



# Geo Meshing Services

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## 1 Introduction

Geo Meshing Engineering PTY LTD (“Geo Meshing”) is a company specialized in providing consulting services in advanced numerical modeling, using state of the art hardware, meshing techniques and geotechnical expertise.

Whilst the company can perform routine 2D and 3D models, it specializes in the most challenging 3D models, where complex geometry, large numbers of elements and the complexity of analysis require the more than 20 years of experience at Geo Meshing to provide value at reasonable cost and time frames.

Besides the advanced company expertise in the numerical modeling environment, Geo Meshing can provide other services in the areas of geotechnical engineering and software mentoring. These services are described in the next section.

## 2 Company Services

Geo Meshing can offer the following services

<b>Geotechnical Area (25 years of experience)</b>	
<b>Service</b>	<b>Comments</b>
Geotechnical Expertise	With over 25 years of experience in the private, mining and governmental sectors, and having participated in a wide variety of projects around the world, we can provide consulting advice in various matters in this field.
Geotechnical Report Reviews	Review of geotechnical reports, including but not limited to stability analysis, material characterization, factual reports, etc.
Site Inspection Visits	Perform geotechnical site inspection visits (annual audit) of earth facilities, such as tailings and embankments, accompanied by a site inspection report.
Site Investigation Campaigns	Design of geotechnical site investigation campaigns. Elaborate/ review factual and interpretative reports.
Laboratory Investigation Campaigns	Design of geotechnical laboratory testing campaigns. Elaborate/ review factual and interpretative reports.

## Numerical Modeling Area (20+ years of experience)

Service	Comments
Mentoring for FLAC2D and FLAC3D	Provide “real world” training for FLAC2D and FLAC3D. With over 100+ projects completed with both applications in several countries, Geo Meshing has the experience to elaborate and tailor a practical hands on course. The course duration can extend from two days to a more comprehensive one as required.
Material properties calibration	Perform material properties calibration based on laboratory and/or field testing. The calibration can be performed for simple and advanced constitutive models, such Mohr Coulomb UBCSand, NorSand, PM4Sand and P2PSand.
2D / 3D analysis	Perform numerical modeling analysis and reporting. This can be completed in 2D or 3D with fast turnaround times and reduced cost. Analysis areas include static analysis, dynamic analysis, liquefaction potential and soil structure interaction.
MPM analysis	Material Point Method is usually used for dam breach analysis (DBA) under “sunny day” conditions. It provides more realistic analysis of a potential dam breach, which does not affect adversely the response plans, like the water-based method of analysis does.
Meshing	2D / 3D meshing services for FLAC2D and FLAC3D, respectively.
Review of numerical models and reports	Provide critical review of numerical models and reports. With years of experience in the field and diverse project experience ranging from NASA to tailings facilities around the world, Geo Meshing can render deep insight into the analysis performed, spot fatal flaws and provide recommendations.
Numerical modeling partnership	Provide expert consulting service to third party numerical modeling teams, through the lifetime of a numerical modeling project, from its conception to the final report.

### 3 Closure

Geo Meshing Engineering PTY LTD can enhance the current services provided by your company. It can also reduce the cost of the analysis and the turnaround times of the final product.

We look forward to working with you and your team.

Alfredo Arenas, PhD

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