

Foundation Engineering



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 ground improvement, foundation design, temporary and permanent retention, earthworks design and construction, and soil or rock slope stability assessment. We also specialise in forensic investigation into the causes of foundation or slope failures, and building damage due to ground movement.

- **Ground Improvement**

Specific expertise is available in relation to vibroflotation (stone columns), surcharge preloading, soil nailing, grout injection (e.g for underpinning) and high energy deep impact compaction.

- **Foundation Design**

We specialise in geotechnical design of spread footings, displacement and non-displacement piles, raft and piled raft foundations. The process typically starts with design and execution of an appropriate geotechnical investigation with subsequent analysis and design based on established and state of the art theory together with our extensive experience in understanding soil/structure interactions. Where appropriate, commercial and in house design software is used, including finite difference and finite element modelling tools.

- **Earthworks**

Through our continual involvement in design and construction management of earth dams and residue impoundment embankments, ATC Williams has developed a keen understanding of the requirements for design and successful implementation of large earthworks projects. In addition to investigation, borrow searches and design, we offer instrumentation installation and monitoring, specification and tender documentation preparation, procurement, contract management and compaction/quality control services.

- **Forensic Investigations**

In the unfortunate event of a slope or foundation failure or the onset of cracking or bulging in structural slabs or walls, ATC Williams has the experience to investigate the cause of the problem and recommend appropriate remedial action. These events can be caused by a number of factors including poor design or construction techniques, highly compressible subsoil layers, poor drainage or hydrostatic pressures, highly reactive clay soils, differential settlement due to uneven load distribution or variable ground, variable or voided fills, natural cavities or solution features, erosion or weathering processes and numerous other influences. Assessment of the investigation and laboratory results with respect to published guidelines and action criteria, will determine whether an Acid Sulfate Soil Management Plan is required.