

**Dr Roger J Maddrell**  
**Senior Consultant**

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**Qualifications**

MCIPS, Chartered Civil Engineer

**Affiliations**

Associate, ADR Chambers, London, 2003-05  
BSc Geology, University of London, 1964  
PhD Sedimentology, University of London, 1968  
Diploma Port, Coastal and Hydraulic Eng., Delft, 1974  
Fellow of the Institution of Civil Engineers, 1985  
Fellow of the Geological Society, 1964  
Fellow of the Academy of Experts, 1995  
Member of the International Project Finance Association  
Chairman/ Member of CIRIA, BSI and HR Committees  
Deputy Chairman, Academy of Experts, 1999-02  
Executive Council Member, Academy of Experts, 1995-2003  
Adjudicator, Mediator and Conciliator, Inst. of Civil Engineers, 1998  
Mediator, the Academy of Experts, 1995  
CEDR Solve Mediator, 2001  
Member, Disputes Resolution Board Foundation, 2003-

**Languages**

English, Spanish, French

**Nationality**

British

**Current Position at CWA**

External Consultant.

Roger Maddrell has over thirty seven years' worldwide professional experience principally in the fields of coastal engineering, harbours, port design, dredging and reclamation, including hydraulics, river engineering, groundwater development, dams, irrigation, mathematical and physical models, risk assessments and contracts. His management and design expertise includes coordination of large multi-disciplinary marine, river, dam and power station projects, infrastructure, environmental impacts; from feasibility studies through to contracts and construction.

He also has specialist expertise in geology, sedimentology, geomorphology and oceanography. Project experience includes the nuclear and insurance industries and quality assurance, as well as experience of most forms of Contract and Procurement Schemes such as PFI, DBO etc.

He is a Mediator, CEDR Solve and Consensus Mediation. Adjudicator with the Construction Industry Council; Adjudicator, Mediator and Conciliator, Institution of Civil Engineer; Member of Advisory Panel on Legal Affairs, Institution of Civil Engineers, 2003 to 2006; Mediator, Academy of Experts. Roger is the author of over 37 internationally published papers, and is a Principal Expert Witness, with over 38 appointments

## Summary of Previous Employment

2002-present **Consultant for the Halcrow Group Ltd and Other Clients**

While at one time managing Halcrow's Dispute Resolution Centre and associated activities, is now actively involved in advising on numerous projects and providing expert advice for Halcrow and a number of Clients. These projects included ports and harbours, dredging and reclamation, coastal developments, canals, pipelines, offshore energy developments, airports, bridges and river basin developments, both in the UK and Overseas e.g. in Chile, China, Malaysia, Australia, Qatar, Egypt, Albania, Hong Kong and the Caribbean.

Additional appointments include those as Expert Witness, Single Joint Expert and by the World Bank. Expert advisor to ICC Arbitration Tribunal (Vienna) as well as for damage claims for the Insurance Industry and on liabilities of parties in terms of claims, including professional negligence. Recent expert witness work includes Flood Risk (UK), Dredging and Reclamation Development (UK, Malaysia, Egypt and Hong Kong), Reclamation and Port Development (UK-three projects), Unsafe Ports (China), Coast Defences, Outfalls, Breakwater and Revetment Failures, Soils and Ordinance.

Continued to be appointed as Adjudicator, Conciliator and Mediator by a number of Bodies, advising in Arbitrations and advising design development teams.

1968-2002

**Halcrow Group Ltd**

1986-2002

UK: Chief Engineer, Project Director, Various Projects

Manager and Director for marine, coastal engineering, ports, harbour and risk projects in the UK and Overseas. These include studies, modelling, design, contract documents, site supervision and environmental assessments. This included five years seconded to Eurotunnel as their Chief Engineer (Marine) and as Technical Advisor for the Oresund tunnel Project (tunnel, island and bridge). Workload also covered managerial and technical assessments for a range of projects worldwide including:

Expert Witness (Recent): Iraq dredging, Bahrain Airbase, Korean breakwater, Sovereign Harbour, Port Talbot, Xiaohu Dao Jetty (China), IoW Flooding, Lebanon Breakwater, Holderness Coast Erosion, Ethiopian Water Supply, UK Marina, Brunei Dredging, Beirut Airport, Scottish Gas Pipeline, Australian Dredging, Rock Blasting, Cofferdams, Cliff Failures, Oil Terminal Pipeline, Port Development, Professional Negligence, Port Construction and other cases including a number as the Single Joint Expert

Adjudicator, Conciliator, Mediator, Expert Determinator and Single Joint Expert

RLE River Medway Crossing, analysis and reporting on various surveys

Sea Defences, Sovereign Harbour, studies, design, contract and Engineer to Contract

Expert Determination: Bahrain Dredging and UK Sea Defence Construction Disputes

Spoil disposal licence, UK, investigations for offshore wind farm

Lee-on-Solent Coast Protection Study: reports, including Engineer's report, design development and obtaining various MAFF and DoE licences. Engineer to the contract

Lee-on-the-Solent: beach management, beach profiling, surveys, reports and approvals. Engineer to the contract

Caister offshore breakwaters, reports, designs, contract documents and obtaining approvals from authorities eg EN, RSPB, EA etc

Sovereign Harbour: emergency and mitigation designs

Shoreline Management Plans, various areas including Christchurch/Bournemouth bays

Blackpool: revetment design studies, site supervision and Engineer's report

Blackpool: safety assessments (risk to public) of various structures

Shoreham: sea defences, studies, designs, contracts and reporting

UK Coasts: Association of British Insurers, studies of coastal flooding and structure risk assessment for the whole of England and Wales. Assessment of the risks from single storms and risk to London from tides and freshwater flows

Dungeness: annual beach replenishment, coastal management and flood risk, Nuclear Power Station

Dungeness: successful implementation of coastal managed retreat

Saltmarshes: managing the NRA's research projects, England and Wales

Eurotunnel: design, construction and contract advice for the working marine platform accommodation over 5Mm<sup>3</sup> of tunnel spoil, as Eurotunnel's Chief Engineer

UAE: managing projects on beach management, regional development, harbour siltation, maintenance dredging and environmental controls, coastal erosion, the impact of structures and environmental enhancement

Teeside and Hartlepool: analysis of dredging fleet requirements and disposal of polluted spoil

Lappel: port planning, designs and consultations. Three contracts for dredging and reclamation and the preparation of designs (revetments, surfacing, lighting, drainage etc), site supervision and for future developments

Oman: harbour design for fisheries development

Kingsnorth: powerstation expansion and development, studies and data collection

Dungeness: environmental assessment of development and flood risks and their remedial works

UAE: four 20m high flood detention dams, management of the studies, designs and construction. Design of other flood relief works

Denmark/Sweden: Øresund Link, dredging and reclamation, technical and Contract advice, spill monitoring and construction. Project risk assessments and claims analyses and contract advice

Bangladesh: river engineering, river basin studies and geomorphology, various projects. Dredging contracts

Rosyth Naval Dockyard: revetments, outfall design and dispersal studies

Past departmental manager for staff resources, planning and technical training.

1984-1986

**Halcrow (Cyprus) Ltd**  
**Cyprus: Principal Engineer, Various Projects**

Responsible for new and existing projects in the UAE and Oman including two 5m high rockfill Wurayyah dam and six Dhaid detention dams; Das Island and Ras Al Khaimah coastal defences; Fishing harbours and marinas at Sir Abu Nu'Air, Haira, Dibba, Sharjah Creek and Khor Fakkan; Hamriyah harbour design, infrastructure and creek projects; Marine outfalls at Al Khan and Haira; Cooling water intake and outfall requirements for a methanol berth; commercial port design, Oman.

1982-1984

**UAE Dubai: Project Manager, Various Projects**

Involved as project manager for a wide range of inter-disciplinary projects including study and design for exploiting spring waters in Salalah, Oman study, site investigation and design of eight rockfill dams and one, 20m high, concrete gravity dam; feasibility study, site investigation and design of two marina facilities and infrastructure, Oman, Dubai ship-lift facility; groyne field design, Ras al Khaimah; flood drainage improvement works, Khor Fakkan; Hamriyah commercial harbour design and development and various coastal works, Sharjah; coastal studies at Das Island, Dubai, Hamriyah, Abu Dhabi and Khor Fakkan. During this period, continued to advise on coastal, creek and island development projects and beach protection works throughout the UAE and Oman.

1980-1982

**UAE: Senior Engineer, Mina Jebel Ali, Dubai**

Supervised the construction of the infrastructure for Mina Jebel Ali, a new 66 berth deepwater port. Works included two port office complexes, three transit sheds, a cool store, a cold store, two sets of four, 26m diameter, reinforced concrete, water tanks together with their 30m high, post-tensioned, reinforced concrete, water towers, steel tanks and pumphouses, six 33KV and seven 11KV substations, a sewage treatment works and a fire monitor tower.

Supervised concrete production of some 8000m<sup>3</sup>/month for over 4000 slabs and 900 quay wall blocks and other precast items.

Resident engineer on Jebel Ali Hotel Marina breakwater extension.

Provided advice on a variety of coastal engineering problems throughout the UAE.

1974-1980

**UK: Senior Project Engineer, Various Projects**

Engaged on a wide range of coastal and maritime projects and other interdisciplinary studies including Koeberg Nuclear Power Station in South Africa, cooling water intake basin, design manager; Douglas Harbour Breakwater in the UK, design; Hunterston Deepwater Platform Site in the UK, design; Mina Jebel Ali in the UAE, reclamation engineer; Lynemouth Colliery in the UK, design; Woolwich Reach Litigation, River Thames in the UK, Expert; Tay Petrochemical Terminal Study in the UK, design; Preston Dock Rehabilitation Study in the UK, design.

In addition, responsible for internal research studies involving the design of a bund building machine for tidal barrages, a report on breakwater armour units and specialist advice for coastal, power station and water supply projects in Libya, Yemen, Dubai, Indonesia, Malaysia and the Bahamas.

Principal Expert Witness on estuarine hydraulics and dredging in a long, successful, court case which went to the House of Lords.

Proof of Evidence for four Public Inquiries.

1973-1974

**Technical University of Delft  
The Netherlands, Diploma in Hydraulic  
Engineering**

Attended the International Course on Hydraulic Engineering, specialising in coastal engineering, port planning and administration and hydraulic construction. Developed a mathematical two dimensional transport diffusion model. Received an endorsement in groundwater recovery.

1968-1973

**UK/Overseas: Design Engineer, Various Projects**

Based mainly in the UK, but also working overseas.

Appraised and organised the collection of oceanographic, meteorological and geological data for tunnel and basin cooling water schemes for a nuclear power station. Later designed the cooling water harbour basin and supervised the model testing; participated in feasibility study for a proposed reclaimed site, Maplin; responsible for site studies covering geology, geomorphology, hydrology and sediments transported on the Jubones River, Ecuador, in relation to dam design, reservoir siltation, river stability and coastal morphology. Predicted siltation patterns in the entrance channel to Puerto Bolivar. Participated in berth designs supervised the site investigation and recommended stability measures for coal tips in South Wales and a similar exercise for six Trinity House Light Towers in the North Sea; assisted with the studies of the Parana Navigation Channel Scheme in Argentina; assessed siltation problems related to Thames jetties, including assessment of model tests.

**Publications**

Maddrell R J: "Offshore Energy – Wind Waves and Currents", WREC 2005 Conference, Innovations in Europe, Aberdeen, May 2005

Maddrell R J: "Lessons Re-Learnt from the Failure of Marine Structures", ICE Conference, Coastlines, Structures and Breakwaters, April 2005

Maddrell R J: "Developments in Offshore Wind Energy", Presentation to ICE SW Branch in April 2004

Maddrell R J: "Short and Long Term Impacts of the Construction of Coast Defences on Coastal Erosion", Coast & Ports Australasian Conference, September 2003

Maddrell R J: "Dealing with Ordnance" WODCON Conference, Malaysia, March 2001

Maddrell R J and Gowan D: "Legal Implications of Coastal Structures", ICE Conference, Coastline, Structures and Breakwaters, September 2001

Maddrell R J, Rennie D and Spiller K: "The "Legal" Impacts on Coastal Structures", MAFF Conference, Keele, June 2001

Maddrell R J, Rennie D, Home R and Thurston N: "The Impacts of Changes to the Bathymetry and Wave Energy on Rates of Coastal Erosion", MAFF Conference, July 1999

Maddrell R J, Phillips and Hill A: "Coastal Structures, an Analysis of the Safety Risks", MAFF Conference, July 1999

Maddrell R J and Osmond W: "The Changing Flood Risk Requirements and Managed Retreat Policy – Dungeness Nuclear Power Station and how it might be Applied Elsewhere", ICE Coastal Management Conference, September 1999

Maddrell R J, Burgess K A and Fleming C A, 1999: "Coastal Flood Defence Studies: Relating Design Criteria to Acceptable Risks, Both Now and in Future Years", COPEDEC Conference, SA.

Maddrell R J, Hintze W W and Lykke S: "Requirements and Results of the Control of Dredged Spoil Losses", WODCON XV Conference, Las Vegas, June 1998

Maddrell R J, Reeve D and Heaton C: "Establishing Coastal Flood Risks from Single Storms and the Distribution of the Risk of Structural Failure", Int. Conf on Coastlines, Structures and Breakwaters '98, London, March 1998

Hunter E J, Maddrell R J and Phillips M: "Blackpool South Shore Coastal Defences Preventing Flooding and Damage during Storms", UK Water Projects, 1998

Maddrell R J, Hintze W W and Lykke S: "The Control of Dredged Sediment Spoil Losses on the Øresund", 2nd Int. Conf. on Immersed Tunnel Techniques, Cork, April 1997

Maddrell R J: "Managed Coastal Retreat, Reducing Flood Risks and Protection Costs, Dungeness Nuclear Power Station", Coastal Engineering, 28, 1996

Maddrell R J: "The Channel Tunnel's Marine Works for Spoil Disposal", CIWEM, 1996

Maddrell R J, Fleming C A and Mounsey C: "Assessing Coastal Flood Risks", 25th ICCE Conference, USA, 1996

Maddrell R J: "Saltmarsh Restoration", Seminar, 1996

Maddrell R J: "Valuation and the Coastal Zone", Marine Environmental Management, Review, 1996

Maddrell R J: 'Harbour Developments in the United Arab Emirates and their Impact on Coastal Morphology' PIANC PCDC, Goa, India, 1995

Maddrell R J, Burgess K A, Deakin R and Mounsey C: 'Identification of Coastal Flood Areas in England and Wales for the Insurance Industry', MAFF Conference, 1995

Maddrell R J, Mounsey C and Burgess K A: 'Coastal Flooding; Assessing the Risk for the Insurance Industry', ICE Conference, 1995

Maddrell R J and Osmond W: 'Review of some 30 years' Beach Replenishment Experience at Dungeness Power Station, UK', 24th ICCE Conference, Japan, 1994

Bin L and Maddrell R J: 'Three Dimensional Model for Wave Induced Currents', 24th ICCE Conference, Japan, 1994

Maddrell R J and Fleming C A: 'The Impact of Large Structures on the Marine Environment', PIANC, Spain, 1994

Maddrell R J: 'Alleviation of Natural Disasters, Southwestern Area of Bangladesh', ICE Conference, 1993

Gardener J D and Maddrell R J: 'Cost Effective Control of Coast Erosion', IWEM Proceedings, 1993

Maddrell R J and Pearson M J: 'Logistics of Dredging the Tees Approach Channel and within the Harbour', CEDA/PIANC Dredging Conference, 1991

Maddrell R J and Vaughan A J: 'The Design and Construction of the Outer Lay by Sea Defences at Shoreham', Coastal Structures and Breakwaters Conference, 1991

Maddrell R J: 'Environmental Impact of the Disposal of Channel Tunnel Spoil', IABSE Colloquium, 1991

Maddrell R J and Burren K: 'Predicted Sea Level Changes and their Impact on Coastal Works Worldwide', 3rd Australian Port and Harbour Engineering Conference, 1990

Maddrell R J: 'The Geology of Hamriyah (Sharjah, UAE) and its relationship to local and structural geology', Conference on Quaternary Sediments in the Gulf and Mesopotamian Region, Kuwait, 1987

Maddrell R J: 'Evidence of Recent Crustal Movements in the Eastern UAE (Oman) mountains', Conference on Quaternary Sediments in the Gulf and Mesopotamian Region, Kuwait, 1987

Loewy E, Witthaus K G, Maddrell R J, Wood J P: 'Breakwater with a Sand Bitumen Core', Coastal Engineering Conference, 1980

Loewy E, Clifford J E, Maddrell R J: 'Environmental Impact of a Major Harbour Project', Coastal Engineering Conference, 1978

Fleming C A and Maddrell R J: 'Mathematical Prediction of Dredged Quantities', Sediment Conference, 1977

Loewy E, Witthaus K G, Summers L, Maddrell R J: 'Data Collection and Analyses for Coastal Projects', Coastal Engineering Conference, 1976,

Maddrell R J: 'The History of Sediment Yield and Deposition of the Jubones River, Ecuador, and its relation to Engineering Projects', International Association for Hydraulic Research, International Symposium on River Mechanics, 1973

Maddrell R J: 'Evolution of the Outer Thames Estuary', Dock and Harbour Authority, 1970

D'Olier B, Maddrell R J: 'Buried Channels of the Thames Estuary', Nature, 1970

Maddrell R J and Prentice J E: 'The Black Deep - A Critical Area of the Thames Estuary', Conference on the Technology of the Sea and Seabed, 1967

