



Specialist
Conferences

6th IWA Specialist Conference
on Wastewater Reclamation
and Reuse for Sustainability

Guiding the growth of water reuse

Programme

ORGANISED BY



Kring-Lopend Water
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PRINCIPAL EVENT SPONSORS



Solid Liquid Separation



SPECIALIST CONFERENCES



October 9-12, 2007
Flanders Congress and Concert Centre
Antwerp, Belgium

www.wrrs2007.org

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Landscape application at Sydney Olympic Park
© Sydney Olympic Park Authority. Courtesy of Sydney Olympic Park Authority

PREFACE

Guiding the growth of water reuse

Water reuse is becoming an essential component in increasing the reliability of the water supply, in terms of quality and quantity. It also helps comply with tougher environmental standards. Today, the framework of integrated water management offers unique opportunities for water reclamation and reuse to be implemented on a larger scale as a sustainable practice.

This 6th IWA Specialist Conference on Wastewater Reclamation and Reuse for Sustainability provides an excellent platform to exchange experiences in water reuse from dry and wet climate areas, from industrialised and rural areas, from high and low income countries. Issues at the centre of debate are risk management, financing, water quality, use of high tech versus low tech, water reclamation in industry, sustainable irrigation practices using reclaimed water and water reclamation in urban water supply.

The conference covers more than 20 water reuse related themes. They are grouped into four main tracks (science, policy, practice and industry), organised in 35 presentation sessions, 3 poster sessions and 5 workshops.

We hope that you not only value the conference programme, but also enjoy our beautiful city.

Prof. Dr. ir. Boudewijn Van De Steene
Conference chairman



ACKNOWLEDGEMENTS

The Organising Committee of the 6th IWA Specialist Conference on Wastewater Reclamation and Reuse for Sustainability would like to express its gratitude to the many individuals and organisations that have participated in the preparation and realisation of this event. Without their enthusiasm and engagement, this conference would not have been possible. In addition to the members of the Conference committees, the presenters, chairs and all participants, we would also like to thank the technical exhibitors, our sponsors and the city of Antwerp for their contribution to the event. We deeply appreciate the Belgian Development Cooperation for providing financial support to a selection of delegates from economically developing and partner countries.

ABOUT THE ORGANISERS

IWA, a global network for water professionals

The International Water Association is a global network of water professionals, spanning the continuum between research and practice and covering all facets of the water cycle. Through IWA members collaborate to promote the development and implementation of innovative and effective approaches to water management.

The strength of IWA lies in the professional and geographic diversity of its membership - a global mosaic of member communities - including academic researchers and research centres, utilities, consultants, regulators, industrial water users and water equipment manufacturers.

IWA members from each of these communities represent the leading edge in their fields of expertise; together they are building new frontiers in the research and implementation of water and wastewater treatment technologies, within the framework of the total water cycle.

Each year IWA organises and sponsors specialised conferences and seminars on a wide variety of topics in water management in locations worldwide. The specialist conference on water reuse has become a biennial tradition since 1991. The IWA Specialist Group on Water Reuse, with more than 1200 members, is the largest within IWA, reflecting the increasing global interest for water reuse.

Multidisciplinary conference organisation

The 6th specialist conference on Wastewater Reclamation and Reuse for Sustainability is organised under the auspices of IWA by **Aquafin**, the Flemish wastewater treatment company, **Reclaim Water**, a research project supported by the European Commission and drinking water company **IWA**, which operates what nowadays is considered the most advanced technically viable solution for artificial aquifer recharge with reclaimed municipal wastewater.



ABOUT AQUAFIN

In 1991 the European Urban Wastewater Directive forced the member states to collect and treat domestic wastewater by the end of 2006. The Flemish Region established Aquafin NV and put the company in charge of Investment Programmes to execute the supra-municipal part of the task at an accelerated pace. The other directive, the European Water Framework Directive, aims at a good quality of water in all natural waterways. The Optimisation Programmes Aquafin is put in charge of by the Region contain a large number of projects for the separation of rainwater and wastewater and the reduction of overflows of untreated wastewater in ditches and rivers. In addition, Aquafin also offers its services for the development and maintenance of the municipal sewage and wastewater treatment system.



Know-how and science

Flanders counts about 6 million inhabitants and is one of the most water stressed regions of Europe. Aquafin's experience on water reclamation and reuse schemes covers the complete project cycle, from feasibility studies, to detailed engineering and operation and maintenance practices. Ten water reuse projects of municipal wastewater treatment plants are already operational, their size ranging from 70,000 m³/year to 11,5 million m³/year, including beneficial uses such as artificial aquifer recharge, to nature enhancement or to industrial reuse. Several others are being prospected or in the planning phase.

Infrastructure and Environment

The infrastructure for water treatment is being planned in an integrated manner. Aquafin takes into account ecological, social, hydrodynamic and economic elements in the studies. All these factors play a role in the final selection of a treatment scenario (integral, small-scale or individual).

At the end of 2006, Aquafin was in charge of the operation of 210 wastewater treatment plants, 905 pumping stations and 4,053 km of pipes. Aquafin treats biologically more than 800 million m³ wastewater a year from more than 4 million people.

For more information: www.aquafin.be



ABOUT IWVA

IWVA is responsible for production and distribution of drinking-water within 6 communities in the western part of the Flemish coast of Belgium near the French border. It is also responsible for the collection of wastewater in this area. For many years water has been drawn from a sand dune aquifer to supply drinking-water. Due to increased demand it was realized that dune abstraction alone was unsustainable and a project for groundwater recharge was developed.

Recharge water

IWVA chose to treat wastewater effluent from the Wulpen WWTP. Due to the sensitive environmental nature of the dune area to be recharged, the quality of the recharge water is subject to stringent standards. As wastewater effluent is high in both salt and nutrient content, reverse-osmosis (RO) was chosen as the final treatment step. As RO requires a high-quality influent the wastewater effluent is pre-treated using ultrafiltration (UF) membranes.

The 'Torreele' site, where secondary wastewater effluent has been reclaimed since 2002, can produce 2,5 million m³/year. The system established enabled the IWVA to reduce the natural groundwater extraction resulting in a sustainable groundwater supply. Currently 40% of the drinking-water demand in the IWVA region is supplied using groundwater recharge.

More information: www.iwva.be (in Dutch)

RECLAIM WATER

Reclaim Water is a research project supported by the European Commission under the Sixth Framework Programme. The project carries the title "Water reclamation technologies for safe artificial groundwater recharge".

Reclaim Water will provide effective technologies to monitor and mitigate emerging risks posed by chemical contaminants and pathogens in reclaimed wastewater streams used for groundwater recharge.

The project consortium counts 16 members from 11 countries (Belgium, China, Germany, France, Israel, Italy, Slovenia, Spain, Switzerland, The Netherlands, United Kingdom).

The European Commission is acknowledged for co-funding the Reclaim Water Project under contract number 018309 in the Global Change and Eco-system sub-priority of the 6th Framework Programme.

More information: www.reclaim-water.org



GENERAL INFORMATION

Dates & location

October 9 – 12, 2007

FCCC (Flanders Congress & Concert Centre)
Koningin Astridplein 26
B-2018 Antwerpen

Conference secretariat

dr. ir. Bart De heyder
ms. Eev Breugelmans
Aquafin NV
Dijkstraat 8
B-2630 Aartselaar
Tel.: + 32 3 450 49 72
Fax: + 32 3 450 44 44
E-mail: info@wrrs2007.org

Registration

Your conference package will be available onsite at the registration desk. Name badges must be worn at all times in the Congress Centre.

Registration desk opening hours:

Monday	October 8	17:00 - 20:00
Tuesday	October 9	8:00 - 12:30

Cloakroom

Coats can be stored safely in an attended cloakroom.

Lunches

Lunches and coffee are included in the conference fee.
They are served in the Looszaal.

Speakers' preview room

Opening hours will be as follows:

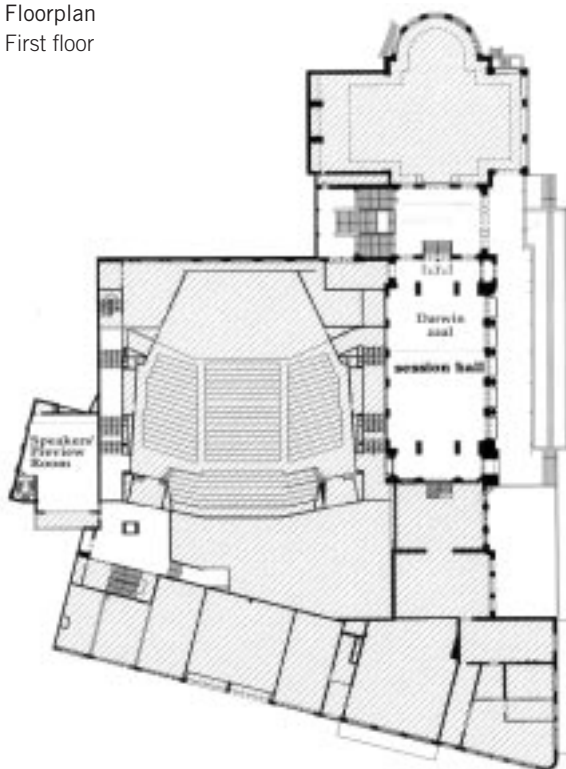
Tuesday	October 9	8:00 - 18:00
Wednesday	October 10	8:00 - 18:00
Thursday	October 11	8:00 - 18:00

Wireless internet access is available through the Swisscom network. Access can be paid for easily online via a secure credit card facility.

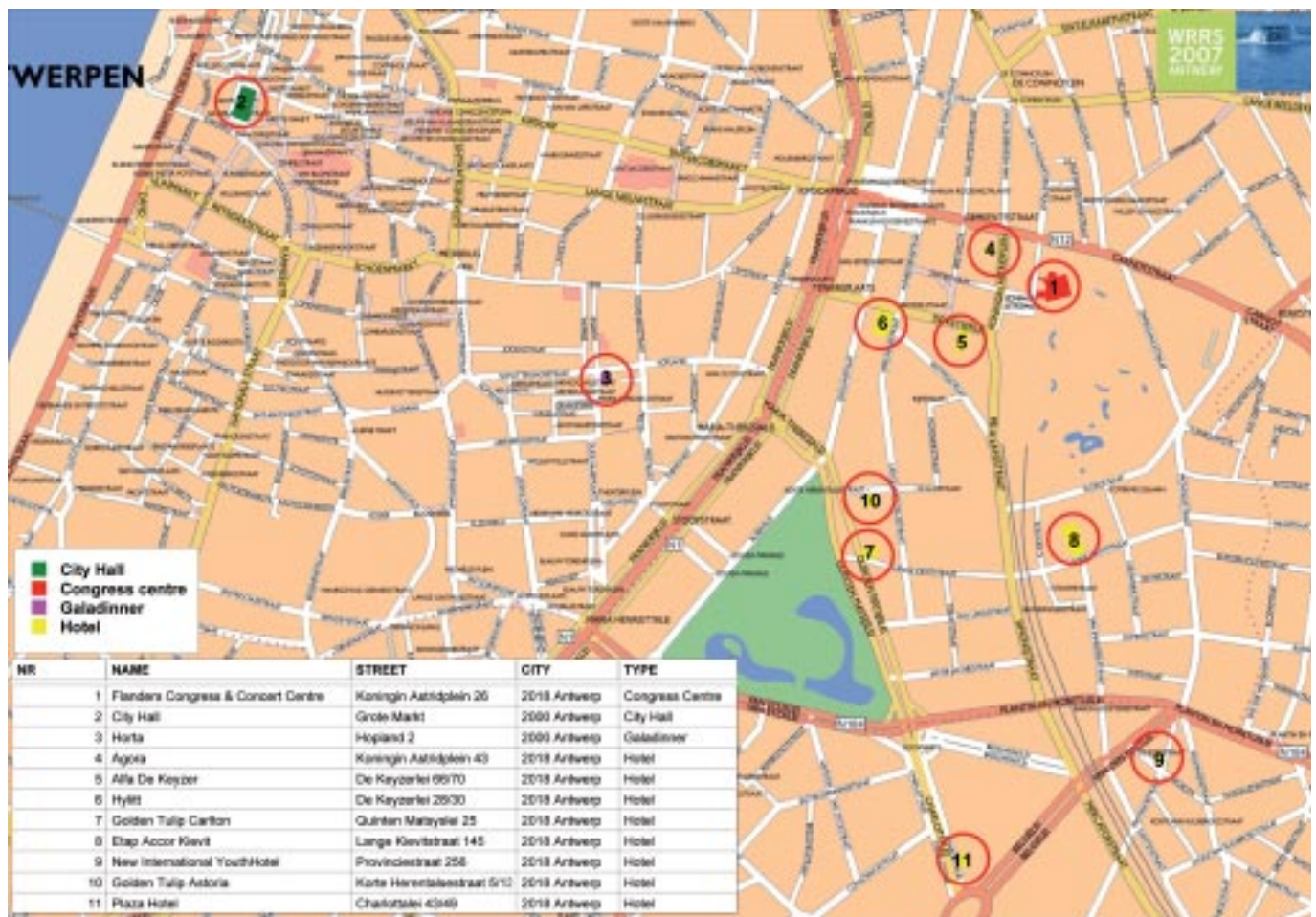
Floorplan
Ground floor



Floorplan
First floor



Antwerp



■ Transportation

Car Park

There is a car park right next to the conference venue

Q-Park

Astridplein 27

2018 Antwerp

Tel +32 (0)3 232 20 76

Parking costs €2/h and max €16/day

Antwerp Central station

Located at walking distance from the conference venue.

For connections to and from Antwerp Central Station please check: www.nmbs.be

Bus - tram

There are two major bus terminal stations: Centraal Station and Rooseveltplaats.

Contact: Public Transport 'De Lijn'

Grote Hondstraat 58

2018 Antwerp

Phone: +32 (0)3 218 14 11

Fax: +32 (0)3 218 15 00

E-mail: dienstregelingen.ant@delijn.be

Fare:

Nice knowing is that a ticket is at least 20% cheaper in advance sale.

A listing of the most common fares (price in advance sale/price when obtaining ticket from driver):

Individual ticket: €1.20/€1.50, 60 minutes valid

Ticket valid for 24 hours: €5/€6, 24 hours valid

10-ride card: €8/€10, 10 x 60 minutes valid

Points for advance sale: Newspaper shops, supermarkets, ticketdispensing machines at the stops, Tourism Antwerp (only ticket valid for 24 hours or 10-ride card) ...

Taxis

Taxi tariffs are imposed and supervised by the City Council of Antwerp. All elements contributing to the total price are displayed by the taximeter. The meter starts running from the pick up, to the clients' final destination.

Tariff B (VAT included)	Starting fee €2.75 Fee per kilometre €1.40 Waiting fee per hour €25 Night time surplus (between 10pm and 6am) €2.00
Tariff A (VAT included)	For distances more than 100km (and with end point in Antwerp city) €0.70
Tariff C (VAT included)	Airport transport (Antwerp-Brussels airport or Brussels Airport-Antwerp) and ordered in advance (included 50 km and 15 minutes wait) €59

■ Opening hours

Banks: generally 9:00 - 16:00, closed in weekends
Shops: 10:00 - 18:00, closed on sundays

■ Prices

All prices in Belgium (in stores restaurants etc) are inclusive of VAT and service charges. Tipping is not required yet not uncommon.

■ Antwerp Tourist office

Grote Markt 13
2000 Antwerp
Phone +32 (0)3 232 01 03
Fax +32 (0)3 231 19 37
toerisme@stad.antwerpen.be
www.antwerpen.be
Central station
level 0, close to stairways
Koningin Astridplein
2018 Antwerp

Open: Monday-Saturday 9:00 - 17:45
Sunday and bank holidays 9:00 - 16:45
(not reachable by phone)

■ Electricity

Electricity in Belgium is according the EU standard, 230 V with electric power frequency of 50 Hz. In Belgium the Type E plug is used: round pin plug and receptacle with male grounding pin.

SOCIAL PROGRAMME

For conference delegates

Monday 8th October

17:00 - 20:00 Ice Breaker, FCCC

Tuesday 9th October

19:00 Reception, Town hall, Grote Markt 1

Wednesday 10th October

20:00 Gala Dinner, Grand Café Horta, Hopland 2

Thursday October 11th, 2007

16:00 Closing ceremony, FCCC
16.35 Royal ballet of Flanders, FCCC
17:15 Reception, FCCC

For accompanying persons

Monday October 8th, 2007

17:00 Ice Breaker

Tuesday October 9th, 2007

14:15 - 17:15 Stylish Antwerp (Meeting with guide in front of FCCC or in case of bad weather inside the lobby of FCCC at 14:00)

Wednesday October 10th, 2007

20:00 Gala Dinner, Grand Café Horta, Hopland 2

Thursday October 11th, 2007

16:00 Closing ceremony, FCCC
16.35 Royal Ballet of Flanders, FCCC
17:15 Reception, FCCC

Friday October 12th, 2007

9:00 - 16:00 Technical visits

For tariffs look at the conference website.



Gala Dinner at Grand café Horta, Hopland 2

Conference participants and accompanying persons are kindly invited to the optional gala dinner. This event is scheduled for Wednesday October 10th at 20h, in the unique Grand Café Horta in the historic centre of Antwerp. The building is a homage to the famous Art Nouveau architect Victor Horta, who was born in 1861 in Ghent (Belgium). The iron frame in the Art Nouveau hall, in which the gala dinner takes place, is a remnant of his Volkshuis in Brussels, which was dismantled in 1965.

Sponsored by: AWW, Stibbe, Talboom



Royal Ballet of Flanders

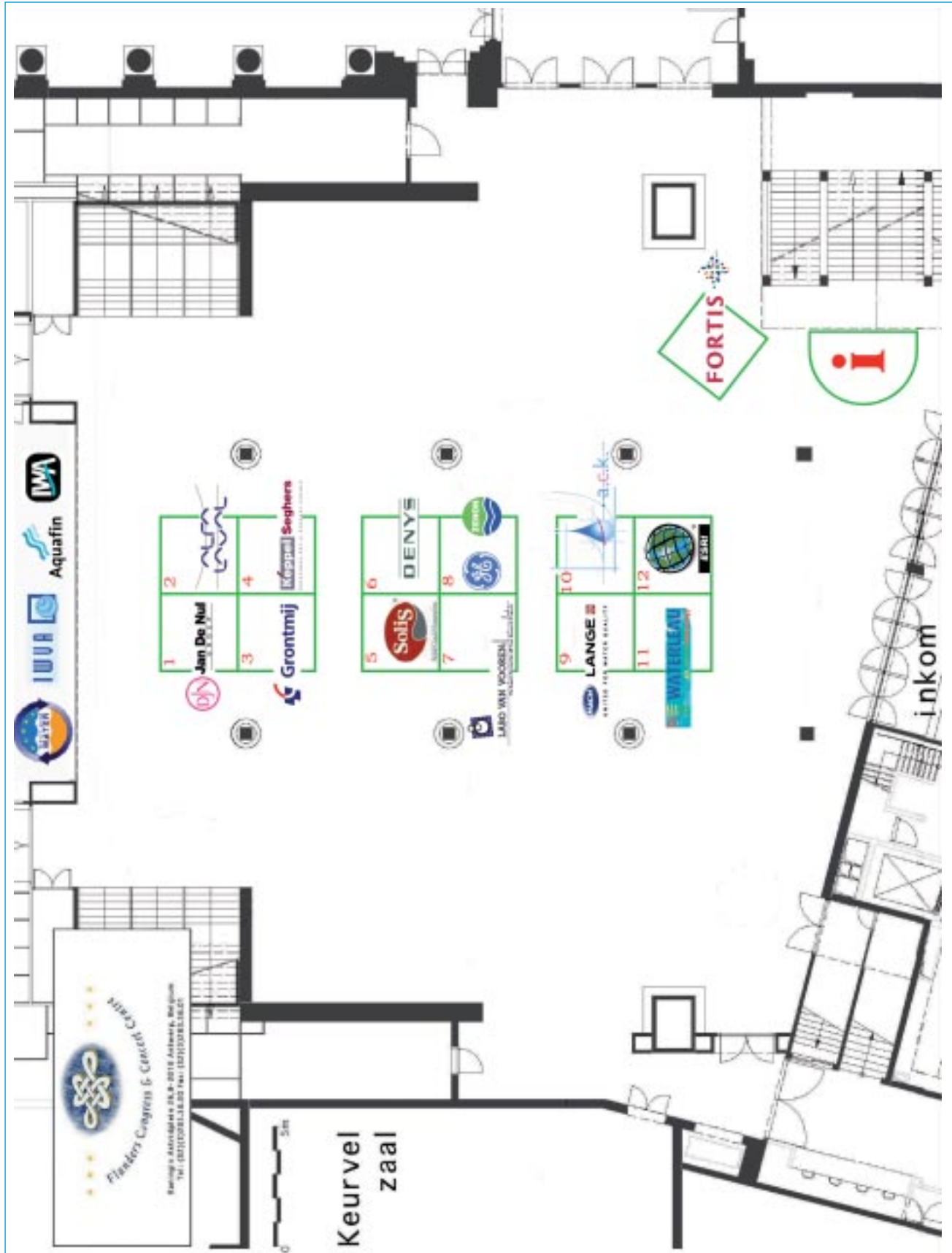
In the Middle somewhat Elevated is the first ballet by William Forsythe to be performed by the Flanders Ballet. Originally created for the Paris Opera Ballet, it is a theme and variation in the strictest sense. Exploiting the vestiges of academic virtuosity that still signify "the Classical", it extends and accelerates the traditional figures of ballet. By shifting the alignment and emphasis of essentially vertical transitions, the affected enchainements receive an unexpected force and drive that makes them appear foreign to their own origins. (William Forsythe)

Supported by: Besix Sanotec and VMW



EXHIBITORS

The exhibit area will be open during the icebreaker and conference days between 08.00 am and 06.00 pm.



PROGRAMME OVERVIEW

Monday 17:00 - 20:00 Icebreaker, FCCC, sponsored by Electrabel

DAY 1 - OCTOBER 9TH

OPENING CEREMONY

09:00	His Royal Highness Prince Laurent of Belgium, chairman of the IRGT - KINT			
09:10	Conference Chairman Prof. B. Van De Steene (Belgium)			
09:20	IWA Water Reuse Specialist Group Chairman Prof. I. S. Kim (South Korea)			
09:30	EUREAU-board president D. Villessot (France)			
09:40	Minister President of the Flemish Region K. Peeters (Belgium)			
09:50 - 10:30	Keynote plenary lecture by Prof. T. Asano (USA)			
11:00 - 12:30	Emerging pollutants <i>Chair: T. Melin (Germany)</i>	Urban applications <i>Chair: L. Sala (Spain)</i>	Industrial applications I <i>Chair: T. Asano (USA)</i>	Policy Framework <i>Chair: A. Angelakis (Greece)</i>
14:00 - 15:55	Health Risks <i>Chair: I. Hespanhol (Brazil)</i>	Agricultural applications <i>Chair: B. Jiménez (Mexico)</i>	Ownership, financing & economics <i>Chair: J. Van Steen (Belgium)</i>	Workshop 1 EU – MED initiative <i>Chairs: A. Angelakis (Greece) & B. Durham (UK)</i>
15:55 - 16:25	Poster presentation session 1: Policy			
16:25 - 18:00	Membranes <i>Chair: R. Messalem (Israel)</i>	Integrated water management <i>Chair: C. Thoeve (Belgium)</i>	Agronomic value <i>Chair: B. Ceballos (Brazil)</i>	Workshop 2 Emerging pollutants <i>Chairs: A. Joss (Switzerland) & T. Ternes (Germany)</i>
19:00	Reception, Town Hall			

DAY 2 - OCTOBER 10TH

09:00 - 10:50	Managed aquifer recharge <i>Chair: T. Wintgens (Germany)</i>	Revised WHO guidelines <i>Chair: H. Shuval (Israel)</i>	Industrial recycling: food industry <i>Chair: W. Verstraete (Belgium)</i>	MBR <i>Chair: I.S. Kim (South Korea)</i>
10:55 - 11:25	Poster presentation session 2: Science			
11:25 - 12:50	Pond systems <i>Chair: D. Mara (UK)</i>	Decision support systems <i>Chair: L. Benedetti (Belgium)</i>	Industrial recycling: ultrapure water <i>Chair: P. Cornel (Germany)</i>	Water quality analysis <i>Chair: M. Jekel (Germany)</i>
14:30 - 15:55	Micro - & sand filtration <i>Chair: V. Lazarova (France)</i>	Public acceptance <i>Chair: P. Jeffrey (UK)</i>	Activated Carbon <i>Chair: J. van der Graaf (the Netherlands)</i>	Workshop 3 Managed groundwater recharge <i>Chairs: T. Wintgens (Germany) & P. Dillon (Australia)</i>
16:00 - 16:30	Poster presentation session 3: Practice and industry			
16:30 - 18:05	UF/NF/RO <i>Chair: G. Oron (Israel)</i>	Greywater recycling <i>Chair: E. Friedler (Israel)</i>	Industrial recycling: cooling water make-up <i>Chair: K. Wood (USA)</i>	Workshop 4 Revised WHO guidelines <i>Chair: R. Bos (Switzerland)</i>
20:00	Gala Dinner, Grand Café Horta			

DAY 3 - OCTOBER 11TH

09:00 - 10:25	UV disinfection <i>Chair: A. Ried (Germany)</i>	Risk Management <i>Chair: J.M. Anderson (Australia)</i>	Industrial Applications II <i>Chair: B. Meesschaert (Belgium)</i>	Mediterranean perspectives <i>Chair: M. Bazza (Egypt)</i>
11:00 - 12:30	Agricultural applications II <i>Chair: R. Mujeriego (Spain)</i>	Constructed wetlands <i>Chair: F. Brissaud (France)</i>	Industrial recycling: textile <i>Chair: C. Lubello (Italy)</i>	Ozone treatment <i>Chair: G. Amy (the Netherlands)</i>
14:00 - 15:25	Rainwater harvesting <i>Chair: P. Dillon (Australia)</i>	Indirect Potable Reuse <i>Chair: W. Miller (USA)</i>	Combined oxidants <i>Chair: M. Weemaes (Belgium)</i>	Workshop 5 Industrial water recycling <i>Chair: H. De Wever (Belgium)</i>

CLOSING CEREMONY

16:00	Chairman of the Flemish Integrated Water Management Commission F. Van Sevenscoten (Belgium)
16:15	Distribution of awards
16:25	Introduction to Technical visits by CEO J. Verbauwheide (IWVA) Closing words by Conference Chairman Prof. B. Van De Steene (AquaFin)
16:35	Royal Ballet of Flanders, followed by reception at 17:15 until 19:00

DAY 4 – OCTOBER 12TH

09:00 - 16:00 **TECHNICAL VISITS**

■ SCIENCE
 ■ POLICY
 ■ PRACTICE
 ■ INDUSTRIAL RECYCLING

TUESDAY OCTOBER 9TH 2007

08:00 Coffee and registration

09:00 OPENING CEREMONY - MARMEREN ZAAL

His Royal Highness Prince Laurent of Belgium, Chairman of the IRGT - KINT

09:10 Conference Chairman Prof. B. Van De Steene (Belgium) "Guiding the growth of water reuse"

09:20 IWA Water Reuse Specialist Group Chairman Prof. I. S. Kim (South Korea) "Past, present and future water reusespecialty conference"

09:30 EUREAU-board president D. Villessot (France) "Importance and implications of water reuse for the water and wastewater utilities"

09:40 Minister President of the Flemish Region K. Peeters (Belgium)

09:50 Keynote plenary lecture by Prof. T. Asano (USA) "Milestones in municipal wastewater reuse"

10:30 Coffee break

11:00	DARWIN ZAAL EMERGING POLLUTANTS Chair intro: <i>T. Melin (Germany)</i>	MARMEREN ZAAL URBAN APPLICATIONS Chair intro: <i>L. Sala (Spain)</i>
11:05	Water reuse and sustainability in semi-arid/arid regions: are they compatible? <i>U. Zoller (Israel)</i>	Current trends in water reuse in Australia <i>M.H. Muston (Australia)</i>
11:25	Occurrence and treatment of endocrine disruptors and pharmaceuticals <i>S.A. Snyder et al. (USA)</i>	Reclaimed wastewater supply business in Tokyo and introduction of new technology <i>K. Yamada et al. (Japan)</i>
11:45	An approach to assess the potential of organic micropollutants to pass through wastewater reuse systems <i>T. Reemtsma et al. (Germany)</i>	Economic and environmental benefits of urban water reuse in tourist areas <i>V. Lazarova & V. Sturny (France)</i>
12:05	Impact of temperature on biodegradation of bulk and trace organics during soil passage in an indirect reuse system <i>S. Gruenheid et al. (Germany)</i>	Heat island mitigation using water retentive pavement sprinkled with reclaimed wastewater <i>H. Yamagata et al. (Japan)</i>
12:25	The impact of household products on biological systems for water reuse <i>G.J.A. Knops et al. (United Kingdom)</i>	Water reuse for irrigation of golf courses and landscapes in Algarve <i>A. Martins & J. Freire (Portugal)</i>
12:30	EE2 cometabolism by E2 degrading bacteria <i>B. Pauwels et al. (Belgium)</i>	
12:35	Lunch, sponsored by Remo NV	

■ SCIENCE ■ POLICY ■ PRACTICE ■ INDUSTRIAL RECYCLING

11:00	FOYER INDUSTRIAL APPLICATIONS I Chair intro: <i>T. Asano (USA)</i>	KEURVELS ZAAL POLICY FRAMEWORK Chair intro: <i>A. Angelakis (Greece)</i>
11:05	Sustainable water management at an industrial complex <i>C.K.Groot et al. (the Netherlands)</i>	The initiative of the EUWI-MED water directors and DG environment
11:25	Wastewater reuse in textile Prato district: technology, management and users satisfaction <i>R. Valeri et al. (Italy)</i>	Towards a European water recycling policy <i>R. Hochstrat et al. (Germany)</i>
11:45	The water balance as a tool for improving the industrial water management in the metallurgical industry - case study Kremikovtzi Ltd., Bulgaria <i>G. Dimova et al. (Bulgaria)</i>	Adapting to climate change with water savings and water reuse <i>J.M. Anderson (Australia)</i>
12:05	Water reuse and sustainability in a global chemical manufacturing company <i>K.N Wood et al. (USA)</i>	Sustainable urban water systems: strategic framework for municipal planning considering regional variation in geography and climate <i>J.W. Norton et al. (USA)</i>
12:25	IPPC as a driver and as a chance for water reuse, two cases <i>J.J.M. Appelman & A. Visser (the Netherlands)</i>	Water recycling and reuse in EUREAU countries: trends & challenges <i>B. Durham et al. (United Kingdom)</i>
12:30	Water reuse in industrial laundries: water saving scenarios and technological options for advanced treatment <i>H. De Wever et al. (Belgium)</i>	
12:35		

■ SCIENCE ■ POLICY ■ PRACTICE ■ INDUSTRIAL RECYCLING

14:00	DARWIN ZAAL HEALTH RISKS Chair intro: <i>I. Hespanhol (Brazil)</i>	MARMEREN ZAAL AGRICULTURAL APPLICATIONS I Chair intro: <i>B. Jiménez (Mexico)</i>
14:05	Water reuse for urban landscape irrigation: aspersion and health related regulations <i>F. Brissaud et al. (France)</i>	The reversed water chain approach: optimizing agricultural use of urban wastewater <i>J.B. van Lier & F.P. Huibers (the Netherlands)</i>
14:25	Integrating disability adjusted life-years (DALYs) as a tool for human health risk assessment <i>I. Kopac et al. (Slovenia)</i>	Water reuse and integrated water resources management in Vitoria-Gasteiz, Spain <i>J. López et al. (Spain)</i>
14:45	How to transpose the 2006 WHO guidelines into national standards <i>D.D. Mara (United Kingdom)</i>	Sustainable reclaimed water management by subsurface drip irrigation system: a case study for forage production <i>M.P. Palacios & R. Mujeriego (Spain)</i>
15:05	Exposure and risk assessment of salmonella in recycled residuals <i>C.P. Gerba et al. (USA)</i>	The first introduction of reclaimed wastewater to dryfarming field in Okinawa Island, Japan <i>T. Shigematsu et al. (Japan)</i>
15:25	Risk assessment of antibiotic resistance genes during artificial groundwater recharge using real-time quantitative PCR <i>U. Böckelmann et al. (Germany)</i>	Modelling E. Coli transport in soil columns: simulation of wastewater reuse in agriculture <i>E. Smith & A. Badawy (Egypt)</i>
15:45	Objective evaluation of required reclaimed water quality for municipal wastewater reclamation and reuse <i>R.J. Chiou (Taiwan)</i>	The use of treated wastewater for irrigated agriculture in Jordan <i>G. Carr et al. (United Kingdom)</i>
15:50	Microbial quality of chlorinated city water stored in household tanks in Byblos Lebanon <i>N.A. Chedid & F. Hashwa (Lebanon)</i>	
15:55	Coffee break POSTER SESSION 1: POLICY	
16:25	MEMBRANES Chair intro: <i>R. Messalem (Israel)</i>	INTEGRATED WATER MANAGEMENT Chair intro: <i>C. Thoeve (Belgium)</i>
16:30	Membrane technology for sustainable treated wastewater reuse: agricultural, environmental and hydrological considerations <i>G. Oron et al. (Israel)</i>	Advanced treated wastewater as an important resource for supporting and improving the water situation in the region South of Berlin <i>B. Heinzmann (Germany)</i>
16:50	Quality and cost analysis of different membrane technologies (microfiltration and ultrafiltration), UV radiation and ozonization applied as tertiary treatment of urban wastewater <i>M. Gómez et al. (Spain)</i>	Microbiological water quality improvement from reclaimed water discharges into Ridaura River (Costa Brava, Girona, Spain) <i>A. Costan et al. (Spain)</i>
17:10	Problems of operation and main reasons for failure of membranes in tertiary treatment systems <i>P. Rougé & V. Lazarova (France)</i>	The planning of greywater management in new housing developments through systems dynamics modelling <i>L.G. Mendoza-Espinosa et al. (USA)</i>
17:30	The water reclamation and reuse project of El Prat de Llobregat, Barcelona, Spain <i>J. Compte et al. (Spain)</i>	Cross sectoral and scale-up impacts of greywater recycling technologies on catchment hydrological flows <i>N. Bertrand et al. (United Kingdom)</i>
17:50	Maximising wastewater reuse in Abu Dhabi <i>R.L. Duquez et al. (United Arab Emirates)</i>	An assessment of policies and institutional frameworks impacting on wastewater management in Zimbabwe <i>J. Rurinda & I. Nyagumbo (Zimbabwe)</i>
17:55		
18:00	END	
19:00	Reception at Town Hall	

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14:00	FOYER OWNERSHIP, FINANCING & ECONOMICS Chair intro: <i>J. Van Steen (Belgium)</i>	KEURVELS ZAAL WORKSHOP 1 EU - MED initiative <i>A. Angelakis (Greece) & B. Durham (United Kingdom)</i>
14:05	Perspectives and impediments of HeBei Provincial WasteWater Reuse Programmes <i>L. Wu et al. (China)</i>	14.00-14.10 Introduction and explanation of objectives of the workshop: <i>A. Angelakis (Greece)</i>
14:25	Viability of increasing the tariff of freshwater for irrigation as a tool to stimulate wastewater reuse in the MENA region <i>M. Abu-Madi et al. (Palestinian Territory)</i>	14.10-14.30 Development of EU guidelines. EUWI-MED working group: <i>B. Durham (United Kingdom)</i>
14:45	Delivery of wastewater projects through alliance contracting <i>J.C. Ricketts & M.J. Cave (Australia)</i>	14.30-14.50 The paradox of water scarcity and ill-reuse of wastewater in the Near East Region: <i>M. Bazza (Egypt)</i>
15:05	The use of data envelopment analysis to simulate the effect of water reuse on efficiency measures for small-scale vegetable growers in North West Province South Africa <i>S. Speelman et al. (Belgium)</i>	14.50-15.10 Good practice examples in Southern Europe: <i>L. Sala et al. (Spain)</i>
15:25	On the development of a meta-analytical framework for the economic valuation of constructed wetlands <i>A. Ghermandi et al. (Italy)</i>	15.10-15.30 Good practice examples in Northern Europe: <i>B. Durham et al. (United Kingdom)</i>
15:45	Making recycled water projects economically feasible – could non-market benefits be of value? <i>A.C. Hurlimann (Australia)</i>	15.30-15.50 Discussion and debate
15:50	Ulu Pandan NEWater Factory - Singapore's experience in closing the water loop <i>C. Dotremont & E. Mun (Belgium)</i>	15.50-16.00 Conclusions: <i>A. Angelakis (Greece), B. Durham (United Kingdom)</i>

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16:25	AGRONOMIC VALUE Chair intro: <i>B.S.O. Ceballos (Brazil)</i>	WORKSHOP 2 EMERGING POLLUTANTS <i>A. Joss (Switzerland) & T. Ternes (Germany)</i>
16:30	Treated sewage effluent as a crop macro nutrient source in irrigated agriculture, the Jordan case <i>S. Boom et al. (the Netherlands)</i>	
16:50	The effect of reclaimed wastewater on the quality and growth of grapevines <i>L.G. Mendoza-Espinosa et al. (USA)</i>	
17:10	Wastewater reuse for sustainable nursery plant production <i>F. Ferrini et al. (Italy)</i>	
17:30	Growth of cotton of brown fiber irrigated with urban treated wastewater <i>W.A.A. Alves et al. (Brazil)</i>	
17:50	Swedish experiences from wastewater irrigation on large-scale Short-Rotation Willow Coppice plantations <i>P. Aronsson & I. Dimitriou (Sweden)</i>	
17:55	Alleviation of salinity stress imposed on broad beans irrigated with reclaimed wastewater mixed with brackish water through exogenous application of jasmonic acid <i>N. Mansour et al. (Palestinian Territories)</i>	

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WEDNESDAY OCTOBER 10TH 2007

08:00	Coffee	
09:00	DARWIN ZAAL MANAGED AQUIFER RECHARGE Chair intro: <i>T. Wintgens (Germany)</i>	MARMEREN ZAAL REVISED WHO GUIDELINES Chair intro: <i>H. Shuval (Israel)</i>
09:05	Framework for assessment of performance of soil aquifer treatment systems <i>S.K. Sharma et al. (the Netherlands)</i>	Evaluating the quantitative microbial risk analysis (QMRA) methodology of the WHO 2006 health guidelines for wastewater reuse in agriculture <i>H. Shuval (Israel)</i>
09:25	Spatial and temporal changes in sulphate-reducing groundwater bacterial community structure in response to managed aquifer recharge <i>D.A. Reed et al. (Australia)</i>	Wastewater treatment requirements for wastewater use in agriculture: implications of the 2006 WHO guidelines <i>D.D. Mara (United Kingdom)</i>
09:45	Preliminary results of managed aquifer recharge with reclaimed wastewater and stormwater in six operational case studies from around the world <i>K. Le Corre et al. (United Kingdom)</i>	Application and adaptation of the WHO guidelines to low-income communities in West Africa and in the Middle East <i>R. Bos & A. Thomas (Switzerland)</i>
10:05	Fate and transport of faecal contamination microbial indicators and pathogens in the artificially recharged fractured aquifer of the Salento, Italy <i>R. La Mantia et al. (Italy)</i>	Reducing health risks from wastewater use in urban and peri-urban Saharan Africa - the role of 2006 WHO Guidelines <i>P. Drechsel et al. (Ghana)</i>
10:25	Alternative SAT treatment of secondary effluents using a combination of UF and short term SAT for increasing infiltration rates at the Shafdan site (Israel) <i>I. Gaus et al. (France)</i>	Wastewater irrigation of salad crops: further evidence for the evaluation of the WHO guidelines <i>R.K.X. Bastos et al. (Brazil)</i>
10:45	Summary of the reclaimed water quality produced at the Blanes Reclamation Plant (Costa Brava, Girona, Spain) <i>G. Borrás et al. (Spain)</i>	
10:50		
10:55	Coffee break POSTER SESSION 2: SCIENCE	
11:25	POND SYSTEMS Chair intro: <i>D. Mara (United Kingdom)</i>	DECISION SUPPORT SYSTEMS Chair intro: <i>L. Benedetti (Belgium)</i>
11:30	Using on-farm sedimentation ponds to reduce health risks in wastewater irrigated urban vegetable farming in Ghana <i>B. Keraita et al. (Ghana)</i>	Integrating sustainable water reuse into our cities: developing frameworks and tools for the optimal scales <i>P. Holt et al. (Australia)</i>
11:50	Enhanced pathogen removal in on-site biofiltration systems over organic filtration materials <i>M.A. Garzon-Zuñiga et al. (Mexico)</i>	MCDM approach for the evaluation of different wastewater treatment and reuse systems <i>G.L. Cirelli & N. Pappalardo (Italy)</i>
12:10	Wastewater modification processes assessment in a stabilization reservoir <i>G. Mancini et al. (Italy)</i>	Decision support tool for integrating health risks in wastewater management <i>J.R. Ottoson (Sweden)</i>
12:30	Upgrading of pond effluents for reuse <i>D. Kaya et al. (Turkey)</i>	Sustainable wastewater reuse: development and application of a holistic approach <i>P. Roccato et al. (Italy)</i>
12:50	A case study in the search for sustainable water reuse <i>T. Chan & F. Rogalla (United Kingdom)</i>	Understanding water reuse in India through both quantitative and qualitative methods <i>G. Zornes et al. (USA)</i>

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09:00	FOYER INDUSTRIAL RECYCLING: FOOD INDUSTRY Chair intro: <i>W. Verstraete (Belgium)</i>	KEURVELS ZAAL MBR Chair intro: <i>I. S. Kim (South-Korea)</i>
09:05	Reuse of water in food industry: AquaCCP <i>R.T.G. Hoeijmakers et al. (Belgium)</i>	Immersed membrane bioreactor treatment for domestic wastewater reclamation: optimal draft tube selection <i>A. Bick et al. (Israel)</i>
09:25	Ozone clean in place in food industries - ozone as an alternative sanitising agent for cleaning operations in food industry <i>M.A. Prieto Arranz & G. Schories (Germany)</i>	Membrane bioreactor for water reuse in Singapore <i>G.H. Tao et al. (Singapore)</i>
09:45	Thermophilic digestion of potato residues followed by membrane separation technology and optimised combined heat and power generation <i>F. Moyaers et al. (Belgium)</i>	Potential of innovative DUAL CAS-MBR configurations in two very diverse market situations: Bulgaria and Cyprus <i>D. Bixio et al. (Belgium)</i>
10:05	Water reuse in the potato processing industry – a case study <i>L. Verdickt et al. (Belgium)</i>	Membrane bioreactors for decentralized wastewater treatment and reuse <i>M. Roediger et al. (Germany)</i>
10:25	Membrane bioreactors as core technology for water loop closure in a maltery <i>H. De Wever et al. (Belgium)</i>	Community scale non-potable reuse in London using an MBR <i>R. Birks et al. (United Kingdom)</i>
10:45	Ureolytic phosphate precipitation from wastewater <i>B. Meesschaert et al. (Belgium)</i>	European and worldwide water reuse applications with Kubota submerged membrane bioreactor <i>M. Kanai et al. (United Kingdom)</i>
10:50	BOOMERANG WATER®: Biological effluent reuse in the food & beverage industry - 2 Waterleau case studies <i>J. De Lathouwer et al. (Belgium)</i>	Wastewater treatment for water reuse – Membrane bioreactors (MBR) <i>K. Vossenkaul et al. (Germany)</i>

10:55

11:25	INDUSTRIAL RECYCLING: ULTRAPURE WATER Chair intro: <i>P. Cornel (Germany)</i>	WATER QUALITY ANALYSIS Chair intro: <i>M. Jekel (Germany)</i>
11:30	Use of submerged UF membranes for wastewater re-use in industry <i>T. Buer et al. (Germany)</i>	Wastewater effluent organic matter (EfOM) versus natural organic matter (NOM): understanding similarities and differences that affect potable reuse <i>S.N. Nam & G. Amy (the Netherlands)</i>
11:50	Reuse of low concentrated electronic wastewater using selected microbe immobilized cell system <i>S.J. Lee et al. (South Korea)</i>	Bioassays and biomarkers for ecotoxicological assessment of reclaimed municipal wastewater <i>C.A. Papadimitriou et al. (Greece)</i>
12:10	Treatment of petroleum production wastewater for reuse in the secondary oil recovery <i>P. M. Nacheva et al. (Mexico)</i>	Application of heat shock protein assay and proteome assay to water from wastewater treatment plant <i>N. Funamizu et al. (Japan)</i>
12:30	Wastewater reclamation experience for cathode-ray tube manufacturing in Korea <i>G.T. Seo et al. (South Korea)</i>	Environmental isotope monitoring of artificial recharge (ASTR) with treated municipal wastewater <i>W. Kloppmann et al. (France)</i>
12:50	Reclamation of the wastewater from the industrial park using hollow-fiber and spiral-wound membranes: 50-CMD pilot testing and cost evaluation <i>C.P. Chu et al. (Taiwan)</i>	Cytotoxic and genomic effect of radiocontrast media (diatrizoate and iopromide) in reclaimed wastewater to human kidney HEK293 cells <i>X. Ren et al. (South Korea)</i>

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12:55	Lunch, sponsored by Keramo Steinzeug NV	
14:30	DARWIN ZAAL MICRO - & SAND FILTRATION Chair intro: <i>V. Lazarova (France)</i>	MARMEREN ZAAL PUBLIC ACCEPTANCE Chair intro: <i>P. Jeffrey (United Kingdom)</i>
14:35	Filtration of secondary clarifier effluent <i>N.C. Wortel et al. (the Netherlands)</i>	Public acceptance: The greatest barrier to widespread water reuse <i>W. Miller (USA)</i>
14:55	Helminth eggs removal by microscreening for water reclamation and reuse <i>S. Quinzanos et al. (Denmark)</i>	What drives communities' decisions and behaviours in the reuse of wastewater? <i>B.E. Nancarrow et al. (Australia)</i>
15:15	Disinfection of secondary effluent using slow sand filtration <i>K. Langenbach et al. (Germany)</i>	Urban versus rural – how public attitudes to recycled water differ in these contexts <i>A.C. Hurlimann (Australia)</i>
15:35	The ACTIDisk process for water reclamation: an experimental performance assessment <i>J. Sanz et al. (Spain)</i>	Stigma, emotion and fear changing mental models about reuse <i>L. Macpherson & P. Slovic (USA)</i>
15:55	The use of chemicals in the conventional tertiary treatment. Full scale experiences and a pilot scale study <i>J.A. Mendoza-Roca et al. (Spain)</i>	
16:00	Coffee break POSTER SESSION 3: PRACTICE AND INDUSTRY	
16:30	UF/NF/RO Chair intro: <i>G. Oron (Israel)</i>	GREYWATER RECYCLING Chair intro: <i>E. Friedler (Israel)</i>
16:35	Influence of biofouling on boron removal by nanofiltration and reverse osmosis membranes <i>E. Huertas et al. (Spain)</i>	Technologies for urban water recycling <i>M. Pidou et al. (United Kingdom)</i>
16:55	An integrated wastewater reuse concept combining natural reclamation techniques, membrane filtration and metal oxide adsorption <i>A. Sperlich et al. (Germany)</i>	Variation in grey wastewater quality reused for toilet flushing <i>E. Eriksson et al. (Denmark)</i>
17:15	The study on the ceramic membrane wastewater reuse system with pre-ozonation and coagulation <i>M. Noguchi et al. (Japan)</i>	Onsite wastewater reclamation and reuse in individual buildings in Japan <i>K. Kimura et al.</i>
17:35	The applicability of drinking water ultrafiltration membrane modules for the treatment of secondary effluent in the context of water reuse <i>F. Kent et al. (Canada)</i>	Grey water reuse in hotel and catering industry <i>K. Gethke et al. (Germany)</i>
17:55	Ultrafiltration membrane plant performance in direct water reclamation at the NGWRP <i>T. Theron-Beukes & E. Konig (Namibia)</i>	Submerged membranes for reclamation technology of greywater in hotels of the Canary Islands <i>L. Vera Peña et al. (Spain)</i>
18:00	Nanofiltration and ultrafiltration membrane – photocatalysis hybrid system for herbicide removal from wastewater <i>S.H. Kim et al. (Taiwan)</i>	Greywater reuse in edifications using combined anaerobic/aerobic compact treatment system <i>R.F. Gonçalves et al. (Brazil)</i>
18:05	End	
20:00	Gala dinner	

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12:55		
14:30	FOYER ACTIVATED CARBON Chair intro: <i>J. van der Graaf (the Netherlands)</i>	KEURVELS ZAAL WORKSHOP 3 MANAGED GROUNDWATER RECHARGE <i>T.Wintgens (Germany) & P.Dillon (Australia)</i>
14:35	Comparing the EfOM removal of direct NF and powdered activated carbon/NF as high quality pretreatment options for artificial groundwater recharge <i>C. Kazner et al. Germany)</i>	14:30 Introduction in the workshop, short overview on objectives and background <i>T. Wintgens (Germany)</i>
14:55	Opportunities for effluent reuse at the municipal wastewater treatment plant Maasbommel <i>F.D.G. Kiestra et al. (the Netherlands)</i>	14:35 Research on water stress mitigation funded by the European Communities in the 6th and 7th Framework Programme <i>A. Gonzalez-Gonzalez (European Commission)</i>
15:15	Advanced treatment of WWTP effluent, no use or reuse? <i>S.M. Scherrenberg et al. (the Netherlands)</i>	14:45 Global experiences with managed aquifer recharge <i>P. Dillon (Australia)</i>
15:35	The use of powdered activated carbon to reduce sludge production from the tertiary treatment of a small WWTP <i>G. Mancini et al. (Italy)</i>	15:05 Flash presentation on treatment technology, water quality and geological aspects to state open questions and stimulate discussion <i>G. Amy (the Netherlands), W. Kloppman (France), T. Ternes (Germany)</i>
15:55	Removal of copper by adsorption using granular activated carbon <i>S.L.Mudaliar & G.S. Natarajan (India)</i>	15:50 Conclusions <i>T. Wintgens (Germany)</i>
16:00		
16:30	INDUSTRIAL RECYCLING: COOLING WATER MAKE-UP Chair intro: <i>K. Wood (United States of America)</i>	WORKSHOP 4 REVISED WHO GUIDELINES <i>R. Bos (Switzerland)</i>
16:35	Integrating advanced oxidation for water reuse <i>J. Neemann et al. (United Kingdom)</i>	
16:55	Reclamation of wastewater for industrial purposes - advanced treatment of secondary effluents for the reuse as boiler and cooling make-up water <i>J. Lahnsteiner et al. (Austria)</i>	
17:15	Eco-efficiency strategy to reduce the water consumption in a Mexican petrochemical industry <i>M.A. Morales M. et al. (Mexico)</i>	
17:35	Wastewater reuse at Sasol: replacing process effluent with secondary effluent for cooling purposes <i>C.A. Moller & C.F. Schutte (South Africa)</i>	
17:55	Status and needs of municipal water reuse for industrial cooling water make-up <i>D. Bixio et al. (Belgium)</i>	
18:00	Re-use of municipal wastewater effluent for cooling water and boiler feed make-up <i>F. Vagi et al. (Canada)</i>	
18:05		
20:00		

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THURSDAY OCTOBER 11TH, 2007

08:00	Coffee	
09:00	DARWIN ZAAL UV DISINFECTION Chair intro: <i>A. Ried (Germany)</i>	MARMEREN ZAAL RISK MANAGEMENT Chair intro: <i>J.M. Anderson (Australia)</i>
09:05	Decentralized raw sewage utilisation for irrigation of green areas in arid cities <i>K.-U. Rudolph et al. (Germany)</i>	Process reliability and significance of reclaimed water quality parameters <i>R. Mujeriego & K. Peters (Spain)</i>
09:25	Combined performance of UV light and chlorine during reclaimed water disinfection <i>M. Montemayor et al. (Spain)</i>	Definition of CCP in two artificial recharge sites with reclaimed wastewater in the RECLAIM WATER project <i>M. N. Ayuso-Gabella et al. (Spain)</i>
09:45	Wastewater ponds and subsequent UV disinfection - a lean cost option for agricultural wastewater reuse <i>T. Fuhrmann & K.U. Rudolph (Germany)</i>	Reliability of operation and failure management of membrane wastewater treatment <i>V. Lazarova et al. (France)</i>
10:05	Prevention of microbial survival during UV treatment of re-used wastewater <i>B.F. Kalisvaart (the Netherlands)</i>	Water recycling in action in South Australia: a review of agricultural and municipal reuse (dual-reticulation) schemes and innovation <i>S. Rinck-Pfeiffer & R. Regel (Australia)</i>
10:25		Assessment of the reliability of an on-site MBR system for greywater treatment and the associated aesthetic and health risks <i>E. Friedler et al. (Israel)</i>
10:30	Coffee break	
11:00	AGRICULTURAL APPLICATIONS II Chair intro: <i>R. Mujeriego (Spain)</i>	CONSTRUCTED WETLANDS Chair intro: <i>F. Brissaud (France)</i>
11:05	Effects of TWW irrigation on the dissolved and soil organic carbon in Israeli soils <i>E. Jueschke et al. (Germany)</i>	Use of reclaimed water in the recreation and restoration of aquatic ecosystems: practical experience in the Costa Brava region (Girona, Spain) <i>L. Sala & S. Romero de Tejada (Spain)</i>
11:25	Water renew systems: wastewater polishing using renewable energy crops <i>A Sugiura et al. (United Kingdom)</i>	Modelling pathogen removal for the design of surface-flow constructed wetlands <i>A. Ghermandi & D. Bixio (Italy)</i>
11:45	Fertility and salinity of soil irrigated with treated wastewater in the tropical semi-arid region of Northeast Brazil <i>W.A.A. Alves et al. (Brazil)</i>	Wastewater treatment solution in rural areas <i>S. Cabras et al. (Italy)</i>
12:05	Reuse of Industrial Wastewater for the Irrigation of Ornamental Plants <i>R. Gori et al. (Italy)</i>	Constructed wetland treatment of strong sewage in arid climates <i>N. Spanakis et al. (Greece)</i>
12:25	Comparison of nitrogen dynamics in soil due to continuous and intermittent irrigation of reclaimed water: an application to Okinawa Island, Japan <i>W.K.C.N. Dayanthi et al. (Japan)</i>	A pilot experiment on greywater recycling for toilet flushing in Morocco <i>B. El Hamouri & M. Regelsberger (Morocco)</i>
12:30		
12:35	Lunch, sponsored by Denys NV	

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09:00	FOYER INDUSTRIAL APPLICATIONS II Chair intro: <i>B. Meesschaert (Belgium)</i>	KEURVELS ZAAL MEDITERRANEAN PERSPECTIVES Chair intro: <i>M. Bazza (Egypt)</i>
09:05	Evaluation of feed water sources and retrofitting of an Integrated Membrane System <i>J. van Agtmaal et al. (the Netherlands)</i>	Spanish national water reuse programs <i>J.R. Barro & L. Ortega (Spain)</i>
09:25	Technical and economical evaluation of water recycling in the carwash industry with membrane processes <i>K. Boussu et al. (Belgium)</i>	Municipal wastewater effluent reuse in agriculture in Apulia - South Italy <i>G. D'Arcangelo & E. Ranieri (Italy)</i>
09:45	A pilot study of industrial wastewater recovery using an electrodialysis reversal system <i>T.M. Liang & Y.M. Chao (Taiwan)</i>	Use of alternative water sources to mitigate water stress in Cyprus <i>T. Wintgens et al. (Germany)</i>
10:05	Wastewater reuse in the chemical industry by a Thermophilic MBR <i>H. Futselaar et al. (the Netherlands)</i>	Jordan strategy for the collection, treatment and reuse of wastewater <i>A.A. Arar (Jordan)</i>
10:25	Evaluation of bioassays for the optimization of waste water treatment in the tank cleaning industry <i>J. Dries et al. (Belgium)</i>	Wastewater potential and reuse standards in Turkey <i>C.F. Gokcay (Turkey)</i>

10:30

11:00	INDUSTRIAL RECYCLING: TEXTILE Chair intro: <i>C. Lubello (Italy)</i>	OZONE TREATMENT Chair intro: <i>G. Amy (the Netherlands)</i>
11:05	Implementation of best available techniques as a prerequisite for sustainable water reuse in textile industry <i>I. De Vreese & T. Cattoor (Belgium)</i>	The use of ozonation for municipal wastewater treatment – Studies to follow the transformation of Sulfamethoxazole via LC-MS <i>A. Hein et al. (Germany)</i>
11:25	Water recycling in textile industries: effects on biological treatment plants <i>L. Cammilli et al. (Italy)</i>	Cost-effective water-reuse with ozone as an oxidant <i>S. Schaefer et al. (Germany)</i>
11:45	From process to product: water recycling in wet textile manufacturing <i>G. Rovero & C. Beltramo (Italy)</i>	The use of ozone during APT of wastewater for its reuse in agriculture: an approach to enhance coagulation, disinfection and crop productivities <i>A.E. Campos-Reales-Pineda & M.T. Orta de Velásquez (Mexico)</i>
12:05	Integrated wastewater management in a denim manufacturing textile mill-implementation of EU's IPPC directive <i>N. Uzal et al. (Turkey)</i>	Ozonation of brine resulting from RO membrane treatment of a municipal wastewater treatment plant effluent <i>J. Benner et al. (Germany)</i>
12:25	Recycling of textile dyeing effluent: examples and recommendations <i>I. De Vreese et al. (Belgium)</i>	Wastewater disinfection using ozone: byproducts formation <i>G.H.R. Silva et al. (Brazil)</i>
12:30	Water recycling by ozonisation of effluent in the textile industry <i>J. Schwerdt et al. (Belgium)</i>	

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14:00	DARWIN ZAAL RAINWATER HARVESTING Chair intro: <i>P. Dillon (Australia)</i>	MARMEREN ZAAL INDIRECT POTABLE REUSE Chair intro: <i>W. Miller (USA)</i>
14:05	Microbial challenge-testing of treatment processes for quantifying stormwater recycling risks and management <i>C.M. Davies et al. (Australia)</i>	Torreele's water re-use facility enabled sustainable groundwater management in the Flemish dunes (Belgium) <i>E. Van Houtte & J. Verbouwhede (Belgium)</i>
14:25	A critical evaluation of combined engineered and aquifer treatment systems in water recycling <i>P. Dillon et al. (Australia)</i>	Selection of a nanofiltration membrane to make potable the water of an aquifer recharged with wastewater in the Tula Valley <i>A. Aguilar et al. (Mexico)</i>
14:45	Treatment of stormwater runoff by on-site infiltration trench in streets <i>L-H. Kim et al. (South Korea)</i>	Feasibility studies of planned indirect potable reuse for augmenting future water supplies in London <i>S. Hills et al. (United Kingdom)</i>
15:05	Reuse of rainwater by cistern systems in Ancient Greece <i>G. Antoniou et al. (Greece)</i>	Water quality control in a third world country: challenges to ensure good quality reclaimed water in Windhoek, Namibia <i>J.G. Menge et al. (Namibia)</i>
15:25	Aquifer storage transfer and recovery (ASTR), a novel application to storage and reuse of stormwater <i>R. Regel et al. (Australia)</i>	Organic matter evolution in the treatment process <i>V. Jacquemet et al. (France)</i>
15:30	Coffee break	
16:00	Can water reuse help to meet integrated water management goals in Flanders? by F. Van Sevenscoten, Chairman of the Flemish Integrated Water Management Commission (Belgium)	
16:15	Distribution of awards	
16:25	Introduction to Technical Tours by IWWA CEO J. Verbauwhede (Belgium) , Closing words by Conference chairman Prof. Dr. B. Van De Steene, Aquafin (Belgium)	
16:35	Royal Ballet of Flanders	
17:15	Reception	
19:00	End	

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14:00	FOYER COMBINATION OF STRONG OXIDANTS Chair intro: <i>M. Weemaes (Belgium)</i>	KEURVELS ZAAL WORKSHOP 5 INDUSTRIAL WATER RECYCLING <i>H. De Wever & L. Diels (Belgium)</i>
14:05	The use of UV and hydrogen peroxide in wastewater reuse to accomplish multiple treatment objectives <i>M.-O. Buffle et al. (Switzerland)</i>	14:00 Introduction <i>H. De Wever (Belgium)</i>
14:25	Sequential application of ozone and UV radiation to eliminate resistant microbiological indicators <i>P. Bilotta & L.A. Daniel (Brazil)</i>	14:05 Vision of the Water Supply and Sanitation Technology Platform on industrial water recycling <i>A. Jansen (the Netherlands)</i>
14:45	The use of AOPs for the abatement of ibuprofen from wastewater <i>R. Dewil et al. (Belgium)</i>	14:20 Bottlenecks for the reuse of water in the paper and laundry industry <i>F. Oosterholt (the Netherlands)</i>
15:05	Effect of peracetic acid, ultraviolet radiation, nanofiltration-chlorine in the disinfection of a not conventional source of water (Tula Valley) <i>J.A. Barrios & B. Jiménez (Mexico)</i>	14:35 Water quality monitoring in the food industry through AquaCCP <i>R. Hoeijmakers (the Netherlands)</i>
15:25		14:50 Removal options for organic micropollutants <i>T. Ternes (Germany)</i>
		15:05 Energy efficient desalination using MEMSTILL technology <i>C. Dotremont (Singapore)</i>
		15:20 Discussion <i>L. Diels (Belgium)</i>
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FRIDAY OCTOBER 12TH, 2007

TECHNICAL VISITS

09:00	OPTION 1: Aquafin WWTP, IWVA Torreele water reuse plant and groundwater recharge project (Wulpen)
	OPTION 2: BioEnergy food processing plant for converting by-products of food processing into reclaimed water for boiler feed water and steam, green electricity and a biological fertilizer (Lommel)
	OPTION 3: Evides industry Water Deco plant for production of demineralised water from 6 different water resources and production of cooling water for the Dow Benelux chemical plant (Terneuzen)
16:00	END



Deco plant Terneuzen. © Evides Industriewater



Saint André infiltration pond in Wulpen. © IWVA

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POSTER PROGRAMME

	POSTER TITLE	AUTHORS
PO1	Environmental Criteria for Alternative Nutrient Removal in Treated Wastewater	J. Munoz, L. Sala
PO2	Proper management, measures as well as laws and by-laws needed towards sustainable wastewater treatment and reuse in Palestine	M. Y. Sbeih
PO3	Reuse of Wastewaters or Reduce the Water Uses: the Main Issue in the Developing Countries	M. Ghaheri
PO4	The optimisation of water networks through genetic algorithm	J.S.Park, W.S.So, M.J. Park, J.H.Jung, C.K. Yoo
PO5	Concept and model of centralized wastewater reuse systems in modern cities	T. Chugg, Y. Feng, K. Wichmann and R. Otterpohl
PO6	The environmental and socio-economic benefits of wastewater use in irrigation under arid climate	M. Ellatifi
PO7	An intelligent visualization and decision support system for decentralized wastewater treatment plants	J. Wölle, J. Hansen, H. Steinmetz, K. Einsfeld, A. Ebert
PO8	Water reuse in the sustainable management of water resources in the Macaronesia	S. Delgado, L. Rodríguez-Gómez, L. Vera, F. Díaz, J. Rodríguez-Sevilla, M. Álvarez, G. Martel
PO9	Wastewater irrigation of animal feed crops: an evaluation of existing guidelines	P.D. Bevilacqua, R.K.X. Bastos, G.S. Costa, R.B. Oliveira, R.O. Capanema
PO10	Policies and Perspectives: Sanitary Criteria for Agricultural Wastewater Reuse in Brazil	M.T.P. Razzolini, A.C. Nardocci, W.S. Paganini, A.C. Rossin, W.M.R. Günther
PO11	Decision support system for planning of integrated water reuse systems	D. Joksimovic, D. Bixio, D.A. Savic, G.A. Walters
SC1	Photo-degradation of Pharmaceutically Activated Compounds in Water by Direct Photolysis and UV Advanced Oxidation	L. Yu
SC2	Application of Electrolysis Disinfection to On-site Type Wastewater Reclamation System	J. Nakajima, M. Sato, A. Horio, I. Mishima, M. Kaneko
SC3	Basic study on phosphorus removal mechanism in MBR process with coagulant addition	J. Nakajima, M. Hama, I. Mishima
SC4	Total N mineralization in vertical flow constructed wetlands systems soil for domestic wastewater treatment	S.C.Silva, R.S. Bernardes, L.M.G. Ramos
SC5	Phosphate removal and recovery by zirconium mesostructures entrapped in calcium alginate	K. H. Yeon, K.Y. Lee, Y.M. Park, S.H. Lee
SC6	Cytotoxicity and dephosphorylation of N, N-diethyl m-toluamide (DEET) in human brain neuroblast BE(2)-M17 cells	Xi. Ren, J.-S. Chang, H.-H. Lim, C.-S. Park, J. Cho, In S. Kim
SC7	Modified rapid biofiltration for advanced treatment of STP effluents	U. Miehe, U. Dünbnier; M. Jekel
SC8	Effect of Oxygen Injection during Reclaimed Wastewater Transportation on the Microbiological Quality of Water	N. Abreu, L. Rodríguez-Gómez, M. Álvarez, B. Valladares
SC9	Follow-up of the physico-chemical and bacteriological quality of the domestic wastewater treated by High Rate Algal Ponds (HRAP) under semi-arid climate.	S. Nacir, L. Mandi, F. Zouhir, S. Dekayir, B. Emzilin, N. Ouazzani
SC10	Risk in the RECLAIM WATER Project	I. Kopac, M. N. Ayuso-Gabella, M. Salgot
SC11	Decentralized wastewater treatment plant, at the University of the Balearic Islands (UIB). Reclaimed water for infiltration and natural ecosystem restoration	C. Amengual Morro, G. Moyà Niell, A. Martínez-Taberner
SC12	Regulation of wastewater from a series of electrochemical continuous reactors	S.A. Martinez, H. Puebla, M. G. Rodriguez, M.A. Morales, R. Aguilar-Lopez
SC13	A Step-feed Hybrid MBR Process for advanced wastewater treatment	L.M. Yuan, C.Y. Zhang , Y.Q. Zhang , D.L. Xi , Y.L. Gao
SC14	Identification and Antibiotic Susceptibility of Enterococcus Strains Isolated from Medicago sativa Plants Irrigated with Reclaimed and Conventional Water	M.T. Tejedor-Junco, M. González-Martín, P. Lupiola-Gómez, V. Mendoza-Grimón, M.P. Palacios-Díaz

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	POSTER TITLE	AUTHORS
SC15	Reusing residential wastewater: physicochemical and biological characterization for water conservation techniques	R.F. Gonçalves, T.C. Rebouças, G. Bianchi, S.T. Cassini
SC16	Integrating methanogenesis and denitrification in EGSB reactors for adjusting effluent nitrogens levels to agricultural demand	G.H. Kassab, E. Koetse, and J.B. van Lier
SC17	Factors that resulted in membrane fouling in the initiative period of a membrane bioreactor (MBR) plant	L. Sun, L. Wang, X.Y. Yuan, L.F. Li
SC18	Biological filtration of treated waste water by Daphnia: an alternative for technical filtration, or an addition?	R. Kampf, H. van der Geest, L. Sala, A. Romani, J. Comas, T. Claassen, S. Gerbens, R. Neef, W. Menkveld
SC19	Trophic webs from discharges: nature enhancement through the Waterharmonica concept	L. Sala, T. Claassen, R. Kampf, J. Sala, D. Boix, H. van der Gees
PR1	Textile wastewater treatment and reuse in technological processes	L. Kos, J. Perkowski
PR2	Start-up of the "Y" form UASB reactor for tanning effluent treatment	O. Peron Filho, T. Matsumoto
PR3	Optimization for the reuse of sewage sludge as an alternative source for agricultural soil nutrients	G.E. Torres, A.F. Hernandez
PR4	Case Study of the Use of Wastewater from the Gacko TPP	I. Milojkovic, B. Obuskovic, B. Cakic, N. Milenkovic
PR5	Adsorption of E. Coli on Egyptian agricultural soils: impact of soil organic content	E. Smith, A. Badawy
PR6	Removal of nitrogen and organic matter in swine wastewater by using advanced oxidation process	J.K. Kim, I.S. Song, H.S. Oh, J.H. Park, Y.K. Choung
PR7	Towards a Solution: Mine Wastes in Domestic Water on the Zambian Copperbelt	M. Kalebe, E. Van Ranst, H. Verplancke
PR8	Eco-toxicological evaluation of advanced oxidation treatment of membrane generated industrial concentrates: preliminary study on the toxicity of a tank-cleaning effluent	W. De Schepper, J. Dries, J. Robbens, H. De Bondt, L. Geuens, R. Blust
PR9	Evaluation of two treatment concepts for the reuse of WWTP effluent at an UF-RO plant	A. N. Janssen, J. van Agtmaal, W. van den Broek, J. Trampe, J.H.J.M. van der Graaf
PR10	Black water of different origin - characterisation and biological treatment	H. Knerr, J. Hansen, H. Steinmetz, M. Engelhart, G. Sagawe
PR11	Fertility of soil irrigated with treated wastewater in the tropical semi-arid region of northeastern Brazil	W.A.A. Alves, C.A.V. Azevedo, J.T. de Sousa, J.D. Neto, N.E.M. Beltrão, B.S.O. Ceballos
PR12	Production of brown fiber cotton irrigated with treated wastewater	W.A.A. Alves, C.A.V. Azevedo, J.T. de Sousa, J.D. Neto, N.E.M. Beltrão, B.S.O. Ceballos
PR13	Physiological indexes of Brown Fiber Cotton Irrigated with Wastewater	C.A.V. Azevedo, W.A.A. Alves, J.T. de Sousa, J.D. Neto, N.E.M. Beltrão, B.S.O. Ceballos
PR14	Domestic wastewater treatment in submerged packed bed bioreactors with different support materials	P. Mijaylova Nacheva, G. Moeller-Chávez, M. Garzón Zuñiga
PR15	Biomass production in slow rate systems used for treatment of domestic wastewater	V.E. Tzanakakis, N.V. Paranychianakis, A.N. Angelakis
PR16	Use potential of stabilization pond effluent in Brazilian tropical agrosystems	C.R. Montes, A.F. Fonseca, T. Gloaguen, U. Herpin, C. Surita, R.P. Pivelli, A.J. Melfi, F.C. Mendonça, T.M. Gomes
PR17	The agricultural use of wastewater in different environments: A comparison between Bolivia, Ghana and Tunisia	F.P. Huibers, S. Agodzo, F. Chenini, A. Durán, J. B. van Lier
PR18	Greywater reuse efficiency for water and energy conservation at residential buildings	R.F. Gonçalves, M. Pertel, P.B. Silva, L.B. Grecco, S.T. Cassini
PR19	Experiences of wastewater reuse for industrial and agricultural purposes in Italy	C. Collivignarelli, M. Vaccari
PR20	Community-based initiatives to exploit untapped run-off water for enhanced nutrition	R.M. Nambooz