



Highways

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Skills and services

Key services

Safety

- Accident reduction
- Passive safety
- Road safety audits
- Safety in construction and maintenance

Sustainability

- Air quality monitoring
- Energy efficiency
- Environmental impact assessment
- Environmental management systems
- Landscaping
- Materials recycling
- Nature conservation
- Noise mitigation
- Pollution control
- Socio-economic assessment
- Vibration assessment

Planning

- Alignment studies
- Business case planning
- Community consultation
- Development planning
- Economic analysis
- Feasibility studies
- Integrated transport strategies
- Materials sourcing
- Pavement studies
- Public inquiry support
- Route location studies
- Site investigation
- Toll revenue forecasting
- Traffic impact studies
- Traffic modelling software
- Traffic surveys

Private finance

- Asset transfer and valuation
- Best value
- BOT/BOOT/DBFO
- Public private partnerships
- Whole life costing

Infrastructure

- Bridges
- Cut-and-cover construction
- Development access
- Expressways and trunk roads
- Motorways and urban roads
- Rural access and feeder roads
- Tunnels

Design and construction

- Construction supervision
- Contract documentation
- Contract management
- Design and build
- Multidisciplinary design
- Preliminary and detail design
- Project management

Operation and maintenance

- Emergency and routine repairs
- Incident response
- IT management systems
- Maintenance inspection
- Network management
- Procurement
- Road space management
- Traffic operations

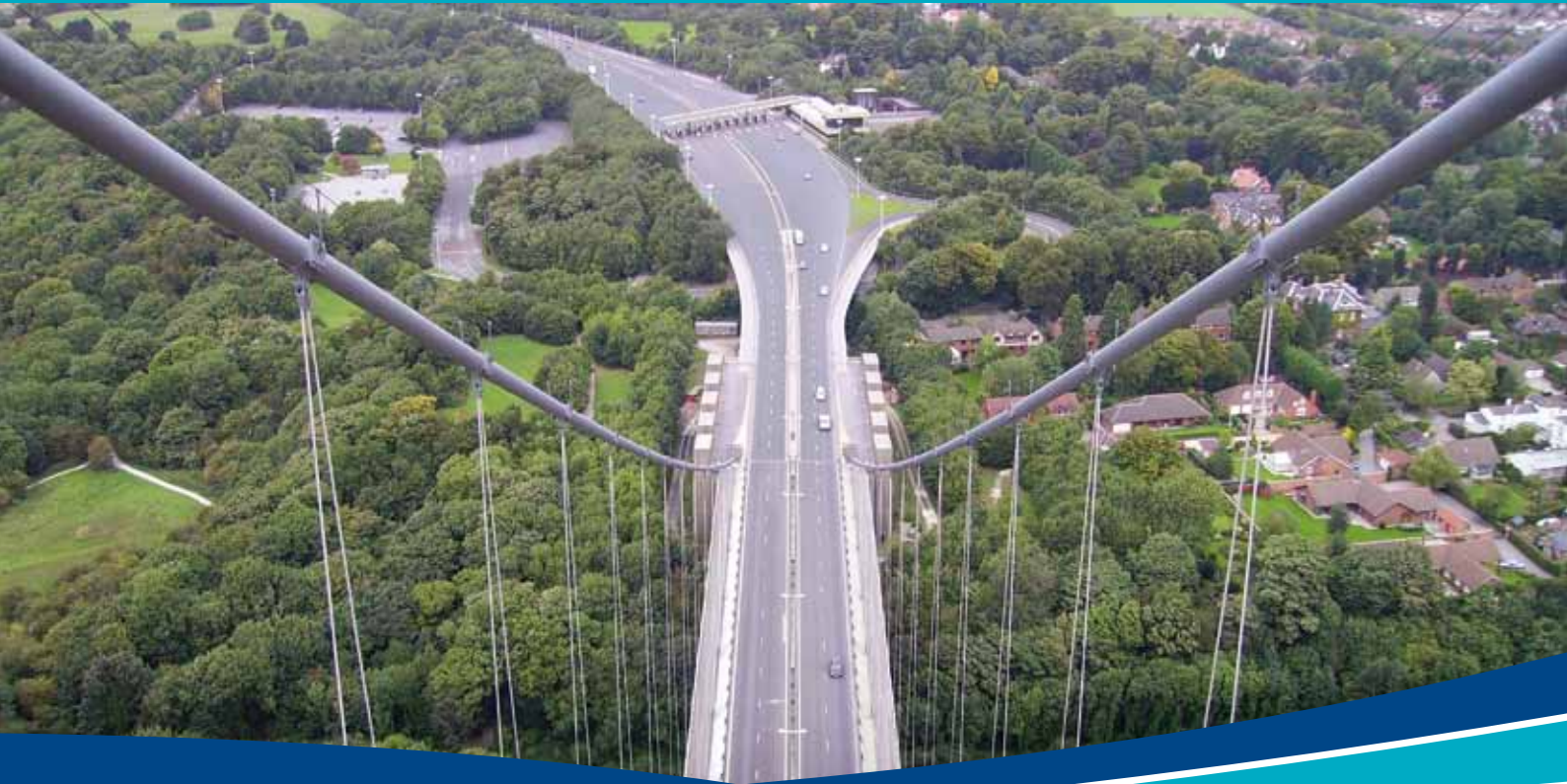
Traffic management

- Congestion analysis
- Demand management
- Driver information systems
- Signing and signalling control
- Toll systems
- Traffic control systems/ITS
- Traffic modelling

Special skills

- Bridge assessment and strengthening
- CCTV
- Communications
- Control systems
- Development planning
- Drainage
- Durability engineering
- Earthworks stability
- Fire safety
- Foundation engineering
- Geotechnics
- GIS
- Inspection and testing
- Institutional strengthening
- Lighting
- Materials recycling
- Materials technology
- Pavement engineering
- Real-time information
- Refurbishment and repair
- Seismic design
- Structural analysis
- Value engineering

Our vision is to be the consultant of choice, providing safe, sustainable and deliverable solutions



Ahead in highways

Highway infrastructure has an effect on a country's economic wellbeing in many ways, whether by forming strategic links in multimodal networks across urbanised regions or by improving access for rural communities to bring business and social opportunities.

At Mott MacDonald we have a deep understanding of the highways sector that encapsulates all its economic, social and environmental dimensions as well as design and construction. This is built on a portfolio ranging from planning, designing and implementing new roads to maintaining, managing, improving and operating existing highway networks.

Driving our commitment to provide best value for our clients is a culture of innovation, safety, research and development. We constantly strive to improve what we do and how we do it, actively seeking fresh solutions for our customers and ourselves. We fully engage with both the public and private sectors through collaborative working – an approach which liberates ideas on best practice and value engineering, leading to delivery of best value to the benefit of all.

These credentials combined with skills from state-of-the-art traffic control systems and high performance surfacings to route optimisation and environmental appraisal mean we are ideally equipped to serve the whole spectrum of highway development and management.



In the Czech Republic we are working for the Road and Motorway Directorate to supervise construction of the country's first ISPA-funded highways project, involving a new section of the strategic R48 Belotin-Cesky Tesin Expressway 400km east of Prague in North Moravia-Silesia.

Project finance

Mott MacDonald is one of the leading providers of technical advisory services for PPP projects worldwide – serving the public sector, investors and bidders/concessionaires. Through our understanding of privately funded and PPP projects we are able to provide advice to project financiers on all the technical, environmental and commercial risks by undertaking the necessary due diligence activities on new-build, maintenance or refinancing an existing project or asset. We also advise concessionaires on risk assessment, value engineering and operation and maintenance.

We act as technical advisors to the public sector for the procurement of the maintenance and operation of highway networks by the private sector. Our innovative approach to procurement and technical aspects of these contracts has delivered added value for customers in the UK, Singapore and Australia.

Efficient procurement

Driving the procurement process we aim to reduce the time and cost of selecting tender lists, improve project delivery and enhance value for money. Early Contractor Involvement (ECI) and Managing Agent Contractor (MAC) are now the standard methods of taking projects forward. We are working under the ECI initiative – devised to speed delivery and enhance value for money by involving the contractor from the project outset – with contractor Balfour Beatty for example on the design for the UK Highways Agency's A3 Hindhead main road scheme.

Appointed by Waterford City Council in Ireland, we provided consulting services in relation to the preliminary design and planning of the N25 Waterford Bypass and to enable construction of the scheme to be procured through a Public Private Partnership.



For the Dundalk Bypass in Ireland constructed under a Public Private Partnership scheme, our role included detailed design of approximately 12km of dual carriageway and 13 main structures.

To convey project concepts faster and more effectively we are constantly advancing our visual communication skills which range from creating virtual reality models to importing 3D design data into video footage of project areas to show new schemes integrated into the real world.



Project delivery

For every project we aim to meet each customer's programme, budget, performance and quality goals through a wealth of design expertise, practical experience and management skills. We recognise the need to maintain the highest levels of quality control, reliability and safety while optimising operating, energy and maintenance costs. Our multidisciplinary base enables us to cover all components of a project and all stages from concept to completion, providing a totally integrated and quality assured one stop service.

Every commission we undertake is assigned a project director plus a project manager who is the customer's principal contact and oversees the project's day to day management and cost control. Close teamwork and partnership with our customers ensure that all project activities are fully co-ordinated and targeted towards their objectives. We provide special training for customers' staff if required. We operate a quality system in accordance with ISO standards designed to ensure we deliver a top class service.

Singapore's US\$1 billion Kallang-Paya Lebar Expressway includes 12km of six lane highway. We are working on a 2.9km cut and cover tunnel, one of the most challenging components of the whole project.



Collaborative working



In areas ranging from bridge design and strengthening and resurfacing to highway safety schemes and environmental measures, we're working with Norfolk County Council and contractor May Gurney under a single strategic management team to help deliver the council's Local Transport Plan and other highway projects.

At Mott MacDonald we believe that any partnership calls for a culture of co-operation, collaboration and continuous improvement, all geared towards attaining mutual objectives and best value. Whilst we have always strived to build close relationships based on trust and teamwork with all our customers, the formal or informal partnering arrangement takes this a stage further, nurturing interaction between private and public sector expertise through total openness and trust.

We are involved with a number of landmark partnerships in the UK including a three-way partnership between ourselves, the Highways Agency and contractor Balfour Beatty Infrastructure Services covering operation and maintenance of motorways and trunk roads in South East and South West England. We've integrated people and processes in a single management environment which is encouraging innovation and continuous improvement. The co-operative management initiative on the A34 Newbury Bypass is another example of a novel partnership as is our partnership with Norfolk County Council where with construction company May Gurney we are working on road and bridge maintenance and have helped deliver a near 150% increase in transport investment.



On a road stabilisation scheme in Dorset for the Highways Agency, local MPs, councillors and members of the business community visited the site during piling operations as part of the consultation process.





We give the highest priority to environmental issues from the outset

Significant mitigation measures were incorporated into the design of the A3 Hindhead improvement programme to ensure this major tunnelling scheme is completed with a net environmental benefit. These measures included returning the existing A3 to heathland, ensuring tunnel alignment is above the water table and extensive translocation of flora and fauna.

Environmental care

Protecting society and the environment is a duty we all have. At Mott MacDonald we have over 200 environmental specialists and a highly specialised health unit which can assess the social impact of transboundary developments and worker migration. We give the highest priority to environmental issues and make sure environmental measures are included from day one. A key element of this is the environmental assessment required for all transport proposals which looks at every aspect of a development especially those of particular public concern such as traffic noise and air quality.

Achieving the highest possible standards of environmental management is always our goal. To this end we pay great attention to protecting any special land and water areas, controlling pollution, preserving wildlife and using materials carefully – recycling wherever possible – to promote sustainable development.

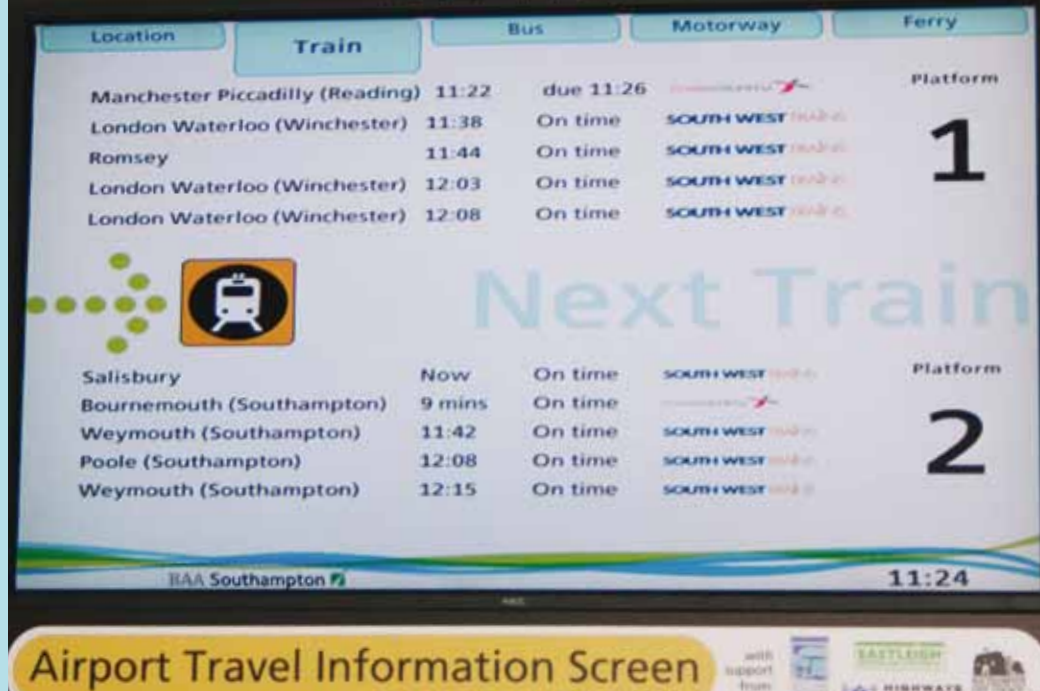


Traffic and economic appraisal

All highway schemes must be designed to address transport issues and to provide value for money. At Mott MacDonald we have considerable worldwide expertise in traffic modelling and economic appraisal of transport infrastructure. We carry out single mode and multimodal appraisals, concentrating on satisfying relevant assessment criteria using standard appraisal software. For the UK Department for Transport we have developed project specific software, TUBA, to deal with the economic assessment of transport projects in a multimodal context and DIADEM, to deal with variable demand modelling.

Economic analysis is vital to show a proposed scheme is value for money and we regularly assess the economic impacts of the safety, design and maintenance aspects of a new scheme. We work on projects in urban, rural and inter-urban areas and have simulated vehicle operations in many cities around the world including London, Lahore and Dhaka, as well as many rural schemes such as the A38 Dobwalls Bypass in the UK. In London we developed the SALT-C model for Transport for London to assess the effect on traffic of the introduction of congestion charging.

At Southampton Airport, UK we've delivered a system in the baggage reclaim hall which provides up to the minute information about local rail, road and ferry services using websites, SMS messages and public displays.



Informed travellers

At Mott MacDonald we deliver innovative solutions to assist in the management of traffic and travel in the urban, inter-urban, rural and multimodal environments. From initial route planning, through computer integrated design and construction to traffic management and infrastructure maintenance, the effective use of data provides significant benefits. By identifying needs and benefits as well as planning and modelling the impact, we develop solutions for integrated transport environments, driver information systems, public transport timetables plus real-time information systems.

Reliable journeys

To improve driver awareness and reduce delays on highway networks we undertake analysis of both regular and incident related congestion leading to targeted road improvements, assisted response measures and information systems.

To complement this we deliver a comprehensive service to maximise the value of transport related information. Reliable journeys are important to all travellers and we are able to provide systems that present information based on historic and real-time data to inform them of likely delays. Applications are developed that are appropriate to customers' needs and range from the installation of off-the-shelf packages to fully bespoke systems. In Leeds for example, we've developed a world class real-time travel information website, Leeds Travel Info (www.leedstravel.info). Building on the common database we developed for the city council, this map-based site provides real-time event and incident data for the greater Leeds area.



Keeping roads open and traffic flowing, enabling better communication with road users and improving safety are among the challenges we face in running thousands of kilometres of road network in southern England for the Highways Agency.

Enhanced safety

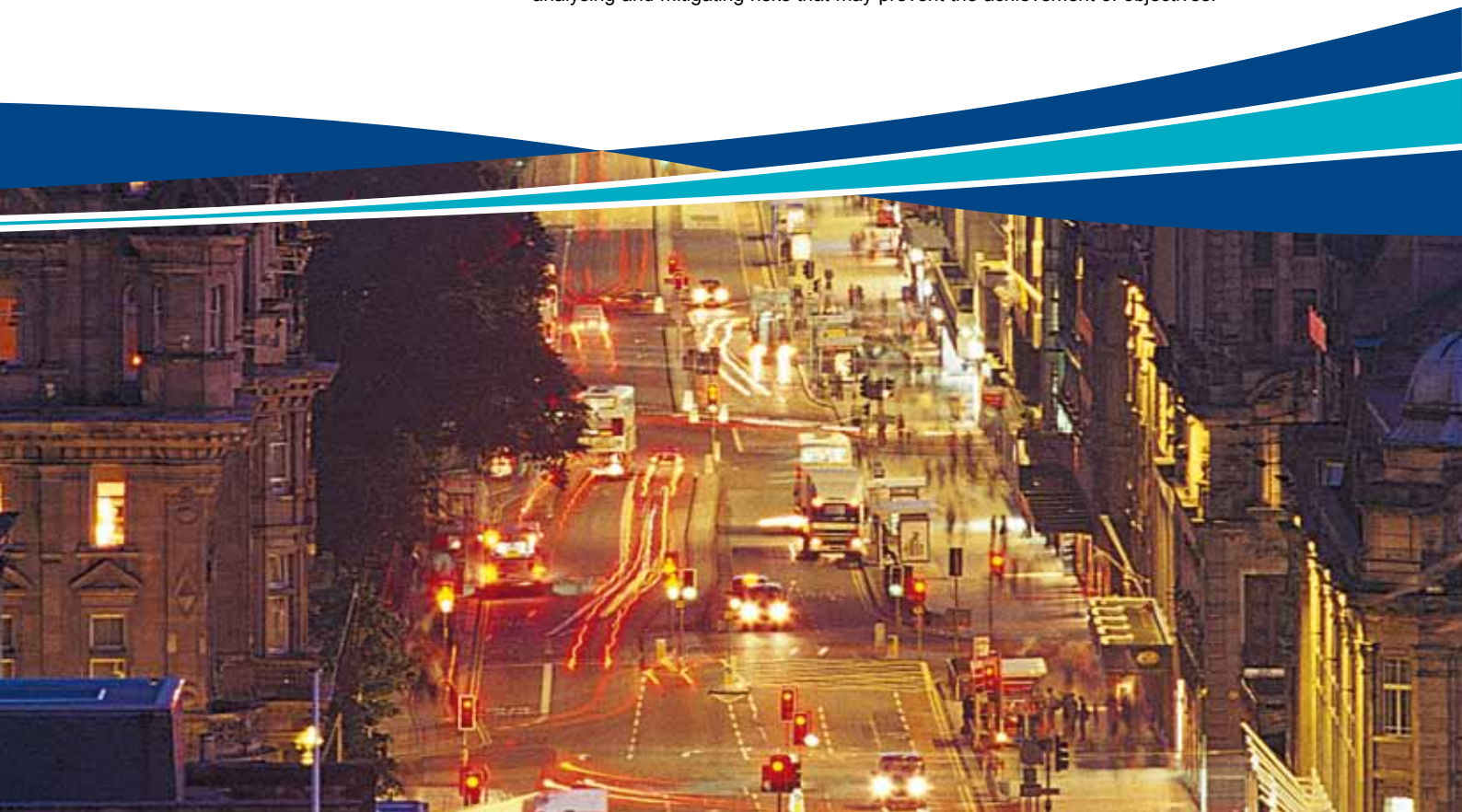
Road safety is a major concern throughout the world. Mott MacDonald is committed to maximising its contribution to the reduction of road casualties through the application of enhanced engineering techniques and innovative approaches in all aspects of our highways business.

We've developed an expert team directly focused on accident reduction and improving road safety. Specialists within the team provide advice on passive safety, accident analysis, road safety engineering and formal road safety audits. We work with our customers' teams in the public and private sectors to improve road safety in countries around the world.

Managed risk

At Mott MacDonald we apply best practice risk management processes throughout the company to manage risks and opportunities and thereby improve the performance of our business and safeguard the interests of customers, employees and shareholders. These risk management processes are an integral and formal part of our business and project management practices and address uncertainties in terms of downside risk and upside opportunities.

At project level, project managers are responsible for risk management, considering the risks that may arise and planning to take account of those risks. For major projects a risk management plan is developed which takes the form of a register with specific plans for mitigating risks where appropriate. As part of the normal project reporting, managers will report on the status of risk management, clarifying goals and objectives and identifying, analysing and mitigating risks that may prevent the achievement of objectives.



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

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