Message from the Chairman

Last year was a very successful one for the section. The technical meeting on "Network modelling for whole-life cost management of potable and sewerage networks" was well attended. Thanks are due to Slobodan Djordjevic, University of Exeter, Neil Scarlet, IETG, Adrian Saul, University of Sheffield and Andrew McConkey, Halcrow Group Ltd. The re-launch of the Young Persons Papers Competition was also a huge success. The results are provided below and thanks are due again to the sponsors for their generous donations. The section also supported very successful meetings on Marine Renewable Energy (organised by the ICE), Flood Risk Management (organised by ICE, Wales) and the Severn Barrage (organised by ICE, Wales).

This year's AGM will be hosted by Cardiff School of Engineering at Cardiff University on 13 September 2007. In addition to the AGM, the day's event include the final of our Young Persons Papers Competition , and a half-day meeting on "Managing flooding and water quality in the urban environment", organised by Catherine Wilson (Cardiff University), and Ian Guymer (Warwick University). I hope you can find time to come along and support both of these events.

This addition of Newsflash UK includes a technical briefing on "Risk based methods" provided by Caroline McGahey of HR Wallingford Ltd. It is our intention to make the technical briefing a regular of Newsflash UK and I would welcome suggestions for future topics.

Finally a list of our current committee members is provided at the end of this edition. I am very grateful to them for their continued hard work and support. Please feel free to contact any committee member with your views on the organisation and management of the UK section. We are particularly keen to receive suggestions for meeting topics.

Garry Pender
IAHR UK Section, Chair
28May 2007

Young Persons Papers Competition 2006
Results

First place (£500)

Douglas Lau
The prediction of solute transport in surcharged manholes using CFD

Second place (£300)

Jorge Leandro
The use of multiple-linking-elements for connecting surface and sub-surface networks

Third place (£200)

Blake Ridley
Development length requirements for fully-developed laminar pipe flow of Newtonian liquids

Guanghai Gao
Refinement of an Unstructured Grid Finite Volume Model for Predicting Coastal and Estuarine Hydrodynamic Processes

Highly commended

Mahmud Ahsan
Flow over and within a porous bed computed using a macroscopic formulation of a low-Reynolds-number k-e turbulence model

Claire Janion
Moore Wastewater Treatment Works: Inlet Works Storage Capacity Utilization

James Shucksmith
Importance of Advective Zone in Longitudinal Mixing Experiments

UK Section AGM
Thursday 13th September 2007

Cardiff School of Engineering
Cardiff University

The UK Section of the IAHR is organising a half-day meeting on "Managing Flooding and Water Quality in the Urban Environment" which will commence after the Water Specialists Meeting at Cardiff University. A programme for the technical session is provided below and will be preceded by the final of the UK Section's young persons papers competition. If you wish to register for the meeting please follow the link below.

12.30 pm	Presentations from finalists in UK Section young persons papers competition.
1.00 pm	Lunch
1.50 pm	Presentation of prizes
2:00 pm	IAHR UK Section AGM
2.10 pm	Technical meeting

Managing Flooding and Water Quality in the Urban Environment

2.10 pm	Elliot Gill, Halcrow Integrated Urban Drainage – Pilot Studies to Develop Good Practice Guidelines
2.45 pm	Prof Adrian Saul, University of Sheffield Urban Flood Modelling: Latest Aspects of the Flood-Risk Management Research Consortium
3.25 pm	Dr Barry Hankin, JBA Consulting Urban Flood Modelling: a Hierarchy of modelling and data collection methodologies
4:00 pm	Paul Dempsey and Ali Cotton, WRc Dynamic modelling of water quality in the River Lee, East London
4.35 pm	Close

Attendance at the half-day technical meeting is free to students, £40 for IAHR members and £50 for non-members. If you wish to attend the above event please register on line now at www.iahr.net/UKSection/. For further details of the Water Specialists Meeting, to be held from 11th-13th September please contact Chris Lee, LeeC3@cf.ac.uk.

Papers competition

The IAHR British Section is pleased to announce its Young Persons Paper Competition 2007. The competition affords young engineers and scientists the opportunity to share knowledge and experience within the hydraulics research community.

Authors are invited to submit a short paper (max 15 pages) describing a piece of research or design they have undertaken that required a novel application of hydraulic principles. The paper may have been written for another purpose, such as, a project report or conference paper. The paper should include a description of the problem solved; its context within engineering and scientific endeavour; the hydraulic principles applied; and, the element of novelty in their application.

The competition is open to scientists and engineers working in any sector: academic, commercial or government. Submissions will be split into two categories, research and design innovation. All candidates must be less than 30. **Deadline for submission is 3rd August 2006.**

The prizes will be awarded to the papers demonstrating progress in hydraulic research and novelty in the application of hydraulic principles to design. The judging panel will be nominated by the IAHR UK Section Committee.

Based on the written submission the top two entries in each category will be required to give a brief presentation of their paper at the UK Section AGM at the University of Cardiff on the 13 September 2007. The oral presentations will determine first and second place in each category.

To enter please submit your paper to Caroline McGahey at c.mcgahey@hrwallingford.co.uk.

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Technical briefing
Risk-based methods and their application in practice

Caroline McGahey
Floods Group
HR Wallingford

The paradigm shift from flood defence management to flood risk management over the past two decades has led to some fundamental changes in how we go about managing our river, estuary and coastal floodplains. These range from changes in the basic thinking, for example, the methods are proactive (i.e. pre-flood planning and analysis) rather than reactive (i.e. action following a flood event) though to the detail of the risk-based methods which are employed to aid the planning and decision making process. This, coupled with a more holistic approach to flood management in keeping with Defra's Making Space for Water (MSfW, http://www.defra.gov.uk/environ/fcd/policy/strategy.htm), has led to the development and use of many risk-based decision support tools. MSfW supports solutions which satisfy a wider range of objectives such as hydro-morphological, ecological and social needs. Tools are being developed to enable decisions makers to explore policies, set targets, question the status quo and determine the merits of innovative ideas. They facilitate the development and exploration of comprehensive management strategies over the short, medium and long-term as well as providing the ability to assess the future impact of present day decisions.

More recently, management focus has been on integrated approaches, which consider a combination of structural (e.g. defence raising) and non-structural (e.g. flood evacuation planning) measures and instruments. This more integrated approach to finding portfolios of solutions further stimulates the need for decision support systems and tools, to aid assessment of a far wider range of possible options.

The move to more risk-based methods has meant that there is an elemental change in the type of questions being asked of decision support tools; including:

- Which option gives the best risk reduction?
- Which options gives the best benefit cost ratio?
- Which option is preferred from a multi-criteria analysis?
- Which asset contributes most to the risk?
- Which uncertainties contribute most to the variance in the estimate of risk?
- Which portfolios of options are most robust to possible future change?

Today, risk-based tools are being developed to address these emerging questions. For example, through collaboration with the Environment Agency (EA), the European Commission and other funders, HR Wallingford have led the development of the RASP (Risk Assessment for Strategic Planning, http://www.rasp-project.net/) suite of methods and associated tools. The RASP methods take account all elements of the source-pathway-receptor model; including the behaviour of defence systems (overflow, overtopping, breaching). The recently completed project, 'Scoping the development and implementation of flood and coastal RASP models' has identified a range of tools which the RASP approach will be incorporated into, including national (National Flood Risk Assessment tool - NaFRA), catchment and shoreline (Modelling and Decision Support Framework 2 - MDSF2) and local (Performance-based Asset Management Systems - PAMS, http://www.pams-project.net/) tools. These methods and tools are starting to be used in anger across the UK (for example an initial version of RASP was used to underpin the Foresight analysis and an evolved version is being used in the Thames Estuary 2100 Project) and China (Tiahu Basin project).

Further afield, the European Commission has commissioned a study under the 6th Framework Integrated Project FLOODsite (http://www.floodsite.net/) to develop conceptual frameworks of integration for flood evacuation planning

and long-term flood risk management, which are to be supported by prototype decision support tools. These tools will incorporate risk-based methods and seek to develop more robust uncertainty analyses and robustness measures for comparing the performance of options through time.

The MSfW and the associated need for integrated urban drainage plans has further highlighted the need for structured risk based methods that enable all sources of flooding and all possible responses (above and below ground infrastructure) to be considered in the context of a coherent risk based framework. Through projects such as the SAM-title project (http://www.dti-sam.co.uk/) lead by HR Wallingford and activities within FRMRC (being lead by the Pennie Water Group) new risk-based procedures and tools supporting Integrated Urban Drainage Design and Management are being developed.

The next five to ten years will see a number of risk-based decision support tools emerging for use by practitioners, which seek to address a wider range of questions than more traditional tools, supporting the move to flood risk management.

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