



CIWEM

The Chartered Institution of Water
and Environmental Management



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THIRD THE CHARTERED INSTITUTION OF WATER AND ENVIRONMENTAL MANAGEMENT **NATIONAL CONFERENCE**

6 - 8TH SEPTEMBER 2005 · BRETTON HALL, WAKEFIELD

MAIN THEMES:

- **WATER RESOURCES**
- **WATER SUPPLY**
- **WATER QUALITY**
- **DIFFUSE POLLUTION**
- **FLOODING AND DRAINAGE**
- **INFRASTRUCTURE ASSET MANAGEMENT**
- **WASTE MANAGEMENT**
- **ODOUR CONTROL**
- **WASTEWATER TREATMENT**

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CIWEM

The Chartered Institution of Water and Environmental Management

THIRD NATIONAL CONFERENCE

VENUE & LOCATION

The venue is Bretton Hall, a spectacular 18th Century Palladian mansion, situated in the 500-acre Yorkshire Sculpture Park. This is one of Europe's leading open-air art organisations showing modern and contemporary work by leading UK and international artists. The park houses the largest collection of Henry Moore sculptures in the world, along with other significant work by Barbara Hepworth and Anthony Gormley. The venue can be visited at www.ysp.co.uk.

The venue is immediately adjacent to the M1 in an area of outstanding natural beauty. It offers an ideal relaxing environment as well as all the conference facilities demanded of a large National Event.

TRAVEL

By Road

From the M1 turn off at junction 38 (Haigh Roundabout) and follow the signs to Huddersfield and West Bretton. In West Bretton turn off the main road at the war memorial into Park Lane. Continue down the road until you pass through stone gates into the Bretton Hall Campus. Full directions will be sent on registration.

By Train

National Rail Enquiries can provide timetable information to get to Wakefield Westgate railway station. Call 08457 48 49 50. Continue by taxi or bus (from Wakefield bus station) to the campus. Visit the web site www.nationalrail.co.uk.

By Air

The nearest airport to the venue is Leeds Bradford International Airport. Please visit the website www.lbia.co.uk.

ABOUT CIWEM

The Chartered Institution of Water and Environmental Management (CIWEM) is the leading professional body for those involved in sustainable management of the environment. All CIWEM conference delegates who are not members of the Institution now have Environmental Partner status until the end of December 2006. You will receive free copies of our monthly magazine and a CIWEM International Directory, have the opportunity to link to our local networks of environmental professionals and be kept informed about future CIWEM meetings, events and conferences.

For more information about CIWEM, including full membership and Industry Affiliate status, contact membership@ciwem.org. Details of CIWEM's policies and activities can be found at www.ciwem.org. Registered Charity No. 1043409.

ACCOMODATION

Bretton Hall Campus

Standard accommodation is available at Bretton Hall, each room has a wash basin but the toilet and shower facilities are shared. The cost for this basic accommodation is only £20.50 (+VAT) per person per night Bed and Breakfast or £31.50 (+VAT) for Bed, Breakfast and Evening Meal per person per night. Parking is available on site.

Other Hotels

There are a range of other hotels in the area. The closest hotels to the venue are:

Cedar Court Hotel (4*)
Reservations **01924 261 268**

Express by Holiday Inn
(Wakefield M1, Jct 39)
Reservations **0800 434040**

Full details of all other hotels in the areas will be sent on registration. We recommend that you book accommodation as soon as possible to avoid disappointment.

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

Our events and conferences provide excellent opportunities for sponsorship and exhibiting, offering you many benefits including increased brand awareness and the opportunity to access niche markets and target audiences.

We are pleased to offer packages which are tailor-made to meet your specific requirements. Please contact Krista Braithwaite on tel. **0113 2424200** or email. kristabraithwaite@aquainviro.co.uk

SOCIAL ACTIVITIES

Tuesday 6th September 2005
Drinks Reception with
Rothwell Temperance Band



This is the ideal opportunity to network with other delegates in a relaxed atmosphere at Bretton Hall. We have also organised a performance from the Rothwell

Temperance Band to give you a taste of local culture.

The Rothwell Temperance Band are a championship section brass band based near Leeds.

Full details of the band can be found at www.rtb.org.uk.

Wednesday 7th September

Conference Dinner at Simply Heathcotes in Leeds



Simply Heathcotes is located in a former grain house on the banks of the Leeds-Liverpool canal. The old 18th century building contradicts its modern interior, wood floors; candles and charcoal interior set the scene for a mixture of British and European dishes seasoned and executed to perfection.

Conference dinner tickets

are priced at £45 (+VAT) per person; this includes return coach travel from Bretton Hall, drinks reception and 3-course dinner with wine.

Corporate tables are available at the dinner, for further details please contact Frances Eldon tel. +44 (0) 113 2424200 or franceseldon@aquainviro.co.uk

You can visit the restaurant website at www.heathcotes.co.uk/simply/



FORTHCOMING EVENTS

CIWEM Young Members Study Tour

12 - 16 September 2005
University of Nottingham

ICE/CIWEM Infrastructure Asset Maintenance and Management

October 2005
One Great George Street, London

Water Quality & Public Health - Swimming Pools and Spa Baths

November 2005, Manchester

For further details on any of these events contact **Frances Eldon** on Tel. **0113 2424200** or email franceseldon@aquainviro.co.uk

BOOKING FORM

SECTION A - DELEGATE DETAILS

Title _____

Name _____

Organisation _____

Address for Correspondence _____

_____ Postcode _____

Tel _____ Fax _____ Email _____

I am content for my email address to be included on CIWEM's email list and I am happy to receive CIWEM's free monthly email update e-news

Are you a CIWEM Member?

YES NO

SECTION B - REGISTRATION DETAILS

To aid us in allocating appropriate rooms for each session please tick the session you wish to attend in the boxes below.

TUESDAY 6TH SEPTEMBER

Plenary Opening	<input type="checkbox"/>	Plant Commissioning and Performance	<input type="checkbox"/>
Sustainable Communities	<input type="checkbox"/>	Membrane Systems	<input type="checkbox"/>
Diffuse Pollution	<input type="checkbox"/>	Nitrogen and Phosphorous Removal	<input type="checkbox"/>
Odour Workshop -Is prevention better than cure?	<input type="checkbox"/>		

WEDNESDAY 7TH SEPTEMBER

Water Resources	<input type="checkbox"/>	Issues in Wastewater Treatment	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Natural Treatment Systems	<input type="checkbox"/>
Water Quality	<input type="checkbox"/>	Sludge	<input type="checkbox"/>
Odour Control	<input type="checkbox"/>	Waste Management - A 20:20 Vision	<input type="checkbox"/>

THURSDAY 8TH SEPTEMBER

Infrastructure Asset Management	<input type="checkbox"/>	Industrial Wastewater Treatment	<input type="checkbox"/>
Flooding	<input type="checkbox"/>	Charaterising Wastewater and Biomass	<input type="checkbox"/>
Drainage	<input type="checkbox"/>		
Fixed Film Processes	<input type="checkbox"/>		

SECTION E - PAYMENT

CHEQUE: I enclose a cheque for £ _____

Payable to AE Technology Transfer (A VAT Receipt will be sent automatically).

INVOICE: Please invoice for the sum of £ _____

Purchase Order: _____ Contact Name: _____

Invoice Address: _____

Please note bookings will not be accepted without a PO Number.

CREDIT CARD: Please note we now accept payment by credit card on our website at www.aqua-enviro.net.

TERMS AND CONDITIONS

A charge of £40 (+VAT) will be levied for cancellations made up to 20 days prior to the event. Cancellations after this period will be liable for payment of the full fee. Payments should be received 30 days of receipt of invoice.

Delegate Signature _____ Date _____

ENQUIRIES AND BOOKING FORMS DIRECTED TO:

AE Technology Transfer, Richmond House, 16 Blenheim Terrace, Leeds LS2 9HN
Tel: 0113 2424200 Fax: 0113 2442166 Email: ciwem@aquaviro.co.uk

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WWW.AQUA-ENVIRO.NET

SECTION C - REGISTRATION FEES

Please tick the appropriate boxes below.

REGISTRATION FEES

Full Delegate Rate	£480.00 (+VAT) =	£564.00	<input type="checkbox"/>
Authors Rate	£400.00 (+VAT) =	£470.00	<input type="checkbox"/>
Student Rate	£250.00 (+VAT) =	£293.75	<input type="checkbox"/>
Day Rate	£240.00 (+VAT) =	£282.00	<input type="checkbox"/>
Author Day Rate	£210.00 (+VAT) =	£246.75	<input type="checkbox"/>

Please select which day you would like to attend

Tue 6th Wed 7th Thu 8th

CONFERENCE DINNER WEDNESDAY 7TH SEPTEMBER

£45.00 (+VAT) = **£52.88**

Please tick here if you are vegetarian

Other special dietary requirements _____

SECTION D - ACCOMMODATION AT BRETTON HALL

Please tick the appropriate boxes below.

RATES FOR SINGLE ROOM

Bed and Breakfast (B&B) @ £20.50 (+VAT) =

£24.09 per night

Bed, Breakfast & Dinner (BB&D) @ £31.50 (+VAT) =

£37.01 per night

Monday 5th B&B BB&D

Tuesday 6th B&B BB&D

Wednesday 7th B&B BB&D

Please note: We are able to support anyone with special needs attending these events.

The 10th

European Biosolids and Biowastes Conference

Exhibition and Workshop

A Decade Of Change

Sunday 13th November -
Wednesday 16th November 2005

Cedar Court Hotel, Wakefield, UK

This year marks the 10th annual European Biosolids and Biowaste conference. The underlying theme of the conference will be to take a look at the progress made in the last decade, and the threats and opportunities facing the next decade.

As a guideline to potential authors we will be accepting papers whose general content includes the following subject areas:

- Sewage Sludge and Biosolids
- Biowaste Treatment including MBT and MSW
- Drinking Water Residuals
- Chemical, Industrial and Manufacturing Sludge and Organic Wastes
- Food Industry Wastes
- Farm Wastes
- Municipal Organic and Green Wastes
- Issues for Advanced and Third World Countries
- Public Health Issues

Abstracts

Abstracts should give an overview of the intended paper comprising of approximately 500 words. Please state clearly Author/s name; organisation, address, email address, telephone number and subject area of proposed paper.

In addition this year we are also asking all authors to submit a 100-word abstract. The names of successful authors and the website abstract will then be published on the European Biosolids and Organic Residual website prior to the conference at www.european-biosolids.com

All abstracts should be submitted to Frances Eldon via email to franceseldon@aquaviro.co.uk

THE CLOSING DATE FOR ABSTRACTS IS 30TH JUNE 2005.

www.european-biosolids.com

ROOM 1

PLENARY OPENING

Robin Green, CIWEM President
Nick Reeves, Executive Director
of CIWEM

PLENARY AFTERNOON SESSION

The Sustainable Communities Plan: Form Function and the Environment

The Sustainable Communities Plan was announced by the Deputy Prime Minister in February 2003. The plan proposes to deliver sustainable communities in both urban and rural areas, through tackling housing supply issues in the South and East, low demand in other parts of the country, and the quality of public open spaces. It claims to herald a "real step-change" in "how we build and what we build" with new development meeting tighter environmental standards.

This session will discuss some of the main issues and challenges surrounding the plans and consider what is required to really make communities sustainable.

Keynote Speaker
Minister of State (invited)

Meeting Water Resources needs in Sustainable Communities

Dr. Colin Fenn, Chairman CIWEM Water
Resources Panel

Sustainable Communities and Flood Risk Management

Dr. Duncan Huggett, CIWEM Amenities,
Recreation and Conservation Panel

Involving the Public in Sustainable Communities

Dr. Paul Holmes, Peak Performance
Partnership

Brownfield Redevelopment and Sustainable Communities

David Edwards - exSite Research Ltd

ROOM 2

DIFFUSE POLLUTION

Modelling the risk associated with urban diffuse pollution

Struve, J., Tagg, A.¹, and Panzeri,
M.¹, ¹Hydraulics Research Ltd

UPM Tools - Time to look at Rivers again?

Saunders, A., and McGovern,
K., Metoc PLC

The Highways Agency's research programme to reduce the environmental impact from highway runoff

Crabtree, B.¹, Moy, F.¹, Roe, A.²,
and Whitehead, M.³, ¹WRc plc,
²Environment Agency, ³Highways
Agency

The impact of soluble pollutants in highway and urban run-off on the ecology of receiving waters

Bury, N.¹, Mustow, S.², Murray-
Bligh, J.³, and Whitehead, M.⁴,
¹King's College, London, ²White
Young Green, ³Environment
Agency, ⁴Highways Agency

ODOUR WORKSHOP - IS PREVENTION BETTER THAN CURE?

This workshop will explore the pros
and cons of alternative strategies for
odour control by means of short
introductory presentations and small
group discussion sessions covering:

- i) Cover and Scrub Technology
- ii) Is there a case of doing
nothing?
- iii) Chemical dosing for septicity
prevention
- iv) Health and Safety Aspects
- v) Asset Management and
Investment
- vi) Managing Public Perceptions of
Odour.

ROOM 3

WASTEWATER TREATMENT

Plant Commissioning and Performance

Ringstend WwTW - plant commissioning and operation

Bickerstaffe, J., O'Reilly, C., and Adam, J.,
Celtic Anglian Water Ltd

Design, commissioning and optimisation experiences with fine bubble diffused aeration in oxidation ditches

Joyce, S., ITT Sanitaire Europe

Commissioning and operation of United Utilities first wastewater MBR

Kitching, C.¹, Heath, F.², Dawson, M.², and
Noble, J.³, ¹MWH Global, ²United Utilities,
³Zenon Environmental (UK) Ltd

Improving the performance of aerated grit chambers

Schwarz, C., Kulisch, H., and Günther, W.,
University of Federal Armed Forces, Germany

Selector Tank - Development of a Cost Effective Design

Trumper, S.¹, Philp, R.¹, Smyth, M.², and
Lavender, P.², ¹Scottish Water Solutions, ²Aqua
Enviro Ltd

Membrane Systems

Operational problems with the MBR

Springer, A., Yorkshire Water

Nutrient removal processes, MBR versus tertiary treatment polishing filtration

Wouters, J.W.¹, Mollen, D.², and Piron, D.³,
¹Paques bv, ²Waterboard Brabantse Delta,
³Waterboard Rivierenland

The optimisation of chemical cleaning of an ultrafiltration membrane plant

Courtis, B., Earth Tech

Combined membrane filtration and submerged membrane bioreactor treatment for recovery of tannery process effluents

Scholz, W.¹, Baumgarten, S.² and Serrarols,
D.³, ¹BLC Leather Technology, ²Aachen
University, ³Industrial Igualadina, S.L., Spain

Nitrogen and Phosphorus Removal

Feed forward control of chemical dosing for the removal of phosphate in wastewater treatment works

Wallace, A., Partech (Electronics) Ltd

Low pH-inducible polyphosphate accumulation: application to wastewater treatment a previously unrecognised aspect of microbial phosphorus metabolism

McGrath, J.W.¹, Mullan, A.¹, Cooper, S.¹,
Adamson, T.², Irwin, S.², and Quinn, J.P.¹, ¹The
Queen's University, Belfast, ²Northern Ireland
Water Service

Aerated denitrification SBR process to meet quality and other drivers in UK

Dutt, S.¹, and Demoulin, G.², ¹Aker Kvaerner
Engineering, ²SFC Umwelttechnik GmbH

Virosage for enhance phosphate removal

Hogan, F., Tillotson, S., and Best, D., Virotec
Europe Ltd

ROOM 1

POTABLE WATER

Water Resources

Embracing the principles of sustainability within water resources planning, through public consultation and EIA

Armitage, K.¹, Tinsdeall, M.², Peay, S.¹, and Davies, G.², ¹Scott Wilson, ²Yorkshire Water Services Ltd

Managing Yorkshire Water Reservoirs - A sustainable resource

Tinsdeall, M.¹, Davies, G.¹, Stevens, I.¹, Lane, S.², Mould, D.² and Christmas, M.³, ¹Yorkshire Water Services Ltd, ²University of Durham, ³Environment Agency

Integrated catchment management for improved water quality

Hillman, J., Shepherd, M., Chambers, B., and Lord, E., ADAS

Water Resources Management on the Caribbean Island of St Lucia

Dent, M., Independent Water Resources & Irrigation Engineer

Sustainable Water Management

Moseley, A. and Arias, C., Hyder Consulting (UK) Ltd

Water Supply

ENCOMS – An energy cost minimisation system for real-time, operational control of water distribution networks

Rao, Z., Wicks, J., and West, S., Halcrow Group Ltd

Does environmental stewardship make good business sense? Hayswater AMP3 Water Quality Improvement Scheme, Pipelines and Pumping Stations (A Case Study)

Shah, A., King, D., and Norris, S.T., Clancy Docwra Ltd

Comparison of Approaches to SEA within the water sector (CFMP and WRP)

Davis, P., and Barker, M., Entec UK Ltd

Modelling the impact of water efficiency measures using measured microcomponent water use data

Marshallsay, D., and Kowalski, M., WRc plc

Water Quality

Meeting multiple water treatment objectives using UV and hydrogen peroxide

Daniels, P., Trojan UK

Emerging and re-emerging pathogens associated with drinking water

McGuinness, M., Scottish Water

Use of rapid small -scale column tests (RSSTCs) for investigating the service life of field spent GACs

Kaur, K., Perry, L., Hale, C., and Pitt, S., WatStech Ltd

Achieving sustainable development, water quality improvements and environmental enhancements with reduced costs

Gamble, D., MWH

Analysis of oxyanions in environmental matrices by high-performance ion chromatography

Darwish, R., and Divan, K., Dionex UK Ltd

ROOM 2

ODOUR CONTROL

Odour from sludge

Hobson, J., Sivil, D., and Hearn, K., WRc plc

Odour control in Scotland - 2 case studies

Jolly, M., and Jeavons, J., Earth Tech UK

Regulating odour

Hopkins, I., and Allan, G., Ofwat

Code of practice for control of odours from wastewater treatment works: how can they be used

Branchflower, P., OdourNet UK Ltd

Odour management plans and beyond

Pickering, B., Evanson, I., and Kynaston, P., MWH Global

Best available technique? Odour from animal feed plants - A case study

Fraser, S., RPS Planning Transport and Environment

Predicting odour emissions from sewage sludge

Hobbs, P.J.¹, Williams, S.J.¹, Dhanoa, M.S.¹, and Lovell, M.², ¹Institute of Grassland and Environmental Research, ²Severn Trent Water Ltd

Management of odours through the practical application of odour dispersion modelling

Hall, D.L.¹, and de Groot, K.², ¹Entec UK, ²Wessex Water Services

Odour control issues at 6 WwTP receiving saline sewage

Graffham, B.¹, and Parkman, B.², ¹Hyder Consulting, ²South West Water

Reducing the costs of wet chemical scrubbers on large enclosed WWTW

Evanson, I., and Pickering, B., and Kynaston, P., MWH Global

Treating sludge drying odour with regenerative thermal oxidation

Pickavance, S., Haden Drysys Environmental

Odour control and best practicable means - the roles of maintenance and training

Callister, S., Parfitt, M., and Lockyer, K., Alderley Environmental Ltd

Odour Strategy Development in Sewage Treatment

Processes Pearcey, A., EA Solutions

ROOM 3

WASTEWATER TREATMENT

Issues In Wastewater Treatment

Passage of EDC and PPCP compounds through wastewater treatment processes - a US perspective

Oppenheimer, J.¹, DeCarolis, J.¹, Adham, S.¹, and Snyder, S.², ¹MWH, ²Southern Nevada Water Authority

MCERTS - meeting the requirements

Burton, R., and Willis, A., Hydro-Logic Ltd

Effect of temperature on biodegradation of recalcitrant compounds

Cheng, C., Phipps, D., and Alkhattar, R.F., Liverpool John Moores University

Survival of a public private water supply and sewerage operation serving nearly 8 million people in a period of National crisis

Walton, B., Private Consultant

Natural Treatment Systems

Facultative waste stabilization ponds and aerated rock filters: the solution for small communities in the UK?

Mara, D., and Johnson, M., University of Leeds

Performance evaluation of the AeroFac wind-aerated lagoon system at Errol, Scotland.

Horan, N.J.¹, Abdelgader, S.¹, and Walkinshaw, T.², ¹University of Leeds, ²Scottish Water

Prediction of constructed treatment wetland performance with case-based reasoning

Scholz, M., The University of Edinburgh

Performance of waste stabilization ponds treating sewage in Aden, Yemen

Almas, A., and Ghangrekar, M.M., Indian Institute of Technology

On-Farm Wastewater Management using a Multi-Stage Reed Bed System in an Area of Outstanding Natural Beauty.

Phillips, L.¹, and Weedon, C.M.², ¹Elm Farm Research Centre, ²Watercourse Systems Ltd

The use of recycled glass as a tertiary filtration medium

Lowe, M.D.¹, Horan, N.J.², Smyth, M.¹, Cowley, E.¹, Lavender, P.¹, Hamilton, R.¹, and Veloza, A.M.¹, ¹Aqua Enviro Ltd, ²The University of Leeds

Sludge

Review of recent trends in capillary suction time and dewaterability analysis

Scholz, M., The University of Edinburgh

A new, environmentally acceptable uncoupling agent for reducing the growth of biosolids in wastewater treatment facilities

Talbot, R., Louvel, L., and Mottot, Y., Rhodia UK Ltd

Aluminium inhibition of municipal sludge digester

Reeves, N.¹, and Stephenson, G.², ¹Earth Tech, ²Yorkshire Water Services Ltd

ROOM 4

WASTE MANAGEMENT – A 20:20 VISION

Chair: Neil Tytler, Chair of CIWEM Waste Management Panel

The Legislative Push Towards 'new' Waste Treatment Technologies

Vanya Veras-de Suys, European Federation for Waste Management and Environmental Services FEAD

- The legislation
- The technologies
- The probable waste treatment scene 10 years from now

Future Perfect - an update

Peter Jones, Director - External Affairs, BIFFA

- The scale of the investment challenge in waste
- Timing issues and risks
- Alternative exit strategies and driving factors

To the Future - Is global waste management possible?

Edward Stentiford, University of Leeds

- Can we manage the waste for the 3 - 4 billion people currently outside of 'the system'
- Is the goal even more unrealistic than the 'Water Decade' and the 'Millennium Sanitation Goal'
- How does carbon credit trading fit into this?

Update on Environment Agency evaluation of organic waste biodegradability measurement methods

Godley, A.R.¹, Graham, A.¹, Frederickson, J.², and Barker, H.³, ¹WRc plc, ²Open University, ³Environment

Key considerations for collecting biological waste from householders

Davis, G., University of Bristol

Dealing with community concerns at the siting of waste disposal facilities in the neighbourhoods

Vohra, S., Living Knowledge Consulting

Biological waste treatment

O'Brien, M., Camilleri, F., and Ordys, A., University of Strathclyde

ROOM 1

INFRASTRUCTURE ASSET MANAGEMENT

Balancing performance, investment and maintenance in water networks

Lenton, B., Green, A., and McAll, R., Advantica Ltd

The role of serviceability assessment and deterioration modelling in infrastructure asset management

Parsons, D., Office of Water Services

The 'economic level' of sewage collapse

Osborne, M., Earth Tech Engineering

CMPCF compliance using decision support technology

Huntingdon, J., Skipworth, P., and Oakes, M., SEAMS Ltd

National urban wastewater study, Ireland

Aikman, I., Jacobs Babbie

A comparison of infrastructure issues in Australia and the UK

Parker, J., Watershed Associates

Partnering in sewers - how was it for you?

Bayliss, D.¹, and Lumley, P.²,
¹Dwr Cymru Welsh Water,
²Carmarthenshire County Council

Pens - The new technology solution?

Ingram, S.¹, and McClean, J.²,
¹MWH TAG, ²Northumbrian Water Ltd

Information management systems - where does the information come from?

Hitchmough, M., and Wright, K., COGNICA Ltd

Knowledge management within a global water business - A consultants experiences. The ARUP Global water skills network

Lawton, A., and Sheehan, T., Arup

Are partnerships just a 'vener'?

The future of frameworks in the utilities sector: how can we create sustainable value?

Townsend, M. Robertson Cox Consulting Ltd

Infrastructure asset management - operation and maintenance

Grimshaw, D., Brown, T., and Winter, K., RPS Water Services Ltd

Have Asset Management Models comprised effective Asset Maintenance?

Leverly, M., MCL Consulting Ltd

Environmental design optimisation (EDOTM): A better way to design compliant solutions

Wright, S., Mooij, C., and Dannatt, R., Metoc PLC

ROOM 2

FLOODING AND DRAINAGE

Flooding

Broad scale tidal flood risk assessment for London using MDSF and floodranger

Reeder, T.¹, Donovan, B.¹, and Wicks, J.²,
¹Environment Agency, ²Halcrow

Validation of FSR and FHE methodology using recent Met Office rainfall data

Millerick, A., Micro Drainage Ltd

Improving the understanding of flood risk from canals

Dun, R.W.A., British Waterways

The rise and fall of the jubilee river

Larcombe, E.

Managed realignment: A cost - benefit analysis

Burgess, D., Turner, K., Coombes, E., and Jackson, N., University of East Anglia

Health impact assessment of flooding and climate change - an urban case study

Fewtrell, L.¹, Blanksby, J.², and Poole, T.³,
¹Centre for Research into Environment and Health, ²Pennine Water Group, ³City of Bradford Metropolitan Council

Drainage

Selection of concrete blocks for permeable pavements

Rodriguez, J., González, N., Castro, D., Ballester, F., University of Cantabria, Spain

Urban drainage - out of sight out of mind?

Ashley, R.¹, Chocat, B.², and Schilling, W.³,
¹Pennine Water Group, ²INSA, Lyon, ³Norwegian University of Science and Technology

Sustainable drainage systems: Designing for exceedance.

Moseley, A., and Arias, C., Hyder Consulting (UK) Ltd

The use of SUDS within landfill and quarry sites, combined improvements in flooding, ecology and water quality

Travis, M., and Robb, G., SLR Consulting Ltd

The use of SUDS in the design of the new Colchester Garrison

Amblin, G.¹, and Hurley, D.²,
¹Independent Consultant, ²Atkins

Best management practice - design and operation of sustainable urban infiltration ponds treating storm runoff

Scholz, M, Zheng, J., and Nanbakhsh, H., The University of Edinburgh

Urban drainage and the management of extreme events

Balmforth, D.¹, Digman, C.¹, and Shaffer, P.²,
¹MWH, ²CIRIA

Sustainable drainage: source uncontrolled?

Schofield, D., and Williams, A., Arup

ROOM 3

WASTEWATER TREATMENT

Fixed Film Processes

A design model for nitrification on structured cross flow plastic media trickling filters

Pearce, P., and Edwards, W., Thames Water Research and Development

The design, commissioning and operation of a single-stage plastic media trickling filter

Bungay, S.¹, Craft, D.², and Stephenson, T.³,
¹Gleeson Construction Services Ltd, ²Southern Water Services Ltd, ³Cranfield University

The evaluation of moving sand bed filtration with external sand wash for tertiary wastewater treatment

Smith, A.J.¹, Downes, N.², and Hutt, M.³,
¹Copa Ltd, ²Southern Water Services Ltd, ³Toveko UK

New generation of biological upflow filtration for industrial wastewater treatment

Rüdiger, I.¹, Rüdiger, A.¹, and Sekoulov, I.²,
¹Aquabiote GmbH, ²Technical University of Hamburg

Industrial Wastewater Treatment

Biological treatment of pharmaceutical wastewater containing macrolide antibiotics

Chelliapan, S.¹, Sallis, P.J.¹, and Wilby, T.E.²,
¹University of Newcastle upon Tyne, ²Eli Lilly and Company Ltd

Treatment of industrial wastewaters

Benazzi, F., and Katebi, R., University of Strathclyde

The industrial implementation of an anaerobic digestion plant at Treforest Textiles

Tucker, D., Water Development Services

Mechanical aeration system by supercavitation

Schmid, A., EMU Unterwasserpumpen GmbH

Application of HPLC in Environmental engineering research

Hossain, M.A., and Donnelly, T., University of Newcastle

Characterising Wastewater and Biomass

Wastewater characterisation as a tool for assessing the treatability of wastewaters in the Midlands

Churchley, J.¹, Vale, P.¹, Smith, B.¹, Kaur, K.², Hale, C.², Perry, L.², and Pitt, S.²,
¹Severn Trent Water Ltd, ²WatStech Ltd

How much is enough? Choosing sensible sampling and analysis regimes

Cowley, E., Aqua Enviro Ltd

The nature and distribution of bacterial diversity in activated sludge

Baptiste, J.D.C., Pickering, R., Read, F., and Curtis, T.P., University of Newcastle

Changes in AOB community structure in full-scale wastewater treatment reactors following a change in wastewater composition

Kirkpatrick Rowan, A., University of Newcastle

Quantification of specific microbial populations in wastewater treatment plants in relation to process function

Davenport, R.J., University of Newcastle