



Water

Water

Skills and services

Sector skills

Asset management and reliability
Barrages
Change management
Coastal zone management
CSOs/UIDs
Dams
Design and build
Effluent discharge
Geotechnics
Groundwater resources
Hydraulic structures
Hydropower
Institutional development
Irrigation and drainage
Pipelines
Public private partnerships
Pumping stations
Reservoirs
River basin management
River engineering
River intakes
RO desalination
Rural water supply and sanitation
Sea outfalls
Seawater cooling
Sludge treatment
Surface water resources
Wastewater networks
Wastewater treatment
Water and wastewater tunnels
Water networks
Water treatment

Key services

Asset planning
Carbon management
Commercial agreement
Commissioning
Concept, outline and detailed design
Cost consultancy
Decommissioning
Demand assessment
Due diligence
Economic analysis
Engineering and specification
Environmental assessment
Feasibility studies
Flood risk modelling
Flow and load evaluation
HAZOP studies
Hydrological and hydrogeological modelling
Legislation assessment and interpretation
Master planning
MEICA
Network modelling
Odour modelling
Periodic review support
Pilot plant studies
Planning advice
Pollution modelling
Process capacity assessment
Procurement and tender adjudication
Programme management
Project development
Reliability modelling
Risk analysis and management
River modelling
SCADA
Site selection
Site supervision
Surge
Sustainability
Technical assessments and reviews
Water governance
Water quality and pollution modelling
Water retaining structure assessment
Wetland management planning

Mott MacDonald's involvement with the Old Aswan Dam, Egypt (pictured), dates back to the 1920s. Our recent rehabilitation study covered both the Old Aswan Dam and the New Aswan Dam.

We're committed to engaging with all stakeholders at each stage of the development cycle



Meeting the challenge

Almost a third of the world's population suffers from water shortages and the effects of pollution. As agricultural and industrial development and urbanisation place increasing demands on freshwater resources, better water management and improved water and sanitation services are vital to alleviating poverty and improving global health, and meeting the wider challenge of the Millennium Development Goals.

With over 80 years worldwide experience in every aspect of water development and management Mott MacDonald has the skills and commitment needed to help governments, funding agencies, regulatory authorities and water service providers deliver practical and cost-effective solutions that benefit every stakeholder, from government agencies to individual water users.

With today's growing focus on sustainability, we aim to deliver sustainable use of water resources and achieve affordable, efficient water supply and irrigation systems. At the same time we seek to address the impacts of global climate change, agricultural deficits and protection of the environment from wastewater pollution, resource exploitation and over abstraction and the effects of natural disasters.

Establishment of policy frameworks, capacity building of public sector institutions and the introduction of private sector skills in financing are all fundamental to our approach – as are teamwork, partnership and continuous improvement. We're committed to engaging with all stakeholders at each stage of the development cycle from policy formation to project delivery, always providing an independent and impartial view on the best way forward.

We undertook design and build modifications to the Tampa Bay Desalination Plant in Florida, completing a fast track assignment to re-engineer the largest seawater desalination plant in North America.



Mott MacDonald provided project management and site supervision services for the refurbishment of a wastewater treatment works and the extension and refurbishment of a water supply and sewerage system in Buzau, Romania.

Setting the framework

In all aspects of water development, we're increasingly involved in both formulating policy and helping to introduce better resource management and good governance guidelines. Along with the introduction of a legal and regulatory framework, we assist with licensing and enforcement as well as capacity building and stakeholder education which include exploring and identifying the true cost of water services.

In the public sector, where strengthening water institutions is as vital as developing physical infrastructure, we're helping government agencies and municipal water utilities manage the changes needed to achieve operational efficiency, the desired level of water service and cost recovery. At community level, user participation in the management and maintenance of facilities and resources is high on the agenda, which means that meaningful consultation with water user groups and local stakeholders is pivotal to success.

In many of the world's river basins, water sharing between neighbouring states or countries is a key issue. We have particular expertise in dealing with such transboundary water management issues, advising governments and other stakeholders on establishing fair water sharing agreements, maximising conjunctive use while safeguarding downstream users. In parallel, we're increasingly involved in facilitating cross-border dialogue and the process of developing consensus over transboundary issues.

We're able to achieve this thanks to our skills in using integrated catchment models to predict the effects of different water use scenarios and compensatory requirements. We also assess in-stream hydropower, fisheries, navigation and ecosystem service uses to develop a full understanding of the impacts of flood and drought conditions.

As owners, operators and service providers redefine individual roles and responsibilities, the framework for delivering water services is being constantly tested. We're at the forefront in understanding issues related to competition – expertise that can greatly benefit our water sector partners.

We have gained huge experience on many major international transboundary river basin management projects, including the EU funded development of a management plan for the Pripjat Basin in Ukraine and Belarus, which contains extensive wetlands of international importance.

Delivering sustainability

We believe that through our experience in integrated management of water resources combined with our specialist knowledge of many of the world's rivers, aquifers and wetland ecosystems, we can support all stakeholders in their aims to achieve sustainable, environmentally responsible solutions that alleviate poverty and promote socially inclusive development. We strive to achieve balance in satisfying user demands while safeguarding the environment, thereby helping to ensure the sustainability of each water resources development project we undertake.

Where water is scarce, our solutions include real-time control of supplies, reallocation, integrated regional water management, conjunctive use of ground and surface water, augmentation through desalination, demand management and cost-effective loss mitigation.

We have a long track record in solving problems arising in the water cycle – including pollution, saline intrusion and over abstraction – and associated with the effects of climate extremes such as droughts, floods and tidal surges. We help our clients mitigate these problems by planning and designing infrastructure, introducing better operational and management practices and preparing contingency and disaster plans.

Our experience in providing sustainable solutions extends to the treatment of waste products such as sewage sludge. In a recent project we provided services in programme management, feasibility and design to deliver four sludge treatment centres that produce a 'Class A' pasteurised product and generate sufficient green energy not only to power the plants themselves, but also to export to the grid.

In Indonesia Mott MacDonald is assisting in strengthening participative irrigation management through physical improvements and institutional strengthening activities.



Mott MacDonald is helping UK water company Anglian Water to increase and secure water supplies. At Wing Water Treatment Plant, a 90 million litres per day (MLD) extension is under construction as well as a 40km pipeline.

Better access, better water

Around the world we help governments, regulatory agencies, municipalities and private sector water utilities provide increasing numbers of people with access to reliable, affordable and safe water supplies – a key socio-economic factor in itself and a key instrument in promoting better health. We also assist authorities and developers in delivering water to the industries and agricultural developments vital to economic growth and food security.

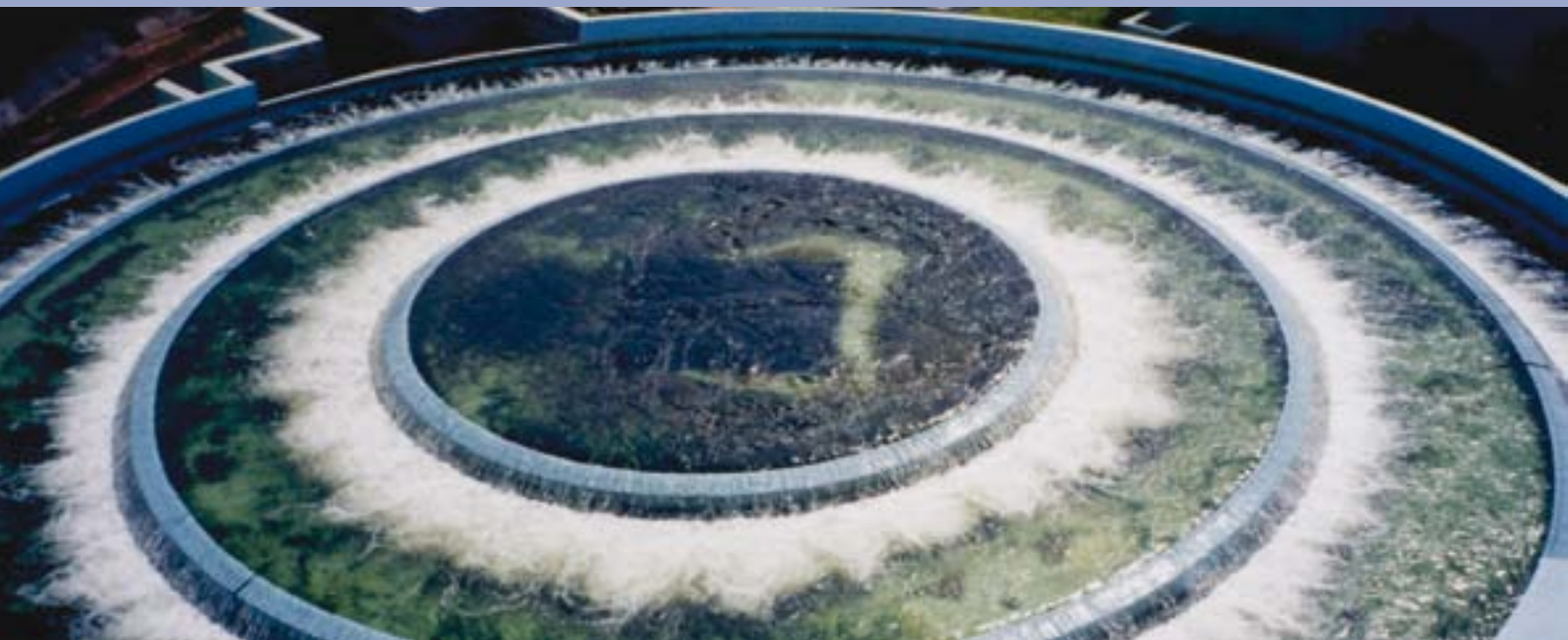
Whether for small-scale irrigation in rural areas or water supplies to cities, matching water quality and quantity with demand is crucial – as is choosing appropriate, affordable levels of service and technology.

The impacts of climate change mean that demand management is becoming an increasingly important topic for water service providers – and we can develop appropriate strategies tailored to meet individual requirements. Control of non-revenue water is a key area where providers can increase the efficiency of service delivery and the quantity of water available to customers. Our worldwide experience in this field means we're able to offer practical and economic solutions.

Cost recovery and affordability are key competing issues. We can advise on the structures of water tariffs or irrigation service fees to allow authorities to operate effectively while providing affordable water for all.

We can develop appropriate strategies tailored to meet individual requirements

In Bangalore, India, we provided an additional 270MLD of treated water to the city as well as improving sewage collection and treatment throughout the metropolitan area.





Safeguarding the environment

The sustainable disposal of biosolids is a key issue for Anglian Water. Their King's Lynn biosolids treatment plant recycles human waste for safe agricultural use – a process that also provides on site renewable power generation.

From governments and multinationals to donors and NGOs, everyone has a part to play in balancing the demands of development with environmental impacts on people, nature and the earth's resources – the key to sustainability and effective solutions. At Mott MacDonald we believe better, sustainable projects are achieved through built-in environmental care which is why we blend environmental solutions into the development process from day one.

Our experience ranges from introducing appropriate on site sanitation facilities in poorer urban and rural environments to planning and implementing major automated wastewater treatment plants and water reclamation plants for domestic and industrial effluent.

We help sustain habitats and conserve rare species through practical, economic measures to address impacts from abstractions, effluent discharges, solid waste disposal and construction activities. We work closely with all stakeholders in developing economic, effective and safe sludge disposal strategies, at both regional and local level to meet the ever higher environmental standards demanded throughout the world. We're increasingly involved in helping municipalities prepare applications to apply for grants through bankable projects to realise the environmental improvements required to meet these exacting standards. We assist in minimising adverse environmental impacts from polluted, saline or stormwater disposal systems.

Our solutions for the collection, treatment and disposal of wastewater and sludge arise from innovative thinking backed by extensive knowledge and experience of available processes.



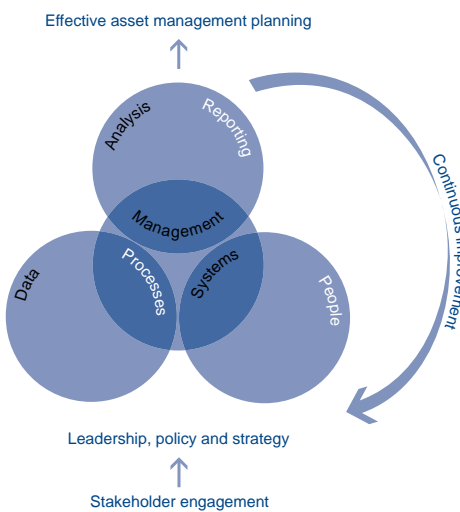
This multistorey wastewater treatment plant uses sequencing batch reactor (SBR) technology and is part of a scheme to improve water quality in the canals and rivers around Bangkok, Thailand.

Seawater cooling is an area in which we have considerable expertise. This cooling tower in Shuaiba, Kuwait, is one of the first to use recirculation of seawater.



We also recognise the increasing importance of infrastructure security

Secure infrastructure



This framework for the asset management planning assessment process underpins Mott MacDonald's work for the UK water industry.

At Mott MacDonald we offer advice and have extensive experience in all aspects of asset management – from preparing inventories, assessing condition and determining residual life to compiling risk registers and investment schedules. Assessing uncertainties to determine justified levels of investment is key to our risk-based approach.

We also recognise the increasing importance of infrastructure security when working with all stakeholders to introduce sustainable solutions. This is why we carry out vulnerability assessments for major facilities.

We've optimised the utilisation of water resources, throughflow and output treatment works, the performance characteristics of major pumping stations and the operation of canals, piped water supplies and sewerage networks. Our operational expertise extends to the management and operation of water supply and wastewater facilities and the provision of operational advice.

Our experts are often called upon to evaluate assets in preparation for a transfer to beneficiaries, privatisation or concession award, or during the planning of a project for private sector funding.

As technical advisor to the lead arrangers, Mott MacDonald provided support throughout the development of the new 31,800 m³/hour Harnaspolder wastewater treatment plant in the Netherlands.



Private partners

Public private partnerships – delivering private sector finance and expertise in developing water infrastructure and improving services to customers – are increasingly being deployed where public funds are prioritised elsewhere. Our track record and understanding of private sector objectives and requirements mean we're well qualified to help governments, beneficiaries and other stakeholders establish appropriate strategies for transferring responsibility to the private sector – with asset management and service provision usually linked to performance targets and incentives. Value for money assessments are fundamental to achieving a balanced allocation of risks and rewards.

Mott MacDonald has helped introduce private sector expertise into developing rural water supply, sanitation and irrigation schemes operated by water-user groups, managed the irrigation and drainage infrastructure for huge areas and provided urban water and wastewater services through management, concession and build-own-operate contracts.

Our work with private sector sponsors and their bankers bidding for and implementing major contracts has also earned us a first class reputation. As well as providing the planning, design, construction monitoring and commissioning skills required for implementation, we're also known for our expertise in due diligence and identifying commercial, technical, environmental and financial risks. We've also advised successful bidders for major water assets on the technical and commercial aspects of their bids.

Castor Bay water treatment works is part of Northern Ireland Water's public private partnership (PPP) programme to update and extend the province's bulk treated water supply system.

Our ethos is built on working together to provide services tailored to stakeholders' needs



Addressing the needs of Romania's water industry, we are providing direct assistance and training to stakeholders in newly regionalised water companies to implement a financial and operating performance improvement programme.

Developing together

Whether we're formulating water management policy, defining options to deliver best value water or sanitation services, assisting lenders with project appraisal, strengthening infrastructure management or helping NGOs, governments and water user associations achieve their aims, we actively channel energy into working with all stakeholders to nurture relationships, open up communication and encourage a culture of trust and integrity.

Everyone involved in project planning and policy development has a part to play in achieving sustainability and our ethos is built on working together to provide services tailored to stakeholders' needs. We're constantly pushing boundaries for continuous improvement, enhancing clarity of expectation and engendering ownership in shaping successful projects.

As part of a programme to deliver sustainable basic water and sanitation services and promote better health, Mott MacDonald was a stakeholder in providing water, sanitation, solid waste management and stormwater systems in seven towns for the Uganda Small Towns Water and Sanitation Project.



Mott MacDonald – multisector, multiskilled, multinational

Buildings

Communications

Construction economics

Education

Water

Environment

Health

Industry

Management consultancy

Planning

Project finance

Project management

Transport

Urban regeneration

Energy

For details see www.mottmac.com

www.mottmac.com

DC/07/09

This brochure is printed on paper made from 80% waste fibre and 20% virgin fibre sourced from sustainable forests. Vegetable oil based inks and sustainable laminate are used. The brochure can be composted or recycled.

