

Aviation in India

Delivering leading expertise for airport projects

Mott MacDonald is a uniquely diverse management, engineering and development consultancy serving the public and private sectors worldwide. Mott MacDonald's US\$1.7 billion business spans 140 countries with 14,000 staff working in all sectors from transport, energy, buildings, water and the environment to health and education, industry and communications.

Mott MacDonald is one of the world's most experienced aviation consultancies. We provide technical advisory services for airports, airport project finance and commercialisation, and have worked on major aviation projects around the world. We also offer a breadth of aviation related knowledge and air transport skills including aviation strategy, air traffic forecasting, fleet and airport planning, including airport terminal design. Our expertise in airfield and building engineering, surface access, capital delivery programmes, asset management and environmental management for airports enables us to ensure aviation projects are delivered to the highest standard of quality and safety.

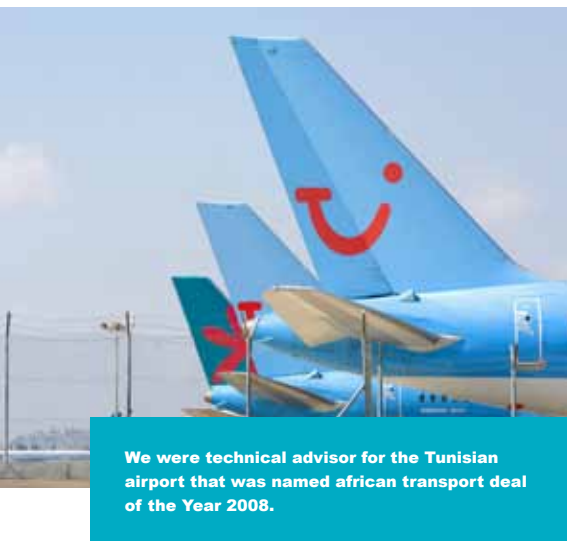
We focus on meeting the aviation industry's specialised demands through the expertise of our integrated team of aviation strategists, economists, accountants, planners, engineers and environmentalists. We are equally experienced at working for airport vendors, investors and lenders on projects of any size. We have international experience from locations as varied as St. Petersburg, Istanbul, Hong Kong and London Heathrow, which we have brought here in New Delhi, Mumbai and other Indian cities.



We provided traffic forecasting, a 30 year master plan and concept and preliminary designs for Delhi international airport. The 34 million passengers per annum capacity terminal building was finished in 38 months. From start to finish the project took only 50 months to deliver and opened to traffic in July 2010.



We are the lender's technical advisor for Adnan Menderes airport in Izmir, Turkey. We are also providing operations monitoring, including traffic reports, financial reviews and environmental, business development and risk management evaluation.



We were technical advisor for the Tunisian airport that was named African transport deal of the Year 2008.



We provided technical advisory services for Pulkovo airport in St Petersburg, Russia.

What we offer globally

Construction economics

- Cost management
- Cost estimating
- Cost planning
- Bill of quantities
- Cost risk analysis
- Cost reporting
- Cash flow prediction

Management

- Project management
- Development management
- Programme management
- Project planning and scheduling
- Value management/engineering
- Risk management
- Procurement/contract management
- Construction planning and management
- Quality assurance and management
- Design management

Operations

- Aircraft performance – route and payload
- Runway performance – length and obstacles
- Fleet planning and development
- Aerodrome operations audit
- Aerodrome safeguarding
- Airline operations audit
- Airline operations management

Markets and routes

- Route and air service development
- Airline network development
- Market research
- Market evaluation
- Pricing policy
- Passenger and cargo traffic forecasts

Planning

- Strategy
- Policy advice
- Business planning
- Marketing planning
- Master planning
- Conceptual planning
- Passenger flow planning
- Facilities planning
- Safeguarding
- Airport development
- Airline development

Engineering

- Civil engineering
- Pavement engineering
- Structural engineering
- Building services engineering
- IT systems and systems integration
- Transportation engineering
- Transportation planning
- Utilities
- ARM analysis

We are providing master planning and detailed engineering design for Male International Airport expansion in the Republic of Maldives.



Courtesy of IDA Hongkong

Our track record

Indira Gandhi international airport, New Delhi

Mott MacDonald was appointed as lead technical advisor to produce a detailed master plan and phase 1 preliminary designs for the restructuring of Indira Gandhi International Airport (IGIA). The master plan proposed a phased development from 2006 to 2036 – when an ultimate development capacity exceeding 100 million passengers per annum would be reached. By that time IGIA will be operating with four additional terminal buildings and three additional runways. A pair of crosslink taxiways was designed to link a new runway to the new international terminal building and the two existing runways. In addition, over 650,000m² of apron pavement was designed. The project will ultimately provide New Delhi with a world class facility, capable of sustaining the growth requirements of a major international city.

Chhatrapati Shivaji international airport, Mumbai We developed the landside master plan and provided infrastructure planning for the modernisation of this airport in the state of Maharashtra. We provided site surveys, environmental impact assessment, storm water drainage system plan, forecourt road network plan and design services for the radio communication network and structured cabling systems. This airport is being developed using a public private partnership model.

International airport, Bangalore This modern greenfield airport is located near Devenahalli, 28km from Bangalore in the state of Karnataka. We were owner's engineer and technical advisor to the client. We examined project and procurement documentation, reviewed the airport master plan and detailed project report, reviewed designs, specifications and drawings, evaluated the engineering procurement construction (EPC) bid

document and reviewed bills of quantities (BOQ) and cost estimates. We provided assistance to finalise construction and to the operation and maintenance (O&M) contractors, addressed project implementation concerns and provided assistance in obtaining financial closure.

Pakyong airport, Sikkim This is a very challenging airport both from aeronautical and engineering perspectives. It involves extensive civil engineering design of earthworks in hilly terrain and constructing up to 100m high retaining structures to create a platform for the runway and terminal buildings. Mott MacDonald reviewed the master plan, provided supervision and monitoring of all surveys, computation of earthwork quantities, and design and issue of good for construction (GFC) drawings for the reinforced earth-retaining structures. We designed the drainage system and prepared detail estimates, specification and tender documents. We also undertook 3D modelling of the runway and surrounding retaining structures.

Shirdi and Solapur airports A greenfield airport is proposed at Shirdi to cater for both domestic and international traffic and the present need and future growth of religious tourism. A greenfield airport is also proposed at Solapur to overcome the expansion and operational limitations of the existing airport. For both locations we carried out site data collection, field surveys, soil investigation, an obstacle limitation survey (OLS), social and environmental impact assessment and facility assessment for both airside and landside. We also helped in preparation of the master plans, simulation studies, development strategies, detailed design and planning, bid process management and various other services to the clients in obtaining clearances.

Landmark global projects

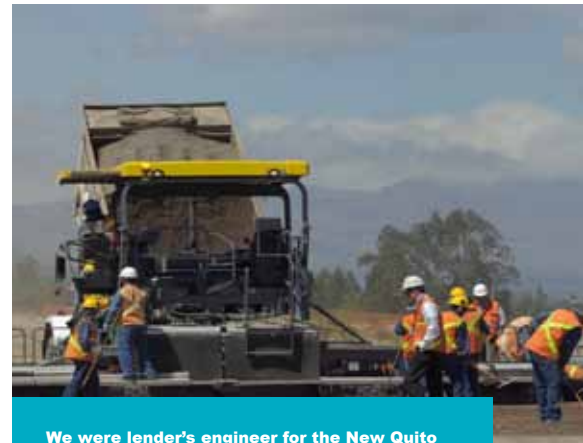
Hong Kong international airport midfield We are providing engineering design and construction support for the HK\$7 billion first development phase of a major expansion project at Hong Kong International Airport – creation of a new concourse building with 20 aircraft parking stands and a new cross-field taxiway, and extension of the existing automated people mover. Our design is intended to achieve the Hong Kong BEAM Plus standard for environmental performance. The company was lead design consultant for the original terminal building and has been advising the Airport Authority Hong Kong throughout the airport's development.

Malé international airport expansion We are providing all master planning, detailed engineering design, construction support and cost estimation services for the US\$368 million expansion and modernisation of Malé International Airport in the Republic of Maldives. The project includes a new 55,000m² passenger terminal building, 23 aircraft stands, VIP and cargo terminals, a ground handling base, aircraft maintenance facilities, aviation fuel system and a fire station.

Heathrow terminal UK BAA's Heathrow Terminal 5 in the UK is one of the most acclaimed construction projects of recent years. The site covers 260ha, equivalent to the size of London's Hyde Park. Costing approximately £4.2 billion, the terminal has taken an estimated 37 million man hours to build and holds the capacity to serve some 30 million passengers a year. Even though the visible parts of Terminal 5 are huge, like an iceberg they are dwarfed by its unseen underground structures – the basements, foundations and tunnels, all designed by Mott MacDonald. These unseen subterranean basements house baggage handling and storage halls, underground railway stations and five tunnels which total 14km in length.

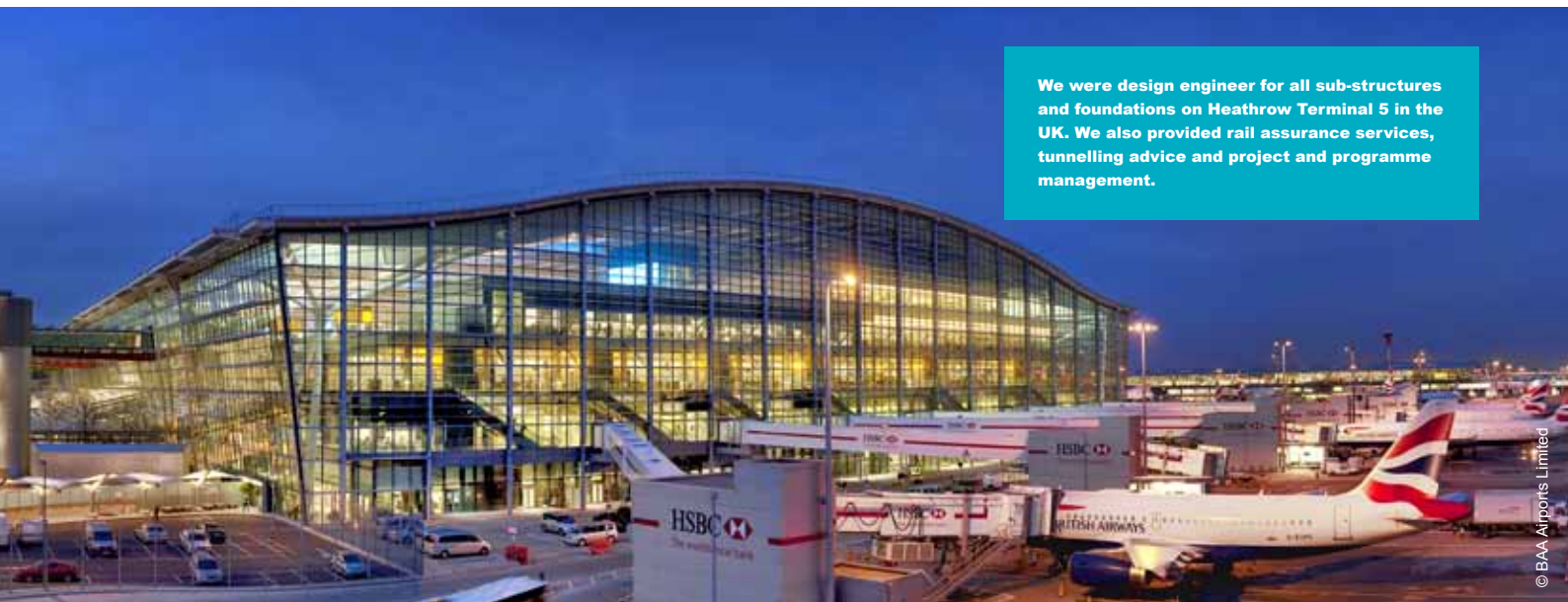


We have been contributing to development at Hong Kong International Airport since the early 1990s. Initially we worked on the design of the original terminal building and subsequently we have been supporting the client with many airside and landside projects.



We were lender's engineer for the New Quito international airport under construction in the Ecuadorian Andes.

We were design engineer for all sub-structures and foundations on Heathrow Terminal 5 in the UK. We also provided rail assurance services, tunnelling advice and project and programme management.



Contact us

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