VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM – 590 014.

Project Report On

"EFFECT ON HIGH RISE STRUCTURE DUE TO ADJACENT VERTICAL OPENING"

Karnataka State Council for Science &Technology, Bangalore
Sponsored Project

A Project report submitted to Visvesvaraya Technological University in partial fulfillment for the award of degree of Bachelor of Engineering in Civil Engineering

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Synopsis

Axisymmetric excavations are quite common in the construction industry.The axisymmetric excavation may be manhole, inspection chamber, service entrance and excavation for bored piles and more commonly open wells in the indian context. The understand of the mechanics of the behavior of axisymmetric excavations are very important considering the safety aspects while advancing the excavation.

In the past some work has been done on a axisymmetric excavations in clays by Bjerrum and Eide (1);parter (12);Pastor and Turgeman (10);Pastor (11);Britto, Kusakabe ,and Schofield (2);and Britto and Kusakabe (3)only in clays. An effort has been made to study the collapse behavior of axisymmetric excavations on sandy soil has been taken up.

The study has been made in the laboratory in a test bed. A test bed of size 900mm X 900mm X 900mm is fabricated with top open. One of the sides is fitted with laminated toughened glass12mm thick and appropriate loading arrangement has been made. Axisymmetric openings are made using PVC pipe of 160mmand 300mm diameter on the toughened glass side in order to observe the collapse mechanism. Further additional loading is applied on the surface to study the affect of surcharge on collapse behavior.

As it is observed from experimentation the sandy soils around axisymmetric opening do not fail under its own weight when the sand is moist. At this moist condition it would take considerable load to induce stability.