

EVALUATION OF SHANSEP PARAMETERS FOR SRI LANKAN COHESIVE SOILS

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DECLARATION

I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and beliefs it does not contain any material previously published or written by another person except where the acknowledgement is made in text.

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The above candidate has carried out research for the Masters thesis under my supervision.

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Name: Prof. U.P. Nawagamuwa

Signature:

Date:

ABSTRACT

This thesis contains a study on SHANSEP parameters, evaluated for Sri Lankan cohesive soils. In Sri Lanka, various correlations are used for the evaluation of shear strength parameters and the settlement. Most of such correlations are developed in overseas countries, which may not accurately model the behavior of Sri Lankan soils as they are developed from other geological conditions.

Though the undrained shear strength is a function of both stress history and stress path, most of the time, they are not considered, which may lead to large errors. The SHANSEP model proposed by Prof. Charles C. Ladd, shows the normalized behavior of the cohesive soils which consider both stress path and stress history in determination of the Undrained Shear Strength of Soils. Therefore, this research is an effort to see the applicability of SHANSEP model for Sri Lankan cohesive soils, using the test data provided by major projects in Sri Lanka.

Since CK0U Triaxial testing facilities are not available in Sri Lanka, data from field vane shear test have been used for the estimation of Undrained Shear Strength in this study. Finally, a SHANSEP equation has been proposed in this thesis for selected alluvial clay soils along with two more conservative equations for the estimation of undrained shear strength and over consolidation ratio respectively.

Key words: *SHANSEP, Normalized Undrained Shear Strength, Over Consolidation Ratio, Field Vane Shear, Alluvial Soil*

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