

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 and 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.

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ATKINS

Tunnelling: Water Industry



Atkins has one of Europe's largest tunnelling groups working extensively in the water industry including new build tunnels for both water supply and the waste water industry as well as inspection and rehabilitation of existing.

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

Project Experience

AMP3 Water Quality Improvements: Bearstones Boreholes, UK



As part of the AMP3 Water Quality Improvement scheme water from Bearstones Boreholes will be combined with treated water conveyed from the Vrnwy Aqueduct by a new pipeline and pumping station. The pipeline alignment required the construction of three tunnels to carry the pipeline under the Shropshire Union Canal, Main Line and Llangollen Branch, and the Shrewsbury to Crewe Railway. Atkins Tunnelling was commissioned, as part of a Design & Build contract, to prepare the detailed design for construction of these crossings.

Belfast Sewers, Northern Ireland



Atkins was awarded the contract to provide Programme & Project Management and Lead Consultancy Services for the Belfast Sewers Project in July 2003, a commission spanning from 2003-2011. The project, valued at £140 Million, is the largest contract ever awarded by the client, DRD Water Service, Northern Ireland.

The Belfast Sewers Project will provide the city of Belfast with modern protection against flooding and also substantially improve the quality of the River Lagan and its tributaries via the management of unsatisfactory combined sewer overflows.

Project Experience

Tunnel Integrity Surveys, UK



As part of the "Clean Sweep" programme for the upgrading of sewage treatment facilities in coastal locations, we were commissioned to carry out inspections of a number of sewage and combined sewage tunnels in the South West.

Commencing with a desk study of historical and geological information pertinent to the tunnels, they surveys concluded with reports which specified remediation necessary to ensure the continued integrity of the tunnel. These were supplemented by photographic and or video records which described the tunnel condition.

Tai Po to Butterfly Valley Aqueducts - Design and Construct Programme, Hong Kong

Atkins China Limited was the design consultant for this major water supply scheme in Hong Kong. The project included the design and construction of three portals, three deep shafts and a 1.2km long raw water tunnel. A further 12km long treated water was excavated to accommodate a heavy steel pipe, the installation of which presented an unusual technological challenge.

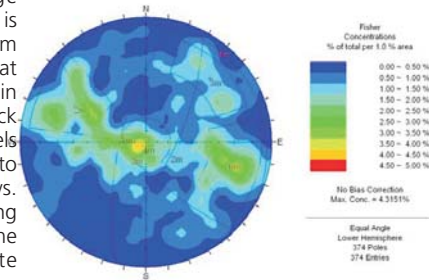
Excavation methods included drill and blast, and hard rock TBMs carrying hydraulic percussive drills for advance probing and a rig beam facility for full annulus advance grouting.



Project Experience

Stabilisation of the Old Drainage Tunnels, Middle East

The project comprised two storm water drainage tunnels. Each tunnel is about 1.5km long, 2m diameter, constructed at depths of up to 40m within geologically complex rock formations. Both tunnels were abandoned due to high groundwater inflows. The unexpected flooding of the tunnels left the majority of the route unsupported.



Atkins was retained by the client to provide expert independent advice on the stabilisation of the tunnels. The ongoing commission is to advise on the risk of tunnel collapse and risk management process if a "do nothing option" is adopted and to review site investigation and monitoring proposals.

Chingaza Tunnel, Colombia



The 10 mile long Chingaza tunnel supplies water from a reservoir in the Andes to the city of Bogota. It comprises a high pressure upper section separated from a low pressure section by a Lerner Johnson valve. The tunnel is driven through sedimentary rock is supported with shotcrete and additionally in some sections with a cast concrete secondary lining.

Following a roof collapse in the low pressure section during operation Atkins commissioned to inspect and advise on causation and to comment on the proposed remedial measures. Upon completion of the repairs and re-commissioning of the system a further ground fall took place in the high pressure section of tunnel. Atkins were again asked to inspect the collapse and advise on causation and remedial measures.