ANALYSIS AND DESIGN OF SUTT PLN TOWER
STABILITY AND SLOPE DESIGN AMONG TOWER
(CASE STUDY SUTT T.11 SEGOROMADU)
LAMONGAN, GERSIK

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ABSTRACT

The number of activities conducted by PT. Semen Gresik around tower SUTT T. 11 Segoromadu-Lamongan is suspected to cause disruption of stability of slope around tower. This Tower originally stood on a flat land. Then by PT. Semen Gresik, chalk stone around the tower dug to be used as raw material for the plant. The excavations have led to the emergence of the low lands and partly in the form of a puddle and filled with rain water. The ground around the tower was left not unearthed until the tower-the tower as if it was on top of a small hill was left as a result of the surrounding land was dug. With a height of ±20 meters above the ground, this extracting caused position of slope be stand ±70°. This condition causes the structure of ground Foundation area of the tower are prone to collapse or sliding.

This Tower is one of the main tower which connects the power of Java, then the stability of the tower should not be disturbed. It is causing concern for the PLN will opportunities happen instability or failure, therefore it needs to be carried out research on the degree of stability of slopes and talud around the tower. This stability analysis is carried out using the auxiliary program Dxstable, Plaxis, and Geoslope.
Based on the test of safety factor which is obtained from each program, Plaxis has the smallest value of SF with 1.299. In this matter $SF = 1.299 > 1.25$ (SF minimum) means that stability of slope around the tower is safe. For the further condition, soil around T.11 tower is assumed to undergo weathering, so the condition of slope stability become unsteady. The preventive action that is taken, using the type of ground anchor tie back grouting with concrete grouting and head anchor as a concrete retaining blocks. Retrofitting of ground anchor has a stress value of lift force ($K$) with 44,21 tons. In order to withstand the force, it is sat the tie back grouting with a diameter 20 cm and a length of grouting 5 m. Therefore, reinforcement of ground anchor is erected 8 m to of anchor is 12 in every section.

**Key Word:** Stability of Slope, PLN Tower, Supporting Software of Calculation and Design (*Plaxis, Geoslope, and Dxstable*)