



# Engineering Modular Services Geotechnical



**OPUS Consultants** 

Pioneering Sustainability Solutions and Redefining the Boundaries of Innovation

## Empowering Safety: Assess Today, Protect Tomorrow!

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Construction of building structures and infrastructure facilities in hilly terrain inevitably results in cut and fill slopes. For example, due to stringent geometric requirements, the alignment of the North-South Expressway would need to cut through hilly terrain and traverse deep valley. These have resulted in more than six thousand slopes formed.

Successful practice of slope engineering requires basic understanding of general concepts, engineering slope stability geology principles, ground water conditions, geologic site exploration, soil and rock testing and interpretation, slope stability analysis, slope stabilisation methods, and instrumentation and monitoring. Slope failures are not uncommon in Malaysia. Factors contributing to slope failures include rainfall intensity, highly complex high geological formation comprising highly weathered soils, mixed metamorphic zones granite hills, poor design and and construction practice, and lack of maintenance

#### **Our Services**

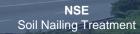
With extensive and proven experience in the cutting-edge design of new and failed slopes for the North-South Expressway as well as other built structures, we provide the whole spectrum of services related to slope engineering.

Our services encompass the following areas:

- Design of Cut & Fill and Rock
   Slopes
- Geological Mapping and Exploration
- Investigation of Slope Failures
- Analysis and Design of Slope Stabilization Works
- Slope Management System
  - Slope Inspection and Assessment

NKVE & NSE Rock Slope Strengthening Work

BUKIT MERAL



### **Sustainable Practices for a Resilient Future**

The major part of coastal areas in Malaysia is underlain by soft marine deposits of Quaternary Age. These deposits are normally characterized by strength low shear and high compressibility. With increase in economic development activities in the coastal areas, buildings and infrastructure facilities will have to be constructed over soft ground. Challenges often faced by the engineers due to construction on soft ground are bearing capacity and post construction settlement. Therefore, a fundamental understanding of soft ground behavior and soil mechanics concept coupled with experience in construction over soft ground is prerequisite for the successful practice of soft ground engineering.

#### **Our Services**

With strong understanding of fundamental soft ground behavior and extensive experience in the design and construction of structures over soft ground, we provide the whole spectrum services related to soft ground engineering.

Our services encompass the following areas:

- Site Investigation
- Design of Foundation and Excavation Support
- Alternative Design
- Embankment over Soft Ground
- Investigation of Distress
- Soft Ground Improvement Works

### Why Choose OPUS

consists certified Our team of professionals with extensive experience providing innovative solutions tailored to your specific needs We deliver integrated approach ensures that every aspect of our project is handled with care and prevision, resulting in seamless execution from concept to completion. dedication to quality Our is unwavering. We believes in fostering partnerships with strong all stakeholders, leading better to decision-making and successful outcomes





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