



IAHR/IWA JOINT SPECIALIST GROUP ON URBAN DRAINAGE – MARCH 2023 NEWSLETTER 36

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

CONTENTS

Joint Committee Contact	2
Chairman’s Thoughts	3
From the Secretary’s Desk	4
Call for Proposals to Organise the 17th International Conference on Urban Drainage in 2027	6
Novatech 2023 Announcement	8
Reports from 2022 Events	9
Young Researcher Profiles	12
JCUD Webinar Series	13
Working Group Reports	14
News from Related Organizations and Projects	19
Open Data Sets for Urban Drainage	27
Upcoming Events	29
News from IWA HQ	30
News from IWA Publishing	31
News from IWA Learn	34
News from IAHR	35
Working Group Contacts	38
Write to us!	40

Joint Committee Contact

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Chairman's Thoughts

Dear members of the Urban Drainage community,



Welcome to 2023! As you will see in this newsletter, 2022 was a year to remember for the Joint Committee on Urban Drainage (JCUD). The JCUD has once again refreshed its membership, adding Associate Professor Hanna Melini Wan Mohtar to our management committee. Hanna comes from Universiti Kebangsaan, Malaysia and brings extensive expertise in environmental hydraulics, water and wastewater engineering and water resources management. We warmly welcome Hanna to our team and look forward to working together.

Last year, the urban drainage community had the opportunity to attend three fantastic conferences in our field: the Urban Drainage Modelling conference (California, USA; January 2022), the Sewers Processes and Networks conference (Graz, Austria; August 2022) and the IWA World Water Congress (Copenhagen, Denmark; September, 2022). Fortunately, these conferences enabled face-to-face events – it was great to finally have these interactions, both to advance our research ideas but also to catch up with friends and colleagues.

The JCUD launched its webinar series in 2022 and we hosted two fantastic events covering the topics of real time control of urban drainage systems (April 7) and the resilience of urban water infrastructure (August 24-28). I extend my thanks to the presenters who participated in these seminars: Martin Oberascher, Wei Xu, Nadia Lund, Nagendra Prasad and David Butler. If you are interested in participating in these webinar series, please feel free to reach out to John Okedi our Event's Manager (John's email is on Page 2).

This newsletter also contains three very exciting highlights: (1) The relaunch of Water Research X as a top-ranking, independent, open access journal, (2) Co-UDlabs Project and ongoing global call for transnational access to 17 urban drainage research facilities and (3) Pervasive Sensing for Buried Pipes. Please take a moment to read these excellent contributions and if you are interested in contributing to these research programs, feel free to reach out!

Looking forward, the JCUD warmly welcomes you to Lyon, France for Novatech in July 2023 which is one of our four flagship conferences with topics on strategies and solutions for sustainable urban water management. Furthermore, we would love to see you at the 40th IAHR World Congress Vienna, which will hold a key topic on Urban Water. During these conferences, please keep an eye out for workshops organised by one of our many JCUD working groups.

In closing, I am very much looking forward to seeing you online during one of our webinars, or in person at one of our upcoming conferences (see Upcoming Events on page 29). Otherwise, please stay safe and in good health until we meet again.

Yours sincerely,

David McCarthy

Chair of 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, 11 voting members, each offering different global perspectives on urban drainage. The JCUD organises, once every three years, the International Conference on Urban Drainage (e.g. 2014: Malaysia, 2017: Czech Republic, 2021: Australia, 2024: Netherlands). Furthermore, the JCUD oversees various working groups, many of which organise its own three-yearly conference (e.g., Sewer Processes and Networks; Urban Drainage Modelling etc.). Everyone is most welcome to get engaged in the activities of the JCUD and its working groups. The JCUD attempts to stimulate contacts, exchange and discussion, e.g., by this newsletter (published annually) and by the "urban-drainage" email discussion list (see other call-out box below).

Change in membership. Thanks to all those who submitted their interest to join the JCUD in 2022. In a virtual meeting end of 2022 Wan Hanna Melini Wan Mohtar (Malaysia) was elected. We welcome our new member to the team for the next 3+ years.

Roles and responsibilities. The committee is structured so that the load among the committee is equally weighted and to ensure that our wider members know exactly whom to contact to seek further information about the specific aspects of the JCUD's activities. With new members joining and other leaving also the responsibilities changed and the JCUD elected a new chair: David McCarthy, Australia. The assigned roles and responsibilities for the JCUD committee members are:

- Chair: David McCarthy
- Secretary: Manfred Kleidorfer
- Treasurer: Jon Hathaway
- Awards: Franz Tscheikner-Gratl
- Newsletter: Sylvie Spraakman
- Webmaster: Job van der Werf, Dusan Jovanovic
- IWA connect: Ulrich Dittmer
- IWA Specialist Group linking: Karine Borne
- IAHR connector: Juan Pablo Rodríguez Sánchez
- Young Water Professionals relation officer: Takashi Sakakibara
- Working groups coordinator: Alma Schellart
- Event coordinator: John Okedi
- Young members: Dusan Jovanovic, Job van der Werf

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 list on first pages). It is our desire to facilitate urban-drainage related work in order to contribute to solutions of one of the pressing needs of this world.

Urban drainage email discussion list. The urban drainage email discussion list has been set up in 1998 by David Butler and Manfred Schütze (now managed by Dr Schütze). It is an easy method of getting in touch with urban-drainage researchers and practitioners worldwide. To use the discussion group, you first need to subscribe (to do this, 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, worldwide. Please do not use for commercial purposes. If you would like more information, visit www.jiscmail.ac.uk/urban-drainage.

Committee Newsletter. This annual newsletter is published to serve the international urban drainage community and meet the requirements of our parent organisations. 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](#). We also distribute the Newsletter to more than 1,200 colleagues on our JCUD mailing list, which is based on the IWA and IAHR memberships, and participation in ICUD and NOVATECH conferences. Please share your electronic newsletter copy (or the link to our website) with 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.

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 david.mccarthy@qut.edu.au (chair) and manfred.kleidorfer@uibk.ac.at (secretary). Applications are always possible.

Best regards,

Manfred Kleidorfer
JCUD secretary

Call for Proposals to Organise the 17th International Conference on Urban Drainage in 2027

The Joint Committee on Urban drainage of IAHR and IWA is inviting the interested parties to submit proposals to host the 17th International Conference on Urban Drainage in 2023. 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 (online, Australia, 2021). The 16th conference is scheduled to be held in Delft (Netherlands) in 2024.

The ICUD conference aims to present the latest advances and innovative approaches in fundamental and applied research on urban drainage, taking into account meteorological, hydrological, hydraulic, water quality and socio-economic aspects worldwide. Among its specific interests are urban water quality, sewer sediments, source control, stormwater management, combined sewer overflows, drainage in cold and alpine climates, real time control of urban drainage systems and the data and models related to urban water. 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.

The proposal format is fairly flexible, but it is a good practice to include the following information:

1. Conference title (sub-themes), location, dates and duration

Dates can be indicative. The code of practice is to organize an ICUD conference from the very end of August until the mid of September. It should be guaranteed that the selected conference venue is available and pre-booked for proposed dates.

2. Proponent team

The proponent team should preferably consist of a wider urban drainage community within the country/region including relevant universities, research institutes and/or other stakeholders. Specify the conference chair and co-chairs including their affiliations and short description of their professional profile. It should be clearly stated which organization is the main conference guarantor ultimately responsible for the event, including financing issues. The ICUD expects also the description of how the team will be connected to the Joint Committee including the reporting during the preparation phase etc.

3. Motivation of the proponent team to organize ICUD conference.

An important paragraph showing the will, the motivation and the capability of the proponent team to organize the high quality event.

4. Conference organization and management (Local Organization Committee, Program committee, International scientific committee).

The description of both the technical organization and scientific program management. The final list of committee members is not necessarily expected at this stage. The proponent team should provide insight into the management structure, the particular responsibilities, the procedure of selection and nomination into the committees. The scientific committee's structure should take into account the range of conference topics and also geographical, gender and age distribution of the members.

5. Proposed conference program and format

The specification of the preliminary conference program includes the list/number of keynote lectures, parallel sessions, special sessions, workshops, technical exhibition, technical tours. The proponents are asked to specify the duration of the event, to specify the presentation formats including the format of poster sessions. It is also welcome to provide novel ideas and formats within the conference program

6. Poul Harremoës Award competition and Mid-Career and Career Achievement Awards

All the awards have to be organized in close cooperation with the JCUD. The proponent has to provide to the awards the publicity and the relevant time slots within the conference program. The proponent has to also cover the cost for participation (conference fee, accommodation, travel) of the PHA winner from previous ICUD2024 and should provide free registration to the three PHA finalists in 2027.

7. Selection of contributions (abstract/paper review) and publishing of papers/proceedings

The proponent should describe the submission procedure and evaluation phase including the preliminary dates. It should be also presented in which form the contributions will be published (including the copyrights) and if the organizers will plan/offer the post-conference publishing of selected papers in peer-review journals.

8. Conference venue (meeting rooms)

The ICUD conference usually attracts 500-700+ participants. This should be taken into account when choosing the appropriate conference venue with one plenary hall and other 5-6 meeting rooms for parallel sessions.

9. Accommodation (with approximate 2023 pricing)

The list of accommodation capacities in the city in the near vicinity of the venue in the whole range of price levels. Indication of low budget accommodation for students is welcome.

10. Financial aspects

The preliminary budget should provide insight into expected revenues (registration fees, sponsors, local authorities) and realistic outcomes structured into the main categories such as venue rentals, catering, social programs, labour costs etc.

11. Social program and post-conference tours

Demonstrate why the conference should to come to your city and country.

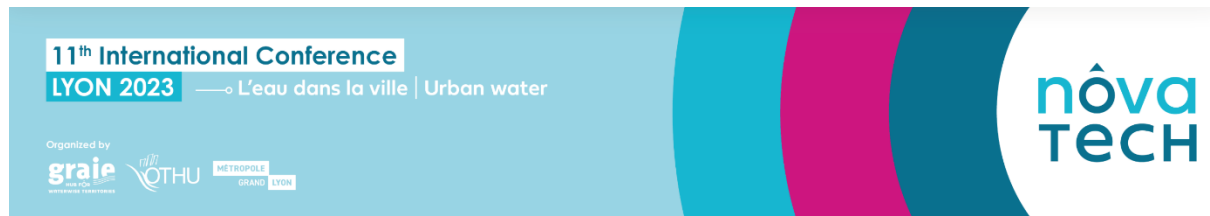
12. Any other points you may consider important.

Mandatory requirements

The proposals (in English) must be submitted electronically in PDF format, and the size of the file should not exceed 20 MB; the proposal layout should not exceed 20 pages, using 12 point font. The proposals must reach the JCUD Chair David McCarthy (david.mccarthy@qut.edu.au) and Secretary Manfred Kleidorfer (Manfred.Kleidorfer@uibk.ac.at) by **May 30th, 2023**.

The Joint Committee will review the proposals and invite selected proponents to present their ideas at the next meeting during Novatech Conference 2023 (planned date 3rd July 2023) in Lyon (France). The final decision will be made after the presentation. If you require any clarification of the proposal specifications, please contact John Okedi (john.okedi@uct.ac.za).

Novatech 2023 Announcement



We are pleased to remind you that the next Novatech conference will be held in Lyon from 3 to 7 July (in a new and very comfortable venue!). Visit the new website: <https://www.novatech2023.org/>

For almost 30 years, the Novatech conference has positioned itself as an international benchmark in the promotion of solutions for integrated and sustainable water management, through the intersection of approaches and dialogue between stakeholders. Novatech promotes a dynamic of innovation, from nature-based solutions to water-wise territories! This 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, impact on waterways, etc.

For the first time, Novatech also proposes two new innovations: a presentation of “just-getting-started” project (we wished we’d thought of this earlier!!), and education and training related to water management!

Novatech will also be held in a new venue in the south of Lyon: we will be pleased to welcome you in comfortable (air-conditioned and quiet!!!!), relaxed and easily accessible premises.

The call for papers (<https://www.novatech2023.org>) is now closed. We received almost 300 submissions from 34 countries, almost equally divided into the four conference topics: technical solutions, urban planning, impacts and society. Thanks to many of you, all the submissions will be reviewed by the 17th of February and very soon after the program of the conference will be available online.

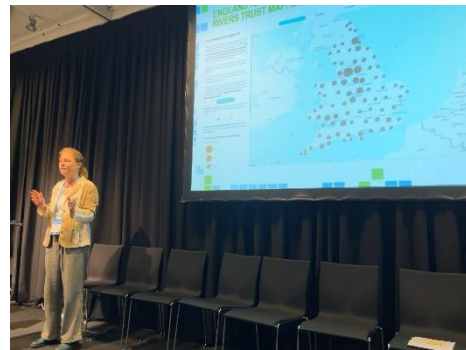
Don't forget to save the conference dates: 3-7 July 2023 in Lyon and see you very soon in Lyon!

Elodie Brelot, Tim Fletcher and Frederic Cherqui

Reports from 2022 Events

IWA World Water Congress 2022...RECAP

After pandemic delays, the IWA World Water Congress was hosted in Copenhagen, Denmark on September 11-15, 2022. Here are some photo highlights from JCUD members Alma Schellert, José Anta Álvarez and David McCarthy.



SPN10 - 10th International Conference on Sewer Processes and Networks 2022 – RECAP

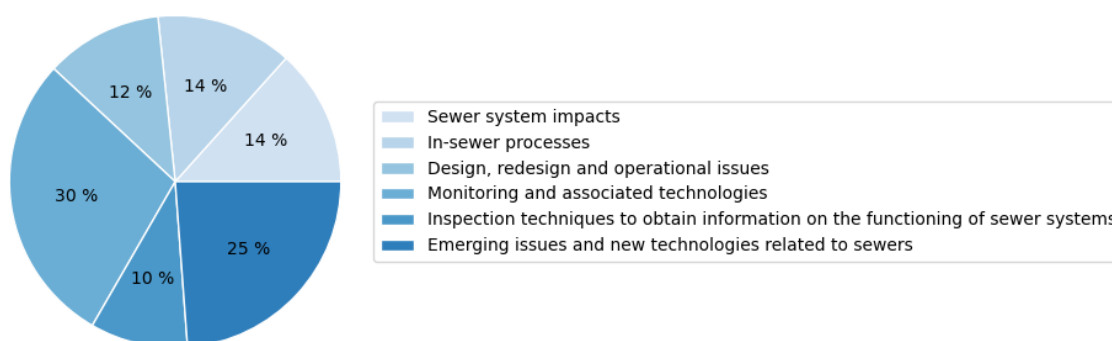
Every third year, the working group on sewer systems and processes under the Joint Committee on Urban Drainage (IWA/IAHR) holds the International Conference on Sewer Processes and Networks (SPN). The last of these conferences, the SPN 8 and SPN 9, were held at TU Delft in Rotterdam, The Netherlands, and at Aalborg University in Aalborg, Denmark. This year, from 24th to 26th of August 2022, the 10th edition of the conference was hosted in Graz, Austria by the Graz University of Technology. As it is a specialist conference there were no parallel tracks to allow all attendees to participate in discussions.

The main themes for the conference were:

- Sewer system impacts
- In-sewer processes
- Design redesign 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

These topic areas covered scientific topics like physical, chemical, and biological processes, as well as the technical topics like operation, monitoring and management of sewer networks.

The conference had room for 39 long presentations in 12 sessions, and 2 sessions dedicated to flash presentations to go along with the poster presentations.



As can be seen in the figure above, the majority of contributions were submitted for the topics of “Monitoring and associated technologies” with 30 % and “Emerging issues and new technologies related to sewers” with 25 %. This highlights the increasing focus on monitoring in sewer system, but also indicates the expansion to new topics, contained in the emerging issues and new technologies section.

Continuing the trend that started with the pandemic, a lot of the contributions came from the area of wastewater-based epidemiology. Within wastewater-based epidemiology, the specific topics ranged from optimizing sampling strategies and methods, ways of sharing and standardizing monitoring data to modelling and tracking the course of the pandemic. Overall, the topic of SARS-CoV-2 filled two entire sessions – only rivaled by the topic of H₂S, which also filled two entire sessions. The presentations on

hydrogen sulfide encompassed methods for modelling corrosion, ways of controlling sulfide corrosion and measurement of dissolved H₂S.

A significant part of the presentations was occupied by contributions, that originated from the transfer of knowledge from other fields, that are not original to urban drainage. This was noticeable for example in the fields of monitoring, where image recognition was applied as means for contactless sensing. Other examples are electrical tomography used for detecting leakages or applying Distributed Temperature Sensing to identify illicit connections to storm sewers. The potential of transferring existing knowledge from other fields to also provide solutions to challenges in the topics of sewer systems and processes was demonstrated impressively.

Apart from captivating presentations, the SPN10 offered an extensive supporting program.

On Tuesday and Friday, guided field trips were offered to Graz' Central Storage Tunnel, an 8.4 kilometres long storage tunnel, collecting combined sewage from 20 CSOs. Along with a tour into the tunnels heart, also called the "cathedral", demonstrations of the employed retractable weirs and discharge measurements by the companies themselves were offered.

Also on Tuesday, preconference workshops were held. The workshop on the Urban Drainage Metrology toolbox (UDMT) of the European project Co-UDlabs and the INSA Lyon provided participants with the opportunity to learn the basics of and discuss the UDMT, which is described in more detail in the IWA open access book "Metrology in Urban Drainage and Stormwater Management: Plug and Pray".

The second workshop of the preconference Tuesday was dedicated to the topic of model and data management. Applications and methods for the management of models, with the focus on versioning and scenarios were presented and discussed. A second part of the workshop discussed the modelling itself. Here, a script-based method to create SWMM models and a more UI focused, QGIS based method were presented and discussed.

The JCUD working group on sewer systems and processes used the occasion of the SPN to hold a working group meeting open to all interested. Topic of discussion was the timeline for the next SPN10 which was set to take place in 2026, thus returning to the pre-pandemic conference schedule. As is common practice in the working group, the conference organiser, Dirk Muschalla, has taken over the chair of the working group from the organiser of the last conference, Jes Vollertsen. The organiser of the eleventh edition of the conference will be nominated in spring 2023.

Aside from the science-side of things, the evenings offered plenty of opportunity to get in touch and network. To complement the ice breaker event and the conference dinner, the IWA Young water professionals hosted a pub quiz in Graz' beautiful old town on Thursday night. With a few beers and some local food, several groups competed to test their knowledge of the history of urban drainage.

At the time of the conference, governmental restrictions in Austria were mostly lifted. To avoid unnecessary risks, participants were provided with masks and the conference venue was equipped with several hand sanitizers. The venue's courtyard was used for breaks as to provide enough room to further decrease the risk of spread of infections.

The ongoing pandemic was especially felt regarding registrations and submissions. Due to travel restrictions in some countries, several prospective authors and participants had to withdraw their submissions or cancel their registrations. Therefore, the number of participants was below the expected amount of around 100 participants.

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!

Mayra Rodriguez, PhD as of Oct 2022 | [See Abstract Here](#)

Thesis Title: The influence of Green Infrastructure on the resilience of urban drainage systems

University: QUEX Institute - a joint agreement between the University of Exeter and the University of Queensland.

Supervisors: Prof Guangtao Fu(UofE), Prof David Butler (UofE), Prof Zhiguo Yuan (UQ), Dr Keshab Sharma (UQ), Dr Lauren Cook (during research visit at Eawag)

Konstantinos Makris, PhD as of Dec 2022 | [See Abstract Here](#)

Thesis Title: Ageing of plastic pipes in urban drainage systems

University: Delft University of Technology

Supervisors: Prof. Dr. Francois Clemens (TU Delft), Dr. Jeroen Langeveld (TU Delft) and Prof Kirill Horoshenkov (University of Sheffield)

Agnethe Nedergaard Pedersen, PhD as of June 2022 | [researchgate](#)

Thesis Title: The digital twin of urban drainage systems – dynamic models and measurements for error diagnosis

University: Technical University of Denmark

Supervisors: Peter Steen Mikkelsen (DTU), Annette Brink-Kjær (VandCenter Syd), Morten Borup (Veolia) and Lasse Engbo Christiansen (DTU).

Zijing Liu, PhD as of May 2022 | [See Abstract here](#) or [researchgate](#)

Thesis Title: Multi-objective quantitative evaluation, and optimization strategy trade-offs. Cost-effectiveness assessment of environmental and ecological restoration measures. Runoff control and risk assessment, water environmental emergency response capacity assessment.

University: Tsinghua University

Supervisor: Dr. Haifeng Jia, Prof. D.WRE

JCUD Webinar Series

JCUD webinars are planned for every two months in 2023. If you would like to host a webinar, please contact john.okedi@uct.ac.za.

We are happy to announce another IWA/IAHR Joint Committee of Urban Drainage (JCUD) webinar, this time focusing on exciting work undertaken on the African continent. In this webinar, we highlight the latest work from some of the leading researchers on the continent and encourage the Global - Community on Urban Drainage (G - CUD) to discuss and provide reactions on the research. The JCUD will continue to organise such exciting webinars every two months to keep the G - CUD engaged and networking between key events like conferences. All webinars will be advertised in the JCUD newsletter and other online platforms.

Date: 17th March 2023, 14:00-15:00 South African Time (Cape Town, South Africa).

Where: <https://msteams.link/2BUM>

Program chair: Dr John Okedi (University of Cape Town, South Africa)

Presenters

1. Dr. Micah M. Mukolwe (Masinde Muliro University of Science and Technology, Kenya): River flow modelling for flood prediction using artificial neural network in ungauged Perkerra catchment, Baringo County, Kenya (Water Practice and Technology (2022) 17 (4): 914–929. <https://doi.org/10.2166/wpt.2022.034>
2. Dr Seith Mugume (Makerere University, Uganda): Enhancing resilience of African water utilities to climate change and other threats. Proceedings in the 21st International Congress of the African Water Association (AfWA)

Working Group Reports

As with many areas of life, the COVID19 pandemic has affected Working Group (WG) activities. 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 David McCarthy (david.mccarthy@qut.edu.au), copied to JC secretary Manfred Kleidorfer (Manfred.Kleidorfer@uibk.ac.at)).

Urban stream working group chair vacancy.

The JCUD **Urban stream working group** is looking for a new chair. The main activity of this working group is to contribute to shared activities around urban streams, which can include, but not limited to, water quality and quantity aspects, stressors and disturbances, ecological/biological/physio-chemical assessment methods and monitoring, local or catchment scale assessment and modeling..etc). Shared activities usually include discussions, collaborations, joint-publications and/or workshops.

Application procedure: you can either nominate yourself, or you can nominate another person (after establishing their willingness to serve), and submit electronically the following two documents to the current JC Chairman, Dr David McCarthy (david.mccarthy@monash.edu), copied to JC secretary Manfred Kleidorfer (Manfred.Kleidorfer@uibk.ac.at): (a) A brief CV, and (b) a statement of activities you would like to contribute to the Urban stream working group. Neither document must exceed one page, using a 10-point font or larger.

Deadline: 15 June 2023: The applications received will be distributed to the JCUD members for assessment and voting; the results will be announced sometimes after the JC meeting (July 2023)

Remember WSUD and SOCOMA? Well, it's time for a new chapter!

The Joint Committee on Urban Drainage (JCUD) operates and coordinates a number of Working Groups, which lead important work in areas of specialty. In the past, two active working group were WSUD (Water Sensitive Urban Design) and SOCOMA (Source Control Management). The two groups had similar, although somewhat distinct, areas of focus.

With changes in personnel (retirements, etc), both groups have become 'inactive', which is a real pity, as the subject areas covered by them remain important and of interest to the international researcher and practitioner communities. (E.g. water sensitive urban design, sustainable drainage systems, sponge cities, source control management, green urban infrastructure, best management practices)

We are proposing to have a meeting to discuss formation of a future Working Group to replace both groups. We will meet at Novatech (another great reason to come along to Novatech!: 3-7 July at a brand new venue in Lyon, France: see here: <https://www.novatech2023.org/en>) to discuss this. Come along with your ideas, and your interest in contributing to – perhaps even leading – such a group.

To register your interest for this meeting, or if you are not able to attend Novatech and would like to be contacted about the outcomes of the meeting, please leave your email address [here](#). If you have any

questions please contact Tim Fletcher (former SoCoMa group member) or Alma Schellart (Joint Committee of Urban Drainage Working Groups coordinator)

International Group on Urban Rainfall

The annual meeting of the IGUR in 2022, took place during the Meteorological Technology World Expo (Paris) on 12 October 2022 as a hybrid event. The next annual meeting is scheduled to be held either during NOVATECH in Lyon, France (3 to 7 July 2023) or UrbanRain from 30 November to 3 December 2023 in Pontresina, Switzerland.

- Activities of IGUR members

One of the objectives of the IGUR network is to facilitate the preparation and success of research projects and international initiatives such as the COST Action OpenSense¹ and the H2020 project WaterSense², which IGUR naturally advertises. It would be extremely useful to establish mutual and synergic interactions between IGUR and these projects.

- New Publication on consequences of rainfall extremes

Following the decision of the last meeting regarding a publication rainfall extremes, Simon Beecham and Thomas Einfalt have set up a publication proposal with the working title: Rainfall-related Consequences of Climate Change on Applications for the Urban Population. Such a publication should be well indexed, and therefore a publication via IWA publishers is envisaged.

The current plan is to publish a book with a companion paper in an open access journal. Another possibility would be a series of open access papers with different authors. A final decision on form of publication and content details will be taken after all potential contributions have been collected.

The contents of the contributions shall be collected by an open call to the hydrological and meteorological communities. The call for contributions is available on the IGUR [website](#).

- Seminars on specific topics

There was the proposal to hold regular seminars on specific topics. IGUR will use the NOVATECH conference to organise a face-to-face meeting to discuss how this could be set up.

- Urban Rain 2023

UrbanRain will take place in from November 30th to December 3rd, 2023, in Pontresina.

The most recent information related to IGUR activities as well as the meeting reports can be found on the group's website which is regularly updated, see <https://igur.org>.

¹ On the initiative of Czech Technical University CTU, the OPENSENSE COST action on opportunistic precipitation measurements has started in August 2021 (<https://www.cost.eu/actions/CA20136/>). Objectives are to make data from different sources and devices openly available and to maintain a comparable quality standard.

² <https://www.watersense.eu>

International Working Group on Data & Models (IWGDM)

<https://sites.google.com/view/iwgdm/>

IWGDM held the following two events in 2022 (all times CET):

- A group meeting on 27th April 2022 (17:00 – 18:00) (share of general information; discussion about relevant topics for the community, e.g., data availability and data format);
- A webinar on December 14th 2022 (12:00 – 13:00) about Resilience of Urban Water Infrastructure. The programme was as follows:
 - Prof. David Butler (Univ. Exeter, UK): Urban water resilience
 - Mr. Nagendra Prasad (Bapatla engineering College, India): Urban stormwater management for sustainable and resilient measures and practices: a review
 - Discussion

UDM 2022 special session: Are we ready to model micropollutants in in wet weather flows?

In the last decade, large efforts have been made to collect water quality data on micropollutants (MP) in wet weather flows (combined and separate systems). With increasing data availability, it will be possible to build models to quantify the discharged MP loads and concentrations, their removal in blue-green infrastructure systems, and their impacts on receiving water bodies. Such models are urgently needed to inform stormwater managers, water utilities and regulators. The aim of the workshop session was to collect and discuss recommendations for future monitoring efforts based on the data requirement by modellers. In the session we presented three talks to outline the current state of data collection and experience from field monitoring (Lena Mutzner, Eawag), the required efforts to identify relevant trace contaminants – the analytical and eco-toxicological perspective (Charles Wong, SCWRP) and we discussed how we can use the collected data in our models (Luca Vezzaro, DTU). The most important challenges were lack of data quality, limited access to raw data and missing metadata. Hence, most of the currently published water quality data on MPs cannot support modellers' work. The special session led to the conclusion that more work is needed to ensure reliable datasets for urban drainage modelling. There is a need for i) a guidance framework on how to implement data collection activities, ii) an open-data database and a iii) dedicated scientific task group.

What happens next?

Join our initiative “micropollutant data collection & modeling in urban water systems”. Following the discussion of the Special Session, we propose to gather the experts in the field as a subgroup of IGWDM. The aim is sharing experiences and discussing recommendations for future monitoring efforts of MPs, with the perspective of the data being used for modelling purposes. Contact lena.mutzner@eawag.ch to join our initiative on RG as a collaborator. <https://www.researchgate.net/project/Micropollutant-data-collection-modeling-in-urban-water-systems>

Novatech 2023, Lyon: We are planning a workshop at Novatech, transitioning from our discussion on water quality data needs for models to concrete recommendations spanning data collection, raw data handling to publishing data open access to develop a recommendation framework for future water quality monitoring work.

Working Group on Urban Drainage Asset Management (UDAM)

Behind the acronym UDAM stands an active working group of the Joint Committee on Urban Drainage, whose goal is to provide a platform to everyone working on Urban Drainage Asset Management ranging from structures, piped networks to green and blue infrastructure. Formed in 2018, it unites now more than 50 members from 20 countries in this endeavour.



More than 50 UDAM members from 20 countries

Main activities for the year 2022:

- Strong participation of the UDAM members to the 9th Leading Edge Conference for Strategic Asset Management (LESAM) in Bordeaux, France, including involvement in the scientific committee of the conference.
- UDAM is bundling the efforts of scientific experts and practitioners in the redaction of a book, entitled “Asset Management of Urban Drainage systems without the hot air”, which collates the most recent results in the field of urban drainage with respect to asset management to provide an introduction to the field and serve as knowledge reservoir for practitioners and early-stage researchers alike. The writing involves many members (but not exclusively) of the UDAM group and will be published before the end of 2023.
- Another article has been published by UDAM members: “Asset management for blue-green infrastructures: a scoping review” - <https://doi.org/10.2166/bgs.2022.019>, under the efficient direction of Jeroen Langeveld!
- The next EURO-SAM (Sewer Asset Management) workshop will be held in Luleå during two days in February and hosted by LTU Luleå (<https://www.ltu.se/research/subjects/VA-teknik?!=en>). Registration is now closed. This will be the 8th edition of the workshop, and we are expecting 30 participants from many different countries. Please visit this page if you want to know more on EURO-SAM: <https://udam.home.blog/euro-sam/>.

If you want to participate, find more information, and join us on <https://udam.home.blog/>.

Metrology Working Group

In the latest Metrology WG meeting during the SPN conference in Graz last August, the successful completion of the IWA publication on metrology was discussed (freely available online through: <https://iwaponline.com/ebooks/book/835/Metrology-in-Urban-Drainage-and-Stormwater>) along with an inventory of potential follow-up activities. A logical follow-up would be to embark on the enterprise of drafting a manuscript on water quality monitoring in urban drainage, for the moment this seems to be not feasible given the reaction of those present. Other activities (e.g. the EJSW workshop on metrology) are found to be covered in other WG's in a consistent manner when adding the notion of metrology to their scope (e.g. WG on Data and Models and the WG on Sewer Processes and Networks). In order to avoid the presence of too many WG's with overlapping scopes it was decided to stop the WG on metrology. It is advised to consider forming a taskforce for drafting a manuscript on water quality monitoring in addition to the 2021 IWA publication "Metrology in Urban drainage and Storm water management: Plug and Pray", which focuses on general principles of metrology along with application on water quantity monitoring.

Working Group on Urban Storm Water Harvesting (USWH)

A project led by the University of Melbourne, Melbourne Water, South East Water and Yarra Ranges Council (the Monbulk Creek Smart Water Network) is installing a network of 100 Real-Time Controlled rainwater tanks, combined with three large urban reservoirs / retarding basins, to deliver optimal streamflow regimes in the peri-urban Monbulk Creek. The tanks will supply water, reduce flooding (through predictive RTC), but also release flows in a way that supplements stream baseflows during dry periods. The project is led by Matt Burns, Rhys Coleman, Darren Bos, Stephanie Lavau, Kathy Russell and Tim Fletcher. More details: <https://mwrpp.org/mcsw/>

News from Related Organizations and Projects

Relaunch of Water Research X as a top-ranking, independent, open access journal

Water Research X (WRX) is emerging from the umbrella of its partner journal, Water Research (WR). WRX was established in 2018 and had since been sharing the WR Editorial Board and handled by the same team of Editors, with neither editors nor reviewers knowing which journal a manuscript was being considered for. In 2022, Water Research X received its first impact factor of 9.365, ranked fourth most impactful water research journal. Now, WRX is branching out as an independent journal that publishes high-quality and ground-breaking water research, with competitive times-to-publication.

WRX is aiming for fast publication times, with an average handling time of just over a month. The editorial board also aims to make pre-review decisions within one week.

Another standout feature of WRX is that it provides new formats (<https://www.elsevier.com/journals/water-research-x/2589-9147/guide-for-authors>) for authors to publish concise but complete and novel papers. Its narrative-based ‘Leading Edge Research Papers’ are distinct from those in other journals and allow complete, innovative research to be published in a timely and succinct manner. WRX also hopes to feature insightful perspectives and editorials along with critical mini-reviews of the latest developments in emerging or fast-evolving research areas.

WRX is a **gold open access journal**. All accepted papers are freely and immediately accessible to all potential readers. This gives authors a path to reach a wider readership and for research to have a higher impact.

WRX now has a **new Editorial Board** comprising an Editor-in-Chief, five Editors, and over 20 Associate Editors who collectively offer outstanding expertise across the entire journal scope. Editor-in-Chief, Professor Zhiguo Yuan, is a world-leading researcher in urban water management. The other Editors include Professor Treavor Boyer, Professor Xia Huang, Professor Wolfgang Gernjak, Dr. Peter Bach, and Dr. Yujie Men. Each offers outstanding and complementary expertise in areas across the journal's scope.

Moving forward, WRX aims to be a leading international journal influencing both the fundamental and applied aspects of water science and technology. WRX continues to have the same scope as WR, welcoming contributions on all aspects of the science and technology of the anthropogenic water cycle, water quality, and its management worldwide.

Co-UDlabs Project and ongoing global call for transnational access to 17 urban drainage research facilities

Jose Anta, University of A Coruña, Spain, Project Coordinator of Co-UDlabs

Co-UDlabs (Building Collaborative Urban Drainage research labs communities) is a Horizon 2020 project (May 2021 – April 2025) in the INFRAIA framework, a funding mechanism designed specifically to establish research networks and communities at large-scale infrastructures. **Co-UDlabs brings together 17 unique ‘field scale’ urban drainage experimental facilities**, hosted by seven organisations in Europe: the University of A Coruña (Spain), the University of Sheffield (UK), INSA Lyon (France), Aalborg University (Denmark), Deltares (Netherlands), EAWAG (Switzerland) and IKT (Germany).

The experimental facilities are designed for research across a range of disciplines such as urban flooding, run-off pollution, physic-chemical and biological in-sewer processes, sustainable urban drainage systems (SUDS), performance analysis of urban assets, asset deterioration and digital solutions. The consortium also includes GRAIE and Euronovia, two institutions based in France that are actively involved in the networking and community building activities of the project.

The key aim of Co-UDlabs is to provide free-of-charge transnational access (TA) to its research infrastructure to researchers, practitioners, experts, and local utilities and regulators that may not have access to comparable or similar facilities and installations in their own countries. Co-UDlabs also aims to enhance dialogue, cooperation, and knowledge exchange — with the ultimate goal of establishing a truly collaborative, open, and inclusive European urban drainage innovation community.

Following the first TA call in 2021-2022, Co-UDlabs has attracted multidisciplinary talent with proposals for testing out novel methods, products and new uses for existing and emerging technologies. 13 proposals have been selected, with users from 18 countries and over 60 different institutions participating in the call, and almost 100 first-time users obtaining access to the Co-UDlabs’ Research Infrastructure.

If you are interested in conducting experiments at one of the 17 research facilities offered by Co-UDlabs, the second TA call will open in July 2023, when Co-UDlabs will host a TA workshop at the 2023 edition of the [Novatech](#) international conference. For all the details, make sure to check all the information available on the [TA call](#) on Co-UDlabs’ website and follow us on [Twitter](#) and [LinkedIn](#)!

Co-UDlabs in a nutshell

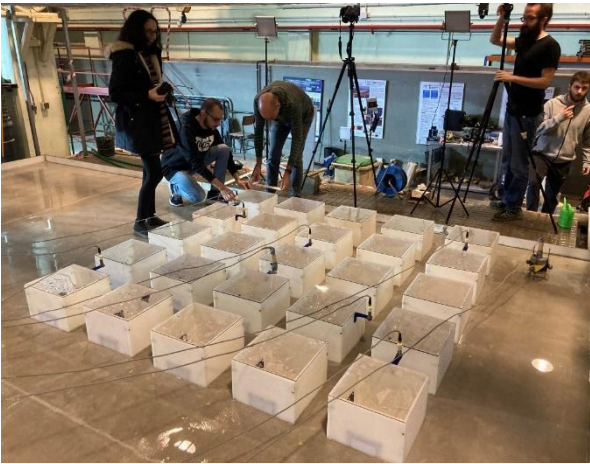
- The [Co-UDlabs website](#), with a full description of the project’s activities, training, publications, and calendar
- The [Co-UDlabs Transnational Access Call hub](#), with information about the call for access
- Our [Contact Form](#) to subscribe to our **Stakeholder Database** to receive Co-UDlabs news and updates on our initiatives

Contact information: contact@co-udlabs.eu



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101008626

An impression of recent transnational access projects:



Setting up a scale model of building blocks to study urban flooding considering building basement storage in the STREET facility in the university of A Coruna.



Setting up a model street to study contaminant spreading in urban flood waters, at the above-below ground flume at Sheffield University

The 17 CoUDlabs research facilities:

1. STREET 	2. BLOCK 	3. BENS FLUME 	4. A/B FLUME 	5. ANNULAR
6. BURIED INFRASTR. 	7. RTC RIG 	8. ALPHA LOOP 	9. BETA LOOP 	10. UWO
11. HALL 	12. IKT LTF 	13. IKT TEST 	14. GROOF 	15. OTHU-DRB
16. OTHU-SUDS 	17. FREJLEV 	 <p>Co-UDlabs COLLABORATIVE URBAN DRAINAGE RESEARCH LABS COMMUNITIES</p>		

Brief descriptions of the 17 facilities of the Co-UDlabs Research Infrastructure

1. The STREET model at A Coruna is a full-scale urban drainage facility of 36 m² for studying rainfall processes, street flooding and pollutants mobilization on the street surface and through pipes.
2. The BLOCK facility at A Coruna represents an urban intersection in a 100 m² scale model (1:4) for studying rainfall-runoff transformation and pollutants mobilization.
3. The BENS flume consists of a 10 m length and 0.8 m width metallic bench for studying sewer processes using real wastewater from the pre-treatment system of A Coruña WWTP with a maximum flow discharge of 30 L/s.
4. The A/B (Above/Below ground) FLUME at Sheffield is a facility designed to study the interactions between shallow surface and piped drainage flows during urban flood conditions.
5. The ANNULAR facility at Sheffield consists of a temperature controlled annular channel with rectangular cross-section 0.20 m wide and a maximum available height of 0.48 m, placed in a 2.20 m external diameter platform.
6. The BURIED INFRASTRUCTURE facility at Sheffield is a unique facility consisting of a 45 m x 6 m x 5 m test tank to study field scale buried and surface urban drainage infrastructure
7. The RTC RIG at Sheffield consists of a 30 m long sewer pipe, 0.2 m in diameter with three manholes (one with a flow control device) and a final CSO chamber 10 m downstream of the third manhole, to study real time control applications.
8. The ALPHA LOOP at Deltares is a flexible large-scale, multi-phase flow facility to be used for a wide range of academic and industrial research topics considering water, gas, and sediment interactions and transient processes in a pressurized transport network.
9. The BETA LOOP at Deltares consists of a transport pipeline where it is possible to investigate the rheology of non-Newtonian slurry flows in pressurized networks.
10. The UWO near EAWAG is a digital Urban Hydrology field laboratory with a unique low-power wireless sensor network (LoRa-based) that enables real-time monitoring of urban drainage cycle dynamics above and below ground, comprising rain depths, flows, water levels, conductivity, and temperatures at very high spatial and temporal (1-5 min) resolution.
11. The HALL facility at EAWAG is a 500 m² test facility for urban drainage and process engineering experiments, with continuous access to wastewater from a municipal trunk sewer and surface water and fixed temperature-controlled flume facilities.
12. The LTF (Large Test Facility) at IKT is a modular construction with a water transport and circulation system, which can be adapted for scientific questions concerning the hydraulic performance of products of wastewater and storm water management.
13. The TEST hydraulic test stand at IKT is a modular construction with a water transport and circulation system, which can be adapted to the scientific question.
14. The GROOF facility consists of 6 green roofs platforms (3 m x 3 m), located on the rooftop of a building at INSA Lyon.
15. The OTHU-DRB facility at INSA Lyon consists of the Django Reinhardt detention and settling basin is an “end of pipe” open detention basin of 11000 m² that enables to intercept up to 80 % of stormwater particulate pollutants.
16. The OTHU-SUDS facility at INSA Lyon provide access to three different SuDS techniques: a porous pavement of around 90 m² with a reservoir structure; a 290 m² infiltration swale; an infiltration trench of 240 m² located at a parking lot catchment.
17. The FREJLEV research station near Aalborg is a sewer research and monitoring station receiving combined and separated sewage water from the city Frejlev. Offers flexibility for any research activity that requires in-line access to raw sewage, with a volume for experimental activity of approximately (10 m x 10 m x 3 m).

Pervasive Sensing for Buried Pipes

The Pipebots project (<https://www.pipebots.ac.uk>), more formally known as Pervasive Sensing for Buried Pipes, has a vision for autonomous robotic inspection of buried sewers and clean water pipes. If you are reading this newsletter, you probably already know that our buried pipe networks are extensive, complex and ageing. Combined with increasing pressures from climate change, urbanisation and population growth, as well as tightening environmental legislation, this means that our pipe networks are under increasing pressure. These networks are predominantly buried and in continuous use so inspection is challenging and therefore expensive, meaning that in many countries there is a poor understanding of the condition of these networks. Pipebots has a long term vision that our buried pipes could be continuously inspected by swarms of miniature robots equipped with sensors tailored to assess defects which may affect hydraulic and structural performance.

Pipebots has over 7 million GBP of funding from the UK Engineering and Physical Sciences Research Council, there project currently employs 12 research staff and 16 PhD students are undertaking related research. The project commenced in 2019 and will run until early 2025, it involves the universities of Birmingham, Bristol, Leeds and Sheffield and is led by a team of 20 academics, and organised by a programme grant manager. There are 8 project themes, as described below.

Theme 1 is the project management and coordination theme.

Theme 2 focuses on the development of sensors to assess condition and performance. The primary focus is on acoustic and ultrasonic methods, these have advantages over image-based systems in needing less power and requiring less computational overhead in terms of data volumes and processing. Acoustic methods are mainly used over longer distances (e.g. up to 30 m in a 300 mm diameter pipe) and are particularly useful for detecting blockages, but also for expected pipe features such as joints and incoming laterals, which can provide data for localisation and mapping. Ultrasonic sensors work best over short distances, providing finer detail to characterise defects. A particularly promising ultrasonic array capable of characterising a range of defects will be tested at IKT in Germany, as part of the Co-UDlabs project “Assessment of Inspection tools for Rising mains”.

Theme 3 covers robotic systems, which includes the design of the platforms that physically and electronically integrate hardware and software from the other themes. They also provide the mobility and environmental resistance to enable navigation and inspection of networks. The robots need to be capable of navigating pipes of various sizes and with variable flows incorporating solids and fats. Several designs have been tested so far, investigating sensor integration, autonomous control, miniaturisation and propulsion options. The latest is the Tankbot (Figure 1).

Theme 4 is autonomous control to enable the robots to use sensor information to navigate through both mapped and unmapped networks. The more autonomous the robotic systems are, the lower the cost of operating them will be, thus assuming the robots are affordable, inspection costs can be vastly reduced enabling much broader and more frequent inspection. Development in this area has included network exploration and motor control within pipes, as well as understanding the navigation challenges such as elevation changes.

Theme 5's main focus is simultaneous localisation and mapping (SLAM), which will provide the information needed for robots to navigate an unknown system or a previously mapped system. SLAM data is vital to accurately record the location of defects and improve asset maps of networks. Localisation of defects allows repeat inspections to monitor defect progression and also opens up more opportunities for trenchless technologies and keyhole repairs.

Theme 6 is mainly focusing on communications, both between robots and from robots to the outside world. Smaller diameter pipes, especially those that are partially water filled, provide significant challenges for communication, both in terms of signal attenuation and data transfer rates. Robot to robot communication has various roles including to ensure system wide surveying and to transfer urgent data to a central hub. The ground attenuates signals, and RF (Radio Frequency) signal transmission can be challenging, however the potential to send emergency signals through the ground has also been shown. Theme 6 also has a role in understanding and managing the power requirements of the robots.

Theme 7 is looking at how robotic surveying fits into the broader infrastructure landscape, what business models would be required to enable uptake of robotic inspection and is also investigating how robotic sensing fits into the governance landscape – where there might be challenges to overcome and where governance can drive positive change.

Theme 8 links closely to the water industry, ensuring the research and development meets their needs. They also focus on the data requirements and analytics which will be needed to transform pervasive data into actionable knowledge, including linking the condition of individual assets to system performance to potentially allow repairs to be more timed to optimise performance. Theme 8 is also closely involved in providing opportunities for testing in realistic environments, initially in the laboratory and later in field scale networks.

In the initial stages of the project, there has been a mix between developing and testing individual elements of the technologies with understanding how those technologies would integrate. This integration was to some extent hampered by the pandemic and also led to more simulation based studies. Recently, the team has made a renewed push on integration with the development of a robot based on an off the shelf platform which hosts the array of sensors used for navigation, localisation and condition assessment with the control and computing power to allow the robot to autonomously navigate through a demonstration network. The first integrated test of this 'Tankbot', so named because the platform is supplied with tracks, took place in January 2023. As might be expected, the first trials had some unexpected challenges, but overall this new demonstration platform shows significant promise. This version is intended for testing in a laboratory environment, hence as shown in Figure 1, electronics etc are still exposed. A dedicated 18 m long, 300 mm diameter, test pipe comprising a range of materials and two access chambers has been set up at the National Distributed Water Infrastructure Facility in ICAIR (<https://icair.ac.uk/>), thus the project is able to quickly test the robot as it is developed to confirm its performance. Joint evaluation with industry partners is expected to take place at the National Buried Infrastructure Facility (<https://www.birmingham.ac.uk/nbif>) in 2024.

To find out more, follow the web links, or contact Dr Will Shepherd (w.shepherd@sheffield.ac.uk).



Figure SEQ Figure 1* ARABIC 1: Early prototype of the 'Tankbot' merging from a 300 mm diameter

Japan Institute of Wastewater Engineering and Technology: Technical report on promotion of sewage works using GI

The Japan Institute of Wastewater Engineering and Technology, established in 1992 for the purpose of research and development, technology dissemination, and technology evaluation in the sewerage sector, made in public the report on the joint research "Technical Report on Promotion of Sewage works Using GI", in December 2022.

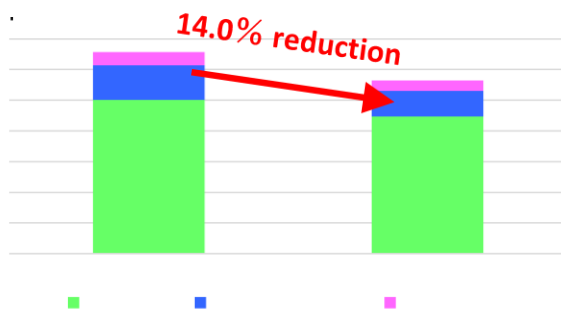
This technical document consists of a total of four chapters and appendices. Chapter 2 describes the status of GI utilization in sewerage projects, Chapter 3 analyzes GI utilization cases, and Chapter 4 describes the quantification of rainwater storage and infiltration effects of GI technologies.

The appendices also describe GI case studies, evaluations, cost-effectiveness analyses, results of demonstration experiments, and financial support systems.

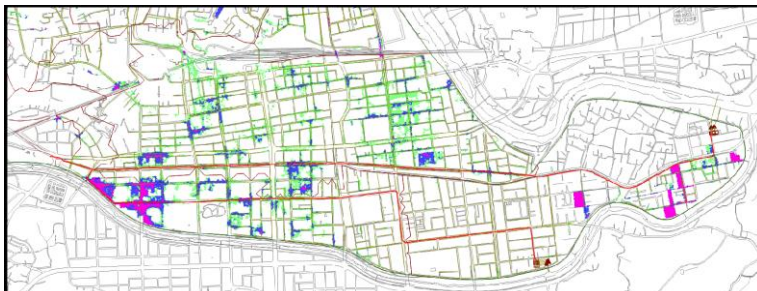
An example of model calculation is shown. The target area is 147.2 hectares which has GI such as underground void storage and infiltration facilities in parks and planting zones. The figure below shows the effect of GI implementation. Assuming a rainfall rate of 91mm/h, effects such as a 14% reduction in the flooded area can be expected.

A cost-effectiveness analysis was also carried out. The total construction cost (52.2) and maintenance cost (8.6) is 60.9 million yen. On the other hand, as for the benefits, in addition to flood control (71.2), the CO₂ absorption effect (0.2), mitigation of the heat island phenomenon (13.8), and the provision of an amenity townscape (2.8) are expected. (Unit of the data is annual benefit or cost per square meter) Based on these, B/C ratio was calculated as 1.45.

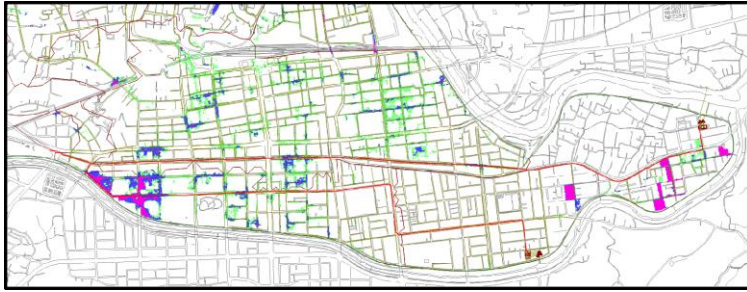
By utilizing GI in the sewerage project, it is expected that many functions such as CO₂ reduction and heat elimination, as well as flood prevention, will be addressed.



Before GI implementation



After GI implementation

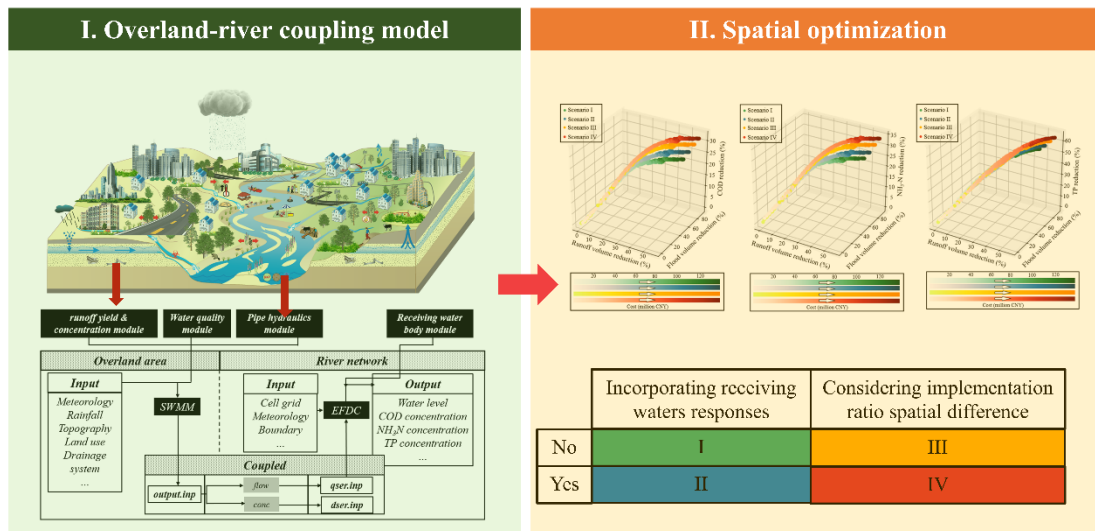


A new framework for spatial optimization of LID-BMPs in plain river network region was proposed by researchers of Tsinghua University

The complexity of urban stormwater management has helped position multi-objective optimization of low impact development best management practices (LID-BMPs) as one of the leading-edge research areas worldwide. Deep insights into the receiving waters responses to optimal spatial allocation of LID-BMPs are considered extremely important. The research addressed the urgent need to incorporate receiving waters responses into the spatial allocation optimization of LID-BMPs and demonstrated the efficiency of the approach to guide watershed management. The integration of an overland-river coupling model and the NSGA-III algorithm resulted in the proposal of a general simulation-optimization framework for the optimal layout of LID-BMPs. The coupled model was swapped out for the surrogates to increase computational efficiency. Results indicate that the incorporation of receiving waters responses and refined spatial allocation are essential for the optimal design of LID-BMPs. This new framework offers the potential for more cost-effective high-cost solutions. The results of spatial optimization are significantly influenced by imperviousness. The research is published in Water Research by Prof. JIA Haifeng’s group. More details can be found in

<https://www.sciencedirect.com/science/article/abs/pii/S0043135422009824>

LENG Linyuan, XU Changqing, JIA Haifeng, JIA Qimeng. Incorporating receiving waters responses into the framework of spatial optimization of LID-BMPs in plain river network region. Water Research, 2022, 224,119036



Open Data Sets for Urban Drainage

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

<p>The Bellinge data set: open data and models for community-wide urban drainage systems research.</p> <p>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.</p> <p>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. <i>Earth System Science Data</i>, 13, p. 4779-4798. https://doi.org/10.5194/essd-13-4779-2021</p>
<p>A decade of monitoring micropollutants in urban wet-weather flows</p> <p>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</p> <p>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? <i>Water Research</i>, 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</p>
<p>Urban Drainage dataset from The Brussels Capital Region (Belgium)</p> <p>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</p>
<p>Open access water related datasets, including of dye traces undertaken in manholes</p> <p>Description: open access water related datasets, including of dye traces undertaken in manholes, https://doi.org/10.15131/shef.data.13373039. They are all available on the University of Sheffield’s Online Research Data site, ORDA, https://orda.shef.ac.uk/.</p>
<p>FloodCitiSense project</p> <p>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.</p> <p>Website link: http://www.floodcitisense.eu/</p>

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.

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
EURO-SAM Workshop	February 15-16, 2023	Lulea, Sweden	https://udam.home.blog/
Mixing Processes in Pipes, Sewers and the natural Environment from Theory to Practice	April 18-19, 2023	University of Sheffield, United Kingdom	https://www.iahr.org/index/detail/818
European General Assembly, Water resources policy and management: digital water and interconnected urban infrastructure	April 23-28 2023	Vienna, Austria	https://meetingorganizer.com/pernicus.org/EGU23/session/45341
18th IWA Leading Edge Conference on Water and Wastewater Technologies	May 29 – June 2, 2023	Daegu, Korea	https://iwa-let.org/
11th Novatech Conference	July 3-7, 2023	Lyon, France	https://www.novatech2023.org/en
40th IAHR World Congress	21-25 August 2023	Vienna, Austria	https://www.iahr.org/index/detail/201
IWA Efficient Urban Water Management Conference	September 13-15, 2023	Bordeaux, France	https://efficient2023.org/
16th International Conference on Urban Drainage	June 9-14, 2023	Delft, Netherlands	https://icud2024.org/
IWA World Water Congress & Exhibition	August 11-15, 2024	Toronto, Canada	worldwatercongress.org
13th Urban Drainage Modeling Conference	September 2025	Innsbruck, Austria	
11th International Conference on Sewer Processes and Networks	2026	To be announced	

News from IWA HQ

IWA Water and Development Congress & Exhibition 2023

The International Water Association is pleased to announce that the next edition of the Water and Development Congress & Exhibition will take place on 10-14 December 2023 in Kigali, Rwanda and that details of the call for submissions are now available.

With an overarching theme of water, sanitation, and climate resilience – keys to a water-wise future, the 2023 edition will present solutions spanning water and sanitation services, the role of water in urban areas, the links between cities and basins, and the opportunities to achieve climate resilience.

Call for Submissions – present and participate at the 7th IWA Water and Development Congress & Exhibition

Find out how to be part of the programme – [Water and Development Congress 2023 – Water, sanitation, and climate resilience for a water-wise future \(waterdevelopmentcongress.org\)](https://www.waterdevelopmentcongress.org)

International Women’s Day Webinar- Empowering women in water – perspectives from the African region

Specialist Group has worked collaboratively with the African Water Association (AfWA) on many issues, including the role of utilities in Africa in supporting the Sustainable Development Goals, the digital worker, and women in water. On Women’s Day this year, AfWA and IWA will co-host a webinar to empower women in water with enriching perspectives and experiences from the African region.

Follow the link to register for the [Webinar Registration - Zoom](#)

News from IWA Publishing

Selected books



Groundwater Assessment and Management for sustainable water-supply and coordinated subsurface drainage: A Guidebook for Water Utilities & Municipal Authorities

Stephen Foster & Radu Gogu
ISBN: 9781789063103

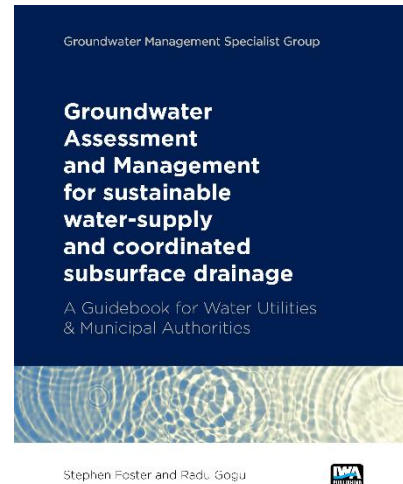
June 2022 • 50 pages • Paperback

IWA Members price: £34.00/ \$51.00/ €43.00

Available as an Open Access eBook

<https://www.iwapublishing.com/books/9781789063103/groundwater-assessment-and-management-sustainable-water-supply-and-coordinated>

Groundwater beneath cities is important. Water utilities and private abstractors use it as a secure source of water-supply and municipal authorities have to cope with it when planning sanitation and using underground space for building and transportation infrastructure, but all too often neither have a comprehensive understanding. This Guidebook aims to highlight what water utilities and municipal government can do to improve groundwater assessment, management and monitoring to avoid experiencing ‘nasty surprises’.



Integrated Wastewater Management for Health and Valorization: A Design Manual for Resource Challenged Cities

Stewart M. Oakley
ISBN: 9781789061529

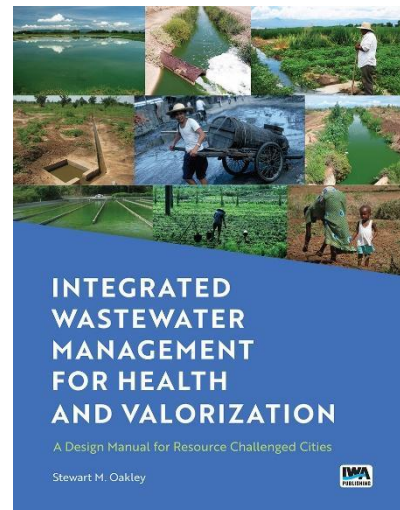
October 2022 • 370 pages • Paperback

IWA Members price: £90.00 / \$135.00 / €113.00

Available as an Open Access eBook

<https://www.iwapublishing.com/books/9781789061529/integrated-wastewater-management-health-and-valorization-design-manual-resource>

This book incorporates the new paradigm of integrated wastewater management for valorization without surface water discharge using waste stabilization pond systems and wastewater reservoirs. In this paradigm the purpose of treatment is to protect health by reducing pathogens to produce an effluent that is valorized for its fertilizer and water value for agriculture and aquaculture. Methane production as a sustainable energy source is also considered for those applications where it is appropriate. Emphasis is on sustainable engineering solutions for low to medium income cities worldwide.





Water-Wise Cities and Sustainable Water Systems: Concepts, Technologies, and Applications

Xiaochang C. Wang & Guangtao Fu

ISBN: 9781789060751

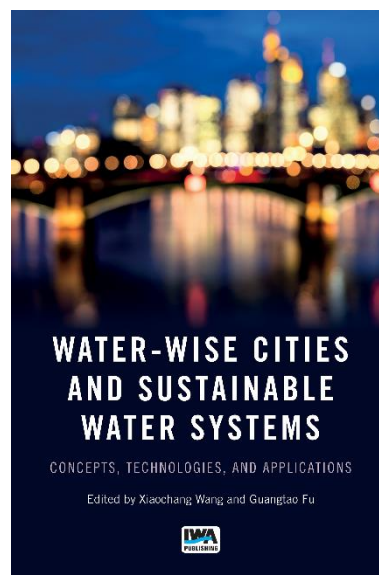
December 2021 • 400 pages • Paperback

IWA Members price: £86.00 / \$108.00 / €129.00

[Available as an Open Access eBook](#)

<https://www.iwapublishing.com/books/9781789060751/water-wise-cities-and-sustainable-water-systems-concepts-technologies-and>

This is the first book to provide comprehensive insights into theoretical, systematic, and engineering aspects of water-wise cities with a broad coverage of global issues. The book aims to (1) provide a theoretical framework of water-wise cities and associated sustainable water systems including key concepts and principles, (2) provide a brand-new thinking on the design and management of sustainable urban water systems of various scales towards a paradigm shift under the resource and environmental constraints, and (3) provide a technological perspective with successful case studies of technology selection, integration, and optimization on the “fit-for-purpose” basis.



Selected journal papers



Performance assessment of the operational management of urban drainage systems: a case study of Bejaia City, Algeria

(OPEN ACCESS)

Meriem Igroufa; Abbas Benzerra; Abdelghani Seghir; Ferhat Merah; Abdelhamid Bedjou

Journal: Water Science & Technology

<https://doi.org/10.2166/wst.2022.330>



A comparative study of the time of concentration methods for designing urban drainage infrastructure

(OPEN ACCESS)

Osheen Mehta; Mitthan Lal Kansal; Deepak Singh Bisht

Journal of Water Supply: Research and Technology-Aqua

<https://doi.org/10.2166/aqua.2022.107>



Aligning financial and technical procedures for the determination of urban drainage assets' current and replacement values

(OPEN ACCESS)

Rita S. Brito; M. C. Martinho; M. C. Almeida; M. Fernandes; S. Ferreira

Journal: Water Policy

<https://doi.org/10.2166/wp.2022.276>



Semi-crystalline microplastics in wastewater plant effluents and removal efficiencies of post-treatment filtration systems

(OPEN ACCESS)

Hajo Bitter, Leonie Krause, Franziska Kirchen, Thomas Fundneider, Susanne Lackner

Journal: Water Research X <https://doi.org/10.1016/j.wroa.2022.100156>

Call For Papers



[The role of environmental education for water conservation and water pollution prevention: experiences and programs from all over the world](#)

We are pleased to invite you to submit a manuscript to *Water Supply* for peer review and possible publication in a Special Issue entitled “The role of environmental education for water conservation and water pollution prevention: experiences and programs from all over the world”.

Deadline: March 2023



[Water Saving and Management](#)

AQUA-Water infrastructure, Ecosystems and Society is pleased to announce a Call for Papers for a new Special Issue on Water Saving and Management.

Deadline: April 1 2023



[Call for Papers: Innovative Strategies for Treatment and Management of Saline Water/Wastewater](#)

Water Reuse is pleased to announce a call for papers for a Special Issue on Innovative Strategies for Treatment and Management of Saline Water/Wastewater

Deadline: May 30 2023

For more information on IWA Publishing products or to buy online visit www.iwapublishing.com

News from IWA Learn

The place for learning & professional development in the Water Sector

Professionals in the water sector require continuous development to be able to stay abreast with the changing environment circumstances. No matter in which stage of your career, IWA provides you with guidance and opportunities to build up the competences required to succeed. This includes a set of tools on how to develop your career, as well as opportunity of professional updating, learning, training and networking.

[Find Learning Opportunities here](#)

The screenshot displays the IWA Learn website interface. At the top left is the IWA logo. A horizontal navigation menu includes: ABOUT US, AGENDAS, EVENTS, COMMUNITIES, AWARDS, LEARNING (highlighted), BLOG, MEDIA, RESOURCES, MEMBERSHIP, and a search icon. Below the navigation is a 'Select Language' dropdown menu. A secondary menu below that lists: SHORT-TERM COURSES, SELF-PACED COURSES, WEBINARS, and WATER MSCS. The main content area features four cards:

- Webinar Card 1:** 'Empowering women in water – perspectives from the African region' on 8 March at 15:00 GMT. The background image shows a smiling woman in a blue hard hat and safety vest.
- Webinar Card 2:** 'Inclusive Sanitation in combatting Climate Change Events and Extremities' on 21 March at 11:00 GMT. The background image shows a flooded residential area.
- Webinar Card 3:** 'YWP Get-Together | How to create a chapter' on 5 April at 13:00 BST. The background is a blue and white abstract graphic.
- Read Card:** 'Water Safety Plan Manual, 2nd Ed.' (Second edition). The background is a white and blue abstract graphic. Logos for the World Health Organization and IWA are visible at the bottom.

News from IAHR



International Association
for Hydro-Environment
Engineering and Research

Hosted by
Spain Water and IWHR, China

Founded in 1935, the International Association for Hydro-Environment Engineering and Research (IAHR) is a not-for-profit, global, independent members-based organisation of hydro-environment engineers, professionals and researchers.

IAHR stimulates and promotes both research and its application by sharing new research paradigms, creating and disseminating knowledge, informing best water-management practices, and nurturing young professionals among others and by doing so contributes to sustainable development, a holistic approach to water resources management, the protection of the environment, and a better water future for all.

The association engages today's experts and helps prepare the next generation to respond to the complexities of future challenges through [technical committees and working groups](#) that exchange and work on the latest hydro-environment knowledge and innovations, collaborate on emerging and pressing water and environmental engineering issues, and influence research agendas; [Institute members](#) —a vibrant and global community of organisations, authorities, laboratories, companies, and educational institutions—; and [Young Professionals Networks](#), which ensure that new generations of future hydro-environment professionals and researchers have the opportunity to engage, network, and connect with peers and senior members.

IAHR publishes and amplifies research excellence and best practice knowledge on hydro-environment science and engineering to achieve a sustainable water future through [books](#), [monographs](#), [white papers](#), a [scientific magazine](#), peer-reviewed [journals](#), and [proceedings](#).

It also convenes [congresses](#), symposiums, [webinars](#), workshops and meetings, providing learning experiences around the world focused on the most pertinent and emerging topics; and brings together international experts working with strategic partners for global outreach and advocacy on matters of interest and importance to its members.

IAHR sponsors the organisation of many conferences and symposiums of potential interest to the urban drainage community; for full information, please visit their website www.iahr.org and subscribe to IAHR NewsFlash World newsletter to keep regularly updated <http://bit.ly/iahr-subscribe>

2023 Upcoming events

40th IAHR World Congress. 21-25 August 2023 | Vienna, Austria <https://worldcongress2023.iahr.org/>



Under the overall theme Rivers —Connecting mountains and coasts, the 40th IAHR World Congress will focus on the importance of rivers being the lifeline of human civilization.

Rivers —Connecting mountains and coasts highlights IAHR’s commitment to the importance of rivers providing safe drinking water, being a source of energy production, acting as lifelines for navigation, and providing ecosystems with habitats for a plethora of terrestrial and aquatic species. Further, rivers are strongly linked to other components of the hydrological cycle (e.g., groundwater) within the

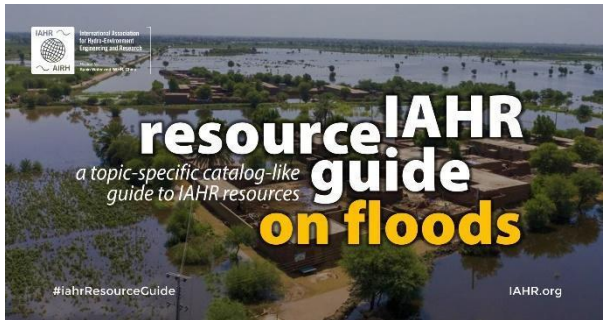
catchment or coastal waters in delta regions.

The 40th IAHR World Congress provides an excellent opportunity to showcase and get involved in the development of innovative approaches and solutions to water challenges. Join us and contribute with your insights and experiences!

Theme 4 Integrated Management of Extremes, Climate Change will address the integrated flood risk management issues and theme 6 Urban Water and Water Industry will address urban floods issues and challenges. Full list of themes available at <https://worldcongress2023.iahr.org/themes/> The final deadline for abstract submission is 12 February.

IAHR Publications -

New IAHR Resource Guides



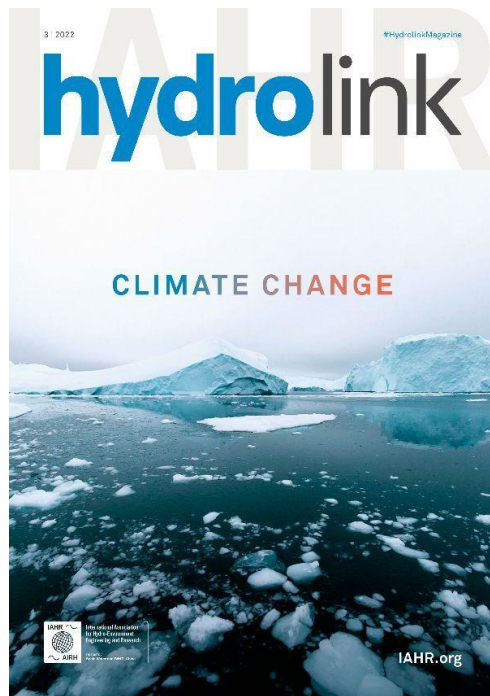
[New IAHR resources to explore hydro-environment topics in depth](#)

Discover IAHR events, publications, articles, experts, insights, initiatives, videos... and much more!

IAHR Resource Guides are intended to help you find useful academic and professional resources and are only available for IAHR members. Not a member yet? Become a member!

The first IAHR Resource Guide focuses on Floods. [Download a first bite!](#)

Hydrolink Magazine



[Hydrolink 3/2022 focuses on Climate Change](#)

Every day there are stories in the news directly or indirectly related to climate change. Even though it is not possible to attribute specific extreme events just to climate change, their increasing frequency and intensity suggest a trend in several meteorological and hydrological variables which is becoming evident even to the most ardent climate change skeptics. Recent examples are the devastating flooding in Pakistan and the catastrophic impact of hurricane Ian in Florida.

Water is at the centre of many of the consequences of climate change. This issue of Hydrolink includes several articles on different aspects of the work of the hydro-environment community on climate change issues.

[>> All issues](#)

Working Group Contacts

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

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Working Group on Source Control for Stormwater Management (SOCOMA)

Chair

Vacancy (see announcement in Working Group reports)

Secretary

Vacancy

International Working Group on Urban Rainfall (IGUR) <https://igur.org/>

Chairman: Prof. Daniel Schertzer
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Urban Drainage in Cold Climate Working Group

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<p>Water Sensitive Urban Design</p>	
<p><i>Chair</i> Vacancy</p>	<p><i>Secretary:</i> Mr Charlie Stillwell, North Carolina State University, Biological and Agricultural Engineering E-mail : stillwell.charles@gmail.com</p>
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<p>Working Group on Metrology of Urban Drainage</p>	
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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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