance

- Catchment-wide monitoring studies and evaluation frameworks for the impacts of implementing NbS

How to submit:

Please make sure that your paper follows the Instructions for Authors, before submitting your paper directly to *Blue-Green Systems* via editorialmanager.com/bgs. Please choose the most appropriate article type and the submission category '**Special Issue: Integrated Nature Based Solutions**' on submission.

Call for Proposals: 18th International Conference on Urban Drainage in 2030

The Joint Committee on Urban Drainage (JCUD) of IAHR and IWA is inviting the interested parties to submit proposals to host the 18th International Conference on Urban Drainage (ICUD) in 2030. This conference will build on success of the previous conferences in this series, which were held in Southampton (UK, 1978), Urbana-Champaign (USA, 1981), Gothenburg (Sweden, 1984), Lausanne (Switzerland, 1987), Osaka (Japan, 1990), Niagara Falls (Canada, 1993), Hannover (Germany, 1996), Sydney (Australia, 1999), Portland (USA, 2002), Copenhagen (Denmark, 2005), Edinburgh (UK, 2008), Porto Alegre (Brazil, 2011), Kuching (Sarawak, Malaysia, 2014), Prague (Czech Republic, 2017), Melbourne (Australia, 2021) and Delft (Netherlands, 2024). The 17th edition will be held in Ningbo, China, in 2027.

Historic ICUD locations 1978-2027
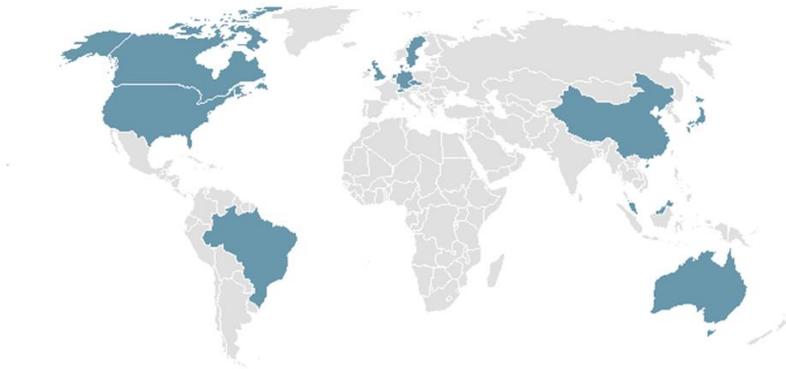
The ICUD conference aims to present the latest advances and innovative approaches in fundamental and applied research on urban drainage, considering meteorological, hydrological, hydraulic, water quality and socio-economic aspects worldwide. The ICUD strives to maintain its long-standing broad international recognition as a prominent platform for the advancement of scientific knowledge in the field of urban drainage. It considers its activities in the wider context of urban water systems, with the ambition of developing and promoting a sustainable and integrated urban water management.

We will take a **two-stage** approach to submitting applications to host the 18th ICUD in 2030. From the Stage 1 submissions, a maximum of four will be invited to submit a full proposal.

- **Stage 1 proposal deadline: 16th of March 2026.**

- **Stage 1 outcome information by April 10th, 2026**.

- **Stage 2 proposal deadline: 8th June 2026**

- **Stage 2 outcome during Novatech conference in France, early July 2026**

All proposals must be in English and submitted electronically in PDF format to the JCUD Event's coordinator Job van der Werf (j.a.vanderwerf@tudelft.nl), with the JCUD secretary Alma Schellart copied in (a.schellart@sheffield.ac.uk).

Page limit stage 1 proposals is 1 page of A4; page limit stage 2 proposals is 20 pages of A4. Proposals should use font size 12 and files should not exceed 7MB. If you require any clarification of the proposal specifications, please contact Job van der Werf, cc'ing Alma Schellart. Additional details of the call can be found on our website https://jcud.org/

Upcoming Events

A list of upcoming major IWA conferences is included below to assist with scheduling events to avoid conflicts (gray highlights indicate the JCUD flagship conferences). More events are updated continuously at https://iwa-network.org/all-events/

Conference	Date	Place	Website
6th ESP Europe Conference	18-22 May 2026,	Prague, Czechia	https://www.espconference.org/europe2026/home
11th Sewer processes and networks (SPN)	20-22 May, 2026	Trondheim, Norway	https://spn11.com/
16th International Conference on Hydroinformatics	22-26 June 2026	Zaragoza, Spain	https://hic2026.org/
12th Novatech International Conference on Urban Water (NOVATECH)	29 June – 3 July, 2026	Lyon, France	https://www.graie-novatech.org/en/
19th International Conference on Wetland Systems for Water Pollution	13-17 September, 2026	Chania, Greece	https://icws2026.tuc.gr/
17th International Conference on Urban Drainage	June 2027	Ningbo, China	https://icud2027.cn/
IWA World Water Congress & Exhibition	4-8 October, 2027	Glasgow, United Kingdom	https://worldwatercongress.org/

News from IWA HQ

The IWA World Water Congress & Exhibition 2026

The IWA World Water Congress & Exhibition is the leading global event for water and allied professionals, covering the full water cycle. Held every two years by the International Water Association, it brings together thought-leaders, decision makers, top researchers, and business innovators from across and beyond the water sector to shape the future of water. Following a highly successful 2024 edition in Toronto, the 15th Congress will take place in Glasgow, UK, in 2026, with around 10,000 participants expected from around the world. IWA World Water Congress & Exhibition – Shaping our water future

The LET conferences

The IWA Leading Edge Conference on Water and Wastewater Technologies is designed to be the place for sharing the latest insights into how pioneering science, technological innovation and leading practices will shape the major transformation in water management that is underway. IWA-LET

News from IWA Publishing

Journal articles

[Sensitivity analysis of the response of one-dimensional modeling of 90° bends in urban drainage networks to different manhole sizes](#)
Chiara Cosco, Beniamino Russo

[A framework for urban planning structured by sustainable urban drainage: the proposal of a priority matrix for site selection](#)
Beatriz Cruz Amback, A. P. Veról, M. M. Sousa, L. E. S. Saraiva, M. G. Miguez

[Editorial: Advances in urban drainage research](#)
Jeroen G. Langeveld, Zoran Kapelan, Job Augustijn van der Werf

[UDMT – Urban drainage metrology toolbox: a software tool facilitating the adoption of better metrology practices](#)
Jean-Luc Bertrand-Krajewski, Mathieu Lepot, Nicolas Invernon

Books

[Asset Management of Urban Drainage Systems :If anything exciting happens, we've done it wrong!](#)
Edited by Frédéric Cherqui, François Clemens-Meyer, Franz Tscheikner-Gratl, Bert van Duin

[Wastewater and Biosolids Management, Third Edition](#)
Edited by Ioannis K. Kalavrouziotis

[Nature-Based Solutions for Urban Sustainability](#)
Edited by Piet N.L. Lens, Xuan-Thanh Bui

News

IWA Members get 25% off all IWA Publishing content, including books and journal articles, using code IWAMEMBER25 on iwaponline.com. Individual members also benefit from a 25% APC discount when publishing in our journals. Find out more [here](#).

IWA LEARN

The place for learning & professional development in the water sector

Professionals in the water sector need continuous development to keep pace with evolving environmental challenges. Regardless of your career stage, the IWA offers valuable guidance and resources to help you build the skills needed for success. This includes a comprehensive suite of tools to advance your career, along with opportunities for professional growth, ongoing learning, specialised training, and networking.

To learn more, visit the IWA Learn platform: https://iwa-network.org/iwa-learn/

News from IAHR

Report 41st IAHR World Congress "Innovative Water Engineering for Sustainable Development"

The 41st IAHR World Congress concluded on 27 June 2025, marking a significant milestone for the global hydro-environment community. Held in conjunction with SIWW Spotlight 2025 at the Singapore EXPO, both events brought together more than 2000 delegates with a diverse and dynamic network of researchers, engineers, policymakers, and industry professionals from across the globe.

Read more

The Road to Bari Framework

It aims at providing a global platform for results-oriented exchange amongst peer experts, decision makers, engineers, and solution providers. Notably, the Road to Bari delivers on:

Key technical and policy challenges for Cities, Basins and Nations
- The science and solutions that are required
- Forums for meaningful stakeholder and public engagement
- An understanding of the options that the future may require

https://www.iahr.org/index/detail/2251

	Download and share our calendar of upcoming events! https://www.iahr.org/index/detail/1993
	IAHR Label for Water Training and Education. A Flagship Initiative of UNESCO-IHP https://www.iahr.org/index/detail/1318
	IAHR Training Courses Series https://www.iahr.org/index/detail/1730
	Discover the IAHR Water Monographs Series https://www.iahr.org/index/detail/659
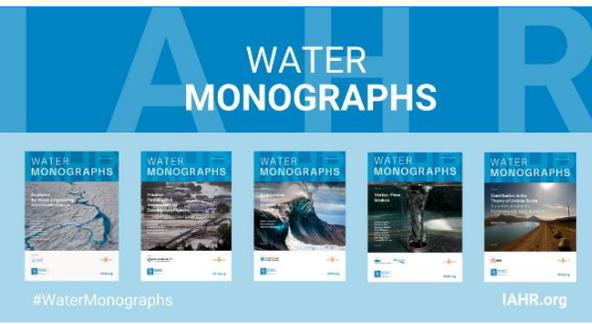
Working Group Contacts

International Working Group on Data & Models (IWGDM) https://sites.google.com/view/iwgdm/

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	Secretary - Searching!

Real-Time Control of Urban Drainage Systems (RTCUDS)

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The University of Texas at Austin	Monash University
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	Secretary - Searching!

Sewer Systems and Processes Working Group (SS&PWG) http://www.sspwg.org

Chair	*Secretary*
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TU Graz	Aalborg University
Email: d.muschalla@tugraz.at	Email: ahn@civil.aau.dk

International Working Group on Blue-Green Infrastructure (iBGI) https://ibgi.group/

Contact #1 (Currently chair is not decided on)	*Contact #2*
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Emerging Contaminants Working Group

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Dr. Heléne Österlund	
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International Working Group on Urban Rainfall (IGUR) https://igur.org/

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Working Group Contacts

Working Group on Urban Drainage Asset Management (UDAM) https://udam.home.blog

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Large Research Infrastructure in Urban Drainage UDRAIN https://udrain.eawag.ch/

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Write to us!

The Newsletter is an opportunity to share information: points of view; policy developments; research; activities and events; worldwide. If you have an interesting project, comments, or are planning a conference or workshop, send it to us, including contact point for more information.

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