Engineering geology of slopes for the preparation of EIA reports — a case study from the proposed site for a national secondary school at Ringlet, Pahang Darul Makmur

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The site for the proposed National Secondary School at Ringlet, Cameron Highland is situated in a rugged hilly terrain underlain by granite and schist. The proposed school buildings is sited in a V-shaped valley because of the difficulty in getting flat or low-lying ground in the tropical highland areas such as Ringlet. Thus, existing slopes have to be cut to create room for the school building. The engineering geological study for slopes presented in this paper forms part of the geological input required for the preparation of an environmental impact assessment (EIA) report prior to approval by the local authority. To assess the stability of the existing and future cut slopes, structural geological mapping has been carried out by collecting data of relict structures in the intensely weathered and restricted outcrops. The study area has been arbitrarily divided into 3 structural domains, i.e Domain A, B and C. In the kinematic slope stability analysis, it is assumed that slopes in each structural domain contain similar structural style and orientation. Results of the anaysis indicates that most of the slopes in the study area have variable potential to undergo wedge and/or planer failures. This is evident in the field by some occurrences of wedge/planar failures, although they are of relatively small-scale. The risk of slope failures can be reduced if the proposed slopes are cut in the orientations and gradients recommended in this study.

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