

What Atkins can offer

We deliver:

- Contract management
- Geotechnical and engineering geology
- GIS and survey
- Structural assessment
- Civil design
- Settlement and associated impact evaluation
- Lighting, ventilation and E&M services
- Life safety engineering
- Operational evaluation and life cycle costing
- Risk management

Tunnelling Skills & Services include:

- Cut and cover tunnels
- Caverns and underground stations
- Railway, road and water tunnels
- Mechanised traditional soft ground and rock tunnels
- Shafts
- Directional drilling and thrust bore tunnelling
- Tunnel remedial works
- Expert services



Atkins Key Contacts

If you are interested in discussing potential projects in any of the topic areas described in this leaflet please get in touch.

Epsom, UK

Robert McCrae +44 (0) 1372 754415
rob.mccrae@atkinsglobal.com

Ian Gee +44 (0) 1372 754445
ian.gee@atkinsglobal.com

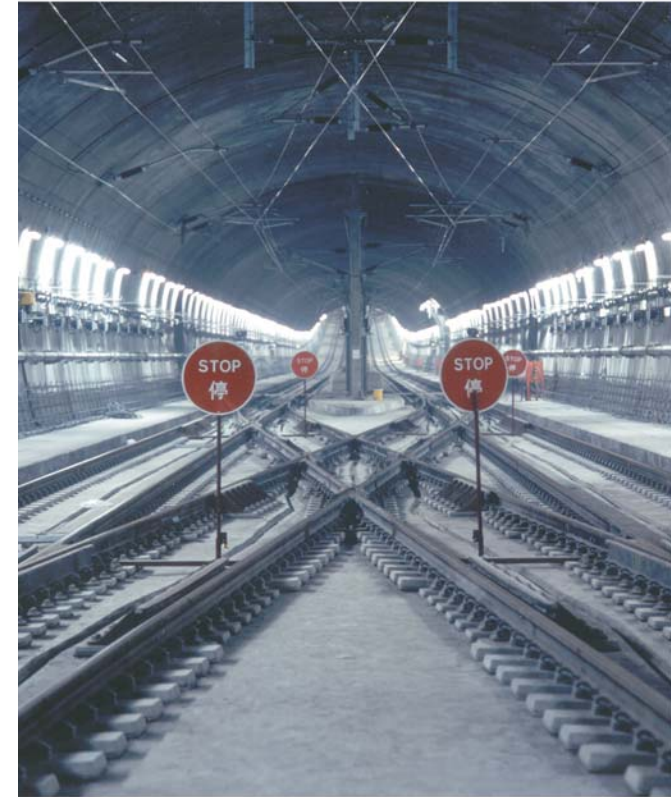
Hong Kong SAR, China

Eric Chui +00 852 2972 1275
eric.chui@atkins.com.hk



ATKINS

Tunnelling: Railway Tunnels



Atkins has one of Europe's largest tunnelling groups working extensively in the rail industry on new light rail, metro, heavy rail projects and in the inspection and rehabilitation of existing infrastructure.

Atkins, through its size, is able to offer a fully multi-disciplinary service to its clients who range from public bodies through Contractors to specialist clients in the legal and financial sectors.

Project Experience

Channel Tunnel Rail Link, UK



Having successfully completed previous tunnelling projects with Nishimatsu, Atkins was appointed to provide tunnelling design services to the Joint Venture for this major section of the Channel Tunnel Rail Link project.

Atkins provided detailed design services for both temporary and permanent works, including:

- design of a steel shove frame for the Tunnel Boring Machine
- design of a steel propping frame for tunnel lining at cross passage openings, and
- structural assessment of Highbury and Islington Stations and running tunnels

Docklands Light Railway, Lewisham Extension, UK



The Lewisham Extension to the Docklands Light Railway runs beneath the River Thames and Greenwich, and consists of twin 5.2m diameter bored running tunnels. Following our successful preparation of the outline design during the tender stage Atkins Tunnelling was commissioned to produce the detailed design for construction.

Project Experience

Metro do Porto, Portugal



Following significant subsidence events in underground sections of the Metro do Porto, Atkins was asked to assist the insurers with claims and project risks by reviewing the suitability of the mitigation and remedial measures implemented by the Contractor. Atkins carried out a detailed assessment of the TBM maintenance regime and undertook inspections during the construction of the underground stations to review and report on the implementation of the construction risk management procedures

adopted by the Contractor. In addition, Atkins provided detailed reviews of the Contractor's current working programme with particular reference to delays, programme achievability and construction risks.

Athens Metro, Greece



The Athens Metro aims to help alleviate some of the transport congestion and environmental problems in the city. Following a number of tunnel collapses during its development, Atkins was invited to provide independent advice on geological and tunnelling matters. The initial work developed into an ongoing commission to advise on the risk of further collapses for the remainder of the tunnelling.

The risk was assessed through a detailed evaluation of ground condition, a back analysis of TBM performance and a prediction of the nature and extent of ground disturbance.

The latter formed the basis of a Building Risk Assessment which indicated those buildings at risk of damage, the nature of damage expected and the level of protection necessary to limit the damage to acceptable levels.

Project Experience

Docklands Light Railway, Woolwich Arsenal Extension, UK



Working with scheme promoter DLR, part of Transport for London, Atkins developed early feasibility studies for the 2.5km railway extension comprising twin bored tunnels under the Thames and a new terminus station in Woolwich Town centre.

Services included the preparation of preliminary design, submission of supporting documentation for a Transport and Works Act, Works Order, support in public inquiry, supervision of marine ground investigation and preparation of concession documentation for the design-build-maintain PFI scheme.

West Rail Tsuen Wan West Station Approach Tunnels, Hong Kong

As part of the West Rail DD300 design contract, Atkins China Ltd completed detailed design and construction supervision of approach tunnels to Tsuen Wan West Station. These comprised approximately 600m of cut and cover, tunnels which cross a congested area of reclaimed land.



Due to the high water table, different sections of the tunnels were designed as either founding on rock via diaphragm walls or "floating" where rockhead was deep. Both "top down" and "bottom up" construction methods were employed.