



**SOLUSI GEOTEK OPTIMA**

# COMPANY PROFILE



**Tailing Dam &  
Geotechnical  
Consultant**





# Connect With Us

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# TABLE OF CONTENTS

**01**

About SGO

**02**

Vision & Mission

**03**

Our Values

**04**

Key Experts & Engineers

**05**

Legalities & Certificate

**06**

Our Services

**07**

Clients & Projects



# About SGO



**PT Solusi Geotek Optima** is a geotechnical consulting company specializing in dam and tailings management. Founded in 2022, our company is supported by a team of experienced professionals with deep expertise in geotechnical engineering, particularly in the context of dam and tailings storage facilities.

We offer a comprehensive range of services, from site investigation and geotechnical design to construction supervision. With a thorough and meticulous approach, we ensure that every client project is executed efficiently, safely, and with minimal impact on the surrounding environment and communities.

We take pride in our ability to develop innovative and cost-effective solutions tailored to meet the specific needs of our clients, while consistently exceeding their expectations. With our expertise, clients can trust that their projects are in the hands of a reliable and dependable partner.



# Vision

*To become the best geotechnical consulting company that provides the most **optimum solutions** and is capable of competing on a global scale.*

# Mission

- To provide geotechnical consulting services based on research and data to ensure the **sustainability and safety of mining operations**.
- To build **long-term relationships** with clients based on trust, integrity, and proven results.
- To provide **adaptive services** tailored to the specific needs of each mining project.

”

**Quality** is never an accident; it is always the result of **intelligent effort**."

– John Ruskin





# Our Values

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## **O – Operational Excellence**

We ensure that every service and project is executed with the highest operational standards. Efficiency, accuracy, and attention to detail are our top priorities for optimal results for our clients.

## **P – Professionalism**

We uphold ethical work practices and professional responsibility in every interaction. With deep technical expertise and years of experience, we maintain service quality in accordance with international standards.

## **T – Trust**

Trust is the foundation of our relationships with clients. Through transparency, honesty, and open communication, we create long-term partnerships built on mutual trust.

## **I – Innovation**

We continually innovate with the latest technologies and methods to offer effective and efficient solutions, ensuring that we remain at the forefront of developments in the geotechnical industry.

## **M – Maximization**

We are committed to delivering exceptional effort in every project, ensuring that our solutions not only optimize efficiency but also provide significant cost-effectiveness for our clients.

## **A – Adaptive**

We have the ability to quickly adapt to changing project conditions and client needs. Our flexible approach allows us to deliver relevant and effective solutions without compromising on quality and safety.



# Key Experts



**Ir. Hendra Jitno, MAsc., PhD., CPEng, RPEQ, FIEAust**

## Area of Expertise:

Soft clay engineering, Tailings and Dam Engineering, Static and Seismic Stability of Dams, Open pit, Waste dumps, Retaining Wall and Deep Excavation, Soil mechanics and Soil Dynamics, Earthquake Engineering, Foundation Engineering, Field and Laboratory Testing of Soils & rocks

## Career Summary

Dr. Jitno has over 35 years of geotechnical engineering experience, specializing in tailings and water-retaining dam design and construction, open-pit mining, dewatering, road and foundation design, tunneling, ports, bridges, and offshore structures. He has worked as both a senior on-site and corporate geotechnical engineer, managing projects across various sectors including coal, gold, copper, manganese, and aluminum tailings dams.

During his employment with Barrick Gold Corporation, Dr. Jitno contributed to the design, construction, and operation of over 20 tailings dams in Australia, Africa, and the Pacific, ensuring compliance with ANCOLD guidelines and international standards. He has published several papers on seismic stability, embankments, and residual soils.

## Education

- University of British Columbia, Canada, Ph.D. in Civil/Geotechnical Engineering, 1995
- University of British Columbia, Canada, MAsc. in Civil/Geotechnical Engineering, 1990
- Bandung Institute of Technology, Indonesia, Ir. in Civil/Structural Engineering, 1983

## Professional Registration

- Chartered Professional Engineer (CPEng), Institution of Engineers Australia.
- Registered Professional Engineer of Queensland (RPEQ).
- APEC Professional Engineer.



# Key Experts



**Ir. M. Cahyono, M.Sc., Ph.D**

## Area of Expertise:

- Hydrology and Hydraulics
- Coastal Processes
- Wave Modelling
- Tsunami Early Warning Instruments Development
- Integrated Coastal Protection System
- River & Estuary Water Quality Modelling

## Career Summary

Dr. Ir. Cahyono is a highly experienced professional with over 35 years of expertise in river engineering, hydraulics, and sediment transport. His work focuses on flood control, river diversions, sedimentation analysis, and erosion control, along with water resource management and drainage systems for both urban and rural areas. He consistently integrates environmental considerations, particularly in tailings management and coastal infrastructure projects.

With a proven track record of leading multidisciplinary teams, Dr. Cahyono has successfully completed projects for government agencies, private companies, and NGOs across Indonesia, from Banda Aceh to Papua.

## Education

- University of Bradford, United Kingdom, Ph.D. in Civil Engineering, 1993
- Bandung Institute of Technology, Indonesia, M.Sc. in Civil Engineering, 1988
- Bandung Institute of Technology, Indonesia, Ir. in Civil Engineering, 1983

## Award

- Innovation Work Award – Bandung Institute of Technology
- 25 Years Award – Bandung Institute of Technology
- Satyalencana 30 Years Medal – Government of the Republic of Indonesia
- Satyalencana 20 Years Medal – Government of the Republic of Indonesia
- Satyalencana 10 Years Medal – Government of the Republic of Indonesia



# Engineers



**Ir. Ahmad Sulaiman, S.T., M.T.**

**Senior Geotechnical Engineer**

**Ir. Nisrina Aulia Is Marsa, S.T., M.T.**

**Senior Geotechnical Engineer**



**Abdul Salam, S.T., M.T.**

**Geophysical Engineer**

**Febrita Rahmantia, S.T.**

**Senior Hydrological Engineer**



**M. Hasbul Hadi Purnomo, S.T.**

**Senior CAD Designer**

**Irma Fudji Lestari, S.T.**

**Geotechnical Engineer**



**Khaerul Muhammad Abdillah, S.T.**

**Mining Engineer**

**Mirna Dwi Lestari S., S.T., M.T.**

**Geotechnical Engineer**





# Engineers



**Antania Hanjani, S.T., M.T.**

**Geotechnical Engineer**

**Ibadurrahman Adz Dzikro**

**Geotechnical Engineer**



**Early Jasmine Gardina, ST**

**Hydrological Engineer**



# Legalties & Certificates

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## ➤ AKTA PENDIRIAN PERUSAHAAN

Notaris: SUSYANA HERLAWATI, S.H., M.Kn.

Nomor: 08

Tanggal: 19 September 2022

## ➤ SK KEMENKUMHAM

Nomor : AHU-0066273.AH.01.01.Tahun 2022

AHU-AH.01.09-0184034.TAHUN 2024

## ➤ AKTA PERUBAHAN PERUSAHAAN

Notaris: SUSYANA HERLAWATI, S.H., M.Kn.

Nomor: 06

Tanggal: 16 April 2024

## ➤ SURAT KETERANGAN TERDAFTAR PAJAK

S-28371/KT/KPP.091303/2023

## ➤ SURAT PENGUKUHAN PENGUSAHA KENA PAJAK

S-354/PKP/KPP.091303/2023

## ➤ NOMOR POKOK WAJIB PAJAK (NPWP)

61.544.085.6-445.000

## ➤ NOMOR INDUK BERUSAHA (NIB)

0311220043718



# Our Services



**Standard Penetration Test (SPT)**



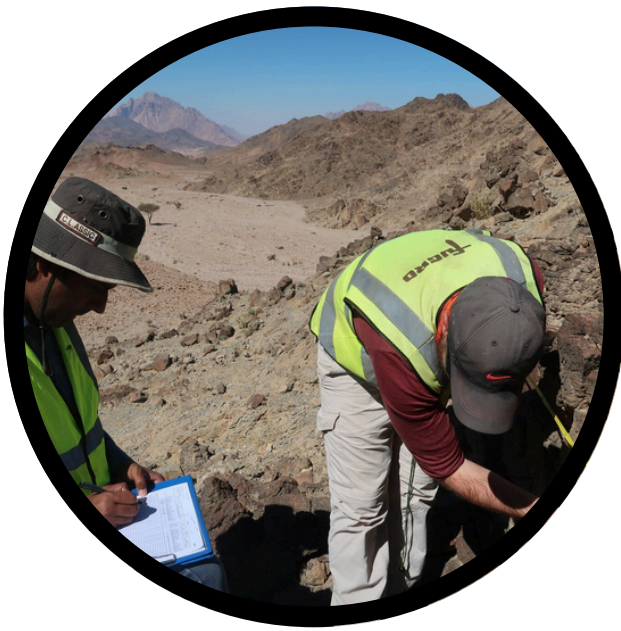
**Hydraulic Packer Test**



**Cone Penetrometer Test (CPT and CPTu)**



**MASW and ERT**



**Geological Mapping**

including **physical** and **geochemical** testing involving **soil**, **rock**, and **waste** materials.

and other **geotechnical**, **geophysical**, and **mining** site investigations



# GEOTECHNICAL ANALYSIS

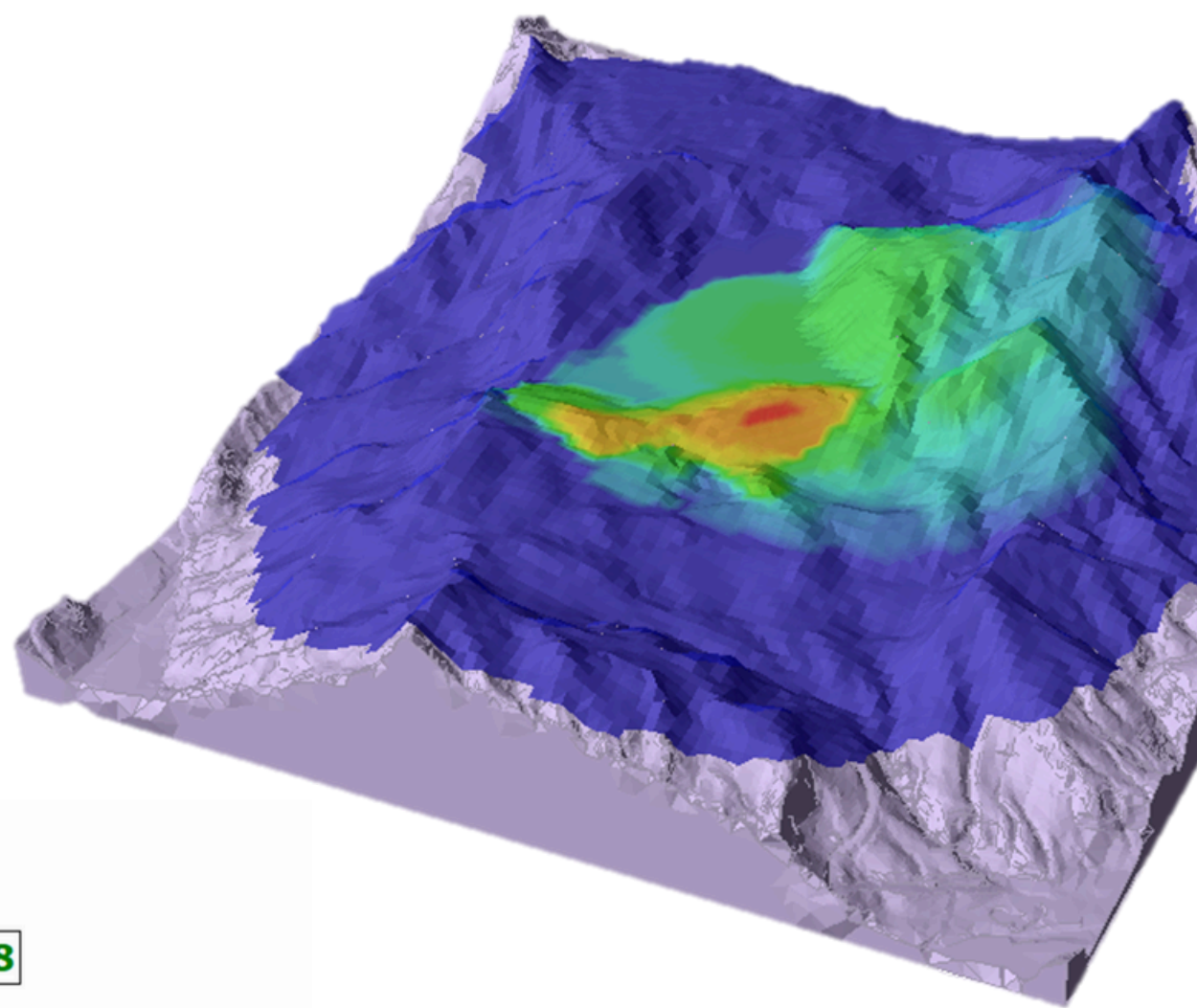
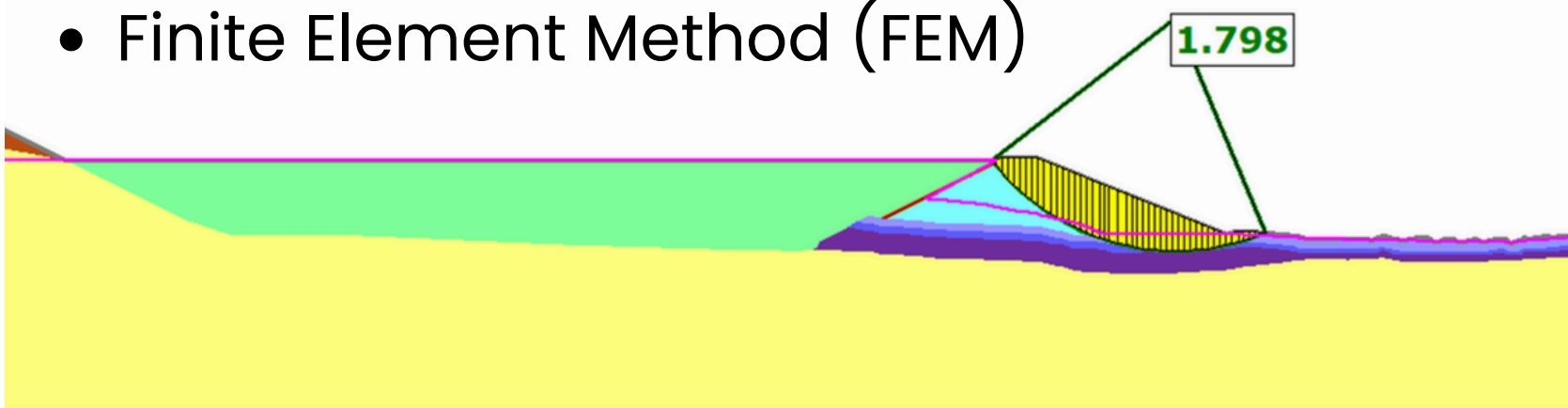
3D and 2D  
Static – Pseudostatic

## MAINLY IN:

- Slope stability analysis
- Seepage analysis
- Hydrogeological analysis
- Foundation Analysis
- etc

## Methods used:

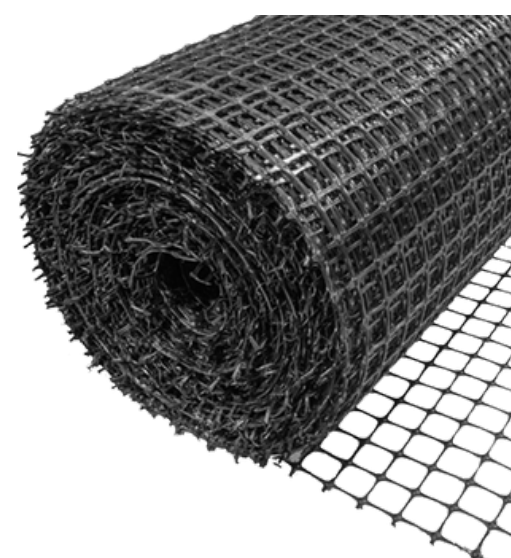
- Limit Equilibrium (LEM)
- Finite Difference Method (FDM)
- Finite Element Method (FEM)



## INCLUDING:

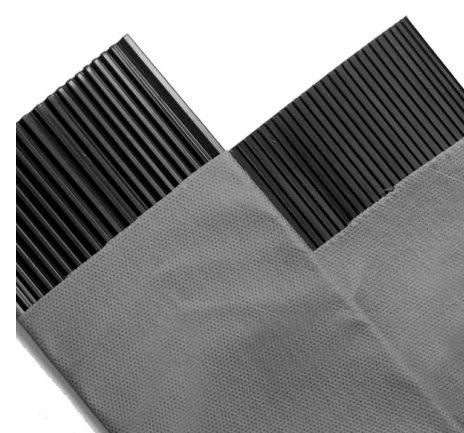
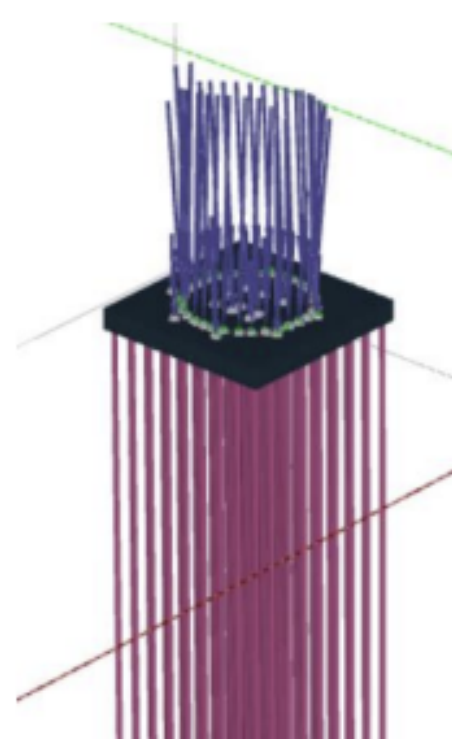
Soil improvement, seepage control, basal reinforcement, etc.

- Prefabricated Vertical/Horizontal Drain (PVD and PHD)
- Deep Cement Mixing (DCM)
- Geosynthetics (geotextile and geomembrane)
- and many more



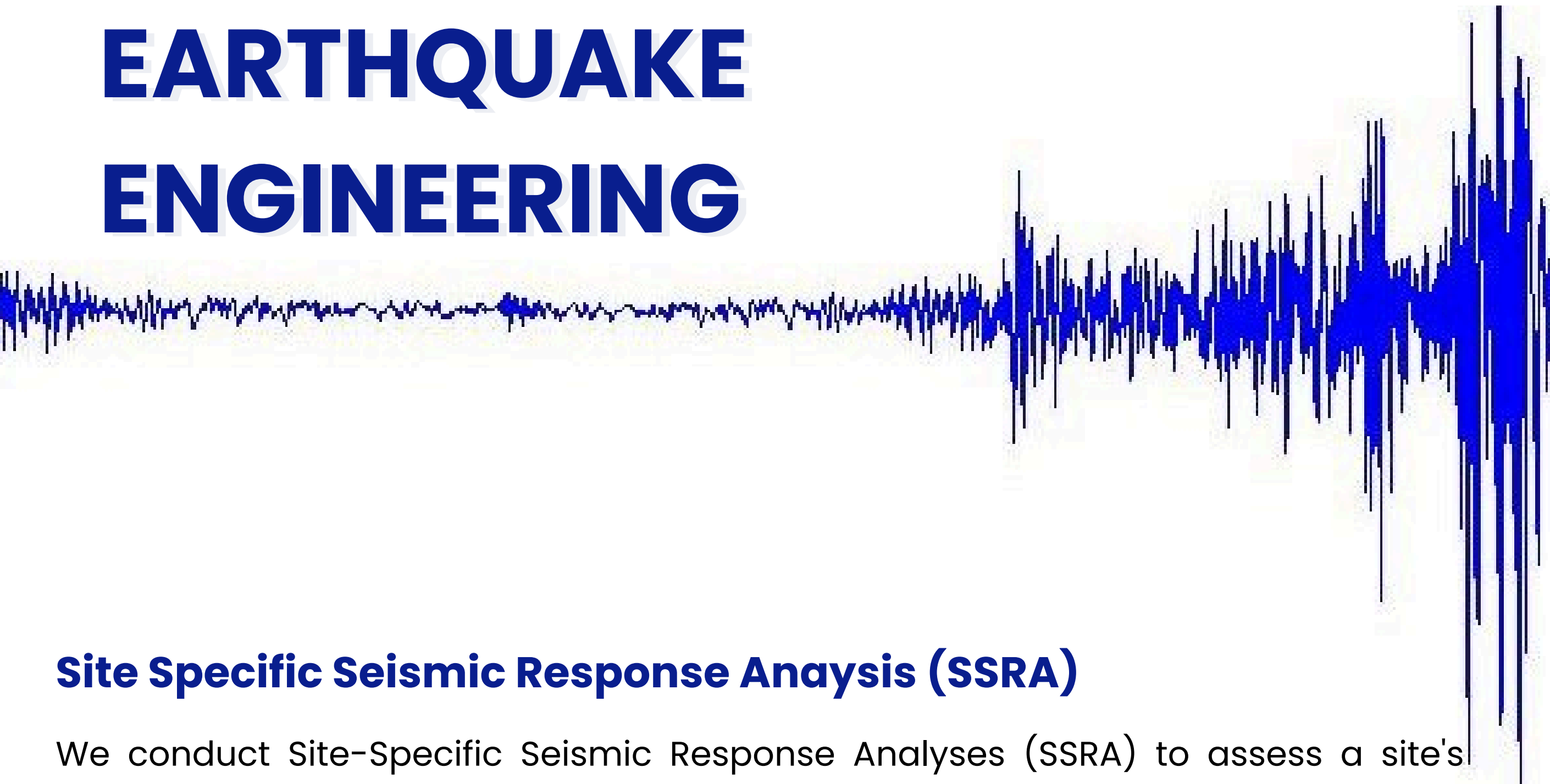
## EXPERIENCED IN HANDLING:

- Soft soil
- Peat
- Potentially liquefiable soil
- etc





# EARTHQUAKE ENGINEERING

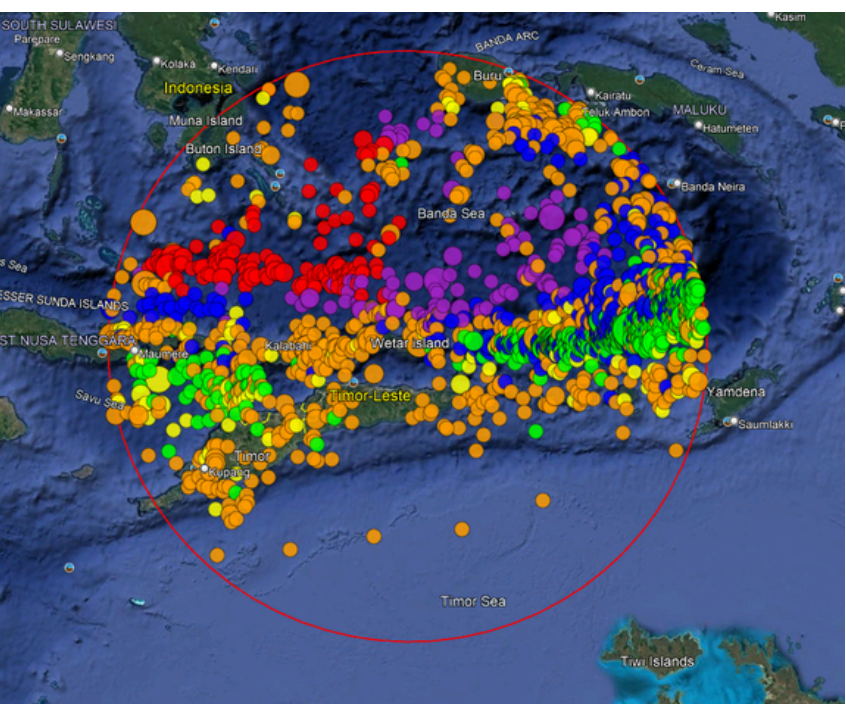


## Site Specific Seismic Response Analysis (SSRA)

We conduct Site-Specific Seismic Response Analyses (SSRA) to assess a site's seismic risk through DSHA and PSHA. Our services help evaluate potential ground shaking hazards specific to your project’s location, allowing us to integrate customized mitigation strategies and seismic design parameters. Using advanced numerical modeling techniques, we provide critical insights for projects in seismically active regions, ensuring compliance with safety standards and enhancing structural resilience.

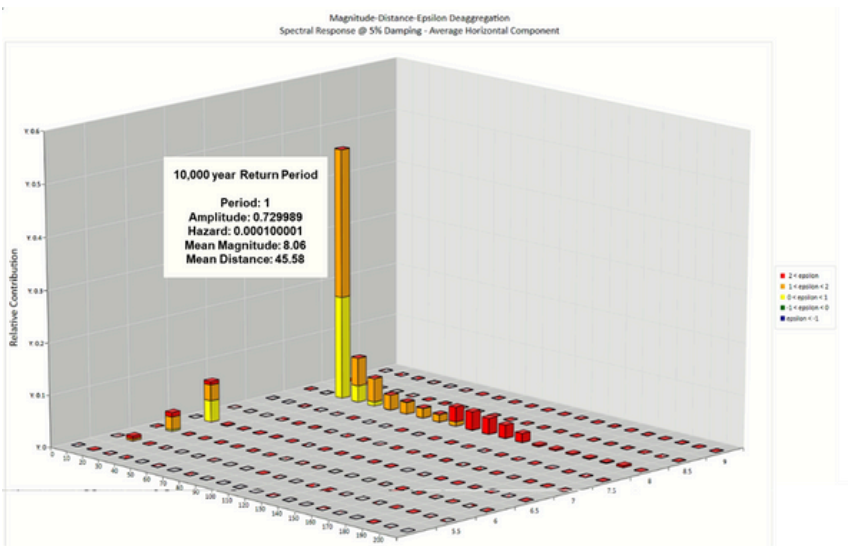
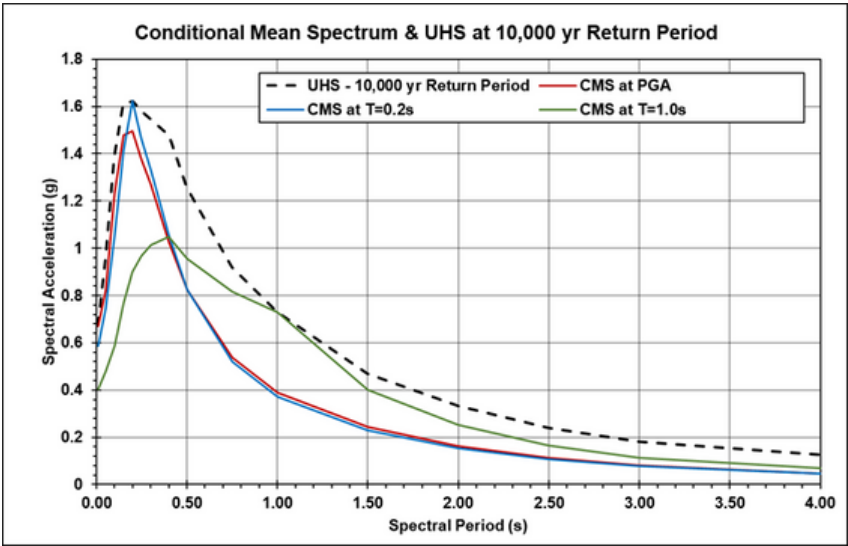
### DSHA

Deterministic Seismic Hazard Analysis



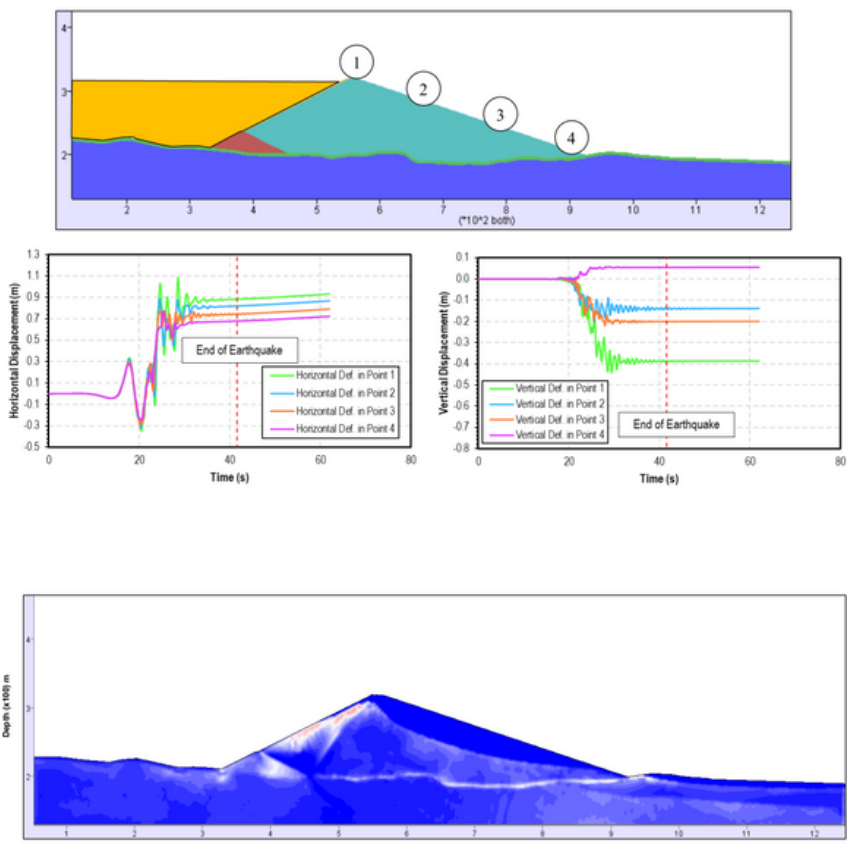
### PSHA

Probabilistic Seismic Hazard Analysis

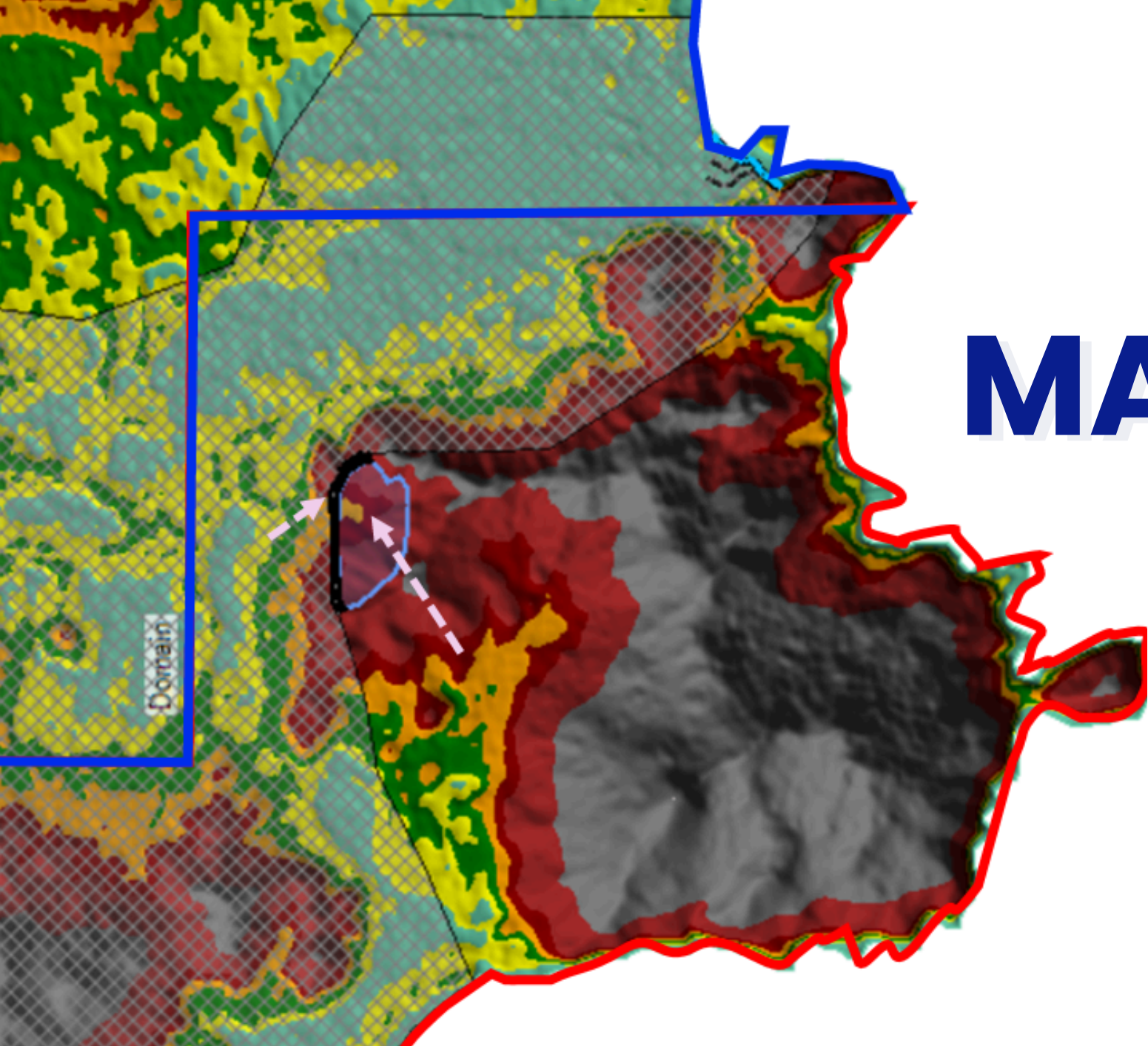


### Dynamic Analysis

Advanced Seismic Deformation Analysis



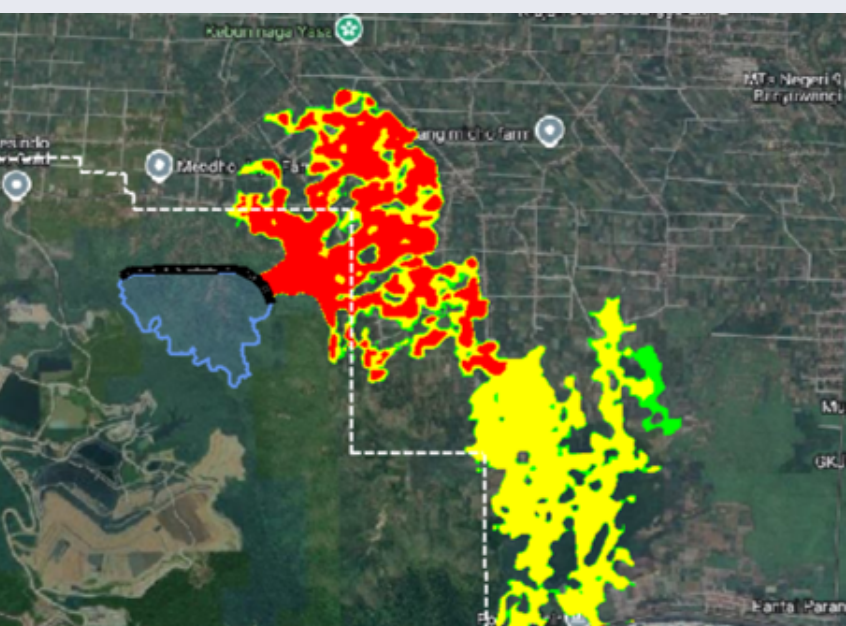




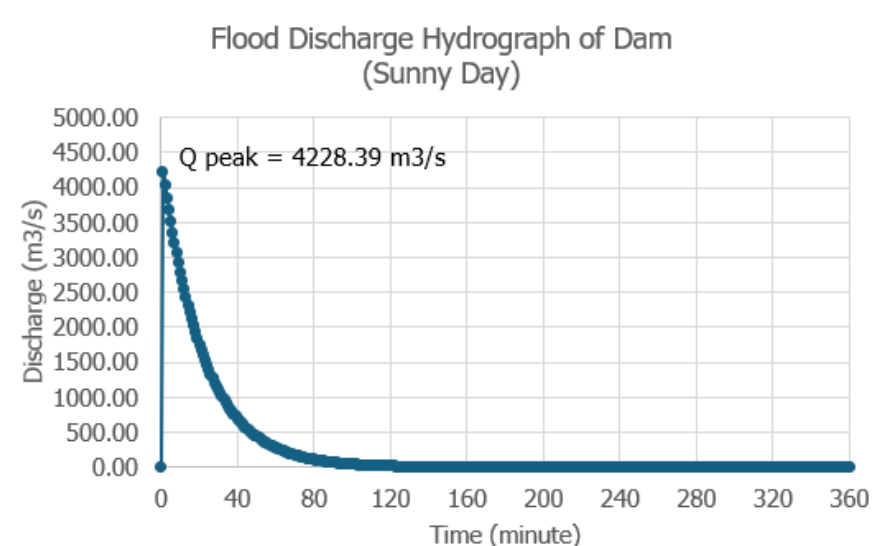
# WATER MANAGEMENT DESIGN

Our Water Management Design services ensure sustainable and efficient water control systems for civil and geotechnical projects. We analyze watershed behavior and water flow dynamics, and design key structures like diversion channels, spillways, and outlet works to manage stormwater and prevent flooding. Additionally, we provide specialized solutions for seepage collection and treatment, protecting groundwater quality and ensuring site stability and environmental compliance.

## Dam Break Analysis



## Hydrology Analysis



## Drainage Design





# Projects



1. Detailed Engineering Design (DED) Red Mud Landfill for SGAR Project, Mempawah, West Kalimantan, Indonesia
2. Technical Study on the Relocation of Mix Bauxite Stockyard & Review of Mix Bauxite Crushing Plant Cost Estimate
3. Basic Engineering Design Consultancy Services for Supporting Facilities of Tailing Landfill in Toho, Mempawah
4. Construction Supervision Services for Red Mud Landfill in Mempawah, West Kalimantan
5. Engineering Review Consultancy Services for Mix Bauxite Crushing Plant Documents
6. Detailed Engineering Design (DED) Red Mud Storage Facility for SGAR Project, Mempawah, West Kalimantan, Indonesia
7. Detailed Engineering Design (DED) Slag Stockyard for SGAR Project, Mempawah, West Kalimantan, Indonesia
8. Engineering, Procurement, and Construction Services for Kalibaru Terminal Phase 1B, Tanjung Priok Port
9. Redesign DED for Red Mud Storage Facility for SGAR Project, Mempawah, West Kalimantan, Indonesia
10. Toka Tindung Tailings Dam Raising to RL320m
11. Annual Audit of RL294m Tailing for Toka Tindung Gold Project
12. Mid-Year Audit of RL294–296m Tailings for BLT Toka Tindung (H1 2024)
13. Hydraulic Analysis of TSF Toka Tindung with No Hanging Drain System
14. Annual Audit of RL296 Tailings for BLT Toka Tindung (H2 2024)
15. Geotechnical Confirmation Study of Toka Pit and TSF 320 Design
16. Wetar In-Pit Tailings Study
17. Supervision Works for IPD Partolang Project
18. Detailed Engineering Design for Partolang IPD TSF
19. Site Investigation for CIL TSF Option A, Tujuh Bukit Project
20. Conceptual and Feasibility Design Proposal for Option A, Option B, and Ex-Quarry Sites
21. Electrical Resistivity Survey at Lampon Area
22. Electrical Resistivity Survey at Water Dam 1
23. Geotechnical Drilling and Instrumentation Installation at Taliabu BLT#2
24. Comprehensive Dam Safety Review of Taliabu Tailing Dam No. 1
25. Recommendations on Pile Type and Ground Improvement Methods – Patuha 2 Geothermal Power Plant



# Projects

26. Review of Geotechnical Design for Tower 199, Medan Grand Mosque
27. Anawe Waste Dump Design – Porgera Mine Project, PNG
28. Supervision Services, Geotechnical Study, and Basic Engineering Design for Leach Pad Area – Motomboto
29. Review of Pani Run-Off Water Management
30. Review of Spillway Design for Tailing Storage Facility 1
31. QA/QC Supervision on Pani Project Site
32. Engineering Services Packages for Salak 7 Development Project
33. Independent Technical Review Board (ITRB) for Kelian Tailing Dam
34. Technical Study for Hazardous Waste Management Permit (Pertek) – TSF B3 Waste Landfill
35. Hydrology and Geotechnical Assessment for Main Haul Road

# Clients





# Connect With Us



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**Jl. Ice Skating VI No. 3, Bandung, Jawa Barat**

**"There is no substitute for hard work  
when it comes to achieving success  
and delivering optimum solutions."  
– Thomas Edison**

