

Title : Slope Stability Analysis at Ban Mae Sa Mai, Pong Yang Subdistrict, Mae Rim District, Chiang Mai Province

Author(s) : 1. Thimaphon Thongchuea

Student ID : 650510412

Major : Geology

Advisor(s) : 1. Assistant Professor Dr. Nipada Santha

Type of presentation* (choose 1):

Oral Presentation (เฉพาะ ตัวแทนศ.ที่สาขาเลือกให้นำเสนอแบบบรรยาย)

Poster (กรณี นำเสนอผลงานปัญหาพิเศษ/การค้นคว้าอิสระ)

Cooperative Education (กรณี นำเสนอผลงานสหกิจศึกษา)

ABSTRACT

Landslides are natural hazards resulting from the downslope movement of soil and rock masses under the influence of gravity. Their occurrence is controlled by several factors, including soil properties, steep topography, climatic variability, and intense rainfall. Ban Mae Sa Mai, Pong Yang Subdistrict, Mae Rim District, Chiang Mai Province, has been identified as a landslide-prone area due to its steep mountainous terrain and there were reports of the past landslide events. In addition to geomorphological conditions, soil type and geological characteristics play significant roles in slope instability. This study aims to evaluate the engineering properties of the soil and assess slope stability within the study area. Field permeability testing was conducted, and soil samples were collected for laboratory analyses, including grain size distribution, Atterberg limits, natural moisture content, bulk unit weight, and shear strength determined by the direct shear test. The results indicate that the soil consists predominantly of sand (78.91–90.29%), with gravel (0.26–17.58%) and silt (3.51–23.44%). The average liquid limit, plastic limit, and plasticity index are 38.18%, 36.08%, and 4.66%, respectively. The average unit weight is 15.26 kN/m³, moisture content is 20.82%, internal friction angle is 32.80°, and cohesion is 0.42 t/m². Slope stability analysis using GEO5 indicates a

**Type of presentation must be matched with an option you choosing on student upload system.*

***The abstract can be more than one page and must be approved by project advisor before upload.*

factor of safety less than 1.50, suggesting low slope stability and a high potential for landslide occurrence.

**Type of presentation must be matched with an option you choosing on student upload system.*

***The abstract can be more than one page and must be approved by project advisor before upload.*