

## CURRICULUM VITAE

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<b>NAME:</b>	<b>Martin J. Edge</b>
<b>YEAR OF BIRTH:</b>	<b>1959</b>
<b>NATIONALITY:</b>	<b>British</b>
<b>PROFESSION:</b>	<b>Waste Management Specialist &amp; Geotechnical Engineer</b>

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### KEY QUALIFICATIONS

Mr. Edge is a professional engineer with over eighteen years relevant experience in environmental and geotechnical engineering, specialising in the field of waste management and geotechnical engineering.

Over the last fourteen years Mr. Edge has been involved in a range of environmental projects throughout the world, particularly, over the last eight years, in South Asia, South-East Asia, the Middle East and Central Asia. Mr. Edge has been responsible, both as Team Leader, Project Manager and as Project Engineer, for, *inter alia*:

- the selection and assessment of sites suitable for sanitary landfilling;
- the preparation of feasibility studies, conceptual designs and detailed designs, for a number of large sanitary and hazardous waste landfill projects, particularly in southern India, Sri Lanka, the Philippines, Oman, the Caribbean, the West Bank and the United Kingdom;
- design reviews of proposed sanitary landfills, particularly in Sri Lanka, southern India, Poland, St. Lucia and Turkey;
- the preparation of operational manuals for sanitary and hazardous waste landfills;
- drafting technical guidelines for the upgrading of landfill standards in the Philippines;
- running training course on landfill design and operation in Sri Lanka, India, the Philippines and Turkey;
- supervision of construction projects in the Middle East, the Caribbean and South Asia; and
- drafting of contract and tender documents for waste management projects in South Asia, South-East Asia and the Middle East (DBO/Construct/Operations/Concessions).

For many of these projects Mr. Edge has also prepared and reviewed Environmental Impact Assessments of project proposals, all of which have been undertaken in compliance with both local and World Bank requirements.

Mr. Edge also has considerable experience of mining developments and civil earthworks and foundations, in terms of design, design review and construction supervision. Projects experience includes, *inter alia*, road design, pile installation, placement and compaction of structural backfill, the design and construction of spoil mounds, the investigation of old mine workings and the design of surface mines and quarries, including the phasing and sequencing

of excavation to balance cut and fill and the use of 3-Dimensional digital ground modelling software.

In the process of undertaking these projects, Mr. Edge has built up an in-depth knowledge of a series of related disciplines, including soil mechanics, geology, geotechnical engineering, hydrology, hydrogeology and planning-related requirements, all of which serve to provide a strong background to work in, co-ordinate and integrate multi-disciplinary projects.

## **KEY RECENT EXPERIENCE:**

### **Oman:                   Privatisation of the National Hazardous Waste Management Project, Sultanate of Oman. 2002-ongoing.**

Mr. Edge is the Project Manager for project focussed on the privatisation, at a national scale, of hazardous waste management in the Sultanate of Oman. The project has involved three principal phases:

- Assessment of hazardous waste generation and characterisation and development of project scope, objectives and development scenarios, culminating the preparation of a Feasibility Study;
- The development of technical, commercial and legal specifications for project development and implementation; and
- The preparation of a Pre-Qualification Document, Tender Documents and a Concession Agreement (with other associated Project Agreements) to solicit Tenders from the private sector.

The project is in the final phase presently, with the Tender Documents, including the Concession Agreements, nearing completion.

### **St. Lucia:               Construction of the Deglos Landfill, St. Lucia, West Indies. 2002-ongoing.**

Mr. Edge is designated as the Contractor's Representative (Project Manager) and Geotechnical Specialist for this project which is a Design and Build Contract for the construction of a municipal solid waste landfill with capacity for 20 years waste volume, intended to serve the northern half of the island St. Lucia. Aside from day-to-day management of the contract, Mr. Edge is responsible for evaluating the design and performance of earthworks constructed at the site and for reviewing the operational manual prepared to assist the Operations Contractor. The landfill was opened on the 1<sup>st</sup> March 2003 for the receipt of municipal solid waste.

### **West Bank:            Feasibility Study, Conceptual Design and Environmental Assessment of Solid Waste Management Improvement Schemes for Jenin Governorate and Hebron District. 2000-ongoing.**

Mr. Edge is responsible for the preparation of the solid waste disposal components in both project areas. The work involves a full appraisal of the existing provisions for the disposal of municipal solid waste and the formulation of design proposals, at the level of a conceptual design, for the development of a regional sanitary landfill in each of the two project areas and proposals for the rehabilitation and eventual closure of all dump sites currently in use.

Groundwater protection is a high priority. Accordingly, both landfills have been designed to be constructed, operated and managed to high standards, including the provision of a basal lining system comprising multiple barriers and intermediate drainage and leachate monitoring layers. The Conceptual Designs form part of the overall Feasibility Study for the Solid Waste Management Improvement Schemes. Mr. Edge is responsible for directing the Feasibility Studies and for reviewing all of the other project inputs, including the financial analyses and the Environmental Assessment of project proposals, to which he is also responsible. The project is, unfortunately, on hold pending resolution of the Israeli-Palastinian conflict.

**Turkey: Assistance with Preparation of Operations Plan, Hazardous Waste Landfill, Izmit. 1999**

Mr. Edge provided the Municipality of Izmit with intensive training in order to assist them with the preparation of the Operations Manual required to secure an operating licence for the hazardous waste landfill. This was achieved with the Ministry of Environment approval secured with no further delays. The landfill is operating successfully at present.

**Philippines: Feasibility Study and Environmental Impact Assessment for ecological waste management facilities, including landfills, in three participating project cities (Solid Waste Ecological Enhancement Project - SWEEP). 1998-2000.**

Mr. Edge was the Team Leader for Component 3 of SWEEP, a project promoted by the Department of the Environment and Natural Resources and funded by the World Bank. In each of the three project cities, a full appraisal of the existing solid waste management situation was undertaken as a basis for establishing and promoting ecological waste management (EWM). A fundamental component of EWM, however, remained the ability to dispose of waste residues in an environmentally sound and acceptable manner. Accordingly, each project city required a landfill engineered to appropriate standards with respect to prevailing environmental conditions and affordability. Mr. Edge was responsible for overall technical direction on this aspect of SWEEP, including preparation of the Feasibility Studies and the preparation of full EIAs of each landfill facility in compliance with local and World Bank requirements. The scope of work includes specifying the scope and content of field surveys, review of baseline data, analysis of options for project development, formulation and review of engineering designs, assessment of environmental impacts and drafting and review of reports for submission to appraising authorities.

**South India: Preparation of preliminary and detailed designs for two large engineered (sanitary) landfills and a transfer station to serve the city of Chennai, Tamil Nadu, 1998-1999.**

Mr. Edge provided overall technical direction on the project, advising, co-ordinating and reviewing the preparation of detailed engineering designs for two large sanitary landfills, each receiving approximately 1,000 tonnes per day of mixed municipal solid waste. The engineered landfills are to be developed at the sites of two existing open dumps, both of which are located in marshlands and prone to flooding. The scope of work for each landfill facility included detailed geotechnical and topographic surveys, detailed engineering designs of all site works, including site infrastructure, the re-mediation of the existing open dumps and the preparation of full Environmental Impact Assessment (EIA) in accordance with local and World Bank requirements. A similar scope of works, excluding an EIA, was also required for the transfer station. Mr. Edge oversaw the preparation of contract documents for subsequent tender issue for the landfills and the transfer station.

**Sri Lanka: Preparation and implementation of an Integrated Solid Waste Management Plan for the Greater Colombo Area, Sri Lanka. 1996-2000.**

Mr. Edge was responsible for overall technical direction of the project, a major World Bank funded project undertaken on behalf of the Government of Sri Lanka. His role has involved, *inter alia*, searches to identify suitable sites for solid waste management facilities (including sanitary landfills and transfer stations), specification and supervision of site investigations, the preparation of a conceptual design for waste management facilities, including all support facilities (e.g. access road, waste reception facilities, compost facility, leachate and landfill gas treatment facilities), the phasing of site development, the specification of site containment engineering, the preparation of a full EIA of the proposed waste management facilities (in accordance with local and World Bank requirements) and the preparation of a detailed engineering design for the transfer station. Mr. Edge was also responsible for the preparation of contract documents for both the landfill facility and the transfer station, prepared for International Competitive Bidding to pre-qualified contractors. Mr. Edge drafted a strategic overview setting out the options available to the Government of Sri Lanka for the management and disposal of municipal solid waste in the Greater Colombo Area. The principal recommendations of the report was presented to key stakeholders and reviewed by decision-makers at the highest levels of government.

**United Arab Emirates: Independent Geotechnical Engineer for a new 92 m high office complex, Abu Dhabi. 1996.**

Mr. Edge was retained by piling subcontractors Bachy (UK) Ltd. and Bauer International (Germany) to oversee and verify piling works in connection with a major new office complex, constructed on behalf of the Abu Dhabi National Oil Company (ADNOC). In addition, Mr. Edge was subsequently retained by the main contractor, a joint venture comprising Balfour Beatty (UK) and Philip Holzman (Germany), to oversee all other geotechnical work on site and to provide quality control to the satisfaction of the Client. Construction supervision lasted for a period of 8 months.

**South India: Solid Waste Management Masterplan for Madras (Chennai). 1995.**

Mr. Edge was responsible for investigating two major open dumps used by the then City of Madras and for specifying and evaluating options for remediating these dump sites and upgrading them to engineered or sanitary landfills. Preliminary EIAs were also undertaken of the proposed works, for which Mr. Edge was responsible. Mr. Edge also undertook a comprehensive site selection and screening exercise to identify potential future landfill sites to be identified in the short and medium term.

**Sri Lanka: Preparation of conceptual design for a large sanitary landfill to serve the Greater Colombo Area, 1994-1996.**

Mr. Edge was involved in preparing engineering designs for a site selected by the Government of Sri Lanka to serve as a regional sanitary landfill. The location selected, a flooded marshland underlain by soft organic and alluvial sediments, required specialised methods of engineering to be adopted. Mr. Edge prepared the outline designs and contributed to the EIA of the proposed works.

**Central Asia: Field reconnaissance, investigations and feasibility study of geotechnical issues associated with the development of a new (greenfield) surface gold mine. 1994-1995.**

Mr. Edge undertook, on behalf of a major mining company, all preliminary field reconnaissance associated with the proposed development of a new surface gold mine in Uzbekistan. In particular, Mr. Edge was tasked to identify suitable locations for the establishment of an US \$ 80 million processing plant, a new residential development to house site workers, access roads, processing ponds, heap leach pads (up to 1 km in diameter, a 40 km pipeline route and potential locations for a series of tailings dams, each up to 25 m high. Site work included walk-over surveys, field reconnaissance mapping, liaison with local geologists and the direction of preliminary site investigations to confirm ground conditions, in places to depths of 50 m. Mr. Edge was solely responsible for all aspects of the work which was undertaken over a period of five months, four of which were spent on site.

**Scotland: Technical Audit of geotechnical design issues, Ayr Road Route, proposed M77 extension. 1994**

As part of the bid procedure, the Highways Authority (UK) require suitably qualified contractors bidding for major contracting works to prepare and submit their own design proposals in response to the Invitation to Bid. Such design proposals have to be reviewed and verified as technically sound by an Independent Engineer. Mr. Edge was retained in this role by the Contractor to perform a technical audit of the Contractor's design proposals. The scope of works involved checking the interpretation of geological and site investigation records, verification of design parameters selected on the basis of available data, or, in the absence of such data, on sound engineering judgement and experience, check analysis of stability calculations for both fill and cut slopes, evaluation of drainage measures proposed for earthworks, assessment of consolidation-induced settlements, the potential for collapse of old mine workings and the verification of sub-grade conditions in relation to the proposed pavement design.

**England: Interpretative Geotechnical Report, Earthworks and Material Properties, proposed Birmingham Northern Relief Road (BNRR). 1993**

The BNRR was the first toll motorway to be proposed for the United Kingdom. Mr. Edge was retained to evaluate all relevant geotechnical aspects relating to the design of earthworks (embankment and cut slopes) along the proposed alignment of the 40 km, six lane highway. The work involved evaluation and analysis of multiple site investigations, interpretation of the superficial and bedrock geology along the whole of the road alignment, identification of abandoned mine workings, the selection of appropriate design parameters for cut and fill slopes and recommendations for slope drainage and construction. In addition, Mr. Edge also reviewed the Interpretative Geotechnical Report prepared on the Structures along the proposed road alignment, including bridges, culverts, retaining walls and gantry foundations.

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## EDUCATION

Ph.D research on geological, lithological and geotechnical properties of continental shelf deposits, northern North Sea, University of Keele, 1981-1984  
Geography, *MA*, University of Oxford. UK, 1984  
Geography, *BA Hons.*, 1<sup>st</sup> Class, St. Peter's College, Oxford University, UK, 1978-1981

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## EMPLOYMENT RECORD:

1997-present	Associate Consultant, Environmental Resources Management Ltd., UK
1996-present	Director, Edge & Pritchard Limited, Middle Barton, Oxon, OX7 7EU, UK
1993-present	Partner, Edge & Pritchard, Middle Barton, Oxon, OX7 7EU, UK
1989-1993	Senior Geotechnical Engineer, Geoffrey Walton Practice, Charlbury, UK
1988-1989	Temporary Lecturer in Soil Mechanics, Oxford Brookes University, UK
1984-1988	Research Assistant in Soil Mechanics, Department of Engineering Science, University of Oxford

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## PROFESSIONAL ORGANISATIONS:

Fellow, Geological Society of London  
Member, British Geomorphological Research Group  
Member, Quaternary Research Association

Applications pending:       Institute of Waste Management (UK)  
                                      Institution of Mining and Metallurgy (UK)  
                                      Institution of Civil Engineers

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## PUBLISHED PAPERS:

Author and co-author of refereed published papers on quaternary geology and soil mechanics. A list can be supplied upon request.

Contributor to conference proceedings (oral presentations and posters) both in the UK and overseas.

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## LANGUAGES:

	<b>Speaking</b>	<b>Reading</b>	<b>Writing</b>
English	Excellent	Excellent	Excellent
German	Basic	Basic	Basic