



Tunnels

As the subsoils of our cities become congested with services, deep tunnels become increasingly attractive. The immediate subsoil below our city streets is fast reaching saturation with services such as sewers, stormwater lines and power and communication cables. The obvious solution for future additional services is at greater depth – some of the world’s larger cities have gone as far as to prepare underground district plans to try to allow for this to happen in a co-ordinated manner. From concept study through to construction administration, Tonkin & Taylor provides high level expertise in the geotechnical and civil components of tunnelling.

Works covered:

- Hard rock and soft ground tunnels
- Shafts
- Portals and openings.

Expertise

Our areas of expertise include:

- Project management
- Value and risk management
- Desktop geological studies, route selection, concept design, preliminary groundwater take and settlement assessment, consultation, AEE preparation and consent processes
- Detailed geotechnical investigations and assessment of effects on groundwater table and surface settlement. Preparation of geotechnical interpretive report and geotechnical baseline report
- Design of tunnel liner and temporary support. Finite element analysis and wedge drop out analysis

- Preparation of contract documentation and administration of the tender process
- Construction administration including Engineer to the Contract
- Expert witness.

Experience

Recent examples include:

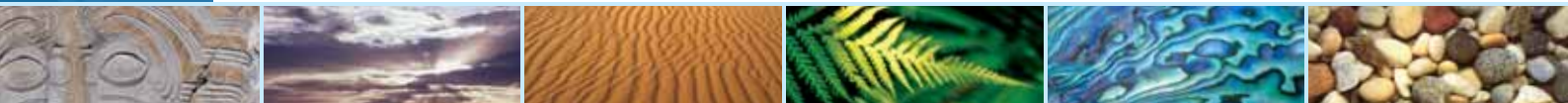
- High Street Power Tunnel, Auckland - concept design, investigations, consents, detailed design and construction administration
- Victoria Park Motorway Tunnel, Auckland - feasibility study / concept design
- Britomart Station Tunnel, Auckland - investigations, detailed design
- Hobson Bay Sewer Tunnel, Auckland - concept design, investigations, consents
- Mount Eden Loop Rail Tunnel, Auckland - feasibility study / concept design
- Royal Oak Sewer Tunnel, Auckland - investigations, detailed design
- Cosseys Tunnel, Auckland - investigations, concept design
- Vector Tunnel, Auckland - concept design, investigations, consents, detailed design, design management and construction administration
- North Shore Sewer Outfall Tunnel, Auckland - concept designs, investigations, consents, preliminary design
- Alpurt B2 Motorway Tunnels, Auckland - concept design, investigations, design management and construction administration
- Manapouri second Tailrace Tunnel, South Island - dewatering and temporary support design





Tonkin & Taylor

- Komarindi Hydro Power Intake Tunnel, Guadalcanal, Solomon Islands - feasibility study, investigations and detailed design
- Bakun Hydro Power Intake Tunnel, Bakun, Malaysia - expert geotechnical witness after tunnel collapse
- Rotowara Coal Mine, Huntly - risk assessment of likelihood of collapse of old mining tunnels
- Yen Chow & Nam Cheong Underground Rail Stations, Kuala Lumpur, Malaysia - geotechnical design and construction supervision
- Cobb Hydro Power Diversion Tunnel - condition survey.



ENVIRONMENTAL AND ENGINEERING CONSULTANTS