# IAHR/IWA Joint Specialist Group on URBAN DRAINAGE

## Newsletter No. 21
## February 2008

For updated information, please regularly visit our website at:
**www.jcud.org**

**CONTENTS**




Prepared by:
Dr Jiri Marsalek
Joint Committee Secretary
c/o National Water Research Institute, Environment Canada
867 Lakeshore Road, Burlington, Ontario L7R 4A6, Canada
jiri.marsalek@ec.gc.ca





IWA is a registered charity (England) 1076690 at Alliance House, 12 Caxton Street, London SW1H 0QS, UK.
Tel: +44 (0)207 654 5500; Fax: +44 (0)207 654 5555;
E-mail: water@IWAhq.org.uk; Web: www.IWAhq.org.uk

IAHR is at Paseo Bajo Virgen del Puerto 3, 28005 Madrid, Spain.
Tel: +34 91 335 7908; Fax: +34 91 335 7935; E-mail: iahr@iahr.org; Web: http://www.iahr.org

## 1. JOINT COMMITTEE CONTACTS

**Dr Jean-Luc Bertrand-Krajewski (Chairman)**
LGCIE (Laboratory of Civil and Environmental Engng)
INSA - Lyon
34 avenue des Arts
F-69621 Villeurbanne cedex
FRANCE
Ph.: 33 4 72 43 81 80; Fax: 33 4 72 43 85 21
E-mail: jean-luc.bertrand-krajewski@insa-lyon.fr

**Prof D. Butler**
Director, Centre for Water Systems
School of Engng, Computer Science and Mathematics
University of Exeter
Harrison Building, North Park Road
Exeter, EX4 4QF
UK
Ph.: 44(0)1392-264064, Fax: 44(0)1392-217965
E-mail: d.butler@exeter.ac.uk

**Dr Ana Deletic**
Institute for Sustainable Water Resources
Dept. of Civil Engineering, Building 60
Monash University
Clayton, Vic 3800
AUSTRALIA
Ph: 61 3 9905 2940, Fax: 61 3 9905 4944
E-mail: ana.deletic@eng.monash.edu.au

**Prof J H W Lee**
Department of Civil Engineering
The University of Hong Kong
Pokfulam Road
HONG KONG, PRC
Phone: 852 2859-2672, Fax: 852-2559-5337
Email: hreclhw@hku.hk

**Prof Nilo de Oliveira Nascimento**
Federal University of Minas Gerais
Dept. of Hydraulics and Water Res. Engineering
Av. do Contorno, 842/8a.
30110-060 - Belo Horizonte, MG.
BRAZIL
Tel.: (+55.31)3238.1872, Fax: (+55.31)3238.1001
e-mail: niloon@ehr.ufmg.br

**Mr Eric W. Strecker**
Geosyntec Consultants
55 SW Yamhill Street, Suite 200
Portland, OR 97204
USA
Ph.: 001-503-222-9518; Fax 001-503-242-1416
E-mail: Estrecker@GeoSyntec.com

**Dr Maria do Céu Almeida**
Urban Water Division
Laboratório Nacional de Engenharia Civil
Av. do Brasil, 101
PT-1700-066 Lisbon
PORTUGAL
Ph: +351 21 844 3627; Fax: +351 21 844 3032
E-mail: mcalmeida@lnec.pt

**Dr Alberto Campisano**
Dept. Civil and Environmental Engineering
University of Catania, Viale Andrea Doria 6
95125 Catania
ITALY
Ph: 39(0)95 738 2730, Fax: 39(0)95 738 2748
E-mail: acampisa@dica.unict.it

**Prof H. Furumai**
Department of Urban Engineering
The University of Tokyo
7-3-1, Hongo, Bunkyo-ku
Tokyo, 113-8656
JAPAN
Ph: 81-3-5841-6239, Fax: 81-3-5841-8535
Email: furumai@env.t.u-tokyo.ac.jp

**Dr Peter Steen Mikkelsen**
DTU Environment
Technical University of Denmark
Bygningstorvet, Building 115,
DK-2800 Kgs. Lyngby
DENMARK
Phone: 45 4525 1600, Fax: 45 4593 2850
Email: psm@env.dtu.dk

**Dr Mohd Nor bin Mohd Desa**
Director, Humid Tropics Centre Kuala Lumpur (HTC)
No 2 Jalan Ledang off Jalan Duta
50480 Kuala Lumpur
MALAYSIA
Phone: 603 2095 8700, Fax: 603 2095 3366
Email: drmohdnor@water.gov.my

**Dr Maria Viklander**
Division of Sanitary Engineering
Lulea University of Technology
S-971 87 Lulea
SWEDEN
Ph.: 46 920 491 634, Fax: 46 920 491 493
E-mail: Maria.Viklander@sb.luth.se

**Dr Jiri Marsalek** (Secretary)
National Water Research Institute
867 Lakeshore Road
Burlington, ON L7R 4A6
CANADA
Ph: 001-905-336-4899; Fax: 001-905-336-4420
E-mail: jiri.marsalek@ec.gc.ca

## 2. CHAIRMAN'S THOUGHTS

Dear friends and colleagues,

As our annual newsletter is prepared in December–January, it offers an excellent opportunity to look back and review our activities in 2007 and to look forward by listing some key activities planned for 2008.

In 2007, the JCUD (IWA/IAHR Joint Committee on Urban Drainage) itself has been reinforced by several actions. Our mission statement has been formally approved after a lengthy review process initiated at the end of 2005; it is accompanied by revised and extended statutes, which clarify the rules of JCUD membership, Committee operation, etc. We have opened a bank account hosted by IWA, which offers new services for both the JCUD and its Working Groups (WGs). The treasurer is our Australian colleague Ana Deletic. In 2007, income has been generated by charging an additional 5-Euro fee per paying participants at Novatech 2007 and the 5th SPN conferences, and from adjunct special workshops organised at these conferences by our WGs. I would like to use this opportunity to warmly thank all colleagues who contributed to the success of these events. Lastly, the JCUD has also decided to be more pro-active in collaboration with other IWA Specialist Groups, IAHR Technical Sections and Divisions, and other entities outside of our parental organisations. Priorities for our actions have been defined and specific JCUD members were designated to look after these collaborative activities.

2007 has been a very active year for the JCUD and its WGs, which were involved in many activities and events, all of them being important for our own research field and also for our links with our parental organisations and other working groups. The most important ones were:

- The Novatech 2007 conference in Lyon, France, 25–28 June, which attracted approx. 675 participants (see a detailed report in Section 8 of this newsletter) and involved many colleagues in the paper review process.
- Four highly successful workshops were organised on 24 June (just before Novatech) by four of our WGs on "Water Sensitive Urban Design", "Real Time Control", "Uncertainty in measurements and models" and "Source controls: managing stormwater with a water balance approach".
- Two "Urban Drainage" sessions, including 10 presentations and 10 posters, were organised by the JCUD during the IAHR Congress in Venice, Italy on 1–6 July, 2007.
- The 11th International Conference on Diffuse Pollution, held in Belo Horizonte, Brazil on 26–31 August was organised, for the first time, jointly by the IWA Specialist Group on Diffuse Pollution and the JCUD. Both groups were satisfied with this initiative suggested by our Brazilian colleagues.

- The 5th SPN – International Conference on Sewer Processes and Networks, held in Delft, Netherlands on 28–31 August by our Sewer System and Processes WG, was also a successful event.
- The Novatech conference provided an opportunity to initiate contacts with the newly established IWA Specialist Group on "Rainwater Harvesting and Management" (see http://www.iwahq.org/templates/ld_templates/layout_633184.aspx?ObjectId=646599). Without any doubt, interactions and collaboration between our groups should be mutually beneficial.

On October 4, 2007, I represented the JCUD in a meeting of all IWA Specialist Group chairs or secretaries held in Amsterdam, The Netherlands. This was an opportunity to confirm our wish to collaborate with other IWA Specialist Groups, to meet colleagues, to maintain direct contacts with the IWA staff, and to get information about the latest developments and objectives of the IWA specialist group policies. The meeting confirmed again that our JCUD was among the most active IWA groups.

In addition, after an arbitrary delisting of the *Water Science and Technology* (WST) journal by the ISI Web of Science and its designation as conference proceedings in 2007, IWA Publishing presented in Amsterdam its new policy for WST, including possible direct submission of papers, decoupling of conference proceedings and journal publications, removal of thematic issues, launching of a new template, etc. The objective is to have WST listed again as a journal as soon as possible. Each IWA specialist group was asked to nominate a colleague to act as an editor for a two-year term. As the JCUD and its WGs organise a lot of events, we suggested that our editor will be assisted by co-editors for each conference. This proposal has been approved by the WST chief-editor Gustav Olsson, and our Australian colleague James Ball has been nominated as the JCUD editor for the next two-year period.
For the urban drainage community, which has contributed significantly to numerous WST issues, WST is a very important medium for publishing selected and revised papers from our meetings, particularly in view of high citations and quality of the WST journal. The new policy will likely impact on our events in the future (this is hard to quantify), especially with respect to the participation in our future events and the way we submit papers for conferences and WST. It may be advantageous to submit our contributions directly as full papers, without submitting and reviewing abstracts first, to accelerate the whole process of selection and publication. In the next months, IWA Publishing will inform us more widely about the ongoing changes and implementation of its new WST policy. In any case, I strongly encourage you to continue to support the WST journal and to be confident in the quality of WST in the future; the quality of WST is nothing else but a reflection of the quality of our own research.
Traditionally, the Newsletter informs about recent changes in the JCUD membership. In 2007, we had no new members of the JCUD; our colleagues J. Lee, P.S. Mikkelsen and N. Nascimento were re-elected for a second 3-year term. Let me congratulate and thank them once again for their previous service and their re-election.

In 2008, the 11th ICUD (International Conference on Urban Drainage) will be held in Edinburgh, UK, from Aug. 31 to Sept. 5, 2008 (http://www.11icud.org). This triennial conference is the most important event for our community, and I cordially invite you to participate. At this time, as I write these lines, more than 630 abstracts have been received and accepted, and full papers are in preparation. No doubt that our colleagues in the UK are highly committed to organise a high quality event, from both scientific and social points of view, including the Poul Harremoës Award competition.

Our American colleagues will organise the ASCE EWRI World Environmental & Water Resources Congress in Hawaii on 13–16 May 2008 (see detail at http://content.asce.org/conferences/ewri2008/). Please consider participating in this event, not just because of the attractiveness of this venue, but mainly to contribute to an increasing exchange of ideas and experience in urban drainage with our American colleagues, which is an objective that the JCUD has been trying to promote for a number of years.

In 2008, we will also launch our own JCUD website, as a complement to the two institutional web-pages operated by our parental institutions. The objective is to offer a website providing more information about our members, working groups, activities, archives of newsletter and other documents, links, publications, etc. It should be also easier for us to access and to update it, compared to the institutional web-pages. Our Italian colleague Alberto Campisano is leading this effort; the first version of our website is now available at www.jcud.org . All comments and suggestions on how to improve it and make it most useful for all of us are welcome.

Let me conclude this Newsletter with more personal thoughts. This is the third and last time I am writing these "Chairman's thoughts", as I will finish my 3-year term as chair in the summer 2008. It was a pleasure to serve the JCUD during this period with the confidence you gave me three years ago. I would like to warmly thank the colleagues on the JCUD and in the WGs, who all contributed to maintaining and further developing our activities and recognition for, and in, the urban drainage community. Special thanks are also due to our secretary Jiri Marsalek, who has been an efficient and good advisor to me: Jiri, it was a pleasure to work with you.

Last but not least, as I write these lines on 3 January 2008, I wish you, your families and friends a Happy New Year, and hope to see you all in Edinburgh in August 2008!

Jean-Luc Bertrand-Krajewski
JCUD chair

## 3. FROM THE SECRETARY'S DESK

**Committee Newsletter**

We shall continue publishing our annual newsletter to serve the needs of our international community and meet the requirements of our parental organisations. Please keep in mind that the main purpose of the newsletter is to facilitate communications and interactions among specialists in our field, rather than presenting detailed information.

Both IWA and IAHR now distribute newsletters only electronically, and place our newsletter on their websites. IAHR also distributes some excerpts from our newsletter in their Newsflash. Furthermore, thanks to the past efforts of Mitsuyoshi Zaizen and Shoichi Fujita, our newsletter was translated into Japanese and 200 hard copies were distributed in Japan. We will also distribute the Newsletter to more than 1,200 colleagues on our JC mailing list, which is based on the IWA and IAHR memberships, and participation in ICUD and NOVATECH conferences, and make it available on our new website (www.jcud.org).

Please share your electronic newsletter copy with colleagues, or refer them to the IAHR and IWA websites. Your comments on this issue and contributions to future newsletters are welcome.

**Joint Committee Activities**
The annual Committee meeting was held in Lyon, France, on June 24, 2007. The minutes of the meeting can be found on our new website (thanks Alberto!). Future JC meetings: 2008 – Edinburgh, UK (Aug. 31, 2008) at the 11th ICUD conference, in 2009 at the UDM Conference in Tokyo, Japan, and in 2010 at the Novatech Conference in Lyon (tentative).

Jiri Marsalek
JC Secretary

## 4. WORKING GROUP REPORTS

**4.1. International Working Group on Data and Models (IWGDM)** (Chairman: Ana Deletic, Institute for Sustainable Water Resources, Dept. of Civil Engineering, Building 60, Monash University, Clayton, Vic 3800, Australia, Ph: 61 3 9905 2940, Fax: 61 3 9905 4944, E-mail: ana.deletic@eng.monash.edu.au ; Secretary: Prof Simon Tait, Pennine Water Group, School of Engineering Design and Technology, University of Bradford, Bradford, BD7 1DP, UK, Ph: +44 1274 233878, Fax: +44 1274 234124; E-mail: s.tait@bradford.ac.uk)

In conjunction with NOVATECH 2007 (held in June 2007, in Lyon, France), the group organised a workshop on Uncertainties in Urban Drainage Data and Models. Eight papers have been presented at the workshop, and extended abstracts of these papers were published in the workshop booklet. A large proportion of presenters were postgraduate students. The workshop attracted 31 participants from a number of different countries, who all actively took part in discussions. The main outcome of the workshop was a wide recognition that there is a lack of data and knowledge of uncertainties in both monitoring and modelling in urban drainage research and practice. It was encouraging to learn that this problem has now been recognised, and as a consequence, a number of very interesting projects on uncertainties are currently being undertaken all over the world.

The annual meeting of the working group was held in conjunction with the NOVATECH in June 2007, in Lyon, France. The main topics discussed were: (1) reflection on the past year activities, (2) organisation of the 8th International conference on Urban drainage Modelling (8UDM) to be held in Tokyo, Japan in 2009, (3) recruiting new members, (4) organisation of a workshop in 2008, and (5) group leadership.

The main focus of the discussion was on importance of uncertainties in monitoring and modelling (i.e. on the outcomes of the Lyon workshop). It was agreed that the group will produce a discussion paper on definition of terms and outline of methods that could be used in the assessment of uncertainties. The work has already started on the discussion paper (led by Monash University, Australia and INSA, Lyon, France) and the first draft will be circulated in early 2008 to the group members.

The annual meeting was well attended and as a result two new members joined the group: Dr Giorgio Mannina from Università di Palermo, Italy, and Dr Marian Muste from University of Iowa, USA. Prof. Hiroaki Furumai, Tokyo University, Japan, reported that the organisation of the 8UDM is going well. The conference will be held in the autumn of 2009 at the University of Tokyo. There is a possibility to combine this conference with another regional conference to assure good conference attendance. For more information, see Section 9 of this newsletter.

We also agreed to organise a workshop in conjunction with 11th ICUD, to be held in September 2008 in Edinburgh, Scotland. During the past few months the group agreed to organise a workshop on Challenges in Monitoring and Modelling of Stormwater Treatment Systems. These systems are now widely implemented. Some are built as systems that treat only stormwater runoff (known as SUDS or SOCOMA in Europe, BMPs or LID systems in USA or WSUD systems in Australia), whilst others treat combined sewer discharges. Methods that we use in the monitoring and modelling of these complex systems are far from being practical and reliable. The workshop will explore the latest challenges and progress in both data collection and modelling of these complex systems.

### 4.2. The Real-Time Control of Urban Drainage Systems (RTCUDS) Working Group

(Chairman: Dr Alberto Campisano, Department of Civil and Environmental Engineering, University of Catania, Viale Andrea Doria 6, 95125 Catania, Italy, Phone: +39 (0)95 7382730, Fax: +39 (0)95 7382748, e-mail: acampisa@dica.unict.it). Secretary: Dr M. Pleau, BPR-CSO, 5100 Sherbrooke St. E., Suite 400, Montreal, Quebec H1V 3R9, Canada; Phone: 001-418-871-8151, Fax: 001-418-871-9569; E-mail: Martin.Pleau@bpr-cso.com).
Web site: http://www.dica.unict.it/users/acampisa/rtcwg/

In 2007, the Work Group on Real Time Control of Urban Drainage System has organized the 5th seminar on RTC of Urban Drainage Systems in Lyon, France. The seminar was held during the Novatech 2007 Conference and was attended by 25 experts from universities, engineering companies and municipalities. Topics included theoretical papers as well as case studies on advanced RTC implementation projects in Berlin, Vienna, Barcelona, Tokyo, Louisville and Wilmington.

The Conference was also an occasion for the RTC Work Group to hold its annual meeting. During that meeting Dr. Alberto Campisano was elected Chairman of the RTC Group and replaced Dr Hubert Colas, who served the RTC Work Group for many years. All the group members present at the meeting have recognized the important contributions of Dr Colas to organizing RTC events and publicising the RTC technology worldwide. Dr Campisano, the past secretary of the committee, will be replaced in that post by Dr Martin Pleau (Martin.Pleau@bpr-cso.com). Dr Pleau is an engineer working for a Canadian consulting firm BPR. He holds a PhD in Process Control and has been involved in the design and implementation of many RTC Urban Drainage Systems in North America and Europe.
The year 2007 was also a time for the RTC Work Group to evaluate the existing literature on RTC of Urban Drainage System. The RTC Work Group has recognized the urgent need to update the RTC State-of-the-Art Report published in 1989 by IWA. As a first step, the existing Case Studies will be updated and new ones will be added to account for the latest RTC projects. This task should be done during 2008. The updated document will be complementary to recent publications in this field (e.g., the French Report on RTC published by AGHTM, the US EPA Report on RTC, and several reports prepared by the German RTC Work Group) as well as to other publications in progress (e.g., the Italian Manual on RTC by CSDU).

The main event of the Work Group on Real Time Control of Urban Drainage System for 2008 will be the 6th seminar on RTC of Urban Drainage Systems. The seminar will be presented in Edinburgh during the ICUD Conference (August 31st to September 5th) and will feature the State-of-the-Art developments in RTC of Urban Drainage Systems. A part of the Workshop will be dedicated to round table discussions, where specific problems related to RTC will be addressed. This new Workshop format aims to stimulate discussions and exchanges among the participants and to find consensus in the international community on solving specific problems related to RTC.

**4.3. Sewer Systems and Processes Working Group (SS&PWG)** (Chairman: Prof. José Saldanha Matos, Technical Superior Institute of the Technical University of Lisbon, Av. Rovisco Pais, 1049-001 Lisbon, Portugal. Ph. 351 21 841 8371; Fax: 351 21 849 8371; E-mail: jsm@civil.ist.utl.pt. Vice-Chairman and Secretary: Prof Francois Clemens, Faculty of Civil Engineering and Geoscience, Delft Technical University, Stevinweg 1, Postbus 5048, 2600 GA Delft, The Netherlands. Ph: 31 (0) 15 278 5450, Fax: 31 (0) 15 278 4918, E-mail: F.H.L.R.Clemens@CiTG.TUDelft.nl. Web site: http://www.sspwg.civil.auc.dk/).

The Sewer System &Processes Working Group (SS&PWG) has organized the 5th International Conference on Sewer Processes and Networks (5th SPN) in Delft, The Netherlands, Aug. 28-31, 2007. Additional information is provided in Section 8 of this newsletter, Reports on conferences.

A pre-conference Workshop on "Emerging Research Priorities in Sewer Processes and Networks" was organized jointly by the SS&PWG and RIONED Foundation on Aug. 28, 2007. The Workshop included the following three parts: (a) Main presentations, (b) Brainstorming and discussion of six specific themes, and (c) Short presentations of group reports, followed by questions and discussion of results. The main discussion themes were: (a) asset management, (b) CSO pollution of surface waters and environmental impacts, (c) design & maintenance of SUDS (sustainable urban drainage systems), (d) health risks, (e) adapting to climate change, and (f) monitoring, sensors and data management.

SS&PWG members have participated in reviewing manuscripts submitted to the 6th World Water Congress and Exhibition that will be held in Vienna, Austria, 7-12 September 2008.

**4.4. Working Group on Source Control for Stormwater Management (SOCOMA)** (Chairman: Gilles Rivard, Aquapraxis Inc, 948 Donat-Belisle, LAVAL (PQ), Canada H7X3W5; Phone: 001-450-689-2967, Fax: 001-450-689-2969, E-mail: GRivard@aquapraxis.com; Vice-chair & Secretary: Sylvie Barraud, LGCIE (Laboratory of Civil and Environmental Engineering), INSA Lyon, 34 Avenue des Arts, F-69621 Villeurbanne Cedex. Phone: 04 72 43 83 88; Fax: 04 72 43 85 21; E-mail: sylvie.barraud@insa-lyon.fr.

The SOCOMA working group studies source controls, which are defined as all measures applied to control stormwater before it enters sewers or the surface receiving waters. The group's objective is to facilitate the development of these techniques, by conducting research and experiments, and disseminating the results.

After discussion with members of the WSUD (Water Sensitive Urban Design) working group, it was decided that SOCOMA would continue as an independent group that would focus on more technical aspects related to source control. The activities and participation at workshops would therefore be more oriented to providing a forum for exchanging technical details of implementation of source control mechanisms or BMPs.

A specialized Workshop was organized on June 24th 2007, as part of the 2007 Novatech Conference in Lyon (France). The main theme of the Workshop was Source Controls: Managing Stormwater with a Water Balance Approach. Examination of the premises behind current management strategies clearly reveals the need for a paradigm shift in stormwater management practice. While end-of-pipe solutions have been effective to a degree in reducing flood flow and water quality impacts, current science points to the need for a water balance approach that promotes additional source and conveyance controls to minimize the increase in runoff generation from urban landscapes and reduce impacts to receiving watercourses and the aquatic habitats that they support. The runoff volume control implied by this approach is often difficult or impossible to achieve only with end-of-pipe solutions and, in that context, source controls involving infiltration mechanisms become an essential component for the stormwater treatment trains.

Based on invited presentations highlighting the practice in different parts of the world (Germany, Brazil, Canada, France, USA and Australia), different climates and various cultural contexts, this Workshop examined the benefits of source controls, design criteria used for source control and the difficulties (technical, institutional and social acceptance) that can be encountered in their implementation. A panel discussion provided a forum to discuss the implications of the new direction to be taken, addressing also the research needs that have been identified. A report with all the presentations is available.

Currently, the SOCOMA group is working on a list of source control manuals and is preparing a dedicated web site that will give information on source controls and links to relevant sites. The site will be put on-line in 2008. The Group will also contribute to special sessions dedicated to source controls at the 11th ICUD (Edinburgh), with special forums and discussion. A workshop could also be developed for the 11th ICUD. It is also envisioned that, during 2008, a summary report highlighting international practice for source controls in different parts of the world could be prepared and discussed at the next SOCOMA meeting, which will be held at the 11th ICUD in Edinburgh (Aug./Sep. 2008).

### 4.5. Working Group on Urban Rainfall (GUR)

(Chairman: Dr Guido Vaes, HydroScan, Tiensevest 26/4, B-3000 Leuven, Belgium; Phone: +32-16-240501, Fax: +32-16-240509, e-mail: guido.vaes@hydroscan.be. Secretary: Dr Thomas Einfalt, Hydro & Meteo GmbH & Co. KG, Breite Strasse 6-8, D-23552 Lübeck, Germany. Ph: +49-451-7027333 Fax: +49-451-7027339, E-mail: einfalt@hydrometeo.de . Group's web site: http:/www.kuleuven.be/hydr/gur

The GUR met at the Novatech 2007 conference in Lyon on June 25, 2007 for their annual meeting. The minutes of these annual meetings can be found on the group's website. The next annual meeting will be held during the 11th International Conference on Urban Drainage (ICUD) in Edinburgh, Scotland. GUR members that have attended different meetings around the world, where topics on urban rainfall were addressed, reported on such events during the annual meeting.

In 2008 a new chairman and secretary have to be chosen. Elections will be organized in such a way that the new chairman and secretary will be known before the annual meeting in 2008 in Edinburgh and can smoothly take over running the group. Guido Vaes has been chairman for 2 terms, he can not be re-elected. Call for nominations is open an interested candidates should contact the chairman or the secretary. Election will be completed before the next meeting in 2008.

The GUR intended to organise a 'Radar seminar for hydrologists' at the Novatech 2007 conference in Lyon, but since the planned attendance was less than 8 persons, this activity had to be cancelled. The GUR believes that this topic is however interesting enough to have a new try at the ICUD conference in Edinburgh in August 2008. Thomas Einfalt will contact the organizers to see if it is possible. It is suggested that the title should be changed from "radar rainfall for hydrologists" to "radar rainfall for urban drainage applications".
The most recent information related to GUR activities can be found on the GUR website which is regularly updated: www.kuleuven.be/hydr/gur.

**4.6. Technology Exchange, Transfer and Training Working Group (TETTWG) – the** group's operation has been suspended; opportunities for its re-activation as a "Global Outreach Working Group" (GOWG) are currently under discussion. Dr. M. Nor has volunteered to lead this re-organisation.

**4.7. Urban Drainage in Cold Climate Working Group (UDCCWG)** (Chair: Dr Maria Viklander, Division of Sanitary Engineering, Lulea University of Technology, S-971 87 Lulea, Sweden, Ph. 46 920 491 634, Fax: 46 920 491 493, Email: Maria.Viklander@sb.luth.se; Secretary Dr John J. Sansalone, Department of Environmental Engineering Sciences, 110 Black Hall, University of Florida, Gainesville, FL 32611-6450, USA, Ph.: 001-352-846-0176, Fax: 001-352-392-3076, Email: jsansal@ufl.edu

**4.8. Working Group on Water Sensitive Urban Design (**Chair: Dr Tony Wong, Ecological Engineering, PO Box 453, Prahran, Victoria 3181, Australia, tel +613 9533 8445; fax +613 9533 7781; tony@ecoeng.com.au; Secretary: Prof Richard M. Ashley, Pennine Water Group, Dept. of Civil and Structural Engineering, University of Sheffield, Sir Frederick Mappin Building, Mappin Street, Sheffield S1 3JD, UK, Phone: 44(0) 114 222 5766, Fax: 44(0) 0114 222 5700, E-mail: r.ashley@sheffield.ac.uk).

## 5. NEWS FROM IAHR AND IWA

### IAHR News

IAHR Secretariat contacts: IAHR, Paseo Bajo Virgen del Puerto 3, 28005 Madrid, Spain; Tel: +34 91 335 7908; Fax: +34 91 335 7935; E-mail: iahr@iahr.org, URL http://www.iahr.org. For more information on IAHR activities and free subscription of the IAHR e-newsletter 'NewsFlash', please contact the IAHR Secretariat: IAHR@IAHR.org

Note that the 2008 membership fees are now due (for more information, visit the IAHR website). Since 2005, IAHR offers an "electronic" membership which includes all normal membership benefits except the printed Journal of Hydraulic Research. Electronic access to the *Journal of River Basin Management* and the subscription to the *Urban Water Journal* are offered at a special reduced rate for IAHR members.

The XXXII Congress of IAHR on Harmonizing the Demands of Art and Nature in Hydraulics, Venice, Italy, July 1–7, 2007, has been highly successful. The next congress, the 33rd, will be held in Vancouver, BC, Canada, Aug. 10-14, 2009. We are trying to have urban drainage included as one of the main topics.

### News from IWA HQ

A note from the Specialist Group Programme Officer: Frances Lucraft.

Dear Members of the Specialist Group on Urban Drainage,

For a full list of IWA's specialist groups, their objectives, activities and open meeting minutes, please view the IWA website: http://www.iwahq.org.uk/template.cfm?name=groups.

### IWA Business Meetings – Amsterdam, October 2007

IWA Specialist Group Leader Meeting, 4th October, Amsterdam

This meeting was attended by a representative of each Specialist group and provided an opportunity for the update to SG leaders of the work of the London office; it also provided an opportunity to further the efforts of developing synergies and common activities of the SGs, inform and consult with the SGs on the delisting of WST and WST:WS from the ISI. In the afternoon the Specialist Group representatives participated in joint interaction with the Vienna Programme Committee, where they discussed the engagement of SGs in the development of the programme for the Vienna Congress. For further details about his meeting, please contact the IWA specialist group coordinator, Frances Lucraft at frances.lucraft@iwahq.org.

IWA Governing Assembly convenes in Amsterdam

The Association's Governing Members, representing the interests of each member country across the IWA family, met recently during the business meetings planned in Amsterdam in the first week of October. A total of 30 Governing Members were present, along with observers, to deliberate on a series of key issues for the Association, some of which are reported elsewhere in this newsletter. The Governing Assembly is a forum for members to help guide and steer the Association in its work and strategy, and an effective mechanism for a diverse exchange of views on common issues running through IWA.

In Amsterdam, several important points were set before the Governing Assembly for their review:

World Water Congress, 2012: Importantly, the Assembly was asked to review candidates and submissions for the hosting of the 2012 World Water Congress. Governing Members agreed that the quality of the submissions from technical, logistical and social perspectives from all the candidates was extremely high. Having heard from the teams leading the bids and from IWA Executive Director Paul Reiter, the Governing Assembly voted to approve Busan, Korea as the winning applicant for the hosting of the 2012 Congress.

Presidential election: the Governing Assembly was given an overview of the process for election of the Association's President, including detail on soliciting for candidates and nominations. Furthermore, a change in the constitution of IWA was approved in the Beijing meeting in 2006. This allows for officers of the Board to serve for two terms. With regard to the Presidency, this was in fact the case; with a single candidate standing, the Governing Assembly elected and ratified David Garman to serve as President for an additional two year term commencing in 2008.

Governing Members' workshop: Following the other business of the Assembly, a short interactive session with Governing Members was scheduled. This focused broadly on how the London office can help Governing Members in their work and activities, and moreover on suggestions that Governing Members had for helping the London office. Three operational aspects were dealt with in detail, including how to recruit and retain members, how to market IWA more effectively and how to ensure closer engagement with Governing Members.

A report from the workshop will be made available for all Governing Members in due course.

Review of Strategic Council meeting outcomes, Amsterdam: 3rd October

Members of IWA's Strategic Council gathered together at the Amsterdam Water and Sewerage Company – Waternet – on 3rd October during the week of scheduled IWA business meetings. The Council, Chaired by Gerard Payen, which had met once already in 2007 in Paris, dedicated the first part of the meeting to an update on progress since Paris, namely in relation to the development of specific partnerships outside of the Association and a prioritised listing of IWA reference papers. Members of the Council recognised that much work had been undertaken between these meetings.

This set the context for the day's deliberations, which placed emphasis on a series of items of critical importance to the Association, namely:

- A review of the IWA Utilities and Global Development Solutions programmes: Council members helped to provide feedback and insights into the strategic direction and activities within both programmes, using small break-out groups to focus opinion and reach consensus. In short, whilst members recognised that both programmes have made a good start, there is still much room for improvement both in the delivery of outputs/outcomes and in engaging the right communities of practice. A noticeable point was to ensure sufficient convergence between the two programmes, whilst retaining their respective differences.

- Strategic Council election process: The Chair and Board of Directors of IWA have recognised the need to optimise – where appropriate – the mix of members within the Strategic Council. However, it was felt that total renewal of Council membership also posed a risk at a time when it was functioning well. A proposal for partial renewal, which will seek to optimise rotation across the different representative groupings in the Council, was approved with minor amendments. Thus, greater emphasis was placed on the transition process to achieve partial renewal, and this is where IWA London office must now focus its energy and attention.

- Reference paper review: three papers were reviewed in detail, in break-out groups. These were: sanitation options, climate change and adaptation, and energy & water. Many specific comments were received which will be excellent feedback for authors in readiness for a further evolution of these papers. The main point of consensus was that reference papers must contain and articulate clear, simple messages, in addition to more substantive technical information.

- Industrial forum: the Council was asked to consider the form and purpose of a forum which could be used to engage the industry member segment within the Association more effectively. The forum would help to link and provide a common language between industrial users of water, industry technology providers and other segments such as consultants, researchers and utilities. In the recent past (at the Beijing Congress) this was achieved through themed exhibition space; in order to evolve our offering to this constituency the Council was challenged to consider the needs of industry, the type of activities that this segment would engage in and how this community should interact at the IWA Congress.

The next Strategic Council meeting will be scheduled for the spring of 2008.

**Busan, Korea selected for 2012 IWA Congress**

In a tightly run contest, the city of Busan in south Korea beat its competitors to the post to win the bid to host the 2012 World Water Congress. The applicants made their pitch presentations to the Governing Assembly during the Amsterdam meetings in October in a style reminiscent of bids to host the Olympics. The very professional presentations by high-ranking delegations included very detailed reasoning spelling out the advantages of the bid and used video to give the Assembly a good insight of the location and what delegates might expect from the particular city in question. “With Busan we have a city extremely well equipped to host the Congress that is in a highly-interesting area for water professionals”, stated Paul Reiter. “The Governing Assembly was convinced by the commitment the Korean delegation demonstrated in their bid and how well it is aligned with IWA’s strategic objectives.” 2012 will be the 8th IWA World Water Congress following Vienna in 2008 and Montreal in 2010

**The IWA Project Innovation Awards 2008**

The IWA Project Innovation Awards programme recognises excellence and innovation in water engineering projects throughout the world. IWA established the Project Innovations Award Programme to recognize excellence and innovation in water engineering projects which were identified by five key criteria in the following areas:

- applied research projects;
- planning projects;
- design projects;
- operations/management;
- small projects.


The programme runs on a two-year cycle with the regional project awards presented in regional forums, and the global project awards being delivered at the biennial IWA World Water Congress, the last one being at the Beijing Congress in 2006. The programme's goal is in keeping with the IWA's founding mission of "connecting water professionals worldwide to lead the development of effective and sustainable approaches to water management".

Key Features of the Programme

- Recognise excellence and innovation in project conception and results.
- Focuses on engineering and water.
- Builds on national awards programmes to create a set of regional and global awards.
- Web and email based application and judging.

The competition is now open to applicants who would like to apply for the 2008 awards, and is open to individuals, companies, organisations, governmental bodies, or any combination of the above, whether or not the organisation is a member of IWA. Each applicant must be submitted in one of three regional bases of North America (AAEE), East Asia and Pacific or Europe.

The winners of the IWA Project Innovation Awards programme will be announced first at the Regional Level, and then the Global Level and the awards will be presented at the IWA World Water Congress in Vienna, September 2008. Winners will be entitled to a physical display of their entry at the Congress Exhibition Centre, a feature article in Water 21 and the IWA Yearbook, and the use of the IWA Project Innovations Awards certificate in advertising.

An international panel of judges drawn from IWA membership will be used to evaluate the submissions against an established set of criteria that focus on excellence and innovation in project conception and results.

Eligibility, criteria and entry forms for the 2008 Awards is now available and the deadline for entries will be **29 February 2008.** For further information about the awards and for a chance to register, please go to the IWA website at **www.iwahq.org**

**It's time to renew!**
It is now time to renew your membership for 2008 and you should by now have received your membership renewal invoice. Individual members have the option to either pay the renewal invoice as instructed or you can renew your membership online at:
http://www.iwahq.org/templates/ld_templates/layout_633184.aspx?ObjectId=639516
IWA would like to encourage our members to renew as soon as possible, in order to avoid any delay in receiving their member benefits!

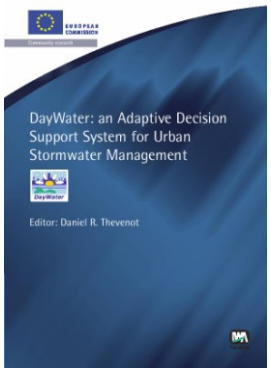
If you have any questions about renewing your membership, please contact us at: iwamembership@portland-services.com quoting your membership number in the subject line of the e-mail. We look forward to continued collaboration with you in 2008!

Finally, on behalf of all of us here at IWA headquarters, best wishes for the New Year!
Frances Lucraft
frances.lucraft@iwahq.org

**IWA Specialist group on Strategic Asset Management (SAM SG) (Contact member: Maria do Céu Almeida)**

The SAM SG meeting took place in Lisbon, during LESAM 2007. The main outcomes from the meeting were: Future LESAMs should proceed on a biennial basis and thematic events or workshops may also take place, if and when appropriate; given the relevance of standards and guidelines, and that different initiatives related to AM are under way, the group is interested in establishing an effective link with the entities involved in standardization and regulation, although it is recognised that it is not the role of SAM SG to take the lead in writing standards. Thus, the first initiative would be to identify the organisations that publish standards and guidelines on AM / SAM worldwide, in order to collect updated information on what is currently available, or being developed or planned in the short term. It was proposed to the group to accept a contact member from the JCUD.

## 6. NEWS FROM IWA PUBLISHING




**DayWater: an Adaptive Decision Support System for Urban Stormwater Management**

Editor: Daniel R. Thevenot

The European DayWater project has developed a prototype of an Adaptive Decision Support System (ADSS) related to urban stormwater pollution source control. The DayWater ADSS greatly facilitates decision-making for stormwater source control, which is currently impeded by the large number of stakeholders involved and by the necessary multidisciplinary knowledge. This book presents the results of this project, providing new insights into both technical and management issues. The main objectives of its technical chapters are pollution source control modelling, risk and impact assessment, and evaluation and comparison of best management practices. It also covers management aspects, such as the analysis of the decision-making processes in stormwater source control, at a European scale, and stormwater management strategies in general. The combination of scientific-technical and socio-managerial knowledge, with the strong cooperation of numerous end-users, reflects the innovative character of this book which includes actual applications of the ADSS prototype in significant case studies.

As demonstrated in several significant case studies the challenge for stormwater managers is to make the benefits of urban stormwater management visible to society, resulting in active co-operation of a diversity of stakeholders. Only then, will sustainable management succeed. **DayWater: an Adaptive Decision Support System for Urban Stormwater Management** advances this cause of sustainable urban management through Urban stormwater management, and makes achievable (by means of risk and vulnerability tools which are included) the goal of integrated urban water management (IUWM).

This title belongs to the European Water Research Series

Further information about this book may be found at:
http://www.iwapublishing.com/template.cfm?name=isbn1843391600.

ISBN: 1843391600 • February 2008 • 280 pages • Paperback
Price: £ 70.00 / US$ 140.00 / € 105.00
IWA members price: £ 52.50 / US$ 105.00 / € 78.75

---

**Performance Assessment of Urban Infrastructure Services**

Editors: Enrique A Cabrera, Jr. and Miguel Angel Pardo

Performance assessment has been one of the hottest topics in the water industry in the past decade. In that period, the International Water Association has played a key role, and the performance indicators systems developed for drinking water and wastewater utilities have become a reference worldwide.

This book represents a collection of the papers presented to the Pi08 Conference, in Valencia, Spain (March 2008). The conference represents the final stage in the COST C18 Action, funded by the EU and brings together some of the most relevant professionals in the water industry.

The included papers cover the latest trends in performance assessment, as well as some relevant case studies from practical applications in utilities around the globe.

Themes:

- Performance Indicators
- Metric Benchmarking
- Process Benchmarking
- Asset Management
- Regulation
- Case Studies

ISBN: 1843391910 • March 2008 • 540 pages • Hardback
IWA Members price: £ 63.75 / US$ 127.50 / € 95.63
**http://www.iwapublishing.com/template.cfm?name=isbn1843391910**

---

**Assessing Infiltration and Exfiltration on the Performance of Urban Sewer Systems**
APUSS

Authors: Bryan Ellis and Jean-Luc Bertrand-Krajewski

Sewer systems constitute a very significant patrimony in European cities. Their structural quality and functional efficiency are key parameters to guarantee the transfer of domestic and trade wastewater to treatment plants without infiltration nor exfiltration. Infiltration of groundwater is particularly detrimental to treatment plant efficiency, while exfiltration of wastewater can lead to groundwater contamination.

During the period 2001–2004, the European research project APUSS (Assessing infiltration and exfiltration on the Performance of Urban Sewer Systems) was devoted to sewer infiltration and exfiltration questions. It was structured on three main Work Areas dealing respectively with (i) the development of new measurement methods based on tracer experiments and accounting for detailed uncertainty analyses, (ii) the implementation of models and software tools to integrate structural and experimental data and to facilitate data display, operational management and decision making process and (iii) the integration of economic and operational questions by means of costs estimation, economic valuation, performance indicators and multi-criteria methods applied to investment/rehabilitation strategies.

This synthetic final report describes the objectives, methods and main results for each Work Area. All APUSS results are publicly available: references to detailed methods, protocols, reports and tools will be given in this final report for readers interested in detailed information.

This title belongs to the European Water Research Series

ISBN: 184339149x • March 2008 • 100 pages • Paperback
IWA Members price: £ 41.25 / US$ 82.50 / € 61.88
**http://www.iwapublishing.com/template.cfm?name=isbn184339149x**

---

**Adaptiveness of IWRM**
Analysing European IWRM research

Authors: Jos G. Timmerman, Claudia Pahl-Wostl, Jorn Moltgen

**Adaptiveness of IWRM** provides new insights and knowledge on the challenges and solutions that current water management faces in a situation of complexity and uncertainty.
Drawing on the available results from a wide range of European research projects under several framework programmes, the book provides an overview of the state of the art in European research on Integrated Water Resources Management on the topics of Participation, Transboundary regimes, Economics, Vulnerability, Climate change, Advanced monitoring, Spatial planning, and the Social dimensions of water management. The achievements of EU research projects are considered in view of the extent to which IWRM responds to the current complexity and uncertainty water management is facing. These achievements are positioned in a wider context of worldwide developments in the respective topics which account for the future challenges. From this, the book concludes with the required focus of European research in the near future and promotes the concept of Adaptive Water Management as the preferred direction for the development of IWRM.
The book presents the achievements of European IWRM research on a range of water management topics and offers conclusions and recommendations for research foci that will be invaluable to water managers, policy-makers and academic researchers working in the field of IWRM.
This title belongs to the European Water Research Series

ISBN: 1843391724 • March 2008 • 200 pages • Paperback
IWA Members price: £ 45.00 / US$ 90.00 / € 67.50
**http://www.iwapublishing.com/template.cfm?name=isbn1843391724**

---

**Institutional Governance and Regulation of Water Services**
The Essential Elements

Author: Michael Rouse

**Institutional Governance and Regulation of Water Services** provides the key elements of policy, governance and regulation necessary for sustainable water and sanitation services. On policy matters, it covers important aspects of separation of policy and delivery, integrated planning, sustainable cost recovery, provisions for the poor, and transparency. Regulation and Regulatory Bodies are presented in their various forms, with discussion of why some form of independent scrutiny is essential for sustainability. There is a separate chapter on Drinking Water Quality Regulation including setting standards and discussion on how to incorporate managing risk in regulatory approaches.

It is the first book to give a comprehensive review of the key elements of policy, governance and regulation for sustainable water services, based on experience from around the world.

The focus is on what works and what does not, based on consideration of basic principles and on case studies in both developing and developed countries.

**Institutional Governance and Regulation of Water Services** is an invaluable information source for national and local governments responsible for water policy, for water utility managers, and for students who will be the policy makers of tomorrow. It should also be of value to all those concerned with water policy matters in donor agencies and international banks as well as for academics involved in the teaching of water policy, governance and regulation.

ISBN: 1843391341 • October 2007 • 230 pages • Hardback
IWA Members price: £ 37.50 / US$ 75.00 / € 56.25
**http://www.iwapublishing.com/template.cfm?name=isbn1843391341**

---

**Cities of the Future**
Towards integrated sustainable water and landscape management

Editors: Vladimir Novotny, Paul Brown

This book is developed from and includes the presentations of leading international experts and scholars in the 12-14 July, 2006 Wingspread Workshop.

With urban waters as a focal point, this book will explore the links between urban water quality and hydrology, and the broader concepts of green cities and smart growth. It also addresses legal and social barriers to urban ecological sustainability and proposes practical ways to overcome those barriers.

Cities of the Future features chapters containing visionary concepts on how to ensure that cities and their water resources become ecologically sustainable and are able to provide clean water for all beneficial uses. The book links North American and Worldwide experience and approaches.

The book is primarily a professional reference aimed at a wide interdisciplinary audience, including universities, consultants, environmental advocacy groups and legal environmental professionals.

ISBN: 1843391368 • September 2007 • 352 pages • Hardback
IWA Members price: £ 63.75 / US$ 127.50 / € 95.63
**http://www.iwapublishing.com/template.cfm?name=isbn1843391368**

---

**Urban Water Resources Toolbox**
Integrating Groundwater into Urban Water Management

Editors: Leif Wolf, Brian Morris, S Burn
This book describes holistic approaches for quantification and balancing of urban water and solute fluxes that have been developed by the joint Euro-Australian research project AISUWRS. The new tools comprise a chain of interconnected models that link urban water supply, urban drainage and urban groundwater resources. These include a new sewer exfiltration, model that is based on pipe asset conditions which permits flows to the environment to be estimated. The book provides details on the further processing of this information through the unsaturated zone down to aquifer, where numerical groundwater flow and transport models are applied. Concise documentation is provided on each of the models.

The practicability of applying the chain of models was tested by applying it in four case study cities in Australia, Germany, Slovenia and the United Kingdom that have diverse conditions in terms of hydrogeologic setup, climate and data availability. This permitted additional validation by field investigations, including problem-oriented monitoring campaigns aimed at assessing the impact of wastewater practice on groundwater.

The case studies have shown that the approach is valid and constitutes an important step towards integrated urban water management.

This title belongs to the European Water Research Series

ISBN: 1843391384 • January 2007 • 309 pages • Hardback
IWA Members price: £ 67.00 / US$ 134.00 / € 100.50
**http://www.iwapublishing.com/template.cfm?name=isbn1843391384**

**Strategic Planning of Sustainable Urban Water Management**

Authors: P-A Malmqvist, G Heinicke, E Korrman, TA Stenstrom, G Svensson
The strategic planning of urban water systems is a complex task.
The Urban Water programme covered projects from various disciplines at 9 Swedish Universities, from 1999 to 2006.

The projects developed a "toolbox" for strategic planning of drinking-, waste- and stormwater management, covering aspects such as the environment, health and hygiene, financing, organisation, households, and technical function.

**Strategic Planning of Sustainable Urban Water Management** synthesises the results and presents a comprehensive approach, which includes not only the technical, economic and environmental aspects, but also the challenges of institutional capacity and public participation in the planning process.

Furthermore, the experience from a number of case studies are summarised and can offer readers inspiration for their own planning situations.

ISBN: 1843391058 • July 2006 • 284 pages • Hardback
IWA Members price: £ 62.25 / US$ 124.50 / € 93.38
**http://www.iwapublishing.com/template.cfm?name=isbn1843391058**

---

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

Or contact one of IWA Publishing's distributors:

UK, Europe and Rest of World:
Portland Customer Services
Commerce Way
Colchester
CO2 8HP, UK
Tel: +44 (0)1206 796 351
Fax: +44 (0)1206 799 331
Email: sales@portland-services.com

North America:
BookMasters, Inc.
P.O. Box 388
Ashland
OH 44805, USA
Tel: +1 800 247-6553 (+1 419 281-1802 from Canada)
Fax: +1 419 281-6883
Email: order@bookmasters.com

## 7. NEWS FROM AROUND THE WORLD

**Australia and New Zealand (reported by Ana Deletic)**

Victoria, AU

The Institute for Sustainable Water Resources (ISWR), Monash University in Melbourne (http://iswr.eng.monash.edu.au/, lead by Dr Tim Fletcher and A/Prof Ana Deletic), completed investigation of clogging of stormwater treatment systems, and developed a new 2D clogging model. Work has also been completed on development of a simple model of stormwater pollution generation in Australian conditions. The group also extensively published on research into filters for stormwater treatment (aiming specifically at stormwater harvesting for non-potable use). The ongoing projects include work on (1) Aquifer Storage and Recovery (ASR) for stormwater in Melbourne, (2) Characterization and modelling of pathogens in stormwater, (3) Ecological responses to urbanization, and (4) Modelling of stormwater wetlands. ISWR commenced two new projects 2007; Assessing uncertainties in stormwater models, and Long-term performance of porous pavement systems.

Facility for Advancing Water Biofiltration (FAWB http://www.monash.edu.au/fawb/) that is a joint venture between ISWR, Monash University and Ecological Engineering Ltd (now EDAW) is very close to provide a proof of concept by developing and testing a range of biofilter systems (also known as bioretention systems) that can be applied to specific market-based needs. This AU$4.3 million worth multi-disciplinary research program has delivered over 20 research papers and reports in the past year.

The Australian National Urban Water Governance Program (http://arts.monash.edu.au/ges/research/nuwgp/index.php), led by A/Prof Rebekah Brown from the School of Geography and Environmental Science at Monash University, aims to provide a credible knowledge base to inform and assist urban water managers in building institutional capacity, and improving urban water governance to deliver more sustainable forms of water management. The interest that this highly unique research program generated in practice is remarkable. The program outputs are now widely adopted by industry and Australian policy makers.

New South Wales, AU

Voluble work in the area of urban drainage is also done within Centre for Water and Waste Technology (CWWT - http://www.cwwt.unsw.edu.au/), lead by A/Prof Richard Stuetz, and Water Research Laboratory (WRL) lead by Dr Peirson (http://www.wrl.unsw.edu.au/index.php3), both placed within the University of New South Wales, Sydney. The following research projects are currently undertaken:

1. Assessing interaction between urban ponds and groundwater that includes assessing infiltration impacts on groundwater quality, and studies on the quality of urban stormwater.
2. Developing procedures for continuous rainfall generation that forms the basis for design flood estimation for urban catchments.
3. Sustainability assessment to ensure holistic consideration of stormwater as a water source that includes the development of LCA tool to enable comparisons on environmental and cost bases with other water cycle management initiatives.
4. Identify stormwater harvesting potential with a focus on treatment requirements for reuse and aquifer recharge and storage.
5. Improving stormwater treatment and design through the use of material and substance flux analysis in urban water management

Recently completed projects include modelling daily stormwater balance and optimal storage volumes and a pre-feasibility assessment of MAR in the north-eastern Botany aquifer for the National Water Commission.

Queensland, AU

The sewer research team at The Advanced Water Management Centre at The University of Queensland(UQ) in Brisbane (www.awmc.uq.edu.au lead by Professors Jürg Keller and Zhiguo Yuan), focuses on corrosion and odour control in sewers. In particular, they focus on the modelling of sulphide production in sewage systems, and the evaluation of various sulphide control strategies. A UQ Sewer Model has been developed in the last four years through extensive and integrated laboratory and field investigations. The model describes the dynamics of a variety of in-sewer physical, chemical and biological processes. In 2007, the UQ Sewer Model was applied to two sewer networks in Australia, which resulted in significant recommendations to the industry partners concerning the optimised use of chemicals for sulphide control. These recommendations included the identification of most suitable chemicals for these systems, as well as their optimal dosage locations and dosing profiles. In collaboration with several other Australian and international universities, the UQ team has recently won another major Australian Research Council research project with very strong support from the Australian water industry. This five-year project with a total cash budget of A$8m will address major industry needs through coordinated national efforts.

New Zealand

An interesting project has been completed by NIWA - National Institute of Water and Atmospheric Research and Landcare Research centre on the growing problem of disposing of road sweeping and catch-pit sediment: towards more sustainable solution. For further details contact the project leader Dr. Craig Depree (c.depree@niwa.co.nz).

Auckland Regional Council (ARC), NZ, is working closely with Landcare research centre on implementation of Water Sensitive Urban Design in Auckland. They have been deploying both structural and non-structural management measures to minimise stormwater pollution discharges into the bay. Biofilters are definitely becoming very popular structural measures.

**Austria (reported by Dr. Stefan Fach)**

Virtual Infrastructure Benchmarking VIBe

The Environmental Engineering Unit at the University of Innsbruck is developing a software tool called VIBe (Virtual Infrastructure Benchmarking). The project is conducted in cooperation with the spin-off company hydro-IT, which is also the distributor of the conceptual modelling software KAREN. The objective of the software tool VIBe is to implement the existing knowledge about conceptual models and modular design systems to generate a virtual municipality with the associated artificial infrastructure system. In a first step this software tool will be limited to model urban drainage systems. But its setting will allow extending the software tool for additional urban infrastructures in the future, including, e.g., water supply systems. The design algorithms implemented are based on generally accepted technical procedures. Therefore the user has to define the constraints to ensure, that the artificial infrastructure system generated is close to reality. The structures generated can be used to identify and understand best practices or successful practices applied to complex infrastructure systems. Up to now the performance of single engineering structures, like CSOs or vortex separators, or of measurements in the drainage catchment can be exclusively evaluated in case studies. The disadvantage of such case studies is that the transferability of the results is generally restricted. The advantage of the software tool is the rapid construction

of various virtual case studies, depending on the user's constraints. Therefore it will be possible to assess the performance of measurements regarding local differences, which cover a wide range of factors potentially influencing the engineering structure. For drainage systems it will be possible to determine the most favourable configuration of CSOs or decentralized infiltration facilities in an existing catchment. So far there exist only a few works, like those by Gosh, Hellweger and Fritch, on the generation of urban infrastructure systems. The software tool VIBe will be developed in four work packages. The first step is the generation of the virtual municipality with a cellular approach. With the algorithms used it is planned to represent also complex processes in urban areas, like the probability of development within a catchment based on the building density. After that the appropriate urban infrastructure has to be implemented. For this work package the modular design system approach will be used, generate a virtual urban drainage system depending on the constraints and characteristics given by the virtual municipality. The third work package consists of the interface linking the existing simulation software to VIBe in order to design the urban infrastructure. With the fourth work package the performance of the urban drainage system will be analysed on basis of the results, which are coming from the external simulation software.

Technical University of Graz Contribution (reported by Dr. G. Gruber)

Dr. Guenter Gruber and Mr. Valentin Gamerith from Graz University of Technology report that in cooperation with TU Darmstadt (Germany) a research topic on pollutant load modelling based on high resolution on-line sensor data was launched in 2007 at the Institute for Urban Water Management and Landscape Water Engineering (Graz University of Technology).

Since 2002 an on-line sewer monitoring station has been installed and operated at a combined sewer overflow structure at the outlet of the "Graz West" catchment (City of Graz, Austria). Runoff as well as pollutant concentrations (TSSeq, CODeq) are continuously recorded in intervals of 1 and 3 minutes, for wet weather and dry weather flows, respectively.

Based on these data, a hydrological catchment model developed at TU Darmstadt was calibrated for both runoff and pollution concentrations (COD) by means of an auto-calibration-scheme based on evolutionary algorithms. Three pollution load model approaches were implemented in the model and compared (site mean concentration approach and two surface accumulation/wash-off approaches). The results obtained so far show that the applied auto-calibration scheme using single-objective calibration (using one objective function) is capable of producing convincing results for both calibration and validation events. Best results were obtained with the basic surface accumulation/wash-off approach.

Further work is ongoing comparing the effectiveness of the applied auto-calibration scheme when using single- and multi-objective calibration.

In 2008 additional rain gauges will be installed in the catchment to increase rainfall data density. Convective storms could not, until now, be reproduced satisfactorily by the model. One single rain gauge is judged insufficient to represent spatial rainfall variation in the 335 ha catchment. To take into account possible backflow effects and to be able to implement modelling approaches within the sewer system, a detailed hydrodynamic model will be set up for the catchment. In addition, the calibration of the used UV-VIS spectrometer probe for pollution concentration measurement will be subject to further investigation as a calibration module has been implemented in the auto-calibration model recently.

In the frame of these activities Mr. Valentin Gamerith has started his Ph.D. thesis with the working title "Hydrodynamic pollutant load modelling of combined sewer systems based on high resolution on-line sensor data and multi-objective auto calibration schemes".

A further Ph.D. thesis will be started in 2008 by Rita Vicuinik regarding the modelling and optimisation of CSO tanks concerning the TSS retention capacity.

**Brazil (reported by Nilo Nascimento)**

The 11th International Conference on Diffuse Pollution and the 1st Joint Meeting of the IWA Diffuse Pollution and the IWA-IAHR Urban Drainage Specialist Groups were simultaneously held in Belo Horizonte, August 26–31, 2007, organized by two IWA Specialist Groups, the Diffuse Pollution and the IWA-IAHR Joint Committee on Urban Drainage. A detailed report appears in Section 8 of this newsletter.

The 17th Brazilian Symposium on Water Resources was held in São Paulo, from 26th to 29th November 2007. This conference was organised jointly with the 8th Symposium on Hydraulics and Water Resources of the Portuguese Speaking Countries. The Brazilian Association of Water Resources (ABRH) and the Portuguese Association of Water Resources hosted the two conferences. About a thousand participants attended the meeting, at which 378 papers were presented orally in 63 sessions, and other 380 papers were presented in poster sessions. Urban drainage themes, mainly focusing on erosion processes, water quality and river restoration in urban areas, impacts of land use on hydrologic processes in urban areas, stormwater management and interfaces between sanitation and stormwater systems, were addressed in 11 sessions. Also, during the conference, two round tables dealt with urban waters in mega-cities and with the new Brazilian legal framework for regulating the sectors of water supply, sanitation, urban drainage and solid waste management.

The ABRH Urban Drainage Committee held its annual meeting during the conference. The agenda of this meeting included the preparation of the first call for papers for the 12th ICUD, to be held in Porto Alegre, Brazil, in 2011, to be distributed during the 11th ICUD; other forthcoming meetings on urban drainage; the possibility of creating a web-based Brazilian journal on urban water management and alternatives serving to reinforce cooperation and exchanges between the ABRH Committee and the IWA/IAHR Joint Committee on Urban Drainage.

The 8th Brazilian Meeting on Urban Waters will be held in Rio de Janeiro, from 5th to 10th May, 2008. It will be organized, for the first time, as a joint meeting with the 6th France-Brazil Meeting on Urban Hydrology. The Brazilian Meeting on Urban Waters is a bi-annual conference hosted by the ABRH Committee on Urban Drainage, gathering professionals and researchers from different Brazilian regions working in this field. The France-Brazil Meeting on Urban Hydrology is an annual conference organized alternatively in France and Brazil, as an initiative of Brazilian and French researchers who have been leading, for a long time, co-operative projects on urban water management, usually funded by the bi-lateral French-Brazilian co-operation on research and development. Two main themes will be addressed during these joint conferences: integrated urban water management and river rehabilitation in urban areas. Abstracts can be submitted in French or in Portuguese. For further information please contact Professors José Paulo Azevedo (zepaulo@hidro.ufrj.br) or Benoit Le Guennec (benoit@peno.coppe.ufrj.br), from the Federal University of Rio de Janeiro.

<u>The PROSAB programme on urban drainage</u>

For the first time the Brazilian Program on Environmental Sanitation (PROSAB) included the theme of urban drainage, in its 5th version covering the period 2006-2008. PROSAB is a long-term multidisciplinary research and development programme covering the fields of drinking water, sanitation, urban drainage and solid waste management. It is currently funded by the Brazilian Science and Technology Fund on Water Resources and managed by FINEP (Research and Project Financing) and CNPq (National Council for Scientific and Technological Development). Since 1996, PROSAB has funded 156 research projects developed by networks of universities, gathering more than 30 research groups and

representing an investment of more than US$18 million. So far, 27 books and manuals have been published containing the programme main issues as well as guidelines on the adoption of innovative technologies particularly those addressed to end users. The on-going programme on urban drainage covers 5 federal universities (Rio Grande do Norte, Pernambuco, Minas Gerais, Brasília and Rio Grande do Sul) as well as the University of São Paulo, in a research network with focus on characterising diffuse pollution in urban areas, testing different types of source control devices (detention trenches, infiltration trenches, pervious pavement, green roofs …), extended detention ponds and constructed wetlands. Concerning source control devices and other BMPs, research efforts focus on assessing environmental risks (e.g., soil and groundwater contamination), efficiency in runoff control and pollution abatement, maintenance requirements and construction and maintenance costs. The research team is now preparing a book aiming to disseminate the main research issues to for the academic and technical public.

The Brazilian and Italian Co-operation on Environmental Sanitation

The Brazilian and Italian Co-operation on Environmental Sanitation and Land Use Management started in 2003, as a result of a bi-lateral agreement sponsored by the Ministry of Cities (Brazil) and Hydroaid – Water for Development Management Institute (Italy), focusing on research and capacity building in integrated urban water and land use management. The programme has been carried out by teams comprising technical staff from the sponsors, the Brazilian municipalities of Manaus, Recife, Santo André and Belo Horizonte as well as by professors from Brazilian universities (University of São Paulo and Federal Universities of Amazonas, Pernambuco and Minas Gerais) and Italian universities (Politecnico di Milano, Politecnico di Torino, Università degli Studi di Bologna, Università degli Studi di Palermo, and Università degli Studi di Pavia). During its first two years of the project development, the four Brazilian cities participating in the project constituted case studies emphasizing the following purposes:

- to accomplish a diagnosis of the urban water management in the four cities, identifying the main operational problems, the impacts on the receiving water caused by stormwater and by wastewater, the existing instruments and tools (legal, staff, economical) for urban water management;
- to identify possible alternatives according to technical, economic, political and social points of view for adequately dealing with the main problems identified by the diagnosis phase; and,
- to conceive strategies to make possible the adoption of the envisaged alternatives.

The main issues of this diagnosis phase led to the conception and implementation of pilot experiments on urban water management in order to evaluate a variety of innovative technologies in the contexts offered by different urban areas in Brazil according to technical and economic criteria, as well as in terms of public acceptance. These are now on-going experiments partially funded by the PROSAB programme (see above). Also, since 2003, three courses on land use and integrated urban water management have been simultaneously offered by Italian and Brazilian teams, as well as 8 short duration workshops, on the same themes, were offered in different Brazilian states. To support these course activities, a book on integrated urban water management was edited by the same team, in 2006. The team is now working on the co-operation programme for 2008-2009, which will involve, among other projects:

- the publication of a book in Portuguese and Italian containing the main results of the on-going pilot experiments;
- the development of an online course on land use and integrated urban water management;
- the development of new pilot experiments on urban drainage simultaneously in Italy and Brazil mainly focusing on comparative studies on the use of constructed wetlands, water harvesting, reuse of water and other BMP alternatives.

**Canada (reported by Jiri Marsalek)**

Innovative Stormwater Management Project

In 2007, The Canadian Water Network (CWN) has initiated a two-year knowledge translation project on innovative stormwater management that has the following aims: 1. Share experiences and identify case studies where some of the innovations have been successful, 2. Compare how the function of these systems varies across the country and how some of these systems have to be modified depending on the prevailing climate conditions, 3. Identify knowledge gaps and research needs, and 4. Provide a forum for dissemination of these innovations to practitioners. So far, two workshops have been held in Vancouver and Calgary, and a third one is scheduled for Toronto in May 2008, where researchers, developers and engineers will share their experiences in this field. The response to this initiative has been very positive and the information presented at these workshops is available at: www.ires.ubc.ca/projects/ism

Preliminary findings of the first two workshops can be summarized as follows:

1. Greatly varying precipitation patterns in various regions of Canada require regionally designed approaches to stormwater management. Workshop presentations dealt with annual precipitation ranging from 350 mm/y (in Alberta) to more than 1,800 mm/y (in British Columbia). In drier regions, management measures emphasizing stormwater reuse and evapotranspiration may receive a higher priority than infiltration measures and aesthetically pleasing storage (e.g., in bioswales) in wetter regions.
2. Source controls (at or near the source) are particularly important in innovative stormwater management. With respect to water quantity, such controls are synonymous with "rainwater management" broadly promoted in British Columbia and elsewhere, or "low impact development". These approaches create demands on more sophisticated hydrological modelling in stormwater management, particularly with respect to such processes as rainwater interception by trees, runoff infiltration (e.g., in bioretention facilities or through pervious pavements) and groundwater mounding, and evapotranspiration. Concerning stormwater quality, new approaches include substitutions of environmentally friendly materials in construction, controls of applications of chemicals or anti-skid materials, incorporation of passive treatment, and enhanced maintenance of stormwater facilities.
3. There is a strong need for social marketing of innovative stormwater or rainwater management, involving all the major stakeholders, including the various levels of government, professional associations, developers, researchers, NGOs and the public.

Water Balance Model

The Water Balance Model supports a watershed-based approach that manages the natural environment and the built environment as integrated components of the same watershed (http://www.waterbalance.ca/waterbalance/home/wbnIndex.asp). Initially developed as a British Columbia-based Inter-Governmental Partnership as an extension of Stormwater Planning: A Guidebook for British Columbia, it led to the decision by Environment Canada, Canada Mortgage & Housing Corporation (CMHC) and the Province of British Columbia to join forces to create a truly national Water Balance Model for Canada that now includes many provinces in Canada. Further modifications and extensions of the model are currently underway.

The Sustainable Technologies Evaluation Program (STEP)

STEP is a multi-agency program based in Ontario (Canada), and led by the Toronto and Region Conservation Authority (TRCA) (http://www.sustainabletechnologies.ca/). The program was developed to provide the data and analytical tools necessary to support broader implementation of sustainable technologies and practices within a Canadian context. Its main objectives are to:

- Monitor and evaluate sustainable technologies in the areas of water and air
- Assess potential barriers to implementing sustainable technologies
- Provide recommendations for guideline and policy development
- Disseminate study results and recommendations and promote the use of effective technologies at a broader scale through education and advocacy.

Technologies evaluated under STEP are not limited to physical structures; they may also include preventative measures, implementation protocols, alternative urban site designs, or other practices that promote more sustainable lifestyles. Since the previous report on this program in the Feb. 2007 newsletter, results of new BMP studies have been added to the above website.

**Denmark (reported by Peter Steen Mikkelsen)**

The Urban Water Technology (UWT) research school was created in January 2007 as a strategic collaboration between the Technical University of Denmark (DTU) and Aalborg University (AAU). With partial funding from the Danish Research Agency, the overall mission of UWT is to enhance the education of PhD candidates and procure basic scientific knowledge serving to protect public health and ensuring a high quality of water discharged into nature while maintaining a sustainable development of urban water systems. A range of leading water and wastewater utility companies, consulting agencies, technology providers, research institutes as well as authorities participate in the research school. Among the first PhD fellowships funded directly under UWT several are within the urban drainage field, i.e. "advanced treatment of urban stormwater runoff", "data based process models for rainfall run-off in combined sewer systems", "optimised model-based monitoring of water quality in dynamic discharges from urban areas" and "framework for real time control of integrated urban wastewater systems".

Several PhD courses will be organized over the next years on selected relevant topics within the urban water technology area, partly supported by UWT and some of the current major Danish research projects in the urban water area (see below). These will also be open to PhD students from abroad. Keep an eye on www.urbanwatertech.dk for further information or contact Peter Steen Mikkelsen (psm@env.dtu.dk) or Jes Vollertsen (jv@bio.aau.dk).

Black, blue, green – Integrated infrastructure planning to sustainable urban water systems (2BG) is a strategic Danish research project focusing on three specific aspects of stormwater management in the urban landscape:

1) Water quantity – what is the capacity of the urban landscape to retain and infiltrate stormwater at an urban/city level, how can specific solutions – with or without overflow to the existing sewer system – be dimensioned, and what will the consequences for the urban water flows and balances be?

2) Water quality – how can an adequate quality of stormwater managed in the urban landscape be ensured, i.e. by which means can groundwater be protected from pollution, streams and rivers in order to avoid erosion and pollution from toxic compounds, so that citizens can enjoy clear and safe surface waters originating from roof- and road runoff?

3) Socio-cultural assets of water – how can urban areas that will gain, or suffer, from introduction of elements of stormwater management be identified and appropriately incorporated into the development plans for the city, and how can specifications concerning hydrological and water treatment entities be developed to facilitate their integration into landscapes designed by landscape architects and urban planners?

The expected outcomes of the project include methods and tools to enhance the socio-cultural and environmental functions and values of the urban landscape through sustainable urban drainage systems, from strategic planning at the city level to design solutions at the site level. The project started in 2007, will soon complete the first year and will last 3 more years. Read more about the project at www.2BG.dk or contact Marina Bergen Jensen (mbj@life.ku.dk).

Treatment and re-use of urban stormwater runoff by innovative technologies for removal of pollutants (LIFE-TREASURE) started in late 2006 and aims at implementing and demonstrating technologies that can efficiently reduce diffuse urban pollutant loads into receiving waters. Focus is on the removal of phosphorus and toxic substances (heavy metals and organic micro-pollutants). As part of the project, 3 wet detention ponds for treating stormwater are being constructed. The ponds are enhanced with filtration and absorption units for removal of small particles and colloidal and soluble bound pollutants, and will be equipped for on-line monitoring of the treatment performance. The facilities are located in Silkeborg, Århus and Odense, Denmark.

It is considered essential that the treatment facilities are constructed as natural and recreational elements in the form of semi-natural lakes that in a positive way contribute to an improved urban environment. Expectantly, the project will demonstrate that a simple and cheap treatment concept of a semi-natural lake extended with filtration and absorption is robust, and excellent treatment performance can be maintained even for big storms following long periods of drought. The LIFE-TREASURE project is carried out by a consortium of 3 municipalities (water companies), 2 universities (Aalborg University and Århus University) and the Danish Environmental Protection Agency. Consult www.life-treasure.dk or contact Jes Vollertsen (jv@bio.aau.dk) for further information.

Source Control Options for Controlling Emissions of Priority Pollutants" (ScorePP) is a European research project funded under the Energy, Environment and Sustainable Development section of the European Community's Sixth Framework Programme for Research, Technological Development and Demonstration. The aim is to develop comprehensive and appropriate source control strategies that authorities, cities, water utilities and chemical industry can employ to reduce emissions of priority pollutants (PPs) from urban areas into the receiving water environment. Having started in late 2006 the first tangible result is now available for use by others.

A database has been constructed to support the consortium as well as others interested in control of priority pollutants with basic information regarding inherent properties, environmental fate, risk classifications, observations in the environment and present legislation for 67 chemicals and chemical groups. These 67 chemicals and chemical groups are included in the Water Framework Directive. The database is constructed in MS Access, and within the database there are several forms to handle chemicals, properties, data sources and data entries. In order to retrieve data from the database, an add-on program is used to generate a report in MS Excel based on the data in the database. Data on all properties for one chemical or data on all chemicals for one property are examples of the kind of reports that may be generated from the database. The database, as well as further information abut the project, may obtained from www.scorepp.eu, or by contacting Hans-Christian Holten Lütshøft (hhl@env.dtu.dk) or Peter Steen Mikkelsen (psm@env.dtu.dk).

Storm- and Wastewater Informatics (SWI) is a strategic Danish research project starting in 2008 and lasting for 5 years. Around the world a very high number of large and ageing wastewater systems can be found nowadays. Many of these systems are located in densely populated city areas, making it impossible or very expensive to carry out major re-design of such systems. Today's wastewater treatment plants apply real time optimisation of the plants, whereas nearly all sewer systems are static, meaning that once the sewer pipes, pumps, basin and overflows have been put in the ground, no further/very little action is taken to optimise the performance of the sewer system in real time. Wastewater systems stress the aquatic environment and may put the health and safety of people at risk, e.g. when a mixture of rainwater and sewage floods residential areas or is discharged through overflows to receiving waters. Further, the operation of the wastewater systems is under an increasing pressure due to 1) the EU Water Framework Directive, 2) increased rainfall and runoff, e.g. due to climate changes, and 3) ageing sewer systems with increased infiltration, exfiltration, structural problems and health risks. The project addresses the problem of fragmented operation of the wastewater systems by closing the knowledge gaps within: process understanding; now- and forecasting of the current conditions in the wastewater system. Output from the project will be components for a real-time decision support system following a drop of water from the sky to the receiving waters. The benefits of such a real-time system are numerous and include improved water quality and reduced health risk, reduced energy consumption and operating costs, reduced flooding, increased reliability, and reduced environmental stress. The project participants include the Technical University of Denmark, Aalborg University, the Danish Meteorological Institute (DMI), three companies (DHI Water Environment Health, Krüger and PH-Cunsult) and 4 municipalities/utility companies (Avedøre Wastewater Services, Copenhagen Energy, Lynettefællesskabet A/S and Århus municipality). Information about the project will be available shortly on http://swi.env.dtu.dk.

**France**

A new network of French Observatories in Urban Hydrology

Three French observatories on Urban Hydrology (OPUR – Paris, OTHU – Lyon, and SAP – Nantes) have decided to create in early 2008 a new network in order to reinforce their research abilities on urban water cycle, and particularly in wastewater and stormwater fields. The futures activities will focus on four key words: Coordination, meetings, communications, and enhancement. In a short term, this network will set up coordinated research projects, on-line forums and a shared website, data and information exchange, and regular meetings.

WSSTP - the technology platform of Lyon

The Water Supply and Sanitation Technology Platform (WSSTP) is one of the technology platforms that are set up within the European Environmental Technology Action Plan (ETAP) that was adopted by the European Commission in 2004. In the Lyon area, and thanks to the OTHU (Field Observatory for Urban Water Management), the Urban Community of Lyon, Veolia, Suez Environnement Lyonnaise des Eaux and research laboratories have created jointly a program on "Sustainable water management in large cities". This platform is specifically dedicated to studies on sewage and technological devices (such as sustainable techniques for management of wet-weather flows). The participants in the program will jointly produce a common vision document for the whole European water industry together with a strategic research agenda and an implementation plan for the short (2010), medium (2020) and long terms (2030).

**Japan (reported by Hiroaki Furumai)**

UDM 2009 Conference to be held in Tokyo

The 8th international conference on Urban Drainage Modelling (8th UDM) will be held in Tokyo, Japan, Sept. 7–11, 2009; the deadline for abstract submission is Aug. 15, 2008. For further details see Section 9 and the conference website: www.env.t.u-tokyo.ac.jp/8UDM .

International Workshop on Rainwater and Reclaimed Water in Kyoto

The urban water consumption is a major factor affecting the natural water cycle and causes various stresses on the aquatic environment. To remedy this situation, the provision of more environmentally-friendly and sustainable water resources for urban areas needs to be pursued. Promotion of the development of alternative sources of urban water, such as rainwater, recharged groundwater, and reclaimed water, is a primary thought. However, various risks are inherent to such options. Therefore, it is required to establish a desirable urban water cycle system that will adequately address issues of water quality, its risk, and management of the alternative water resources. The second International Workshop on Rainwater and Reclaimed Water for Urban Sustainable Water Use was held in Kyoto and scheduled so it would serve for summarizing results of the Core Research for Evolutional Science and Technology (CREST) on "Risk-based Management of Self-regulated Urban Water Recycle and Reuse System". For the reference, the first international workshop was held at the University of Tokyo in June 2005 (website: http://www.recwet.t.u-tokyo.ac.jp/furumailab/crest/e/workshop-e.htm). The information concerning the second workshop can be found at http://www.eqc.kyoto-u.ac.jp/local/crest/top/index.html

Recent trends in stormwater management

In recent years, localized torrential rainfalls occur quite often, and are supposed to be caused by the heat island effect in Japan's urban regions. In big cities like Tokyo and Osaka, the design criteria for rainfall intensity for design of stormwater sewers were determined in the range from 50 to 60 mm/hr; however, much higher rainfall intensities, as high as 100 mm/hr, occur frequently. As countermeasures, large stormwater storage pipes and reservoirs, located underground, have been proposed and constructed. Other than these structural measures, a rainfall information system serving the citizens has been established, in order to mitigate flood damages. The latest news from Tokyo and Nagoya, concerning the Tokyo Amesh Renewal and the Amamizu (Stormwater) Information System, appears below.

Tokyo Amesh

This is the name of the radar precipitation gauge system. The objective of the system is to provide real-time information for the optimization of operation of stormwater drainage facilities. "The system was launched in 1988 and opened up to serve the general public through an Internet homepage in 2002. In FY 2006, the total number of visits to the site reached 7.6 million, and this contributed to an improved disaster preparedness based on self-help. Furthermore, in July 2007, we improved the homepage by sharing precipitation data with the neighbouring municipalities, extending the scope of data processing, introducing a more precise classification of rainfall intensities, and improving the site operation. After this amendment, the monthly number of visits in July 2007 reached 1.38 million, which is a record value. The renewed Tokyo Amesh System won the prize for promoting information system by the relevant governmental ministries. We would like to continue these efforts for providing accurate rainfall information. "(Yoshinori Sakurai, Tokyo Metropolitan Government). URL: http://tokyo-ame.jwa.or.jp/en/index.html

The Amamizu (Stormwater ) Information System

This sends citizens real-time information on the state of stormwater pump operation through the Internet by using a self-supporting network of optical fibre cables installed in sewer pipes. The information sent includes advisories and warnings related to weather information, and information from the meteorological radar, river data, disaster prevention weather information, and disaster emergency information and refuge maps, in addition to the state of stormwater pump operation (running, stoppages, and break-downs). Good utilization of this information provided via the Internet to the citizens is most useful in for their self-help activities, such as evacuations and protection against floods ( reported by Hirokazu Ochiai, Nagoya City Government).

**Malaysia (reported by Dr. M. Nor)**

Regional Short Training Course on Urban Stormwater Management (RSTC USWM)

This course was organized by the Humid Tropics Centre, Kuala Lumpur and UNESCO Jakarta Office, with support by the International Water Association (IWA), International Centre for Water Hazard and Risk Management (ICHARM), Regional Centre on Urban Water Management (RCUWM), Malaysian Hydrological Society (MHS), Malaysian International Hydrological Programme (MIHP), Universiti Tenaga Nasional (UNITEN) and Institution of Engineers Malaysia (IEM). It provided a good forum for exchange of knowledge and experience amongst the participants involved. In was held in Cititel Hotel, Kuala Lumpur, Malaysia from 3rd to 7th December 2007. Further information is provided in Section 8 of this newsletter.

**Portugal (reported by Maria do Céu Almeida and José Matos)**
The new national Strategic Plan for Water Supply and Urban Wastewater (PEAASAR II – Plano Estratégico de Abastecimento de Água e de Saneamento de Águas Residuais), to be implemented during the period from 2007 to 2013, was recently published. The document that provides main guidelines for developments and investments in the sector includes the sustainable management of stormwater and infrastructure asset management as the main target areas. One of the priority areas for investments during the period 2007-2013 is the minimization of inflows into combined sewer systems, extraneous water inflows into sanitary sewer systems, and of wastewater into storm sewers. This document also provides interesting perspectives and motivation for the development of applied research in these areas.

**United Kingdom (reported by David Butler)**
We are very pleased to be holding the next (11th) International Conference on Urban Drainage in the UK, hosted by the fine city of Edinburgh in Scotland. In case you had not yet done so, put the week of 31st August to 5th September 2008 in your diary and make a note to come along! More information appears in Section 9 on future meetings.

UK research
Work on urban flooding continues apace in the UK. A particular focus of activity is the Flood Risk Management Research Consortium (FRMRC). Work in this consortium relevant to the urban drainage community has been carried out by the Pennine Water Group (University of Sheffield, r.ashley@sheffield.ac.uk), the Urban Water Research Group (Imperial College London, c.maksimovic@imperial.ac.uk) and the Centre for Water Systems (University of Exeter, s.djordjevic@exeter.ac.uk). Significant advancements have been made in developing the tools for 1D/1D dual drainage modelling by more accurate GIS-based automatic generation of surface network characteristics. This includes flow path cross-sectional geometry, connectivity and pond area-depth curves derived from LIDAR-based DTM and land-use images. A 1D/2D approach to modelling urban flooding has also been enhanced and tested by both the research team and the industrial partners on a range of case studies. Complex interactions that take place through surface/sub-surface links have been investigated in detail.

The WaND project (Water Cycle Management for New Developments), described in several previous issues of this newsletter, has now reached its formal conclusion. WaND is led by the Centre for Water Systems at the University of Exeter, and delivered by a consortium of UK university partners: Aberystwyth, Bradford, Cranfield, Imperial College London, Leeds and Sheffield with CEH Wallingford, HR Wallingford and WRc. Contact details can be found on our web-site: www.wand.uk.net. A good range of WaND related papers was presented at the 'Water Management in Global Change' conference held in Leicester last September and copies of the conference book can still be obtained from Professor Bogumil Ulaniki (b.ulaniki@dmu.ac.uk).

As part of the project we have developed a WaND Portal, which is an innovative repository of most of the WaND deliverables with particular attention paid to guiding stakeholders to relevant material. This will be available on the WaND web-site later next year. Also next year we will be producing a WaND 'Users Guide' to be published by CIRIA (Construction Industry Research and Information Association).

If you would like further information on specific WaND work packages or any of our publications, please contact Professor David Butler (d.butler@exeer.ac.uk).

**United States (reported by Eric Strecker)**

The Urban Water Resources Research Council (UWRRC) of the Environmental and Water Resources Institute (EWRI) of the American Society of Civil Engineers (ASCE) is the primary organization that is interacting with the JCUD. The UWRRC held their annual meeting of the research council in May of 2007 at the EWRI annual conference in Tampa, Florida. The next general meeting of the UWRRC will be held in Honolulu, Hawaii at the EWRI 2008 World Water & Environmental Congress May 12-16, 2008. The meeting date has not been set yet, but will likely be May 17th, 2008. In addition, the leadership of the UWRRC will be meeting at the EWRI Council's weekend February 23 and 24th. If there are items that JCUD would like UWRRC to consider, then getting any requests to Eric Strecker or the UWRRC leadership (Richard Field, US EPA (field.richard@epa.gov) is the Chair of the UWWRC) should occur if possible prior to these dates. An update on UWRRC Activities follows.

I. Water Balance Model—Partners Forum—British Columbia. The Water Balance Model is an intergovernmental partnership. The group examines avoidable cumulative impacts and green building effects on environmental impacts. The main focus of the workgroup has been to enhance the water balance tool on the web. Additional topics have included a tree canopy research project examining interception. More information is available at: http://waterbucket.ca/rm/index.asp?sid=44&id=307&type=single. Linda Pechacek (linda.pechacek@sbcglobal.net) is participating on behalf of the Council.

II. Manual of Practice (MOP) on Water Quality (Stormwater) The UWRRC is pursuing an electronic Manual of Practice on Water Quality. This will be an official ASCE MOP. The general approach will be to have modular MOP that can be updated part by part as new information emerges on topics. TC is looking into using a wiki for online collaboration and peer review. Once a critical mass of 5 to 6 chapters have been created and peer review initiated, ASCE will launch product online. Authors have been identified for a number of chapters. Committee now needs to develop work flow and start writing. The committee is led by Andrew Earls (AEarles@wrightwater.com) and Marcus Quigley (mquigley@geosyntec.com ).

III. Engineering Conference International (ECI) Modelling Conference The conference focused on stormwater modelling was held at Humboldt State University in Arcata, California in July of 2007. There were 70 attendees. The Conference followed the traditional ECI format with sessions in the mornings and evenings and afternoons open for discussion. Wayne Huber (Wayne.Huber@orst.edu) was the Chair with Eric Strecker (estrecker@geosyntec.com) as a co-chair. Proceedings are still in process, but the plan is to publish them on-line with free or minimal cost for downloading via Berkeley Press.

IV. 11th ICUD Edinburgh 2008— A good number of UWRRC members have submitted abstracts and plan to attend the conference. Charles Rowney (acr@rowney.com) and Eric Strecker are serving on the scientific committee.

V. 5th International Urban Watershed Management Conference. The Conference in Chengdu, China was a success with 20 sessions and more than 100 papers. UWRRC was well represented with approximately a dozen members attending. Keynote addresses on the first day of the conference were given by Michal Ports, James Kuo and Tony Tafuri. The conference included a field trip to a 2000 year old hydraulic structure. CDs and compilations of papers from the 5th conference are being produced and Shaw Yu is considering potentially publishing papers in a special issue of an ASCE journal such as the Journal of Water Resources Planning and Management. The

next conference (6th) will likely be in Nanchang, China (near China's largest freshwater lake) in October of 2008, and organizational efforts are underway for a future conference in New Zealand, probably in 2009. Dr. Shaw Yu (sly@virginia.edu) has been the champion for the series of conference. Elizabeth Fassman (e.fassman@auckland.ac.nz) is working on organizing the upcoming conferences with Shaw Yu.

VI. Urban Streams Sub-Committee. An Urban Streams Restoration Monitoring and Assessment manual effort is being headed up by John Schwartz (jschwart@utk.edu). The committee has sponsored a large number of sessions and symposiums at past EWRI conferences. Ed Herricks (Herricks@uiuc.edu) is working on compiling the best of these papers for a publication.

VII. Gross Solids Technical Committee. Betty Rushton (bettyrs@atlantic.net) has been heading up this committee. The committee's Gross Solids guidelines has been completed and sent out for review by UWRRC. Field testing methods are a topic where information is needed. The Gross Solids TC is coordinating with the WERF stormwater solids effort.

VIII. Urban Watershed Management Technical Committee This TC is headed up by Scott Struck (Scott.Struck.@ttemi.com) A book was published last year with papers from the Salt Lake City and Anchorage symposiums. TC is looking into a similar publication based on papers from Omaha and Tampa. The Urban Watershed Management 2007 Symposium TC (Struck) included 18 sessions and a panel discussion. The committee will be active in the EWRI Honolulu conference.

IX. Wet Weather Flow Technology Sub-Committee (Previously known as CSO/SSO). Sri Rangarajan (srangarajan@hydroqual.com) can be contacted for information. The Committee has been working on white paper addressing issues including blending, TMDL framework and modelling.

X. Certification of Manufactured BMPs Technical Committee (to be coordinated between other EWRI Committees. The goal of this TC is to develop guidelines for developing a BMP certification program. TC was approved in February. Objectives are: (1) review existing certification programs and methods, and (2) develop new guidelines for laboratory and field testing. Issues to be addressed will include scaling and maintenance. The product from the TC will be an objective, technical manual on the subject. Gordon England (gengland@stormwatersolutionsinc.com) is Co-chair.

XI. International BMP Database Project Sub-Committee Eric Strecker (estrecker@geosyntec.com) and Jonathan Jones (Jonjones@wrightwater.com) lead this committee. The Database continues to grow along with approximately 330 BMP performance studies now loaded into the database. An updated analysis of data in the Database has been performed and posted on the Database website (www.bmpdatabase.org), which includes all data added to the Database in the last year. The website has been updated this year, and updated data entry tools and spreadsheets have been posted. The website was also transitioned to a new, quicker platform this year. WERF is working on outreach and education. The database team continues to seek BMP performance studies that meet the databases protocols (see web page and BMP monitoring guidance).

XII. Low-Impact Development (LID) Sub-Committee. The 2nd National LID Conference in Wilmington, NC was a success, with attendees from as far away as New Zealand and Puerto Rico. A new Technical Committee has been formed to work on publishing a collection of papers from the conference. There are also new Technical Committees on a LID '08 (Seattle area) and '09 conferences. Mike Clar (MClar@ecosite.biz) can be contacted regarding these activities. The LID Bio-retention Technical Committee (Clar & Bill Hunt (bill_hunt@ncsu.edu) has a draft report out now for review and expects to have a final report soon.

The UWRRC officers include Richard Field, US EPA Edison, NJ – Chair, Linda Pechacek – Vice-Chair, and Andrew Earles as Secretary (see e-mail addresses above).

## 8. REPORTS ON CONFERENCES AND WORKSHOPS

**The Novatech 2007 conference.** From June 24 to 28, 2007, the City of Lyon welcomed the Novatech 2007 conference. Since 1992, every three years, the GRAIE has been organizing this international meeting, which deals with sustainable techniques and alternative solutions for management of wet-weather flows in urban and suburban areas. During this sixth edition, Novatech gathered more than 675 participants, 170 communications, 40 scientific posters and 20 exhibitors. The 2007 Novatech had a significantly broader thematic field linking urban design and management with the management of water bodies. The Novatech proceedings are now completed and included on a new CD-ROM containing the complete Novatech proceedings since 1992. This CD-ROM can be ordered through www.novatech.graie.org . We hope to see you at the next Novatech conference in the summer of 2010!

**The 11th International Conference on Diffuse Pollution and the 1st Joint Meeting of the IWA Diffuse Pollution and the IWA-IAHR Urban Drainage Specialist Groups** were simultaneously held in Belo Horizonte, August 26–31, 2007, organized by two IWA Specialist Groups, the Diffuse Pollution and the IWA-IAHR Joint Committee on Urban Drainage. The host institutions were IWA, the Brazilian Association for Water Resources (ABRH), the Brazilian Association of Environmental Engineering (ABES), and the Federal University of Minas Gerais (UFMG). Over 150 people attended the conference, 76% of them from abroad. During the meetings, 106 papers were presented, covering different aspects related to diffuse pollution as well as urban drainage, with main focus on such themes as pollution loading and diffuse pollution control, monitoring and modelling, as well as institutional aspects of diffuse pollution control. Eight keynote speeches were presented covering such topics as: diffuse pollution in the developing world, long term operator and research partnership in urban hydrology, the new paradigm of integrated drainage and diffuse pollution management in the city of the future, state of the art of rainwater harvesting in developing countries, climate change and mechanisms of clean development. A round table on the experience of developed and developing countries on source control for stormwater management motivated significant exchanges between participants to the conference. Two workshops were also organized during the conference. The first one, proposed by a team of the 6th EU Framework project, SWITCH, dealt with integrated urban water management in the city of the future. The main topic of the second workshop was automobiles emissions and regulatory aspects for their control.

Selection of papers for publication in *Water Science and Technology* is being carried out by the Scientific Committee (Marcos von Sperling, Edurado von Sperling, Jean-Luc Bertrand-Krajewski, Ray Earle and Nilo Nascimento).

The Sewer System &Processes Working Group (SS&PWG) has co-organized **the 5th International Conference on Sewer Processes and Networks (5th SPN)** that took place in Delft, The Netherlands, August 28-31, 2007. The other co-organizers were the Delft University of Technology, Department of Sanitary Engineering and UNESCO-IHE Institute for Water Education. The 5th SPN has included the following sessions: (1) Sewer process monitoring, (2) Operational aspects, (3) Hydrodynamic modelling and calibration, (4) Water quality data and modelling, (5) Sewer solids, (6) Hydraulics and hydrodynamics, (7) Real time control, and (8) In-sewer processes. The papers presented at the conference were reviewed prior to their acceptance, starting with abstracts and following with full papers. The Conference had more than one hundred delegates from different countries of the world, including 26 UNESCO-IHE students who were in the finishing stage of their studies at IHE.

**2nd Leading Edge Conference on Strategic Asset Management, LESAM 2007.** The IWA Leading Edge conference on Strategic Asset Management was held in Lisbon, Portugal, Oct. 17-19, 2007, and was hosted by the Laboratorio Nacional de Engenharia Civil. The total number of participants was 190 from 32 countries (participants distribution: 147 from Europe, 20 from North America, 7 from Africa, 6 from Australia, 4 from the Far East, 2 from South America and 1 from the Middle East). The conference aimed to examine ways of improving asset management, as described in 59 papers and 18 posters, distributed by the following topics: Global approaches to asset management (6 papers), Institutional and organisational aspects (12 papers), Target definition and assessment of performance (6 papers), Cost and benefit valuation (6 papers), Target definition and assessment of risks (5 papers), Asset data and information systems (6 papers), Engineering developments – wastewater and water supply (18 papers). Conference outcomes, including opening session interventions, paper presentations, conclusions and recommendations and photos can be found on the conference website www.lesam2007.org.

**Regional Short Training Course Urban Stormwater Management (RSTC USWM).** This course was organized by the Humid Tropics Centre Kuala Lumpur and UNESCO Jakarta Office, with support by the International Water Association (IWA), International Centre for Water Hazard and Risk Management (ICHARM), Regional Centre on Urban Water Management (RCUWM), Malaysian Hydrological Society (MHS), Malaysian International Hydrological Programme (MIHP), Universiti Tenaga Nasional (UNITEN) and Institution of Engineers Malaysia (IEM). It provided a good forum for exchange of knowledge and experience amongst the participants involved. It was held in Cititel Hotel, Kuala Lumpur, Malaysia from 3rd to 7th December 2007, and sponsored by the Participation Programme of UNESCO, with additional funding from the UNESCO Jakarta Office and the Malaysia Government. Course objectives were to present the latest appropriate techniques and concepts in USWM in the tropics for a sustainable environment.

Targeted groups (by invitation): engineers, managers, academicians, and professionals involved in urban stormwater management. There were seven international and 25 local professionals participants. Invited Resource Persons included Prof. S. Beecham, University of South Australia; Prof. C. Maksimovic, Imperial College, London; Dr. P.R. Rakhecha, Guest Researcher HTC KL; Dr. Surajate Boonya Aroonnet, Imperial College, London; Dr. Nida

Seelsaen, Mahasarakham University; Assoc. Prof. Dr. Ismail Abustan, Universiti Sains Malaysia; Assoc. Prof. Lariyah Mohd. Sidek, Universiti Tenaga Nasional, Malaysia; Dr. Mohd. Nor Mohd. Desa, HTC Kuala Lumpur; and, Dr. Md. Nasir Md. Noh, Department of Irrigation and Drainage Malaysia.

The course program covered review of the current practice on urban stormwater management (USWM) in the Humid Tropics, introduction to new concepts on USWM such as water sensitive urban drainage, source control, ecological urban drainage system, etc.; computer modelling using appropriate computer software, design calculation of IDF parameters and case studies; technical visits, and other presentations.

## 9. FUTURE MEETINGS AND CONFERENCES

A table listing the proposed JC and WG conferences and workshops appears below; additional information on some events is also presented. All information about conferences, seminars, workshops, summer schools, etc. dealing with urban drainage is welcome and will be added to this table as it becomes available. Please send such information to Jiri Marsalek or Jean-Luc Bertrand-Krajewski. You should also use this table when proposing new events - to avoid overlaps in time and topics.

**Future urban drainage events (as of January 2008)**

| Year | Month | JCUD | Data and Models WG | RTC in urban drainage | Sewer Systems & Processes WG | WGUR (urban rainfall) | WSUD WG |
|---|---|---|---|---|---|---|---|
| | | JLBK | A. Deletic | A. Campisano | J. Matos | G. Vaes | T. Wong |
| | | J. Marsalek | B. Tait | M. Pleau | F. Clemens | T. Einfalt | R. Ashley |
| 2008 | Aug. | 31 Aug. – 5 Sept., 11th ICUD, Edinburgh, UK | | | | | |
| | Sept. | 7–12 Sept., IWA World Water Congress, Vienna, Austria | | | | | |
| 2009 | Aug. | 10-14, Aug., 33rd IAHR Congress, Vancouver, BC, Canada. | | | | | |
| | Sept. | | 7–11 Sept., 8th UDM (Urban Drainage Modelling), Tokyo, Japan | | | | |
| | Dec. | | | | | 8th Int. Workshop on Precipitation in Urban Areas, St. Moritz, Switzerland | |

For updated information, please regularly visit our website at:
http://www.iwahq.org/templates/ld_templates/layout_633184.aspx?ObjectId=633912, or
www.jcud.org

**International Short Course on Advances in Knowledge of Urban Drainage: from the Catchment to the Receiving Waters – Technical Solutions for the Management of Rainwater, the University of Calabria, Rende, Italy, May 30, 2008.**
This short course is organised by Centro Studi Acquedotti e Fognature, Dipartimento di Difesa del Suolo (University of Calabria), Laboratorio di Idraulica Urbana (LIU) and Associazione Idrotecnica Italiana – Calabria division, and will focus on technical solutions in rainwater / stormwater management. The course is designed for practicing hydraulic and environmental engineers, and graduate students and young researchers. Young professionals from other countries are particularly welcome to come and share their ideas and research topics with Italian colleagues.

The objective of the course is to provide theoretical knowledge as well as practical approaches for comparing international experiences in technical solutions for rainwater/stormwater management (also known as SUDS, BMPs, LID, WSUD). The course is divided into two didactic parts: (i) presentations of research findings by experts and (ii) presentations of new technologies by specialised companies. It presents a great opportunity for exchanges among researchers, private companies and the course participants, who can take advantage of visiting an equipment exhibition held during the course and talk to technical representatives of exhibitors. The course will be held on the campus of the University of Calabria in Arcavacata di Rende (Cosenza), and the participants can stay in the University residence at reduced costs. Simultaneous translations (English-Italian) will be provided.

For further information, contact the course Secretariat, or visit the website (www.liu-cs.it), or contact Prof. Patrizia Piro, Dipartimento di Difesa del Suolo "V. Marone", Università della Calabria, Ponte Pietro Bucci, Cubo 42/b, 87036 Arcavacata di Rende (CS), Tel. +039-0984-496546/47 Fax. +039-0984-496546, e-mail: patpiro@dds.unical .

**11th International Conference on Urban Drainage, the Edinburgh International Conference Centre, Edinburgh, UK, August 31 – September 5, 2008.** The conference is organised by the UK community of urban drainage specialists. More than 600 abstracts have been submitted to the conference. The authors of accepted abstracts should submit their papers by March 2, 2008. Please add these dates to your diary.

The conference proposes to inform urban drainage professionals, designers, practitioners and researchers of the latest advances, concepts, design and best practice across all technical, environmental, social and economic aspects of urban drainage. As you would expect, we will be organising a series of technical and cultural tours and an extensive 'accompanying persons' programme**.** We will do our very best to ensure you discover Scotland's rich heritage and experience Edinburgh's famous hospitality! For details, visit the conference website: www.11icud.org .

**8th International Conference on Urban Drainage Modelling (8th UDM)** will be held in Tokyo, Japan, Sept. 7-11, 2009; the deadline for abstract submission is Aug. 15, 2008. Urban Drainage Modelling conferences have a history longer than 20 years, with the first meeting dealing with modelling the urban drainage system and the interactions with other urban water systems and urban environment held in 1986. This will be the first time that the UDM conference is held in Asia and we especially encourage high participation from Asian countries. To reflect regional issues, the conference will have a special session on East Asian urban water management in the monsoonal climate. We welcome submissions of abstracts, which will be reviewed by the conference reviewers. The deadline for abstract submission is 15 August, 2008. All the information on abstract submission and conference details is available on the conference website listed below; for further information, please contact to the conference secretariat at 8UDM@env.t.u-tokyo.ac.jp.
8UDM website http:// www.env.t.u-tokyo.ac.jp/8UDM.

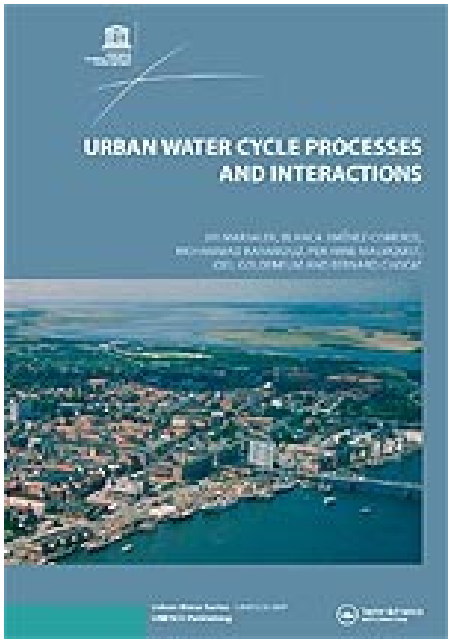
**8th International workshop on Precipitation in Urban Areas, St. Moritz, Switzerland, December, 2009.** Specific themes will be announced in a call for papers in 2008 on the group's website: http://www.kuleuven.ac.be/hydr/gur.

## 10. RECENT PUBLICATIONS OF INTEREST

For a comprehensive listing of IWA publications, see Section 6 (News from IWA Publishing).

**UNESCO-IHP Urban Water Series**
This series, organized by Editors Cedo Maksimovic and Alberto Tejada-Guibert, will feature about 10 books on various topics dealing with urban water management. The first three published books are listed below.

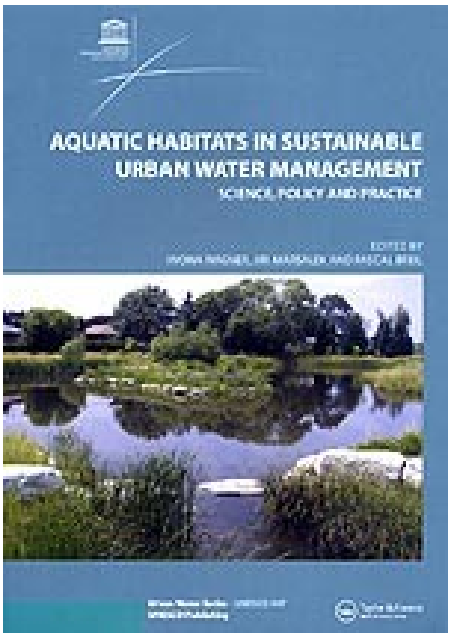
**Marsalek, J., Jimenez-Cisneros, B., Karamouz, M., Malmqvist, P.-A., Goldenfum, J. and Chcoat, B (2008). Urban Water Cycle Processes and Interactions. UNESCO Publishing and Taylor & Francis Group, ISSN 1749-0790, Leiden, The Netherlands**




The water cycle is a fundamental hydrological concept describing storage and circulation of water between the atmosphere, lithosphere, hydrosphere, and biosphere. In urban areas, this cycle is greatly modified and is referred to as the urban water cycle. Among the most obvious modifications are those related to the catchment hydrology, because of transformations of undeveloped land into urban forms, with concomitant changes in catchment imperviousness, increased energy releases, and increased demands on water supply. Urbanized catchments produce higher volumes and peaks of runoff, reduced groundwater recharge and stream baseflows, and therefore greatly altered flow regimes. These changes have been historically managed by building urban infrastructures to mitigate threats to the urban population and to satisfy the growing demands on water services. Drinking water, which is required at various rates of use and in a prescribed quality, is generally extracted from surface waters or groundwater, treated at a central plant, and delivered to individual customers. There has been a great progress in treatment technologies, with refinement of such processes as membrane treatment, UV disinfection, and provision of additional water sources by desalination and rainwater harvesting. The multi-barrier approach adds greatly to the safety of treated water. Urban drainage has evolved tremendously during the past 30 years, with introduction of sustainable drainage systems attempting to mimic natural drainage and reduce urban impacts on land drainage. Flood protection is continuing to face many challenges, partly those caused by climate change and variation, with increased frequency of flood events in recent years, and socio-economic challenges caused by the lack of funding for planning and implementing flood protection and rapid urbanization with continuing encroachment on flood plains. The issue of wastewater

management and sanitation has been practically resolved in developed countries with provision of services and wastewater treatment at the secondary or even tertiary level. Recent concerns are caused by newly emerging chemicals including pharmaceuticals and personnel care products. In developing countries, ecological sanitation (EcoSan) holds a great promise, but the lack of improved sanitation for a large population (2 billion) remains a problem. A modern management measure, in the form of wastewater reclamation and reuse, offers some advantages with respect to providing additional water for subpotable uses and protecting receiving waters against pollution discharges. In the final chapter, the impacts of urbanization on the environment are discussed by focusing on six components: The atmosphere, surface waters, wetlands, soils, groundwater and biota. Where appropriate, measures serving for mitigation of such impacts are also discussed.

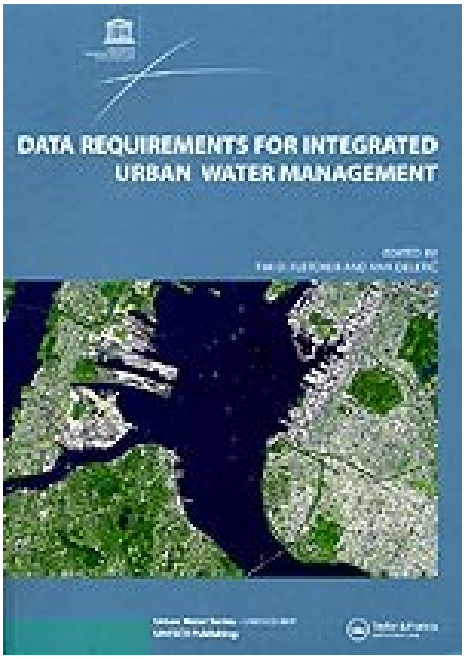
**Wagner, I., Marsalek, J., and Breil, P. (Eds.) (2008). Aquatic habitats in sustainable urban water management: science, policy and practice. UNESCO Publishing and Taylor & Francis Group, ISSN 1749-0790, Leiden, The Netherlands**




This book has been produced by UNESCO, through its International Hydrological Programme (IHP) and its Man and the Biosphere (MAB) Programme, as a part of a series of urban water management books produced in the framework of the Sixth Phase of IHP (2002-2007). It aims to increase the awareness of water management professionals of often neglected aspects of integrated urban water management, including the protection of urban aquatic habitats and, where feasible, the utilization of aquatic habitat properties in the delivery of urban water services. It focuses on presenting both general and specific principles used in UAH management and provides numerous references to other sources of detailed information on this topic. It was prepared by an international team of authors with broad experience in the field from various regions of the world, and the authors were further guided by the UNESCO staff, ensuring coverage of the aspects related to both developed and developing countries.

The book is divided into three parts, the first of which (Chapters 1 to 3) deals with the review of basic concepts and challenges encountered in UAHs, as well as general strategies for integrating aquatic habitats into urban water management. The second part (Chapters 4 to 8) provides the reader with technical measures related to urban water habitats management and rehabilitation, as well as their incorporation into urban planning and their role in protecting human health. Finally, the third part of the book (Chapter 9) gives practical examples of existing UAH issues and possible approaches to solving them, presented in the form of case studies from all over the world.

**Tim D. Fletcher and Ana Deletić (eds) (2008). Data Requirements for Integrated Urban Water Management. UNESCO Publishing and Taylor & Francis Group, ISSN 1749-0790, Leiden, The Netherlands. ISBN 2008, 978-92-3-104059-7**




Integrated urban water management relies strongly on data allowing us to analyse, understand and predict the behaviour of the individual water cycle components and their interactions. The concomitant monitoring of the complex of urban water system elements makes it possible to grasp the entirety of relations among the various components of the urban water cycle and so develop a holistic approach to solving urban water problems.

The book preparation was initiated under the UNESCO's International Hydrological Programme project and is geared towards improving integrated urban water management by providing guidance on the collection, validation, storage, assessment and utilization of the relevant data. The first part of this volume describes general principles for developing a monitoring programme in support of sustainable urban water management. The second part examines in detail the monitoring of individual water cycle components. Two case studies in the final part illustrating attempts to deliver an integrated monitoring system help demonstrate the fundamental principles of sustainable urban water management.

## 11. WORKING GROUP CONTACTS

<table>
<tr><td colspan="2">Int. Working Group on Data & Models (IWGDM) Web site: http://iswr.eng.monash.edu.au/iwgdm</td></tr>
<tr><td>Chairman: Dr Ana Deletic<br>Institute for Sustainable Water Resources<br>Dept. of Civil Engineering, Building 60<br>Monash University<br>Clayton, Vic 3800<br>AUSTRALIA<br>Ph: 61 3 9905 2940, Fax: 61 3 9905 4944<br>E-mail: ana.deletic@eng.monash.edu.au</td><td>Secretary: Prof. Simon Tait<br>Pennine Water Group<br>School of Engineering Design and Technology,<br>University of Bradford<br>Bradford, BD7 1DP<br>UK<br>Ph: +44 1274 233878, Fax: +44 1274 234124<br>E-mail: s.tait@bradford.ac.uk</td></tr>
<tr><td colspan="2">Real-Time Control of Urban Drainage Systems (RTCUDS) Web site: http://web.tiscali.it/RTCUSD/</td></tr>
<tr><td>Chairman: Dr A.. Campisano<br>Dept. Civil and Environmental Engineering<br>University of Catania, Viale Andrea Doria 6<br>95125 Catania<br>ITALY<br>Ph: 39(0)95 738 2730, Fax: 39(0)95 738 2748<br>E-mail: acampisa@dica.unict.it</td><td>Secretary: Dr M. Pleau<br>BPR-CSO<br>5100, Sherbrooke St. E., Suite 400<br>Montreal, Quebec H1V 3R9<br>CANADA<br>Ph.: +001 418-871-8151, Fax: +001 418-871-9569; E-mail: martin.pleau@bpr-cso.com</td></tr>
<tr><td colspan="2">Sewer Systems and Processes Working Group (SS&PWG)<br>Web Site: http://www.sspwg.civil.auc.dk</td></tr>
<tr><td>Chairman: Prof J. Saldanha Matos<br>Architecture and Civil Eng. Department<br>Technical Superior Institute, University of Lisbon<br>Av. Rovisco Pais<br>1049-001 Lisboa<br>PORTUGAL<br>Ph.: 351 21 841 8371, Fax: 351 21 849 8371<br>E-mail: jsm@civil.ist.utl.pt</td><td>Secretary: Prof Francois Clemens<br>Faculty of Civil Engineering and Geoscience<br>Delft Technical University<br>Stevinweg 1, Postbus 5048<br>2600 GA Delft<br>The Netherlands<br>Ph: 31 15 278 5450, Fax: 31 15 278 4918<br>E-mail: F.H.L.R.Clemens@CiTG.TUDelft.nl .</td></tr>
<tr><td colspan="2">Working Group on Source Control for Stormwater Management (SOCOMA)</td></tr>
<tr><td>Chairman: Gilles Rivard<br>Aquapraxis Inc.<br>948 Donat-Belisle<br>LAVAL (Qc),<br>CANADA H7X3W5<br>Ph: 001-450-689-2967, Fax: 001-450-689-2969<br>E-mail: GRivard@aquapraxis.com</td><td>Secretary: Sylvie Barraud<br>LGCIE (Lab. of Civil and Environmental Engng)<br>INSA Lyon<br>34 Avenue des Arts<br>F-69621 Villeurbanne Cedex<br>France<br>Phone: 04 72 43 83 88 - Fax: 04 72 43 85 21<br>E-mail: sylvie.barraud@insa-lyon.fr</td></tr>
<tr><td colspan="2">Working Group on Urban Rainfall (GUR) Web Site: http://www.kuleuven.ac.be/hydr/gur</td></tr>
<tr><td>Chairman: Dr Guido Vaes<br>HydroScan<br>Tiensevest 26/4<br>B 3000 Leuven<br>BELGIUM<br>Ph.: +32-16-240501, Fax: +32-16-240509<br>E-mail: guido.vaes@hydroscan.be</td><td>Secretary: Dr Thomas Einfalt<br>Hydro & Meteo GmbH & Co. KG<br>Breite Str. 6-8<br>D-23552 Lübeck<br>GERMANY<br>Ph.: 49-451-7027333, Fax: 49-451-7027339<br>E-mail: thomas@einfalt.de</td></tr>
<tr><td colspan="2">Technology Exchange, Transfer and Training (TETTWG) - operation temporarily suspended.</td></tr>
</table>

| **Urban Drainage in Cold Climate Working Group** | |
|---|---|
| Chair: Dr Maria Viklander<br>Div. of Sanitary Engineering<br>Lulea University of Technology<br>S-971 87 Lulea<br>SWEDEN<br>Ph.: 46 920 491 634, Fax: 46 920 491 493<br>E-mail: Maria.Viklander@sb.luth.se | Secretary: Dr John J. Sansalone<br>Department of Environmental Engineering Sciences<br>110 Black Hall, University of Florida<br>Gainesville, FL 32611-6450<br>USA<br>Ph.: 001-352-846-0176, Fax: 001-352-392-3076<br>Email: jsansal@ufl.edu |
| **Water Sensitive Urban Design** | |
| Chairman: Dr Tony Wong<br>Ecological Engineering<br>PO Box 453<br>Prahran, Victoria 3181<br>Australia<br>Ph: 61 3 9533 8445; Fax: 61 3 9533 7781<br>Email: tony@ecoeng.com.au | Secretary: Prof Richard M. Ashley<br>Dept. of Civil and Structural Engineering<br>University of Sheffield<br>Sir Frederick Mappin Building, Mappin Street<br>Sheffield S1 3JD<br>UK<br>Phone: 44(0) 114 222 5766, Fax: 44(0) 0114 222 5700<br>E-mail: r.ashley@sheffield.ac.uk |

International Water Association

Alliance House 12 Caxton Street London SWIH 0QS
United Kingdom
Tel: +44 (0)20 7654 5500 · Fax: +44 (0)20 7654 5555
Email: water@iwahq.org.uk · Web: www.iwahq.org.uk
Company registered in England No. 3597005
Registered Charity (England) No. 1076690