Retention and Slope Stability

ATC Williams offers a wide range of design services and solutions to geotechnical and foundation engineering problems frequently encountered in civil construction works, both large and small.

We have extensive experience in the fields of temporary and permanent retention, including diaphragm walling, soil nailing, sheet piling, contiguous bored piles and soil or rock slope stability assessment. We also specialise in assessment and remediation of slope failures.

We have senior staff with practical construction experience in these fields and liaise closely with specialist contractors so you can be confident that the solutions offered are practical and cost effective.

- **Retention**

  A sound understanding of the lateral earth pressures exerted by different soil types (often subject to surcharge loads) and the influences of hydrostatic and seepage pressures is important when considering a suitable construction stage or permanent support system for deep, vertical or steep sided excavations. ATCW offer our extensive experience in the design and construction of such support systems which include cantilever, propped or anchored sheet piles, contiguous or secant piles and diaphragm walls.

- **Soil Nailing**

  Soil nailing is frequently used as a means of stabilizing over-steep slopes or creation of temporary or permanent retaining walls. We have experience of design and installation of soil nail wall in a wide range of ground conditions including sand, clay and rock. Many applications have involved difficult access conditions and complex wall geometry. This form of construction can often provide greater design flexibility than any other retention system.

- **Slope Stability**

  ATCW have the capabilities to investigate, model and analyse the stability of existing and proposed soil and rock slopes and to investigate the actual or potential mechanisms of failure where slopes have failed or are already considered likely to fail. Analysis typically involves the careful collection and assessment of geometry data and strength parameters for use in conventional computer based tools such as GALENA or SLOPEW. Both mechanistic and probabilistic analyses can be undertaken and we have significant experience in relation to assessment of stability under seismically induced loads, evaluation of liquefaction potential and the use of post liquefaction strength parameters where appropriate.

  We also undertake landslide or rockfall risk assessments in general accordance with current Australian (AGS) guidelines. Such assessments have been undertaken for numerous coastal cliff areas, former quarries and caves in Western Australia, often requiring inspection of the rock mass by abseil descent.