

Transport



Highways

Tunnels and bridges

Rail and
urban transit

Airports

Ports and harbours

Transport technology

Metros



With 100 years' experience we bring an holistic approach to any project on any scale



Mott MacDonald was principal design consultant for all civil and geotechnical engineering on the UK section of the **Channel Tunnel** – the world's longest undersea crossing. We also provided key mechanical and electrical services throughout the entire 50 km tunnel between Folkestone in England and Sangatte in France.

Mott MacDonald delivers cutting edge solutions to a huge range of customers for strategic projects covering all forms of transport by road, rail, air and sea. Within our global transport business we have a wealth of experienced and skilled professionals which means we can mobilise multi-disciplinary teams tailored to providing a total service for our customers. And the Group's vast network of offices world-wide enables us to provide our total consulting service wherever our customers or their projects are based.

From preparing the business case and advising on related issues – such as revenue, procurement and environmental legislation – to delivering the completed infrastructure and helping to maintain it, our planning, engineering and management skills cover the whole project cycle.

Transport

As one of BAAs first-tier integrated suppliers, we have a key role in helping deliver the £4.3 billion **Heathrow Terminal 5** project. We've worked on all sub-structures and foundations as well as extending underground rail links to service the airport.





We advise on all aspects of transport policy, feasibility studies and project funding

Project development



As lender's technical advisor for the long-term expansion of **Istanbul Airport** we're advising on the development planning that will take the airport's capacity to over 30 million passengers, as well as looking at terminal capacity, traffic forecasting and environmental impact.

For central London's **Congestion Charging Scheme** – the largest of its kind in the world – we supported Transport for London in many roles including work on the legal frameworks, traffic management strategies and programmes, signing, traffic modelling and a real-time traffic information database. We went on to help trial new technology and extend the original scheme.



On **Kuala Lumpur Monorail**, the biggest outside Japan, our role as independent checking engineer included the monitoring, review, verification and certification of the complete system design, payment milestones and progress to programme, for civil, mechanical and electrical railway systems.

Transport projects present a range of challenges for effective development, requiring numerous disciplines. We have the advantage of top quality staff offering a huge depth and breadth of experience, with several known in the industry as leaders in their field.

At the start of any project we are able to assemble an in-house team covering every discipline needed to deliver our customer's requirements, from economists, environmentalists, transport planners, procurement experts, engineers, project and programme managers to safety specialists, cost consultants, ergonomists, IT experts and more besides.

We've been helping the public sector attract private investment for modernising and developing infrastructure around the world. When it comes to funding, we have built an enviable reputation for meeting the specific needs of financiers, developers, contractors, operators, insurers and public sector bodies whatever the procurement route.

Our experience of serving national and local governments, transport operators, contractors, systems suppliers and financial institutions has given us valuable insight into their different goals, business drivers, cultures and ways of working – and hence the diverse challenges they face, from operational safety to revenue generation to stakeholder accountability. We also understand the importance of addressing these issues throughout a project's development.



On the 109 km **Channel Tunnel Rail Link** – among Europe's largest privately funded transport schemes – we're lead consultant entrusted with looking after the UK government's interests during all stages of implementation and ensuring that the concessionaire fulfils its obligations under the project agreement.



In Poland we're working on the £20 million modernisation of Gdansk Port and its supporting infrastructure as well as reconstruction of road junctions, tram lines and rail track. Meanwhile in South Africa we're working on an £80 million expansion to **Durban Harbour** which involves developing a 500 m long utility tunnel.



Design



In Malaysia our innovative design for **SMART** (Stormwater Management and Road Tunnel) provides a single solution to central Kuala Lumpur's recurring floods and ongoing traffic congestion in the form of the world's first dual-purpose tunnel carrying vehicles and stormwater.

Work on phase 3 of the **Manchester Metrolink** has involved our full range of light rail services including feasibility and design of 70 km of track and engineering structures, tram/traffic interfaces, signalling, interchanges, rolling stock, power supply and depots. We've been continually involved in the Metrolink scheme from its inception helping with initial planning, design and development of phases 1 and 2 in addition to the phase 3 works.

We work closely with our customers on all design aspects, factoring in ease of maintenance, safety, reliability and availability. Our holistic engineering approach ensures interfaces between different systems are carefully integrated and optimised.

Driving our commitment to provide best value for our customers is a culture of innovation and research and development. We constantly strive to improve what we do and how we do it, seeking fresh solutions to design challenges to benefit operators and users of transport networks alike.



Mott MacDonald and Epsilon were appointed as concept designer and supervising engineer by the Bangkok Metropolitan Administration for the city's **Rama VIII Bridge**. The design received national acclaim within Thailand as the first crossing of the Chao Phraya River to combine modern bridge construction technology with adornment inspired by Thailand's rich cultural heritage.





Using our sophisticated modelling techniques our ventilation team is helping relieve high temperatures in the underground trainshed serving New York's **Grand Central Terminal**. Our solution uses a combination of mechanical and natural ventilation systems including the supply and distribution of additional ambient air into the trainshed as well as extra sidewalk gratings.



Safety and sustainability



Image provided and licensed by Taiwan High Speed Rail Corporation

Among the world's largest privately funded transport schemes, the **Taiwan High Speed Rail** project features 50 km of tunnels and 240 km of bridges and viaducts plus six stations. We've been leading the international joint venture serving as the independent checking and site engineer.

We give priority to sustainability, environment and safety, ensuring measures are included from day one

Whether replacing obsolete equipment with the latest economically and energy efficient technologies or managing transport to limit its impact on local communities and the natural environment, we are committed to working in partnership with our customers to address sustainability in every project.

We also work to improve the travelling environment. For example, we can apply modelling systems to assess impact on air quality, noise and vibration to make surroundings safe and comfortable for the end user or develop real-time information systems to keep travellers updated.

Customers benefit too from our extensive expertise in the cost-effective implementation of formal safety management systems. These ensure that management structures, procedures and responsibilities are clearly established, with safety considered from the beginning of the project.

Delhi Metro is starting to change the face of the city by reducing traffic congestion. We provided complete architectural, civil, structural, mechanical and electrical services for 6.6 km of tunnel and six underground stations forming the southern section of Line 2. We also worked on the detailed design of Mandi House metro station, part of Line 3.



At **Stonehenge**, a designated UNESCO World Heritage site and one of the most significant archaeological areas in the world, we helped develop proposals for a 2.1 km length of tunnel to hide the A303 trunk road in the most sensitive and visible zone near the stones.

Road Rail Air Sea



We're helping deliver one of the most challenging components on the 12 km six lane **Kallang/Paya Lebar Expressway** for Singapore's Land Transport Authority incorporating a 2.9 km cut-and-cover tunnel, ventilation buildings, five slip roads, two road bridges and an interchange.



Construction and delivery



For **Hong Kong Airport** at Chek Lap Kok Mott MacDonald helped conceive, plan, design and deliver over US\$6.5 billion of transport infrastructure including the award winning passenger terminal and road and rail links. We're now working on the next airside phase – the North Satellite Concourse.

Our capabilities cover all technical and management aspects of project delivery



Courtesy of Samsung

In Korea Mott MacDonald is involved in the delivery of two fixed road crossings totalling US\$2.8 billion – the Busan-Geoje Link and the second **Incheon Crossing** which is an 800 m span cable-stayed bridge linking the mainland to Yongjong Island, home of the new airport.

Because we've been delivering ambitious, vast, complex and demanding projects all over the world for more than a century, we've demonstrated our dependability and dedication – and it's this same commitment that we bring to every assignment.

Mott MacDonald also has a long track record in providing specialist advice to project teams and customer organisations around the world on all aspects of site supervision and construction management, including safety, offshore manufacture, quality and environmental management and management systems. We work closely with local consultants, contractors and customers to help establish models for improving construction management and supervision skills, as well as providing structured training through on-the-job programmes by resident advisors, supported by visiting specialists and study tours.



Operation and maintenance



Canadian Pacific Railway (E7902-3) Rick Robinson

Canadian Pacific Railway undertook a major programme to expand mainline track capacity in western Canada. We mobilised a team to develop designs, procure contracts and administer controls for some 26 projects covered in the programme.

In the UK, our long term partnership with the **Highways Agency** involves us in managing and maintaining both infrastructure and technology on over 3000 km of road network across much of southern England, providing an increasing range of expertise geared towards the Agency's mission of safe roads, reliable journeys and informed travellers.



At **Kilimanjaro Airport**, Africa's first privatised international airport being run in a public/private joint venture with the Tanzanian Government, we helped with the overall management and provided master planning for the development of the airport estate.



Through our **Partnerships with Local Authorities** in the UK we're helping enhance the operations of various transport services. Working with Norfolk County Council we helped improve the efficiency of bus services with touch screen ticket systems cutting down boarding times. We have also helped Norfolk County Council secure more than £10 million of funding for innovative public transport projects.

Customers around the world use our skills not only to deliver innovative transport solutions but also to manage and maintain their transport infrastructure.

We're here to help long after a new facility is up and running. As well as devising preventative maintenance regimes to extend service life and producing detailed operation and maintenance manuals, we can appraise business performance once a new facility is earning revenue, then advise on any operational changes. Our project management skills ensure our skilful handling of a project all the way through its operational life.



Adding value

Through collaboration, innovation and learning we strive to sharpen our working practices, further improving our service to our customers and helping advance industry best practice.

Web-based asset information systems, simulation models to enhance fire safety and evacuation procedures, passively safe signposts to reduce injuries from collisions – these innovations all demonstrate the commitment to continuous improvement that drives us to seek new ways of deploying our intellectual capital to benefit our customers and partners.

This focus on adding value is embedded in our company culture, with all our offices around the world working to go beyond the obvious in devising approaches to help enhance efficiency, service delivery and stakeholder accountability.



Instant access to real-time travel information to help the public plan journeys and avoid delays – that's fast becoming a reality for shoppers in the UK, where the public can check out train times at kiosks linked to **MATTISSE**, a multi-modal system developed by our software systems integration experts to enable transport authorities in the UK to exchange up-to-the-minute travel data.

Our innovative solution reduced costs by several hundred million US dollars on one of the most complex contracts on the USA's **Boston Central Artery** project by proposing tunnel jacking instead of traditional cut-and-cover techniques. The project, which involved jacking three full-size interstate highway tunnels without any disruption for the 40 000 daily train commuters, was the biggest of its kind in the world and winner of ten global industry awards.



Mott MacDonald – multi-sector, multi-skilled, multi-national

Buildings

Communications

Construction economics

Education

Energy

Environment

Health

Industry

Management consultancy

Planning

Project finance

Project management

Transport

Urban regeneration

Water

For details see www.mottmac.com

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